# Agenda: Battle Creek City Commission

Meeting Date: March 19, 2024- 7:00 PM

Location: City Commission Chambers

Chair: Mayor Mark A. Behnke

Title: Battle Creek City Hall - City Commission Chambers - 3rd Floor

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**INVOCATION**

**PLEDGE OF ALLEGIANCE**

**ROLL CALL**

**PROCLAMATIONS AWARDS**

Beautiful Battle Creek Awards

Proclamation for National Donate Life Month 2024

Proclamation for Kidney Awareness Month 2024

**CHAIR NOTES ADDED OR DELETED RESOLUTIONS**

**PETITIONS COMMUNICATIONS REPORTS**

**INTRODUCTION OF ORDINANCES**

A proposed Ordinance, #02-2024, seeking to amend the Zoning Code of the City of Battle Creek.

A proposed Ordinance, #03-2024, seeking to rezone various properties located in two clusters along Michigan Avenue W, Jackson St W, Kendall St S, Van Buren St W, and Angell St currently zoned R-3, Multiple Family Residential District and T-3, Neighborhood Commercial District to T-4 Downtown Commercial District and T-3 Neighborhood Commercial District.

**PUBLIC COMMENTS REGARDING CONSENT AGENDA AND RESOLUTIONS NOT ON CONSENT AGENDA**

(Limited to three minutes per individual)

**COMMISSION COMMENT REGARDING MEETING BUSINESS**

**CONSENT AGENDA**

**Minutes:**

Minutes for the March 5, 2024 City Commission Regular Meeting

**Petitions, Communications, Reports:**

City Manager's Report for March 19, 2024

Review Committee Meeting Minutes for March 13, 2024

**Resolutions:**

384 A Resolution appointing Ezra Bell as a new member to the Battle Creek Downtown Development Authority.

385 A Resolution appointing Tha Par as a new member to the BCTIFA / Brownfield Redevelopment Authority.

386 A Resolution reappointing James Eldridge, Sharon Miller, Jana Davis, Karen Roebuck and Rebecca Squires to the License Review Board.

387 A Resolution seeking authorization for a change order for mobile video equipment and software services for the City of Battle Creek Police Department with Motorola Solutions, Inc., in an estimated amount of $39,000.88, with unit prices prevailing.

388 A Resolution seeking to authorize the City Manager to execute an easement agreement between Consumers Energy Company and the City of Battle Creek in order to install two streetlights on the Capital Avenue bridge at Capital Avenue and Beckley Road.

389 A Resolution seeking acceptance of the proposal of best value from Union Electric, Inc., for a new fire alarm system at the Valentine Center in a not to exceed amount of $51,475.00.

390 A Resolution seeking to correct the identity of the Grantee/Buyer in Resolution 126, approved May 2, 2023.

391 A Proposed Resolution authorizing the City Manager to execute all documents necessary to sell the city-owned vacant land located in Assyria Township in Barry County, Parcel #08-01-031-020-00, to Barry County for $1.00.

**RESOLUTIONS NOT INCLUDED IN THE CONSENT AGENDA**

392 A Resolution seeking approval to direct staff to fly the Donate Life flag at City Hall from noon on April 1, 2024 through April 30, 2024.

393 A Resolution authorizing the City Manager to submit a grant application to The Michigan Department of Natural Resources Trust Fund for the construction of a permanent and accessible restroom facility at the ANYbodies Playground and boat launch area in Bailey Park.

394 A Resolution seeking approval for the editing and inclusion of certain ordinances and resolutions as parts of the various component codes of the codified ordinances; and repealing ordinances and resolutions in conflict therewith.

395 A Resolution authorizing the City Manager, under the provisions of 296.09(c), to continue to employ Jill Wood who presently holds the position of Customer Service Rep II at the WWTP and to allow for Ms. Wood's years of service as a Fire Fighter with the BCFD to count towards vesting and eligibility with MERS.

396 A Resolution seeking acceptance of the lowest responsive, responsible bid for Wastewater Treatment Plant HVAC project from Shouldice Industrial Manufacturers and Contractors, Inc., in a not-to-exceed amount of $769,757.00.

383 A Resolution seeking to set a Closed Session on a labor matter for March 19, 2024.

**GENERAL PUBLIC COMMENT**

(Limited to three minutes per individual)

**COMMISSION COMMENTS**

**RECESS**

**CLOSED SESSION**

**RETURN FROM RECESS**

**ADJOURNMENT**

It is the desire of the City Commission to encourage public expression in the course of its meetings. Such expression can be integral to the decision-making process of the City Commission. It is the intention of the City Commission to respect the rights of persons addressing the Commission. Public comment periods are a time for citizens to make comments; they are not intended as a forum for debate or to engage in question-answer dialogues with the Commission or staff. Commissioners are encouraged not to directly respond to speakers during public comment periods. At the conclusion of the speakers remarks, the Mayor or individual Commissioners may refer a question to City staff, if appropriate. Also, individual Commissioners may choose to respond to speakers during the Commission Comment period. It is with these aims in mind, so as to promote decorum and civility and an orderly process for conducting its public meetings, that the following rules concerning public comments, consistent with applicable law, are adopted by the City Commission.

(1) Persons attending a regular or special Commission Meeting shall be permitted to address the City Commission in conformity with this rule. The opportunity to address the Commission shall be limited to the following:

(a) Persons desiring to address the City Commission are encouraged, but shall not be required, to fill out and turn in to either the City Clerk, Mayor, or presiding Commissioner, prior to the meeting, a comment card disclosing the following information: The person's name, address, and telephone number; the specific issue, topic or resolution the individual wishes to address.

(b) During public hearings when scheduled, speakers may present facts and opinions on the specific matter being heard by the Commission. A three-minute time limit is imposed per speaker. In the discretion of the Mayor or presiding officer, the time limit for individual speakers may be lengthened or shortened when appropriate.

(c) During the consideration of specific ordinances when scheduled, speakers may present facts and opinions on the specific ordinance being considered by the City Commission. Speakers addressing the City Commission during this time shall limit their comments to the specific issue being considered. A three-minute time limit, which may be lengthened or shortened by the Mayor or presiding officer when appropriate, is imposed per speaker, per matter considered.

(d) During the public comment period on the consent agenda and resolutions not on the consent agenda, each speaker may address the Commission once, regarding anything on the consent agenda and resolutions not on the consent agenda, for a total not to exceed three minutes regardless of how many consent agenda items or regular resolutions the speaker is addressing, which time period may be lengthened or shortened by the Mayor or presiding officer when appropriate.

(e) During the General Public Comment portion of the meeting, speakers may

address the City Commission on any matter within the control and jurisdiction of the City of Battle Creek. A speaker shall be permitted to address the City Commission once, for up to three minutes, during this portion of the meeting.

(f) Applicants or Appellants, as defined below, or an attorney retained to represent them, are not bound by the specific time limitations set out above but may have the amount of time deemed reasonably necessary by the Mayor or presiding official to present their case to the City Commission without violating the rules set out below in sub-section 4(a) through (g), with which they are obligated to comply.

(*i*) Applicant is defined an individual or business entity seeking a City Commission final decision on a matter for which the individual has made application to the City based upon a specific provision in a City Ordinance or state statute for permission to take a specific action;

(*ii*) Appelant is an individual appealing a decision of a City official or an inferior body based upon a specific provision in City ordinances entitling the individual to appeal the decision to the City Commission.

(2) An individual wishing to address the City Commission shall wait to be recognized by the Mayor or presiding Commissioner before speaking. An individual who has not filled out a card requesting to address the City Commission shall raise his or her hand and wait to be recognized by the Mayor or presiding Commissioner before speaking and shall identify themselves by name and address and, if appropriate, group affiliation for the record.

(3) Speakers shall address all remarks to the Mayor, or the presiding Commissioner or official, and not to individual Commissioners or staff members. Speakers shall not address their remarks to members of the public in attendance at the meeting.

(4) A speaker will be ruled out-of-order by the Mayor or presiding Commissioner and the Commission will continue with its business, and the speaker may be required to leave the meeting after having been ruled out-of-order for a breach of the peace committed at the meeting as permitted by the OMA, when the speaker violates above sub-section 3 or the following:

(a) Becomes repetitive or speaks longer than the allotted time;

(b) Attempts to yield any unused portion of time to other speakers;

(c) Engages in a personal attack upon a city employee, administrator or Commissioner only if the personal attack is totally unrelated to the manner in which the employee, administrator or Commissioner carries out their public duties or office;

(d) Uses obscene or profane language;

(e) Engages in slanderous or defamatory speech;

(f) Uses derogatory racial, sexual or ethnic slurs or epithets relating to any individual or category of persons; or

(g) Engages in conduct that interrupts or disrupts the meeting.

(5) Individuals attending City Commission meetings or workshops, excluding City

staff, shall not pass the commission chambers bar upon which the podium is affixed (and which divides the audience section from the well of the chambers) without having been invided to do so by the Mayor or official presiding over the meeting, or after requesting and explicitly being granted permission to do so. Any individual violating this sub-section will be ruled out-of-order by the Mayor or presiding official and the individual may be required to leave the meeting for a breach of the peace committed at the meeting as permitted by the OMA.

General Detail NO.

Beautiful Battle Creek Awards

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Beautiful Battle Creek Awards for March 2024**

**NPC 1**
Donny W. Williams
443 Main Street
Battle Creek, MI 49014 - Ward 2

Robert W. Guth
139 Lathrop Avenue
Battle Creek, MI 49014-- Ward 3

**NPC 2**
No Nominations

**NPC 3**
Mary M. Buckingham
354 W Burnham Street
Battle Creek, MI 49015 – Ward 1

Body Bronz LLC
696 SW Capital Avenue
Battle Creek, MI 49015 - Ward 4

**NPC 4**
No Nominations

**NPC 5**
Tinnea J. Brown
106 Barney Blvd
Battle Creek, MI 49037 - Ward 1

Rayann M. Osborn
8 Kimber Avenue
Battle Creek, MI 49037 - Ward 1

**NPC 11**
No Nominations

Battle Creek City Commission
3/19/2024

# Action Summary

**Staff Member:** Marcie Gillette, Community Services Director

**Department:** Community Development

## SUMMARY

Beautiful Battle Creek Awards

## BUDGETARY CONSIDERATIONS

## HISTORY, BACKGROUND and DISCUSSION

## DISCUSSION OF THE ISSUE

## POSITIONS

ATTACHMENTS:

| File Name | Description |
|---|---|
| BEAUTIFUL_BATTLE_CREEK_AWARD_COVER_SHEET_MARCH_2024.pdf | BBCA Cover Sheet March 2024 |
| 443_Main_Street_-_BBCA_March_2024.pdf | 443 Main Street - BBCA March 2024 |
| 139_Lathrop_Avenue_-_BBCA_March_2024.pdf | 139 Lathrop Avenue - BBCA March 2024 |
| 354_W_Burnham_Street_-_BBCA_March_2024.pdf | 354 W Burnham Street - BBCA March 2024 |
| 696_SW_Capital_Ave_-_BBCA_March_2024.pdf | 696 SW Capital Avenue - BBCA March 2024 |
| 106_Barney_Blvd_-_BBCA_March_2024.pdf | 106 Barney Blvd - BBCA March 2024 |
| 8_Kimber_Ave_-_BBCA_March_2024.pdf | 8 Kimber Avenue - BBCA March 2024 |

# BEAUTIFUL BATTLE CREEK AWARD MARCH 2024

**NPC 1**
Donny W Williams
443 Main Street
Battle Creek, MI 49014 - Ward 2

Robert W Guth
139 Lathrop Avenue
Battle Creek, MI 49014-- Ward 3

**NPC 2**
No Nominations

**NPC 3**
Mary M Buckingham
354 W Burnham Street
Battle Creek, MI 49015 – Ward 1

Body Bronz LLC
696 SW Capital Avenue
Battle Creek, MI 49015 - Ward 4

**NPC 4**
No Nominations

**NPC 5**
Tinnea J Brown
106 Barney Blvd
Battle Creek, MI 49037 - Ward 1

Rayann M Osborn
8 Kimber Avenue
Battle Creek, MI 49037 - Ward 1

**NPC 11**
No Nominations

# BEAUTIFUL BATTLE CREEK AWARD

PROUDLY PRESENTED TO

## Donny W. Williams
## 443 Main Street

Are hereby recognized by the Neighborhood Planning Council, and by the City of Battle Creek, for their continuing efforts to improve their neighborhood through property maintenance and beautification that contributes to the community-wide goal of improving the quality of life for Battle Creek's citizens.

**In testimony thereof, the Seal of the City of Battle Creek was affixed on the 19th Day of March, Two Thousand Twenty Four.**

James Moreno

NPC Chair

Mayor



# BEAUTIFUL BATTLE CREEK AWARD

PROUDLY PRESENTED TO

## Robert W. Guth

## 139 Lathrop Avenue

Are hereby recognized by the Neighborhood Planning Council, and by the City of Battle Creek, for their continuing efforts to improve their neighborhood through property maintenance and beautification that contributes to the community-wide goal of improving the quality of life for Battle Creek's citizens.



**In testimony thereof, the Seal of the City of Battle Creek was affixed on the 19th Day of March, Two Thousand Twenty Four.**

James Moreno

NPC Chair

Mayor

# BEAUTIFUL BATTLE CREEK AWARD

PROUDLY PRESENTED TO

## Mary M. Buckingham
## 354 W Burnham Street

Are hereby recognized by the Neighborhood Planning Council, and by the City of Battle Creek, for their continuing efforts to improve their neighborhood through property maintenance and beautification that contributes to the community-wide goal of improving the quality of life for Battle Creek's citizens.

**In testimony thereof, the Seal of the City of Battle Creek was affixed on the 19th Day of March, Two Thousand Twenty Four.**

*Timothy Conlogue*

NPC Chair

Mayor



# BEAUTIFUL BATTLE CREEK AWARD

PROUDLY PRESENTED TO

## Body Bronz LLC
## 696 SW Capital Avenue

Are hereby recognized by the Neighborhood Planning Council, and by the City of Battle Creek, for their continuing efforts to improve their neighborhood through property maintenance and beautification that contributes to the community-wide goal of improving the quality of life for Battle Creek's citizens.



**In testimony thereof, the Seal of the City of Battle Creek was affixed on the 19th Day of March, Two Thousand Twenty Four.**

*Timothy Conlogue*

NPC Chair

Mayor

# BEAUTIFUL BATTLE CREEK AWARD

PROUDLY PRESENTED TO

## Tinnea J. Brown
## 106 Barney Blvd

Are hereby recognized by the Neighborhood Planning Council, and by the City of Battle Creek, for their continuing efforts to improve their neighborhood through property maintenance and beautification that contributes to the community-wide goal of improving the quality of life for Battle Creek's citizens.

**In testimony thereof, the Seal of the City of Battle Creek was affixed on the 19th Day of March, Two Thousand Twenty Four.**

Kathy Antaya

NPC Chair

Mayor



# BEAUTIFUL BATTLE CREEK AWARD

PROUDLY PRESENTED TO

## Rayann M. Osborn
## 8 Kimber Avenue

Are hereby recognized by the Neighborhood Planning Council, and by the City of Battle Creek, for their continuing efforts to improve their neighborhood through property maintenance and beautification that contributes to the community-wide goal of improving the quality of life for Battle Creek's citizens.




**In testimony thereof, the Seal of the City of Battle Creek was affixed on the 19th Day of March, Two Thousand Twenty Four.**

*Kathy Antaya*

NPC Chair

Mayor

General Detail NO.

Proclamation for National Donate Life Month 2024

**BATTLE CREEK, MICHIGAN -** 3/19/2024

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Patti Worden, Executive Assistant

**Department:** City Manager

**SUMMARY**

Proclamation for National Donate Life Month 2024

**BUDGETARY CONSIDERATIONS**

**HISTORY, BACKGROUND and DISCUSSION**

**DISCUSSION OF THE ISSUE**

**POSITIONS**

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ATTACHMENTS:

| File Name | Description |
| --- | --- |
| Proclamation_for_National_Donate_Life_Month_2024.pdf | Proclamation for National Donate Life Month 2024 |

# Proclamation

**WHEREAS,** more than 100,000 Americans and over 2,400 of those patients in the State of Michigan are currently on the national transplant waiting list; and

**WHEREAS,** another person is added to the waiting list every nine minutes, and, on average, seventeen people die each day while waiting for a lifesaving organ transplant; and

**WHEREAS,** the most effective way to address this health crisis is to educate and to encourage citizens to commit to the following actions: register your decision to be an organ, eye and tissue donor in the National Donate Life Registry at RegisterMe.org or the State of Michigan Donor Registry at michigan.gov or at your local Secretary of State and learn more about living donation at DonateLife.net; and

**WHEREAS,** the Donate Life cause of saving and healing lives through organ, eye and tissue donation is of such immediate and worthwhile importance, those who can donate are encouraged to make this worthwhile life changing commitment;

**NOW, THEREFORE,** I, Mark A. Behnke, Mayor of the City of Battle Creek, do hereby proclaim the month of April 2024, as

***"NATIONAL DONATE LIFE MONTH"***

in the Greater Battle Creek Area and encourage all neighbors who are able to register their decision to be an organ, eye and tissue donor in the National Donate Life Registry at RegisterMe.org or the State of Michigan Donor Registry at michigan.gov or at your local Secretary of State.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Official Logo of the City of Battle Creek, Michigan to be affixed this 19th day of March, 2024.

Mark Behnke

Mark A. Behnke, Mayor

General Detail NO.

Proclamation for Kidney Awareness Month 2024

**BATTLE CREEK, MICHIGAN -** 3/19/2024

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Patti Worden, Executive Assistant

**Department:** City Manager

**SUMMARY**

Proclamation for Kidney Awareness Month 2024

**BUDGETARY CONSIDERATIONS**

**HISTORY, BACKGROUND and DISCUSSION**

**DISCUSSION OF THE ISSUE**

**POSITIONS**

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ATTACHMENTS:

| File Name | Description |
|---|---|
| Proclamation_for_Kidney_Awareness_Month_2024.pdf | Proclamation for Kidney Awareness Month 2024 |

# Proclamation

**WHEREAS,** Chronic Kidney Disease (CKD) is an under-recognized public health crisis. This disease consists of the progressive, gradual loss of kidney function, which results in a decreased ability of the kidneys to remove waste from the body; and,

**WHEREAS,** Diabetes and high blood pressure are the leading causes of CKD; and,

**WHEREAS,** Chronic Kidney Disease affects more than 1 in 7 people, that is 15% of U.S. adults or 37 million people are estimated to have CKD; and,

**WHEREAS,** African American, Hispanic, Asian and Indigenous individuals are at high risk for developing kidney failure; and,

**WHEREAS,** as many as 9 out of 10 people with CKD don't know they have it and about 2 in 5 adults with severe CKD do not know they have it because CKD usually has no symptoms until the late stages; and,

**WHEREAS,** regular screening and early detection of CKD allows opportunity for disease management that can slow the progression of kidney disease and help prevent kidney failure; and,

**WHEREAS,** As of January 1, 2024, there were 2,020 people in Michigan waiting for a lifesaving kidney transplant; and,

**WHEREAS,** the month of March is designated as Kidney Month to raise awareness of kidney disease and the importance of prevention and early detection;

**NOW, THEREFORE,** I, Mark A. Behnke, Mayor of the City of Battle Creek, Michigan, do hereby proclaim ***the month of March 2024*** as

## "KIDNEY AWARENESS MONTH"

in the Greater Battle Creek Area and urge neighbors to join me in the commitment to fight Chronic Kidney Disease (CKD) and take preventative and early detection measures in the battle against this progressive disease.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Official Logo of the City of Battle Creek, to be affixed this 19th day of March 2024.

Mark A. Behnke, Mayor

Ordinance NO.

A proposed Ordinance, #02-2024, seeking to amend the Zoning Code of the City of Battle Creek.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**The City of Battle Creek Ordains:**

Section 1: An Ordinance to adopt an update to the Zoning Ordinance, attached hereto. The proposed Ordinance, Part 12 of the Codified Ordinances includes modifications to allow a two foot increase in height for accessory structures, an increase in the allowed size of accessory structures when located on larger lots, a reduction in the minimum lot widths in zoning districts R-3, T-3, T-4 and T-5, adds language to allow food trucks as an accessory use in the B-1, B-2, T-3, T-4, T-5, I-1, I-2 and S Districts, and corrects and clarifies some of the use and dimensional requirements.

Section 2. Should any section, clause or phrase of this Ordinance be declared to be invalid, the same shall not affect the validity of the Ordinance as a whole or any part thereof, other than the part so declared to be invalid.

Section 3. All Ordinances or parts of Ordinances in conflict with any of the provisions of this Ordinance are hereby repealed, saving any prosecution, criminal or administrative appeal pending on, or violation cited on or before the effective date of this Ordinance, which shall remain subject to the Ordinance provision existing at the time of the alleged violation.

Section 4. Except as otherwise provided by law, this Ordinance shall take effect seven (7) days from the date of its publication, in accordance with the provisions of Section 401 of the Michigan Zoning Enabling Act.

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Darcy Schmitt, Planning Supervisor

**Department:** Planning

**SUMMARY**

A proposed Ordinance, #02-2024, seeking to amend the Zoning Code of the City of Battle Creek.

**BUDGETARY CONSIDERATIONS**

There are no additional permit/licenses being proposed by the proposed Ordinance, nor are there new services proposed that will require additional resources. Therefore, adoption of the update to the Zoning Code will not have an impact to the budget.

**HISTORY, BACKGROUND and DISCUSSION**

The proposed amendments are a result of questions and concerns brought to the attention of the City by residents or property owners where they felt certain requirements are overly restrict, unclear or incorrect.

*Chapter 1240 Zoning Districts and Map:* The primary revisions involved reducing the minimum lot widths in the R-3, T-3, T-4 and T-5 Districts to better reflect the density and types of uses allowed in these districts. They also involved clarifying existing lot requirements by replacing the Minimum Lot Area regulation for residential uses with the Maximum Residential Units Per Acre while not changing the existing intensity of the districts, as well as adding the Minimum Lot Depth regulation for all districts pursuant of Section 1240.21(a)(7). Other revisions include adding food trucks to the B-1, B-2, T-3, T-4, T-5, I-1, I-2, and S Districts as accessory uses as this is how they have been regulated for the past several years and making typographical corrections and alignment between the Table of Permitted Uses and District tables.

*Chapter 1241 Schedule of Regulations*: Revisions were made to reflect the changes made to Section 1240. In Section 1241.07(b)(7), storage and parking of vehicles in the required front yard of R Districts and T-3 District is permitted currently only on legally authorized driveways so the following disclaimer was added, "unless otherwise allowed in other sections of the Zoning Code".

*Chapter 1251 Standards Applicable to Specific Uses*: Revisions not constituting substantive changes to the operation and execution were made throughout the Chapter, including reformatting and punctuation changes. Section 1251.14 was changed from "Drive-Thru Restaurant" to "Drive-Thru Business" with no further substantive revisions made to the text regarding use standards to address all drive-thru businesses. The buffer requirement for a Transitional and Supportive Residential Housing for More than Six Persons to not be within a 1,500 ft. radius of another Transitional and Supportive Residential Home or State Licensed Residential Care Facility in Section 1251.50(2) has been removed to meet state requirements. Section 1251.33(a) was removed because it was in part added to Sections 1240 and 1241 with other dimensional requirements for the district and in part because the size of a building is already regulated through the maximum residential units per acre and minimum lot size requirements.

*Chapter 1260 General Provisions*: Changes were made to allow for more flexibility when proposing accessory buildings on large lot properties. The maximum size of the floor areas of any single accessory building has been changed from a fixed number to meeting requirements stated in 1260.01(c)(1) and (2). The maximum height for accessory buildings has also been increased from fourteen feet in height to sixteen feet in height. The specifications for construction of accessory buildings in a secondary front yard have been related back to the specifications stated in Chapter 1230. With the proposed increase in height of two feet, accessory structures will be able to house campers and have no substantial impact on surrounding properties. It will also regulate the footprint of the building by not allowing it to exceed fifty percent of the rear yard or increase the overall building coverage of the zoning district beyond the maximum allowed coverage.

*Chapter 1281 Administrative Procedures:* The significant revision here is the addition of a six month limit on complete applications without action, after which they expire. This requires that a new application and the associated fee to be submitted after that six month limit.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

The Planning Commission, at their February 28, 2024 meeting, held a public hearing on the draft amendments to the Zoning Code. There were no public comments during the public hearing. With (7)

seven members present, the Planning Commission voted unanimously to recommend the City Commission approve the proposed amendments to the Zoning Code.

Staff finds that the proposed amendments to the Zoning Code are needed to fix errors, improve clarity and provide additional flexibility to land uses for residents and property owners in the community without compromising safety and quality of life for the residents.

A Resolution seeking to adopt Ordinance #02-2024 to amend the Zoning Code of Battle Creek is recommended.

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ATTACHMENTS:

| File Name | Description |
|---|---|
| Text_Amendment_Staff_Report.pdf | Staff Report |
| 1240_Zoning_Districts_and_Map_Clean_Copy.pdf | Chapter 1240_Clean Copy |
| 1240_Zoning_Districts_and_Map_Mark_Up.pdf | Chapter 1240_Mark Up |
| 1241_Schedule_of_Regulations_Clean_Copy.pdf | Chapter 1241_Clean Copy |
| 1241_Schedule_of_Regulations_Mark_Up.pdf | Chapter 1241_Mark Up |
| 1251_Standards_Applicable_to_Specific_Uses_Clean_Copy.pdf | Chapter 1251_Clean Copy |
| 1251_Standards_Applicable_to_Specific_Uses_Mark_Up.pdf | Chapter 1251_Mark Up |
| 1260_General_Provisions_Clean_Copy.pdf | Chapter 1260_Clean Copy |
| 1260_General_Provisions_Mark_Up.pdf | Chapter 1260_Mark Up |
| 1281_Administrative_Procedures_Clean_Copy.pdf | Chapter 1281_Clean Copy |
| 1281_Administrative_Procedures_Mark_Up.pdf | Chapter 1281_Mark Up |
| 02.28.2024_Plannning_Commission_Meeting_Minutes_Draft.pdf | Draft PC Minutes_02.28.24 |

# Battle Creek City Planning Commission
## Staff Report for the February 28, 2024 Regular Meeting

**To:** Planning Commissioners

**From:** CJ Sivak-Schwennesen, Planner

**Subjects:** Request from the City of Battle Creek to consider amendments to various sections of the City of Battle Creek zoning code pursuant to Section 1281.01.

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**Summary**

Request from the City of Battle Creek to consider amendments to various sections of the City of Battle Creek zoning code pursuant to Section 1281.01.

**Background**

*Chapter 1240 Zoning Districts and Map:* The primary revisions involved reducing the minimum lot widths in the R-3, T-3, T-4 and T-5 Districts to better reflect the density and types of uses allowed in these districts. They also involved clarifying existing lot requirements by replacing the Minimum Lot Area regulation for residential uses with the Maximum Residential Units Per Acre while not changing the existing intensity of the districts, as well as adding the Minimum Lot Depth regulation for all districts pursuant of Section 1240.21(a)(7). Other revisions include adding food trucks to the B-1, B-2, T-3, T-4, T-5, I-1, I-2, and S Districts as accessory uses as this is how they have been regulated for the past several years and making typographical corrections and alignment between the Table of Permitted Uses and District tables.

*Chapter 1241 Schedule of Regulations*: Revisions were made to reflect the changes made to Section 1240. In Section 1241.07(b)(7), storage and parking of vehicles in the required front yard of R Districts and T-3 District is permitted currently only on legally authorized driveways so the following disclaimer was added, “unless otherwise allowed in other sections of the Zoning Code”.

*Chapter 1251 Standards Applicable to Specific Uses*: Revisions not constituting substantive changes to the operation and execution were made throughout the Chapter, including reformatting and punctuation changes. Section 1251.14 was changed from “Drive-Thru Restaurant” to “Drive-Thru Business” with no further substantive revisions made to the text regarding use standards to address all drive-thru businesses. The buffer requirement for a Transitional and Supportive Residential Housing for More than Six Persons to not be within a 1,500 ft. radius of another Transitional and Supportive Residential Home or State Licensed Residential Care Facility in Section 1251.50(2) has been removed to meet state requirements. Section 1251.33(a) was removed because it was in part added to Sections 1240 and 1241 with other dimensional requirements for the district and in part because the size of a building is already regulated through the maximum residential units per acre and minimum lot size requirements.

*Chapter 1260 General Provisions*: Changes were made to allow for more flexibility when proposing accessory buildings on large lot properties. The maximum size of the floor areas of any single accessory building has been changed from a fixed number to meeting requirements stated in 1260.01(c)(1) and (2). The maximum height for accessory buildings has also been increased from fourteen feet in height to sixteen feet in height. The specifications for construction of accessory buildings in a secondary front yard have been related back to the specifications stated in Chapter 1230. With the proposed increase in height of two feet, accessory structures will be able to house campers and have no substantial impact on surrounding properties. It will also regulate the footprint of the building by not allowing it to exceed fifty percent of the rear yard or increase the overall building coverage of the zoning district beyond the maximum allowed coverage.

*Chapter 1281 Administrative Procedures:* The significant revision here is the addition of a six month limit on complete applications without action, after which they expire. This requires that a new application and the associated fee to be submitted after that six month limit.

## Public Hearing and Notice Requirements

This request has been scheduled for the February 28, 2024 Planning Commission meeting, with notice of the hearing published in the February 8th, 2024 edition of the Battle Creek Shopper.

## Support Material

Ordinance Amendment Spreadsheet
Ordinance Amendments (Redline copy followed by clean copy for each chapter)

| Item No. | Section(s) | Issues | Solutions | Comments |
|---|---|---|---|---|
| 1 | 1240.02 | Lack of marking where an Accessory Use would require a Special Land Use permit in the Table of Uses. | Add a use type signified by $A^S$ to represent this use category in the Table of Uses. | |
| 2 | 1240.03, 1240.04, 1240,08 | Uses listed do not match the Table of Permitted Uses; | a. Corrected Use lists.<br>b. Replaced Minimum Lot Area regulation with Maximum Residential Units per Acre regulation.<br>c. Added Required Minimum Lot Depth regulation. | |
| 3 | 1240.04 | Uses listed do not match the Table of Permitted Uses; | a. Corrected Use lists.<br>b. Replaced Minimum Lot Area regulation with Maximum Residential Units per Acre regulation.<br>c. Added Required Minimum Lot Depth regulation. | |
| 4 | 1240.05, 1240.06 | Error in the upper limit associated with Adult Foster Care Large Group Home; | a. Corrected errors.<br>b. Replaced Minimum Lot Area regulation with Maximum Residential Units per Acre regulation.<br>c. Added Required Minimum Lot Depth regulation. | |
| 5 | 1240.07 | | a. Replaced Minimum Lot Area regulation with Maximum Residential Units per Acre regulation.<br>b. Added Required Minimum Lot Depth regulation. | |
| 6 | 1240.09 | | a. Replaced Minimum Lot Area regulation with Maximum | |

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| | | | Residential Units per Acre regulation.<br>b. Added Required Minimum Lot Depth regulation.<br>c. Specfied 2.5 story limit in the Maximum Building Height regulation.<br>d. Changed the minimum lot width from 60' to 40'. | |
| 7 | 1240.10 | Table must reflect proposed changes to 1240.02 Table of Permitted Uses | a. Corrected errors.<br>b. Replaced Minimum Lot Area regulation with Maximum Residential Units per Acre regulation.<br>c. Added Required Minimum Lot Depth regulation. | |
| 8 | 1240.11 | | a. Reorganized Restaurant Use types within Permitted Uses.<br>b. Removed Minimum Lot Area regulation.<br>c. Added Required Minimum Lot Depth regulation.<br>d. Adding Food Trucks to Accessory Uses. | |
| 9 | 1240.12 | | a. Reorganized Restaurant Use types within Permitted Uses.<br>b. Added the Required Minimum Lot Depth regulation.<br>c. | |
| 10 | 1240.13 | Table must reflect proposed changes to 1240.02 Table of Permitted Uses; Existing lot dimensions and setbacks prevent construction on smaller lots, | a. Corrected errors in Use lists.<br>b. Replaced Minimum Lot Area regulation with Maximum Units | |

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| | | especially those with multiple frontages. | per Acre regulation.<br>c. Changed Minimum Lot Width from 60ft to 30ft.<br>d. Added Minimum Lot Depth regulation.<br>e. Associated Front Yard Setback with Section 1250.04(d)(1)A.<br>f. Adding Food Trucks to Accessory Uses. | |
| 11 | 1240.14 | Table must reflect proposed changes to 1240.02 Table of Permitted Uses; Existing lot dimensions and setbacks prevent construction on smaller lots, especially those with multiple frontages. | a. Corrected errors in Use lists.<br>b. Changed Minimum Lot Area regulation to "Not Required".<br>c. Changed Minimum Lot Width from 60ft to 40ft.<br>d. Added Minimum Lot Depth regulation.<br>e. Associated Front Yard Setback with Section 1250.04(d)(1)A.<br>f. Adding Food Trucks to Accessory Uses.<br>g. Adding Food Trucks to Accessory Uses. | |

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| 12 | 1240.15 | Existing lot dimensions and setbacks prevent construction on smaller lots, especially those with multiple frontages. | a. Reorganized Restaurant types within Permitted Uses.<br>b. Replaced Minimum Lot Area regulation with Maximum Residential Units per Acre regulation.<br>c. Changed Minimum Lot Width from 60ft to 30ft.<br>d. Added Required Minimum Lot Depth regulation.<br>e. Associated Front Yard Setback with Section 1250.04(d)(1)A.<br>f. Adding Food Trucks to Accessory Uses. | |
| 13 | 1240.16 | Table must reflect proposed changes to 1240.02 Table of Permitted Uses; | a. Reorganized Restaurant types within Permitted Uses.<br>b. Added Vehicle Repair, Minor to Permitted Uses.<br>c. Added Required Minimum Lot Depth regulation.<br>d. Changed Maximum Percent of Building Coverate to Not Required.<br>e. Adding Food Trucks to Accessory Uses. | |
| 14 | 1240.17 | Table must reflect proposed changes to 1240.02 Table of Permitted Uses; | a. Reorganized Restaurant types within Permitted Uses.<br>b. Added Vehicle Repair, Minor to Permitted Uses.<br>c. Added Required Minimum Lot Depth regulation. | |

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| 15 | 1240.18 | Table must reflect proposed changes to 1240.02 Table of Permitted Uses; | a. Reorganized Restaurant types within Permitted Uses.<br>b. Added State Licensed Child Care Family Home 1-7 and 8-14 Children to Accessory Uses.<br>c. Added Required Minimum Lot Depth regulation.<br>d. Adding Food Trucks to Accessory Uses. | |
| 16 | 1241.02 | | a. Added column for Max. Units Per Acre regulation.<br>b. Updated Minimum Lot Widths to reflect proposed changes in Section 1240. | |
| 17 | 1241.07(b)(7) | | Specified that parking or storage of vehicles on a required front yard is not permitted in any R District or the T-3 District, unless otherwise allowed in this code. | |
| 18 | 1251.02(a) | Typographical errors | Corrected errors. | |
| 19 | 1251.12(b) | Typographical errors | Corrected errors. | |
| 20 | 1251.12(d)(3) | Sentence phrasing unclear | Rephrased sentence with no substantive change to the Zoning Code text. | |
| 21 | 1251.12(d)(12) | Typographical errors | Corrected errors. | |
| 22 | 1251.13 (multiple) | Existing code was too limited, restricting standards to only drive-thru restaurants rather than any business with a drive-thru component | Change “Restaurant” to “Business” within this section of the Standards to broaden its scope | |
| 23 | 1251.17(c) | Typographical errors | Corrected errors. | |

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| 24 | 1251.18(c)(4) | Typographical errors | Corrected errors. | |
| 25 | 1251.20(b) | Typographical errors | Corrected errors. | |
| 26 | 1251.28(b) | | Changed "day" in "day care" to "child", for a cumulative change to "child care". | |
| 27 | 1251.29(b) | | Changed "day" in "day care" to "child", for a cumulative change to "child care". | |
| 28 | 1251.31(b) | | Changed "day" in "day care" to "child", for a cumulative change to "child care". | |
| 29 | 1251.32(b) | | Changed "day" in "day care" to "child", for a cumulative change to "child care". | |
| 30 | 1251.33 | Redundant and unclear language. | Removed language under Section 1251.33(a) | |
| 31 | 1251.41(a) | Existing wording was unclear | Clarified wording with no substantive change to the Zoning Code text. | |
| 32 | 1251.41(b) | No heading present to describe what standards this section discussed | Added heading after section indication. | |
| 33 | 1251.50(b) | It does not meet the state requirements. | Removed the buffer between other Transitional and Supportive Homes or State Licensed Residential Facilities. | |
| 34 | 1251.50 (multiple) | Previous change made the section numbering inaccurate | Re-numbered following sections to accommodate the addition of 1251.50(b) | |
| 35 | 1260.01(c)(3) | Reasonable requests for large accessory buildings on larger lots could not be granted due to existing | Changed the maximum floor area size of any single accessory building to be | |

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| | | restrictions on accessory building area | contingent to meeting requirements specified in 1260.01(c)(1) and (2) rather than providing a flat value. | |
| 36 | 1260.01(d) | Reasonable requests for large accessory buildings on larger lots could not be granted due to existing restrictions on accessory building height | Changed the maximum height for accessory buildings from fourteen feet to sixteen feet. | |
| 37 | 1260.01(e)(2)(A) | Existing text was lacking reference to front yard definition | Added reference to the definition as stated in Chapter 1230. | |
| 38 | 1260.01(e)(2)(A)(1) | Existing text was lacking reference to front yard definition | Added reference to the definition as stated in Chapter 1230. | |
| 39 | 1281.04(b)(4) | Site plan applications had previously been submitted and subsequently remained dormant while City staff asked for additional information necessary to approve the application. This was previously allowed to occur with no method of expiration or staff recourse. | Added a provision that site plan applications expire after six months of no action, and that a new application and the associated fees may be requested after six months pass. | |
| 40 | 1281.04(e)(2) | Typographical errors | Corrected errors. | |

# Chapter 1240
# Zoning Districts and Maps

## 1240.01 DISTRICTS ESTABLISHED.

In order to classify, regulate and restrict the location of trades, industries, and buildings designed for specified uses, to regulate and limit the height and bulk of buildings hereafter erected or structurally altered, to regulate and limit the intensity of the use of lot areas, and to regulate and determine the areas of yards, courtyards and other open spaces within and surrounding such buildings, the City is hereby divided into districts, as follows:

G Green District
AG Agricultural District
R-1R Single Family Residential District
R-1A Single-Family Residential District
R-1B Single-Family Residential District
R-2 Two Family Residential District
R-3 Multiple Family Residential District
MFR High Density Multiple Family Residential District
B-1 Corridor Commercial District
B-2 Regional Commercial District
T-3 Neighborhood Commercial District
T-4 Downtown Commercial
T-5 Core Downtown Commercial District
I-1 Light Industrial District
I-2 Heavy Industrial District
S Spark District

## 1240.02 TABLE OF PERMITTED USES.

The following table lists the permitted uses and special land uses in each zoning district. When a use is classified by square footage, the square footage listed refers to the gross square footage of a building and not the square footage of an individual tenant unit. A use classified by capacity, refers to the capacity established by the City Fire Inspector. Whenever a specific development standard is included for a particular use in the table below, any development must comply with the requirement of the referenced section in addition to all of the other applicable requirements of this Code. All development standards for specific uses are listed in Section 1251 and in other areas of this Code. Additionally, any use that is a special land use must also comply with the standards of Section 1281.05.

| | Uses | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *A* | Accessory Use | | | | | | | | | | | | | | | | | |
| *A*[s] | Accessory Use Requiring SLU Approval | | | | | | | | | | | | | | | | | |
| *E* | Existing Use | | | | | | | | | | | | | | | | | |
| *P* | Permitted Use | | | | | | | | | | | | | | | | | |
| *S* | Special Use | | | | | | | | | | | | | | | | | |
| | *Residential Uses* | | | | | | | | | | | | | | | | | |
| | *Accessory Dwelling Unit* | | | | A[s] | A[s] | A[s] | A | A | | | A | A | A | | | A | |
| | *Bed and Breakfast* | P | P | P | P | P | P | P | P | | | P | | | | | | 1251.09 |
| | *Home Occupation* | A | A | A | A | A | A | A | | | | | | | | | | 1251.18 |
| | *Multi-Family Dwelling Units* | | | | | | | P | P | | | P | P | P | | | P | 1251.33 |
| | *Personal-Scale Wind Energy Facility* | A | A | A | A | A | A | | | | | A | | | | | A | 1251.39 |
| | *Rooming and Boarding Houses* | | | | | | P | P | | | | | | | | | | 1251.43 |
| | *Single Family Dwelling Unit Attached* | | | | | | | P | P | | | P | P | E | | | P | |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Single Family Dwelling Unit Detached* | P | P | P | P | P | P | P | P | E | E | P | E | E | E | E | P | |
| *State Licensed Child Care Family Home, 1-7 Children* | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | 1251.45 |
| *State Licensed Child Care Group Home, 8-14 Children* | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | 1251.46 |
| *State Licensed Child Care Center* | P | | | | | | | P | P | P | P | P | P | P | P | P | |
| *State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons* | P | P | P | P | P | P | P | P | | | P | P | | | | | 1251.47 |
| *State Licensed Residential Facility Adult Foster Care Small Group Home, 7-12 Persons* | S | S | S | S | S | S | S | S | | | | | | | | | 1251.48 |
| *State Licensed Residential Facility Adult Foster Care Large Group Home 13-20 Persons* | S | S | S | S | S | S | S | S | | | | | | | | | |
| *Transitional and Supportive Home, 1-6 Persons* | | | P | P | P | P | P | P | | | P | P | | | | | 1251.49 |
| *Transitional and Supportive Home, More than 6 Persons* | | | S | S | S | S | S | S | | | P | P | | | | | 1251.50 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Community Residential Facility and Group Homes* | | | | | | S | S | S | | | | | | | | | 1251.48 |
| *Two-Family Dwelling Units* | | | | | | P | P | P | | | P | P | P | | | P | |
| | | | | | | | | *Commercial Uses* | | | | | | | | | |
| *Adult Business* | | | | | | | | | S | | | | | S | S | | 1251.02 |
| *Agri-Tourism* | S | S | S | | | | | | | | | | | | | | |
| *Arena/Theater* | | | | | | | | | P | P | | | | | | P | |
| *Artisan/Maker Space* | | | | | | | | | P | P | S | P | P | P | P | P | |
| *Assisted Senior Living* | | | | | | | P | P | P | P | P | P | | | | P | 1251.03 |
| *Automobile Car Wash Establishment* | | | | | | | | | P | P | | | | S | S | | 1251.04 |
| *Automobile Repair* | | | | | | | | | P | P | | | | P | P | | 1251.05 |
| *Automobile Service Station* | | | | | | | | | S | P | | | | P | P | | 1251.06 |
| *Automobile or Vehicle Dealership* | | | | | | | | | P | P | | | | P | | | 1251.07 |
| *Banquet and Meeting Hall < 100 cap.* | S | | | | | | S | S | P | P | P | P | P | | | P | 1251.08 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Banquet and Meeting Hall > 100 cap.* | S | | | | | | S | S | P | P | | P | P | | | P | 1251.08 |
| *Bar, Tavern, or Saloon* | | | | | | | | | S | P | S | P | P | S | S | P | |
| *Bookstore* | | | | | | | | | P | P | P | P | P | | | P | |
| *Brewpub* | | | | | | | | | P | P | S | P | P | P | P | P | |
| *Catering Business* | | | | | | | | | P | P | P | P | P | | | | |
| *Convalescent Home, Nursing Home, or Home for the Aged* | | | | | | | P | P | P | P | P | P | S | | | S | 1251.13 |
| *Distillery, Winery – w/ or w/o Food* | P | P | S | | | | | | P | P | S | P | P | P | P | P | |
| *Event Center* | | | | | | | | | P | P | | P | P | | | | |
| *Farm Equip. and Heavy Machinery Sales* | | | | | | | | | | | | | | P | P | | |
| *Financial Institutions* | | | | | | | | | P | P | P | P | P | P | P | P | |
| *Funeral Homes, Mortuaries, and Crematoriums (No Crematoriums B-1, T-3,4)* | | | | | | | | | P* | P | S* | S* | | S | | | |
| *Hospital > 20,000 s.f.* | | | | | | | | S | S | S | | S | S | S | S | | 1251.19 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Hotel* | | | | | | | | | | P | S | P | P | | | P | 1251.20 |
| *Independent Senior Living with Services* | | | | | | | P | P | P | | P | P | P | | | P | 1251.21 |
| *Indoor Recreation* | P | | | | | | | | P | P | P | P | P | | | P | |
| *Kennels/Veterinarian* | S | S | S | | | | | | P | P | | | | S | P | S | 1251.23 |
| *Marihuana: Adult-Use Marihuana Microbusiness* | | | | | | | | | P | P | S | | | P | P | | 1251.24<br>1251.26<br>1251.27 |
| *Marihuana: Adult-Use Marihuana Retailers* | | | | | | | | | P | P | S | P | P | P | P | | 1251.24<br>1251.25<br>1251.27 |
| *Marihuana: Medical Marihuana Provisioning Center* | | | | | | | | | P | P | S | P | P | P | P | | 1251.24<br>1251.30<br>1251.27 |
| *Medical or Dental Clinic < 5,000 s.f.* | | | | | | | | | P | P | P | P | P | | | | |
| *Medical or Dental Clinic <20,000 s.f.* | | | | | | | | P | P | P | S | P | P | | | P | |
| *Motel* | | | | | | | | | | P | S | P | P | | | P | 1251.34 |
| *Microbrewery* | | | | | | | | | P | P | S | P | P | P | P | P | 1251.35 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Nightclub* | | | | | | | | | S | P | S | P | P | S | S | P | |
| *Office < 5,000 s.f.* | | | | | | | | | P | P | P | P | P | A | A | P | |
| *Office 5,000 – 17,000 s.f.* | | | | | | | | | P | P | P | P | P | A | A | P | |
| *Office > 17,000 s.f.* | | | | | | | | | P | P | S | P | P | A | A | P | |
| *Outdoor Recreation/Private* | P | P | | | | | | | P | P | | | | | | | 1251.36 |
| *Outdoor Recreation/Public* | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 1251.36 |
| *Outdoor Storage* | | | | | | | | | A | A | | | | A | A | | 1251.37 |
| *Pawn Broker* | | | | | | | | | P | P | S | | | | | | |
| *Personal Service Establishment* | | | | | | | | | P | P | P | P | P | | | P | 1251.40 |
| *Private Club* | | | | | | | | | P | P | P | P | P | | | | |
| *Restaurant* | | | | | | | | | | | | | | | | | |
| Carry-Out Restaurant | | | | | | | | | P | P | P | P | P | P | P | P | |
| Drive-In Restaurant | | | | | | | | | P | P | P | S | | P | P | P | |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drive-Thru Restaurant | | | | | | | | | P | P | S | S | | P | P | | 1251.14 |
| Full-Service Restaurant | | | | | | | | | P | P | P | P | P | P | P | P | |
| Limited Service Restaurant | | | | | | | | | P | P | P | P | P | P | P | P | |
| *Retail Sales < 5,000 s.f.* | | | | | | | | | P | P | P | P | P | S | S | P | |
| *Retail Sales 5,000 – 17,000 s.f.* | | | | | | | | | P | P | P | P | P | S | S | P | |
| *Retail Sales > 17,000 s.f.* | | | | | | | | | P | P | S | P | P | S | S | P | |
| *Tree Farm* | P | P | | | | | | | | | | | | | | | |
| *Vehicle Repair, Major* | | | | | | | | | S | S | | | | P | P | | 1251.54 |
| *Vehicle Repair, Minor* | | | | | | | | | P | P | | | | P | P | | |
| *Industrial Uses* | | | | | | | | | | | | | | | | | |
| *Junk and Salvage Yard* | | | | | | | | | | | | | | S | S | | 1251.22 |
| *Manufacturing* | | | | | | | | | | | | | | P | P | | |
| *Marihuana: Medical and Adult Use* | | | | | | | | | | | | | | P | P | | 1251.24<br>1251.27 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Marihuana Grow Operation* | | | | | | | | | | | | | | | | | 1251.28 |
| *Marihuana: Medical and Adult Use Marihuana Processing Facility* | | | | | | | | | | | | | | P | P | | 1251.24<br>1251.27<br>1251.29 |
| *Marihuana: Medical and Adult Use Marihuana Safety Compliance Facility* | | | | | | | | | P | P | | | | P | P | | 1251.24<br>1251.27<br>1251.31 |
| *Marihuana: Medical and Adult Use Marihuana Secure Transporter* | | | | | | | | | P | P | | | | P | P | | 1251.24<br>1251.27<br>1251.32 |
| *Research and Development* | | | | | | | | | S | P | | S | | P | P | P | |
| *Self-Storage Facilities* | | | | | | | | | P | P | | | | | | | 1251.44 |
| *Transportation and Logistics* | | | | | | | | | S | S | | | | P | P | P | |
| *Utility-Scale Solar Energy Facility* | | S | S | | | | | | A | A | | | | P | P | | 1251.52 |
| *Utility-Scale Wind Energy Facility* | | S | S | | | | | | | | | | | | S | | 1251.53 |
| *Warehouse* | | | | | | | | | S | S | | | | P | P | P | |
| *Wholesale* | | | | | | | | | S | S | | | | P | P | P | |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Other Uses* | | | | | | | | | | | | | | | | | |
| *Accessory Buildings* | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | 1260.01 |
| *Adaptive Reuse* | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | P | 1251.01 |
| *Campground* | S | S | S | S | S | S | | | | | | | | | | | 1251.09 |
| *Cemetery* | | S | S | S | S | S | S | S | S | S | S | | | S | S | S | 1251.10 |
| *Community Garden* | P | P | P | P | P | P | P | P | | | P | | | | | P | 1251.11 |
| *Essential Services* | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 1240.21(b) |
| *Farmer's Market* | A/S | A/S | | | | | | | | | A/S | A | A | | | A | 1251.15 |
| *Food Truck* | | | | | | | | | A | A | A | A | A | A | A | A | |
| *General and Specialized farms, including crops and the raising and keeping for profit of cattle, hogs, horses, ponies, sheep and similar livestock* | | P | | | | | | | | | | | | | | | 1251.17 |
| *Government/Public Uses* | | | | | | | | | P | P | P | P | P | P | | P | 1251.16 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Greenhouse/Nursery (Principal Use)* | P | P | P | | | | | | | P | | | | P | | P | |
| *Institutions of Higher Education* | S | S | S | S | S | S | S | P | P | P | S | P | P | P | P | P | |
| *Marinas* | S | | | | | | | | | | S | | | | | S | |
| *Parking as a Principal Use* | | | | | | | | | | S | | S | S | S | S | S | |
| *Private K-12 Schools* | | | S | S | S | S | S | S | P | P | S | S | P | | | S | |
| *Private Garden* | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | 1251.41 |
| *Public K-12 Schools* | | | P | P | P | P | P | P | P | P | P | P | P | | | P | |
| *Public and private conservation areas and structures for the conservation of open space, water, soil, forest, and wildlife resources* | P | P | | | | | | | | | | | | | | | |
| *Religious Institutions* | S | S | S | S | S | S | S | S | P | P | P | P | P | P | P | P | 1251.42 |
| *Telecommunications* | Refer to Section 1251.49 to see where telecommunication towers are permitted. | | | | | | | | | | | | | | | | 1251.49 |
| *Mobile Home Park Overlay District* | Refer to Section 1250.05 for Mobile Home Park requirements. | | | | | | | | | | | | | | | | 1250.05 |

1240.03 G GREEN DISTRICT.

**(a) Purpose**

It is the purposes of this district to:

1. Preserve and protect natural and man-made water areas, flood plains, marshes, and wetlands from development other than open spaces or recreational uses
2. Preserve and protect agricultural districts and/or wildlife habitats
3. Limit residential and commercial development and encourage design that preserves natural environments
4. Retain natural drainage patterns
5. Preserve and protect the values of distinctive geologic, topographic, botanic, historic, or scenic areas

| **(b) Permitted Uses** | **(c) Special Land Uses** |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Child Care Centers<br>• Distillery, Winery – w/ or w/o food<br>• Essential Services<br>• Greenhouse/Nursery (Principal Use)<br>• Indoor Recreation<br>• Outdoor Recreation/Private (Section 1251.36)<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Public and private conservation areas and structures for the conservation of open space, water, soil, forest, and wildlife resources<br>• Single Family Dwelling Unit Detached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Tree Farm | • Adaptive Reuse (Section 1251.01)<br>• Agri-Tourism<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Campground (Section 1251.10)<br>• Farmers Market (Section 1251.15)<br>• Institutions of Higher Education<br>• Kennels (Section 1251.23)<br>• Marinas<br>• Religious Institutions (Section 1251.42)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48) |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Accessory Uses**

- Accessory Buildings (Section 1260.01)
- Farmers Market (Section 1251.15)
- Home Occupation (Section 1251.18)
- Personal-Scale Wind Energy Facility (Section 1251.39)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

**(e) Dimension Regulations**

| **Lot Standards** | **G** |
|---|---|
| Minimum Lot Area (sq. ft.) | Not Required |
| Maximum Residential Units Per Acre | 1 |
| Minimum Lot Width (ft.) | 150 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | 35 |
| Rear Yard Setback (ft.) | 35 |
| Side Yard Setback (ft.) | 35 |
| Maximum Building Height | 35 ft., 2.5 stories |

**Footnotes:** Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses.

1240.04 AG AGRICULTURAL DISTRICT.

**(a) Purpose**

It is the purposes of this district to provide rural areas used predominantly for general farming operations. Although urban development is occurring at a substantial rate in the City, agriculture remains an important economic activity, and in the proper interest of the welfare of present and future residents, it is considered necessary to conserve an effective environment for stable, productive agricultural operations.

The regulations of this chapter, therefore, are designed to:

1. Protect and stabilize the essential characteristics of these areas
2. Minimize conflicting land uses detrimental to farm enterprises
3. Exclude development which requires highway, drainage, and other public utilities and facilities in excess of those required by agricultural uses

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Distillery, Winery – w/ or w/o food<br>• Essential Services<br>• General and specialized farms, including crops and the raising and keeping of livestock (Section 1251.17)<br>• Greenhouse/Nursery (Principal Use)<br>• Outdoor Recreation/Private (Section 1251.36)<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Public and private conservation areas and structures for the conservation of open space, water, soil, forest, and wildlife resources<br>• Single Family Dwelling Unit Detached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Tree Farm | • Adaptive Reuse (Section 1251.01)<br>• Agri-Tourism<br>• Campground (Section 1251.10)<br>• Cemetery (Section 1251.11)<br>• Famers Market (Section 1251)<br>• Institutions of Higher Education<br>• Kennels/Veterinarian (Section 1251.23)<br>• Religious Institutions (Section 1251.42)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Utility-Scale Solar Energy Facility (Section 1251.52)<br>• Utility-Scale Wind Energy Facility (Section 1251.53) |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |

| (d) Accessory Uses |
|---|
| • Accessory Buildings (Section 1260.01)<br>• Farmers Market (Section 1251.15)<br>• Home Occupation (Section 1251.18)<br>• Personal-Scale Wind Energy Facility (Section 1251.39)<br>• Private Gardens (Section 1251.39)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46) |

**(e) Dimension Regulations**

| Lot Standards | AG |
|---|---|
| Minimum Lot Area (sq. ft.) | Not Required |
| Maximum Residential Units Per Acre | .33 |
| Minimum Lot Width (ft.) | 150 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |

| | |
|---|---|
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | (c) |
| Rear Yard Setback (ft.) | (c) |
| Side Yard Setback (ft.) | (c) |
| Maximum Building Height | 35 ft., 2.5 stories |
| **Footnotes:** Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.05 R-1R SINGLE-FAMILY RESIDENTIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to establish residential properties of a semi-rural character that includes areas of the City presently without water and sewerage services and likely to remain without such services, in whole or in part, indefinitely. The R-1R Single-Family Rural Residential District includes existing low-density one-family properties, as well as areas within which such developments appear both likely and desirable.

| **(b) Permitted Uses** | **(c) Special Land Uses** |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Essential Services<br>• Greenhouse/Nursery (Principal Use)<br>• Outdoor Recreation/Public (Section 1251.35)<br>• Public K-12 Schools<br>• Single Family Dwelling Unit Detached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49) | • Adaptive Reuse (Section 1251.01)<br>• Agri-Tourism<br>• Campground (Section 1251.10)<br>• Cemetery (Section 1251.11)<br>• Distillery, Winery – w/ and w/o food<br>• Institutions of Higher Education<br>• Private K-12 Schools<br>• Kennels/Veterinarian (Section 1251.23)<br>• Religious Institution (Section 1251.42)<br>• Transitional and Supportive Home, More than 6 Persons<br>• Utility-Scale Solar Energy Facility (Section 1251.52)<br>• Utility-Scale Wind Energy Facility (Section 1251.53) |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Accessory Uses**

- Accessory Buildings (Section 1260.01)
- Home Occupation (Section 1251.18)

- Personal-Scale Wind Energy Facility (Section 1251.39)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

**(e) Dimension Regulations**

| Lot Standards | R-1R |
|---|---|
| Minimum Lot Area (sq. ft.) | Not Required |
| Maximum Residential Units Per Acre | 1.45 |
| Minimum Lot Width (ft.) | 120 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | 35 |
| Rear Yard Setback (ft.) | 35 |
| Side Yard Setback (ft.) | 15 |
| Maximum Building Height | 35 ft., 2.5 stories |

Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses.

1240.06 R-1A SINGLE-FAMILY RESIDENTIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to establish areas of primarily single-family detached residential properties of a semi-suburban to suburban, low-density character, usually served by City water and sewer.

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Essential Services<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Public K-12 Schools<br>• Single Family Dwelling Unit Detached | • Adaptive Reuse (Section 1251.01)<br>• Campground (Section 1251.10)<br>• Cemetery (Section 1251.11)<br>• Institutions of Higher Education<br>• Private K-12 Schools<br>• Personal-Scale Wind Energy Facility (Section 1251.39)<br>• Religious Institutions (Section 1251.42) |

| | |
|---|---|
| • State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.49)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.47) | • State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Transitional and Supportive Home, More than 6 Persons (Section 1251.50) |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |
| **(d) Accessory Uses** | |
| • Accessory Buildings (Section 1260.01)<br>• Accessory Dwelling Unit, with SLU approval<br>• Home Occupation (Section 1251.18)<br>• Private Gardens (Section 1251.41)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46) | |
| **(e) Dimension Regulations** | |
| **Lot Standards** | **R-1A** |
| Minimum Lot Area (sq. ft.) | Not Required |
| Maximum Residential Units Per Acre | 5.80 |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 30 |
| Front Yard Setback (ft.) | 30 |
| Rear Yard Setback (ft.) | 35 |
| Side Yard Setback (ft.) | 8 |
| Maximum Building Height | 35 ft., 2.5 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.07 R-1B SINGLE-FAMILY RESIDENTIAL DISTRICT.

| |
|---|
| **(a) Purpose** |

It is the purpose of this district to establish primarily single-family detached residential properties of a suburban, medium-density character. This district includes those areas which are serviced by City water and sewer.

| **(b) Permitted Uses** | **(c) Special Land Uses** |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Essential Services<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Public K-12 Schools<br>• Single Family Dwelling Unit Detached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49) | • Adaptive Reuse (Section 1251.01)<br>• Campground (Section 1251.10)<br>• Cemetery (Section 1251.11)<br>• Institutions of Higher Education<br>• Private K-12 Schools<br>• Personal-Scale Wind Energy Facility (Section 1251.39)<br>• Religious Institutions (Section 1251.42)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Transitional and Supportive Home, More than 6 Persons (section 1251.50) |

Refer to Section 1230.06 for definitions for uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Accessory Uses**

- Accessory Buildings (Section 1260.01)
- Accessory Dwelling Unit, with SLU approval
- Home Occupation (Section 1251.18)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

**(e) Dimension Regulations**

| **Lot Standards** | **R-1B** |
|---|---|
| Minimum Lot Area (sq. ft.) | Not Required |
| Maximum Residential Units Per Acre | 8.7 |
| Minimum Lot Width (ft.) | 50 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 30 |
| Front Yard Setback (ft.) | 25 |
| Rear Yard Setback (ft.) | 30 |

| | |
|---|---|
| Side Yard Setback (ft.) | 6 |
| Maximum Building Height | 35 ft., 2.5 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.08 R-2 TWO FAMILY RESIDENTIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to establish a mix of single- and two-family residential properties of an urban, medium-density character. Limited commercial uses, which tend to complement residential areas should be expected. This district includes street and utility elements expected in an urban setting. Further, this district provides a buffer between single-family and multifamily neighborhoods.

| **(b) Permitted Uses** | **(c) Special Land Uses** |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Essential Services<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Public K-12 Schools<br>• Rooming and Boarding Houses, not to Exceed 4 Boarders (Section 1251.43)<br>• Single Family Dwelling Unit Detached<br>• Two-Family Dwelling Units<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49) | • Adaptive Reuse (Section 1251.01)<br>• Campground (Section 1251.10)<br>• Cemetery (Section 1251.11)<br>• Institutions of Higher Education<br>• Religious Institutions (Section 1251.42)<br>• Private K-12 Schools<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-20 Persons (Section 1251.48)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Transitional and Supportive Home, More than 6 Persons (Section 1251.50) |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Accessory Uses**

- Accessory Building (Section 1260.01)
- Accessory Dwelling Unit, with SLU approval
- Home Occupation (Section 1251.18)
- Personal-Scale Wind Energy Facility, with SLU approval (Section 1251.39)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)

- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

**(e) Dimension Regulations**

| Lot Standards | R-2 |
|---|---|
| Minimum Lot Area (sq. ft.) | Not Required |
| Maximum Residential Units Per Acre | 8.70 |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 25 |
| Front Yard Setback (ft.) | 25 |
| Rear Yard Setback (ft.) | 25 |
| Side Yard Setback (ft.) | 5 |
| Maximum Building Height | 35 ft., 2.5 stories |

Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses.

1240.09 R-3 MULTIPLE FAMILY RESIDENTIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to establish high-density multi-family developments located in suburban and urban areas, and commercial development with relatively low intensities that often complement residential neighborhoods. Further, this district supports housing styles of mid- and high-level buildings consisting of garden apartments, and townhome condominiums. The high density of this district is intended to support nearby commercial districts, and provide a transition between commercial and mid-density districts.

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Assisted Senior Living (Section 1251.03)<br>• Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Essential Services<br>• Independent Senior Living with Services (Section 1251.21)<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Outdoor Recreation/Public (section 1251.36) | • Adaptive Reuse (Section 1251.01)<br>• Banquet and Meeting Hall < 100 capacity (Section 1251.08)<br>• Cemetery (Section 1251.11)<br>• Institutions of Higher Education<br>• Private K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48) |

| | |
|---|---|
| • Public K-12 Schools<br>• Rooming and Boarding Houses, Up to 10 Boarders (Section 1251.43)<br>• Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached<br>• Two-Family Dwelling Units<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Transitional and Supportive Home, 1-6 persons (Section 1251.49) | • State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Transitional and Supportive Home, More than 6 Persons (Section 1251.50) |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |
| **(d) Accessory Uses** | |
| • Accessory Buildings (Section 1260.01)<br>• Accessory Dwelling Unit<br>• Home Occupation (Section 1251.18)<br>• Private Gardens (Section 1251.39)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46 | |
| **(e) Dimension Regulations** | |
| Lot Standards | R-3 |
| Minimum Lot Area (sq. ft.) | Not Required |
| Maximum Residential Units Per Acre | 15 |
| Minimum Lot Width (ft.) | 40 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 25 |
| Front Yard Setback (ft.) | 25 |
| Rear Yard Setback (ft.) | 25 (f) |
| Side Yard Setback (ft.) | 25 (f) |
| Maximum Building Height | 45 ft., 4 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.10 MFR HIGH DENSITY MULTIPLE FAMILY DISTRICT.

**(a) Purpose**

It is the purpose of this district to accommodate new types of diversified residential developments of high densities, usually requiring a large tract of unplatted land. The types of residential structures include garden apartments, terrace apartments and row housing units and those special types of housing structures similar in character and density to multiple family housing.

| **(b) Permitted Uses** | **(c) Special Land Uses** |
|---|---|
| • Assisted Senior Living (Section 1251.03)<br>• Bed and Breakfast (Section 1251.09)<br>• Child Care Centers<br>• Community Garden (Section 1251.12)<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Essential Services<br>• Independent Senior Living with Services (Section 1251.21)<br>• Institutions of Higher Education<br>• Medical or Dental Clinic <20,000 s.f.<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Public K-12 Schools<br>• Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached<br>• Two-Family Dwelling Units<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49) | • Adaptive Reuse (Section 1251.01)<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Cemetery (Section 1251.11)<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Private K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Transitional and Supportive Home, More than 6 Persons (Section 1251.50) |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Accessory Uses**

- Accessory Buildings (Section 1260.01)
- Accessory Dwelling Unit
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

| (e) Dimension Regulations | |
|---|---|
| **Lot Standards** | **MFR** |
| Minimum Lot Area (sq. ft.) | See Section 1241.03(e) |
| Maximum Residential Units Per Acre | 20(d)(e) |
| Minimum Lot Width (ft.) | 120 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 30 |
| Front Yard Setback (ft.) | 35 |
| Rear Yard Setback (ft.) | 20 |
| Side Yard Setback (ft.) | 20 |
| Maximum Building Height | 45 ft., 4 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.11 B-1 CORRIDOR COMMERCIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to accommodate those retail and business service activities that serve the whole community and the metropolitan region. Such activities require land and structure uses that are typically compact and densely grouped, generating a large volume of pedestrian and vehicular traffic. It is the purpose of these regulations to permit the establishment of a wide variety of business enterprises and to provide flexibility for adaptation to new merchandising techniques.

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Arena/Theater<br>• Artisan/Maker Space<br>• Assisted Senior Living (Section 1251.03)<br>• Automobile Car Wash Establishment (Section 1251.04)<br>• Automobile or Vehicle Dealership (Section 1251.07)<br>• Automobile Repair (Section 1251.05)<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Bookstore<br>• Brewpub<br>• Catering Businesses | • Adaptive Reuse (Section 1251.01)<br>• Adult Business (Section 1251.01)<br>• Automobile Service Station (Section 1251.04)<br>• Bar, Tavern, or Saloon<br>• Cemetery (Section 1251.11)<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Nightclub<br>• Research and Development<br>• Transportation and Logistics<br>• Vehicle Repair, Major (Section 1251.54)<br>• Warehouse |

| | |
|---|---|
| • Child Care Centers<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Distillery, Winery – w/ or w/o food<br>• Drive-Thru Business (Section 1251.14)<br>• Essential Services<br>• Event Center<br>• Financial Institutions<br>• Funeral Homes, Mortuaries<br>• Government/Public Uses (Section 1251.16)<br>• Indoor Recreation<br>• Institutions of Higher Education<br>• Pawn Broker<br>• Private Club<br>• Private K-12 Schools<br>• Public K-12 Schools<br>• Kennels/Veterinarian (Section 1251.23)<br>• Marihuana: Adult-Use Marihuana Microbusiness (Sections 1251.23, 1251.25)<br>• Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25)<br>• Marihuana: Medical Marihuana Provisioning Center (Section 1251.24, 1251.30)<br>• Marihuana: Medical and Adult-Use Marihuana Safety Compliance Facility (Sections 1251.24, 1251.31)<br>• Marihuana: Medical and Adult-Use Marihuana Secure Transporter (Sections 1251.24, 1251.32)<br>• Medical or Dental Clinic =< 20,000 s.f.<br>• Microbrewery (Section 1251.35)<br>• Office<br>• Outdoor Recreation/Private (Section 1251.36)<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Outdoor Storage (Section 1251.37)<br>• Personal Service Establishment (Section 1251.40) | • Wholesale |

| | |
|---|---|
| • Religious Institutions (Section 1251.42)<br>• Restaurant<br>  ○ Carry-Out<br>  ○ Drive-In<br>  ○ Drive Thru (Section 1251.14)<br>  ○ Full Service<br>  ○ Limited Service<br>• Retail Sales<br>• Self-Storage Facilities (Section 1251.44)<br>• Vehicle Repair, Minor | |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Existing Uses**

- Single Family Dwelling Unit Detached

**(e) Accessory Uses**

- Accessory Buildings (Section 1260.01)
- Food Truck
- Outdoor Storage (Section 1251.37)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)
- Utility-Scale Solar Energy Facility (Section 1251.52)

**(f) Prohibited Uses**

- Sale, rental, or display of motor vehicles, trailers, or boats
- Manufacturing and processing establishments not selling their entire output at retail on the site

**(g) Dimension Regulations**

| **Lot Standards** | **B-1** |
|---|---|
| Minimum Lot Area | Not Required |
| Maximum Residential Units Per Acre | NA |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | 20 |
| Rear Yard Setback (ft.) | 15 (h) |
| Side Yard Setback (ft.) | 15 (g) |

| | |
|---|---|
| Maximum Building Height | 45 ft., 3 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.12 B-2 REGIONAL COMMERCIAL DISTRICT.

| **(a) Purpose** | |
|---|---|
| It is the purpose of this district to accommodate those specialized retail and business service activities herein specified that serve the whole community, as well as persons traveling on interstate highways, and typically may be grouped around a major interstate highway interchange (I-94) generating a considerable volume of vehicular traffic. It is the purpose of these regulations to permit the establishment of a limited variety of business enterprises and to provide flexibility for adaptation to new merchandising techniques as may develop, particularly where the use of motor vehicles is involved. In order to utilize the full potential effectiveness of this District, certain functions that would operate more effectively in other districts and that would interfere with the general business effectiveness of this District have been intentionally excluded. | |
| **(b) Permitted Use** | **(c) Special Land Uses** |
| • Arena/Theater<br>• Artisan/Maker Space<br>• Assisted Senior Living<br>• Automobile Car Wash Establishment (Section 1251.04)<br>• Automobile or Vehicle Dealership (Section 1251.07)<br>• Automobile Repair (Section 1251.05)<br>• Automobile Service Station (section 1251.06)<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Bar, Tavern, or Saloon<br>• Bookstore<br>• Brewpub<br>• Catering Businesses<br>• Child Care Centers<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Distillery, Winery – w/ or w/o food<br>• Drive-Thru Business (Section 1251.14)<br>• Essential Services<br>• Event Center<br>• Financial Institutions<br>• Funeral Homes, Mortuaries, and Crematoriums<br>• Government/Public Uses (Section 1251.16) | • Adaptive Reuse (Section 1251.01)<br>• Cemetery (Section 1251.11)<br>• Parking as a Principal Use<br>• Transportation and Logistics<br>• Vehicle Repair, Major (Section 1251.54)<br>• Warehouse<br>• Wholesale |

| | |
|---|---|
| • Greenhouse/Nursery (Principal Use)<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Hotel (Section 1251.20)<br>• Indoor Recreation<br>• Institutions of Higher Education<br>• Kennels/Veterinarian (Section 1251.23)<br>• Marihuana: Adult-Use Marihuana Microbusiness (Sections 1251.24, 1251.26)<br>• Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25)<br>• Marihuana: Medical Marihuana Provisioning Center (Sections 1251.24, 1251.30)<br>• Marihuana: Medical and Adult-Use Marihuana Safety Compliance Facility (Sections 1251.24, 1251.31)<br>• Marihuana: Medical and Adult-Use Marihuana Secure Transporter (Sections 1251.24, 1251.32)<br>• Medical or Dental Clinic =< 20,000 s.f.<br>• Microbrewery (Section 1251.35)<br>• Motel (Section 1251.34)<br>• Nightclub<br>• Office<br>• Outdoor Recreation/Private (Section 1251.36)<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Pawn Broker<br>• Personal Service Establishment (Section 1251.39)<br>• Private Club<br>• Private K-12 Schools<br>• Public K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• Research and Development<br>• Restaurant<br>  o Carry-Out<br>  o Drive-In<br>  o Drive Thru (Section 1251.14)<br>  o Full Service | |

| | |
|---|---|
| ○ Limited Service<br>• Retail Sales > 17,000 s.f.<br>• Self Storage Facilities (Section 1251.44)<br>• Vehicle Repair, Minor | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses | |
| **(d) Existing Uses** | |
| • Single Family Dwelling Unit Detached | |
| **(e) Accessory Uses** | |
| • Accessory Buildings (Section 1260.01)<br>• Food Truck<br>• Outdoor Storage (Section 1251.37)<br>• Private Gardens (Section 1251.41)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)<br>• Utility-Scale Solar Energy Facility (Section 1251.52) | |
| **(f) Dimension Regulations** | |
| **Lot Standards** | **B-2** |
| Minimum Lot Area (s.f.) | 25,000 |
| Maximum Residential Units Per Acre | NA |
| Minimum Lot Width (ft.) | 150 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | 35 |
| Rear Yard Setback (ft.) | 20 |
| Side Yard Setback (ft.) | 20 |
| Maximum Building Height | 50 ft., 3 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for dimensional regulations for specific uses. | |

1240.13 T-3 NEIGHBORHOOD COMMERCIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to establish and preserve areas for those commercial uses and facilities which are especially useful in close proximity to residential areas, while minimizing the undesirable impact of such uses on the neighborhoods which they serve.

**(b) Permitted Uses**

- Assisted Senior Living (Section 1251.03)
- Banquet and Meeting Hall < 100 Capacity (Section 1251.08)
- Bed and Breakfast (Section 1251.09)
- Bookstore
- Catering Businesses
- Child Care Centers
- Community Garden (Section 1251.12)
- Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)
- Essential Services
- Financial Institutions
- Government/Public Uses (Section 1251.14)
- Indoor Recreation
- Independent Senior Living with Services (Section 1251.21)
- Medical or Dental Clinic< 5,000 s.f.
- Multi-Family Dwelling Units (Section 1251.33)
- Office < 17,000 s.f.
- Outdoor Recreation/Public (Section 1251.36)
- Personal-Scale Wind Energy Facility (Section 1251.39)
- Personal Service Establishments (Section 1251.40)
- Private Club
- Public K-12 Schools
- Religious Institutions (Section 1251.42)
- Restaurant
  - Carry-Out
  - Drive-In
  - Full Service

**(c) Special Land Uses**

- Adaptive Reuse (Section 1251.01)
- Artisan/Maker Space
- Bar, Tavern, or Saloon
- Brewpub
- Cemetery (Section 1251.11)
- Distillery, Winery – w/ or w/o food
- Drive Thru Business (Section 1251.14)
- Farmers' Market (Section 1251.15)
- Funeral Homes, Mortuaries
- Hotel (Section 1251.20)
- Institutions of Higher Education
- Pawn Broker
- Private K-12 Schools
- Marihuana: Medical Marihuana Provisioning Center (Sections 1251.24, 1251.30)
- Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25)
- Marihuana: Adult-Use Marihuana Microbusiness (Sections 1251.24, 1251.26)
- Marinas
- Medical or Dental Clinic 5,000 to < 20,000 s.f.
- Microbrewery (Section 1251.35)
- Motel (Section 1251.20)
- Nightclub
- Office >= 17,000 s.f.
- Retail Sales >= 17,000 s.f.
- Restaurant
  - Drive-Thru (Section 1251.14)

| | |
|---|---|
| ○ Limited Service<br>• Retail Sales < 17,000 s.f.<br>• Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached<br>• Two-Family Dwelling Units<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49)<br>• Transitional and Supportive Home, More than 6 Persons (Section 1251.50) | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. Refer to Section 1250.04, Form Based Development Standards for the T-3, T-4, and T-5 Districts for additional development requirements. | |
| (d) Accessory Uses | |
| • Accessory Buildings (Section 1260.02)<br>• Food Truck<br>• Accessory Dwelling Unit, with SLU approval<br>• Farmers Market (Sections 1251.15)<br>• Private Gardens (1251.41)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46) | |
| (e) Dimension Regulations | |
| **Lot Standard** | **T-3** |
| Minimum Lot Area (sq. ft.) | Not Required |
| Maximum Residential Units Per Acre | 20(d) |
| Minimum Lot Width (ft.) | 3~~6~~0 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 40 |
| Front Yard Setback (ft.) | See Section 1250.04(d)(1)A |
| Rear Yard Setback (ft.) | 20 (h) |
| Side Yard Setback (ft.) | 10 (g) |
| Maximum Building Height | 36 ft., 3 stories |
| Footnotes: Refer to Section 1241.03 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.14 T-4 DOWNTOWN COMMERCIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to encourage the development, redevelopment and use of properties in a manner compatible with the character of the downtown area and consistent with the protection and enhancement of property values.

| **(b) Permitted Uses** | **(c) Special Land Uses** |
|---|---|
| • Artisan/Maker Space<br>• Assisted Senior Living (Section 1251.03)<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Bar, Tavern, or Saloon<br>• Bookstore<br>• Brewpub<br>• Catering Businesses<br>• Child Care Centers<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Distillery, Winery – w/ or w/o food<br>• Essential Services<br>• Event Center<br>• Farmers Market (Section 1251.15)<br>• Financial Institutions<br>• Government/Public Uses (Section 1251.16)<br>• Hotel (Section 1251.20)<br>• Independent Senior Living with Services (Section 1251.21)<br>• Indoor Recreation<br>• Institutions of Higher Education<br>• Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25)<br>• Marihuana: medical Marihuana Provisioning Center (Sections 1251.24, 1251.30)<br>• Medical or Dental Clinic < 20,000 s.f.<br>• Microbrewery (Section 1251.35)<br>• Motel (Section 1251.34)<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Nightclub<br>• Office | • Adaptive Reuse (Section 1251.01)<br>• Drive-Thru Business (Section 1251.14)<br>• Funeral Homes, Mortuaries<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Private K-12 Schools<br>• Parking as a Principal Use<br>• Research and Development<br>• Restaurant<br>  ○ Drive-In<br>  ○ Drive-Thru (Section 1251.14) |

| | |
|---|---|
| • Outdoor Recreation/Public (Section 1251.36)<br>• Personal Service Establishments (Section 1251.40)<br>• Private Club<br>• Public K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• Retail Sales<br>• Restaurant<br>  ○ Carry-Out<br>  ○ Full Service<br>  ○ Limited Service<br>• Single Family Dwelling Unit Attached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.48)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49)<br>• Transitional and Supportive Home, More than 6 Persons (Sections 1251.50)<br>• Two-Family Dwelling Units | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. Refer to Section 1250.04, Form Based Development Standards for the T-3, T-4, and T-5 Districts for additional development requirements. | |
| (d) Existing Uses | |
| • Single Family Dwelling Unit Detached | |
| (e) Accessory Uses | |
| • Accessory Buildings (Section 1260.02)<br>• Accessory Dwelling Unit<br>• Farmers Market (Section 1251.15)<br>• Food Truck<br>• Private Gardens (Section 1251.40)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 7-12 Children (Section 1251.46) | |
| (f) Dimension Regulations | |
| **Lot Standards** | **T-4** |
| Minimum Lot Area (s.f.) | Not Required |
| Maximum Residential Units Per Acre | 20(d) |
| Minimum Lot Width (ft.) | 40 |

| | |
|---|---|
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | See Section 1250.04(d)(1)A |
| Rear Yard Setback (ft.) | Not Required |
| Side Yard Setback (ft.) | Not Required |
| Maximum Building Height | Not Required |
| Footnotes: Refer to Section 1241.03 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.15 T-5 CORE DOWNTOWN COMMERCIAL DISTRICT.

| **(a) Purpose** | |
|---|---|
| It is the purpose of this district to revitalize commercial areas which, through business relocation, substantial change in surrounding uses, changes in the market, or a combination thereof, require the orderly placement of business establishments to provide the maximum use of buildings to accommodate and respond to changes in vehicular and pedestrian traffic flow. To permit the full potential of this district, certain uses which would interfere with the general effectiveness of this District have been intentionally excluded, and uses permitted herein are intended to be strictly limited in their definition. Further, to promote uses that support a walkable downtown environment, mix of uses within a single building, and uses that create activity throughout the day and week. | |
| (b) Permitted Uses | (c) Special Land Uses |
| • Artisan/Maker Space<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Bar, Tavern, or Saloon<br>• Bookstore<br>• Brewpub<br>• Catering Businesses<br>• Child Care Centers<br>• Distillery, Winery – w/ or w/o food<br>• Essential Services<br>• Event Center<br>• Financial Institutions<br>• Government/Public Uses (Section 1251.16)<br>• Hotel (Section 1251.20)<br>• Independent Senior Living with Services (Section 1251.21)<br>• Indoor Recreation<br>• Institutions of Higher Education<br>• Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25)<br>• Marihuana: Medical Marihuana Provisioning Center (Sections 1251.24, 1251.30)<br>• Medical or Dental Clinic <= 20,000 s.f.<br>• Microbrewery (Section 1251.35)<br>• Motel (Section 1251.34)<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Nightclub | • Adaptive Reuse (Section 1251.01)<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Parking as a Principal Use |

| | |
|---|---|
| • Office<br>• Outdoor Recreation/Public (Section 1251.35)<br>• Personal Service Establishments (Section 1251.38)<br>• Private Club<br>• Private K-12 Schools<br>• Public K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• Restaurant<br>  ○ Carry-Out<br>  ○ Drive-In<br>  ○ Full Service<br>  ○ Limited Service<br>• Retail Sales<br>• Two Family Dwelling Units | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. Refer to Section 1250.04, Form Based Development Standards for the T-3, T-5, and T-5 Districts for additional development requirements. | |
| (d) Existing Uses | |
| • Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached | |
| (e) Accessory Uses | |
| • Accessory Buildings (Section 1260.02)<br>• Accessory Dwelling Unit<br>• Farmers Market (Section 1251.15)<br>• Food Truck<br>• Private Gardens (Section 1251.41)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46) | |
| (f) Dimension Regulations | |
| **Lot Standards** | **T-5** |
| Minimum Lot Area (sq. ft.) | Not Required |
| Maximum Residential Units Per Acre | 20(d) |
| Minimum Lot Width (ft.) | 30 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | See Section 1250.04(d)(1)A |

| | |
|---|---|
| Rear Yard Setback (ft.) | Not Required |
| Side Yard Setback (ft.) | Not Required |
| Maximum Building Height | Not Required |
| Footnotes: Refer to Section 1241.03 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.16 I-1 LIGHT INDUSTRIAL DISTRICT.

**(a) Purpose**

The I-1 Light Industrial District is intended to accommodate those industrial uses that generate noise, glare, odors, dust, vibration, air and water pollution, fire and safety hazards, the emission of any potentially harmful or obnoxious matter or radiation or any other nuisance characteristics. It is established as one in which the principal use of the land is for industrial activities wholly compatible with all other uses permitted in this District, commercial establishments not engaging in retail sales and service establishments which, if doing retail business, are of the type not generally requiring the customer to call at the place of business.

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Artisan/Maker Space<br>• Automobile or Vehicle Dealership (Section 1251.07)<br>• Automobile Repair (Section 1251.05)<br>• Automobile Service Station (Section 1251.06)<br>• Brewpub<br>• Child Care Center<br>• Distillery, Winery – w/ or w/o food<br>• Drive-Thru Business (Section 1251.14)<br>• Essential Services<br>• Farm Implements and Heavy Machinery Sales<br>• Financial Institutions<br>• Government/Public Uses (Section 1251.16)<br>• Greenhouse/Nursery (Principal Use)<br>• Institutions of Higher Education<br>• Limited Service Restaurant<br>• Manufacturing<br>• Marihuana: Adult-Use Marihuana Microbusiness (Sections 1251.24, 1251.26) | • Adaptive Reuse (Section 1251.01)<br>• Adult Business (Section 1251.02)<br>• Automobile Car Wash Establishment (Section 1251.04)<br>• Bar, Tavern, or Saloon<br>• Cemetery (Section 1251.11)<br>• Funeral Homes, Mortuaries, and Crematoriums<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Junk or Salvage Yard (Section 1251.22)<br>• Kennels (Section 1251.23)<br>• Nightclub<br>• Parking as a Principal Use<br>• Retail Sales |

| | |
|---|---|
| • Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25) (must be co-located with a Grower or Processor)<br>• Marihuana: Medical and Adult-Use Marihuana Grow Operation (Sections 1251.24, 1251.28)<br>• Marihuana: Medical and Adult-Use Marihuana Processing Facility (Sections 1251.24, 1251.29)<br>• Marihuana: Medical Marihuana Provisioning Center (Sections 1251.24, 1251.30) (must be co-located with a Grower or Processor)<br>• Marihuana: Medical and Adult-Use Marihuana Safety Compliance Facility (Sections 1251.24, 1251.31)<br>• Marihuana: Medical and Adult-Use Marihuana Secure Transporter (Sections 1251.24, 1251.32)<br>• Microbrewery (Section 1251.34)<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Religious Institutions (Section 1251.42)<br>• Research and Development<br>• Restaurant<br>  ○ Carry-Out<br>  ○ Drive-In<br>  ○ Drive-Thru (Section 1251.14)<br>  ○ Full Service<br>  ○ Limited Service<br>• Transportation and Logistics<br>• Utility-Scale Solar Energy Facility (Section 1251.52)<br>• Vehicle Repair, Major (Section 1251.53)<br>• Vehicle Repair, Minor<br>• Warehouse<br>• Wholesale | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |
| (d) Existing Uses | |
| • Single Family Dwelling Unit Detached | |

(e) Accessory Uses

- Accessory Buildings (Section 1260.01)
- Office
- Outdoor Storage (Section 1251.37)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

(f) Dimension Regulations

| **Lot Standard** | **I-1** |
|---|---|
| Minimum Lot Area (s.f.) | 2,900 |
| Maximum Residential Units Per Acre | NA |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | 25 |
| Rear Yard Setback (ft.) | 50 (H) |
| Side Yard Setback (ft.) | 25 (G) |
| Maximum Building Height | Not Required |

Footnotes: Refer to Section 1241.03 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above. Refer to Chapter 1251 for additional dimensional regulations for specific uses.

1240.17 I-2 HEAVY INDUSTRIAL DISTRICT.

**(a) Purpose**

The purpose of this district is to provide suitable locations for manufacturing, assembling and fabricating uses, including large-scale or specialized industrial operations requiring good access by road and/or railroad and public and utility services.

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Artisan/Maker Space | • Adaptive Reuse (Section 1251.01) |
| • Automobile Repair (Section 1251.05) | • Adult Business (Section 1251.01) |
| • Automobile Service Station (Section 1251.06) | • Automobile Car Wash Establishment (Section 1251.04) |
| • Brewpub | • Bar, Tavern, or Saloon |
| • Carry Out Restaurant | • Cemetery (Section 1251.11) |
| • Child Care Centers | • Hospital > 20,000 s.f. (Section 1251.19) |
| • Distillery, Winery – w/ or w/o food | • Junk or Salvage Yard (Section 1251.22) |

- Drive-Thru Business (Section 1251.14)
- Essential Services
- Farm Implements and Heavy Machinery Sales
- Financial Institutions
- Institutions of Higher Education
- Kennels (Section 1251.23)
- Manufacturing
- Marihuana: Adult-Use Marihuana Microbusiness (Sections 1251.24, 1251.26)
- Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25) (must be co-located with a Grower or Processor)
- Marihuana: Medical and Adult-Use Marihuana Grow Operation (Sections 1251.24, 1251.28)
- Marihuana: Medical and Adult-Use Marihuana Processing Facility (Sections 1251.24, 1251.29)
- Marihuana: Medical Marihuana Provisioning Center (Sections 1251.24, 1251.30) (must be co-located with a Grower or Processor)
- Marihuana Medical and Adult-Use Marihuana Safety Compliance Facility (Section 1251.24, 1251.31)
- Marihuana: Medical and Adult Use Marihuana Secure Transporter (Section 1251.24, 1251.32)
- Microbrewery (Section 1251.35)
- Outdoor Recreation/Public (Section 1251.36)
- Religious Institutions (Section 1251.42)
- Research and Development
- Restaurant
  - Carry-Out
  - Drive-In
  - Drive-Thru (Section 1251.14)
  - Full Service
  - Limited Service
- Transportation and Logistics
- Nightclub
- Parking as a Principal Use
- Retail Sales
- Utility-Scale Wind Energy Facility (Section 1251.53)

| | |
|---|---|
| • Utility-Scale Solar Energy Facility (Section 1251.52)<br>• Vehicle Repair, Major (Section 1251.54)<br>• Vehicle Repair, Minor<br>• Warehouse<br>• Wholesale | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |
| (d) Existing Uses | |
| • Single Family Dwelling Unit Detached | |
| (e) Accessory Uses | |
| • Accessory Buildings (Section 1260.02)<br>• Carry-Out Restaurant<br>• Outdoor Storage (Section 1251.37)<br>• Office<br>• Private Gardens (Section 1251.40)<br>• State Licensed Child Care Family Home, 1-7 Children<br>• State Licensed Child Care Group Home, 8-14 Children | |
| (f) Dimension Regulations | |
| **Lot Standards** | **I-2** |
| Minimum Lot Area (s.f.) | 2,900 |
| Maximum Residential Units Per Acre | NA |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | 25 |
| Rear Yard Setback (ft.) | 25 (h) |
| Side Yard Setback (ft.) | 25 (h) |
| Maximum Building Height | Not Required |
| **Footnotes:** Refer to Chapter 1241 wherever a footnote is referenced in parentheses after one of the dimension regulations. Additionally, some uses have specific standards that overrule the dimensional regulations above. Refer to Chapter 1251 for dimensional regulations for specific uses. | |

1240.18 S SPARK DISTRICT.

**(a) Purpose**

It is the purpose of this district to encourage and facilitate redevelopment by implementing the following mixed-use policies:

1. Mix of Land Compatible Land Uses: Permit a range of compatible land uses, such as residential (from single-family to multi-family), public, institutional, office, retail, personal services use, and appropriate general business uses.
2. Walkability: Create a walkable, pedestrian-oriented development that does not conflict with motorized traffic.
3. Building Location and Site Design: Ensure that buildings have a strong relationship to the street by requiring development to be human-scale through appropriate building location and site design, including developing areas that include civic spaces and pedestrian amenities and requiring on-street parking along interior streets.
4. Use of Buildings: Allow compatible mixed uses to be located in a single building.

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Adaptive Reuse (Section 1251.01)<br>• Arena/Theater<br>• Artisan/Maker Space<br>• Assisted Senior Living (Section 1251.03)<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Bar, Tavern, or Saloon<br>• Bookstore<br>• Brewpub<br>• Child Care Centers<br>• Community Garden (Section 1251.10)<br>• Distillery, Winery – w/ or w/o food<br>• Drive-Thru Business (Section 1251.14)<br>• Essential Services<br>• Financial Institutions<br>• Government/Public Uses (Section 1251.16)<br>• Greenhouse/Nursery (Principal Use)<br>• Hotel (Section 1251.20)<br>• Independent Senior Living with Services (Section 1251.21)<br>• Indoor Recreation<br>• Institutions of Higher Education<br>• Medical or Dental Clinic < 20,000 s.f.<br>• Microbrewery (Section 1251.35) | • Cemetery (Section 1251.11)<br>• Convalescent Homes, Nursing Homes, or Homes for the Aged (Section 1251.13)<br>• Private K-12 Schools<br>• Kennels (Section 1251.23)<br>• Marinas<br>• Parking as a Principal Use |

| | |
|---|---|
| • Motel (Section 1251.34)<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Nightclub<br>• Office<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Outdoor Recreation/Private (Section 1251.36)<br>• Personal Service Establishments (Section 1251.40)<br>• Public K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• Research and Development<br>• Restaurant<br>  ○ Carry-Out<br>  ○ Drive-In<br>  ○ Drive-Thru (Section 1251.14)<br>  ○ Full Service<br>  ○ Limited Service<br>• Retail Sales<br>• Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached<br>• Transportation and Logistics<br>• Two-Family Dwelling Units<br>• Warehouse<br>• Wholesale | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |
| (d) Accessory Uses | |
| • Accessory Buildings (Section 1260.02)<br>• Accessory Dwelling Unit<br>• Farmers Market (Section 1251.15)<br>• Personal-Scale Wind Energy Facility (Section 1251.39)<br>• Private Gardens (Section 1251.41)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.45) | |
| (e) Dimension Regulations | |
| **Lot Standards** | **S** |

| | |
|---|---|
| Minimum Lot Area (s.f.) | Not Required |
| Maximum Residential Units Per Acre | 20 |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | Not Required |
| Rear Yard Setback (ft.) | Not Required |
| Side Yard Setback (ft.) | Not Required |
| Maximum Building Height | Not Required |
| **Footnotes:** Refer to Section 1241.04 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule these dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. All development in the S Spark District is eligible for administrative approval subject to the discretion of the Zoning Administrator. | |

1240.19 OFFICIAL ZONING MAP AND INTERPRETATION.

The boundaries of the districts are shown upon the map which is made a part of this Zoning Code, which map is designated as the “Official Zoning Map.” Such map and all the notations, references and other information shown thereon are a part of this Zoning Code and have the same force and effect as if they were fully set forth or described herein.

Where, due to the scale, illegibility or detail of the map, there is uncertainty, contradiction or conflict as to the location of a district boundary, the interpretation of the exact location of such boundary shall be determined by the Zoning Board of Appeals.

(Ord. 10-2020.Passed 11-24-20.)

1240.20 DISTRICT BOUNDARY UNCERTAINTIES.

Where uncertainty exists or arises with respect to the boundaries of the various districts as shown on the zoning district map accompanying and made a part of this zoning ordinance in its original form, the following rules apply:

(a) The district boundaries are either streets, alleys, rights of way or watercourses, unless otherwise shown. Where such districts are bounded approximately by streets, alleys, rights of way or watercourses, the same shall be construed to be the boundaries of the districts unless such boundaries are fixed by dimensions as shown on the map.

(b) Where the district boundaries are not otherwise indicated, and where the property has been or may hereafter be divided into blocks and lots, the district boundaries shall be construed to be the lot lines. Where such districts are bounded approximately by lot lines, the lot lines shall be construed to be the boundaries of the districts, unless the boundaries are fixed by dimensions as shown on the map.

(c) In any determined by the use of the scale appearing on the map, unless the same are indicated by dimensions as shown on the map.

1240.21 ZONING DISTRICTS.

(a) Conformity with District Regulations Required. Except as hereinafter provided:

(1) No building or structure shall be erected, converted, enlarged, reconstructed, moved or structurally altered, nor shall any building or land be used, except for a purpose permitted in the district in which the building or land is located.

(2) No building shall be erected, converted, enlarged, reconstructed or structurally altered to exceed the height limit established for the district in which the building is located.

(3) No building shall be erected, converted, enlarged, reconstructed or structurally altered except in conformity with the yard and lot area regulations of the district in which the building is located.

(4) No building shall be erected or structurally altered to the extent specifically provided hereinafter except in conformity with the off-street parking and loading regulations of the district in which such building is located, except for as otherwise allowed in Chapter 1270.

(5) No building or structure shall be enlarged or altered and no use of a premises shall be changed in any way which increases its nonconformity, except for as otherwise allowed in Chapter 1270.

(6) The minimum yards, parking spaces and other open spaces, including the lot area per family, required by this Zoning Code for each and every building existing at the time of passage of this Zoning Code (November 24, 2020) or for any building hereafter erected, shall not be encroached upon or considered as yard or open space requirements for any other building, nor shall any lot area be reduced beyond the district requirements of this Zoning Code.

(7) Every building hereinafter erected or structurally altered shall be on a lot, provided that a lot may be subdivided or a series of lots may be increased in number and decreased in size, so long as each new lot is not less than 100 feet in depth and in conformity with the width requirements of Chapter 1240. In no case shall there be more than one main building on one lot unless otherwise provided in this Zoning Code.

(b) Essential Services. Essential services shall be permitted as authorized and regulated by law and ordinances of the City. It is the intention of this Zoning Code to exempt such essential services from the application of this Zoning Code.

(c) Land Under Water; Streets. All areas within the City which are under water or a public right-of-way and not shown as included within any district shall be subject to all of the regulations of the district which immediately adjoins the water or right-of-way area. If the water or right-of-way area adjoins two or more districts, the boundaries of each district shall be construed to extend into the water or right-of-way area in a straight line until they meet the other district.

(d) Annexed Land.

(1) Whenever any areas are annexed to the City, one of the following conditions shall prevail:

A. All lots, tracts or land which may hereafter be annexed to the City shall be classified as being in whichever district as most clearly conforms to the zoning that existed in the annexed area. Such classifications shall be recommended by the Planning Commission to the City Commission and the City Commission shall approve the same by resolution.

B. If any lot, tract or land is not subject to zoning at the time of annexation, it shall be classified as R-IA Single-Family whenever the land is vacant and otherwise shall be classified into whatever district of this Zoning Code most closely conforms to the existing use of the annexed area. Such classification shall be approved in the same manner as described for property that is zoned when annexed.

(2) In all cases, there shall be a public hearing, within a reasonable time after annexation, on the question of a permanent zoning classification. The hearing before the Planning Commission and the subsequent action by the City Commission shall follow the procedure to establish amendments in accordance with Section 1281.01(c).

(e) Vacation of Streets. Whenever any street, alley or other public way is vacated by official action of the City Commission or by the courts, the zoning district adjoining each side of such street, alley or other public way shall be automatically extended to the center of such vacation and all area included in the vacation shall then and henceforth be subject to all appropriate regulations of the extended district.

(f) Uses Not Specifically Mentioned. The City Zoning Administrator or their designee shall have the power to classify a use, which is not specifically mentioned in this Zoning Code, along with a comparable permitted or prohibited use for the purpose of the use regulations in any district. The City Planning and Zoning Administrator or their designee may refer these appeals to the Zoning Board of Appeals.

# Chapter 1240
# Zoning District and Map

## 1240.01 DISTRICTS ESTABLISHED.

In order to classify, regulate and restrict the location of trades, industries, and buildings designed for specified uses, to regulate and limit the height and bulk of buildings hereafter erected or structurally altered, to regulate and limit the intensity of the use of lot areas, and to regulate and determine the areas of yards, courtyards and other open spaces within and surrounding such buildings, the City is hereby divided into districts, as follows:

G Green District
AG Agricultural District
R-1R Single Family Residential District
R-1A Single-Family Residential District
R-1B Single-Family Residential District
R-2 Two Family Residential District
R-3 Multiple Family Residential District
MFR High Density Multiple Family Residential District
B-1 Corridor Commercial District
B-2 Regional Commercial District
T-3 Neighborhood Commercial District
T-4 Downtown Commercial
T-5 Core Downtown Commercial District
I-1 Light Industrial District
I-2 Heavy Industrial District
S Spark District

## 1240.02 TABLE OF PERMITTED USES.

The following table lists the permitted uses and special land uses in each zoning district. When a use is classified by square footage, the square footage listed refers to the gross square footage of a building and not the square footage of an individual tenant unit. A use classified by capacity, refers to the capacity established by the City Fire Inspector. Whenever a specific development standard is included for a particular use in the table below, any development must comply with the requirement of the referenced section in addition to all of the other applicable requirements of this Code. All development standards for specific uses are listed in Section 1251 and in other areas of this Code. Additionally, any use that is a special land use must also comply with the standards of Section 1281.05.

| | Uses | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *A* | Accessory Use | | | | | | | | | | | | | | | | | |
| *A*[s] | Accessory Use Requiring SLU Approval | | | | | | | | | | | | | | | | | |
| *E* | Existing Use | | | | | | | | | | | | | | | | | |
| *P* | Permitted Use | | | | | | | | | | | | | | | | | |
| *S* | Special Use | | | | | | | | | | | | | | | | | |
| | *Residential Uses* | | | | | | | | | | | | | | | | | |
| *Accessory Dwelling Unit* | | | | | ~~S/~~A[s] | ~~S/~~A[s] | ~~S/~~A[s] | A | A | | | A | A | A | | | A | |
| *Bed and Breakfast* | | P | P | P | P | P | P | P | P | | | P | | | | | | 1251.09 |
| *Home Occupation* | | A | A | A | A | A | A | A | | | | | | | | | | 1251.18 |
| *Multi-Family Dwelling Units* | | | | | | | | P | P | | | P | P | P | | | P | 1251.33 |
| *Personal-Scale Wind Energy Facility* | | A | A | A | A | A | A | | | | | A | | | | | A | 1251.39 |
| *Rooming and Boarding Houses* | | | | | | | P | P | | | | | | | | | | 1251.43 |
| *Single Family Dwelling Unit Attached* | | | | | | | | P | P | | | P | P | E | | | P | |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Single Family Dwelling Unit Detached* | P | P | P | P | P | P | P | P | E | E | P | E | E | E | E | P | |
| *State Licensed Child Care Family Home, 1-7 Children* | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | 1251.45 |
| *State Licensed Child Care Group Home, 8-14 Children* | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | 1251.46 |
| *State Licensed Child Care Center* | P | | | | | | | P | P | P | P | P | P | P | P | P | |
| *State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons* | P | P | P | P | P | P | P | P | | | P | P | | | | | 1251.47 |
| *State Licensed Residential Facility Adult Foster Care Small Group Home, 7-12 Persons* | S | S | S | S | S | S | S | S | | | | | | | | | 1251.48 |
| *State Licensed Residential Facility Adult Foster Care Large Group Home 13-20 Persons* | S | S | S | S | S | S | S | S | | | | | | | | | |
| *Transitional and Supportive Home, 1-6 Persons* | | | P | P | P | P | P | P | | | P | P | | | | | 1251.49 |
| *Transitional and Supportive Home, More than 6 Persons* | | | S | S | S | S | S | S | | | P | P | | | | | 1251.50 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Community Residential Facility and Group Homes* | | | | | | S | S | S | | | | | | | | | 1251.48 |
| *Two-Family Dwelling Units* | | | | | | P | P | P | | | P | P | P | | | P | |
| *Commercial Uses* | | | | | | | | | | | | | | | | | |
| *Adult Business* | | | | | | | | | S | | | | | S | S | | 1251.02 |
| *Agri-Tourism* | S | S | S | | | | | | | | | | | | | | |
| *Arena/Theater* | | | | | | | | | P | P | | | | | | P | |
| *Artisan/Maker Space* | | | | | | | | | P | P | S | P | P | P | P | P | |
| *Assisted Senior Living* | | | | | | | P | P | P | P | P | P | | | | P | 1251.03 |
| *Automobile Car Wash Establishment* | | | | | | | | | P | P | | | | S | S | | 1251.04 |
| *Automobile Repair* | | | | | | | | | P | P | | | | P | P | | 1251.05 |
| *Automobile Service Station* | | | | | | | | | S | P | | | | P | P | | 1251.06 |
| *Automobile or Vehicle Dealership* | | | | | | | | | P | P | | | | P | | | 1251.07 |
| *Banquet and Meeting Hall < 100 cap.* | S | | | | | | S | S | P | P | P | P | P | | | P | 1251.08 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Banquet and Meeting Hall > 100 cap.* | S | | | | | | S | S | P | P | | P | P | | | P | 1251.08 |
| *Bar, Tavern, or Saloon* | | | | | | | | | S | P | S | P | P | S | S | P | |
| *Bookstore* | | | | | | | | | P | P | P | P | P | | | P | |
| *Brewpub* | | | | | | | | | P | P | S | P | P | P | P | P | |
| *Catering Business* | | | | | | | | | P | P | P | P | P | | | | |
| *Convalescent Home, Nursing Home, or Home for the Aged* | | | | | | | P | P | P | P | P | P | S | | | S | 1251.13 |
| *Distillery, Winery – w/ or w/o Food* | P | P | S | | | | | | P | P | S | P | P | P | P | P | |
| *Event Center* | | | | | | | | | P | P | | P | P | | | | |
| *Farm Equip. and Heavy Machinery Sales* | | | | | | | | | | | | | | P | P | | |
| *Financial Institutions* | | | | | | | | | P | P | P | P | P | P | P | P | |
| *Funeral Homes, Mortuaries, and Crematoriums (No Crematoriums B-1, T-3,4)* | | | | | | | | | P* | P | S* | S* | | S | | | |
| *Hospital > 20,000 s.f.* | | | | | | | | S | S | S | | S | S | S | S | | 1251.19 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Hotel* | | | | | | | | | | P | S | P | P | | | P | 1251.20 |
| *Independent Senior Living with Services* | | | | | | | P | P | P | | P | P | P | | | P | 1251.21 |
| *Indoor Recreation* | P | | | | | | | | P | P | P | P | P | | | P | |
| *Kennels/Veterinarian* | S | S | S | | | | | | P | P | | | | S | P | S | 1251.23 |
| *Marihuana: Adult-Use Marihuana Microbusiness* | | | | | | | | | P | P | S | | | P | P | | 1251.24<br>1251.26<br>1251.27 |
| *Marihuana: Adult-Use Marihuana Retailers* | | | | | | | | | P | P | S | P | P | P | P | | 1251.24<br>1251.25<br>1251.27 |
| *Marihuana: Medical Marihuana Provisioning Center* | | | | | | | | | P | P | S | P | P | P | P | | 1251.24<br>1251.30<br>1251.27 |
| *Medical or Dental Clinic < 5,000 s.f.* | | | | | | | | | P | P | P | P | P | | | | |
| *Medical or Dental Clinic <20,000 s.f.* | | | | | | | | P | P | P | S | P | P | | | P | |
| *Motel* | | | | | | | | | | P | S | P | P | | | P | 1251.34 |
| *Microbrewery* | | | | | | | | | P | P | S | P | P | P | P | P | 1251.35 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Nightclub* | | | | | | | | | S | P | S | P | P | S | S | P | |
| *Office < 5,000 s.f.* | | | | | | | | | P | P | P | P | P | A | A | P | |
| *Office 5,000 – 17,000 s.f.* | | | | | | | | | P | P | P | P | P | A | A | P | |
| *Office > 17,000 s.f.* | | | | | | | | | P | P | S | P | P | A | A | P | |
| *Outdoor Recreation/Private* | P | ~~S~~P | | | | | | | P | P | | | | | | | 1251.36 |
| *Outdoor Recreation/Public* | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 1251.36 |
| *Outdoor Storage* | | | | | | | | | A | A | | | | A | A | | 1251.37 |
| *Pawn Broker* | | | | | | | | | P | P | S | | | | | | |
| *Personal Service Establishment* | | | | | | | | | P | P | P | P | P | | | P | 1251.40 |
| *Private Club* | | | | | | | | | P | P | P | P | P | | | | |
| *Restaurant* | | | | | | | | | | | | | | | | | |
| Carry-Out Restaurant | | | | | | | | | P | P | P | P | P | P | P | P | |
| Drive-In Restaurant | | | | | | | | | P | P | P | S | | P | P | P | |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drive-Thru Restaurant | | | | | | | | | P | P | S | S | | P | P | | 1251.14 |
| Full-Service Restaurant | | | | | | | | | P | P | P | P | P | P | P | P | |
| Limited Service Restaurant | | | | | | | | | P | P | P | P | P | P | P | P | |
| *Retail Sales < 5,000 s.f.* | | | | | | | | | P | P | P | P | P | S | S | P | |
| *Retail Sales 5,000 – 17,000 s.f.* | | | | | | | | | P | P | P | P | P | S | S | P | |
| *Retail Sales > 17,000 s.f.* | | | | | | | | | P | P | S | P | P | S | S | P | |
| *Tree Farm* | P | P | | | | | | | | | | | | | | | |
| *Vehicle Repair, Major* | | | | | | | | | S | S | | | | P | P | | 1251.54 |
| *Vehicle Repair, Minor* | | | | | | | | | PS | PS | | | | P | P | | |
| *Industrial Uses* | | | | | | | | | | | | | | | | | |
| *Junk and Salvage Yard* | | | | | | | | | | | | | | S | S | | 1251.22 |
| *Manufacturing* | | | | | | | | | | | | | | P | P | | |
| *Marihuana: Medical and Adult Use Marihuana Grow* | | | | | | | | | | | | | | P | P | | 1251.24<br>1251.27 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Operation* | | | | | | | | | | | | | | | | | 1251.28 |
| *Marihuana: Medical and Adult Use Marihuana Processing Facility* | | | | | | | | | | | | | | P | P | | 1251.24<br>1251.27<br>1251.29 |
| *Marihuana: Medical and Adult Use Marihuana Safety Compliance Facility* | | | | | | | | | P | P | | | | P | P | | 1251.24<br>1251.27<br>1251.31 |
| *Marihuana: Medical and Adult Use Marihuana Secure Transporter* | | | | | | | | | P | P | | | | P | P | | 1251.24<br>1251.27<br>1251.32 |
| *Research and Development* | | | | | | | | | S | P | | S | | P | P | P | |
| *Self-Storage Facilities* | | | | | | | | | P | P | | | | | | | 1251.44 |
| *Transportation and Logistics* | | | | | | | | | S | S | | | | P | P | P | |
| *Utility-Scale Solar Energy Facility* | | S | S | | | | | | A | A | | | | P | P | | 1251.52 |
| *Utility-Scale Wind Energy Facility* | | S | S | | | | | | | | | | | | S | | 1251.53 |
| *Warehouse* | | | | | | | | | S | S | | | | P | P | P | |
| *Wholesale* | | | | | | | | | S | S | | | | P | P | P | |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Other Uses* | | | | | | | | | | | | | | | | | |
| *Accessory Buildings* | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | 1260.01 |
| *Adaptive Reuse* | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | P | 1251.01 |
| *Campground* | S | S | S | S | S | S | | | | | | | | | | | 1251.09 |
| *Cemetery* | | S | S | S | S | S | S | S | S | S | S | | | S | S | S | 1251.10 |
| *Community Garden* | P | P | P | P | P | P | P | P | | | P | | | | | P | 1251.11 |
| *Essential Services* | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 1240.21(b) |
| *Farmer's Market* | A/S | A/S | | | | | | | | | A/S | A | A | | | A | 1251.15 |
| *Food Truck* | | | | | | | | | A | A | A | A | A | A | A | A | |
| ~~*General and Specialized farms, including crops and the raising and keeping for profit of cattle, hogs, horses, ponies, sheep and similar livestock*~~ *General and Specialized farms, including crops and the raising and keeping for profit of cattle, hogs,* | | P | | | | | | | | | | | | | | | 1251.17 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *horses, ponies, sheep and similar livestock* | | | | | | | | | | | | | | | | | |
| *Government/Public Uses* | | | | | | | | | P | P | P | P | P | P | | P | 1251.16 |
| *Greenhouse/Nursery (Principal Use)* | P | P | P | | | | | | | P | | | | P | | P | |
| *Institutions of Higher Education* | S | S | S | S | S | S | S | P | P | P | S | P | P | P | P | P | |
| *Marinas* | S | | | | | | | | | | S | | | | | S | |
| *Parking as a Principal Use* | | | | | | | | | | S | | S | S | S | S | S | |
| *Private K-12 Schools* | | | S | S | S | S | S | S | P | P | S | S | P | | | S | |
| *Private Garden* | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | 1251.41 |
| *Public K-12 Schools* | | | P | P | P | P | P | P | P | P | P | P | P | | | P | |
| *Public and private conservation areas and structures for the conservation of open space, water, soil, forest, and wildlife resources* | P | P | | | | | | | | | | | | | | | |
| *Religious Institutions* | S | S | S | S | S | S | S | S | P | P | P | P | P | P | P | P | 1251.42 |

| *Uses* | G | AG | R1-R | R1-A | R1-B | R-2 | R-3 | MFR | B-1 | B-2 | T-3 | T-4 | T-5 | I-1 | I-2 | S | Use Standard |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Telecommunications* | Refer to Section 1251.49 to see where telecommunication towers are permitted. | | | | | | | | | | | | | | | | 1251.49 |
| *Mobile Home Park Overlay District* | Refer to Section 1250.05 for Mobile Home Park requirements. | | | | | | | | | | | | | | | | 1250.05 |

1240.03 G GREEN DISTRICT.

**(a) Purpose**

It is the purposes of this district to:

1. Preserve and protect natural and man-made water areas, flood plains, marshes, and wetlands from development other than open spaces or recreational uses
2. Preserve and protect agricultural districts and/or wildlife habitats
3. Limit residential and commercial development and encourage design that preserves natural environments
4. Retain natural drainage patterns
5. Preserve and protect the values of distinctive geologic, topographic, botanic, historic, or scenic areas

| **(b) Permitted Uses** | **(c) Special Land Uses** |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Child Care Centers<br>• Distillery, Winery – w/ or w/o food<br>• Essential Services<br>• Greenhouse/Nursery (Principal Use)<br>• ~~Home Occupation (Section 1251.18)~~<br>• Indoor Recreation<br>• Outdoor Recreation/Private (Section 1251.36)<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Public and private conservation areas and structures for the conservation of open space, water, soil, forest, and wildlife resources<br>• Single Family Dwelling Unit Detached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Tree Farm | • Adaptive Reuse (Section 1251.01)<br>• Agri-Tourism<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Campground (Section 1251.10)<br>• Farmers Market (Section 1251.15)<br>• Institutions of Higher Education<br>• Kennels (Section 1251.23)<br>• Marinas<br>• Religious Institutions (Section 1251.42)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48) |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Accessory Uses**

- Accessory Buildings (Section 1260.01)
- Farmers Market (Section 1251.15)
- Home Occupation (Section 1251.18)
- Personal-Scale Wind Energy Facility (Section 1251.39)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

**(e) Dimension Regulations**

| **Lot Standards** | **G** |
|---|---|
| Minimum Lot Area (sq. ft.) | ~~43,560~~ Not Required |
| Maximum Residential Units Per Acre | 1 |
| Minimum Lot Width (ft.) | 150 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | 35 |
| Rear Yard Setback (ft.) | 35 |
| Side Yard Setback (ft.) | 35 |
| Maximum Building Height | 35 ft., 2.5 stories |

**Footnotes:** Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses.

1240.04 AG AGRICULTURAL DISTRICT.

**(a) Purpose**

It is the purposes of this district to provide rural areas used predominantly for general farming operations. Although urban development is occurring at a substantial rate in the City, agriculture remains an important economic activity, and in the proper interest of the welfare of present and future residents, it is considered necessary to conserve an effective environment for stable, productive agricultural operations.

The regulations of this chapter, therefore, are designed to:

1. Protect and stabilize the essential characteristics of these areas
2. Minimize conflicting land uses detrimental to farm enterprises
3. Exclude development which requires highway, drainage, and other public utilities and facilities in excess of those required by agricultural uses

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Distillery, Winery – w/ or w/o food<br>• Essential Services<br>• General and specialized farms, including crops and the raising and keeping of livestock (Section 1251.17)<br>• Greenhouse/Nursery (Principal Use)<br>• Outdoor Recreation/Private (Section 1251.36)<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Public and private conservation areas and structures for the conservation of open space, water, soil, forest, and wildlife resources<br>• Single Family Dwelling Unit Detached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Tree Farm | • Adaptive Reuse (Section 1251.01)<br>• Agri-Tourism<br>• Campground (Section 1251.10)<br>• Cemetery (Section 1251.11)<br>• Famers Market (Section 1251)<br>• Institutions of Higher Education<br>• Kennels/Veterinarian (Section 1251.23)<br>• Religious Institutions (Section 1251.42)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Utility-Scale Solar Energy Facility (Section 1251.52)<br>• Utility-Scale Wind Energy Facility (Section 1251.53) |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |

| (d) Accessory Uses |
|---|
| • Accessory Buildings (Section 1260.01)<br>• Farmers Market (Section 1251.15)<br>• Home Occupation (Section 1251.18)<br>• Personal-Scale Wind Energy Facility (Section 1251.39)<br>• Private Gardens (Section 1251.39)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)<br>• ~~State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.46), with SLU Approval~~ |

| (e) Dimension Regulations | |
|---|---|
| **Lot Standards** | **AG** |
| Minimum Lot Area (sq. ft.) | ~~3 acres~~ Not Required |
| Maximum Residential Units Per Acre | .33 |

| | |
|---|---|
| Minimum Lot Width (ft.) | 150 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | (c) |
| Rear Yard Setback (ft.) | (c) |
| Side Yard Setback (ft.) | (c) |
| Maximum Building Height | 35 ft., 2.5 stories |

**Footnotes:** Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses.

1240.05 R-1R SINGLE-FAMILY RESIDENTIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to establish residential properties of a semi-rural character that includes areas of the City presently without water and sewerage services and likely to remain without such services, in whole or in part, indefinitely. The R-1R Single-Family Rural Residential District includes existing low-density one-family properties, as well as areas within which such developments appear both likely and desirable.

| **(b) Permitted Uses** | **(c) Special Land Uses** |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Essential Services<br>• Greenhouse/Nursery (Principal Use)<br>• Outdoor Recreation/Public (Section 1251.35)<br>• Public K-12 Schools<br>• Single Family Dwelling Unit Detached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49) | • Adaptive Reuse (Section 1251.01)<br>• Agri-Tourism<br>• Campground (Section 1251.10)<br>• Cemetery (Section 1251.11)<br>• Distillery, Winery – w/ and w/o food<br>• Institutions of Higher Education<br>• Private K-12 Schools<br>• Kennels/Veterinarian (Section 1251.23)<br>• Religious Institution (Section 1251.42)<br>• ~~State Licensed Residential Facility, Adult Foster Care Large Group Home, 7-13 Persons (Sections 1251.48)~~<br>• Transitional and Supportive Home, More than 6 Persons<br>• Utility-Scale Solar Energy Facility (Section 1251.52)<br>• Utility-Scale Wind Energy Facility (Section 1251.53) |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Accessory Uses**

- Accessory Buildings (Section 1260.01)
- Home Occupation (Section 1251.18)
- Personal-Scale Wind Energy Facility (Section 1251.39)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

**(e) Dimension Regulations**

| Lot Standards | R-1R |
|---|---|
| Minimum Lot Area (sq. ft.) | ~~3,000~~ Not Required |
| Maximum Residential Units Per Acre | 1.45 |
| Minimum Lot Width (ft.) | 120 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | 35 |
| Rear Yard Setback (ft.) | 35 |
| Side Yard Setback (ft.) | 15 |
| Maximum Building Height | 35 ft., 2.5 stories |

Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses.

1240.06 R-1A SINGLE-FAMILY RESIDENTIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to establish areas of primarily single-family detached residential properties of a semi-suburban to suburban, low-density character, usually served by City water and sewer.

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Essential Services<br>• Outdoor Recreation/Public (Section | • Adaptive Reuse (Section 1251.01)<br>• Campground (Section 1251.10)<br>• Cemetery (Section 1251.11)<br>• Institutions of Higher Education |

| | |
|---|---|
| 1251.36)<br>• Public K-12 Schools<br>• Single Family Dwelling Unit Detached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.49)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12~~3~~ Persons (Section 1251.48)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.47) | • Private K-12 Schools<br>• Personal-Scale Wind Energy Facility (Section 1251.39)<br>• Religious Institutions (Section 1251.42)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Transitional and Supportive Home, More than 6 Persons (Section 1251.50) |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |
| **(d) Accessory Uses** | |
| • Accessory Buildings (Section 1260.01)<br>• Accessory Dwelling Unit, with SLU approval<br>• Home Occupation (Section 1251.18)<br>• Private Gardens (Section 1251.41)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46) | |
| **(e) Dimension Regulations** | |
| **Lot Standards** | **R-1A** |
| Minimum Lot Area (sq. ft.) | ~~7,500~~ Not Required |
| Maximum Residential Units Per Acre | 5.80 |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 30 |
| Front Yard Setback (ft.) | 30 |
| Rear Yard Setback (ft.) | 35 |
| Side Yard Setback (ft.) | 8 |
| Maximum Building Height | 35 ft., 2.5 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.07 R-1B SINGLE-FAMILY RESIDENTIAL DISTRICT.

| |
|---|
| **(a) Purpose** |

It is the purpose of this district to establish primarily single-family detached residential properties of a suburban, medium-density character. This district includes those areas which are serviced by City water and sewer.

| **(b) Permitted Uses** | **(c) Special Land Uses** |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Essential Services<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Public K-12 Schools<br>• Single Family Dwelling Unit Detached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49) | • Adaptive Reuse (Section 1251.01)<br>• Campground (Section 1251.10)<br>• Cemetery (Section 1251.11)<br>• Institutions of Higher Education<br>• Private K-12 Schools<br>• Personal-Scale Wind Energy Facility (Section 1251.39)<br>• Religious Institutions (Section 1251.42)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Transitional and Supportive Home, More than 6 Persons (section 1251.50) |

Refer to Section 1230.06 for definitions for uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Accessory Uses**

- Accessory Buildings (Section 1260.01)
- Accessory Dwelling Unit, with SLU approval
- Home Occupation (Section 1251.18)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

**(e) Dimension Regulations**

| **Lot Standards** | **R-1B** |
|---|---|
| Minimum Lot Area (sq. ft.) | ~~5,000~~ Not Required |
| Maximum Residential Units Per Acre | 8.7 |
| Minimum Lot Width (ft.) | 50 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 30 |
| Front Yard Setback (ft.) | 25 |
| Rear Yard Setback (ft.) | 30 |

| | |
|---|---|
| Side Yard Setback (ft.) | 6 |
| Maximum Building Height | 35 ft., 2.5 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.08 R-2 TWO FAMILY RESIDENTIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to establish a mix of single- and two-family residential properties of an urban, medium-density character. Limited commercial uses, which tend to complement residential areas should be expected. This district includes street and utility elements expected in an urban setting. Further, this district provides a buffer between single-family and multifamily neighborhoods.

| **(b) Permitted Uses** | **(c) Special Land Uses** |
|---|---|
| • Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Essential Services<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Public K-12 Schools<br>• Rooming and Boarding Houses, not to Exceed 4 Boarders (Section 1251.43)<br>• Single Family Dwelling Unit Detached<br>• Two-Family Dwelling Units<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49) | • Adaptive Reuse (Section 1251.01)<br>• Campground (Section 1251.10)<br>• Cemetery (Section 1251.11)<br>• Institutions of Higher Education<br>• Religious Institutions (Section 1251.42)<br>• Private K-12 Schools<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-20 Persons (Section 1251.48)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Transitional and Supportive Home, More than 6 Persons (Section 1251.50) |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Accessory Uses**

- Accessory Building (Section 1260.01)
- Accessory Dwelling Unit, with SLU approval
- Home Occupation (Section 1251.18)
- Personal-Scale Wind Energy Facility, with SLU approval (Section 1251.39)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

| (e) Dimension Regulations | |
|---|---|
| **Lot Standards** | **R-2** |
| Minimum Lot Area (sq. ft.) | ~~5,000~~ Not Required |
| Maximum Residential Units Per Acre | 8.70 |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 25 |
| Front Yard Setback (ft.) | 25 |
| Rear Yard Setback (ft.) | 25 |
| Side Yard Setback (ft.) | 5 |
| Maximum Building Height | 35 ft., 2.5 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.09 R-3 MULTIPLE FAMILY RESIDENTIAL DISTRICT.

| (a) Purpose | |
|---|---|
| It is the purpose of this district to establish high-density multi-family developments located in suburban and urban areas, and commercial development with relatively low intensities that often complement residential neighborhoods. Further, this district supports housing styles of mid- and high-level buildings consisting of garden apartments, and townhome condominiums. The high density of this district is intended to support nearby commercial districts, and provide a transition between commercial and mid-density districts. | |
| **(b) Permitted Uses** | **(c) Special Land Uses** |
| • Assisted Senior Living (Section 1251.03)<br>• Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Essential Services<br>• Independent Senior Living with Services (Section 1251.21)<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Outdoor Recreation/Public (section 1251.36)<br>• Public K-12 Schools<br>• Rooming and Boarding Houses, Up to 10 | • Adaptive Reuse (Section 1251.01)<br>• Banquet and Meeting Hall < 100 capacity (Section 1251.08)<br>• Cemetery (Section 1251.11)<br>• Institutions of Higher Education<br>• Private K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Transitional and Supportive Home, More |

| | |
|---|---|
| Boarders (Section 1251.43)<br>• Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached<br>• Two-Family Dwelling Units<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Transitional and Supportive Home, 1-6 persons (Section 1251.49) | than 6 Persons (Section 1251.50) |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |
| **(d) Accessory Uses** | |
| • Accessory Buildings (Section 1260.01)<br>• Accessory Dwelling Unit<br>• Home Occupation (Section 1251.18)<br>• Private Gardens (Section 1251.39)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46 | |
| **(e) Dimension Regulations** | |
| Lot Standards | R-3 |
| Minimum Lot Area (sq. ft.) | ~~2,900~~ Not Required |
| Maximum Residential Units Per Acre | 15 |
| Minimum Lot Width (ft.) | ~~60~~ 40 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 25 |
| Front Yard Setback (ft.) | 25 |
| Rear Yard Setback (ft.) | 25 (f) |
| Side Yard Setback (ft.) | 25 (f) |
| Maximum Building Height | 45 ft., 4 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.10 MFR HIGH DENSITY MULTIPLE FAMILY DISTRICT.

| |
|---|
| **(a) Purpose** |
| It is the purpose of this district to accommodate new types of diversified residential developments of high densities, usually requiring a large tract of unplatted land. The types of |

residential structures include garden apartments, terrace apartments and row housing units and those special types of housing structures similar in character and density to multiple family housing.

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Assisted Senior Living (Section 1251.03)<br>• Bed and Breakfast (Section 1251.09)<br>• Child Care Centers<br>• Community Garden (Section 1251.12)<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Essential Services<br>• Independent Senior Living with Services (Section 1251.21)<br>• Institutions of Higher Education<br>• Medical or Dental Clinic <= 20,000 s.f.<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Public K-12 Schools<br>• Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached<br>• Two-Family Dwelling Units<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49) | • Adaptive Reuse (Section 1251.01)<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Cemetery (Section 1251.11)<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Private K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• State Licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 Persons (Section 1251.48)<br>• State Licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 Persons (Section 1251.48)<br>• Transitional and Supportive Home, More than 6 Persons (Section 1251.50) |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Accessory Uses**

- Accessory Buildings (Section 1260.01)
- Accessory Dwelling Unit
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

| (e) Dimension Regulations | |
|---|---|
| **Lot Standards** | **MFR** |
| Minimum Lot Area (sq. ft.) | ~~2,170(d)(e)~~ See Section 1241.03(e) |
| Maximum Residential Units Per Acre | 20(d)(e) |
| Minimum Lot Width (ft.) | 120 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 30 |
| Front Yard Setback (ft.) | 35 |
| Rear Yard Setback (ft.) | 20 |
| Side Yard Setback (ft.) | 20 |
| Maximum Building Height | 45 ft., 4 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.11 B-1 CORRIDOR COMMERCIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to accommodate those retail and business service activities that serve the whole community and the metropolitan region. Such activities require land and structure uses that are typically compact and densely grouped, generating a large volume of pedestrian and vehicular traffic. It is the purpose of these regulations to permit the establishment of a wide variety of business enterprises and to provide flexibility for adaptation to new merchandising techniques.

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Arena/Theater<br>• Artisan/Maker Space<br>• Assisted Senior Living (Section 1251.03)<br>• Automobile Car Wash Establishment (Section 1251.04)<br>• Automobile or Vehicle Dealership (Section 1251.07)<br>• Automobile Repair (Section 1251.05)<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Bookstore<br>• Brewpub<br>• Catering Businesses<br>• Child Care Centers | • Adaptive Reuse (Section 1251.01)<br>• Adult Business (Section 1251.01)<br>• Automobile Service Station (Section 1251.04)<br>• Bar, Tavern, or Saloon<br>• Cemetery (Section 1251.11)<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Nightclub<br>• Research and Development<br>• Transportation and Logistics<br>• Vehicle Repair, Major (Section 1251.54)<br>• Warehouse<br>• Wholesale |

| | |
|---|---|
| • Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Distillery, Winery – w/ or w/o food<br>• ~~Drive In Restaurant~~<br>• Drive-Thru Business ~~Restaurant~~ (Section 1251.14)<br>• Essential Services<br>• Event Center<br>• Financial Institutions<br>• ~~Full Service Restaurant~~<br>• Funeral Homes, Mortuaries<br>• Government/Public Uses (Section 1251.16)<br>• Indoor Recreation<br>• Institutions of Higher Education<br>• Pawn Broker<br>• Private Club<br>• Private K-12 Schools<br>• Public K-12 Schools<br>• Kennels/Veterinarian (Section 1251.23)<br>• ~~Limited Service Restaurant~~<br>• Marihuana: Adult-Use Marihuana Microbusiness (Sections 1251.23, 1251.25)<br>• Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25)<br>• Marihuana: Medical Marihuana Provisioning Center (Section 1251.24, 1251.30)<br>• Marihuana: Medical and Adult-Use Marihuana Safety Compliance Facility (Sections 1251.24, 1251.31)<br>• Marihuana: Medical and Adult-Use Marihuana Secure Transporter (Sections 1251.24, 1251.32)<br>• Medical or Dental Clinic =< 20,000 s.f.<br>• Microbrewery (Section 1251.35)<br>• Office<br>• Outdoor Recreation/Private (Section 1251.36)<br>• Outdoor Recreation/Public (Section 1251.36) | |

| | |
|---|---|
| • Outdoor Storage (Section 1251.37)<br>• Personal Service Establishment (Section 1251.40)<br>• Religious Institutions (Section 1251.42)<br>• Restaurant<br>  ○ Carry-Out<br>  ○ Drive-In<br>  ○ Drive Thru (Section 1251.14)<br>  ○ Full Service<br>  ○ Limited Service<br>• Retail Sales<br>• Self-Storage Facilities (Section 1251.44)<br>• Vehicle Repair, Minor | |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses.

**(d) Existing Uses**

- Single Family Dwelling Unit Detached

**(e) Accessory Uses**

- Accessory Buildings (Section 1260.01)
- Food Truck
- Outdoor Storage (Section 1251.37)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)
- Utility-Scale Solar Energy Facility (Section 1251.52)

**(f) Prohibited Uses**

- Sale, rental, or display of motor vehicles, trailers, or boats
- Manufacturing and processing establishments not selling their entire output at retail on the site

**(g) Dimension Regulations**

| Lot Standards | B-1 |
|---|---|
| Minimum Lot Area | ~~2,900~~ Not Required |
| Maximum Residential Units Per Acre | NA |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | 20 |

| | |
|---|---|
| Rear Yard Setback (ft.) | 15 (h) |
| Side Yard Setback (ft.) | 15 (g) |
| Maximum Building Height | 45 ft., 3 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |
| | |

1240.12 B-2 REGIONAL COMMERCIAL DISTRICT.

| **(a) Purpose** | |
|---|---|
| It is the purpose of this district to accommodate those specialized retail and business service activities herein specified that serve the whole community, as well as persons traveling on interstate highways, and typically may be grouped around a major interstate highway interchange (I-94) generating a considerable volume of vehicular traffic. It is the purpose of these regulations to permit the establishment of a limited variety of business enterprises and to provide flexibility for adaptation to new merchandising techniques as may develop, particularly where the use of motor vehicles is involved. In order to utilize the full potential effectiveness of this District, certain functions that would operate more effectively in other districts and that would interfere with the general business effectiveness of this District have been intentionally excluded. | |
| **(b) Permitted Use** | **(c) Special Land Uses** |
| • Arena/Theater<br>• Artisan/Maker Space<br>• Assisted Senior Living<br>• Automobile Car Wash Establishment (Section 1251.04)<br>• Automobile or Vehicle Dealership (Section 1251.07)<br>• Automobile Repair (Section 1251.05)<br>• Automobile Service Station (section 1251.06)<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Bar, Tavern, or Saloon<br>• Bookstore<br>• Brewpub<br>• Catering Businesses<br>• Child Care Centers<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Distillery, Winery – w/ or w/o food<br>• ~~Drive In Restaurant~~<br>• Drive-Thru Business ~~Restaurant~~ (Section 1251.14)<br>• Essential Services<br>• Event Center<br>• Financial Institutions<br>• ~~Full Service Restaurant~~<br>• Funeral Homes, Mortuaries, and | • Adaptive Reuse (Section 1251.01)<br>• Cemetery (Section 1251.11)<br>• Parking as a Principal Use<br>• Transportation and Logistics<br>• Vehicle Repair, Major (Section 1251.54)<br>• Warehouse<br>• Wholesale |

| | |
|---|---|
| Crematoriums<br>• Government/Public Uses (Section 1251.16)<br>• Greenhouse/Nursery (Principal Use)<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Hotel (Section 1251.20)<br>• Indoor Recreation<br>• Institutions of Higher Education<br>• Kennels/Veterinarian (Section 1251.23)<br>• ~~Limited Service Restaurant~~<br>• Marihuana: Adult-Use Marihuana Microbusiness (Sections 1251.24, 1251.26)<br>• Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25)<br>• Marihuana: Medical Marihuana Provisioning Center (Sections 1251.24, 1251.30)<br>• Marihuana: Medical and Adult-Use Marihuana Safety Compliance Facility (Sections 1251.24, 1251.31)<br>• Marihuana: Medical and Adult-Use Marihuana Secure Transporter (Sections 1251.24, 1251.32)<br>• Medical or Dental Clinic =< 20,000 s.f.<br>• Microbrewery (Section 1251.35)<br>• Motel (Section 1251.34)<br>• Nightclub<br>• Office<br>• Outdoor Recreation/Private (Section 1251.36)<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Pawn Broker<br>• Personal Service Establishment (Section 1251.39)<br>• Private Club<br>• Private K-12 Schools<br>• Public K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• Research and Development<br>• Restaurant | |

| | |
|---|---|
| ○ Carry-Out<br>○ Drive-In<br>○ Drive Thru (Section 1251.14)<br>○ Full Service<br>○ Limited Service<br>• Retail Sales > 17,000 s.f.<br>• Self Storage Facilities (Section 1251.44)<br>• Vehicle Repair, Minor | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses | |
| **(d) Existing Uses** | |
| • Single Family Dwelling Unit Detached | |
| **(e) Accessory Uses** | |
| • Accessory Buildings (Section 1260.01)<br>• Food Truck<br>• Outdoor Storage (Section 1251.37)<br>• Private Gardens (Section 1251.41)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)<br>• Utility-Scale Solar Energy Facility (Section 1251.52) | |
| **(f) Dimension Regulations** | |
| **Lot Standards** | **B-2** |
| Minimum Lot Area (s.f.) | 25,000 |
| Maximum Residential Units Per Acre | NA |
| Minimum Lot Width (ft.) | 150 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | 35 |
| Rear Yard Setback (ft.) | 20 |
| Side Yard Setback (ft.) | 20 |
| Maximum Building Height | 50 ft., 3 stories |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for dimensional regulations for specific uses. | |

1240.13 T-3 NEIGHBORHOOD COMMERCIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to establish and preserve areas for those commercial uses and facilities which are especially useful in close proximity to residential areas, while minimizing the undesirable impact of such uses on the neighborhoods which they serve.

**(b) Permitted Uses**

- Assisted Senior Living (Section 1251.03)
- Banquet and Meeting Hall < 100 Capacity (Section 1251.08)
- Bed and Breakfast (Section 1251.09)
- Bookstore
- ~~Carry Out Restaurant~~
- Catering Businesses
- Child Care Centers
- Community Garden (Section 1251.12)
- Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)
- Essential Services
- Financial Institutions
- ~~Full Service Restaurant~~
- Government/Public Uses (Section 1251.14)
- Indoor Recreation
- Independent Senior Living with Services (Section 1251.21)
- ~~Limited Service Restaurant~~
- Medical or Dental Clinic< 5,000 s.f.
- Multi-Family Dwelling Units (Section 1251.33)
- Office < 17,000 s.f.
- Outdoor Recreation/Public (Section 1251.36)
- Personal-Scale Wind Energy Facility (Section 1251.39)
- Personal Service Establishments (Section 1251.40)
- Private Club
- Public K-12 Schools
- Religious Institutions (Section 1251.42)
- Restaurant
  - Carry-Out
  - Drive-In

**(c) Special Land Uses**

- Adaptive Reuse (Section 1251.01)
- Artisan/Maker Space
- Bar, Tavern, or Saloon
- Brewpub
- Cemetery (Section 1251.11)
- Distillery, Winery – w/ or w/o food
- Drive Thru Business (Section 1251.14)
- Farmers' Market (Section 1251.15)
- Funeral Homes, Mortuaries
- Hotel (Section 1251.20)
- Institutions of Higher Education
- Pawn Broker
- Private K-12 Schools
- Marihuana: Medical Marihuana Provisioning Center (Sections 1251.24, 1251.30)
- Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25)
- Marihuana: Adult-Use Marihuana Microbusiness (Sections 1251.24, 1251.26)
- Marinas
- Medical or Dental Clinic 5,000 to < 20,000 s.f.
- Microbrewery (Section 1251.35)
- Motel (Section 1251.20)
- Nightclub
- Office >= 17,000 s.f.
- Retail Sales >= 17,000 s.f.
- Restaurant
  - Drive-Thru (Section 1251.14)

| | |
|---|---|
| ○ Full Service<br>○ Limited Service<br>• Retail Sales < 17,000 s.f.<br>• Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached<br>• Two-Family Dwelling Units<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.47)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49)<br>• Transitional and Supportive Home, More than 6 Persons (Section 1251.50) | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. Refer to Section 1250.04, Form Based Development Standards for the T-3, T-4, and T-5 Districts for additional development requirements. | |
| (d) Accessory Uses | |
| • Accessory Buildings (Section 1260.02)<br>• Food Truck<br>• Accessory Dwelling Unit, with SLU approval<br>• Farmers Market (Sections 1251.15)<br>• Private Gardens (1251.41)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46) | |
| (e) Dimension Regulations | |
| **Lot Standard** | **T-3** |
| Minimum Lot Area (sq. ft.) | ~~2,900(d)~~ Not Required |
| Maximum Residential Units Per Acre | 20(d) |
| Minimum Lot Width (ft.) | ~~36~~0 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | 40 |
| Front Yard Setback (ft.) | See Section 1250.04(d)(1)A ~~30~~ |
| Rear Yard Setback (ft.) | 20 (h) |
| Side Yard Setback (ft.) | 10 (g) |
| Maximum Building Height | 36 ft., 3 stories |
| Footnotes: Refer to Section 1241.03 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.14 T-4 DOWNTOWN COMMERCIAL DISTRICT.

**(a) Purpose**

It is the purpose of this district to encourage the development, redevelopment and use of properties in a manner compatible with the character of the downtown area and consistent with the protection and enhancement of property values.

**(b) Permitted Uses**

- Artisan/Maker Space
- Assisted Senior Living (Section 1251.03)
- Banquet and Meeting Hall (Section 1251.08)
- Bar, Tavern, or Saloon
- Bookstore
- Brewpub
- ~~Carry Out Restaurant~~
- Catering Businesses
- Child Care Centers
- Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)
- Distillery, Winery – w/ or w/o food
- Essential Services
- Event Center
- Farmers Market (Section 1251.15)
- Financial Institutions
- ~~Full Service Restaurant~~
- Government/Public Uses (Section 1251.16)
- Hotel (Section 1251.20)
- Independent Senior Living with Services (Section 1251.21)
- Indoor Recreation
- Institutions of Higher Education
- ~~Limited Service Restaurant~~
- Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25)
- Marihuana: medical Marihuana Provisioning Center (Sections 1251.24, 1251.30)
- Medical or Dental Clinic < 20,000 s.f.
- Microbrewery (Section 1251.35)

**(c) Special Land Uses**

- Adaptive Reuse (Section 1251.01)
- ~~Drive In Restaurant~~
- Drive-Thru Business ~~Restaurant~~ (Section 1251.14)
- Funeral Homes, Mortuaries
- Hospital > 20,000 s.f. (Section 1251.19)
- Private K-12 Schools
- Parking as a Principal Use
- Research and Development
- Restaurant
  - Drive-In
  - Drive-Thru (Section 1251.14)

| | |
|---|---|
| • Motel (Section 1251.34)<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Nightclub<br>• Office<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Personal Service Establishments (Section 1251.40)<br>• Private Club<br>• Public K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• Retail Sales<br>• Restaurant<br>  ○ Carry-Out<br>  ○ Full Service<br>  ○ Limited Service<br>• Single Family Dwelling Unit Attached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 Persons (Section 1251.48)<br>• Transitional and Supportive Home, 1-6 Persons (Section 1251.49)<br>• Transitional and Supportive Home, More than 6 Persons (Sections 1251.50)<br>• Two-Family Dwelling Units | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. Refer to Section 1250.04, Form Based Development Standards for the T-3, T-4, and T-5 Districts for additional development requirements. | |
| (d) Existing Uses | |
| • Single Family Dwelling Unit Detached | |
| (e) Accessory Uses | |
| • Accessory Buildings (Section 1260.02)<br>• Accessory Dwelling Unit<br>• Farmers Market (Section 1251.15)<br>• Food Truck<br>• Private Gardens (Section 1251.40)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 7-12 Children (Section 1251.46) | |
| (f) Dimension Regulations | |

| Lot Standards | T-4 |
|---|---|
| Minimum Lot Area (s.f.) | ~~2,900 (d)~~ Not Required |
| Maximum Residential Units Per Acre | 20(d) |
| Minimum Lot Width (ft.) | ~~4~~60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | See Section 1250.04(d)(1)A ~~Not Required~~ |
| Rear Yard Setback (ft.) | Not Required |
| Side Yard Setback (ft.) | Not Required |
| Maximum Building Height | Not Required |
| Footnotes: Refer to Section 1241.03 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.15 T-5 CORE DOWNTOWN COMMERCIAL DISTRICT.

| **(a) Purpose** | |
|---|---|
| It is the purpose of this district to revitalize commercial areas which, through business relocation, substantial change in surrounding uses, changes in the market, or a combination thereof, require the orderly placement of business establishments to provide the maximum use of buildings to accommodate and respond to changes in vehicular and pedestrian traffic flow. To permit the full potential of this district, certain uses which would interfere with the general effectiveness of this District have been intentionally excluded, and uses permitted herein are intended to be strictly limited in their definition. Further, to promote uses that support a walkable downtown environment, mix of uses within a single building, and uses that create activity throughout the day and week. | |
| (b) Permitted Uses | (c) Special Land Uses |
| • Artisan/Maker Space<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Bar, Tavern, or Saloon<br>• Bookstore<br>• Brewpub<br>• ~~Carry Out Restaurant~~<br>• Catering Businesses<br>• Child Care Centers<br>• Distillery, Winery – w/ or w/o food<br>• Essential Services<br>• Event Center<br>• Financial Institutions<br>• ~~Full Service Restaurant~~<br>• Government/Public Uses (Section 1251.16)<br>• Hotel (Section 1251.20)<br>• Independent Senior Living with Services (Section 1251.21)<br>• Indoor Recreation<br>• Institutions of Higher Education<br>• ~~Limited Service Restaurant~~<br>• Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25)<br>• Marihuana: Medical Marihuana Provisioning Center (Sections 1251.24, 1251.30)<br>• Medical or Dental Clinic <= 20,000 s.f.<br>• Microbrewery (Section 1251.35) | • Adaptive Reuse (Section 1251.01)<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Parking as a Principal Use |

| | |
|---|---|
| • Motel (Section 1251.34)<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Nightclub<br>• Office<br>• Outdoor Recreation/Public (Section 1251.35)<br>• Personal Service Establishments (Section 1251.38)<br>• Private Club<br>• Private K-12 Schools<br>• Public K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• Restaurant<br>  ○ Carry-Out<br>  ○ Drive-In<br>  ○ Full Service<br>  ○ Limited Service<br>• Retail Sales<br>• Two Family Dwelling Units | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. Refer to Section 1250.04, Form Based Development Standards for the T-3, T-5, and T-5 Districts for additional development requirements. | |
| (d) Existing Uses | |
| • Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached | |
| (e) Accessory Uses | |
| • Accessory Buildings (Section 1260.02)<br>• Accessory Dwelling Unit<br>• Farmers Market (Section 1251.15)<br>• Food Truck<br>• Private Gardens (Section 1251.41)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46) | |
| (f) Dimension Regulations | |
| **Lot Standards** | **T-5** |
| Minimum Lot Area (sq. ft.) | Not Required ~~2,900(d)~~ |
| Maximum Residential Units Per Acre | 20(d) |
| Minimum Lot Width (ft.) | ~~6~~30 |

| | |
|---|---|
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | See Section 1250.04(d)(1)A ~~Not Required~~ |
| Rear Yard Setback (ft.) | Not Required |
| Side Yard Setback (ft.) | Not Required |
| Maximum Building Height | Not Required |
| Footnotes: Refer to Section 1241.03 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.16 I-1 LIGHT INDUSTRIAL DISTRICT.

**(a) Purpose**

The I-1 Light Industrial District is intended to accommodate those industrial uses that generate noise, glare, odors, dust, vibration, air and water pollution, fire and safety hazards, the emission of any potentially harmful or obnoxious matter or radiation or any other nuisance characteristics. It is established as one in which the principal use of the land is for industrial activities wholly compatible with all other uses permitted in this District, commercial establishments not engaging in retail sales and service establishments which, if doing retail business, are of the type not generally requiring the customer to call at the place of business.

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Artisan/Maker Space<br>• Automobile or Vehicle Dealership (Section 1251.07)<br>• Automobile Repair (Section 1251.05)<br>• Automobile Service Station (Section 1251.06)<br>• Brewpub<br>• ~~Carry Out Restaurant~~<br>• Child Care Center<br>• Distillery, Winery – w/ or w/o food<br>• ~~Drive In Restaurant~~<br>• Drive-Thru ~~Restaurant~~ Business (Section 1251.14)<br>• Essential Services<br>• Farm Implements and Heavy Machinery Sales<br>• Financial Institutions<br>• Government/Public Uses (Section 1251.16) | • Adaptive Reuse (Section 1251.01)<br>• Adult Business (Section 1251.02)<br>• Automobile Car Wash Establishment (Section 1251.04)<br>• Bar, Tavern, or Saloon<br>• Cemetery (Section 1251.11)<br>• Funeral Homes, Mortuaries, and Crematoriums<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Junk or Salvage Yard (Section 1251.22)<br>• Kennels (Section 1251.23)<br>• Nightclub<br>• Parking as a Principal Use<br>• Retail Sales |

| | |
|---|---|
| • Greenhouse/Nursery (Principal Use)<br>• Institutions of Higher Education<br>• ~~Limited Service Restaurant~~<br>• Manufacturing<br>• Marihuana: Adult-Use Marihuana Microbusiness (Sections 1251.24, 1251.26)<br>• Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25) (must be co-located with a Grower or Processor)<br>• Marihuana: Medical and Adult-Use Marihuana Grow Operation (Sections 1251.24, 1251.28)<br>• Marihuana: Medical and Adult-Use Marihuana Processing Facility (Sections 1251.24, 1251.29)<br>• Marihuana: Medical Marihuana Provisioning Center (Sections 1251.24, 1251.30) (must be co-located with a Grower or Processor)<br>• Marihuana: Medical and Adult-Use Marihuana Safety Compliance Facility (Sections 1251.24, 1251.31)<br>• Marihuana: Medical and Adult-Use Marihuana Secure Transporter (Sections 1251.24, 1251.32)<br>• Microbrewery (Section 1251.34)<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Religious Institutions (Section 1251.42)<br>• Research and Development<br>• Restaurant<br>  ○ Carry-Out<br>  ○ Drive-In<br>  ○ Drive-Thru (Section 1251.14)<br>  ○ Full Service<br>  ○ Limited Service<br>• Transportation and Logistics<br>• Utility-Scale Solar Energy Facility (Section 1251.52)<br>• Vehicle Repair, Major (Section 1251.53)<br>• Vehicle Repair, Minor<br>• Warehouse | |

| | |
|---|---|
| • Wholesale | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |
| (d) Existing Uses | |
| • Single Family Dwelling Unit Detached | |
| (e) Accessory Uses | |
| • Accessory Buildings (Section 1260.01)<br>• Office<br>• Outdoor Storage (Section 1251.37)<br>• Private Gardens (Section 1251.41)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46) | |
| (f) Dimension Regulations | |
| **Lot Standard** | **I-1** |
| Minimum Lot Area (s.f.) | 2,900 |
| Maximum Residential Units Per Acre | NA |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | ~~NL~~ Not Required |
| Front Yard Setback (ft.) | 25 |
| Rear Yard Setback (ft.) | 50 (H) |
| Side Yard Setback (ft.) | 25 (G) |
| Maximum Building Height | Not Required |
| Footnotes: Refer to Section 1241.03 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

1240.17 I-2 HEAVY INDUSTRIAL DISTRICT.

| **(a) Purpose** | |
|---|---|
| The purpose of this district is to provide suitable locations for manufacturing, assembling and fabricating uses, including large-scale or specialized industrial operations requiring good access by road and/or railroad and public and utility services. | |
| (b) Permitted Uses | (c) Special Land Uses |
| • Artisan/Maker Space<br>• Automobile Repair (Section 1251.05) | • Adaptive Reuse (Section 1251.01)<br>• Adult Business (Section 1251.01) |

- Automobile Service Station (Section 1251.06)
- Brewpub
- Carry Out Restaurant
- Child Care Centers
- Distillery, Winery – w/ or w/o food
- Drive-Thru ~~Restaurant~~ Business (Section 1251.14)
- Essential Services
- Farm Implements and Heavy Machinery Sales
- Financial Institutions
- ~~Full Service Restaurant~~
- Institutions of Higher Education
- Kennels (Section 1251.23)
- ~~Limited Service Restaurant~~
- Manufacturing
- Marihuana: Adult-Use Marihuana Microbusiness (Sections 1251.24, 1251.26)
- Marihuana: Adult-Use Marihuana Retailers (Sections 1251.24, 1251.25) (must be co-located with a Grower or Processor)
- Marihuana: Medical and Adult-Use Marihuana Grow Operation (Sections 1251.24, 1251.28)
- Marihuana: Medical and Adult-Use Marihuana Processing Facility (Sections 1251.24, 1251.29)
- Marihuana: Medical Marihuana Provisioning Center (Sections 1251.24, 1251.30) (must be co-located with a Grower or Processor)
- Marihuana Medical and Adult-Use Marihuana Safety Compliance Facility (Section 1251.24, 1251.31)
- Marihuana: Medical and Adult Use Marihuana Secure Transporter (Section 1251.24, 1251.32)
- Microbrewery (Section 1251.35)
- Outdoor Recreation/Public (Section 1251.36)
- Religious Institutions (Section 1251.42)
- Automobile Car Wash Establishment (Section 1251.04)
- Bar, Tavern, or Saloon
- Cemetery (Section 1251.11)
- Hospital > 20,000 s.f. (Section 1251.19)
- Junk or Salvage Yard (Section 1251.22)
- Nightclub
- Parking as a Principal Use
- Retail Sales
- Utility-Scale Wind Energy Facility (Section 1251.53)

| | |
|---|---|
| • Research and Development<br>• Restaurant<br>  ○ Carry-Out<br>  ○ Drive-In<br>  ○ Drive-Thru (Section 1251.14)<br>  ○ Full Service<br>  ○ Limited Service<br>• Transportation and Logistics<br>• Utility-Scale Solar Energy Facility (Section 1251.52)<br>• Vehicle Repair, Major (Section 1251.54)<br>• Vehicle Repair, Minor<br>• Warehouse<br>• Wholesale | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |
| (d) Existing Uses | |
| • Single Family Dwelling Unit Detached | |
| (e) Accessory Uses | |
| • Accessory Buildings (Section 1260.02)<br>• Carry-Out Restaurant<br>• Outdoor Storage (Section 1251.37)<br>• Office<br>• Private Gardens (Section 1251.40)<br>• State Licensed Child Care Family Home, 1-7 Children~~, with SLU approval (Section 1251.45)~~<br>• State Licensed Child Care Group Home, 8-14 Children~~, with SLU approval (Section 1251.46)~~ | |
| (f) Dimension Regulations | |
| **Lot Standards** | **I-2** |
| Minimum Lot Area (s.f.) | 2,900 |
| Maximum Residential Units Per Acre | NA |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | 25 |
| Rear Yard Setback (ft.) | 25 (h) |
| Side Yard Setback (ft.) | 25 (h) |

| | |
|---|---|
| Maximum Building Height | Not Required |

**Footnotes:** Refer to Chapter 1241 wherever a footnote is referenced in parentheses after one of the dimension regulations. Additionally, some uses have specific standards that overrule the dimensional regulations above. Refer to Chapter 1251 for dimensional regulations for specific uses.

1240.18 S SPARK DISTRICT.

**(a) Purpose**

It is the purpose of this district to encourage and facilitate redevelopment by implementing the following mixed-use policies:

1. Mix of Land Compatible Land Uses: Permit a range of compatible land uses, such as residential (from single-family to multi-family), public, institutional, office, retail, personal services use, and appropriate general business uses.
2. Walkability: Create a walkable, pedestrian-oriented development that does not conflict with motorized traffic.
3. Building Location and Site Design: Ensure that buildings have a strong relationship to the street by requiring development to be human-scale through appropriate building location and site design, including developing areas that include civic spaces and pedestrian amenities and requiring on-street parking along interior streets.
4. Use of Buildings: Allow compatible mixed uses to be located in a single building.

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Adaptive Reuse (Section 1251.01)<br>• Arena/Theater<br>• Artisan/Maker Space<br>• Assisted Senior Living (Section 1251.03)<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Bar, Tavern, or Saloon<br>• Bookstore<br>• Brewpub<br>• ~~Carry Out Restaurant~~<br>• Child Care Centers<br>• Community Garden (Section 1251.10)<br>• Distillery, Winery – w/ or w/o food<br>• ~~Drive In Restaurant~~<br>• Drive-Thru Business ~~Restaurant~~ (Section 1251.14)<br>• Essential Services<br>• Financial Institutions<br>• Government/Public Uses (Section 1251.16) | • Cemetery (Section 1251.11)<br>• Convalescent Homes, Nursing Homes, or Homes for the Aged (Section 1251.13)<br>• Private K-12 Schools<br>• Kennels (Section 1251.23)<br>• Marinas<br>• Parking as a Principal Use |

| | |
|---|---|
| • Greenhouse/Nursery (Principal Use)<br>• Hotel (Section 1251.20)<br>• Independent Senior Living with Services (Section 1251.21)<br>• Indoor Recreation<br>• Institutions of Higher Education<br>• ~~Limited Service Restaurant~~<br>• Medical or Dental Clinic < 20,000 s.f.<br>• Microbrewery (Section 1251.35)<br>• Motel (Section 1251.34)<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Nightclub<br>• Office<br>• Outdoor Recreation/Public (Section 1251.36)<br>• Outdoor Recreation/Private (Section 1251.36)<br>• Personal Service Establishments (Section 1251.40)<br>• Public K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• Research and Development<br>• Restaurant<br>  ○ Carry-Out<br>  ○ Drive-In<br>  ○ Drive-Thru (Section 1251.14)<br>  ○ Full Service<br>  ○ Limited Service<br>• Retail Sales<br>• Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached<br>• Transportation and Logistics<br>• Two-Family Dwelling Units<br>• Warehouse<br>• Wholesale | |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |
| (d) Accessory Uses | |
| • Accessory Buildings (Section 1260.02) | |

- Accessory Dwelling Unit
- Farmers Market (Section 1251.15)
- Personal-Scale Wind Energy Facility (Section 1251.39)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.45)

(e) Dimension Regulations

| Lot Standards | S |
|---|---|
| Minimum Lot Area (s.f.) | ~~2,900~~ Not Required |
| Maximum Residential Units Per Acre | 20 |
| Minimum Lot Width (ft.) | 60 |
| Minimum Lot Depth (ft.) | 100 (Section 1240(a)(7)) |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | Not Required |
| Rear Yard Setback (ft.) | Not Required |
| Side Yard Setback (ft.) | Not Required |
| Maximum Building Height | Not Required |

**Footnotes:** Refer to Section 1241.04 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule these dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. All development in the S Spark District is eligible for administrative approval subject to the discretion of the Zoning Administrator.

1240.19 OFFICIAL ZONING MAP AND INTERPRETATION.

The boundaries of the districts are shown upon the map which is made a part of this Zoning Code, which map is designated as the "Official Zoning Map." Such map and all the notations, references and other information shown thereon are a part of this Zoning Code and have the same force and effect as if they were fully set forth or described herein.

Where, due to the scale, illegibility or detail of the map, there is uncertainty, contradiction or conflict as to the location of a district boundary, the interpretation of the exact location of such boundary shall be determined by the Zoning Board of Appeals.

(Ord. 10-2020.Passed 11-24-20.)

1240.20 DISTRICT BOUNDARY UNCERTAINTIES.

Where uncertainty exists or arises with respect to the boundaries of the various districts as shown on the zoning district map accompanying and made a part of this zoning ordinance in its original form, the following rules apply:

(a) The district boundaries are either streets, alleys, rights of way or watercourses, unless otherwise shown. Where such districts are bounded approximately by streets, alleys, rights of way or watercourses, the same shall be construed to be the boundaries of the districts unless such boundaries are fixed by dimensions as shown on the map.

(b) Where the district boundaries are not otherwise indicated, and where the property has been or may hereafter be divided into blocks and lots, the district boundaries shall be construed to be the lot lines. Where such districts are bounded approximately by lot lines, the lot lines shall be construed to be the boundaries of the districts, unless the boundaries are fixed by dimensions as shown on the map.

(c) In any determined by the use of the scale appearing on the map, unless the same are indicated by dimensions as shown on the map.

(Ord. 10-2020.Passed 11-24-20.)

1240.21 ZONING DISTRICTS.

(a) Conformity with District Regulations Required. Except as hereinafter provided:

(1) No building or structure shall be erected, converted, enlarged, reconstructed, moved or structurally altered, nor shall any building or land be used, except for a purpose permitted in the district in which the building or land is located.

(2) No building shall be erected, converted, enlarged, reconstructed or structurally altered to exceed the height limit established for the district in which the building is located.

(3) No building shall be erected, converted, enlarged, reconstructed or structurally altered except in conformity with the yard and lot area regulations of the district in which the building is located.

(4) No building shall be erected or structurally altered to the extent specifically provided hereinafter except in conformity with the off-street parking and loading regulations of the district in which such building is located, except for as otherwise allowed in Chapter 1270.

(5) No building or structure shall be enlarged or altered and no use of a premises shall be changed in any way which increases its nonconformity, except for as otherwise allowed in Chapter 1270.

(6) The minimum yards, parking spaces and other open spaces, including the lot area per family, required by this Zoning Code for each and every building existing at the time of passage of this Zoning Code (November 24, 2020) or for any building hereafter erected, shall not be encroached upon or considered as yard or open space requirements for any other building, nor shall any lot area be reduced beyond the district requirements of this Zoning Code.

(7) Every building hereinafter erected or structurally altered shall be on a lot, provided that a lot may be subdivided or a series of lots may be increased in number and decreased in size, so long as each new lot is not less than 100 feet in depth and in conformity with the width requirements of Chapter 1240. In no case shall there be more than one main building on one lot unless otherwise provided in this Zoning Code.

(b) Essential Services. Essential services shall be permitted as authorized and regulated by law and ordinances of the City. It is the intention of this Zoning Code to exempt such essential services from the application of this Zoning Code.

(c) Land Under Water; Streets. All areas within the City which are under water or a public right-of-way and not shown as included within any district shall be subject to all of the regulations of the district which immediately adjoins the water or right-of-way area. If the water or right-of-way area adjoins two or more districts, the boundaries of each district shall be construed to extend into the water or right-of-way area in a straight line until they meet the other district.

(d) Annexed Land.

(1) Whenever any areas are annexed to the City, one of the following conditions shall prevail:

A. All lots, tracts or land which may hereafter be annexed to the City shall be classified as being in whichever district as most clearly conforms to the zoning that existed in the annexed area. Such classifications shall be recommended by the Planning Commission to the City Commission and the City Commission shall approve the same by resolution.

B. If any lot, tract or land is not subject to zoning at the time of annexation, it shall be classified as R-IA Single-Family whenever the land is vacant and otherwise shall be classified into whatever district of this Zoning Code most closely conforms to the existing use of the annexed area. Such classification shall be approved in the same manner as described for property that is zoned when annexed.

(2) In all cases, there shall be a public hearing, within a reasonable time after annexation, on the question of a permanent zoning classification. The hearing before the Planning Commission and the subsequent action by the City Commission shall follow the procedure to establish amendments in accordance with Section 1281.01(c).

(e) Vacation of Streets. Whenever any street, alley or other public way is vacated by official action of the City Commission or by the courts, the zoning district adjoining each side of such street, alley or other public way shall be automatically extended to the center of such vacation and all area included in the vacation shall then and henceforth be subject to all appropriate regulations of the extended district.

(f) Uses Not Specifically Mentioned. The City Zoning Administrator or their designee shall have the power to classify a use, which is not specifically mentioned in this Zoning Code, along with a comparable permitted or prohibited use for the purpose of the use regulations in any district. The City Planning and Zoning Administrator or their designee may refer these appeals to the Zoning Board of Appeals.

Chapter 1241
Schedule of Regulations

## 1241.01 STATEMENT OF PURPOSE.

The purpose of this Chapter is to provide area, height, and placement regulations for districts established by this Zoning Code.

## 1241.02 SCHEDULE OF REGULATIONS.

| Schedule of Regulations | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Zoning District | | | Lot Area, Lot Width, and Building Coverage Requirements (Section 1247.07(a) ) | | Minimum Yard Setbacks | | | Maximum Building Height | |
| | Max. Residential Units Per Acre | Min. Lot Area (sq. ft.) | Min. Lot Width (ft.) | Max. % Building Coverage | Front (ft.) (Section 1247.07 (b)) | Side (ft.) (Section 1247.07(c)) | Rear (ft.) | Feet | Stories |
| G, Green District | 1 | Not Required | 150 | Not Required | 35 | 15 | 35 | 35 | 2.5 |
| AG, Agricultural District | .33 | Not Required | 150 | Not Required | (c) | (c) | (c) | 35 | 2.5 |
| R-1R, Single Family Residential District | 1.45 | Not Required | 120 | Not Required | 35 | 15 | 35 | 35 | 2.5 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| R-1A, Single Family Residential District | 5.8 | Not Required | 60 | 30 | 30 | 8 | 35 | 35 | 2.5 |
| R-1B, Single Family Residential District | 8.7 | Not Required | 50 | 30 | 25 | 6 | 30 | 35 | 2.5 |
| R-2, Two Family Residential District | 8.7 | Not Required | 50 | 25 | 25 | 5 | 25 | 35 | 2.5 |
| R-3, Multiple Family District | 15 | Not Required | 40 | 25 | 25 (f) | 5 (f) | 25 (f) | 45 | 4 |
| MFR, High Density Multiple Family District | 20 | Not Required | 120 | 30 | 35 | 20 | 20 | 45 | 4 |
| B-1, Corridor Commercial District | NA | Not Required | 60 | Not Required | 35 | 20 | 20 | 50 | 3 |
| B-2, Regional Commercial District | NA | 25,000 | 150 | Not Required | 35 | 20 | 20 | 50 | 3 |
| T-3, Neighborhood Commercial District (Section 1241.03 (i)) | 20(d) | Not Required | 30 | 40 | See Section 1250.04(d)(1)A ~~30~~ | 10 (g) | 20 (h) | 36 | 3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| T-4, Downtown Commercial, Community Services, Community Open Space and Recreation (Section 1241.03(i)) | 20(d) | Not Required | 40 | Not Required | See Section 1250.04(d)(1)A | Not Required | Not Required | Not Required | Not Required |
| T5, Downtown Commercial District (Section 1241.03(i)) | 20(d) | Not Required | 30 | Not Required | See Section 1250.04(d)(1)A | Not Required | Not Required | Not Required | Not Required |
| I-1, Light Industrial District | NA | 2,900 | 60 | Not Required | 25 | 25 (g) | 50 (h) | Not Required | Not Required |
| I-2, Heavy Industrial District | NA | 2,900 | 60 | Not Required | 25 | 25 (g) | 50 (h) | Not Required | Not Required |
| S, Spark District | 20 | Not Required | 60 | Not Required | Not Required | Not Required | Not Required | Not Required | Not Required |
| Footnotes: Refer to Section 1241.03 whenever a lowercase letter is referenced in parentheses. . Additionally, some uses have specification standards that overrule these dimensional regulations. Refer to Chapter 1251 for dimensional regulations for specific uses. | | | | | | | | | |

## 1241.03 FOOTNOTES TO SCHEDULE OF REGULATIONS.

(a) Whenever a lot has less area or width than required in this chapter, but was a lot of record at the time of the adoption of this Zoning Code (Ordinance 10-2020, adopted on November 24, 2020), such lot may be occupied by any of the uses permitted in the district in which it is located. The use must meet all of the other requirements of this Zoning Code.

(b) In R Districts, where required front yards exceed twenty-five feet, only one front yard in excess of twenty-five feet shall be required, except that south of I-94 on lots fronting on Beckley Road or Capital Avenue, S.W., all such front yards shall be a minimum of fifty feet.

(c) Thirty-five feet to dwelling only.

(d) The maximum residential density allowed in the MFR High Density Multiple Family District and the T-3 Neighborhood Commercial District shall not exceed twenty units per acre. There is no residential density limit in the T-4 and T-5 Districts. However, all other dimensional regulations in those districts shall apply.

(e) No new multifamily dwelling in the MFR High Density Multiple Family District shall be established having a site area of less than 7,500 sq. ft.

(f) Provided that the front and rear yards are increased by one foot for each foot of building height exceeding thirty-five feet, and that the side yards are increased over the minimum requirement by one foot for each two feet of building height over thirty-five feet.

(g) No side yard shall be required, except that a side yard shall be provided on the side of a lot or tract adjoining a residential use or district. If an alley separates such a lot from a residential use or district, no side yard shall be required.

(h) A rear yard shall be required only upon that portion of a lot or tract abutting on a residential district or adjacent to a residential use. Where a rear yard abuts an alley, the width of one-half of the alley may be considered part of the required yard.

(i) The schedule of regulations is intended to be complementary with the requirements of Section 1250.04, Form-Based Development Standards for the T-3, T-4, and T-5 Districts; however, in any instance where there is apparent conflict the provisions of Section 1250.04 shall control.

1241.04 HEIGHT REQUIREMENTS.

(a) Exceptions and Modifications.

(1) Chimneys, cooling towers, elevator bulkheads, fire towers, gas tanks, solariums, steeples, penthouses, stacks, stage towers, scenery lofts, tanks, water towers, ornamental towers and spires, wireless, television or radio towers and necessary mechanical appurtenances shall not be included in determining the height or number of stories of a building.

(2) The limitation on the number of stories shall not apply to buildings used exclusively for storage purposes, provided that such buildings do not exceed the height permitted in the district in which they are located.

(b) Airport Height Restrictions. Additional height limitations exist in areas designated on the official zoning map within approach zones at the Battle Creek Executive Airport at Kellogg Field. These restrictions are further delineated in Section 1250.03.

1241.05 LOT AREA AND WIDTH REQUIREMENTS.

(a) Exceptions.

(1) Two or more parcels, lots of record or platted lots, when contiguous and held in common ownership, may be treated as a single lot for purposes of the dimensional

requirements of this Zoning Code, provided that such lots are located in the same district. This does not prevent the use of the lots as separate stand-alone parcels.

(2) Where a single lot of record, platted lot or parcel of land is within two or more zoning districts, it may be treated as two or more lots for purposes of this Zoning Code, provided that each portion has the required frontage on a street or place and meets all of the other standards for the district in which it is located.

(3) Where a lot of record on the effective date of this Zoning Code (Ordinance 10-2020, adopted on November 24, 2020) is less than fifty feet in width, the required side yard may be reduced to 10% of the width of the lot, provided that no side yard is less than four feet.

(4) More than one main multiple dwelling or commercial or industrial building may be located upon a lot, provided that such building conforms to all yard requirements for the district in which the lot is located.

(5) For purposes of this Zoning Code, the width of a lot shall be determined to be the width at the required front yard setback line.

(b) Prohibition of Flag Lots. The creation of flag or panhandle lots is prohibited.

## 1241.06 SINGLE FAMILY RESIDENTIAL SITING REQUIREMENTS.

(a) Purpose and Application. This chapter is necessary in order for the City to more specifically address the special requirements and regulations associated with the on-site placement of manufactured housing to assure favorable comparison with site-built housing. However, it shall apply to all single-family dwellings.

(b) Location. The siting of a single-family dwelling may occur on any lot located in a district that permits such use, provided the dwelling meets the requirements established for that particular district and the requirements of this chapter.

(c) General Requirements.

(1) A single-family dwelling shall have a minimum first floor area of 450 square feet and a minimum width of twenty feet on the shortest side and a minimum internal height of seven and one-half feet.

(2) The building shall be located and constructed so as to meet the minimum off-street parking and loading requirements set forth in Chapter 1261, and conform to the Schedule of Regulations set forth in Chapter 1241, if located in an R District, any accessory buildings and uses shall meet the residential district requirements set forth in Section 1260.01.

(3) Construction of site-built and manufactured houses without mobile chassis shall be in compliance with the latest adopted Building Code of the City. Manufactured houses with mobile chassis, shall meet the requirements of the HUD Code.

(4) The dwelling shall be attached to a permanent foundation as required in the latest adopted Building Code of the City. Manufactured houses shall be supported and anchored as required by the latest adopted Building Code of the City, or as required by the Michigan Mobile Home Commission rules.

(5) When setting on a permanent foundation, wheels shall be removed from manufactured houses so equipped, and the screening of the towing mechanism, undercarriage or chassis shall be done with non-load bearing, fire-resistant skirting materials of similar or the same composition as the home's outside surface. Such screening shall be installed in a manner so as to resist damage under normal weather conditions, shall be vented and shall have an access panel provided for in accordance with the Michigan Mobile Home Commission rules.

(6) The dwelling shall be connected to a public sanitary sewer system if such exists within 200 feet of the structure or, if no public sewer is so available, a private septic tank may be established if it is approved by the County Health Department. The dwelling may be connected to a public water system if such is available, or to a private well approved by the County Health Department.

(7) Additions to dwellings shall be built in conformity with the latest adopted Building Code of the City, and shall be constructed with similar materials, be similar in appearance and be of similar quality of workmanship as in the original structure.

(8) Dwellings must include storage area, either in the basement, in an attic area, in closet areas or in a separate fully enclosed structure. Such storage area shall be at least 5% of the total square footage of interior living area of the dwelling or 525 cubic feet, whichever is less.

(9) Sixty percent of the roof configuration shall be a minimum of 2.5 inches per every twelve inches of run-slope and shall meet or exceed all applicable roof snow load and strength requirements.

(d) Design Standards.

(1) The dwelling shall be aesthetically compatible in design and appearance with adjacent existing residential buildings. Aesthetic compatibility shall not be construed to prohibit innovative design concepts involving, nor limit such matters as solar energy, view, unique land contour or relief from the common or standard designed home.

(2) The aesthetic compatibility of design and appearance shall be determined by the Planning and Zoning Administrator upon review of the plans submitted for a particular dwelling.

(3) Determination of incompatibility of a particular dwelling may be appealed by an aggrieved party to the Zoning Board of Appeals within a period of fifteen days of the receipt of notice of the Planning and Zoning Administrators decision.

(e) Exemption for Mobile Home Parks. The provisions of this chapter shall not apply to a mobile home located in a licensed mobile home park, except to the extent required by State or Federal law.

1241.07 YARD REQUIREMENTS.

(a) Building Projections. Every part of a required yard shall be open to the sky and unobstructed by a building, except for the following may project into required yards:

(1) Accessory buildings as permitted in Section 1260.01.

(2) The ordinary projection of sills, belt courses, cornices, eaves and ornamental features not exceeding twelve inches.

(3) Permanent awnings projecting not more than four feet into a required yard.

(4) Terraces, uncovered porches, wheelchair ramps and ornamental features that do not rise more than four feet above the ground.

(b) Front Yards.

(1) Lots having frontage on a lake, brook, stream, river or other watercourse shall be provided with a required front yard on this water frontage, as well as that, which might be required on any street frontage as specified for the district in which it is situated.

(2) On corner lots, a front yard shall be required along each street.

(3) Interior lots having a frontage on two streets shall be provided with the required front yard on both streets.

(4) Where front yards have been established, or may be required on each of two intersecting streets, there shall be a front yard on each street side of a corner lot, with the following exceptions:

A. In R Districts, where required front yards exceed twenty-five feet, only one front yard in excess of twenty-five feet shall be required, except that south of I-94 on lots fronting on Beckley Road or Capital Avenue, S.W., all such front yards shall be a minimum of fifty feet.

B. The width of the principal building located on a lot of record need not be less than twenty-feet when the owner of record can show that the ownership and control of any adjacent lot or lots of record are by another person.

(5) Where 40% or more of frontages on the same side of a street between intersecting streets are developed with buildings that have a front yard less in depth than otherwise required by this chapter, new buildings shall be erected no closer to the street than the average front yard so established by the existing buildings on both sides of the lot to be used, except that this subsection shall not apply south of I-94 to lots fronting Beckley Road or Capital Avenue, S.W.

(6) Where alleys separate lots, the width of the alley shall not be considered in the computation of frontage, nor shall the alley be considered an intersecting street.

(7) No storage or parking of vehicles is permitted on any portion of a required front yard in any R District or T-3 District, except as such parking or storage may intermittently occur on legally authorized driveways and as otherwise may be permitted in this Zoning Code, unless otherwise allowed in this code.

(c) Side Yards.

(1) For the purpose of the side yard regulations, a two-family or multiple dwelling may be considered as one building occupying one lot.

(2) Whenever the wall of any building adjoining a side yard within any Single-Family or Two-Family Residential District exceeds a length of fifty feet, the width of the side yard shall be increased by one foot for each ten feet of wall length in excess of fifty feet.

(d) Exceptions for Commercial and Industrial Districts.

(1) Parking shall be permitted in the required front yard in any B-1, B-2, I-1 or I-2 District.

(2) Whenever a commercial or industrial district adjoins an R District or a residential use, no off-street parking required for the commercial or industrial development shall be located within the required yard within fifty feet from the residential structure or the R District boundary.

(3) Fences of a concealment type, not to include chain link, shall be erected on the common lot line whenever such lot line separates a Commercial or Industrial District from an R District or a residential structure. Such fence shall be installed concurrently with the commercial or industrial use of the land or building. The height of such fence shall conform to the requirements of Section 1260.02 (e).

Chapter 1241
Schedule of Regulations

1241.01 STATEMENT OF PURPOSE.

The purpose of this Chapter is to provide area, height, and placement regulations for districts established by this Zoning Code.

1241.02 SCHEDULE OF REGULATIONS.

| Schedule of Regulations | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Zoning District | | | Lot Area, Lot Width, and Building Coverage Requirements (Section 1247.07(a) ) | | Minimum Yard Setbacks | | | Maximum Building Height | |
| | Max Residential Units Per Acre | Min. ~~imum~~ Lot Area (sq. ft.) | Min. ~~imum~~ Lot Width (ft.) | Max. ~~imum~~ ~~%Percent of~~ Building Coverage | Front (ft.) (Section 1247.07 (b)) | Side (ft.) (Section 1247.07 (c)) | Rear (ft.) | Feet | Stories |
| G, Green District | 1 | ~~43,560~~ Not Required | 150 | Not Required | 35 | 15 | 35 | 35 | 2.5 |
| AG, Agricultural District | .33 | ~~130,680~~ Not Required | 150 | Not Required | (c) | (c) | (c) | 35 | 2.5 |
| R-1R, Single Family | 1.45 | ~~30,000~~ | 120 | Not Required | 35 | 15 | 35 | 35 | 2.5 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Residential District | | Not Required | | | | | | | |
| R-1A, Single Family Residential District | 5.8 | ~~7,500~~ Not Required | 60 | 30 | 30 | 8 | 35 | 35 | 2.5 |
| R-1B, Single Family Residential District | 8.7 | ~~5,000~~ Not Required | 50 | 30 | 25 | 6 | 30 | 35 | 2.5 |
| R-2, Two Family Residential District | 8.7 | ~~5,000~~ Not Required | ~~5~~60 | 25 | 25 | 5 | 25 | 35 | 2.5 |
| R-3, Multiple Family District | 15 | ~~42,090 0~~ Not Required | ~~4~~60 | 25 | 25 (f) | 5 (f) | 25 (f) | 45 | 4 |
| MFR, High Density Multiple Family District | 20 | ~~2,170 (d), (e)~~ Not Required | 120 | 30 | 35 | 20 | 20 | 45 | 4 |
| B-1, Corridor Commercial District | NA | ~~2,900~~ Not Required | 60 | Not Required | 35 | 20 | 20 | 50 | 3 |
| B-2, Regional Commercial District | NA | 25,000 | 150 | Not Required | 35 | 20 | 20 | 50 | 3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| T-3, Neighborhood Commercial District (Section 1241.03 (i)) | 20(d) | ~~2,900 (d)~~ Not Required | ~~6~~30 | 40 | See Section 1250.04(d)(1)A ~~30~~ | 10 (g) | 20 (h) | 36 | 3 |
| T-4, Downtown Commercial, Community Services, Community Open Space and Recreation (Section 1241.03(i)) | 20(d) | ~~42,090 0 (d)~~ Not Required | ~~466~~0 | Not Required | ~~Not Required~~ See Section 1250.04(d)(1)A | Not Required | Not Required | Not Required | Not Required |
| T5, Downtown Commercial District (Section 1241.03(i)) | 20(d) | ~~2,900 (d)~~ Not Required | ~~6~~30 | Not Required | ~~Not Required~~ See Section 1250.04(d)(1)A | Not Required | Not Required | Not Required | Not Require |
| I-1, Light Industrial District | NA | 2,900 | 60 | Not Required | 25 | 25 (g) | 50 (h) | Not Required | Not Required |
| I-2, Heavy Industrial District | NA | 2,900 | 60 | Not Required | 25 | 25 (g) | 50 (h) | Not Required | Not Required |
| S, Spark District | 20 | ~~2,900~~ Not Required | 60 | Not Required | Not Required | Not Required | Not Required | Not Required | Not Required |
| Footnotes: Refer to Section 1241.03 whenever a lowercase letter is referenced in parentheses. . Additionally, some uses have specification standards that overrule these dimensional regulations. Refer to Chapter 1251 for dimensional regulations for specific uses. | | | | | | | | | |

1241.03 FOOTNOTES TO SCHEDULE OF REGULATIONS.

(a) Whenever a lot has less area or width than required in this chapter, but was a lot of record at the time of the adoption of this Zoning Code (Ordinance 10-2020, adopted on November 24, 2020), such lot may be occupied by any of the uses permitted in the district in which it is located. The use must meet all of the other requirements of this Zoning Code.

(b) In R Districts, where required front yards exceed twenty-five feet, only one front yard in excess of twenty-five feet shall be required, except that south of I-94 on lots fronting on Beckley Road or Capital Avenue, S.W., all such front yards shall be a minimum of fifty feet.

(c) Thirty-five feet to dwelling only.

(d) The maximum residential density allowed in the MFR High Density Multiple Family District and the T-3 Neighborhood Commercial District shall not exceed twenty units per acre. There is no residential density limit in the T-4 and T-5 Districts. However, all other dimensional regulations in those districts shall apply.

(e) No new multifamily dwelling in the MFR High Density Multiple Family District shall be established having a site area of less than 7,500 sq. ft.

(f) Provided that the front and rear yards are increased by one foot for each foot of building height exceeding thirty-five feet, and that the side yards are increased over the minimum requirement by one foot for each two feet of building height over thirty-five feet.

(g) No side yard shall be required, except that a side yard shall be provided on the side of a lot or tract adjoining a residential use or district. If an alley separates such a lot from a residential use or district, no side yard shall be required.

(h) A rear yard shall be required only upon that portion of a lot or tract abutting on a residential district or adjacent to a residential use. Where a rear yard abuts an alley, the width of one-half of the alley may be considered part of the required yard.

(i) The schedule of regulations is intended to be complementary with the requirements of Section 1250.04, Form-Based Development Standards for the T-3, T-4, and T-5 Districts; however, in any instance where there is apparent conflict the provisions of Section 1250.04 shall control.

1241.04 HEIGHT REQUIREMENTS.

(a) Exceptions and Modifications.

(1) Chimneys, cooling towers, elevator bulkheads, fire towers, gas tanks, solariums, steeples, penthouses, stacks, stage towers, scenery lofts, tanks, water towers, ornamental towers and spires, wireless, television or radio towers and necessary mechanical appurtenances shall not be included in determining the height or number of stories of a building.

(2) The limitation on the number of stories shall not apply to buildings used exclusively for storage purposes, provided that such buildings do not exceed the height permitted in the district in which they are located.

(b) Airport Height Restrictions. Additional height limitations exist in areas designated on the official zoning map within approach zones at the Battle Creek Executive Airport at Kellogg Field. These restrictions are further delineated in Section 1250.03.

1241.05 LOT AREA AND WIDTH REQUIREMENTS.

(a) Exceptions.

(1) Two or more parcels, lots of record or platted lots, when contiguous and held in common ownership, may be treated as a single lot for purposes of the dimensional requirements of this Zoning Code, provided that such lots are located in the same district. This does not prevent the use of the lots as separate stand-alone parcels.

(2) Where a single lot of record, platted lot or parcel of land is within two or more zoning districts, it may be treated as two or more lots for purposes of this Zoning Code, provided that each portion has the required frontage on a street or place and meets all of the other standards for the district in which it is located.

(3) Where a lot of record on the effective date of this Zoning Code (Ordinance 10-2020, adopted on November 24, 2020) is less than fifty feet in width, the required side yard may be reduced to 10% of the width of the lot, provided that no side yard is less than four feet.

(4) More than one main multiple dwelling or commercial or industrial building may be located upon a lot, provided that such building conforms to all yard requirements for the district in which the lot is located.

(5) For purposes of this Zoning Code, the width of a lot shall be determined to be the width at the required front yard setback line.

(b) Prohibition of Flag Lots. The creation of flag or panhandle lots is prohibited.

1241.06 SINGLE FAMILY RESIDENTIAL SITING REQUIREMENTS.

(a) Purpose and Application. This chapter is necessary in order for the City to more specifically address the special requirements and regulations associated with the on-site placement of manufactured housing to assure favorable comparison with site-built housing. However, it shall apply to all single-family dwellings.

(b) Location. The siting of a single-family dwelling may occur on any lot located in a district that permits such use, provided the dwelling meets the requirements established for that particular district and the requirements of this chapter.

(c) General Requirements.

(1) A single-family dwelling shall have a minimum first floor area of 450 square feet and a minimum width of twenty feet on the shortest side and a minimum internal height of seven and one-half feet.

(2) The building shall be located and constructed so as to meet the minimum off-street parking and loading requirements set forth in Chapter 1261, and conform to the Schedule of Regulations set forth in Chapter 1241, if located in an R District, any accessory buildings and uses shall meet the residential district requirements set forth in Section 1260.01.

(3) Construction of site-built and manufactured houses without mobile chassis shall be in compliance with the latest adopted Building Code of the City. Manufactured houses with mobile chassis, shall meet the requirements of the HUD Code.

(4) The dwelling shall be attached to a permanent foundation as required in the latest adopted Building Code of the City. Manufactured houses shall be supported and anchored as required by the latest adopted Building Code of the City, or as required by the Michigan Mobile Home Commission rules.

(5) When setting on a permanent foundation, wheels shall be removed from manufactured houses so equipped, and the screening of the towing mechanism, undercarriage or chassis shall be done with non-load bearing, fire-resistant skirting materials of similar or the same composition as the home's outside surface. Such screening shall be installed in a manner so as to resist damage under normal weather conditions, shall be vented and shall have an access panel provided for in accordance with the Michigan Mobile Home Commission rules.

(6) The dwelling shall be connected to a public sanitary sewer system if such exists within 200 feet of the structure or, if no public sewer is so available, a private septic tank may be established if it is approved by the County Health Department. The dwelling may be connected to a public water system if such is available, or to a private well approved by the County Health Department.

(7) Additions to dwellings shall be built in conformity with the latest adopted Building Code of the City, and shall be constructed with similar materials, be similar in appearance and be of similar quality of workmanship as in the original structure.

(8) Dwellings must include storage area, either in the basement, in an attic area, in closet areas or in a separate fully enclosed structure. Such storage area shall be at least 5% of the total square footage of interior living area of the dwelling or 525 cubic feet, whichever is less.

(9) Sixty percent of the roof configuration shall be a minimum of 2.5 inches per every twelve inches of run-slope and shall meet or exceed all applicable roof snow load and strength requirements.

(d) Design Standards.

(1) The dwelling shall be aesthetically compatible in design and appearance with adjacent existing residential buildings. Aesthetic compatibility shall not be construed to prohibit innovative design concepts involving, nor limit such matters as solar energy, view, unique land contour or relief from the common or standard designed home.

(2) The aesthetic compatibility of design and appearance shall be determined by the Planning and Zoning Administrator upon review of the plans submitted for a particular dwelling.

(3) Determination of incompatibility of a particular dwelling may be appealed by an aggrieved party to the Zoning Board of Appeals within a period of fifteen days of the receipt of notice of the Planning and Zoning Administrators decision.

(e) Exemption for Mobile Home Parks. The provisions of this chapter shall not apply to a mobile home located in a licensed mobile home park, except to the extent required by State or Federal law.

1241.07 YARD REQUIREMENTS.

(a) Building Projections. Every part of a required yard shall be open to the sky and unobstructed by a building, except for the following may project into required yards:

(1) Accessory buildings as permitted in Section 1260.01.

(2) The ordinary projection of sills, belt courses, cornices, eaves and ornamental features not exceeding twelve inches.

(3) Permanent awnings projecting not more than four feet into a required yard.

(4) Terraces, uncovered porches, wheelchair ramps and ornamental features that do not rise more than four feet above the ground.

(b) Front Yards.

(1) Lots having frontage on a lake, brook, stream, river or other watercourse shall be provided with a required front yard on this water frontage, as well as that, which might be required on any street frontage as specified for the district in which it is situated.

(2) On corner lots, a front yard shall be required along each street.

(3) Interior lots having a frontage on two streets shall be provided with the required front yard on both streets.

(4) Where front yards have been established, or may be required on each of two intersecting streets, there shall be a front yard on each street side of a corner lot, with the following exceptions:

A. In R Districts, where required front yards exceed twenty-five feet, only one front yard in excess of twenty-five feet shall be required, except that south of I-94 on lots fronting on Beckley Road or Capital Avenue, S.W., all such front yards shall be a minimum of fifty feet.

B. The width of the principal building located on a lot of record need not be less than twenty-feet when the owner of record can show that the ownership and control of any adjacent lot or lots of record are by another person.

(5) Where 40% or more of frontages on the same side of a street between intersecting streets are developed with buildings that have a front yard less in depth than otherwise required by this chapter, new buildings shall be erected no closer to the street than the average front yard so established by the existing buildings on both sides of the lot to be used, except that this subsection shall not apply south of I-94 to lots fronting Beckley Road or Capital Avenue, S.W.

(6) Where alleys separate lots, the width of the alley shall not be considered in the computation of frontage, nor shall the alley be considered an intersecting street.

(7) No storage or parking of vehicles is permitted on any portion of a required front yard in any R District or T-3 District, except as such parking or storage may intermittently occur on legally authorized driveways and as otherwise may be permitted in this Zoning Code, unless otherwise allowed in this code.

(c) Side Yards.

(1) For the purpose of the side yard regulations, a two-family or multiple dwelling may be considered as one building occupying one lot.

(2) Whenever the wall of any building adjoining a side yard within any Single-Family or Two-Family Residential District exceeds a length of fifty feet, the width of the side yard shall be increased by one foot for each ten feet of wall length in excess of fifty feet.

(d) Exceptions for Commercial and Industrial Districts.

(1) Parking shall be permitted in the required front yard in any B-1, B-2, I-1 or I-2 District.

(2) Whenever a commercial or industrial district adjoins an R District or a residential use, no off-street parking required for the commercial or industrial development shall be located within the required yard within fifty feet from the residential structure or the R District boundary.

(3) Fences of a concealment type, not to include chain link, shall be erected on the common lot line whenever such lot line separates a Commercial or Industrial District from an R District or a residential structure. Such fence shall be installed concurrently with the commercial or industrial use of the land or building. The height of such fence shall conform to the requirements of Section 1260.02 (e).

# CHAPTER 1251
# Standards Applicable to Specific Uses

## 1251.01 ADAPTIVE REUSE

(a) Purpose. To allow for the adaptive reuse of vacant buildings in the city that have maintained their structural integrity but the use they were intended to serve is no longer needed, desired or allowed in the zoning district where they are located. The proposed use shall be in harmony with or beneficial to the surrounding uses and it must not do any of the following:

(1) Promote undue concentration of traffic throughout the day or at any specific time-period that would be uncharacteristic or disruptive to the surrounding uses.

(2) The use will not create activities, processes, materials, equipment or conditions of operation that will be detrimental to any person, property or the general welfare by reason of an excessive generation of noise, smoke, fumes, glare, vibrations or odors.

## 1251.02 ADULT BUSINESSES.

(a) Purposes. In the development and execution of this chapter, it is recognized that there are some uses, which because of their very nature have serious operational characteristics, particularly when concentrated or when one or more of them are located in near proximity to residential zones, thereby having a deleterious effect upon adjacent areas. Regulation of these uses through location is necessary to ensure that the adverse effects of such uses will not contribute to the blighting or downgrading of the surrounding neighborhood. The provisions of this chapter are intended to prevent a concentration of these uses within any one area and to prevent deterioration or blighting of nearby residential neighborhoods.

(b) Restrictions on Location. An adult business may be located in the city only in accordance with the following restrictions:

(1) All such businesses shall be limited to areas zoned B-1, I-1 or I-2, excluding those areas so zoned within the boundaries of the Battle Creek Tax Increment Financing Authority District known as Fort Custer Industrial Park, as approved by the City Commission in Resolution 27, passed April 28, 1986, and amended by Resolution 338, passed September 9, 1986 and excluded from within the boundaries of the Dickman Road Business Improvement District established by City Commission Resolution 351 on September 7, 1999.

(2) No adult business shall be located within 1,000 feet of another adult business; within 1,000 feet of a church, school, or public park; or within 300 feet of a residential or agricultural zoning district.

(c) Miscellaneous Requirements.

(1) The height, yard, lot area, lot width, building coverage, sign and parking requirements of an adult business shall conform to the requirements for the zone in which it is located.

(2) The distance between an adult business and a church, school, public park, or a residential or agricultural zoning district shall be measured in a straight line, without regard to intervening structures or objects, from the nearest property line of the adult business or building containing an adult business to the nearest property line of the protected use or residential or agricultural district.

(3) No person shall reside in or permit any person to reside in the premises of an adult business.

(d) Exceptions. The provisions of this chapter regarding massage parlors shall not apply to hospitals, sanitariums, nursing homes or medical clinics, or to the offices of a physician, surgeon, chiropractor, osteopath or physical therapist, duly licensed by the state, or to massage therapists licensed by the State under Part 179A of the Public Health Code, MCL. 333.17951 et seq.

(e) Penalty; Equitable Remedies.

(1) A person who violates or fails to comply with any of the provisions of this chapter is responsible for a Class F municipal civil infraction and shall be subject to the civil fines provided in Section 202.98.

(2) Notwithstanding subsection (a) hereof, the city may employ any remedy available at law or in equity to prevent or remedy a violation of any provision of this chapter.

1251.03 ASSISTED SENIOR LIVING.

(a) Minimum Site Area. The minimum parcel area shall contain 2,000 square feet per living bed.

(b) Required Minimum Usable Floor Area in Square Feet Per Dwelling Unit.

(1) State of Michigan licensing requirements regulate assisted living unit size.

(2) No living unit within a senior housing development may contain more than two bedrooms.

(c) Maximum Building Height. The maximum building height in an assisted senior living development shall not exceed forty feet.

(d) Setbacks. The minimum setbacks for senior housing shall be:

(1) Front yard setback: Fifty feet.

(2) Side yard setback: Fifty feet.

(3) Rear yard setback: Fifty feet.

(e) Open Space. A minimum of 25% of the site, exclusive of existing or planned public road right-of-way, must be maintained as landscaped open space. Courtyards larger than 2,400 square feet may be counted as required open space. Recreation facilities, active and/or passive, including paved walkways and covered sitting areas shall be provided in a manner that meets the needs of the resident population.

(f) Building Facade and Length. Assisted senior living buildings must present a residential architectural image in terms of building facades, the composition and use of exterior wall surface materials, and building length. Any building façade longer than 100 feet must provide for variations in the outside wall and roof line.

1251.04 AUTOMOBILE CAR WASH ESTABLISHMENT.

(a) Pedestrian Access. The use must be located so as not to interfere with the pedestrian interchange between the parking lot and the storefront.

(b) Driveway Approaches. No more than two driveway approaches are permitted directly from any thoroughfare and the driveway must not exceed thirty (30) feet in width at the property line.

(c) Circulation. Vehicular approaches to the property must be designed to allow sufficient off-street parking or waiting area without creating an interference with traffic on the street.

1251.05 AUTOMOBILE REPAIR.

(a) Pedestrian Access. The use must be located so as not to interfere with the pedestrian interchange between the parking lot and the storefront.

(b) Driveway Approaches. No more than two driveway approaches are permitted directly from any thoroughfare and the driveway must not exceed thirty feet in width at the property line.

(c) Circulation. Vehicular approaches to the property must be designed to allow sufficient off-street parking or waiting area without creating an interference with traffic on the street.

(d) Screening. All inoperable vehicles shall be enclosed by a sight-obscuring fence or wall of a minimum height of eight feet

1251.06 AUTOMOBILE SERVICE STATION.

(a) Pedestrian Access. The use must be located to not interfere with the pedestrian interchange between the parking lot and the storefront.

(b) Driveway Approaches. No more than two driveway approaches are permitted directly from any thoroughfare and the driveway must not exceed thirty feet in width at the property line.

(c) Pump Islands. Gasoline pumps and pump islands may be located in any required yard setback space but must be located at least twenty feet from any lot line.

(d) Circulation. Vehicular approaches to the property must be designed to allow sufficient off-street parking or waiting area without creating an interference with traffic on the street.

(e) Indoor Activity Only. All activities, except those required to be performed at fuel pumps, must be carried on inside a building. If work is performed on a vehicle, such vehicle must be entirely within a building.

(f) Outdoor Facilities and Merchandise. The location of outdoor facilities (e.g., vacuums, air machines, etc.) and outdoor merchandise (e.g., coolers, propane tanks, etc.) must be shown on the site plan and must not interfere with vehicular and pedestrian circulation.

1251.07 AUTOMOBILE OR VEHICLE DEALERSHIP.

(a) Minimum Lot Size and Lot Width. Automobile or vehicle dealerships shall be located on a parcel of land containing no less than one-half acre and having a width of at least 100 feet at the front lot line.

(b) Outdoor Storage. Outdoor storage of disabled, damaged or unlicensed vehicles is prohibited, unless properly screened.

1251.08 BANQUET AND MEETING HALL.

Only permitted in T-5 if on second floor or above.

1251.09 BED AND BREAKFAST.

(a) Parking. Bed and breakfast establishments are permitted only when off-street parking is provided upon the lot or on adjoining property, which space is adequate to accommodate one car for each room available to tourists.

(b) Accessory Structures. No accessory buildings shall be used for bed and breakfast sleeping rooms unless they were originally constructed to accommodate residential use. No garage shall be used for bed and breakfast sleeping rooms.

1251.10 CAMPGROUND.

(a) Minimum Lot Size. Minimum campground size shall be five acres.

(b) Access. The campground shall provide vehicular access to a public street or road.

(c) Public Stations. Public stations, housed in all-weather structures, containing adequate water outlet, toilet, waste container and shower facilities, shall be provided, uniformly throughout the campground at a ratio of not less than one such station for each twenty sites.

(d) Commercial Enterprises. No commercial enterprises shall be permitted to operate in the campground, except that convenience goods shopping may be provided.

(e) Campsite Setback. Campsites shall be located a minimum distance of fifty feet from property lines, and fifteen feet between all campsites.

1251.11 CEMETERY.

(a) Minimum Lot Size. Twenty acres.

(b) Setbacks. No building or structure may be closer than fifty feet from any property line.

1251.12 COMMUNITY GARDEN.

(a) Applicability. Community gardens are subject to restrictions for accessory buildings, fencing, and nuisance provisions of the Battle Creek Codified Ordinances for the property on which the community garden is located.

(b) Minimum Lot Size and Lot Width. Community gardens are a permitted use of vacant property that contains a minimum of 5,000 square feet and minimum width of fifty feet.

(c) General Requirements. The following provisions apply to community gardens:

(1) Plant beds shall be setback three feet from the property lines and the public right-of-way.

(2) Accessory buildings including greenhouses, storage sheds, and shade pavilions shall be permitted in the side or rear yard, subject to Section 1260.01, but shall not exceed 10% of the total lot area.

(3) Hoop houses are permitted as an accessory building but are not counted toward the allowable accessory building size limitation. The coverings must be maintained and remain intact, and removed when no longer in use for a period of six-months or longer.

(4) Compost piles must be located at least five feet from all adjoining property lines and a minimum of twenty feet from the nearest residential structure. Each compost bin/area shall be less than sixteen square feet in size.

(5) Rain catchment systems must be located at least five feet from all adjoining property lines.

(6) Farm stands selling plants grown at the property are permitted between 8:00 a.m. and 8:00 p.m. Except for sales of plants produced within the community garden and sold at the farm stand, there shall be no retail sales on the site except that properties exceeding two acres may sell up to thirty percent of their overall farmers market inventory in the form of packaged food to complement the produce grown on premise. Alcohol sales shall be prohibited.

(7) The use of motorized equipment, by use of gas or electricity, within a residential zoning district shall be restricted to the hours between 7:00 a.m. and 8:00 p.m.

(8) Lighting, if provided, shall be a minimal amount and shielded so that all directly emitted light falls within the property.

(9) Fencing shall comply with Section 1260.02.

(10) Vehicle access to the site shall only be by way of a driveway constructed to city standards to avoid vehicle damage to the curb, sidewalk and any lawn area in the right-of-way.

(11) There are no minimum parking requirements, however any parking lot proposed and designed for four or more vehicles must be constructed in accordance with Section 1261.01 only after a site plan has been reviewed and approved in accordance with Section 1281.04.

(12) One freestanding sign consisting of no more than twelve square feet shall be allowed. Such sign shall otherwise comply with the applicable regulations of the zoning district in which it is located.

(13) Trash containers may be provided on site.

(14) Gardening activities shall be conducted in a manner which is consistent with the activities and noise levels of the neighborhood in which they are located.

(15) Educational activities relating to the community garden and food preparation may be held onsite where properties are 2 acres or more in size.

(d) Maintenance.

(1) Community gardens shall be maintained in an orderly and neat condition, free of noxious weeds or debris. Dead garden plants shall be removed regularly and, in any instance, no later than November 30 of each calendar year.

(2) Plants or ground cover other than grass shall be prevented from encroaching onto adjacent properties or onto the public right-of-way.

(3) No plants except grass may be grown in the public right-of-way or within one foot of the public sidewalk. Grass must be maintained at a height that does not exceed nine inches.

(4) No plant material may grow to a height that interferes with a clear vision line of sight at street intersections or when entering or exiting driveways.

(5) Oats, wheat, and rye may be used as a winter cover crop, but not grown to full maturity in any season.

(6) Trash receptacles shall be located to the rear of the property.

(7) Walkways shall be unpaved and covered with mulch, gravel or other aggregate that is treated to control dust.

(8) Garden waste or other refuse that is not allowed as compost may not be stored or allowed to accumulate on the site.

(9) Compost piles are only for waste created on the property and they must be maintained. Compost shall not include meat, grease, fat, oil, bones, manure, or milk products.

(10) These uses shall not be detrimental to the physical environment or to the public health and general welfare by reason of excessive production of noise, smoke, fumes, vibrations, odors, chemical, or biological pollutants. Nothing associated with a community garden or commercial urban farm, including allowable fertilizers, pesticides, insecticides, herbicides, compost materials, and water collection receptacles shall emit odors that can be detected beyond the confines of the property containing the garden or be an inordinate attraction for mice, rats or other rodents.

(11) Tools, supplies, and machinery shall be stored in an enclosed structure or removed from the property daily. All chemicals and fuels shall be stored off the ground in an enclosed, locked structure when the site is unattended.

(12) The property shall be maintained to prevent the flow of stormwater, irrigation water, chemicals, dirt, or mud across or onto adjacent lots, properties, public streets, or alleys.

(13) At such time garden activity ceases completely and the site will no longer be used for a garden, any raised planting beds, accessory buildings, and other above ground remains of the garden shall be promptly removed and the ground leveled and restored so it can be utilized for uses permitted in that zoning district

1251.13 CONVALESCENT HOME, NURSING HOME, OR HOME FOR THE AGED.

Such businesses may establish adult foster care centers within their own facilities as a permitted accessory use. Convalescent homes, nursing homes, and homes for the elderly shall be licensed by the State of Michigan. Such businesses, however, may establish adult foster care centers within their own facilities as a permitted accessory use, if such use is permitted within the district.

1251.14 DRIVE-THRU BUSINESS.

(a) Drive-Thru Window. A business with a drive-thru window shall provide a separate customer service station.

(b) Minimum Width. The traffic lane serving the drive-thru window shall be at least ten feet wide.

(c) By-Pass Lane. A by-pass lane or other suitable means of access to a public street shall be provided for vehicles that do not use the drive-thru window.

(d) Parking Spaces. Parking spaces located beyond drive-thru windows shall be designated for use of drive-thru window patrons.

1251.15 FARMER'S MARKET.

If the farmer's market is seasonal, the use will require special land use approval.

1251.16 GOVERNMENT/PUBLIC USES.

Public or semipublic service buildings, where permitted, may be erected to a height not exceeding sixty feet.

1251.17 GENERAL AND SPECIALIZED FARMS, INCLUDING CROPS AND THE RAISING AND KEEPING OF LIVESTOCK.

(a) Customary agricultural operations, including general farming, field crops, gardening, fruit orchards, nurseries, greenhouses and usual farm buildings, providing any farm building shall not be closer than fifty feet from any property line.

(b) General and specialized farms, including the raising and keeping for profit of cattle, hogs, horses, ponies, sheep and similar livestock on a lot having an area of not less than ten acres;

(c) Customary farm animals including horses, ponies, poultry, rabbits, goats, and similar small animals and similar livestock, may be kept on a noncommercial basis, for the enjoyment, use, and/or consumption by the occupants of the premises, when adequately housed and fenced on a parcel of land not less than 43,560 square feet (1 acre) in area, subject to the following conditions:

(1) No storage of manure or odor or dust producing materials or uses shall be permitted within 100 feet of any adjoining property line.

(2) A private stable for animals owned by the occupant may be kept, provided that the minimum area upon which one horse may be kept is one acre, and that one additional horse may be kept for each additional 20,000 square feet over one acre.

(3) Private stables or buildings housing farm animals shall not be closer than 100 feet from any adjoining property line.

1251.18 HOME OCCUPATIONS.

(a) Purpose. The purpose of this chapter is to provide for the regulation of certain business activities to be carried on or within residential districts when accessory and subordinate to the residential use, and which by their nature will not detract from the quality of residential neighborhoods.

(b) Home Occupation Defined. A home occupation is an activity carried out for consideration by a resident and conducted as an accessory use in the resident's dwelling unit. Consideration shall be defined as some right, interest, profit or benefit accruing to one party, or some forbearance, detriment, loss, or responsibility, given, suffered, or undertaken by the other. This section does not prohibit the regulation of noise, advertising, traffic, hours of operation, or other conditions that may accompany the use of a residence under this section.

(c) Regulations; Requirements. Home occupations engaged in within a Residential District by the resident of a dwelling unit shall comply with all of the following:

(1) Such occupation shall be carried on by one occupant within the principal building, excluding all outdoor activities, with no employees. Examples of such home occupations

include, but are not limited to, hairdressing, millinery, dressmaking, bookkeeping and accounting services, real estate and insurance sales and catalog sales.

(2) A babysitting service or family childcare home when not more than seven minor children are received for care and supervision for periods of less than eighteen hours a day, when unattended by a parent or legal guardian, is permitted.

(3) Home occupations shall be conducted by a person living within the dwelling and by no others, either as a principal or an employee. However, home occupations involving subordinate assistants who do not reside within the dwelling may be allowed by the Zoning Board of Appeals, where, in the Board's discretion, the same would not materially impair the residential character of the neighborhood.

(4) Home occupations shall be operated in their entirety within the dwelling and not within any garage or accessory building located upon the premises, except for incidental storage, which may be allowed within a residential type garage upon the premises.

(5) No external evidence of such home occupation shall be allowed indicating from the exterior that it is being used for anything but a dwelling. This includes the parking of commercial vehicles and temporary storage of any materials associated with a home occupation.

(6) The parking or storage of commercial vehicles at a residence is prohibited and in violation of this chapter. For purposes of this section, a commercial vehicle is any vehicle used to conduct a business or trade including but not limited to step vans, cargo vans, box trucks, stake beds, buses, tractor trailers, dump trucks, wreckers, trailers, earth moving equipment, cement mixers and other similar construction equipment that has two or more of the following characteristics:

A. Exceeds a GVWR of 10,000 lbs.

B. Exceeds seven feet in height.

C. Exceeds twenty feet in length.

D. Has more than two axles.

E. Has more than four tires in contact with the ground.

F. Can carry more than eight passengers.

G. Is designed to sell food or merchandise directly from the vehicle.

(7) Home occupations may not be used as a meeting place, or rendezvous point for business activities or service operations before, during, or after shifts.

(8) No home occupation shall be conducted within a dwelling unless the same is clearly incidental and subordinate to the principal use of the premises for residential purposes.

(9) No home occupation shall involve the sale of goods from the premises.

(10) No service shall be sold or conducted upon or from the premises which would constitute a nuisance to adjoining residents by reason of noise, smoke, odor, electrical disturbance, night lighting or the creation of unreasonable traffic to the premises. Noise, smoke, odor, electrical disturbances or lighting shall not be discernible beyond the boundaries of the property from which the home occupation is conducted.

(11) No home occupation requiring warehousing of retail or wholesale merchandise, or delivery of the same by large semitrailer-type trucks, shall be allowed.

(12) Paving of any yard area other than normal driveway areas to accommodate parking for home occupations is prohibited.

(13) No home occupation shall be allowed which utilizes more than twenty percent of the interior gross floor area of the inhabitable area of the dwelling and not, in any event, more than 300 square feet.

(14) In no instance shall the repair or sale of motor vehicles be permitted to be a home occupation.

(15) The permission for home occupations as provided herein is intended to secure flexibility in the application of this Zoning Code, but such permission is not intended to allow the essential residential character of a Residential District, in terms of use, traffic and appearance, to be changed in the slightest degree by the occurrence of nonresidential activities. Furthermore, no structural provisions shall be inherent in the design of the structure and no structural alterations shall be made for the accommodation of any home occupation. All activities, unless otherwise stated, shall be carried on indoors only, within the principal building.

(d) Other Requirements. The regulation of home occupations in this chapter shall not waive additional provisions that may be necessary to meet other local, state or federal requirements, including, but not limited to, the following:

(1) State, local or federal taxation or business licensing laws;

(2) All applicable State of Michigan regulations for the preparation and distribution of food and food products;

(3) Cosmetologists, land surveyors and other occupations requiring licensing by the Michigan Department of Licensing and Regulatory Affairs;

(4) Section 28.1814(1)(e) of the Uniform Traffic Code of the State of Michigan, which prohibits the parking of a motor vehicle on a public street for more than forty-eight continuous hours;

(5) The Child Care Organizations Act, Public Act 116 of 1973, as amended, being MCL 722.111 et seq. which provides for the licensing of child care facilities by the Michigan Department of Social Services. The Act defines family child care homes as private homes in which at least one but fewer than eight minor children are received for care and supervision for compensation for periods of less than twenty-four hours a day, unattended by a parent or legal guardian, except children related to an adult member of the household by blood, marriage, or adoption.

(6) The Uniform Fire Code as it pertains to the storage of flammable materials, the use of mechanical or electrical equipment and the need to provide sufficient ingress and egress; and

(7) Private covenants or deed restrictions.

1251.19 HOSPITAL GREATER THAN TWENTY THOUSAND SQUARE FEET.

(a) Minimum Lot Size. All such hospitals shall be developed on sites consisting of at least five acres in area. Provided that there is a minimum of 1,500 square feet of lot area per bed.

(b) Minimum Setbacks. All structures and activity areas must be located at least 100 feet from all property lines.

(c) Screening. Ambulance and delivery areas shall be obscured from all residential view with an obscuring wall or fence not less than six feet in height.

(d) Maximum Height. Public, semipublic or public service buildings, hospitals, institutions or schools, where permitted, may be erected to a height not exceeding sixty feet when the required side and rear yards are each increased by one foot for each foot of additional building height above the height regulations for the district in which the building is located.

1251.20 HOTEL.

(a) Minimum Lot Area and Lot Width. The minimum lot area shall be one acre with a minimum width of 150 feet, provided that there shall be not less than 800 square feet of lot area for each guest unit.

(b) Lighting. No lighting shall have a source of illumination visible outside of the boundaries of the lot. Such lighting shall in no way impair safe movement of traffic on any street or highway. No lighting shall shine directly on adjacent properties.

1251.21 INDEPENDENT SENIOR LIVING WITH SERVICES.

(a) Minimum Site Area. The minimum site area shall contain 5,500 square feet per independent living unit.

(b) Required Minimum Usable Floor Area in Square Feet Per Dwelling Unit.

(1) Independent Living Units: Efficiency/studio, one-bedroom dwelling units, and two-bedroom dwelling units shall meet the minimum requirements of the Building Code.

(2) No living unit within a senior housing development may contain more than two bedrooms.

(c) Maximum Building Height. The maximum building height in a senior housing development shall not exceed forty feet.

(d) Setbacks. The minimum setbacks for senior housing shall be:

(1) Front yard setback: Fifty feet.

(2) Side yard setback: Fifty feet.

(3) Rear yard setback: Fifty feet.

(e) Open Space. A minimum of 25% of the site, exclusive of existing or planned public road right-of-way, must be maintained as landscaped open space. Courtyards larger than 2,400 square feet may be counted as required open space. Recreation facilities, active and/or passive, including paved walkways and covered sitting areas shall be provided in a manner that meets the needs of the resident population.

(f) Building Facade and Length. Senior housing buildings must present a residential architectural image in terms of building facades, the composition and use of exterior wall surface materials, and building length. Any building façade longer than 100 feet must provide for variations in the outside wall and roof line.

1251.22 JUNK OR SALVAGE YARD.

(a) Screening. Where a junk yard is adjacent to residential or commercial zoned properties or has frontage on a road or highway, a solid masonry wall or solid obscuring fence of eight feet in height or one foot above the height of the piles, whichever is greater, shall be constructed in the side and rear yards. The fence shall be placed on or inside the required side yard, or rear yard setback.

(b) Enclosed. There shall be no burning of tires, vehicle bodies, wiring, oil or waste products on the site, and all industrial processes, including the use of equipment for cutting, compressing or packaging shall be conducted within a completely enclosed building.

(c) Truck Routes. Truck routes must be established for movement in and out of the development in such a way that it will minimize the wear on public streets and prevent hazards and damage to other properties.

1251.23 KENNELS/VETERINARIAN.

(a) Screening. All outdoor runs or breeding areas shall be enclosed on all sides by an obscuring wall or fence not less than four feet in height.

(b) Setback. All outdoor runs and breeding areas shall be located at least fifty feet from any lot line and shall be not be located in the front yard.

1251.24 MARIHUANA: MARIHUANA BUSINESS REGULATIONS.

Refer to Chapter 835, Adult Use Marihuana Establishments, and/or Chapter 833 Medical Marihuana Facilities of the City of Battle Creek Codified Ordinances for business licensing requirements.

1251.25 MARIHUANA: ADULT USE MARIHUANA RETAILER ESTABLISHMENT.

Must be located at least 1,000 feet from day care centers, preschools, private or public K-12 schools and libraries, and, except for in the I-1 and I-2 Districts, must be located at least 1,000 feet away from a property containing an adult use marihuana retailer, an adult use marihuana microbusiness, and a medical marihuana provisioning center. The setback measurements are between nearest property lines, regardless of ownership of property or licensee. In the I-1 and I-2 Districts, state licensed adult use marihuana retailers are permitted only when collocated with an adult use marihuana grower and/or processor.

1251.26 MARIHUANA: ADULT USE MARIHUANA MICROBUSINESS.

(a) Locational Specifications.

(1) The property at which the microbusiness will be located shall be at least 1,000 feet away from any property containing an adult use marihuana retailer, an adult use marihuana microbusiness, and a medical marihuana provisioning center; setbacks measured between nearest property lines, regardless of ownership of property or licensee; and

(2) The property at which the microbusiness will be located shall be at least 1,000 feet from K-12 schools and libraries open to the public, setbacks measured between nearest property lines, regardless of ownership of property or licensee; and

(3) The property at which the microbusiness will be located shall not abut a Residential ("R") zoning district or a property with a residential use.

1251.27 MARIHUANA FACILITIES AND ESTABLISHMENTS.

(a) Purpose. The purpose of this chapter is to implement the provisions of the Michigan Medical Marihuana Act (MMA), Initiated Law 1 of 2008, as amended being MCL 333.26421 et seq., the Medical Marihuana Facilities Licensing Act (MMFLA), Public Act 281 of 2016, as amended, being MCL 333.2701 et seq., and the Michigan Regulation and Taxation of Marihuana Act (MRTMA), Initiated Law 1 of 2018, as amended, being MCL 333.27951 et seq. for establishing local zoning authority for the permitting of adult use marihuana establishments and medical marihuana facilities. Further, the purpose of this chapter also provides:

(1) A process for the city to legally facilitate the development of adult use marihuana establishments and medical marihuana facilities, which are otherwise illegal under federal law.

(2) A procedure for growing, processing, testing, transporting, and selling medical marihuana for qualified persons and selling adult use marihuana as permitted under the MRTMA.

(3) Zoning authority for the protection and preservation of public safety, welfare, and property value; and ensuring consistency with the future land use map of the Master Plan.

(4) A licensing and taxing authority to the city to defray costs to additional public safety, administrative, and enforcement with the result of facilitating development of adult use marihuana establishments and medical marihuana facilities.

(5) Additional economic industry and benefit to the community.

(b) Authority. With the adoption of the MMA of 2008, the MMFLA of 2016, and the MRTMA of 2018, the City of Battle Creek has legislative authority to establish zoning regulations, application processes and associated fees, and enforcement abilities for marihuana development without penalty consistent with the state laws.

(c) License and Permit Required; Application; Fee.

(1) Licenses required. No person or entity shall operate an adult use marihuana establishment or medical marihuana facility without receiving the following licenses:

A. An approved operating license from the State;

B. An approved permit from the City pursuant to Chapter 833 and/or Chapter 835; and

(2) Permit type. No person or entity shall operate an adult use marihuana establishment or medical marihuana facility without receiving the following permits where required:

A. Approved building permit and occupancy permit. All marihuana establishments and facilities shall require an approved building permit showing compliance with applicable zoning and building codes. A certificate of occupancy shall be issued once all applicable inspections are show satisfactory compliance with all zoning and building codes.

B. Approved site plan application. Certain medical marihuana facilities and adult use marihuana establishments shall require gaining an approved site plan application pursuant to Section 1281.04 Site Plan Review.

C. Approved special use permit, if required. Certain medical marihuana facilities and adult use marihuana establishments shall require an approved special use permit pursuant to Section 1281.05 Special Land Uses.

(d) Non-Conforming Uses.

(1) Medical marihuana dispensaries and growing operations, which may have been established under the auspices of the 2008 MMA but have not gained approved permits from the City shall not be considered legally non-conforming. Owners of such dispensaries or growing operations shall cease operation, or if applicable, obtain required permit pursuant to Section 1251.23.

(2) Medical marihuana dispensaries and growing operations, which may have been established under the auspices of the 2008 MMA and have approved permits from the City are considered legally non-conforming and may continue operating pursuant to Chapter 1270 Nonconforming Uses and Structures.

(e) Locational Standards. Pursuant to the 2016 MMFLA, 2018 MRTMA, and Section 1251.23, all types of state licensed marihuana establishments and facilities are allowed in zoning districts established by this chapter and within specific zoning districts provided in this Zoning Code.

(1) The official updated 'Marihuana Maps' of the City of Battle Creek will be maintained by the City's Planning Division.

(2) Co-location of licenses. Where State Licensed Marihuana Growers, Processors, Adult Use Retailers, and Provisioning Centers are co-located on a single property, the usable floor area of the Provisioning Center and Adult Use Retailer shall not exceed 10% of the gross square footage of the overall combine areas of the growing and provisioning areas.

(3) Only one state licensed provisioning center, microbusiness or retailer shall be allowed on a property within the area defined by property lines, except for colocations at same locations by the same licensee holder.

(f) Development, Operational Standards. The following regulations are applicable to all state licensed marihuana establishments and facilities.

(1) Marihuana location. Except when being transported by state licensed security transporter, all marihuana shall be located entirely inside a building having permanent foundation, walls, and roof.

A. Notwithstanding subsection (1), a roof on grow establishments or facilities may consist of a sturdy transparent material, such as glass, to allow sunlight into the growing areas of the building. If such transparent material is utilized, it must be fully covered with a non-transparent material between dusk and dawn that prevents interior lighting from escaping through the roof.

B. Walls enclosing marihuana growing establishments or facilities shall be constructed of a structurally-supportive load bearing brick, wood, or masonry construction from grade to eight feet in height.

(2) Signage. Notwithstanding Chapter 1263 Signs, only two signs per street frontage shall be permitted for any state licensed marihuana establishment or facility. Neon lighted signs are prohibited.

(3) Fence. Use of barb wire outside of the Industrial Districts is prohibited.

(4) Window glass on ground floor levels must be transparent and free from film or other materials that block visibility. Interior shades, curtains, etc. are permitted.

1251.28 MARIHUANA: MEDICAL AND ADULT USE MARIHUANA GROW OPERATION.

Must be located at least 500 feet away from properties, as measured between nearest property lines, containing any of the following uses:

(a) Religious assembly uses;

(b) Child care centers, preschools, private or public K-12 schools;

(c) Public parks;

(d) Libraries;

(e) Any Residential (“R”) zoned property

1251.29 MARIHUANA: MEDICAL AND ADULT USE MARIHUANA PROCESSING FACILITY.

Must be located at least 500 feet away from any Residential (“R”) zoned property and at least 1000 feet away from properties, as measured between nearest property lines, containing any of the following uses:

(a) Religious assembly uses;

(b) Child care centers, preschools, private or public K-12 schools;

(c) Public parks;

(d) Libraries.

1251.30 MARIHUANA: MEDICAL MARIHUANA PROVISIONING CENTER.

Must be located at least at least 1,000 feet away from day care centers, preschools, private or public K-12 schools and libraries, and, except for in the I-1 and I-2 Districts, must be located 1,000 feet away from a property containing an adult use marihuana retailer, an adult use marihuana microbusiness, and a medical marihuana provisioning center. These setback measurements are between nearest property lines, regardless of ownership of property or licensee. In the I-1 and I-2 Districts, state licensed medical marihuana provisioning centers are permitted only when collocated with a medical marihuana grower and/or processor.

1251.31 MARIHUANA: MEDICAL AND ADULT USE MARIHUANA SAFETY COMPLIANCE FACILITY.

Must be located at least 1,000 feet away from properties, as measured between nearest property lines, containing any of the following uses:

(a) Religious assembly uses;

(b) Child care centers, preschools, private or public K-12 schools;

(c) Public parks;

(d) Libraries;

(e) Any Residential (“R”) zoned property.

1251.32 MARIHUANA: MEDICAL AND ADULT USE MARIHUANA SECURE TRANSPORTER.

Must be located at least 1,000 feet away from properties, as measured between nearest property lines, containing any of the following uses:

(a) Religious assembly uses;

(b) Child care, preschool, private or public K-12 schools;

(c) Public parks;

(d) Libraries;

(e) Any Residential ("R") zoned property.

1251.33 MULTI-FAMILY DWELLING UNITS.

Location. Multiple family dwelling units shall be located only the second floor or above on Michigan Ave in the T4 and T5 zoning districts. Multiple family dwelling units are permitted on the ground floor everywhere else.

1251.34 MOTEL.

(a) Minimum Lot Area. The minimum lot area shall be one acre with a minimum width of 150 feet, provided that there shall be not less than 800 square feet of lot area for each guest unit.

(b) Lighting. No lighting shall have a source of illumination visible outside of the boundaries of the lot. Such lighting shall, in no way, impair safe movement of traffic on any street or highway. No lighting shall shine directly on adjacent properties.

1251.35 MICROBREWERY.

(a) Distribution. Wholesale distribution shall be prohibited.

(b) Setback. Microbreweries must be setback a minimum of 300 feet from any residence.

1251.36 OUTDOOR RECREATION.

Outdoor theaters according to the following:

(a) Compliance. The proposed internal design shall receive approval from the Building Inspector, Zoning Administrator, and the City Engineer as to adequacy of drainage, lighting, screening and other technical aspects.

(b) Direct Access. Outdoor recreation establishments shall abut directly upon a major thoroughfare of not less than 120 feet of right-of-way width.

(c) Ingress and Egress. Points of ingress and egress shall be available from abutting major thoroughfares of not less than 120 feet of right-of-way width and shall not be available from any residential street.

(d) Off-Street Waiting Space. Off-street waiting space shall be provided for all vehicles waiting or standing to enter the facility. No vehicle shall be permitted to wait or stand within a dedicated right of way.

(e) Screening. All lighting used to illuminate the area shall be so installed as to be confined within and directed onto the premises on which the outdoor recreation establishment is located.

1251.37 OUTDOOR STORAGE

Outdoor storage of retail products, construction material or equipment shall be confined to a concealment type fence enclosure per Section 1261.02 Fences, except that a reasonable amount of typically seasonal retail product may be stored near the primary building in an orderly fashion.

1251.38 PERSONAL-SCALE SOLAR ENERGY FACILITY.

Roof-mounted and wall-mounted solar energy systems for on-site use are permitted as personal-scale solar energy facilities, subject to the following regulations:

(a) Height. Roof-mounted systems must not extend more than three feet above the roofline nor will they extend above the maximum permitted height of the building to which it is attached.

(b) Location.

(1) Roof-mounted solar energy systems may be located anywhere on a roof of a principal or accessory structure. However, roof-mounted solar energy systems shall not protrude beyond the edge of the roof. A solar panel may function as a roof element, such as an awning.

(2) Wall-mounted solar energy systems may be located anywhere on the wall of a principal or accessory structure. Wall-mounted systems shall not extend above the edge of the roof.

(c) Performance Guarantee. All applications for a solar energy system must be accompanied by a performance guarantee sufficient to ensure the decommissioning and removal of the system when it is abandoned or no longer needed. Refer to Section 1281.04 (f) and Section 1281.046.

(d) Insurance. The applicant must submit proof of sufficient property damage and liability insurance.

1251.39 PERSONAL-SCALE WIND ENERGY FACILITY.

Personal-scale wind energy facilities designed to generate power for the property at which it is located are permitted, subject to the following regulations:

(a) Location. Personal-scale wind energy facilities may not fall within the front yard and must meet all of the applicable requirements of this Code.

(b) Maximum Wind Turbine Height. Ten feet above the highest point of the roof or ten feet above the maximum height of the zoning district, whichever is lower.

(c) Noise. A wind energy system must comply with the noise standards set forth in the City's ordinances.

(d) Shadow Flicker. The application for a wind energy system must include a shadow flicker analysis demonstrating impact on adjacent and nearby residential properties. Wind energy systems must be constructed in locations that minimize the impacts of shadow flicker on residences.

(e) Lighting. No wind energy system will be artificially lighted unless required by the Federal Aviation Administration (FAA).

(f) Appearance, Color, and Finish. The wind energy system must be maintained in the color or finish that was originally applied by the manufacturer, unless otherwise approved in the

building permit. All wind energy systems will be a single non-reflective, non-obtrusive, matte finished color (e.g. white or gray).

(g) Electrical Wires. All electrical wires associated with a wind energy system, other than wires necessary to connect the wind generator to the tower wiring, the tower wiring to the disconnect junction box, and grounding wires, must be located underground.

(h) Compliance with Electrical Code. Building permit applications for wind energy systems must be accompanied by line drawings of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code.

(i) Construction Codes, Towers, and Interconnection Standards. Wind energy systems, including towers, must comply with all applicable state construction and electrical codes and local building permit requirements. Wind energy systems including towers, must comply with the FAA requirements, and other applicable local and state regulations. A wind energy system connected to the public utility electrical grid must comply with the Michigan Public Service Commission and Federal Energy Regulatory Commission standards. Off-grid systems are exempt from this requirement.

(j) System Access. Wind energy systems must be designed and installed such that step bolts, ladders, or other means of access readily accessible to the public are located at least eight feet above grade level.

(k) Safety. A wind energy system must have an automatic braking, governing, or feathering system to prevent uncontrolled rotation or over speeding. All wind towers must have lightning protection. If a tower is supported by guy wires, the wires must be clearly visible to a height of at least six feet above the guy wire anchors.

(l) Minimum Ground Clearance. The lowest extension of any blade or other exposed moving component of a tower mounted wind energy system must be at least twenty feet above the surrounding grade at its highest point within twenty feet of the base of the tower and at least twenty feet above any outdoor surface intended for human use, such as balconies or roof gardens, that are located below the wind energy system.

(m) Roof-Mounted Wind Energy Systems. Roof-mounted wind energy systems must be limited to roof mounting and must not be mounted on any other building wall or surface.

(n) Utility Connection. The applicant must submit evidence that the utility company has been informed of the customer's intent to install an interconnected, customer-owned wind energy generator and that such connection has been approved. Off-grid systems are exempt from this requirement.

## 1251.40 PERSONAL SERVICE ESTABLISHMENT

Personal service establishments requiring a state license must be licensed by the State of Michigan. Personal services establishments without required state licenses, if any, are not permitted in the City of Battle Creek.

## 1251.41 PRIVATE GARDEN

(a) Subject to Restrictions: Private gardens are allowed on any property when accessory to a permitted principal use and subject to restrictions for accessory buildings, fencing, and nuisance provisions of the Battle Creek Codified Ordinances for the property on which the private garden is located.

(b) Limitations: Private gardens are permitted on any vacant property less than one acre in size with the following limitations:

(1) Plant beds shall be set back three feet from property lines and the public right-of-way.

(2) Compost piles must be located at least five feet from all adjoining property lines and a minimum of 20 feet from the nearest residential structure. Each compost bin/area shall be less than 16 square feet in size.

(3) Rain catchment systems must be located at least five feet from all adjoining property lines.

(4) Farm stands selling plants grown at the property are permitted between 8:00 a.m. and 8:00 p.m. and shall be setback three feet from the property line and the public right-of-way. Except for sales of plants produced within the private garden, there shall be no retail sales on the site.

(5) Use of motorized equipment, by use of gas or electricity, within a residential zoning district shall be restricted to the hours between 7:00 a.m. and 8:00 p.m.

(6) Decorative landscape lighting is permitted.

(7) Fencing shall comply with Section 1260.02.

1251.42 RELIGIOUS INSTITUTIONS.

(a) Noise. If music, bells, carolers, chimes or similar audio presentation are to be used, the expected use, times, durations and volumes shall be disclosed on the site plan.

(b) Site Plan. All uses of the structure, facility and land shall be completely described in a full use statement on the site plan, such uses as outdoor recreation areas, pavilions, memorial gardens, memorials, gathering areas and similar uses or activities shall be identified on the site plan.

(c) Maximum Height. Churches and temples may be erected to a height not exceeding seventy-five feet when the required side and rear yards are each increased by one foot for each foot of additional building height above the height regulations for the district in which the building is located.

(d) Minimum Size and Access. In residential districts religious institutions must be located on a parcel having at least one acre of land, and must be located on a major street as show on the major street plan.

1251.43 ROOMING AND BOARDING HOUSES.

Not more than four boarders are permitted in the R2 District and not more than ten boarders are permitted in the R3 District. In all cases the owner of the house must be the occupant and is responsible with maintenance and upkeep of the structure and property. Boarding and rooming homes must register with the City of Battle Creek and remain in compliance with Chapter 1462.

1251.44 SELF-STORAGE / MINI-STORAGE FACILITIES.

Such use shall be screened from exterior view by a solid, well maintained fence which is eight feet in height, and vehicles shall not be stored in a manner exceeding the height of the fence.

1251.45 STATE LICENSED CHILD CARE FAMILY HOME, ONE TO SEVEN CHILDREN.

(a) Licensee as Permanent Resident. The licensee must permanently reside as a member of the household.

(b) Limit on the Number of Children. The limit on the number of children at a child care family home does not include children who are related to an adult member of the family by blood, marriage or adoption. It includes care to an unrelated minor child for more than four weeks in a calendar year.

1251.46 STATE LICENSED CHILD CARE GROUP HOME, EIGHT TO FOURTEEN CHILDREN.

(a) Licensee as Permanent Resident. The licensee must permanently reside as a member of the household.

(b) Limit on the Number of Children. The limit on the number of children at a child care family home does not include children who are related to an adult member of the family by blood, marriage or adoption. It includes care to an unrelated minor child for more than four weeks in a calendar year.

1251.47 STATE LICENSED RESIDENTIAL FACILITY, ADULT FOSTER CARE FAMILY HOME, ONE THROUGH SIX PERSONS.

A private residence with the approved capacity to receive six or fewer adults to be provided with foster care for five or more days a week and for two or more consecutive weeks. The adult foster care family home licensee shall be a member of the household, and an occupant of the residence. This does not apply to adult foster care facilities licensed by a state agency for care and treatment of persons released from or assigned to adult correctional institutions.

1251.48 STATE LICENSED RESIDENTIAL FACILITY, ADULT FOSTER CARE GROUP HOME FOR MORE THAN SEVEN THROUGH TWENTY RESIDENTS; COMMUNITY RESIDENTIAL FACILITY AND GROUP HOMES.

(a) For State Licensed Residential Facilities. This includes adult foster care facilities licensed by a state agency for care and treatment of persons released from or assigned to adult correctional institutions. The licensee must permanently reside as a member of the household.

(b) Minimum Lot Size. Is located on a lot that is not less than one-half acre and has not less than 500 square feet of lot area per person, including patients, employees and other residents;

(c) Front Yard Setback. Provides a front yard of not less than fifty feet;

(d) Side Yard Setback. Provides side yards of an aggregate of fifty feet and in no instance less than fifteen feet.

1251.49 TRANSITIONAL AND SUPPORTIVE RESIDENTIAL HOUSING UP TO SIX PERSONS.

(a) Register. Transitional and supportive residential homes must register with the City of Battle Creek and remain in compliance with Chapter 1462 and Chapter 818.

(1) Supportive services. Prior to approval, applicant shall provide documentation describing the onsite (and any offsite) supportive services that will be provided to the residents.

Documentation shall also indicate the name of the entity(ies) that will provide the supportive services.

(2) Residents. All residents within the house shall share a bond among themselves which together seek the same transitional or support service purpose.

(b) Parking. Off-street parking shall be provided on the basis of at least one space per three residents, plus an additional space for each employee (if applicable).

(c) Structure Exterior. The structure shall not be established or modified in a manner that would make it inconsistent with the scale and architectural character of the neighborhood, including applicable development standards and design guidelines.

(d) Signage. No signage, graphics, display, or other visual representation that is visible from a public street shall be used to identify it as a transitional or supportive home.

(e) Occupancy. Must comply with Property Maintenance Code Section 404 Occupancy Limitations and shall not exceed more than two persons per habitable bedroom.

1251.50 TRANSITIONAL AND SUPPORTIVE RESIDENTIAL HOUSING FOR MORE THAN SIX PERSONS.

(a) Register. Transitional and supportive residential homes must register with the City of Battle Creek and remain in compliance with Chapter 1462 and Chapter 818.

(1) Supportive services. Prior to approval, applicant shall provide documentation describing the onsite (and any offsite) supportive services that will be provided to the residents. Documentation shall also indicate the name of the entity(ies) that will provide the supportive services.

(2) Residents. All residents within the house shall share a bond among themselves which together seek the same transitional or support service purpose.

(b) Parking. Off-street parking shall be provided on the basis of at least one space per three residents, plus an additional space for each employee (if applicable).

(c) Structure exterior. The structure shall not be established or modified in a manner that would make it inconsistent with the scale and architectural character of the neighborhood, including applicable development standards and design guidelines.

(d) Signage. No signage, graphics, display, or other visual representation that is visible from a public street shall be used to identify it as a transitional or supportive home.

(ez) Occupancy. Must comply with Property Maintenance Code Section 404 Occupancy Limitations and shall not exceed more than two persons per habitable bedroom.

1251.51 TELECOMMUNICATION TOWERS.

(a) New Facilities. New wireless telecommunications facilities, as defined in the Michigan Zoning Enabling Act, shall be permitted by special use approval in all zoning districts, regardless of whether a new support structure (tower) will be constructed or not, subject to the following standards:

(1) Before constructing a new facility, the applicant must demonstrate that they cannot achieve the needed service improvement by co-locating at an existing facility.

A. The applicant must submit coverage and/or capacity information, including propagation maps and other information requested by the City, to demonstrate the needed service improvement and why co-location is not possible.

B. If an owner or operator of an existing tower refuses to allow a co-location, written evidence of the denial of the co-location request must be submitted to the City, and must include the reason for the denial.

(2) To the extent practical, all ground equipment associated with the facility must be enclosed within a locked building.

(3) Information must be submitted showing that the facility is in compliance with all applicable FCC regulations regarding radio frequency emissions.

(4) Information must be submitted showing that the facility will not cause interference with any nearby existing telecommunications facilities.

(5) Signage notifying the public of potential high voltage and radio frequency emissions and giving the contact information for the tower owner and the operators of all equipment on the site must be posted on the exterior fence.

(6) If a new tower is to be constructed for the facility, it shall meet the following standards:

A. The tower must be set back from all property lines by a distance equal to 1.5 times its height.

B. Lighting on the tower shall be prohibited unless required by the Federal Aviation Administration.

C. The tower must be a monopole design. Guyed and lattice towers are prohibited.

D. No signage shall be placed upon the tower structure.

E. The tower must be the shortest possible height required to provide the service desired by the applicant. The applicant must submit coverage and/or capacity information, including propagation maps and other information requested by the City, to demonstrate the needed service improvement and why the requested height is necessary. The City may request further information, including propagation maps, demonstrating the service at lower heights, in order to determine for itself whether the requested height is necessary.

F. The base of the tower and all associated equipment must be surrounded by a locked, opaque screening fence meeting the standards of the zoning district that the tower is located within.

G. The applicant must demonstrate the number of colocation sites that will be available on the tower.

H. A structural analysis, signed and sealed by a licensed engineer, must be submitted demonstrating that the proposed tower will be able to support all proposed antennae, including co-locations.

I. The applicant must submit renderings or photo-sims of the proposed tower as viewed from the following locations:

1. The nearest public roadway.

2. The nearest residential use.

3. Any other location requested by the City from which the tower may potentially be visible.

J. The applicant must pay all required fees, as designated by the City Commission.

(b) Co-Locations and Modifications to Existing Facilities.

(1) Co-locations and modifications to existing facilities shall not require special use or site plan approval, except as described in Subsection (2), below. The Zoning Administrator shall have the authority to approve all co-locations and modifications that meet the standards of this Section, and shall be able to request the input and recommendation of the Planner and Engineer at their discretion.

(2) Under the following circumstances, co-locations and modifications shall require special use approval, regardless of the zoning district they are located in:

A. The applicant proposes to increase the height of an existing tower by more than twenty feet, or 10% of its original height, whichever is greater.

B. The applicant proposes to increase the width of the tower by more than the minimum necessary for structural stability given existing and proposed antennae.

C. The applicant proposes to increase the ground-level compound to more than 2,500 square feet in area.

(3) Co-locations and modifications must meet the following standards in order to be approved, either administratively or by special use.

A. The applicant must submit a structural analysis, signed and sealed by a licensed engineer, demonstrating that the tower, in its present condition, has the structural capacity to support any proposed new antennae or other tower-mounted equipment.

B. The applicant must submit the results of an inspection of the condition of the tower and equipment compound, noting any potential problems with the facility that could impact the health, safety, and welfare of the surrounding area, or the effective provision of service from the facility. Any concerns raised by the inspection must be corrected during construction of the modification of the co-location.

C. Information must be submitted showing that the facility is in compliance with all applicable Federal Communications Commission regulations regarding radio frequency emissions.

D. Information must be submitted showing that the facility will not cause interference with any nearby existing telecommunications facilities.

E. No lighting may be added to the tower unless required by the Federal Aviation Administration.

F. Signage notifying the public of potential high voltage and radio frequency emissions and giving the contact information for the tower owner and the operators of all equipment on the site must be posted on the exterior fence. No signage shall be placed upon the tower structure.

G. The applicant must pay all required fees, as designated by the City Commission.

(c) Timeline for Approval. The City will comply with all state and federal requirements for approval timelines. In the event of changes to federal or state law, this section shall be void and the laws in place at the time of application shall be followed.

(1) For new facilities, the City shall request all required information within fourteen business days of the application being filed with the Inspection Division. The City shall issue a decision on the special use within ninety days of the application being deemed complete by the City.

(2) For modifications and co-locations, the City shall request all required information within fourteen business days of the application being filed with the Inspection Division. The Building Official shall issue an administrative approval within sixty days of the application being deemed complete by the City.

(3) Once the City has notified an applicant that an application is incomplete, if the applicant does not provide any new information for 180 days, the application will be deemed to have been withdrawn. Any new information submitted after 180 days shall be deemed a new application for the purposes of this Zoning Code and the Michigan Zoning Enabling Act.

(d) Abandonment and Removal. At the time of application for a new tower structure, the applicant shall, at its cost and expense, be required to execute and file with the City a bond in an amount of at least one hundred-fifty thousand dollars ($150,000.00). If the tower is not used for as a wireless telecommunications facility for any period of six consecutive months, it must be removed at the expense of the property owner and/or owner of the tower. If the property owner and/or owner of the tower fail to remove the tower, the bond shall be forfeited, and the bond amount shall be used by the City to remove the tower.

## 1251.52 UTILITY-SCALE SOLAR ENERGY FACILITY.

Roof-mounted, wall-mounted, and ground-mounted solar energy systems are permitted as utility-scale solar energy facilities, subject to the following regulations:

(a) Location and Setbacks. Solar energy systems must be located in the rear of the principal building. Solar energy systems must also meet the minimum setbacks of the zoning district.

(b) Height. The height of the solar energy system and any mounts must not exceed ten feet when oriented at maximum tilt.

(c) Screening. Evergreen landscaping, sight obscuring fencing, or the combination of the two, must be provided to screen the racking (i.e., the framing below the panels) from view on all sides.

(d) Power Lines. All power lines between solar panels and inverters must be placed underground.

(e) Performance Guarantee. All applications for a solar energy system must be accompanied by a performance guarantee sufficient to ensure the decommissioning and removal of the system when it is abandoned or no longer needed. Refer to Section 1281.04(f).

(f) Insurance. The applicant must submit proof of sufficient property damage and liability insurance.

(g) Utility Connection. The applicant must submit evidence that the utility company has been informed of the customer's intent to install an interconnected, customer-owned solar energy system and that such connection has been approved. Systems for on-site use are exempt from this requirement.

1251.53 UTILITY-SCALE WIND ENERGY FACILITY.

(a) Location. Utility-scale wind energy facilities may not fall within the front yard and must meet all of the applicable requirements of this Code.

(b) Minimum Lot Area. Must be located on a lot with a minimum area of one acre.

(c) Maximum Wind Turbine Height. Seventy feet.

(d) Noise. A wind energy system must comply with the noise standards set forth in the City's ordinances.

(e) Shadow Flicker. The application for a wind energy system must include a shadow flicker analysis demonstrating impact on adjacent and nearby residential properties. Wind energy systems must be constructed in locations that minimize the impacts of shadow flicker on residences.

(f) Lighting. No wind energy system will be artificially lighted unless required by the Federal Aviation Administration (FAA).

(g) Appearance, Color, and Finish. The wind energy system must be maintained in the color or finish that was originally applied by the manufacturer, unless otherwise approved in the building permit. All wind energy systems will be a single non-reflective, non-obtrusive, matte finished color (e.g. white or gray).

(h) Electrical Wires. All electrical wires associated with a wind energy system, other than wires necessary to connect the wind generator to the tower wiring, the tower wiring to the disconnect junction box, and grounding wires, must be located underground.

(i) Compliance with Electrical Code. Building permit applications for wind energy systems must be accompanied by line drawings of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code.

(j) Construction Codes, Towers, and Interconnection Standards. Wind energy systems, including towers, must comply with all applicable state construction and electrical codes and local building permit requirements. Wind energy systems including towers, must comply with the FAA requirements, and other applicable local and state regulations. A wind energy system connected to the public utility electrical grid must comply with the Michigan Public Service Commission and Federal Energy Regulatory Commission standards. Off-grid systems are exempt from this requirement.

(k) System Access. Wind energy systems must be designed and installed such that step bolts, ladders, or other means of access readily accessible to the public are located at least eight feet above grade level.

(l) Safety. A wind energy system must have an automatic braking, governing, or feathering system to prevent uncontrolled rotation or over speeding. All wind towers must have lightning

protection. If a tower is supported by guy wires, the wires must be clearly visible to a height of at least six feet above the guy wire anchors.

(m) Minimum Ground Clearance. The lowest extension of any blade or other exposed moving component of a tower mounted wind energy system must be at least twenty feet above the surrounding grade at its highest point within twenty feet of the base of the tower and at least twenty feet above any outdoor surface intended for human use, such as balconies or roof gardens, that are located below the wind energy system.

(n) Roof-Mounted Wind Energy Systems. Roof-mounted wind energy systems must be limited to roof mounting and must not be mounted on any other building wall or surface.

(o) Performance Guarantee. All applications for a wind energy system must be accompanied by a performance guarantee in an amount sufficient to ensure the decommissioning and removal of the system when it is abandoned or no longer needed. Refer to Section 1281.04(f).

(p) Insurance. The applicant must submit proof of sufficient property damage and liability insurance.

(q) Utility Connection. The applicant must submit evidence that the utility company has been informed of the customer's intent to install an interconnected, customer-owned wind energy generator and that such connection has been approved. Off-grid systems are exempt from this requirement.

1251.54 VEHICLE REPAIR, MAJOR.

Truck parking areas, maneuvering lanes, and access ways to public streets must be designed to cause no interference with the safe and convenient movement of automobile and pedestrian traffic on and adjacent to the site.

# CHAPTER 1251
# Standards Applicable to Specific Uses

## 1251.01 ADAPTIVE REUSE

(a) Purpose. To allow for the adaptive reuse of vacant buildings in the city that have maintained their structural integrity but the use they were intended to serve is no longer needed, desired or allowed in the zoning district where they are located. The proposed use shall be in harmony with or beneficial to the surrounding uses and it must not do any of the following:

(1) Promote undue concentration of traffic throughout the day or at any specific time-period that would be uncharacteristic or disruptive to the surrounding uses.

(2) The use will not create activities, processes, materials, equipment or conditions of operation that will be detrimental to any person, property or the general welfare by reason of an excessive generation of noise, smoke, fumes, glare, vibrations or odors.

## 1251.02 ADULT BUSINESSES.

(a) Purposes. In the development and execution of this chapter, it is recognized that there are some uses, which because of their very nature have serious operational characteristics, particularly when concentrated or when one or more of them are located in near proximity to residential zones, thereby having a deleterious effect upon adjacent areas. Regulation of these uses through location is necessary to ensure that the adverse effects of such uses will not contribute to the blighting or downgrading of the surrounding neighborhood. The provisions of this chapter are intended to prevent a concentration of these uses within any one area and to prevent deterioration or blighting of nearby residential neighborhoods.

(b) Restrictions on Location. An adult business may be located in the city only in accordance with the following restrictions:

(1) All such businesses shall be limited to areas zoned B-1, I-1 or I-2, excluding those areas so zoned within the boundaries of the Battle Creek Tax Increment Financing Authority District known as Fort Custer Industrial Park, as approved by the City Commission in Resolution 27, passed April 28, 1986, and amended by Resolution 338, passed September 9, 1986 and excluded from within the boundaries of the Dickman Road Business Improvement District established by City Commission Resolution 351 on September 7, 1999.

(2) No adult business shall be located within 1,000 feet of another adult business; within 1,000 feet of a church, school, or public park; or within 300 feet of a residential or agricultural zoning district.

(c) Miscellaneous Requirements.

(1) The height, yard, lot area, lot width, building coverage, sign and parking requirements of an adult business shall conform to the requirements for the zone in which it is located.

(2) The distance between an adult business and a church, school, public park, or a residential or agricultural zoning district shall be measured in a straight line, without regard to intervening structures or objects, from the nearest property line of the adult business or building containing an adult business to the nearest property line of the protected use or residential or agricultural district.

(3) No person shall reside in or permit any person to reside in the premises of an adult business.

(d) Exceptions. The provisions of this chapter regarding massage parlors shall not apply to hospitals, sanitariums, nursing homes or medical clinics, or to the offices of a physician, surgeon, chiropractor, osteopath or physical therapist, duly licensed by the state, or to massage therapists licensed by the State under Part 179A of the Public Health Code, MCL. 333.17951 et seq.

(e) Penalty; Equitable Remedies.

(1) A person who violates or fails to comply with any of the provisions of this chapter is responsible for a Class F municipal civil infraction and shall be subject to the civil fines provided in Section 202.98.

(2) Notwithstanding subsection (a) hereof, the city may employ any remedy available at law or in equity to prevent or remedy a violation of any provision of this chapter.

1251.03 ASSISTED SENIOR LIVING.

(a) Minimum Site Area. The minimum parcel area shall contain 2,000 square feet per living bed.

(b) Required Minimum Usable Floor Area in Square Feet Per Dwelling Unit.

(1) State of Michigan licensing requirements regulate assisted living unit size.

(2) No living unit within a senior housing development may contain more than two bedrooms.

(c) Maximum Building Height. The maximum building height in an assisted senior living development shall not exceed forty feet.

(d) Setbacks. The minimum setbacks for senior housing shall be:

(1) Front yard setback: Fifty feet.

(2) Side yard setback: Fifty feet.

(3) Rear yard setback: Fifty feet.

(e) Open Space. A minimum of 25% of the site, exclusive of existing or planned public road right-of-way, must be maintained as landscaped open space. Courtyards larger than 2,400 square feet may be counted as required open space. Recreation facilities, active and/or passive, including paved walkways and covered sitting areas shall be provided in a manner that meets the needs of the resident population.

(f) Building Facade and Length. Assisted senior living buildings must present a residential architectural image in terms of building facades, the composition and use of exterior wall surface materials, and building length. Any building façade longer than 100 feet must provide for variations in the outside wall and roof line.

1251.04 AUTOMOBILE CAR WASH ESTABLISHMENT.

(a) Pedestrian Access. The use must be located so as not to interfere with the pedestrian interchange between the parking lot and the storefront.

(b) Driveway Approaches. No more than two driveway approaches are permitted directly from any thoroughfare and the driveway must not exceed thirty (30) feet in width at the property line.

(c) Circulation. Vehicular approaches to the property must be designed to allow sufficient off-street parking or waiting area without creating an interference with traffic on the street.

1251.05 AUTOMOBILE REPAIR.

(a) Pedestrian Access. The use must be located so as not to interfere with the pedestrian interchange between the parking lot and the storefront.

(b) Driveway Approaches. No more than two driveway approaches are permitted directly from any thoroughfare and the driveway must not exceed thirty feet in width at the property line.

(c) Circulation. Vehicular approaches to the property must be designed to allow sufficient off-street parking or waiting area without creating an interference with traffic on the street.

(d) Screening. All inoperable vehicles shall be enclosed by a sight-obscuring fence or wall of a minimum height of eight feet

1251.06 AUTOMOBILE SERVICE STATION.

(a) Pedestrian Access. The use must be located to not interfere with the pedestrian interchange between the parking lot and the storefront.

(b) Driveway Approaches. No more than two driveway approaches are permitted directly from any thoroughfare and the driveway must not exceed thirty feet in width at the property line.

(c) Pump Islands. Gasoline pumps and pump islands may be located in any required yard setback space but must be located at least twenty feet from any lot line.

(d) Circulation. Vehicular approaches to the property must be designed to allow sufficient off-street parking or waiting area without creating an interference with traffic on the street.

(e) Indoor Activity Only. All activities, except those required to be performed at fuel pumps, must be carried on inside a building. If work is performed on a vehicle, such vehicle must be entirely within a building.

(f) Outdoor Facilities and Merchandise. The location of outdoor facilities (e.g., vacuums, air machines, etc.) and outdoor merchandise (e.g., coolers, propane tanks, etc.) must be shown on the site plan and must not interfere with vehicular and pedestrian circulation.

1251.07 AUTOMOBILE OR VEHICLE DEALERSHIP.

(a) Minimum Lot Size and Lot Width. Automobile or vehicle dealerships shall be located on a parcel of land containing no less than one-half acre and having a width of at least 100 feet at the front lot line.

(b) Outdoor Storage. Outdoor storage of disabled, damaged or unlicensed vehicles is prohibited, unless properly screened.

1251.08 BANQUET AND MEETING HALL.

Only permitted in T-5 if on second floor or above.

1251.09 BED AND BREAKFAST.

(a) Parking. Bed and breakfast establishments are permitted only when off-street parking is provided upon the lot or on adjoining property, which space is adequate to accommodate one car for each room available to tourists.

(b) Accessory Structures. No accessory buildings shall be used for bed and breakfast sleeping rooms unless they were originally constructed to accommodate residential use. No garage shall be used for bed and breakfast sleeping rooms.

1251.10 CAMPGROUND.

(a) Minimum Lot Size. Minimum campground size shall be five acres.

(b) Access. The campground shall provide vehicular access to a public street or road.

(c) Public Stations. Public stations, housed in all-weather structures, containing adequate water outlet, toilet, waste container and shower facilities, shall be provided, uniformly throughout the campground at a ratio of not less than one such station for each twenty sites.

(d) Commercial Enterprises. No commercial enterprises shall be permitted to operate in the campground, except that convenience goods shopping may be provided.

(e) Campsite Setback. Campsites shall be located a minimum distance of fifty feet from property lines, and fifteen feet between all campsites.

1251.11 CEMETERY.

(a) Minimum Lot Size. Twenty acres.

(b) Setbacks. No building or structure may be closer than fifty feet from any property line.

1251.12 COMMUNITY GARDEN.

(a) Applicability. Community gardens are subject to restrictions for accessory buildings, fencing, and nuisance provisions of the Battle Creek Codified Ordinances for the property on which the community garden is located.

(b) Minimum Lot Size and Lot Width. Community gardens are a permitted use of vacant property that contains a minimum of 5,000 square feet and minimum width of fifty feet.

(c) General Requirements. The following provisions apply to community gardens:

(1) Plant beds shall be setback three feet from the property lines and the public right-of-way.

(2) Accessory buildings including greenhouses, storage sheds, and shade pavilions shall be permitted in the side or rear yard, subject to Section 1260.01, but shall not exceed 10% of the total lot area.

(3) Hoop houses are permitted as an accessory building but are not counted toward the allowable accessory building size limitation. The coverings must be maintained and remain intact, and removed when no longer in use for a period of six-months or longer.

(4) Compost piles must be located at least five feet from all adjoining property lines and a minimum of twenty feet from the nearest residential structure. Each compost bin/area shall be less than sixteen square feet in size.

(5) Rain catchment systems must be located at least five feet from all adjoining property lines.

(6) Farm stands selling plants grown at the property are permitted between 8:00 a.m. and 8:00 p.m. Except for sales of plants produced within the community garden and sold at the farm stand, there shall be no retail sales on the site except that properties exceeding two acres may sell up to thirty percent of their overall farmers market inventory in the form of packaged food to complement the produce grown on premise. Alcohol sales shall be prohibited.

(7) The use of motorized equipment, by use of gas or electricity, within a residential zoning district shall be restricted to the hours between 7:00 a.m. and 8:00 p.m.

(8) Lighting, if provided, shall be a minimal amount and shielded so that all directly emitted light falls within the property.

(9) Fencing shall comply with Section 1260.02.

(10) Vehicle access to the site shall only be by way of a driveway constructed to city standards to avoid vehicle damage to the curb, sidewalk and any lawn area in the right-of-way.

(11) There are no minimum parking requirements, however any parking lot proposed and designed for four or more vehicles must be constructed in accordance with Section 1261.01 only after a site plan has been reviewed and approved in accordance with Section 1281.04.

(12) One freestanding sign consisting of no more than twelve square feet shall be allowed. Such sign shall otherwise comply with the applicable regulations of the zoning district in which it is located.

(13) Trash containers may be provided on site.

(14) Gardening activities shall be conducted in a manner which is consistent with the activities and noise levels of the neighborhood in which they are located.

(15) Educational activities relating to the community garden and food preparation may be held onsite where properties are 2 acres or more in size.

(d) Maintenance.

(1) Community gardens shall be maintained in an orderly and neat condition, free of noxious weeds or debris. Dead garden plants shall be removed regularly and, in any instance, no later than November 30 of each calendar year.

(2) Plants or ground cover other than grass shall be prevented from encroaching onto adjacent properties or onto the public right-of-way.

(3) No plants except grass may be grown in the public right-of-way or within one foot of the public sidewalk. Grass must be maintained at a height that does not exceed nine inches.

(4) No plant material may grow to a height that interferes with a clear vision line of sight at street intersections or when entering or exiting driveways.

(5) Oats, wheat, and rye may be used as a winter cover crop, but not grown to full maturity in any season.

(6) Trash receptacles shall be located to the rear of the property.

(7) Walkways shall be unpaved and covered with mulch, gravel or other aggregate that is treated to control dust.

(8) Garden waste or other refuse that is not allowed as compost may not be stored or allowed to accumulate on the site.

(9) Compost piles are only for waste created on the property and they must be maintained. Compost shall not include meat, grease, fat, oil, bones, manure, or milk products.

(10) These uses shall not be detrimental to the physical environment or to the public health and general welfare by reason of excessive production of noise, smoke, fumes, vibrations, odors, chemical, or biological pollutants. Nothing associated with a community garden or commercial urban farm, including allowable fertilizers, pesticides, insecticides, herbicides, compost materials, and water collection receptacles shall emit odors that can be detected beyond the confines of the property containing the garden or be an inordinate attraction for mice, rats or other rodents.

(11) Tools, supplies, and machinery shall be stored in an enclosed structure or removed from the property daily. All chemicals and fuels shall be stored off the ground in an enclosed, locked structure when the site is unattended.

(12) The property shall be maintained to prevent the flow of stormwater, irrigation water, chemicals, dirt, or mud across or onto adjacent lots, properties, public streets, or alleys.

(13) At such time garden activity ceases completely and the site will no longer be used for a garden, any raised planting beds, accessory buildings, and other above ground remains of the garden shall be promptly removed and the ground leveled and restored so it can be utilized for uses permitted in that zoning district

1251.13 CONVALESCENT HOME, NURSING HOME, OR HOME FOR THE AGED.

Such businesses may establish adult foster care centers within their own facilities as a permitted accessory use. Convalescent homes, nursing homes, and homes for the elderly shall be licensed by the State of Michigan. Such businesses, however, may establish adult foster care centers within their own facilities as a permitted accessory use, if such use is permitted within the district.

1251.14 DRIVE-THRU BUSINESS.

(a) Drive-Thru Window. A business with a drive-thru window shall provide a separate customer service station.

(b) Minimum Width. The traffic lane serving the drive-thru window shall be at least ten feet wide.

(c) By-Pass Lane. A by-pass lane or other suitable means of access to a public street shall be provided for vehicles that do not use the drive-thru window.

(d) Parking Spaces. Parking spaces located beyond drive-thru windows shall be designated for use of drive-thru window patrons.

1251.15 FARMER'S MARKET.

If the farmer's market is seasonal, the use will require special land use approval.

1251.16 GOVERNMENT/PUBLIC USES.

Public or semipublic service buildings, where permitted, may be erected to a height not exceeding sixty feet.

1251.17 GENERAL AND SPECIALIZED FARMS, INCLUDING CROPS AND THE RAISING AND KEEPING OF LIVESTOCK.

(a) Customary agricultural operations, including general farming, field crops, gardening, fruit orchards, nurseries, greenhouses and usual farm buildings, providing any farm building shall not be closer than fifty feet from any property line.

(b) General and specialized farms, including the raising and keeping for profit of cattle, hogs, horses, ponies, sheep and similar livestock on a lot having an area of not less than ten acres;

(c) Customary farm animals including horses, ponies, poultry, rabbits, goats, and similar small animals and similar livestock, may be kept on a noncommercial basis, for the enjoyment, use, and/or consumption by the occupants of the premises, when adequately housed and fenced on a parcel of land not less than 43,560 square feet (1 acre) in area, subject to the following conditions:

(1) No storage of manure or odor or dust producing materials or uses shall be permitted within 100 feet of any adjoining property line.

(2) A private stable for animals owned by the occupant may be kept, provided that the minimum area upon which one horse may be kept is one acre, and that one additional horse may be kept for each additional 20,000 square feet over one acre.

(3) Private stables or buildings housing farm animals shall not be closer than 100 feet from any adjoining property line.

1251.18 HOME OCCUPATIONS.

(a) Purpose. The purpose of this chapter is to provide for the regulation of certain business activities to be carried on or within residential districts when accessory and subordinate to the residential use, and which by their nature will not detract from the quality of residential neighborhoods.

(b) Home Occupation Defined. A home occupation is an activity carried out for consideration by a resident and conducted as an accessory use in the resident's dwelling unit. Consideration shall be defined as some right, interest, profit or benefit accruing to one party, or some forbearance, detriment, loss, or responsibility, given, suffered, or undertaken by the other. This section does not prohibit the regulation of noise, advertising, traffic, hours of operation, or other conditions that may accompany the use of a residence under this section.

(c) Regulations; Requirements. Home occupations engaged in within a Residential District by the resident of a dwelling unit shall comply with all of the following:

(1) Such occupation shall be carried on by one occupant within the principal building, excluding all outdoor activities, with no employees. Examples of such home occupations

include, but are not limited to, hairdressing, millinery, dressmaking, bookkeeping and accounting services, real estate and insurance sales and catalog sales.

(2) A babysitting service or family childcare home when not more than seven minor children are received for care and supervision for periods of less than eighteen hours a day, when unattended by a parent or legal guardian, is permitted.

(3) Home occupations shall be conducted by a person living within the dwelling and by no others, either as a principal or an employee. However, home occupations involving subordinate assistants who do not reside within the dwelling may be allowed by the Zoning Board of Appeals, where, in the Board's discretion, the same would not materially impair the residential character of the neighborhood.

(4) Home occupations shall be operated in their entirety within the dwelling and not within any garage or accessory building located upon the premises, except for incidental storage, which may be allowed within a residential type garage upon the premises.

(5) No external evidence of such home occupation shall be allowed indicating from the exterior that it is being used for anything but a dwelling. This includes the parking of commercial vehicles and temporary storage of any materials associated with a home occupation.

(6) The parking or storage of commercial vehicles at a residence is prohibited and in violation of this chapter. For purposes of this section, a commercial vehicle is any vehicle used to conduct a business or trade including but not limited to step vans, cargo vans, box trucks, stake beds, buses, tractor trailers, dump trucks, wreckers, trailers, earth moving equipment, cement mixers and other similar construction equipment that has two or more of the following characteristics:

A. Exceeds a GVWR of 10,000 lbs.

B. Exceeds seven feet in height.

C. Exceeds twenty feet in length.

D. Has more than two axles.

E. Has more than four tires in contact with the ground.

F. Can carry more than eight passengers.

G. Is designed to sell food or merchandise directly from the vehicle.

(7) Home occupations may not be used as a meeting place, or rendezvous point for business activities or service operations before, during, or after shifts.

(8) No home occupation shall be conducted within a dwelling unless the same is clearly incidental and subordinate to the principal use of the premises for residential purposes.

(9) No home occupation shall involve the sale of goods from the premises.

(10) No service shall be sold or conducted upon or from the premises which would constitute a nuisance to adjoining residents by reason of noise, smoke, odor, electrical disturbance, night lighting or the creation of unreasonable traffic to the premises. Noise, smoke, odor, electrical disturbances or lighting shall not be discernible beyond the boundaries of the property from which the home occupation is conducted.

(11) No home occupation requiring warehousing of retail or wholesale merchandise, or delivery of the same by large semitrailer-type trucks, shall be allowed.

(12) Paving of any yard area other than normal driveway areas to accommodate parking for home occupations is prohibited.

(13) No home occupation shall be allowed which utilizes more than twenty percent of the interior gross floor area of the inhabitable area of the dwelling and not, in any event, more than 300 square feet.

(14) In no instance shall the repair or sale of motor vehicles be permitted to be a home occupation.

(15) The permission for home occupations as provided herein is intended to secure flexibility in the application of this Zoning Code, but such permission is not intended to allow the essential residential character of a Residential District, in terms of use, traffic and appearance, to be changed in the slightest degree by the occurrence of nonresidential activities. Furthermore, no structural provisions shall be inherent in the design of the structure and no structural alterations shall be made for the accommodation of any home occupation. All activities, unless otherwise stated, shall be carried on indoors only, within the principal building.

(d) Other Requirements. The regulation of home occupations in this chapter shall not waive additional provisions that may be necessary to meet other local, state or federal requirements, including, but not limited to, the following:

(1) State, local or federal taxation or business licensing laws;

(2) All applicable State of Michigan regulations for the preparation and distribution of food and food products;

(3) Cosmetologists, land surveyors and other occupations requiring licensing by the Michigan Department of Licensing and Regulatory Affairs;

(4) Section 28.1814(1)(e) of the Uniform Traffic Code of the State of Michigan, which prohibits the parking of a motor vehicle on a public street for more than forty-eight continuous hours;

(5) The Child Care Organizations Act, Public Act 116 of 1973, as amended, being MCL 722.111 et seq. which provides for the licensing of child care facilities by the Michigan Department of Social Services. The Act defines family child care homes as private homes in which at least one but fewer than eight minor children are received for care and supervision for compensation for periods of less than twenty-four hours a day, unattended by a parent or legal guardian, except children related to an adult member of the household by blood, marriage, or adoption.

(6) The Uniform Fire Code as it pertains to the storage of flammable materials, the use of mechanical or electrical equipment and the need to provide sufficient ingress and egress; and

(7) Private covenants or deed restrictions.

1251.19 HOSPITAL GREATER THAN TWENTY THOUSAND SQUARE FEET.

(a) Minimum Lot Size. All such hospitals shall be developed on sites consisting of at least five acres in area. Provided that there is a minimum of 1,500 square feet of lot area per bed.

(b) Minimum Setbacks. All structures and activity areas must be located at least 100 feet from all property lines.

(c) Screening. Ambulance and delivery areas shall be obscured from all residential view with an obscuring wall or fence not less than six feet in height.

(d) Maximum Height. Public, semipublic or public service buildings, hospitals, institutions or schools, where permitted, may be erected to a height not exceeding sixty feet when the required side and rear yards are each increased by one foot for each foot of additional building height above the height regulations for the district in which the building is located.

1251.20 HOTEL.

(a) Minimum Lot Area and Lot Width. The minimum lot area shall be one acre with a minimum width of 150 feet, provided that there shall be not less than 800 square feet of lot area for each guest unit.

(b) Lighting. No lighting shall have a source of illumination visible outside of the boundaries of the lot. Such lighting shall in no way impair safe movement of traffic on any street or highway. No lighting shall shine directly on adjacent properties.

1251.21 INDEPENDENT SENIOR LIVING WITH SERVICES.

(a) Minimum Site Area. The minimum site area shall contain 5,500 square feet per independent living unit.

(b) Required Minimum Usable Floor Area in Square Feet Per Dwelling Unit.

(1) Independent Living Units: Efficiency/studio, one-bedroom dwelling units, and two-bedroom dwelling units shall meet the minimum requirements of the Building Code.

(2) No living unit within a senior housing development may contain more than two bedrooms.

(c) Maximum Building Height. The maximum building height in a senior housing development shall not exceed forty feet.

(d) Setbacks. The minimum setbacks for senior housing shall be:

(1) Front yard setback: Fifty feet.

(2) Side yard setback: Fifty feet.

(3) Rear yard setback: Fifty feet.

(e) Open Space. A minimum of 25% of the site, exclusive of existing or planned public road right-of-way, must be maintained as landscaped open space. Courtyards larger than 2,400 square feet may be counted as required open space. Recreation facilities, active and/or passive, including paved walkways and covered sitting areas shall be provided in a manner that meets the needs of the resident population.

(f) Building Facade and Length. Senior housing buildings must present a residential architectural image in terms of building facades, the composition and use of exterior wall surface materials, and building length. Any building façade longer than 100 feet must provide for variations in the outside wall and roof line.

1251.22 JUNK OR SALVAGE YARD.

(a) Screening. Where a junk yard is adjacent to residential or commercial zoned properties or has frontage on a road or highway, a solid masonry wall or solid obscuring fence of eight feet in height or one foot above the height of the piles, whichever is greater, shall be constructed in the side and rear yards. The fence shall be placed on or inside the required side yard, or rear yard setback.

(b) Enclosed. There shall be no burning of tires, vehicle bodies, wiring, oil or waste products on the site, and all industrial processes, including the use of equipment for cutting, compressing or packaging shall be conducted within a completely enclosed building.

(c) Truck Routes. Truck routes must be established for movement in and out of the development in such a way that it will minimize the wear on public streets and prevent hazards and damage to other properties.

1251.23 KENNELS/VETERINARIAN.

(a) Screening. All outdoor runs or breeding areas shall be enclosed on all sides by an obscuring wall or fence not less than four feet in height.

(b) Setback. All outdoor runs and breeding areas shall be located at least fifty feet from any lot line and shall be not be located in the front yard.

1251.24 MARIHUANA: MARIHUANA BUSINESS REGULATIONS.

Refer to Chapter 835, Adult Use Marihuana Establishments, and/or Chapter 833 Medical Marihuana Facilities of the City of Battle Creek Codified Ordinances for business licensing requirements.

1251.25 MARIHUANA: ADULT USE MARIHUANA RETAILER ESTABLISHMENT.

Must be located at least 1,000 feet from day care centers, preschools, private or public K-12 schools and libraries, and, except for in the I-1 and I-2 Districts, must be located at least 1,000 feet away from a property containing an adult use marihuana retailer, an adult use marihuana microbusiness, and a medical marihuana provisioning center. The setback measurements are between nearest property lines, regardless of ownership of property or licensee. In the I-1 and I-2 Districts, state licensed adult use marihuana retailers are permitted only when collocated with an adult use marihuana grower and/or processor.

1251.26 MARIHUANA: ADULT USE MARIHUANA MICROBUSINESS.

(a) Locational Specifications.

(1) The property at which the microbusiness will be located shall be at least 1,000 feet away from any property containing an adult use marihuana retailer, an adult use marihuana microbusiness, and a medical marihuana provisioning center; setbacks measured between nearest property lines, regardless of ownership of property or licensee; and

(2) The property at which the microbusiness will be located shall be at least 1,000 feet from K-12 schools and libraries open to the public, setbacks measured between nearest property lines, regardless of ownership of property or licensee; and

(3) The property at which the microbusiness will be located shall not abut a Residential (“R”) zoning district or a property with a residential use.

1251.27 MARIHUANA FACILITIES AND ESTABLISHMENTS.

(a) Purpose. The purpose of this chapter is to implement the provisions of the Michigan Medical Marihuana Act (MMA), Initiated Law 1 of 2008, as amended being MCL 333.26421 et seq., the Medical Marihuana Facilities Licensing Act (MMFLA), Public Act 281 of 2016, as amended, being MCL 333.2701 et seq., and the Michigan Regulation and Taxation of Marihuana Act (MRTMA), Initiated Law 1 of 2018, as amended, being MCL 333.27951 et seq. for establishing local zoning authority for the permitting of adult use marihuana establishments and medical marihuana facilities. Further, the purpose of this chapter also provides:

(1) A process for the city to legally facilitate the development of adult use marihuana establishments and medical marihuana facilities, which are otherwise illegal under federal law.

(2) A procedure for growing, processing, testing, transporting, and selling medical marihuana for qualified persons and selling adult use marihuana as permitted under the MRTMA.

(3) Zoning authority for the protection and preservation of public safety, welfare, and property value; and ensuring consistency with the future land use map of the Master Plan.

(4) A licensing and taxing authority to the city to defray costs to additional public safety, administrative, and enforcement with the result of facilitating development of adult use marihuana establishments and medical marihuana facilities.

(5) Additional economic industry and benefit to the community.

(b) Authority. With the adoption of the MMA of 2008, the MMFLA of 2016, and the MRTMA of 2018, the City of Battle Creek has legislative authority to establish zoning regulations, application processes and associated fees, and enforcement abilities for marihuana development without penalty consistent with the state laws.

(c) License and Permit Required; Application; Fee.

(1) Licenses required. No person or entity shall operate an adult use marihuana establishment or medical marihuana facility without receiving the following licenses:

A. An approved operating license from the State;

B. An approved permit from the City pursuant to Chapter 833 and/or Chapter 835; and

(2) Permit type. No person or entity shall operate an adult use marihuana establishment or medical marihuana facility without receiving the following permits where required:

A. Approved building permit and occupancy permit. All marihuana establishments and facilities shall require an approved building permit showing compliance with applicable zoning and building codes. A certificate of occupancy shall be issued once all applicable inspections are show satisfactory compliance with all zoning and building codes.

B. Approved site plan application. Certain medical marihuana facilities and adult use marihuana establishments shall require gaining an approved site plan application pursuant to Section 1281.04 Site Plan Review.

C. Approved special use permit, if required. Certain medical marihuana facilities and adult use marihuana establishments shall require an approved special use permit pursuant to Section 1281.05 Special Land Uses.

(d) Non-Conforming Uses.

(1) Medical marihuana dispensaries and growing operations, which may have been established under the auspices of the 2008 MMA but have not gained approved permits from the City shall not be considered legally non-conforming. Owners of such dispensaries or growing operations shall cease operation, or if applicable, obtain required permit pursuant to Section 1251.23.

(2) Medical marihuana dispensaries and growing operations, which may have been established under the auspices of the 2008 MMA and have approved permits from the City are considered legally non-conforming and may continue operating pursuant to Chapter 1270 Nonconforming Uses and Structures.

(e) Locational Standards. Pursuant to the 2016 MMFLA, 2018 MRTMA, and Section 1251.23, all types of state licensed marihuana establishments and facilities are allowed in zoning districts established by this chapter and within specific zoning districts provided in this Zoning Code.

(1) The official updated 'Marihuana Maps' of the City of Battle Creek will be maintained by the City's Planning Division.

(2) Co-location of licenses. Where State Licensed Marihuana Growers, Processors, Adult Use Retailers, and Provisioning Centers are co-located on a single property, the usable floor area of the Provisioning Center and Adult Use Retailer shall not exceed 10% of the gross square footage of the overall combine areas of the growing and provisioning areas.

(3) Only one state licensed provisioning center, microbusiness or retailer shall be allowed on a property within the area defined by property lines, except for colocations at same locations by the same licensee holder.

(f) Development, Operational Standards. The following regulations are applicable to all state licensed marihuana establishments and facilities.

(1) Marihuana location. Except when being transported by state licensed security transporter, all marihuana shall be located entirely inside a building having permanent foundation, walls, and roof.

A. Notwithstanding subsection (1), a roof on grow establishments or facilities may consist of a sturdy transparent material, such as glass, to allow sunlight into the growing areas of the building. If such transparent material is utilized, it must be fully covered with a non-transparent material between dusk and dawn that prevents interior lighting from escaping through the roof.

B. Walls enclosing marihuana growing establishments or facilities shall be constructed of a structurally-supportive load bearing brick, wood, or masonry construction from grade to eight feet in height.

(2) Signage. Notwithstanding Chapter 1263 Signs, only two signs per street frontage shall be permitted for any state licensed marihuana establishment or facility. Neon lighted signs are prohibited.

(3) Fence. Use of barb wire outside of the Industrial Districts is prohibited.

(4) Window glass on ground floor levels must be transparent and free from film or other materials that block visibility. Interior shades, curtains, etc. are permitted.

1251.28 MARIHUANA: MEDICAL AND ADULT USE MARIHUANA GROW OPERATION.

Must be located at least 500 feet away from properties, as measured between nearest property lines, containing any of the following uses:

(a) Religious assembly uses;

(b) Child care centers, preschools, private or public K-12 schools;

(c) Public parks;

(d) Libraries;

(e) Any Residential (“R”) zoned property

1251.29 MARIHUANA: MEDICAL AND ADULT USE MARIHUANA PROCESSING FACILITY.

Must be located at least 500 feet away from any Residential (“R”) zoned property and at least 1000 feet away from properties, as measured between nearest property lines, containing any of the following uses:

(a) Religious assembly uses;

(b) Child care centers, preschools, private or public K-12 schools;

(c) Public parks;

(d) Libraries.

1251.30 MARIHUANA: MEDICAL MARIHUANA PROVISIONING CENTER.

Must be located at least at least 1,000 feet away from day care centers, preschools, private or public K-12 schools and libraries, and, except for in the I-1 and I-2 Districts, must be located 1,000 feet away from a property containing an adult use marihuana retailer, an adult use marihuana microbusiness, and a medical marihuana provisioning center. These setback measurements are between nearest property lines, regardless of ownership of property or licensee. In the I-1 and I-2 Districts, state licensed medical marihuana provisioning centers are permitted only when collocated with a medical marihuana grower and/or processor.

1251.31 MARIHUANA: MEDICAL AND ADULT USE MARIHUANA SAFETY COMPLIANCE FACILITY.

Must be located at least 1,000 feet away from properties, as measured between nearest property lines, containing any of the following uses:

(a) Religious assembly uses;

(b) Child care centers, preschools, private or public K-12 schools;

(c) Public parks;

(d) Libraries;

(e) Any Residential (“R”) zoned property.

1251.32 MARIHUANA: MEDICAL AND ADULT USE MARIHUANA SECURE TRANSPORTER.

Must be located at least 1,000 feet away from properties, as measured between nearest property lines, containing any of the following uses:

(a) Religious assembly uses;

(b) Child care, preschool, private or public K-12 schools;

(c) Public parks;

(d) Libraries;

(e) Any Residential ("R") zoned property.

1251.33 MULTI-FAMILY DWELLING UNITS.

~~(a) Minimum Lot Area. No dwelling shall be established having an area or width less than that specified in the R-1R District. However, for multiple family housing, the average lot area per family or dwelling unit shall be not less than 2,170 square feet allowing up to twenty units per acre.~~

~~(b)~~ Location. Multiple family dwelling units shall be located only the second floor or above on Michigan Ave in the T4 and T5 zoning districts. Multiple family dwelling units are permitted on the ground floor everywhere else.

1251.34 MOTEL.

(a) Minimum Lot Area. The minimum lot area shall be one acre with a minimum width of 150 feet, provided that there shall be not less than 800 square feet of lot area for each guest unit.

(b) Lighting. No lighting shall have a source of illumination visible outside of the boundaries of the lot. Such lighting shall, in no way, impair safe movement of traffic on any street or highway. No lighting shall shine directly on adjacent properties.

1251.35 MICROBREWERY.

(a) Distribution. Wholesale distribution shall be prohibited.

(b) Setback. Microbreweries must be setback a minimum of 300 feet from any residence.

1251.36 OUTDOOR RECREATION.

Outdoor theaters according to the following:

(a) Compliance. The proposed internal design shall receive approval from the Building Inspector, Zoning Administrator, and the City Engineer as to adequacy of drainage, lighting, screening and other technical aspects.

(b) Direct Access. Outdoor recreation establishments shall abut directly upon a major thoroughfare of not less than 120 feet of right-of-way width.

(c) Ingress and Egress. Points of ingress and egress shall be available from abutting major thoroughfares of not less than 120 feet of right-of-way width and shall not be available from any residential street.

(d) Off-Street Waiting Space. Off-street waiting space shall be provided for all vehicles waiting or standing to enter the facility. No vehicle shall be permitted to wait or stand within a dedicated right of way.

(e) Screening. All lighting used to illuminate the area shall be so installed as to be confined within and directed onto the premises on which the outdoor recreation establishment is located.

1251.37 OUTDOOR STORAGE

Outdoor storage of retail products, construction material or equipment shall be confined to a concealment type fence enclosure per Section 1261.02 Fences, except that a reasonable amount of typically seasonal retail product may be stored near the primary building in an orderly fashion.

1251.38 PERSONAL-SCALE SOLAR ENERGY FACILITY.

Roof-mounted and wall-mounted solar energy systems for on-site use are permitted as personal-scale solar energy facilities, subject to the following regulations:

(a) Height. Roof-mounted systems must not extend more than three feet above the roofline nor will they extend above the maximum permitted height of the building to which it is attached.

(b) Location.

(1) Roof-mounted solar energy systems may be located anywhere on a roof of a principal or accessory structure. However, roof-mounted solar energy systems shall not protrude beyond the edge of the roof. A solar panel may function as a roof element, such as an awning.

(2) Wall-mounted solar energy systems may be located anywhere on the wall of a principal or accessory structure. Wall-mounted systems shall not extend above the edge of the roof.

(c) Performance Guarantee. All applications for a solar energy system must be accompanied by a performance guarantee sufficient to ensure the decommissioning and removal of the system when it is abandoned or no longer needed. Refer to Section 1281.04 (f) and Section 1281.046.

(d) Insurance. The applicant must submit proof of sufficient property damage and liability insurance.

1251.39 PERSONAL-SCALE WIND ENERGY FACILITY.

Personal-scale wind energy facilities designed to generate power for the property at which it is located are permitted, subject to the following regulations:

(a) Location. Personal-scale wind energy facilities may not fall within the front yard and must meet all of the applicable requirements of this Code.

(b) Maximum Wind Turbine Height. Ten feet above the highest point of the roof or ten feet above the maximum height of the zoning district, whichever is lower.

(c) Noise. A wind energy system must comply with the noise standards set forth in the City's ordinances.

(d) Shadow Flicker. The application for a wind energy system must include a shadow flicker analysis demonstrating impact on adjacent and nearby residential properties. Wind energy

systems must be constructed in locations that minimize the impacts of shadow flicker on residences.

(e) Lighting. No wind energy system will be artificially lighted unless required by the Federal Aviation Administration (FAA).

(f) Appearance, Color, and Finish. The wind energy system must be maintained in the color or finish that was originally applied by the manufacturer, unless otherwise approved in the building permit. All wind energy systems will be a single non-reflective, non-obtrusive, matte finished color (e.g. white or gray).

(g) Electrical Wires. All electrical wires associated with a wind energy system, other than wires necessary to connect the wind generator to the tower wiring, the tower wiring to the disconnect junction box, and grounding wires, must be located underground.

(h) Compliance with Electrical Code. Building permit applications for wind energy systems must be accompanied by line drawings of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code.

(i) Construction Codes, Towers, and Interconnection Standards. Wind energy systems, including towers, must comply with all applicable state construction and electrical codes and local building permit requirements. Wind energy systems including towers, must comply with the FAA requirements, and other applicable local and state regulations. A wind energy system connected to the public utility electrical grid must comply with the Michigan Public Service Commission and Federal Energy Regulatory Commission standards. Off-grid systems are exempt from this requirement.

(j) System Access. Wind energy systems must be designed and installed such that step bolts, ladders, or other means of access readily accessible to the public are located at least eight feet above grade level.

(k) Safety. A wind energy system must have an automatic braking, governing, or feathering system to prevent uncontrolled rotation or over speeding. All wind towers must have lightning protection. If a tower is supported by guy wires, the wires must be clearly visible to a height of at least six feet above the guy wire anchors.

(l) Minimum Ground Clearance. The lowest extension of any blade or other exposed moving component of a tower mounted wind energy system must be at least twenty feet above the surrounding grade at its highest point within twenty feet of the base of the tower and at least twenty feet above any outdoor surface intended for human use, such as balconies or roof gardens, that are located below the wind energy system.

(m) Roof-Mounted Wind Energy Systems. Roof-mounted wind energy systems must be limited to roof mounting and must not be mounted on any other building wall or surface.

(n) Utility Connection. The applicant must submit evidence that the utility company has been informed of the customer's intent to install an interconnected, customer-owned wind energy generator and that such connection has been approved. Off-grid systems are exempt from this requirement.

1251.40 PERSONAL SERVICE ESTABLISHMENT

Personal service establishments requiring a state license must be licensed by the State of Michigan. Personal services establishments without required state licenses, if any, are not permitted in the City of Battle Creek.

1251.41 PRIVATE GARDEN

(a) Subject to Restrictions: Private gardens are allowed on any property when accessory to a permitted principal use and subject to restrictions for accessory buildings, fencing, and nuisance provisions of the Battle Creek Codified Ordinances for the property on which the private garden is located.

(b) Limitations: Private gardens are permitted on any vacant property less than one acre in size with the following limitations:

(1) Plant beds shall be set back three feet from property lines and the public right-of-way.

(2) Compost piles must be located at least five feet from all adjoining property lines and a minimum of 20 feet from the nearest residential structure. Each compost bin/area shall be less than 16 square feet in size.

(3) Rain catchment systems must be located at least five feet from all adjoining property lines.

(4) Farm stands selling plants grown at the property are permitted between 8:00 a.m. and 8:00 p.m. and shall be setback three feet from the property line and the public right-of-way. Except for sales of plants produced within the private garden, there shall be no retail sales on the site.

(5) Use of motorized equipment, by use of gas or electricity, within a residential zoning district shall be restricted to the hours between 7:00 a.m. and 8:00 p.m.

(6) Decorative landscape lighting is permitted.

(7) Fencing shall comply with Section 1260.02.

1251.42 RELIGIOUS INSTITUTIONS.

(a) Noise. If music, bells, carolers, chimes or similar audio presentation are to be used, the expected use, times, durations and volumes shall be disclosed on the site plan.

(b) Site Plan. All uses of the structure, facility and land shall be completely described in a full use statement on the site plan, such uses as outdoor recreation areas, pavilions, memorial gardens, memorials, gathering areas and similar uses or activities shall be identified on the site plan.

(c) Maximum Height. Churches and temples may be erected to a height not exceeding seventy-five feet when the required side and rear yards are each increased by one foot for each foot of additional building height above the height regulations for the district in which the building is located.

(d) Minimum Size and Access. In residential districts religious institutions must be located on a parcel having at least one acre of land, and must be located on a major street as show on the major street plan.

1251.43 ROOMING AND BOARDING HOUSES.

Not more than four boarders are permitted in the R2 District and not more than ten boarders are permitted in the R3 District. In all cases the owner of the house must be the occupant and is responsible with maintenance and upkeep of the structure and property. Boarding and rooming homes must register with the City of Battle Creek and remain in compliance with Chapter 1462.

1251.44 SELF-STORAGE / MINI-STORAGE FACILITIES.

Such use shall be screened from exterior view by a solid, well maintained fence which is eight feet in height, and vehicles shall not be stored in a manner exceeding the height of the fence.

1251.45 STATE LICENSED CHILD CARE FAMILY HOME, ONE TO SEVEN CHILDREN.

(a) Licensee as Permanent Resident. The licensee must permanently reside as a member of the household.

(b) Limit on the Number of Children. The limit on the number of children at a child care family home does not include children who are related to an adult member of the family by blood, marriage or adoption. It includes care to an unrelated minor child for more than four weeks in a calendar year.

1251.46 STATE LICENSED CHILD CARE GROUP HOME, EIGHT TO FOURTEEN CHILDREN.

(a) Licensee as Permanent Resident. The licensee must permanently reside as a member of the household.

(b) Limit on the Number of Children. The limit on the number of children at a child care family home does not include children who are related to an adult member of the family by blood, marriage or adoption. It includes care to an unrelated minor child for more than four weeks in a calendar year.

1251.47 STATE LICENSED RESIDENTIAL FACILITY, ADULT FOSTER CARE FAMILY HOME, ONE THROUGH SIX PERSONS.

A private residence with the approved capacity to receive six or fewer adults to be provided with foster care for five or more days a week and for two or more consecutive weeks. The adult foster care family home licensee shall be a member of the household, and an occupant of the residence. This does not apply to adult foster care facilities licensed by a state agency for care and treatment of persons released from or assigned to adult correctional institutions.

1251.48 STATE LICENSED RESIDENTIAL FACILITY, ADULT FOSTER CARE GROUP HOME FOR MORE THAN SEVEN THROUGH TWENTY RESIDENTS; COMMUNITY RESIDENTIAL FACILITY AND GROUP HOMES.

(a) For State Licensed Residential Facilities. This includes adult foster care facilities licensed by a state agency for care and treatment of persons released from or assigned to adult correctional institutions. The licensee must permanently reside as a member of the household.

(b) Minimum Lot Size. Is located on a lot that is not less than one-half acre and has not less than 500 square feet of lot area per person, including patients, employees and other residents;

(c) Front Yard Setback. Provides a front yard of not less than fifty feet;

(d) Side Yard Setback. Provides side yards of an aggregate of fifty feet and in no instance less than fifteen feet.

1251.49 TRANSITIONAL AND SUPPORTIVE RESIDENTIAL HOUSING UP TO SIX PERSONS.

(a) Register. Transitional and supportive residential homes must register with the City of Battle Creek and remain in compliance with Chapter 1462 and Chapter 818.

(1) Supportive services. Prior to approval, applicant shall provide documentation describing the onsite (and any offsite) supportive services that will be provided to the residents. Documentation shall also indicate the name of the entity(ies) that will provide the supportive services.

(2) Residents. All residents within the house shall share a bond among themselves which together seek the same transitional or support service purpose.

(b) Parking. Off-street parking shall be provided on the basis of at least one space per three residents, plus an additional space for each employee (if applicable).

(c) Structure Exterior. The structure shall not be established or modified in a manner that would make it inconsistent with the scale and architectural character of the neighborhood, including applicable development standards and design guidelines.

(d) Signage. No signage, graphics, display, or other visual representation that is visible from a public street shall be used to identify it as a transitional or supportive home.

(e) Occupancy. Must comply with Property Maintenance Code Section 404 Occupancy Limitations and shall not exceed more than two persons per habitable bedroom.

1251.50 TRANSITIONAL AND SUPPORTIVE RESIDENTIAL HOUSING FOR MORE THAN SIX PERSONS.

(a) Register. Transitional and supportive residential homes must register with the City of Battle Creek and remain in compliance with Chapter 1462 and Chapter 818.

(1) Supportive services. Prior to approval, applicant shall provide documentation describing the onsite (and any offsite) supportive services that will be provided to the residents. Documentation shall also indicate the name of the entity(ies) that will provide the supportive services.

(2) Residents. All residents within the house shall share a bond among themselves which together seek the same transitional or support service purpose.

(b) Parking. Off-street parking shall be provided on the basis of at least one space per three residents, plus an additional space for each employee (if applicable).

(c) Structure exterior. The structure shall not be established or modified in a manner that would make it inconsistent with the scale and architectural character of the neighborhood, including applicable development standards and design guidelines.

(d) Signage. No signage, graphics, display, or other visual representation that is visible from a public street shall be used to identify it as a transitional or supportive home.

(e) Occupancy. Must comply with Property Maintenance Code Section 404 Occupancy Limitations and shall not exceed more than two persons per habitable bedroom.

1251.51 TELECOMMUNICATION TOWERS.

(a) New Facilities. New wireless telecommunications facilities, as defined in the Michigan Zoning Enabling Act, shall be permitted by special use approval in all zoning districts, regardless of whether a new support structure (tower) will be constructed or not, subject to the following standards:

(1) Before constructing a new facility, the applicant must demonstrate that they cannot achieve the needed service improvement by co-locating at an existing facility.

A. The applicant must submit coverage and/or capacity information, including propagation maps and other information requested by the City, to demonstrate the needed service improvement and why co-location is not possible.

B. If an owner or operator of an existing tower refuses to allow a co-location, written evidence of the denial of the co-location request must be submitted to the City, and must include the reason for the denial.

(2) To the extent practical, all ground equipment associated with the facility must be enclosed within a locked building.

(3) Information must be submitted showing that the facility is in compliance with all applicable FCC regulations regarding radio frequency emissions.

(4) Information must be submitted showing that the facility will not cause interference with any nearby existing telecommunications facilities.

(5) Signage notifying the public of potential high voltage and radio frequency emissions and giving the contact information for the tower owner and the operators of all equipment on the site must be posted on the exterior fence.

(6) If a new tower is to be constructed for the facility, it shall meet the following standards:

A. The tower must be set back from all property lines by a distance equal to 1.5 times its height.

B. Lighting on the tower shall be prohibited unless required by the Federal Aviation Administration.

C. The tower must be a monopole design. Guyed and lattice towers are prohibited.

D. No signage shall be placed upon the tower structure.

E. The tower must be the shortest possible height required to provide the service desired by the applicant. The applicant must submit coverage and/or capacity information, including propagation maps and other information requested by the City, to demonstrate the needed service improvement and why the requested height is necessary. The City may request further information, including propagation maps, demonstrating the service at lower heights, in order to determine for itself whether the requested height is necessary.

F. The base of the tower and all associated equipment must be surrounded by a locked, opaque screening fence meeting the standards of the zoning district that the tower is located within.

G. The applicant must demonstrate the number of colocation sites that will be available on the tower.

H. A structural analysis, signed and sealed by a licensed engineer, must be submitted demonstrating that the proposed tower will be able to support all proposed antennae, including co-locations.

I. The applicant must submit renderings or photo-sims of the proposed tower as viewed from the following locations:

1. The nearest public roadway.

2. The nearest residential use.

3. Any other location requested by the City from which the tower may potentially be visible.

J. The applicant must pay all required fees, as designated by the City Commission.

(b) Co-Locations and Modifications to Existing Facilities.

(1) Co-locations and modifications to existing facilities shall not require special use or site plan approval, except as described in Subsection (2), below. The Zoning Administrator shall have the authority to approve all co-locations and modifications that meet the standards of this Section, and shall be able to request the input and recommendation of the Planner and Engineer at their discretion.

(2) Under the following circumstances, co-locations and modifications shall require special use approval, regardless of the zoning district they are located in:

A. The applicant proposes to increase the height of an existing tower by more than twenty feet, or 10% of its original height, whichever is greater.

B. The applicant proposes to increase the width of the tower by more than the minimum necessary for structural stability given existing and proposed antennae.

C. The applicant proposes to increase the ground-level compound to more than 2,500 square feet in area.

(3) Co-locations and modifications must meet the following standards in order to be approved, either administratively or by special use.

A. The applicant must submit a structural analysis, signed and sealed by a licensed engineer, demonstrating that the tower, in its present condition, has the structural capacity to support any proposed new antennae or other tower-mounted equipment.

B. The applicant must submit the results of an inspection of the condition of the tower and equipment compound, noting any potential problems with the facility that could impact the health, safety, and welfare of the surrounding area, or the effective provision of service from the facility. Any concerns raised by the inspection must be corrected during construction of the modification of the co-location.

C. Information must be submitted showing that the facility is in compliance with all applicable Federal Communications Commission regulations regarding radio frequency emissions.

D. Information must be submitted showing that the facility will not cause interference with any nearby existing telecommunications facilities.

E. No lighting may be added to the tower unless required by the Federal Aviation Administration.

F. Signage notifying the public of potential high voltage and radio frequency emissions and giving the contact information for the tower owner and the operators of all equipment on the site must be posted on the exterior fence. No signage shall be placed upon the tower structure.

G. The applicant must pay all required fees, as designated by the City Commission.

(c) Timeline for Approval. The City will comply with all state and federal requirements for approval timelines. In the event of changes to federal or state law, this section shall be void and the laws in place at the time of application shall be followed.

(1) For new facilities, the City shall request all required information within fourteen business days of the application being filed with the Inspection Division. The City shall issue a decision on the special use within ninety days of the application being deemed complete by the City.

(2) For modifications and co-locations, the City shall request all required information within fourteen business days of the application being filed with the Inspection Division. The Building Official shall issue an administrative approval within sixty days of the application being deemed complete by the City.

(3) Once the City has notified an applicant that an application is incomplete, if the applicant does not provide any new information for 180 days, the application will be deemed to have been withdrawn. Any new information submitted after 180 days shall be deemed a new application for the purposes of this Zoning Code and the Michigan Zoning Enabling Act.

(d) Abandonment and Removal. At the time of application for a new tower structure, the applicant shall, at its cost and expense, be required to execute and file with the City a bond in an amount of at least one hundred-fifty thousand dollars ($150,000.00). If the tower is not used for as a wireless telecommunications facility for any period of six consecutive months, it must be removed at the expense of the property owner and/or owner of the tower. If the property owner and/or owner of the tower fail to remove the tower, the bond shall be forfeited, and the bond amount shall be used by the City to remove the tower.

## 1251.52 UTILITY-SCALE SOLAR ENERGY FACILITY.

Roof-mounted, wall-mounted, and ground-mounted solar energy systems are permitted as utility-scale solar energy facilities, subject to the following regulations:

(a) Location and Setbacks. Solar energy systems must be located in the rear of the principal building. Solar energy systems must also meet the minimum setbacks of the zoning district.

(b) Height. The height of the solar energy system and any mounts must not exceed ten feet when oriented at maximum tilt.

(c) Screening. Evergreen landscaping, sight obscuring fencing, or the combination of the two, must be provided to screen the racking (i.e., the framing below the panels) from view on all sides.

(d) Power Lines. All power lines between solar panels and inverters must be placed underground.

(e) Performance Guarantee. All applications for a solar energy system must be accompanied by a performance guarantee sufficient to ensure the decommissioning and removal of the system when it is abandoned or no longer needed. Refer to Section 1281.04(f).

(f) Insurance. The applicant must submit proof of sufficient property damage and liability insurance.

(g) Utility Connection. The applicant must submit evidence that the utility company has been informed of the customer's intent to install an interconnected, customer-owned solar energy system and that such connection has been approved. Systems for on-site use are exempt from this requirement.

1251.53 UTILITY-SCALE WIND ENERGY FACILITY.

(a) Location. Utility-scale wind energy facilities may not fall within the front yard and must meet all of the applicable requirements of this Code.

(b) Minimum Lot Area. Must be located on a lot with a minimum area of one acre.

(c) Maximum Wind Turbine Height. Seventy feet.

(d) Noise. A wind energy system must comply with the noise standards set forth in the City's ordinances.

(e) Shadow Flicker. The application for a wind energy system must include a shadow flicker analysis demonstrating impact on adjacent and nearby residential properties. Wind energy systems must be constructed in locations that minimize the impacts of shadow flicker on residences.

(f) Lighting. No wind energy system will be artificially lighted unless required by the Federal Aviation Administration (FAA).

(g) Appearance, Color, and Finish. The wind energy system must be maintained in the color or finish that was originally applied by the manufacturer, unless otherwise approved in the building permit. All wind energy systems will be a single non-reflective, non-obtrusive, matte finished color (e.g. white or gray).

(h) Electrical Wires. All electrical wires associated with a wind energy system, other than wires necessary to connect the wind generator to the tower wiring, the tower wiring to the disconnect junction box, and grounding wires, must be located underground.

(i) Compliance with Electrical Code. Building permit applications for wind energy systems must be accompanied by line drawings of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code.

(j) Construction Codes, Towers, and Interconnection Standards. Wind energy systems, including towers, must comply with all applicable state construction and electrical codes and local building permit requirements. Wind energy systems including towers, must comply with the

FAA requirements, and other applicable local and state regulations. A wind energy system connected to the public utility electrical grid must comply with the Michigan Public Service Commission and Federal Energy Regulatory Commission standards. Off-grid systems are exempt from this requirement.

(k) System Access. Wind energy systems must be designed and installed such that step bolts, ladders, or other means of access readily accessible to the public are located at least eight feet above grade level.

(l) Safety. A wind energy system must have an automatic braking, governing, or feathering system to prevent uncontrolled rotation or over speeding. All wind towers must have lightning protection. If a tower is supported by guy wires, the wires must be clearly visible to a height of at least six feet above the guy wire anchors.

(m) Minimum Ground Clearance. The lowest extension of any blade or other exposed moving component of a tower mounted wind energy system must be at least twenty feet above the surrounding grade at its highest point within twenty feet of the base of the tower and at least twenty feet above any outdoor surface intended for human use, such as balconies or roof gardens, that are located below the wind energy system.

(n) Roof-Mounted Wind Energy Systems. Roof-mounted wind energy systems must be limited to roof mounting and must not be mounted on any other building wall or surface.

(o) Performance Guarantee. All applications for a wind energy system must be accompanied by a performance guarantee in an amount sufficient to ensure the decommissioning and removal of the system when it is abandoned or no longer needed. Refer to Section 1281.04(f).

(p) Insurance. The applicant must submit proof of sufficient property damage and liability insurance.

(q) Utility Connection. The applicant must submit evidence that the utility company has been informed of the customer's intent to install an interconnected, customer-owned wind energy generator and that such connection has been approved. Off-grid systems are exempt from this requirement.

1251.54 VEHICLE REPAIR, MAJOR.

Truck parking areas, maneuvering lanes, and access ways to public streets must be designed to cause no interference with the safe and convenient movement of automobile and pedestrian traffic on and adjacent to the site.

CHAPTER 1260
General Provisions

1260.01 ACCESSORY BUILDINGS AND USES.

(a) Application.

(1) Accessory buildings include, but are not limited to: pool houses; storage buildings; patio covers; garages; carports; workshops; greenhouses; gazebos; tree-houses; play structures; and permanent or temporary tent structures including those intended to shelter vehicles.

(2) Any non-habitable portion of the main residential building that is used for an accessory use including parking and/or storage of vehicles or personal property and is structurally attached to the main residential building shall be considered a part of the main residential building and shall conform to all regulations of this Zoning Code applicable to main residential buildings. “Attached” for the purposes of this regulation is defined as being integrated visually, structurally, and architecturally with the main residential building, containing a common roof, and permitting access between the habitable and non-habitable areas either internally or under the common roof. If the common roof serves as an unenclosed connection between the two areas, they shall be considered attached if the length of the connection does not exceed the length of the non-habitable portion by more than 50% or twenty feet, whichever is less.

(3) Accessory uses of a dwelling shall be limited as provided in Section 1230.06, but are deemed to include uses that are performed for personal enjoyment, amusement or recreation including hobby workshops, gardens, swimming pools for the use by the occupants, driveways, and the parking and/or storage of vehicles and other personal property.

(4) Accessory buildings or structures used in accordance with a permitted agricultural use are exempt from the provisions of this chapter.

(5) Landscape features including plantings, light poles, flag poles, planters, and statuary are exempt from the provisions of this chapter if they do not require a building permit and they do not restrict visibility from intersections or driveways.

(b) General Requirements.

(1) Construction of accessory buildings for one and two-family dwellings in the AG and R Districts shall conform to the following regulations except as may otherwise be provided in this Zoning Code. Accessory buildings for other permitted uses in the A and R districts and for permitted uses in other districts shall be constructed in accordance with regulations for main buildings in those districts.

(2) Any accessory building may not be constructed on a lot or parcel of land until and unless a main building is first constructed on the lot or parcel.

(3) Accessory buildings are allowed to be serviced by utilities including water, gas, electrical, and sanitary sewer, but in no case shall an accessory building contain kitchen facilities or be used for dwelling purposes.

(c) Size.

(1) All accessory buildings shall not exceed 10% of the lot area, excluding areas devoted to public road rights-of-way or private access easements.

(2) The totality of all accessory buildings shall not occupy in excess of 50% of a rear yard and shall comply with the building coverage requirements of Chapter 1241.

(3) The maximum size of the floor area of any one accessory building shall be contingent upon meeting the requirements of 1260.01(c)(1) and (2). The floor area shall be measured using the exterior wall dimensions.

(d) Height. Accessory buildings shall not exceed sixteen feet in height.

(e) Location.

(1) Accessory buildings shall not be erected in the front yard of a lot or parcel, unless otherwise provided herein. In accordance with Section 1241.07(b) of this Zoning Code, front yards are located adjacent to all street frontages for parcels having frontage on two or more streets. Parcels having frontage on a lake, brook, stream, river or other watercourse shall be allowed an accessory building in the waterfront front yard if the building complies with the setback or in the street front yard if the waterfront yard prohibits the placement due to naturally occurring circumstances (topography) with approval from the Planning and Zoning Administrator.

(2) Accessory buildings may be erected in the side or rear yard, or the secondary front yard, as regulated herein:

A. Where the main residential building contains a secondary front yard as defined under Section 1230.06(214)C. accessory buildings may be erected:

1. In the secondary front yard of a through lot where the building is set back 25 feet from the rear lot line; or

2. In the secondary front yard of a corner lot where the building is set back 25 feet from the lot line abutting a street and be no closer to the front lot line as defined under Section 1230.06(214)C. than the primary building.

(3) Accessory buildings shall not be closer than three feet from all side and rear lot lines, including the roof overhang.

(4) Accessory buildings may not be closer than ten feet to the main building or another accessory building unless otherwise permitted under building code provisions.

(5) Wherever a required rear yard abuts the required side yard of an adjacent lot, accessory buildings shall maintain a distance from the common lot line of not less than the required side yard of the adjacent lot.

(6) Swimming pools and hot tubs shall not be nearer than six feet from the side or rear lot line. No swimming pool or hot tub shall be in any primary front yard.

(7) In no instance shall an accessory building be located within a dedicated easement right-of-way.

1260.02 Fences

(a) Short Title. This section may be referred to and cited as the “Fence Ordinance of the City of Battle Creek” or just the “the Fence Ordinance.”

(b) Purpose. The purpose of this chapter is to permit such fences that will not, by their reason, size, location, construction or manner of display, endanger the public safety of individuals, obstruct the vision necessary for traffic safety or otherwise endanger public health, safety and morals; and to permit and regulate fences in such a way as to support and

complement land use objectives and aesthetic purposes while protecting the rights of adjacent properties to light, air and view.

(c) Permit Required; Application; Fee.

(1) No person shall construct or cause to be constructed any permanent fence upon property within the City without first obtaining a permit therefor, unless otherwise stated. A permit shall not be required for painting or for repairs not affecting more than 25% of the fence performed within a one-year period provided that the height, location, and style of the repairs do not change.

(2) A fee in the amount established by the City Commission shall be paid for such permit and shall be submitted along with the application for the permit.

(3) A permit is not required for fences used for agricultural purposes where agriculture is the principal use, fences that can be installed or removed without the means of tools or machinery, or for shrubs or hedges planted to serve as a fence.

(d) General Provisions for All Fences.

(1) Location. No fence shall be located in a public right-of-way.

(2) In no circumstance shall any fence be erected or maintained within 25 feet of the corner property line at a street intersection so as to interfere with traffic visibility across the corner of streets or alleys.

(3) All fences:

A. In the front yard shall have a minimum transparent surface area of 50%:

B. In a secondary front yard created by a through lot, a fence may be erected 25 feet or more from the rear property line up to 6 feet in height with no transparency requirement.

C. In a secondary front yard created by a corner lot, a fence may be erected 25 feet or more from the exterior side lot line up to 6 feet in height with no transparency requirement.

(3) Decorative architectural features on fences shall not be included in the measured height of a fence so long as they do not extend more than nine inches above the maximum height and have a minimum spacing of five feet between features.

(4) Legally existing, nonconforming fences will be required to comply with this section when any change or repair is made to the fence affecting more than 25% of the fence surface within a one-year period. This provision does not include the painting of a fence.

(5) For purposes of this chapter, retaining walls are not considered a fence; however, any retaining wall exceeding four feet in height requires a minimum four-foot-tall fence erected along the highest elevation of the wall. For terraced retaining walls, any section of retaining wall that is over four feet in height where there is less than a three-foot-wide landing, there shall be a minimum four-foot-tall fence erected along the highest elevation of subject property grade.

(6) Solid fences or walls are required to completely conceal and enclose dumpsters with a capacity of two yards or more, and must extend at least six inches above the height of the dumpster being concealed. Chain link shall not be used to enclose dumpsters with a capacity of two yards or more.

(7) Construction fences not to exceed eight feet in height to secure the construction site are permitted for a period of one year or while a construction permit is open, whichever timeframe is less.

(8) Snow fences are permitted between November 1st and May 31st at a height and location for permanent fences in the district where the property is located.

(e) General Provisions by Zoning District and Use.

(1) Agricultural Districts. No restrictions are imposed to limit the size, type or location of fences in an agricultural district when used for agricultural purposes.

(2) Residential Districts and properties used for residential purposes regardless of zoning district. No fence in a primary and required secondary front yard shall exceed four feet in height and no fence in any rear or side yard shall exceed six feet in height.

(3) Commercial Districts.

A. No fence in a primary front yard shall exceed four feet in height. No fence in any side or rear yard shall exceed eight feet in height unless the fence is used to enclose outdoor retail displays, is contiguous to the principal use, and is not more than twenty feet tall or up to height of building, whichever the lessor.

B. Fences, walls, and/or plantings of complete concealment type measuring six feet in height shall be constructed at the common side or rear lot line between all building and parking areas whenever a commercial or office use abuts a residential zone or residential use regardless of what yard it is in and shall be installed concurrently with the commercial or office use of land or building. If the proposed concealment method includes materials other than a fence, the proposed design of such concealment method shall be submitted to the Community Services Department with a permit application for review and approval by the Planning and Zoning Administrator or their designee.

C. Storage yards for motor vehicles for salvage shall be governed by Section 1251.22.

(4) Industrial Districts.

A. No fence in a front yard shall exceed six feet in height. No fence in any side or rear yard shall exceed ten feet in height unless the fence is used to enclose outdoor storage areas, is contiguous to the principal use, and is not more than 20 feet tall.

B. Fences, walls, berms, or plantings of complete concealment type measuring six feet in height shall be constructed at the common side or rear lot line between all buildings and parking areas whenever an industrial use abuts a residential zone or residential use regardless of what yard it is in and shall be installed concurrently with the industrial use of land or building. If the proposed concealment method includes materials other than a fence, the proposed design of such concealment method shall be submitted to the Community Services Department with a permit application for review and approval by the Planning and Zoning Administrator or their designee.

C. Storage yards for motor vehicles for salvage shall be governed by Section 1251.22.

(f) Construction and Maintenance.

(1) Any fence or hedge, under construction or completed, which, through lack of repair, neglect, type of construction, placement or otherwise, is a hazard or endangers any person, animal or property, is hereby deemed a violation of this code. A fence may not interrupt traffic

patterns, parking spaces, maneuvering lanes, drainage areas, or cause visibility obstructions to cars or pedestrians at driveways and sidewalks.

(2) Fence posts must be set firmly in the ground and at a depth that will support the structure of the fence.

(3) Fences may be constructed from wrought iron, vinyl, wood pickets, stone, brick, chain link, or any other generally accepted fencing material. In no instance shall a fence be constructed from pallets, twigs, pressed board, plywood, scrap lumber or other nontraditional fencing material without the Planning and Zoning Administrator or their designee's approval.

(4) The owner of any fence shall maintain a fence by painting, treating, trimming, repairing or removal, as necessary to maintain the fence in a safe and reasonably attractive condition. A fence that is dangerous to public safety, health or general welfare as determined by the Planning and Zoning Administrator or their designee is considered a violation and the City may commence proceedings for the abatement thereof.

(g) Prohibited Fencing.

(1) No fence erected within the City limits shall be electrically charged in any manner unless the fence is buried beneath the ground unless authorized or permitted elsewhere in this chapter.

(2) No fence shall be constructed of barbed wire, razor wire, concertina strands, single wire, cattle fencing, or similar materials; provided however that a fence which includes barbed wire strands may be used to enclose hazardous materials or land uses, or where such additional security is appropriate for land used for commercial or industrial purposes, in the discretion of the Planning and Zoning Administrator or their designee, provided that only three strands are used, not more than a total of nine inches in height. Above ground electric fences and barbed wire fences are permitted for agricultural purposes in an agricultural zone.

(h) Exceptions.

(1) The height and location restrictions of this chapter shall not apply to schools, public recreation areas, public utilities, or any other use that the Planning and Zoning Administrator or their designee deems necessary to preserve the safety and protection of the public.

(2) Any conflict between this section and any ordinance, statute, or regulation regarding fences around swimming pools shall be controlled by that ordinance, statute, or regulation regarding swimming pools.

(3) Fences around public property and public and private recreation areas to enclose tennis courts, basketball courts, schools, church playgrounds, or other similar areas are permitted at a height not to exceed ten feet high, provided that all yard setbacks are maintained and that no obstruction to visibility is created thereby.

CHAPTER 1260
General Provisions

1260.01 ACCESSORY BUILDINGS AND USES.

(a) Application.

(1) Accessory buildings include, but are not limited to: pool houses; storage buildings; patio covers; garages; carports; workshops; greenhouses; gazebos; tree-houses; play structures; and permanent or temporary tent structures including those intended to shelter vehicles.

(2) Any non-habitable portion of the main residential building that is used for an accessory use including parking and/or storage of vehicles or personal property and is structurally attached to the main residential building shall be considered a part of the main residential building and shall conform to all regulations of this Zoning Code applicable to main residential buildings. “Attached” for the purposes of this regulation is defined as being integrated visually, structurally, and architecturally with the main residential building, containing a common roof, and permitting access between the habitable and non-habitable areas either internally or under the common roof. If the common roof serves as an unenclosed connection between the two areas, they shall be considered attached if the length of the connection does not exceed the length of the non-habitable portion by more than 50% or twenty feet, whichever is less.

(3) Accessory uses of a dwelling shall be limited as provided in Section 1230.06, but are deemed to include uses that are performed for personal enjoyment, amusement or recreation including hobby workshops, gardens, swimming pools for the use by the occupants, driveways, and the parking and/or storage of vehicles and other personal property.

(4) Accessory buildings or structures used in accordance with a permitted agricultural use are exempt from the provisions of this chapter.

(5) Landscape features including plantings, light poles, flag poles, planters, and statuary are exempt from the provisions of this chapter if they do not require a building permit and they do not restrict visibility from intersections or driveways.

(b) General Requirements.

(1) Construction of accessory buildings for one and two-family dwellings in the AG and R Districts shall conform to the following regulations except as may otherwise be provided in this Zoning Code. Accessory buildings for other permitted uses in the A and R districts and for permitted uses in other districts shall be constructed in accordance with regulations for main buildings in those districts.

(2) Any accessory building may not be constructed on a lot or parcel of land until and unless a main building is first constructed on the lot or parcel.

(3) Accessory buildings are allowed to be serviced by utilities including water, gas, electrical, and sanitary sewer, but in no case shall an accessory building contain kitchen facilities or be used for dwelling purposes.

(c) Size.

(1) All accessory buildings shall not exceed 10% of the lot area, excluding areas devoted to public road rights-of-way or private access easements.

(2) The totality of all accessory buildings shall not occupy in excess of 50% of a rear yard and shall comply with the building coverage requirements of Chapter 1241.

(3) The maximum size of the floor area of any one accessory building shall ~~not exceed 1,500 square feet~~ be contingent upon meeting the requirements of 1260.01(c)(1) and (2). The floor area shall be measured using the exterior wall dimensions.

(d) Height. Accessory buildings shall not exceed sixteen ~~fourteen~~ feet in height ~~or the height of the main residential building, whichever is less~~.

(e) Location.

(1) Accessory buildings shall not be erected in the front yard of a lot or parcel, unless otherwise provided herein. In accordance with Section 1241.07(b) of this Zoning Code, front yards are located adjacent to all street frontages for parcels having frontage on two or more streets. Parcels having frontage on a lake, brook, stream, river or other watercourse shall be allowed an accessory building in the waterfront front yard if the building complies with the setback or in the street front yard if the waterfront yard prohibits the placement due to naturally occurring circumstances (topography) with approval from the Planning and Zoning Administrator.

(2) Accessory buildings may be erected in the side or rear yard, or the secondary front yard, as regulated herein:

A. Where the main residential building contains a secondary front yard as defined under Section 1230.06(214)C. accessory buildings may be erected:

1. In the secondary front yard of a through lot where the building is set back 25 feet from the rear lot line; or

2. In the secondary front yard of a corner lot where the building is set back 25 feet from the lot line abutting a street and be no closer to the front lot line as defined under Section1230.06(214)C. than the primary building.

(3) Accessory buildings shall not be closer than three feet from all side and rear lot lines, including the roof overhang.

(4) Accessory buildings may not be closer than ten feet to the main building or another accessory building unless otherwise permitted under building code provisions.

(5) Wherever a required rear yard abuts the required side yard of an adjacent lot, accessory buildings shall maintain a distance from the common lot line of not less than the required side yard of the adjacent lot.

(6) Swimming pools and hot tubs shall not be nearer than six feet from the side or rear lot line. No swimming pool or hot tub shall be in any primary front yard.

(7) In no instance shall an accessory building be located within a dedicated easement right-of-way.

1260.02 Fences

(a) Short Title. This section may be referred to and cited as the “Fence Ordinance of the City of Battle Creek” or just the “the Fence Ordinance.”

(b) Purpose. The purpose of this chapter is to permit such fences that will not, by their reason, size, location, construction or manner of display, endanger the public safety of individuals, obstruct the vision necessary for traffic safety or otherwise endanger public health, safety and morals; and to permit and regulate fences in such a way as to support and

complement land use objectives and aesthetic purposes while protecting the rights of adjacent properties to light, air and view.

(c) Permit Required; Application; Fee.

(1) No person shall construct or cause to be constructed any permanent fence upon property within the City without first obtaining a permit therefor, unless otherwise stated. A permit shall not be required for painting or for repairs not affecting more than 25% of the fence performed within a one-year period provided that the height, location, and style of the repairs do not change.

(2) A fee in the amount established by the City Commission shall be paid for such permit and shall be submitted along with the application for the permit.

(3) A permit is not required for fences used for agricultural purposes where agriculture is the principal use, fences that can be installed or removed without the means of tools or machinery, or for shrubs or hedges planted to serve as a fence.

(d) General Provisions for All Fences.

(1) Location. No fence shall be located in a public right-of-way.

(2) In no circumstance shall any fence be erected or maintained within 25 feet of the corner property line at a street intersection so as to interfere with traffic visibility across the corner of streets or alleys.

(3) All fences:

A. In the front yard shall have a minimum transparent surface area of 50%:

B. In a secondary front yard created by a through lot, a fence may be erected 25 feet or more from the rear property line up to 6 feet in height with no transparency requirement.

C. In a secondary front yard created by a corner lot, a fence may be erected 25 feet or more from the exterior side lot line up to 6 feet in height with no transparency requirement.

(3) Decorative architectural features on fences shall not be included in the measured height of a fence so long as they do not extend more than nine inches above the maximum height and have a minimum spacing of five feet between features.

(4) Legally existing, nonconforming fences will be required to comply with this section when any change or repair is made to the fence affecting more than 25% of the fence surface within a one-year period. This provision does not include the painting of a fence.

(5) For purposes of this chapter, retaining walls are not considered a fence; however, any retaining wall exceeding four feet in height requires a minimum four-foot-tall fence erected along the highest elevation of the wall. For terraced retaining walls, any section of retaining wall that is over four feet in height where there is less than a three-foot-wide landing, there shall be a minimum four-foot-tall fence erected along the highest elevation of subject property grade.

(6) Solid fences or walls are required to completely conceal and enclose dumpsters with a capacity of two yards or more, and must extend at least six inches above the height of the dumpster being concealed. Chain link shall not be used to enclose dumpsters with a capacity of two yards or more.

(7) Construction fences not to exceed eight feet in height to secure the construction site are permitted for a period of one year or while a construction permit is open, whichever timeframe is less.

(8) Snow fences are permitted between November 1st and May 31st at a height and location for permanent fences in the district where the property is located.

(e) General Provisions by Zoning District and Use.

(1) Agricultural Districts. No restrictions are imposed to limit the size, type or location of fences in an agricultural district when used for agricultural purposes.

(2) Residential Districts and properties used for residential purposes regardless of zoning district. No fence in a primary and required secondary front yard shall exceed four feet in height and no fence in any rear or side yard shall exceed six feet in height.

(3) Commercial Districts.

A. No fence in a primary front yard shall exceed four feet in height. No fence in any side or rear yard shall exceed eight feet in height unless the fence is used to enclose outdoor retail displays, is contiguous to the principal use, and is not more than twenty feet tall or up to height of building, whichever the lessor.

B. Fences, walls, and/or plantings of complete concealment type measuring six feet in height shall be constructed at the common side or rear lot line between all building and parking areas whenever a commercial or office use abuts a residential zone or residential use regardless of what yard it is in and shall be installed concurrently with the commercial or office use of land or building. If the proposed concealment method includes materials other than a fence, the proposed design of such concealment method shall be submitted to the Community Services Department with a permit application for review and approval by the Planning and Zoning Administrator or their designee.

C. Storage yards for motor vehicles for salvage shall be governed by Section 1251.22.

(4) Industrial Districts.

A. No fence in a front yard shall exceed six feet in height. No fence in any side or rear yard shall exceed ten feet in height unless the fence is used to enclose outdoor storage areas, is contiguous to the principal use, and is not more than 20 feet tall.

B. Fences, walls, berms, or plantings of complete concealment type measuring six feet in height shall be constructed at the common side or rear lot line between all buildings and parking areas whenever an industrial use abuts a residential zone or residential use regardless of what yard it is in and shall be installed concurrently with the industrial use of land or building. If the proposed concealment method includes materials other than a fence, the proposed design of such concealment method shall be submitted to the Community Services Department with a permit application for review and approval by the Planning and Zoning Administrator or their designee.

C. Storage yards for motor vehicles for salvage shall be governed by Section 1251.22.

(f) Construction and Maintenance.

(1) Any fence or hedge, under construction or completed, which, through lack of repair, neglect, type of construction, placement or otherwise, is a hazard or endangers any person, animal or property, is hereby deemed a violation of this code. A fence may not interrupt traffic

patterns, parking spaces, maneuvering lanes, drainage areas, or cause visibility obstructions to cars or pedestrians at driveways and sidewalks.

(2) Fence posts must be set firmly in the ground and at a depth that will support the structure of the fence.

(3) Fences may be constructed from wrought iron, vinyl, wood pickets, stone, brick, chain link, or any other generally accepted fencing material. In no instance shall a fence be constructed from pallets, twigs, pressed board, plywood, scrap lumber or other nontraditional fencing material without the Planning and Zoning Administrator or their designee's approval.

(4) The owner of any fence shall maintain a fence by painting, treating, trimming, repairing or removal, as necessary to maintain the fence in a safe and reasonably attractive condition. A fence that is dangerous to public safety, health or general welfare as determined by the Planning and Zoning Administrator or their designee is considered a violation and the City may commence proceedings for the abatement thereof.

(g) Prohibited Fencing.

(1) No fence erected within the City limits shall be electrically charged in any manner unless the fence is buried beneath the ground unless authorized or permitted elsewhere in this chapter.

(2) No fence shall be constructed of barbed wire, razor wire, concertina strands, single wire, cattle fencing, or similar materials; provided however that a fence which includes barbed wire strands may be used to enclose hazardous materials or land uses, or where such additional security is appropriate for land used for commercial or industrial purposes, in the discretion of the Planning and Zoning Administrator or their designee, provided that only three strands are used, not more than a total of nine inches in height. Above ground electric fences and barbed wire fences are permitted for agricultural purposes in an agricultural zone.

(h) Exceptions.

(1) The height and location restrictions of this chapter shall not apply to schools, public recreation areas, public utilities, or any other use that the Planning and Zoning Administrator or their designee deems necessary to preserve the safety and protection of the public.

(2) Any conflict between this section and any ordinance, statute, or regulation regarding fences around swimming pools shall be controlled by that ordinance, statute, or regulation regarding swimming pools.

(3) Fences around public property and public and private recreation areas to enclose tennis courts, basketball courts, schools, church playgrounds, or other similar areas are permitted at a height not to exceed ten feet high, provided that all yard setbacks are maintained and that no obstruction to visibility is created thereby.

# CHAPTER 1281
# Administrative Procedures

## 1281.01 ZONING ORDINANCE/ MAP AMENDMENTS.

(a) Initiation. The City Commission may amend, supplement or change the regulations or the district boundaries of this Zoning Code pursuant to the authority and according to the procedure set forth in The Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3101 et seq. Changes in the text of this Zoning Code may be proposed by:

(1) The City Commission;

(2) The Planning Commission; or

(3) Any interested person or organization through a petition, which shall not be initiated for the same property more often than once every twelve months.

Changes in zoning district boundaries may be proposed by:

(1) The City Commission;

(2) The Planning Commission;

(3) The owner(s) of the premises concerned; or

(4) The designated agent of a person having an ownership interest in the property.

(b) Definition. An amendment to this Zoning Code shall be deemed to be any change to the text or to the official map, including:

(1) Petitions for zoning ordinance amendments; or

(2) Conditional rezonings.

(c) Amendment Review Procedures. The amendment, be it a text or a map amendment, and application materials shall be prepared in accordance with the provisions of this section, and shall be reviewed in accordance with the following procedure. Amendments or application materials that do not meet the stipulated requirements shall be considered incomplete and shall not be eligible for consideration by the Planning Commission.

(1) Technical review. Prior to Planning Commission consideration, the proposed amendment and application materials shall be distributed to appropriate City departments and divisions and staff for review and comment. The proposed amendment and application materials may also be distributed to applicable outside agencies and designated City consultants for review.

(2) Public hearing. A public hearing shall be held for all proposed amendments in accordance with the procedures set forth in the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3101 et seq., as summarized below:

A. On any amendment to this Zoning Code, the Planning Commission shall hold a public hearing prior to the amendment being referred to the City Commission for action. A record of the comments received at the public hearing shall become a part of the Planning Commission report and recommendation to the City Commission. The following requirements shall pertain to public hearings held before the Planning Commission:

1. Not less than fifteen-day notice of the date, time and place of the hearing shall be published in a newspaper of general circulation in the City.

2. Not less than fifteen-day notice of the date, time and place of the hearing shall be given, by regular mail, to each public utility company and to each railroad company owning or operating any public utility or railroad within the City that registers its name and mailing address with the City Clerk for the purpose of receiving such notices.

3. Not less than fifteen-day notice shall be given, by regular mail, to the owners of property that is the subject of the request. Notice shall also be given to all persons to whom real property is assessed within 300 feet of the subject property affected by the amendment, as listed in the most current assessment roll and to the occupants of all structures with 300 feet of the subject property regardless whether the property or structure is located in the zoning jurisdiction. Notification need not be given to more than one occupant of a structure, except that if a structure contains more than one dwelling unit or spatial area owned or leased by different persons, one occupant of each unit or spatial area shall be given notice. If a single structure contains more than four dwelling units or other distinct spatial areas owned or leased by different persons, then notice may be given to the manager or owner of the structure, who shall be requested to post the notice at the primary entrance to the structure.

4. The notice under subsection 3. above is considered to be given when personally delivered or when deposited during normal business hours for delivery with the United States postal service or other public or private delivery service. The notice shall be given not less than fifteen days before the date the request will be considered. If the name of the occupant is not known, then the term “occupant” may be used for the intended recipient of the notice. However, failure of property owners to receive such notice, shall not invalidate the amendment.

5. A notice under this section shall do all of the following:

a. Describe the nature of the request.

b. Indicate the property that is the subject of the request. The notice shall include a listing of all existing street addresses within the property. Street addresses do not need to be created and listed if no such addresses currently exist within the

property. If there are no street addresses, then other means of identification may be used.

c. State when and where the request will be considered.

d. Indicate when and where written comments will be received concerning the request.

6. For any group of adjacent properties numbering eleven or more that is proposed for rezoning, the requirements of above subsection iii), and the requirement of above subsection 5.b., that street addresses be listed do not apply to that group of adjacent properties.

(3) Planning Commission consideration of proposed amendment. The Planning Commission shall review the proposed amendment, together with any reports and recommendations from staff, consultants, other reviewing agencies, and any public comments. The Planning Commission shall identify and evaluate all factors relevant to the petition, including the appropriate criteria listed in this section, and shall report its findings and recommendation to the City Commission.

(4) City Commission action on proposed amendment. Upon receipt of the report and recommendation from the Planning Commission, the City Commission may approve or deny the proposed amendment. If determined to be necessary, the City Commission may refer the amendment back to the Planning Commission for further consideration. In the case of an amendment to the official zoning map, the City Commission shall approve or deny the amendment, based upon its consideration of the criteria contained in this Zoning Code.

A. The City Commission, upon receipt of the Planning Commission study and report, shall publish a notice indicating the proposed amendment, proposed use and affected property in a newspaper of general circulation in the City. Such notice shall be published at least five days before the City Commission meeting, and shall indicate the time, date and place of such meeting.

(d) Standards of Review for Amendments. In considering any petition for an amendment to the text of this Zoning Code or to the zoning map, the Planning Commission and City Commission shall consider the following criteria that apply to the application in making findings, recommendations, and a decision. The Planning Commission and City Commission may also take into account other factors or considerations that are applicable to the application but are not listed below.

(1) Consistency with the goals, policies and objectives of the master plan and any sub-area plans. If conditions have changed since the master plan was adopted, consistency with recent development trends in the area shall be considered.

(2) Consistency with the basic intent and purpose of this Zoning Code.

(3) The capability of the street system to safely and efficiently accommodate the expected traffic generated by uses permitted in the requested zoning district.

(4) The capacity of the City's utilities and services are sufficient to accommodate the uses permitted in the requested district without compromising the health, safety, and welfare of the City.

(5) That conditions have changed since the Zoning Code was adopted or there was an error in the Zoning Code that justifies the amendment.

(6) That the amendment will not be expected to result in exclusionary zoning or spot zoning.

(7) If a rezoning is requested, compatibility of the site's physical, geological, hydrological and other environmental features with the uses permitted in the proposed zoning district.

(8) If a rezoning is requested, compatibility of all the potential uses allowed in the proposed zoning district with surrounding uses and zoning in terms of land suitability, impacts on the environment, density, nature of use, traffic impacts, aesthetics, infrastructure and potential influence on property values.

(9) If a rezoning is requested, the boundaries of the requested rezoning district will be reasonable in relationship to surrounding zoning districts, and construction on the site will be able to meet the dimensional regulations for the requested zoning district.

(10) If a rezoning is requested, the requested zoning district is considered to be more appropriate from the City's perspective than another zoning district.

(11) If a rezoning is requested to allow for a specific use, rezoning the land is considered to be more appropriate than amending the list of permitted or special land uses in the current zoning district to allow the use.

(12) If a rezoning is requested, the requested rezoning will not create an isolated or incompatible zone in the neighborhood.

(e) Notice of Adoption of Amendment. Following adoption of an amendment by the City Commission, one notice of adoption shall be filed with the City Clerk and one notice shall be published in a newspaper of general circulation in the City within fifteen days after adoption, in accordance with the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3101 et seq. A record of all amendments shall be maintained by the City Clerk. A Zoning Map shall be maintained by the City Clerk, which shall identify all map amendments. The required notice of adoption shall be maintained by the Planning and Zoning Administrator and include all of the following information:

(1) In the case of a newly adopted Zoning Ordinance, the following statement: "A zoning ordinance regulating the development and use of land has been adopted by the City of Battle Creek."

(2) In the case of an amendment(s) to the existing Zoning Ordinance, either a summary of the regulatory effect of the amendment(s), including the geographic area affected, or the text of the amendment(s).

(f) Referendum.

(1) Within seven days after publication of the Zoning Ordinance, a registered elector residing in the zoning jurisdiction of the City may file with the City Clerk a notice of intent to file a petition under this section, in accordance with Section 401 of the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3401.

(2) If a notice of intent is filed under subsection (1) above, the petitioner shall have thirty days following the publication of the zoning ordinance to file a petition signed by a number of registered electors residing in the zoning jurisdiction of the City not less than 15% of the total vote cast within the zoning jurisdiction for all candidates for governor at the last preceding general election at which a governor was elected, with the City Clerk requesting the submission of the zoning ordinance or part of the zoning ordinance to the electors residing in the zoning jurisdiction of the City for their approval,, in accordance with Section 402 of the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3402.

(3) Whenever there is a conflict between this section of the Zoning Ordinance or the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3101 et seq., shall govern.

(g) Conditional Rezoning.

(1) Intent. The Planning Commission and City Commission recognize that, in certain instances, it would be an advantage to both the City and to a property owner seeking rezoning if the property owner proposes certain conditions and limitations as part of a petition for rezoning. Therefore, it is the intent of this section to provide a process consistent with the provision of Section 405 of the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3405, to permit property owners to offer conditions regarding the use and/or development of land as part of the rezoning request. It is the further intent of this Zoning Code to accomplish, among other things, the objectives of the zoning ordinance and the master plan to achieve integration of the proposed land development project with the characteristics of the surrounding area.

(2) Definitions. The following definitions shall apply in the interpretation of this Section:

A. “Rezoning Conditions” shall mean conditions regarding the development and use of property proposed by the applicant and approved by the City as part of an approval under this section, including review and recommendation by the Planning Commission.

B. “Rezoning with Conditions Agreement” shall mean a written agreement approved and executed by the City and property owner setting forth the conditions attached to the rezoning pursuant to MCL 125.3405 (as amended) and any other terms mutually agreed upon by the parties relative to land for which the City has approved a rezoning with conditions.

C. “Rezoning with Conditions Plan” shall mean a plan of the property which is the subject of a rezoning with conditions, prepared by a Michigan licensed civil engineer or architect, that may show the location, size, height, design, architecture or other measure or feature for and/or of buildings, structures, improvements and features on, and in some cases adjacent to, the property. The details to be offered for inclusion within the rezoning with conditions plan shall be determined by the applicant, subject to approval of the City Commission after recommendation by the Planning Commission.

D. “Rezoning” shall mean the amendment of this Zoning Code to change the zoning map classification on property from its existing district to a new district classification.

(3) Authorization and eligibility.

A. The standards of this Section shall grant a property owner the option of voluntarily proposing conditions for the development and use of property in connection with a submission of a petition seeking a rezoning. Such conditions may be proposed at the time the application for rezoning is filed, or at a subsequent point in the process of review of the proposed rezoning.

B. In order to be eligible for consideration of a rezoning with conditions, a property owner must propose a rezoning of property to a new zoning district classification, and must, as part of such proposal, voluntarily offer certain site-specific conditions (to be set forth in a rezoning with conditions agreement) that are more strict or limiting than the regulations that would apply to the land under the proposed new zoning district. Such conditions may include, but are not limited to, the following:

1. The location, size, height or other measure for and/or of buildings, structures, improvements, setbacks, landscaping, buffers, design, architecture and other physical features of the proposed development.

2. Specification of maximum density or intensity of development and/or use, expressed in terms fashioned for the particular development and/or use. For example: units per acre, maximum usable floor area, or hours of operation.

3. Preservation of open space, natural resources and/or natural features.

4. Improvements to address traffic issues, including paving, substantial improvements to or funding of improvements to major roads to the benefit of the entire City.

5. Site improvements such as signage, lighting, landscaping, building materials for the exterior of some or all structures above and beyond what would otherwise be required by City ordinance.

6. Limitations on permissible uses of the property.

7. Any other conditions that may be voluntarily proposed by the property owner.

(4) Application and review procedures.

A. Application.

1. At the time of making application for amendment of this Zoning Code seeking a rezoning of property, or at a later time during the process of City consideration of such rezoning a property owner may submit a complete application for approval of a rezoning with conditions to apply in conjunction with the rezoning.

2. The application, which may be amended by the applicant during the process of consideration, shall specify the rezoning conditions proposed by the applicant, recognizing that rezoning conditions shall not authorize uses or development not permitted in the district proposed by the rezoning.

3. An application for a rezoning with conditions shall include a rezoning with conditions agreement ("the agreement"). The agreement shall set forth the rezoning conditions and may incorporate a rezoning with conditions plan.

4. The application shall include a notarized signature of the property owner indicating that the conditions attached to the rezoning are voluntarily offered.

B. Planning Commission review.

1. The proposed rezoning with conditions shall be noticed for public hearing before the Planning Commission as a proposed legislative amendment of the zoning ordinance.

2. Following the public hearing, and further deliberations as deemed appropriate by the Planning Commission, the Planning Commission shall make a recommendation to the City Commission on the proposed rezoning with conditions.

C. City Commission review. Upon recommendation by the Planning Commission, the City Commission shall make a final determination to approve or deny the rezoning with conditions as offered by the applicant. The City Commission may only consider the conditions offered by the applicant, and may not attach any other conditions to the rezoning other than those offered by the applicant. The City Commission's deliberations shall include, but not be limited to, a consideration of the review criteria for a rezoning with conditions.

(5) Review criteria. A rezoning with conditions shall only be approved if it meets the following requirements and standards:

A. The proposed rezoning with conditions will further the goals and objectives of the city master plan.

B. Rezoning conditions shall not authorize uses or development not permitted in the district proposed by the rezoning (and shall not permit uses or development expressly or implicitly prohibited in the rezoning with conditions agreement).

C. The use of the property in question shall be in complete conformity with all regulations governing development and use within the zoning district to which the property is proposed to be rezoned, including, without limitation, permitted uses, lot area

and width, setbacks, height limits, required facilities, buffers, open space areas, and land use density; provided, however, the following shall apply:

1. Development and use of the property shall be subject to the more restrictive requirements shown or specified in the rezoning with conditions agreement, and/or in other conditions and provisions set forth in the rezoning with conditions agreement required as part of the rezoning with conditions approval. Such rezoning with conditions agreement shall supersede all inconsistent regulations otherwise applicable under the zoning ordinance.

2. As part of the grant of final approval of a rezoning with conditions, the City Commission shall be authorized to grant modifications to the strict terms of the zoning ordinance governing dimensional requirements on the property; provided, such authorization to grant modifications shall be conditioned upon the City Commission finding that each zoning ordinance provision sought to be modified will result in an enhancement of the development that would be in the public interest, and that approving the modification would be consistent with the city master plan and compatible with the surrounding area.

D. The proposed rezoning with conditions will result in integration of the proposed land development project with the characteristics of the project area, and result in an enhancement of the project area as compared to the existing zoning, and such enhancement would be unlikely to be achieved or would not be assured in the absence Of the use of a rezoning with conditions.

E. As compared to the existing zoning and considering the site-specific conditions and/or land use proposed by the applicant, it would be in the public interest to grant the rezoning with conditions. In determining whether approval of a proposed application would be in the public interest, the benefits which would reasonably be expected to accrue from the proposal shall be balanced against and be found to clearly outweigh the reasonably foreseeable detriments, taking into consideration reasonably accepted planning, engineering, environmental and other principles, and also taking into consideration the special knowledge and understanding of the City by the City Commission and Planning Commission.

F. The proposed conditions will not preclude future zoning and planning actions by or on behalf of the municipality.

G. Existing and available public services will be capable of serving proposed or potential development that will occur as a result of the rezoning with conditions without negatively impacting the delivery of public services to other properties in the City, or the conditions will ensure that public services will be sufficient to serve both the site and other properties in the City.

H. The offered condition(s) are beneficial to the public good and likely to be enforceable.

I. The condition does not have the same effect as a use variance.

J. The proposed conditions do not relieve the applicant of the responsibility of securing any applicable site plan, plat, condominium, or special land use approvals.

(6) Effect of approval. Approval of the rezoning with conditions and rezoning with conditions agreement confirms only the rezoning of the property, subject to any conditions reflected in the rezoning with conditions agreement and after recordation as set forth in subsection (8) below. Any applicable site plan, plat, condominium, special land use, or variance approvals shall be required before any improvements to the property may be undertaken.

If approved, the zoning district classification of the rezoned property shall consist of the district to which the property has been rezoned, accompanied by a reference to "CR Rezoning with Conditions". The zoning map shall specify the new zoning district plus a reference to "CR" e.g., the district classification for the property might be "B-1, Corridor Commercial District (CR, Rezoning with Conditions)", with a zoning map designation of "B-1/CR." Use of the property so classified and approved shall comply with the conditions set Forth in the rezoning with conditions agreement. No development or use of the land inconsistent with the conditions of the rezoning with conditions agreement shall be permitted.

(7) Compliance with conditions.

A. Any person who establishes a development or commences a use upon land that has been rezoned with conditions shall continuously operate and maintain the development or use in compliance with all of the conditions set forth in the rezoning with conditions agreement. Any failure to comply with a condition contained within the rezoning with conditions agreement shall constitute a violation of this Zoning Code and shall be punishable accordingly. Additionally, any such violation shall be deemed a nuisance per se and subject to judicial abatement as provided by law.

B. No permit or approval shall be granted under this Zoning Code for any use or development that is contrary to an applicable rezoning with conditions agreement.

(8) Period of approval.

A. The rezoning with conditions and agreement shall expire after a period of one year from the effective date of the rezoning unless substantial progress towards obtaining site plan and other required approvals has been made, and shall expire after a period of two years unless development of the property is substantially begun within such two year period and proceeds diligently and in good faith as required by ordinance to completion.

B. In the event substantial progress towards obtaining site plan and other required approvals has not commenced within one year and bona fide development has not commenced within two years from the effective date of the rezoning, the rezoning with conditions and the rezoning with conditions agreement shall be void and of no effect.

C. The property owner may apply for a one year extension two times. The request must be submitted to the Planning Division before the approval time limit

expires. The property owner must demonstrate why the extension should be granted, and must also demonstrate that there is a strong likelihood that the development or use will commence within the period of extension and proceed diligently thereafter to completion, and if the City Commission finds that there has not been a change in circumstances that would render the rezoning with conditions incompatible with adjacent or nearby use and zoning of land or is otherwise inconsistent with sound zoning policy.

An extension request shall be considered by the City Commission following a recommendation by the Planning Commission.

D. If the rezoning with conditions becomes void in the manner provided in this section, the following procedures shall apply:

1. The property owner may seek a new rezoning of the property within thirty days of the expiration of the period of approval.

2. If no application is made for a new rezoning of the property, the land shall revert to its former zoning classification as set forth in MCL 124.3405(2)(as amended). The City Commission shall direct the Planning Commission to proceed with consideration of rezoning the land to its former zoning designation following the standard rezoning procedures set forth in this Zoning Code.

3. Until such time as a new zoning district classification of the property has become effective, no development shall be undertaken or permits for development issued.

(9) Rezoning with conditions agreement requirements. A rezoning with conditions agreement shall be executed between the applicant and the City at the time of City Commission approval of a rezoning with conditions.

A. Rezoning with conditions agreements shall, at a minimum, contain all of the following items:

1. Identification of the requested zoning district and a listing of the conditions offered by the applicant.

2. A statement acknowledging that the rezoning with conditions was proposed by the applicant, and, further agreement and acknowledgment that the conditions and rezoning with conditions agreement are authorized by all applicable state and federal law and constitution, and that the agreement is valid and was entered into on a voluntary basis and represents a permissible exercise of authority by the City.

3. Agreement and understanding that the property in question shall not be developed or used in a manner inconsistent with the rezoning with conditions agreement.

4. Agreement and understanding that the approval and rezoning with conditions agreement shall be binding upon and inure to the benefit of the property owner and City, and their respective heirs, successors, assigns, and transferees.

5. The date upon which the rezoning with conditions becomes void, as specified in Section 1281.01(g)(8). If the City Council grants an extension of approval, a new rezoning with conditions agreement with the new expiration date shall be recorded.

6. Agreement and understanding that, if a rezoning with conditions becomes void in the manner provided in Section 1281.01(g)(8), no development shall be undertaken or permits for development issued until a new zoning district classification of the property has been established.

7. Agreement and understanding that each of the requirements and conditions in the rezoning with conditions agreement represents a necessary and reasonable measure which, when considered with all other conditions and requirements, is roughly proportional to the increased impact created by the use represented in the approved rezoning with conditions, taking into consideration the changed zoning district classification and the specific use authorization granted.

8. A legal description of the property affected by the rezoning with conditions.

9. Development regulations affected by the conditions of rezoning, including but not limited to density, setbacks, height, site coverage, signs, parking, architecture, etc.

10. Revocation of approval provisions returning the property to its original zoning designation if the developer violates the terms of the agreement.

B. A rezoning with conditions plan may be included as an exhibit to the agreement. The rezoning with conditions plan may show the conceptual layout of the proposed development or use, along with any other information deemed relevant by the applicant. Inclusion of a rezoning with conditions plan as an exhibit to a rezoning with conditions agreement shall not replace the requirement for preliminary and final site plan, subdivision, condominium, special land use or variance review and approval.

(10) Amendment of rezoning with conditions agreement. Amendment of a rezoning with conditions agreement shall be proposed, reviewed and approved in the same manner as a new rezoning with conditions.

(11) Recordation of rezoning with conditions agreement. A rezoning with conditions shall become effective following publication in the manner provided by law, and, after recordation of the rezoning with conditions agreement, whichever is later. All rezoning with conditions agreements shall be recorded with the Calhoun County Register of Deeds.

(12) Termination. The City Commission shall be the only body with the authority to terminate a rezoning with conditions agreement. The consideration to terminate the agreement shall be for reasons of expiration of the agreement, discovery of false information upon which the initial approval was based, or the existence or discovery of new information that alters the viability of the approved rezoning. The termination shall comply with any applicable provisions of this Zoning Code or the rezoning with conditions agreement. If the agreement is terminated, the City shall follow the procedures in Section 1281.01 (g)(8)D.

(13) City right to rezone. Nothing in the rezoning with conditions agreement or in the provisions of this section shall be deemed to prohibit the City from rezoning all or any portion of land that is subject to a rezoning with conditions to another zoning classification. Any such rezoning shall be conducted in compliance with this Zoning Code and the Michigan Zoning Enabling Act.

(14) If land that is subject to a rezoning with conditions agreement is thereafter rezoned to a different zoning classification or to the same zoning classification but with a different or no rezoning with conditions agreement, the rezoning with conditions agreement attached to the former zoning classification shall cease to be in effect. In such a case, the Planning and Zoning Administrator or their designee shall record with the Calhoun County Register of Deeds a notice that the rezoning with conditions is no longer in effect upon the property owner's written request.

(h) Fees. Petitions for an amendment to this Zoning Code shall be accompanied by a fee as prescribed in the schedule provided for in Section 802.24 . Such fee is applicable when filing a petition for zoning reclassification or special use permits and is nonrefundable.

(i) Protest Petition. An amendment to a zoning ordinance is subject to a protest petition under Section 1281.08 .

(j) An amendment to conform a provision of the zoning ordinance to the decree of a court of competent jurisdiction as to any specific lands may be adopted by the City Commission and the notice of the adopted amendment published without referring the amendment to any other board provided for under this chapter.

1281.02 CERTIFICATES OF OCCUPANCY.

(a) Subsequent to the effective date of this Zoning Code (Adopted on November 24, 2020), no change in the use or occupancy of land or in the use or occupancy of an existing building shall be made, nor shall any new building be occupied for any purpose, until a certificate of occupancy has been issued by the Chief Building Official or their designee or agent. Such a certificate shall state that the new occupancy complies with this Zoning Code.

(b) No permit for excavation, or the erection or alteration of, any building or premise shall be issued before the application has been approved for such activities, and no building or premises shall be occupied until a certificate of occupancy is issued by the Chief Building Official or their designee or agent. (c) A record of all certificates of occupancy shall be kept on file in the Inspections Division office. Copies shall be furnished on request to any person having a proprietary or tenancy interest in land or in buildings affected by such certificates.

1281.03 APPLICATIONS FOR BUILDING PERMITS AND ZONING PERMITS; RECORDS.

(a) It shall be unlawful for any person to commence excavation for construction of any building or structure, structural changes or repairs in any existing building, a change in use, or moving of an existing building without first obtaining a zoning permit and/or

building permit from the City of Battle Creek. No permit shall be issued for construction, alteration or remodeling of any building or structure, or change in use, until an application has been submitted in accordance with the provision of this Zoning Code showing that the construction proposed is in compliance with the provisions of this Zoning Code and with the Building Code adopted by the City. “Alteration” or “repair” of an existing building or structure, shall include any changes in structural members, stairways, basic construction type, kind or class of occupancy, light or ventilation, means of egress and ingress, use, or any other changes regulated by the Building Code of the City, the Housing Law of Michigan, Public Act 167 of 1917, as amended, being MCL 125.401 et seq., this Zoning Code, except for minor repairs or changes not involving any of the aforesaid provisions.

(b) Each application for a zoning permit shall contain all required information specified in Section 1281.04(d). A record of applications and plot plans shall be kept in the offices of the Planning Division.

(c) Zoning permits are required for activities detailed in Section 1281.04(c), and as otherwise specified in this Zoning Code.

(d) No building, plumbing, electrical, drainage or other permit shall be issued until the City of Battle Creek has determined that the plans and designated use indicate that the proposed structure and lot will conform to the provisions of this Zoning Code.

1281.04 SITE PLAN REVIEW.

(a) Purpose. It is the purpose of this chapter to require site plan review approval for certain buildings, structures and uses that can be expected to have a significant impact on natural resources, traffic patterns, adjacent parcels and the character of future development. Site plan approval shall be required before building permits are granted by the City for parcels subject to this chapter. The regulations contained in this chapter are intended to promote:

(1) Safe and convenient vehicle and pedestrian traffic movements, both within a site and in relation to access streets;

(2) Harmonious relationships between buildings, structures and uses, both within a site and within adjacent sites;

(3) Conservation of natural amenities and resources; and

(4) Compliance with all other applicable regulations of this Zoning Code.

(b) Application.

(1) Applications for site plan approval shall be available at the Planning Division and a complete application packet shall be filed with the Inspections Division. A complete application packet shall consist of a completed application, a digital format of the site plan and other applicable drawings, supporting information, and the review fee established by Section 802.24.

(2) All requirements for site plan approval shall be filed with the Inspections Division at one time, as a complete single submittal.

(3) Once a complete application, site plan, and other materials are submitted, the Planning and Zoning Administrator or their designee will schedule a review at the earliest possible date.

(4) Any additional information requested by city staff must be submitted no later than 180 days from the date a complete application is filed. The application shall expire if the requested additional information is not received by the end of the 180 day period. An applicant may submit a new application and fee.

(c) Required Review Based on Proposed Activity. The table below details which type of reviews are required based on the proposed activity.

| Proposed Activity | Administrative Review of Site Plan Per Section 1281.04 | Administrative Review of Building and Zoning Permits Per Section 1281.03 | Planning/City Commission Review Per Section 1281.05 |
|---|---|---|---|
| Any proposed new building or parking area or where an alteration, addition, or expansion of existing developments constitute an increase or reduction to the existing buildings or parking area of more than ten percent (10%) | ● | | |
| Projects where less than a ten percent (10%) increase or reduction of the building or parking will occur shall adhere to review requirements as outlined in the Stormwater Management Program Technical Reference Manual. | | ● | |
| Planned Unit Developments | ● | | ● |
| Parking lot mill and repave projects where an approved site plan is not on file | ● | | |

| | | | |
|---|---|---|---|
| Special land uses | ● | | ● |
| Adult Use Marihuana Microbusiness located in B-1,B-2, I-1 and I-2 | ● | | |
| Adult Use Marihuana Microbusiness located in T-3 | ● | | ● |
| Adult Use Marihuana Retailers located in B-1, B-2, T-4, T-5, I-1, and I-2 | ● | | |
| Adult Use Marihuana Retailers located in T-3 | ● | | ● |
| Medical Marihuana Provisioning Center located in B-1, B-2, T-4, T-5, I-1, and I-2 | ● | | |
| Medical Marihuana Provisioning Center located in T-3 | ● | | ● |
| Medical and Adult Use Marihuana Grow Operation located in I-1 and I-2 | ● | | |
| Medical and Adult Use Marihuana Processing Facility located in I-1 and I-2 | ● | | |
| Medical and Adult Use Safety Compliance Facility located in B-1, I-1 and 1-2 | ● | | |
| Medical and Adult Use Secure Transporter located in B-1, I-1 and I-2 | ● | | |
| Medical and Adult Use Excess Grow Operation located in I-1 and I-2 | ● | | |
| Driveway or curb cut relocation where the new driveway will be relocated within 25 feet of the existing driveway location or where a driveway or curb cut is being totally eliminated | | ● | |
| Construction and development on any parcel of land proposing or having multi-family, commercial, or industrial uses | ● | | |
| Site improvements that include landscaping, lighting, site access, and parking lot grading, layout, and new off-street parking | ● | | |
| Landscaping that is less than 25% of the parcel size or 5,000 square feet, whichever is less | | ● | |
| Re-paving of an off-street parking lot, provided there are no grading changes and no changes to the configuration of the parking lot layout | | ● | |
| Construction of and/or the conversion of an existing structure to one (1) or more units meeting the definition of a State Licensed Residential Facility | | ● | |

| | | | |
|---|---|---|---|
| Construction or replacement of a fence, shed, signage, or driveway | | ● | |

(1) Site plan review shall not be required for the following:

A. Detached single-family housing and related parking;

B. Two-family dwelling units and related parking;

C. Agricultural uses; and

D. Nonresidential accessory buildings no more than 120 square feet in area and all residential accessory buildings.

(2) No grading, removal of trees or other vegetation, land-filling or construction of improvements shall commence for any project which requires site plan approval until a site plan is approved and is in effect and any other applicable permits are obtained.

(d) Site Development Plans. All site development plans shall be prepared on standard twenty-four inch by thirty-six inch, or thirty-six inch by forty-two inch, architectural or engineering sheets, and are required to incorporate the following information, unless waived by the Planning and Zoning Administrator or their designee:

Site Plan Required Information:

(1) The title of the proposed project;

(2) The name of the property owner, proprietor or project director;

(3) The location of the project, the street name and the address;

(4) Professional seal of the architect, engineer or designer, and their name, address, phone number, and email address, if available;

(5) The date drawn and subsequent revision dates;

(6) The scale of the drawing, the north directional arrow, and vicinity map showing location of project;

(7) Provide all dimensions, including property lines, easements and rights-of-way, existing and proposed buildings building setback lines, site improvements; gross and net acreage, and zoning classification of the site and adjacent properties;

(8) Location of adjacent property lines, buildings and structures, sidewalks, parking lots, rights-of-ways, abutting streets, curb cuts, and access easements within 100 feet of the subject property;

(9) Existing man-made or natural features such as wetlands, waterways, woodlands, and areas with slopes greater than 10%, with an indication of which features will be retained or removed;

(10) The topography, existing and proposed, including contours with a maximum of two-foot contours, or spot elevations sufficient to determine the topography of the site, so as to clearly indicate required cutting, filling, and grading. The site plan shall contain arrows indicating direction of drainage and stormwater calculations;

(11) Location and dimension of existing and proposed buildings or structures, including intended uses, floor area, number of floors, width, length, height, number of types of dwelling units (where applicable), and setback distances;

(12) The location of sidewalks, rights-of-ways, abutting streets, curb cuts, and access easements, ingress and egress drives, both existing and proposed, to thoroughfares, showing traffic patterns into the site from the same, including ultimate pavement width, deceleration lanes and the like; the location of private and public pedestrian walkways;

(13) On-site traffic circulation and parking areas, including the number and size of parking bays, width of maneuvering aisles, designation of fire lanes, the location and size of handicapped parking, surface materials and striping of the parking lot surface to delineate parking bays and individual spaces;

(14) The location of loading berths, truck docks, truck wells, service drives and exterior parking lot lighting, including photometric plan;

(15) The location and size of all existing and proposed public and private utilities above and below ground proposed to service the project and the location of any public or private utility easements, to include water, gas, electric, cable, stormwater, stormsewer, catch basins, and fire hydrants;

(16) The spatial relationship of buildings on the site, including pedestrian walkways, protective or retaining walls, fences, landscaped buffers, either existing or proposed, and the materials to be utilized, if required;

(17) The location of signs, either existing or proposed, and an indication of their size, height and design pursuant to City sign regulations;

(18) A landscaping plan of the site, including greenbelts or buffers if required, and the identification of all plant and landscape material to be utilized as to type, size and location;

(19) The location and proposed method of screening trash refuse receptacles;

(20) Location of outdoor storage/display areas including a description of the items to be located outdoors, as well as the location and description of required screening;

(21) Storage and containment areas if the use of hazardous substances is involved; and

(22) Any additional information as may be required of the applicant to properly evaluate the proposed development.

(e) Standards for Consideration. The following shall be the standards for consideration of all plans for developments submitted for site plan approval:

(1) All elements of the site plan shall be harmoniously and efficiently organized in relation to topography, the size and type of the lot, the character of adjacent properties and the type and size of buildings.

(2) The landscape shall be preserved in its natural state, insofar as practical, by minimizing tree and soil removal and by topographic modifications, which result in maximum harmony with adjacent areas.

(3) The site plan shall provide reasonable visual and sound privacy for all occupants located therein. Fences, walks, barriers and landscaping shall be used, as appropriate, for the protection and enhancement of property and for the privacy of its occupants.

(4) All buildings or groups of buildings shall be so arranged as to permit emergency vehicles access by some practical means to all sides as may be required by the Building and/or Fire Code.

(5) Every structure or dwelling unit shall have access to a public street, walkway or other area dedicated to common use.

(6) There shall be provided a pedestrian circulation system which is insulated as completely as is reasonably possible from the vehicular circulation system.

(7) The arrangement of public or common ways for vehicular and pedestrian circulation shall respect the pattern of existing or planned streets and pedestrian or bicycle pathways in the area. Streets and drives which are a part of an existing or planned street pattern which serves an adjacent development shall be of a width appropriate to the traffic volume they will carry and shall have a dedicated right-of-way equal to that specified by the City Engineer and/or any other entity having authority over said roadway.

(8) Where the Planning Division, City Engineer, or Traffic Engineer finds that an excessive number of ingress and/or egress points may occur with relation to major or secondary thoroughfares, thereby diminishing the carrying capacity of the thoroughfare, they shall require marginal access drives as follows:

A. For a narrow frontage of less than 120 feet, the design will require a single outlet.

B. For a series of adjacent frontages in a developing area, a service road shall be constructed and a single marginal access drive shall serve all establishments fronting thereon, with road cuts not closer than 330 feet centerline to centerline, or 330 feet from a street intersection.

C. The overall design of a marginal access drive shall uphold the purposes of this chapter, promote the public safety, and serve the public interest.

D. Marginal access drives shall be required only if the concept is reasonable in terms of the land available for such an improvement.

(9) All site plans shall be designed in accordance with the City of Battle Creek Stormwater Management Program Technical Reference Manual. All stormwater shall be detained on site for controlled release. Attention shall be given to proper site drainage to ensure neighboring properties will not be adversely affected.

(10) Loading and unloading areas and outside storage areas which face or are visible from residential uses or districts or public thoroughfares, shall be screened by a six foot solid screening fence (concealment screening) and plant materials no less than six feet in height.

(11) Trash containers must be stored in a trash enclosure constructed of solid screening fence (concealment screening) on all four sides from four inches above the ground to six inches above the trash container. The enclosure shall not be located in the front yard unless the Planning and Zoning Administrator or their designee finds that there is no other feasible location.

(12) Exterior lighting shall be arranged so that it is deflected away from adjacent properties and so that it does not impede the vision of traffic along adjacent streets.

(13) Development occurring within the City of Battle Creek wellhead protection area, in accordance with Chapter 1041, shall comply with the requirements established in the performance standards as administered by the Department of Public Works.

(f) Decisions and approval.

(1) The Planning Division, the Inspection Division, and the Department of Public Works shall be responsible for reviewing site plans, and the Planning and Zoning Administrator or their designee shall be responsible for granting approval. A decision approving, conditionally approving, or rejecting a site plan shall be based upon requirements and standards contained in the zoning ordinance, other statutorily authorized and properly adopted City planning documents, other applicable ordinances, and state and federal statutes.

(2) Any revisions to the site plan shall be submitted in accordance with Section 1281.04(b).

(3) If approved, the site plan shall become part of the record of approval, and subsequent actions related to the activity authorized shall be consistent with the approved site plan, unless a change conforming to the zoning ordinance is agreed to by the landowner and the body or official that initially approved the site plan.

(4) A site plan approved under this section shall be valid for a period of one year. If construction has not commenced within this time period, or if construction has ceased for more than one year, the site plan shall become null and void. Thirty days prior to the expiration of an approved final site plan, an applicant may make application for a six-month extension of the site plan. The extension shall be granted if the Planning and Zoning Administrator or designee finds good cause for the extension and that zoning

regulations and site conditions of the subject property and adjacent properties have not changed since the approval.

(5) Performance guarantee. In accordance with the Michigan Zoning Enabling Act, the City may require that a cash deposit, certified check, irrevocable letter of credit, or surety bond acceptable to the City, in an amount to cover the estimated cost of the improvements associated with the project, be deposited with the City Clerk to insure faithful completion of the improvements as set out in the site plan approved by the Planning and Zoning Administrator or their designee. If the City has required a performance guarantee, then it shall be subject to the following terms and conditions:

A. The performance guarantee shall be deposited at the time of the issuance of the permit authorizing the activity or project. The City may not require the deposit of the performance guarantee until it is prepared to issue the permit.

B. Rebates of cash deposits. Where the performance guarantee has been made in the form of a cash deposit, the performance guarantor shall be entitled to a rebate of the cash deposit in reasonable proportion to the ratio of work completed on the required improvements as satisfactory work progresses. The performance guarantor may request the rebates in three equal installments each time one-third of the entire required work has been satisfactorily completed in accordance with the final approved site plan, including any approved amendments.

C. Failure to complete improvements. If the performance guarantor fails to complete the improvements as approved in the final approved site plan within such time period as is required by the conditions or guarantees as outlined above, then the City may proceed to have such work completed and shall reimburse itself for the cost thereof by appropriating the cash deposit, certified check, or surety bond or by drawing upon the irrevocable letter of credit, or shall take the necessary steps to require performance by the bonding company.

(g) Appeals. An appeal may be taken to the Zoning Board of Appeals by any person aggrieved by a decision of the Planning Division, the City Engineer or the Traffic Engineer as it relates to this chapter. Such appeal shall be taken within such time as is prescribed by Section 1280.03.

(h) Amendments. All site improvements shall conform to the final site plan. A site plan may be amended upon application and in accordance with the procedure herein. The Planning and Zoning Administrator or their designee shall have the authority to determine if a proposed change requires an amendment to an approved final site plan, provided that a revised final site drawing be submitted showing such minor changes, for purposes of record.

(i) As-Built Plan. After construction has concluded, as-built plans shall be submitted to ensure compliance with final site plan approval.

(j) Violations and Penalties.

(1) All site improvements shall conform to the final approved site plan, unless an amendment has been approved by the Planning and Zoning Administrator or their

designee. If an amendment has not been approved, the Planning Division may require the applicant to correct any physical changes to the site that were completed without proper approval so as to conform to the approved final site plan.

(2) Stop work order. If improvements and/or construction is being undertaken contrary to this Chapter or the final approved site plan, including any approved amendments, the Planning and Zoning Administrator or their designee shall give written notice to the holder of the building permit, or if a building permit has not been issued, then to the person doing the construction and/or improvements, notifying them of the violation of this Chapter, or other applicable laws and ordinances. If the person doing the construction is not known, or cannot be located with reasonable effort, then the notice may be delivered to the person in charge of, or apparently in charge of, the construction/improvements. If the holder of the permit or the person doing the construction or improvements fails to correspond with the City to show good cause within one full working day after notice is delivered, the Planning and Zoning Administrator or their designee shall cause a written order to stop construction and/or improvements to be posted on the premises. A person shall not continue, or cause or allow to be continued, construction and/or improvements in violation of a stop work order, except with permission of the Zoning Administrator or their designee to abate the dangerous condition or remove the violation, or except by court order. If an order to stop construction and/or improvements is not obeyed, the Planning and Zoning Administrator or their designee may apply to the Calhoun County circuit court for an order enjoining the violation of the stop work order. This remedy is in addition to, and not in limitation of, any other remedy provided by law or ordinance, and does not prevent criminal prosecution for failure to obey the order.

(3) A person who violates or fails to comply with any of the provisions of this Zoning Code is responsible for a Class C Municipal civil infraction and shall be subject to the civil infraction fines provided in Section 202.98.

1281.05 SPECIAL LAND USES.

(a) Application for Special Uses; Certificates of Occupancy. An application to build or occupy any of the special uses described in Section 1240.02 shall be submitted in accordance with the following procedure:

(1) Applications shall be submitted through the Planning Division to the Planning Commission. A copy of the application shall be forwarded to the City Commission. Each application shall be accompanied by a nonrefundable filing fee as established in the fee, bond and insurance schedule.

(2) Every application shall be accompanied by the following information and data:

A. A special use petition form supplied by the Planning Division;

B. A site plan, plot plan or development plan, drawn to a readable scale, of the total property involved showing the location of all abutting streets, the location of all existing and proposed structures, the types of buildings and their proposed uses;

C. Preliminary plans and specifications of the proposed development and for all intended construction; and

D. A statement with supporting evidence regarding the required findings specified in Section 1281.05(c).

(3) Before authorization by the City Commission of any of the special uses referred to in this chapter, the Planning Commission shall cause a study and report concerning the effect of the proposed use on the master plan and on the character and development of the neighborhood.

(4) The Planning Commission may recommend, and the City Commission may impose, such conditions or restrictions upon the construction, location and operation of a special use as is deemed necessary to secure the general objectives of this Zoning Code and to preserve the value of property in the neighborhood. Any proposed special use shall otherwise comply with all of the requirements set forth in this Zoning Code for the district in which the use is located, except that the City Planning Commission may permit hospitals and institutions to exceed the height limitations of such district.

(5) A special uses permit shall be valid for a period established by the City Planning Commission or as long as the use is established and maintained in conformity with the plans submitted and approved. Special use permits shall expire after one year if the use is not under construction or operational. For good cause shown and upon written application, the City Commission may extend a special use permit for six months. The written application to request a six month extension shall be filed with the Planning Division no later than 60 days prior to expiration.

(b) Hearings and Notices. (Requirements for public hearing and hearing notices are the same as for an amendment to the Zoning Code as specified in Section 1281.01 (c)(2).

(c) Decision on Application; Basis for Determination.

(1) The City Commission may deny, approve, or approve with conditions a request for special land use approval. The decision on a special land use shall be incorporated in a statement of findings and conclusions relative to the special land use which specifies the basis for the decision and any conditions imposed.

(2) Before approving, or approving with conditions, a request for a special land use, the Planning Commission and the City Commission shall establish that the general standards specified in the following shall be satisfied by the completion and operation of a proposed development:

A. The use will be harmonious with and in accordance with the general objectives of the master plan.

B. The use will be designed, constructed, operated and maintained so as to be compatible with adjacent uses of land, the natural environment, and harmonious and appropriate in appearance with the existing or intended character of the general vicinity and will not change the essential character of the neighborhood.

C. The use will not be hazardous or disturbing to existing or future neighboring uses.

D. The use will be an improvement to property in the immediate vicinity and to the community as a whole.

E. The use will be adequately served by essential public facilities and services, such as streets, highways, police and fire protection, drainage, refuse disposal and schools, or the persons or agencies responsible for the development shall be able to adequately provide such services.

F. The use will not create excessive additional requirements at public cost for public facilities and services and will not be detrimental to the economic welfare of the community.

G. The use will not create activities, processes, materials, equipment or conditions of operation that will be detrimental to any person, property or the general welfare by reason of an excessive generation of traffic, noise, smoke, fumes, glare, vibrations or odors.

H. The use will be consistent with the intent and purpose of this Zoning Code.

(3) A request for approval of a special land use shall be approved (except requests for approval of a group child care home, which are discretionary approvals) if the request is in compliance with the standards stated in this ordinance, the conditions imposed under this Zoning Code and other applicable ordinances, and state and federal statutes.

(d) Approval of Special Land Use with Conditions.

(1) Reasonable conditions may be required with the approval of a special land use. The conditions may include conditions necessary to ensure that public services and facilities affected by a proposed land use or activity will be capable of accommodating increased service and facility loads caused by the land use or activity, to protect the natural environment and conserve natural resources and energy, to ensure compatibility with adjacent uses of land, and to promote the use of land in a socially and economically desirable manner. Conditions imposed shall meet all the following requirements:

A. Be designed to protect the natural resources, the health, safety, and welfare, as well as the social and economic wellbeing, of those who will use the land use or activity under consideration, residents and landowners immediately adjacent to the proposed land use or activity, and the community as a whole.

B. Be related to the valid exercise of the police power and purposes which are affected by the proposed use or activity.

C. Be necessary to meet the intent and purpose of the zoning requirements, be related to the standards established in this zoning ordinance for the land use or activity under consideration, and be necessary to ensure compliance with those standards.

(2) The conditions imposed with respect to the approval of a land use or activity shall be recorded in the record of the approval action and remain unchanged except upon the mutual consent of the Planning Commission and the landowner. The Planning Commission shall maintain a record of conditions which are changed.

(3) To ensure compliance with any conditions imposed pursuant to the section, the City may require that a cash deposit, certified check, irrevocable letter of credit, or surety bond acceptable to the City covering the estimated cost of necessary improvements be deposited with the City Clerk to insure faithful completion of the improvements relative to the imposed conditions. The performance guarantee shall be deposited at the time of the issuance of the permit authorizing the special use. Refer to Section 1281.04(f)(4).

(e) Reapplication.

(1) No application for a special use permit shall be submitted for the same property, or any part thereof, or as part of a larger parcel, for a period of six months from the date of Planning Commission decision on a special use application for the property, except on grounds of newly discovered evidence or proof of changed conditions found, in the discretion of the Planning Commission, to be sufficient to justify a reconsideration.

(2) As used in this section, “newly discovered evidence” means a finding that the evidence itself, not merely its materiality, is newly discovered; that the evidence is not cumulative; that the evidence is such as to render a different result probable on rehearing; and that the evidence could not, with reasonable diligence, have been discovered and produced at the time of the original hearing.

(3) For purposes of this section, “proof of changed conditions” shall not include an application for another or different special use than that originally requested.

1281.06 ENFORCEMENT BY ZONING ADMINISTRATOR; APPEALS.

The Planning and Zoning Administrator or their designee shall enforce this Zoning Code. The officers and employees of the City, especially all of the members of the Police Department, shall assist the Planning and Zoning Administrator or their designee by reporting to the Administrator upon observing new construction, reconstruction or land uses or upon observed violations. An appeal from a decision of the Planning and Zoning Administrator or their designee may be made to the Zoning Board of Appeals as provided in Section 1280.03.

1281.07 INTERPRETATION, PURPOSE AND CONFLICTS.

In interpreting and applying the provisions of this Zoning Code, they shall be held to be the minimum requirements for the promotion of the public safety, health, convenience, comfort, morals, prosperity and general welfare. This Zoning Code is not intended to interfere with, abrogate or annul any ordinance, rule, regulation or permit previously adopted or issued and not in conflict with any of the provisions of this Zoning Code, or which shall be adopted or issued pursuant to a law relating to the use of buildings or premises and likewise not in conflict with any of the provisions of this

Zoning Code, nor is this Zoning Code intended to interfere with, abrogate or annul any easement, covenant or other agreement between parties, provided that where this Zoning Code imposes a greater restriction upon the use of buildings or requires larger open spaces or larger lot areas than are imposed or required by such ordinances or agreements, the provisions of this Zoning Code shall control.

1281.08 PROTEST PETITION, SUBMISSION OF ORDINANCES TO ELECTORS.

(a) An amendment to the zoning ordinance is subject to a protest petition as required by this subsection. If a protest petition is filed, then approval of the amendment to the zoning ordinance shall require a 2/3 vote of the City Commission. The protest petition shall be presented to the City Commission before final legislative action on the amendment and shall be signed by one or more of the following:

(1) The owners of at least 20% of the area of land included in the proposed change.

(2) The owners of at least 20% of the area of land included within an area extending outward 100 feet from any point on the boundary of the land included in the proposed change.

(b) Publicly owned land shall be excluded in calculating the 20% land area requirement under subsection (a) above.

1281.09 REQUIREMENT OF PAYMENT OF FEES.

The City may require the payment of reasonable fees for zoning permits as a condition to the granting of authority to use, erect, alter, or locate dwellings, buildings, and structures, including tents and recreational vehicles, within a zoning district established under this act.

1281.10 TRANSFER OF OWNERSHIP.

It shall be unlawful for the owner of any dwelling unit or structure who has received a compliance order or upon whom a notice of violation has been served to sell, transfer, mortgage, lease or otherwise dispose of such dwelling unit or structure to another until the provisions of the compliance order or notice of violation have been complied with, or until such owner shall first furnish the grantee, transferee, mortgagee or lessee a true copy of any compliance order or notice of violation issued by the code official and shall furnish to the code official a signed and notarized statement from the grantee, transferee, mortgagee or lessee, acknowledging the receipt of the compliance order or notice of violation and fully accepting the responsibility without condition for making the corrections or repairs required by such compliance order of notice of violation.

# CHAPTER 1281
# Administrative Procedures

## 1281.01 ZONING ORDINANCE/ MAP AMENDMENTS.

(a) Initiation. The City Commission may amend, supplement or change the regulations or the district boundaries of this Zoning Code pursuant to the authority and according to the procedure set forth in The Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3101 et seq. Changes in the text of this Zoning Code may be proposed by:

(1) The City Commission;

(2) The Planning Commission; or

(3) Any interested person or organization through a petition, which shall not be initiated for the same property more often than once every twelve months.

Changes in zoning district boundaries may be proposed by:

(1) The City Commission;

(2) The Planning Commission;

(3) The owner(s) of the premises concerned; or

(4) The designated agent of a person having an ownership interest in the property.

(b) Definition. An amendment to this Zoning Code shall be deemed to be any change to the text or to the official map, including:

(1) Petitions for zoning ordinance amendments; or

(2) Conditional rezonings.

(c) Amendment Review Procedures. The amendment, be it a text or a map amendment, and application materials shall be prepared in accordance with the provisions of this section, and shall be reviewed in accordance with the following procedure. Amendments or application materials that do not meet the stipulated requirements shall be considered incomplete and shall not be eligible for consideration by the Planning Commission.

(1) Technical review. Prior to Planning Commission consideration, the proposed amendment and application materials shall be distributed to appropriate City departments and divisions and staff for review and comment. The proposed amendment and application materials may also be distributed to applicable outside agencies and designated City consultants for review.

(2) Public hearing. A public hearing shall be held for all proposed amendments in accordance with the procedures set forth in the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3101 et seq., as summarized below:

A. On any amendment to this Zoning Code, the Planning Commission shall hold a public hearing prior to the amendment being referred to the City Commission for action. A record of the comments received at the public hearing shall become a part of the Planning Commission report and recommendation to the City Commission. The following requirements shall pertain to public hearings held before the Planning Commission:

1. Not less than fifteen-day notice of the date, time and place of the hearing shall be published in a newspaper of general circulation in the City.

2. Not less than fifteen-day notice of the date, time and place of the hearing shall be given, by regular mail, to each public utility company and to each railroad company owning or operating any public utility or railroad within the City that registers its name and mailing address with the City Clerk for the purpose of receiving such notices.

3. Not less than fifteen-day notice shall be given, by regular mail, to the owners of property that is the subject of the request. Notice shall also be given to all persons to whom real property is assessed within 300 feet of the subject property affected by the amendment, as listed in the most current assessment roll and to the occupants of all structures with 300 feet of the subject property regardless whether the property or structure is located in the zoning jurisdiction. Notification need not be given to more than one occupant of a structure, except that if a structure contains more than one dwelling unit or spatial area owned or leased by different persons, one occupant of each unit or spatial area shall be given notice. If a single structure contains more than four dwelling units or other distinct spatial areas owned or leased by different persons, then notice may be given to the manager or owner of the structure, who shall be requested to post the notice at the primary entrance to the structure.

4. The notice under subsection 3. above is considered to be given when personally delivered or when deposited during normal business hours for delivery with the United States postal service or other public or private delivery service. The notice shall be given not less than fifteen days before the date the request will be considered. If the name of the occupant is not known, then the term “occupant” may be used for the intended recipient of the notice. However, failure of property owners to receive such notice, shall not invalidate the amendment.

5. A notice under this section shall do all of the following:

a. Describe the nature of the request.

b. Indicate the property that is the subject of the request. The notice shall include a listing of all existing street addresses within the property. Street addresses do not need to be created and listed if no such addresses currently exist within the

property. If there are no street addresses, then other means of identification may be used.

c. State when and where the request will be considered.

d. Indicate when and where written comments will be received concerning the request.

6. For any group of adjacent properties numbering eleven or more that is proposed for rezoning, the requirements of above subsection iii), and the requirement of above subsection 5.b., that street addresses be listed do not apply to that group of adjacent properties.

(3) Planning Commission consideration of proposed amendment. The Planning Commission shall review the proposed amendment, together with any reports and recommendations from staff, consultants, other reviewing agencies, and any public comments. The Planning Commission shall identify and evaluate all factors relevant to the petition, including the appropriate criteria listed in this section, and shall report its findings and recommendation to the City Commission.

(4) City Commission action on proposed amendment. Upon receipt of the report and recommendation from the Planning Commission, the City Commission may approve or deny the proposed amendment. If determined to be necessary, the City Commission may refer the amendment back to the Planning Commission for further consideration. In the case of an amendment to the official zoning map, the City Commission shall approve or deny the amendment, based upon its consideration of the criteria contained in this Zoning Code.

A. The City Commission, upon receipt of the Planning Commission study and report, shall publish a notice indicating the proposed amendment, proposed use and affected property in a newspaper of general circulation in the City. Such notice shall be published at least five days before the City Commission meeting, and shall indicate the time, date and place of such meeting.

(d) Standards of Review for Amendments. In considering any petition for an amendment to the text of this Zoning Code or to the zoning map, the Planning Commission and City Commission shall consider the following criteria that apply to the application in making findings, recommendations, and a decision. The Planning Commission and City Commission may also take into account other factors or considerations that are applicable to the application but are not listed below.

(1) Consistency with the goals, policies and objectives of the master plan and any sub-area plans. If conditions have changed since the master plan was adopted, consistency with recent development trends in the area shall be considered.

(2) Consistency with the basic intent and purpose of this Zoning Code.

(3) The capability of the street system to safely and efficiently accommodate the expected traffic generated by uses permitted in the requested zoning district.

(4) The capacity of the City's utilities and services are sufficient to accommodate the uses permitted in the requested district without compromising the health, safety, and welfare of the City.

(5) That conditions have changed since the Zoning Code was adopted or there was an error in the Zoning Code that justifies the amendment.

(6) That the amendment will not be expected to result in exclusionary zoning or spot zoning.

(7) If a rezoning is requested, compatibility of the site's physical, geological, hydrological and other environmental features with the uses permitted in the proposed zoning district.

(8) If a rezoning is requested, compatibility of all the potential uses allowed in the proposed zoning district with surrounding uses and zoning in terms of land suitability, impacts on the environment, density, nature of use, traffic impacts, aesthetics, infrastructure and potential influence on property values.

(9) If a rezoning is requested, the boundaries of the requested rezoning district will be reasonable in relationship to surrounding zoning districts, and construction on the site will be able to meet the dimensional regulations for the requested zoning district.

(10) If a rezoning is requested, the requested zoning district is considered to be more appropriate from the City's perspective than another zoning district.

(11) If a rezoning is requested to allow for a specific use, rezoning the land is considered to be more appropriate than amending the list of permitted or special land uses in the current zoning district to allow the use.

(12) If a rezoning is requested, the requested rezoning will not create an isolated or incompatible zone in the neighborhood.

(e) Notice of Adoption of Amendment. Following adoption of an amendment by the City Commission, one notice of adoption shall be filed with the City Clerk and one notice shall be published in a newspaper of general circulation in the City within fifteen days after adoption, in accordance with the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3101 et seq. A record of all amendments shall be maintained by the City Clerk. A Zoning Map shall be maintained by the City Clerk, which shall identify all map amendments. The required notice of adoption shall be maintained by the Planning and Zoning Administrator and include all of the following information:

(1) In the case of a newly adopted Zoning Ordinance, the following statement: "A zoning ordinance regulating the development and use of land has been adopted by the City of Battle Creek."

(2) In the case of an amendment(s) to the existing Zoning Ordinance, either a summary of the regulatory effect of the amendment(s), including the geographic area affected, or the text of the amendment(s).

(f) Referendum.

(1) Within seven days after publication of the Zoning Ordinance, a registered elector residing in the zoning jurisdiction of the City may file with the City Clerk a notice of intent to file a petition under this section, in accordance with Section 401 of the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3401.

(2) If a notice of intent is filed under subsection (1) above, the petitioner shall have thirty days following the publication of the zoning ordinance to file a petition signed by a number of registered electors residing in the zoning jurisdiction of the City not less than 15% of the total vote cast within the zoning jurisdiction for all candidates for governor at the last preceding general election at which a governor was elected, with the City Clerk requesting the submission of the zoning ordinance or part of the zoning ordinance to the electors residing in the zoning jurisdiction of the City for their approval,, in accordance with Section 402 of the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3402.

(3) Whenever there is a conflict between this section of the Zoning Ordinance or the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3101 et seq., shall govern.

(g) Conditional Rezoning.

(1) Intent. The Planning Commission and City Commission recognize that, in certain instances, it would be an advantage to both the City and to a property owner seeking rezoning if the property owner proposes certain conditions and limitations as part of a petition for rezoning. Therefore, it is the intent of this section to provide a process consistent with the provision of Section 405 of the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, being MCL 125.3405, to permit property owners to offer conditions regarding the use and/or development of land as part of the rezoning request. It is the further intent of this Zoning Code to accomplish, among other things, the objectives of the zoning ordinance and the master plan to achieve integration of the proposed land development project with the characteristics of the surrounding area.

(2) Definitions. The following definitions shall apply in the interpretation of this Section:

A. “Rezoning Conditions” shall mean conditions regarding the development and use of property proposed by the applicant and approved by the City as part of an approval under this section, including review and recommendation by the Planning Commission.

B. “Rezoning with Conditions Agreement” shall mean a written agreement approved and executed by the City and property owner setting forth the conditions attached to the rezoning pursuant to MCL 125.3405 (as amended) and any other terms mutually agreed upon by the parties relative to land for which the City has approved a rezoning with conditions.

C. “Rezoning with Conditions Plan” shall mean a plan of the property which is the subject of a rezoning with conditions, prepared by a Michigan licensed civil engineer or architect, that may show the location, size, height, design, architecture or other measure or feature for and/or of buildings, structures, improvements and features on, and in some cases adjacent to, the property. The details to be offered for inclusion within the rezoning with conditions plan shall be determined by the applicant, subject to approval of the City Commission after recommendation by the Planning Commission.

D. “Rezoning” shall mean the amendment of this Zoning Code to change the zoning map classification on property from its existing district to a new district classification.

(3) Authorization and eligibility.

A. The standards of this Section shall grant a property owner the option of voluntarily proposing conditions for the development and use of property in connection with a submission of a petition seeking a rezoning. Such conditions may be proposed at the time the application for rezoning is filed, or at a subsequent point in the process of review of the proposed rezoning.

B. In order to be eligible for consideration of a rezoning with conditions, a property owner must propose a rezoning of property to a new zoning district classification, and must, as part of such proposal, voluntarily offer certain site-specific conditions (to be set forth in a rezoning with conditions agreement) that are more strict or limiting than the regulations that would apply to the land under the proposed new zoning district. Such conditions may include, but are not limited to, the following:

1. The location, size, height or other measure for and/or of buildings, structures, improvements, setbacks, landscaping, buffers, design, architecture and other physical features of the proposed development.

2. Specification of maximum density or intensity of development and/or use, expressed in terms fashioned for the particular development and/or use. For example: units per acre, maximum usable floor area, or hours of operation.

3. Preservation of open space, natural resources and/or natural features.

4. Improvements to address traffic issues, including paving, substantial improvements to or funding of improvements to major roads to the benefit of the entire City.

5. Site improvements such as signage, lighting, landscaping, building materials for the exterior of some or all structures above and beyond what would otherwise be required by City ordinance.

6. Limitations on permissible uses of the property.

7. Any other conditions that may be voluntarily proposed by the property owner.

(4) Application and review procedures.

A. Application.

1. At the time of making application for amendment of this Zoning Code seeking a rezoning of property, or at a later time during the process of City consideration of such rezoning a property owner may submit a complete application for approval of a rezoning with conditions to apply in conjunction with the rezoning.

2. The application, which may be amended by the applicant during the process of consideration, shall specify the rezoning conditions proposed by the applicant, recognizing that rezoning conditions shall not authorize uses or development not permitted in the district proposed by the rezoning.

3. An application for a rezoning with conditions shall include a rezoning with conditions agreement ("the agreement"). The agreement shall set forth the rezoning conditions and may incorporate a rezoning with conditions plan.

4. The application shall include a notarized signature of the property owner indicating that the conditions attached to the rezoning are voluntarily offered.

B. Planning Commission review.

1. The proposed rezoning with conditions shall be noticed for public hearing before the Planning Commission as a proposed legislative amendment of the zoning ordinance.

2. Following the public hearing, and further deliberations as deemed appropriate by the Planning Commission, the Planning Commission shall make a recommendation to the City Commission on the proposed rezoning with conditions.

C. City Commission review. Upon recommendation by the Planning Commission, the City Commission shall make a final determination to approve or deny the rezoning with conditions as offered by the applicant. The City Commission may only consider the conditions offered by the applicant, and may not attach any other conditions to the rezoning other than those offered by the applicant. The City Commission's deliberations shall include, but not be limited to, a consideration of the review criteria for a rezoning with conditions.

(5) Review criteria. A rezoning with conditions shall only be approved if it meets the following requirements and standards:

A. The proposed rezoning with conditions will further the goals and objectives of the city master plan.

B. Rezoning conditions shall not authorize uses or development not permitted in the district proposed by the rezoning (and shall not permit uses or development expressly or implicitly prohibited in the rezoning with conditions agreement).

C. The use of the property in question shall be in complete conformity with all regulations governing development and use within the zoning district to which the property is proposed to be rezoned, including, without limitation, permitted uses, lot area

and width, setbacks, height limits, required facilities, buffers, open space areas, and land use density; provided, however, the following shall apply:

1. Development and use of the property shall be subject to the more restrictive requirements shown or specified in the rezoning with conditions agreement, and/or in other conditions and provisions set forth in the rezoning with conditions agreement required as part of the rezoning with conditions approval. Such rezoning with conditions agreement shall supersede all inconsistent regulations otherwise applicable under the zoning ordinance.

2. As part of the grant of final approval of a rezoning with conditions, the City Commission shall be authorized to grant modifications to the strict terms of the zoning ordinance governing dimensional requirements on the property; provided, such authorization to grant modifications shall be conditioned upon the City Commission finding that each zoning ordinance provision sought to be modified will result in an enhancement of the development that would be in the public interest, and that approving the modification would be consistent with the city master plan and compatible with the surrounding area.

D. The proposed rezoning with conditions will result in integration of the proposed land development project with the characteristics of the project area, and result in an enhancement of the project area as compared to the existing zoning, and such enhancement would be unlikely to be achieved or would not be assured in the absence Of the use of a rezoning with conditions.

E. As compared to the existing zoning and considering the site-specific conditions and/or land use proposed by the applicant, it would be in the public interest to grant the rezoning with conditions. In determining whether approval of a proposed application would be in the public interest, the benefits which would reasonably be expected to accrue from the proposal shall be balanced against and be found to clearly outweigh the reasonably foreseeable detriments, taking into consideration reasonably accepted planning, engineering, environmental and other principles, and also taking into consideration the special knowledge and understanding of the City by the City Commission and Planning Commission.

F. The proposed conditions will not preclude future zoning and planning actions by or on behalf of the municipality.

G. Existing and available public services will be capable of serving proposed or potential development that will occur as a result of the rezoning with conditions without negatively impacting the delivery of public services to other properties in the City, or the conditions will ensure that public services will be sufficient to serve both the site and other properties in the City.

H. The offered condition(s) are beneficial to the public good and likely to be enforceable.

I. The condition does not have the same effect as a use variance.

J. The proposed conditions do not relieve the applicant of the responsibility of securing any applicable site plan, plat, condominium, or special land use approvals.

(6) Effect of approval. Approval of the rezoning with conditions and rezoning with conditions agreement confirms only the rezoning of the property, subject to any conditions reflected in the rezoning with conditions agreement and after recordation as set forth in subsection (8) below. Any applicable site plan, plat, condominium, special land use, or variance approvals shall be required before any improvements to the property may be undertaken.

If approved, the zoning district classification of the rezoned property shall consist of the district to which the property has been rezoned, accompanied by a reference to "CR Rezoning with Conditions". The zoning map shall specify the new zoning district plus a reference to "CR" e.g., the district classification for the property might be "B-1, Corridor Commercial District (CR, Rezoning with Conditions)", with a zoning map designation of "B-1/CR." Use of the property so classified and approved shall comply with the conditions set Forth in the rezoning with conditions agreement. No development or use of the land inconsistent with the conditions of the rezoning with conditions agreement shall be permitted.

(7) Compliance with conditions.

A. Any person who establishes a development or commences a use upon land that has been rezoned with conditions shall continuously operate and maintain the development or use in compliance with all of the conditions set forth in the rezoning with conditions agreement. Any failure to comply with a condition contained within the rezoning with conditions agreement shall constitute a violation of this Zoning Code and shall be punishable accordingly. Additionally, any such violation shall be deemed a nuisance per se and subject to judicial abatement as provided by law.

B. No permit or approval shall be granted under this Zoning Code for any use or development that is contrary to an applicable rezoning with conditions agreement.

(8) Period of approval.

A. The rezoning with conditions and agreement shall expire after a period of one year from the effective date of the rezoning unless substantial progress towards obtaining site plan and other required approvals has been made, and shall expire after a period of two years unless development of the property is substantially begun within such two year period and proceeds diligently and in good faith as required by ordinance to completion.

B. In the event substantial progress towards obtaining site plan and other required approvals has not commenced within one year and bona fide development has not commenced within two years from the effective date of the rezoning, the rezoning with conditions and the rezoning with conditions agreement shall be void and of no effect.

C. The property owner may apply for a one year extension two times. The request must be submitted to the Planning Division before the approval time limit

expires. The property owner must demonstrate why the extension should be granted, and must also demonstrate that there is a strong likelihood that the development or use will commence within the period of extension and proceed diligently thereafter to completion, and if the City Commission finds that there has not been a change in circumstances that would render the rezoning with conditions incompatible with adjacent or nearby use and zoning of land or is otherwise inconsistent with sound zoning policy.

An extension request shall be considered by the City Commission following a recommendation by the Planning Commission.

D. If the rezoning with conditions becomes void in the manner provided in this section, the following procedures shall apply:

1. The property owner may seek a new rezoning of the property within thirty days of the expiration of the period of approval.

2. If no application is made for a new rezoning of the property, the land shall revert to its former zoning classification as set forth in MCL 124.3405(2)(as amended). The City Commission shall direct the Planning Commission to proceed with consideration of rezoning the land to its former zoning designation following the standard rezoning procedures set forth in this Zoning Code.

3. Until such time as a new zoning district classification of the property has become effective, no development shall be undertaken or permits for development issued.

(9) Rezoning with conditions agreement requirements. A rezoning with conditions agreement shall be executed between the applicant and the City at the time of City Commission approval of a rezoning with conditions.

A. Rezoning with conditions agreements shall, at a minimum, contain all of the following items:

1. Identification of the requested zoning district and a listing of the conditions offered by the applicant.

2. A statement acknowledging that the rezoning with conditions was proposed by the applicant, and, further agreement and acknowledgment that the conditions and rezoning with conditions agreement are authorized by all applicable state and federal law and constitution, and that the agreement is valid and was entered into on a voluntary basis and represents a permissible exercise of authority by the City.

3. Agreement and understanding that the property in question shall not be developed or used in a manner inconsistent with the rezoning with conditions agreement.

4. Agreement and understanding that the approval and rezoning with conditions agreement shall be binding upon and inure to the benefit of the property owner and City, and their respective heirs, successors, assigns, and transferees.

5. The date upon which the rezoning with conditions becomes void, as specified in Section 1281.01(g)(8). If the City Council grants an extension of approval, a new rezoning with conditions agreement with the new expiration date shall be recorded.

6. Agreement and understanding that, if a rezoning with conditions becomes void in the manner provided in Section 1281.01(g)(8), no development shall be undertaken or permits for development issued until a new zoning district classification of the property has been established.

7. Agreement and understanding that each of the requirements and conditions in the rezoning with conditions agreement represents a necessary and reasonable measure which, when considered with all other conditions and requirements, is roughly proportional to the increased impact created by the use represented in the approved rezoning with conditions, taking into consideration the changed zoning district classification and the specific use authorization granted.

8. A legal description of the property affected by the rezoning with conditions.

9. Development regulations affected by the conditions of rezoning, including but not limited to density, setbacks, height, site coverage, signs, parking, architecture, etc.

10. Revocation of approval provisions returning the property to its original zoning designation if the developer violates the terms of the agreement.

B. A rezoning with conditions plan may be included as an exhibit to the agreement. The rezoning with conditions plan may show the conceptual layout of the proposed development or use, along with any other information deemed relevant by the applicant. Inclusion of a rezoning with conditions plan as an exhibit to a rezoning with conditions agreement shall not replace the requirement for preliminary and final site plan, subdivision, condominium, special land use or variance review and approval.

(10) Amendment of rezoning with conditions agreement. Amendment of a rezoning with conditions agreement shall be proposed, reviewed and approved in the same manner as a new rezoning with conditions.

(11) Recordation of rezoning with conditions agreement. A rezoning with conditions shall become effective following publication in the manner provided by law, and, after recordation of the rezoning with conditions agreement, whichever is later. All rezoning with conditions agreements shall be recorded with the Calhoun County Register of Deeds.

(12) Termination. The City Commission shall be the only body with the authority to terminate a rezoning with conditions agreement. The consideration to terminate the agreement shall be for reasons of expiration of the agreement, discovery of false information upon which the initial approval was based, or the existence or discovery of new information that alters the viability of the approved rezoning. The termination shall comply with any applicable provisions of this Zoning Code or the rezoning with conditions agreement. If the agreement is terminated, the City shall follow the procedures in Section 1281.01 (g)(8)D.

(13) City right to rezone. Nothing in the rezoning with conditions agreement or in the provisions of this section shall be deemed to prohibit the City from rezoning all or any portion of land that is subject to a rezoning with conditions to another zoning classification. Any such rezoning shall be conducted in compliance with this Zoning Code and the Michigan Zoning Enabling Act.

(14) If land that is subject to a rezoning with conditions agreement is thereafter rezoned to a different zoning classification or to the same zoning classification but with a different or no rezoning with conditions agreement, the rezoning with conditions agreement attached to the former zoning classification shall cease to be in effect. In such a case, the Planning and Zoning Administrator or their designee shall record with the Calhoun County Register of Deeds a notice that the rezoning with conditions is no longer in effect upon the property owner's written request.

(h) Fees. Petitions for an amendment to this Zoning Code shall be accompanied by a fee as prescribed in the schedule provided for in Section 802.24 . Such fee is applicable when filing a petition for zoning reclassification or special use permits and is nonrefundable.

(i) Protest Petition. An amendment to a zoning ordinance is subject to a protest petition under Section 1281.08 .

(j) An amendment to conform a provision of the zoning ordinance to the decree of a court of competent jurisdiction as to any specific lands may be adopted by the City Commission and the notice of the adopted amendment published without referring the amendment to any other board provided for under this chapter.

1281.02 CERTIFICATES OF OCCUPANCY.

(a) Subsequent to the effective date of this Zoning Code (Adopted on November 24, 2020), no change in the use or occupancy of land or in the use or occupancy of an existing building shall be made, nor shall any new building be occupied for any purpose, until a certificate of occupancy has been issued by the Chief Building Official or their designee or agent. Such a certificate shall state that the new occupancy complies with this Zoning Code.

(b) No permit for excavation, or the erection or alteration of, any building or premise shall be issued before the application has been approved for such activities, and no building or premises shall be occupied until a certificate of occupancy is issued by the Chief Building Official or their designee or agent. (c) A record of all certificates of occupancy shall be kept on file in the Inspections Division office. Copies shall be furnished on request to any person having a proprietary or tenancy interest in land or in buildings affected by such certificates.

1281.03 APPLICATIONS FOR BUILDING PERMITS AND ZONING PERMITS; RECORDS.

(a) It shall be unlawful for any person to commence excavation for construction of any building or structure, structural changes or repairs in any existing building, a change in use, or moving of an existing building without first obtaining a zoning permit and/or

building permit from the City of Battle Creek. No permit shall be issued for construction, alteration or remodeling of any building or structure, or change in use, until an application has been submitted in accordance with the provision of this Zoning Code showing that the construction proposed is in compliance with the provisions of this Zoning Code and with the Building Code adopted by the City. “Alteration” or “repair” of an existing building or structure, shall include any changes in structural members, stairways, basic construction type, kind or class of occupancy, light or ventilation, means of egress and ingress, use, or any other changes regulated by the Building Code of the City, the Housing Law of Michigan, Public Act 167 of 1917, as amended, being MCL 125.401 et seq., this Zoning Code, except for minor repairs or changes not involving any of the aforesaid provisions.

(b) Each application for a zoning permit shall contain all required information specified in Section 1281.04(d). A record of applications and plot plans shall be kept in the offices of the Planning Division.

(c) Zoning permits are required for activities detailed in Section 1281.04(c), and as otherwise specified in this Zoning Code.

(d) No building, plumbing, electrical, drainage or other permit shall be issued until the City of Battle Creek has determined that the plans and designated use indicate that the proposed structure and lot will conform to the provisions of this Zoning Code.

1281.04 SITE PLAN REVIEW.

(a) Purpose. It is the purpose of this chapter to require site plan review approval for certain buildings, structures and uses that can be expected to have a significant impact on natural resources, traffic patterns, adjacent parcels and the character of future development. Site plan approval shall be required before building permits are granted by the City for parcels subject to this chapter. The regulations contained in this chapter are intended to promote:

(1) Safe and convenient vehicle and pedestrian traffic movements, both within a site and in relation to access streets;

(2) Harmonious relationships between buildings, structures and uses, both within a site and within adjacent sites;

(3) Conservation of natural amenities and resources; and

(4) Compliance with all other applicable regulations of this Zoning Code.

(b) Application.

(1) Applications for site plan approval shall be available at the Planning Division and a complete application packet shall be filed with the Inspections Division. A complete application packet shall consist of a completed application, a digital format of the site plan and other applicable drawings, supporting information, and the review fee established by Section 802.24.

(2) All requirements for site plan approval shall be filed with the Inspections Division at one time, as a complete single submittal.

(3) Once a complete application, site plan, and other materials are submitted, the Planning and Zoning Administrator or their designee will schedule a review at the earliest possible date.

(4) Any additional information requested by city staff must be submitted no later than 180 days from the date a complete application is filed. The application shall expire if the requested additional information is not received by the end of the 180 day period. An applicant may submit a new application and fee.

(c) Required Review Based on Proposed Activity. The table below details which type of reviews are required based on the proposed activity.

| Proposed Activity | Administrative Review of Site Plan Per Section 1281.04 | Administrative Review of Building and Zoning Permits Per Section 1281.03 | Planning/City Commission Review Per Section 1281.05 |
|---|---|---|---|
| Any proposed new building or parking area or where an alteration, addition, or expansion of existing developments constitute an increase or reduction to the existing buildings or parking area of more than ten percent (10%) | ● | | |
| Projects where less than a ten percent (10%) increase or reduction of the building or parking will occur shall adhere to review requirements as outlined in the Stormwater Management Program Technical Reference Manual. | | ● | |
| Planned Unit Developments | ● | | ● |
| Parking lot mill and repave projects where an approved site plan is not on file | ● | | |

| | | | |
|---|---|---|---|
| Special land uses | ● | | ● |
| Adult Use Marihuana Microbusiness located in B-1,B-2, I-1 and I-2 | ● | | |
| Adult Use Marihuana Microbusiness located in T-3 | ● | | ● |
| Adult Use Marihuana Retailers located in B-1, B-2, T-4, T-5, I-1, and I-2 | ● | | |
| Adult Use Marihuana Retailers located in T-3 | ● | | ● |
| Medical Marihuana Provisioning Center located in B-1, B-2, T-4, T-5, I-1, and I-2 | ● | | |
| Medical Marihuana Provisioning Center located in T-3 | ● | | ● |
| Medical and Adult Use Marihuana Grow Operation located in I-1 and I-2 | ● | | |
| Medical and Adult Use Marihuana Processing Facility located in I-1 and I-2 | ● | | |
| Medical and Adult Use Safety Compliance Facility located in B-1, I-1 and 1-2 | ● | | |
| Medical and Adult Use Secure Transporter located in B-1, I-1 and I-2 | ● | | |
| Medical and Adult Use Excess Grow Operation located in I-1 and I-2 | ● | | |
| Driveway or curb cut relocation where the new driveway will be relocated within 25 feet of the existing driveway location or where a driveway or curb cut is being totally eliminated | | ● | |
| Construction and development on any parcel of land proposing or having multi-family, commercial, or industrial uses | ● | | |
| Site improvements that include landscaping, lighting, site access, and parking lot grading, layout, and new off-street parking | ● | | |
| Landscaping that is less than 25% of the parcel size or 5,000 square feet, whichever is less | | ● | |
| Re-paving of an off-street parking lot, provided there are no grading changes and no changes to the configuration of the parking lot layout | | ● | |
| Construction of and/or the conversion of an existing structure to one (1) or more units meeting the definition of a State Licensed Residential Facility | | ● | |

| | | | |
|---|---|---|---|
| Construction or replacement of a fence, shed, signage, or driveway | | ● | |

(1) Site plan review shall not be required for the following:

A. Detached single-family housing and related parking;

B. Two-family dwelling units and related parking;

C. Agricultural uses; and

D. Nonresidential accessory buildings no more than 120 square feet in area and all residential accessory buildings.

(2) No grading, removal of trees or other vegetation, land-filling or construction of improvements shall commence for any project which requires site plan approval until a site plan is approved and is in effect and any other applicable permits are obtained.

(d) Site Development Plans. All site development plans shall be prepared on standard twenty-four inch by thirty-six inch, or thirty-six inch by forty-two inch, architectural or engineering sheets, and are required to incorporate the following information, unless waived by the Planning and Zoning Administrator or their designee:

Site Plan Required Information:

(1) The title of the proposed project;

(2) The name of the property owner, proprietor or project director;

(3) The location of the project, the street name and the address;

(4) Professional seal of the architect, engineer or designer, and their name, address, phone number, and email address, if available;

(5) The date drawn and subsequent revision dates;

(6) The scale of the drawing, the north directional arrow, and vicinity map showing location of project;

(7) Provide all dimensions, including property lines, easements and rights-of-way, existing and proposed buildings building setback lines, site improvements; gross and net acreage, and zoning classification of the site and adjacent properties;

(8) Location of adjacent property lines, buildings and structures, sidewalks, parking lots, rights-of-ways, abutting streets, curb cuts, and access easements within 100 feet of the subject property;

(9) Existing man-made or natural features such as wetlands, waterways, woodlands, and areas with slopes greater than 10%, with an indication of which features will be retained or removed;

(10) The topography, existing and proposed, including contours with a maximum of two-foot contours, or spot elevations sufficient to determine the topography of the site, so as to clearly indicate required cutting, filling, and grading. The site plan shall contain arrows indicating direction of drainage and stormwater calculations;

(11) Location and dimension of existing and proposed buildings or structures, including intended uses, floor area, number of floors, width, length, height, number of types of dwelling units (where applicable), and setback distances;

(12) The location of sidewalks, rights-of-ways, abutting streets, curb cuts, and access easements, ingress and egress drives, both existing and proposed, to thoroughfares, showing traffic patterns into the site from the same, including ultimate pavement width, deceleration lanes and the like; the location of private and public pedestrian walkways;

(13) On-site traffic circulation and parking areas, including the number and size of parking bays, width of maneuvering aisles, designation of fire lanes, the location and size of handicapped parking, surface materials and striping of the parking lot surface to delineate parking bays and individual spaces;

(14) The location of loading berths, truck docks, truck wells, service drives and exterior parking lot lighting, including photometric plan;

(15) The location and size of all existing and proposed public and private utilities above and below ground proposed to service the project and the location of any public or private utility easements, to include water, gas, electric, cable, stormwater, stormsewer, catch basins, and fire hydrants;

(16) The spatial relationship of buildings on the site, including pedestrian walkways, protective or retaining walls, fences, landscaped buffers, either existing or proposed, and the materials to be utilized, if required;

(17) The location of signs, either existing or proposed, and an indication of their size, height and design pursuant to City sign regulations;

(18) A landscaping plan of the site, including greenbelts or buffers if required, and the identification of all plant and landscape material to be utilized as to type, size and location;

(19) The location and proposed method of screening trash refuse receptacles;

(20) Location of outdoor storage/display areas including a description of the items to be located outdoors, as well as the location and description of required screening;

(21) Storage and containment areas if the use of hazardous substances is involved; and

(22) Any additional information as may be required of the applicant to properly evaluate the proposed development.

(e) Standards for Consideration. The following shall be the standards for consideration of all plans for developments submitted for site plan approval:

(1) All elements of the site plan shall be harmoniously and efficiently organized in relation to topography, the size and type of the lot, the character of adjacent properties and the type and size of buildings.

(2) The landscape shall be preserved in its natural state, insofar as practical, by minimizing tree and soil removal and by topographic modifications, which result in maximum harmony with adjacent areas.

(3) The site plan shall provide reasonable visual and sound privacy for all occupants located therein. Fences, walks, barriers and landscaping shall be used, as appropriate, for the protection and enhancement of property and for the privacy of its occupants.

(4) All buildings or groups of buildings shall be so arranged as to permit emergency vehicles access by some practical means to all sides as may be required by the Building and/or Fire Code.

(5) Every structure or dwelling unit shall have access to a public street, walkway or other area dedicated to common use.

(6) There shall be provided a pedestrian circulation system which is insulated as completely as is reasonably possible from the vehicular circulation system.

(7) The arrangement of public or common ways for vehicular and pedestrian circulation shall respect the pattern of existing or planned streets and pedestrian or bicycle pathways in the area. Streets and drives which are a part of an existing or planned street pattern which serves an adjacent development shall be of a width appropriate to the traffic volume they will carry and shall have a dedicated right-of-way equal to that specified by the City Engineer and/or any other entity having authority over said roadway.

(8) Where the Planning Division, City Engineer, or Traffic Engineer finds that an excessive number of ingress and/or egress points may occur with relation to major or secondary thoroughfares, thereby diminishing the carrying capacity of the thoroughfare, they shall require marginal access drives as follows:

A. For a narrow frontage of less than 120 feet, the design will require a single outlet.

B. For a series of adjacent frontages in a developing area, a service road shall be constructed and a single marginal access drive shall serve all establishments fronting thereon, with road cuts not closer than 330 feet centerline to centerline, or 330 feet from a street intersection.

C. The overall design of a marginal access drive shall uphold the purposes of this chapter, promote the public safety, and serve the public interest.

D. Marginal access drives shall be required only if the concept is reasonable in terms of the land available for such an improvement.

(9) All site plans shall be designed in accordance with the City of Battle Creek Stormwater Management Program Technical Reference Manual. All stormwater shall be detained on site for controlled release. Attention shall be given to proper site drainage to ensure neighboring properties will not be adversely affected.

(10) Loading and unloading areas and outside storage areas which face or are visible from residential uses or districts or public thoroughfares, shall be screened by a six foot solid screening fence (concealment screening) and plant materials no less than six feet in height.

(11) Trash containers must be stored in a trash enclosure constructed of solid screening fence (concealment screening) on all four sides from four inches above the ground to six inches above the trash container. The enclosure shall not be located in the front yard unless the Planning and Zoning Administrator or their designee finds that there is no other feasible location.

(12) Exterior lighting shall be arranged so that it is deflected away from adjacent properties and so that it does not impede the vision of traffic along adjacent streets.

(13) Development occurring within the City of Battle Creek wellhead protection area, in accordance with Chapter 1041, shall comply with the requirements established in the performance standards as administered by the Department of Public Works.

(f) Decisions and approval.

(1) The Planning Division, the Inspection Division, and the Department of Public Works shall be responsible for reviewing site plans, and the Planning and Zoning Administrator or their designee shall be responsible for granting approval. A decision approving, conditionally approving, or rejecting a site plan shall be based upon requirements and standards contained in the zoning ordinance, other statutorily authorized and properly adopted City planning documents, other applicable ordinances, and state and federal statutes.

(2) Any revisions to the site plan shall be submitted in accordance with Section 1281.04(b).

(3) If approved, the site plan shall become part of the record of approval, and subsequent actions related to the activity authorized shall be consistent with the approved site plan, unless a change conforming to the zoning ordinance is agreed to by the landowner and the body or official that initially approved the site plan.

(4) A site plan approved under this section shall be valid for a period of one year. If construction has not commenced within this time period, or if construction has ceased for more than one year, the site plan shall become null and void. Thirty days prior to the expiration of an approved final site plan, an applicant may make application for a six-month extension of the site plan. The extension shall be granted if the Planning and Zoning Administrator or designee finds good cause for the extension and that zoning

regulations and site conditions of the subject property and adjacent properties have not changed since the approval.

(5) Performance guarantee. In accordance with the Michigan Zoning Enabling Act, the City may require that a cash deposit, certified check, irrevocable letter of credit, or surety bond acceptable to the City, in an amount to cover the estimated cost of the improvements associated with the project, be deposited with the City Clerk to insure faithful completion of the improvements as set out in the site plan approved by the Planning and Zoning Administrator or their designee. If the City has required a performance guarantee, then it shall be subject to the following terms and conditions:

A. The performance guarantee shall be deposited at the time of the issuance of the permit authorizing the activity or project. The City may not require the deposit of the performance guarantee until it is prepared to issue the permit.

B. Rebates of cash deposits. Where the performance guarantee has been made in the form of a cash deposit, the performance guarantor shall be entitled to a rebate of the cash deposit in reasonable proportion to the ratio of work completed on the required improvements as satisfactory work progresses. The performance guarantor may request the rebates in three equal installments each time one-third of the entire required work has been satisfactorily completed in accordance with the final approved site plan, including any approved amendments.

C. Failure to complete improvements. If the performance guarantor fails to complete the improvements as approved in the final approved site plan within such time period as is required by the conditions or guarantees as outlined above, then the City may proceed to have such work completed and shall reimburse itself for the cost thereof by appropriating the cash deposit, certified check, or surety bond or by drawing upon the irrevocable letter of credit, or shall take the necessary steps to require performance by the bonding company.

(g) Appeals. An appeal may be taken to the Zoning Board of Appeals by any person aggrieved by a decision of the Planning Division, the City Engineer or the Traffic Engineer as it relates to this chapter. Such appeal shall be taken within such time as is prescribed by Section 1280.03.

(h) Amendments. All site improvements shall conform to the final site plan. A site plan may be amended upon application and in accordance with the procedure herein. The Planning and Zoning Administrator or their designee shall have the authority to determine if a proposed change requires an amendment to an approved final site plan, provided that a revised final site drawing be submitted showing such minor changes, for purposes of record.

(i) As-Built Plan. After construction has concluded, as-built plans shall be submitted to ensure compliance with final site plan approval.

(j) Violations and Penalties.

(1) All site improvements shall conform to the final approved site plan, unless an amendment has been approved by the Planning and Zoning Administrator or their

designee. If an amendment has not been approved, the Planning Division may require the applicant to correct any physical changes to the site that were completed without proper approval so as to conform to the approved final site plan.

(2) Stop work order. If improvements and/or construction is being undertaken contrary to this Chapter or the final approved site plan, including any approved amendments, the Planning and Zoning Administrator or their designee shall give written notice to the holder of the building permit, or if a building permit has not been issued, then to the person doing the construction and/or improvements, notifying them of the violation of this Chapter, or other applicable laws and ordinances. If the person doing the construction is not known, or cannot be located with reasonable effort, then the notice may be delivered to the person in charge of, or apparently in charge of, the construction/improvements. If the holder of the permit or the person doing the construction or improvements fails to correspond with the City to show good cause within one full working day after notice is delivered, the Planning and Zoning Administrator or their designee shall cause a written order to stop construction and/or improvements to be posted on the premises. A person shall not continue, or cause or allow to be continued, construction and/or improvements in violation of a stop work order, except with permission of the Zoning Administrator or their designee to abate the dangerous condition or remove the violation, or except by court order. If an order to stop construction and/or improvements is not obeyed, the Planning and Zoning Administrator or their designee may apply to the Calhoun County circuit court for an order enjoining the violation of the stop work order. This remedy is in addition to, and not in limitation of, any other remedy provided by law or ordinance, and does not prevent criminal prosecution for failure to obey the order.

(3) A person who violates or fails to comply with any of the provisions of this Zoning Code is responsible for a Class C Municipal civil infraction and shall be subject to the civil infraction fines provided in Section 202.98.

1281.05 SPECIAL LAND USES.

(a) Application for Special Uses; Certificates of Occupancy. An application to build or occupy any of the special uses described in Section 1240.02 shall be submitted in accordance with the following procedure:

(1) Applications shall be submitted through the Planning Division to the Planning Commission. A copy of the application shall be forwarded to the City Commission. Each application shall be accompanied by a nonrefundable filing fee as established in the fee, bond and insurance schedule.

(2) Every application shall be accompanied by the following information and data:

A. A special use petition form supplied by the Planning Division;

B. A site plan, plot plan or development plan, drawn to a readable scale, of the total property involved showing the location of all abutting streets, the location of all existing and proposed structures, the types of buildings and their proposed uses;

C. Preliminary plans and specifications of the proposed development and for all intended construction; and

D. A statement with supporting evidence regarding the required findings specified in Section 1281.05(c).

(3) Before authorization by the City Commission of any of the special uses referred to in this chapter, the Planning Commission shall cause a study and report concerning the effect of the proposed use on the master plan and on the character and development of the neighborhood.

(4) The Planning Commission may recommend, and the City Commission may impose, such conditions or restrictions upon the construction, location and operation of a special use as is deemed necessary to secure the general objectives of this Zoning Code and to preserve the value of property in the neighborhood. Any proposed special use shall otherwise comply with all of the requirements set forth in this Zoning Code for the district in which the use is located, except that the City Planning Commission may permit hospitals and institutions to exceed the height limitations of such district.

(5) A special uses permit shall be valid for a period established by the City Planning Commission or as long as the use is established and maintained in conformity with the plans submitted and approved. Special use permits shall expire after one year if the use is not under construction or operational. For good cause shown and upon written application, the City Commission may extend a special use permit for six months. The written application to request a six month extension shall be filed with the Planning Division no later than 60 days prior to expiration.

(b) Hearings and Notices. (Requirements for public hearing and hearing notices are the same as for an amendment to the Zoning Code as specified in Section 1281.01 (c)(2).

(c) Decision on Application; Basis for Determination.

(1) The City Commission may deny, approve, or approve with conditions a request for special land use approval. The decision on a special land use shall be incorporated in a statement of findings and conclusions relative to the special land use which specifies the basis for the decision and any conditions imposed.

(2) Before approving, or approving with conditions, a request for a special land use, the Planning Commission and the City Commission shall establish that the general standards specified in the following shall be satisfied by the completion and operation of a proposed development:

A. The use will be harmonious with and in accordance with the general objectives of the master plan.

B. The use will be designed, constructed, operated and maintained so as to be compatible with adjacent uses of land, the natural environment, and harmonious and appropriate in appearance with the existing or intended character of the general vicinity and will not change the essential character of the neighborhood.

C. The use will not be hazardous or disturbing to existing or future neighboring uses.

D. The use will be an improvement to property in the immediate vicinity and to the community as a whole.

E. The use will be adequately served by essential public facilities and services, such as streets, highways, police and fire protection, drainage, refuse disposal and schools, or the persons or agencies responsible for the development shall be able to adequately provide such services.

F. The use will not create excessive additional requirements at public cost for public facilities and services and will not be detrimental to the economic welfare of the community.

G. The use will not create activities, processes, materials, equipment or conditions of operation that will be detrimental to any person, property or the general welfare by reason of an excessive generation of traffic, noise, smoke, fumes, glare, vibrations or odors.

H. The use will be consistent with the intent and purpose of this Zoning Code.

(3) A request for approval of a special land use shall be approved (except requests for approval of a group child care home, which are discretionary approvals) if the request is in compliance with the standards stated in this ordinance, the conditions imposed under this Zoning Code and other applicable ordinances, and state and federal statutes.

(d) Approval of Special Land Use with Conditions.

(1) Reasonable conditions may be required with the approval of a special land use. The conditions may include conditions necessary to ensure that public services and facilities affected by a proposed land use or activity will be capable of accommodating increased service and facility loads caused by the land use or activity, to protect the natural environment and conserve natural resources and energy, to ensure compatibility with adjacent uses of land, and to promote the use of land in a socially and economically desirable manner. Conditions imposed shall meet all the following requirements:

A. Be designed to protect the natural resources, the health, safety, and welfare, as well as the social and economic wellbeing, of those who will use the land use or activity under consideration, residents and landowners immediately adjacent to the proposed land use or activity, and the community as a whole.

B. Be related to the valid exercise of the police power and purposes which are affected by the proposed use or activity.

C. Be necessary to meet the intent and purpose of the zoning requirements, be related to the standards established in this zoning ordinance for the land use or activity under consideration, and be necessary to ensure compliance with those standards.

(2) The conditions imposed with respect to the approval of a land use or activity shall be recorded in the record of the approval action and remain unchanged except upon the mutual consent of the Planning Commission and the landowner. The Planning Commission shall maintain a record of conditions which are changed.

(3) To ensure compliance with any conditions imposed pursuant to the section, the City may require that a cash deposit, certified check, irrevocable letter of credit, or surety bond acceptable to the City covering the estimated cost of necessary improvements be deposited with the City Clerk to insure faithful completion of the improvements relative to the imposed conditions. The performance guarantee shall be deposited at the time of the issuance of the permit authorizing the special use. Refer to Section 1281.04(f)(4).

(e) Reapplication.

(1) No application for a special use permit shall be submitted for the same property, or any part thereof, or as part of a larger parcel, for a period of six months from the date of Planning Commission decision on a special use application for the property, except on grounds of newly discovered evidence or proof of changed conditions found, in the discretion of the Planning Commission, to be sufficient to justify a reconsideration.

(2) As used in this section, “newly discovered evidence” means a finding that the evidence itself, not merely its materiality, is newly discovered; that the evidence is not cumulative; that the evidence is such as to render a different result probable on rehearing; and that the evidence could not, with reasonable diligence, have been discovered and produced at the time of the original hearing.

(3) For purposes of this section, “proof of changed conditions” shall not include an application for another or different special use than that originally requested.

1281.06 ENFORCEMENT BY ZONING ADMINISTRATOR; APPEALS.

The Planning and Zoning Administrator or their designee shall enforce this Zoning Code. The officers and employees of the City, especially all of the members of the Police Department, shall assist the Planning and Zoning Administrator or their designee by reporting to the Administrator upon observing new construction, reconstruction or land uses or upon observed violations. An appeal from a decision of the Planning and Zoning Administrator or their designee may be made to the Zoning Board of Appeals as provided in Section 1280.03.

1281.07 INTERPRETATION, PURPOSE AND CONFLICTS.

In interpreting and applying the provisions of this Zoning Code, they shall be held to be the minimum requirements for the promotion of the public safety, health, convenience, comfort, morals, prosperity and general welfare. This Zoning Code is not intended to interfere with, abrogate or annul any ordinance, rule, regulation or permit previously adopted or issued and not in conflict with any of the provisions of this Zoning Code, or which shall be adopted or issued pursuant to a law relating to the use of buildings or premises and likewise not in conflict with any of the provisions of this

Zoning Code, nor is this Zoning Code intended to interfere with, abrogate or annul any easement, covenant or other agreement between parties, provided that where this Zoning Code imposes a greater restriction upon the use of buildings or requires larger open spaces or larger lot areas than are imposed or required by such ordinances or agreements, the provisions of this Zoning Code shall control.

1281.08 PROTEST PETITION, SUBMISSION OF ORDINANCES TO ELECTORS.

(a) An amendment to the zoning ordinance is subject to a protest petition as required by this subsection. If a protest petition is filed, then approval of the amendment to the zoning ordinance shall require a 2/3 vote of the City Commission. The protest petition shall be presented to the City Commission before final legislative action on the amendment and shall be signed by one or more of the following:

(1) The owners of at least 20% of the area of land included in the proposed change.

(2) The owners of at least 20% of the area of land included within an area extending outward 100 feet from any point on the boundary of the land included in the proposed change.

(b) Publicly owned land shall be excluded in calculating the 20% land area requirement under subsection (a) above.

1281.09 REQUIREMENT OF PAYMENT OF FEES.

The City may require the payment of reasonable fees for zoning permits as a condition to the granting of authority to use, erect, alter, or locate dwellings, buildings, and structures, including tents and recreational vehicles, within a zoning district established under this act.

1281.10 TRANSFER OF OWNERSHIP.

It shall be unlawful for the owner of any dwelling unit or structure who has received a compliance order or upon whom a notice of violation has been served to sell, transfer, mortgage, lease or otherwise dispose of such dwelling unit or structure to another until the provisions of the compliance order or notice of violation have been complied with, or until such owner shall first furnish the grantee, transferee, mortgagee or lessee a true copy of any compliance order or notice of violation issued by the code official and shall furnish to the code official a signed and notarized statement from the grantee, transferee, mortgagee or lessee, acknowledging the receipt of the compliance order or notice of violation and fully accepting the responsibility without condition for making the corrections or repairs required by such compliance order of notice of violation.

CITY OF BATTLE CREEK
**PLANNING COMMISSION**
10 North Division, Battle Creek, MI 49014
**Minutes for February 28, 2024**

**MEETING CALLED TO ORDER:** By Commissioner Gray at 4:01 p.m.

**ATTENDANCE:** Roll call was taken.
**Commission Members Present:**

| | |
|---|---|
| **Comm. Gray,** present | **Comm. Denison,** present |
| **Comm. Godfrey III,** present | **Comm. Moton,** absent |
| **Comm, O'Donnell,** present | **Comm. White,** absent |
| **Comm. Hughes,** present | **Mayor Behnke,** present |
| **Comm. Morris,** present | |

S**taff Present:** Melody Carlsen, Administrative Assistant, Marcel Stoetzel, Deputy City Attorney, CJ Sivak-Schwennesen, Planner, Darcy Schmitt, Planning Supervisor.

**APPROVAL OF MINUTES:** December 20, 2023 Capital Improvement Plan Workshop, December 20, 2023 Meeting.

**MOTION MADE BY COMMISSIONER GODFREY TO APPROVE THE DECEMBER 20, 2023 CAPITAL IMPROVEMENT PLAN WORKSHOP MINUTES AND THE DECEMBER 20, 2023 PLANNING COMMISSION MEETING MINUTES, SECONDED BY COMMISSIONER MORRIS.**

**ROLL VOTE:** Commissioner Gray asked everyone in favor to signify by saying "aye".

**ALL IN FAVOR, NONE OPPOSED, MOTION APPROVED.**

**CORRESPONDENCE:**
Correspondence from resident, Sheila McDonald in opposition of #R1-24 rezoning along E. Michigan Avenue was submitted to the Chairperson. Read by Melody Carlson.

**ADDITIONS/DELETIONS:** None.

**PUBLIC HEARINGS/DELIBERATIONS:**

**A) ZONING MAP AMENDMENT #R1-24**

Petition from the City of Battle Creek to rezone properties along E. Michigan Avenue, between Caine Street, and Stiles Street currently zoned "R-3 Multiple-Family Residential District" and "R1-B Single-Family Residential District" to "T-3 Neighborhood Commercial District" pursuant to Sections 1281.01 and 1240.13 of the zoning code.

**Staff Presentation:** CJ Sivak-Schwennesen gave the staff report for #R1-24 rezoning with staff's recommendation for approval.

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**Public Comment:**
**Cynthia Fritz** of 451 Main Street spoke and opposed the rezoning.
**James Moreno** of 451 Main Street spoke and opposed the rezoning, would like to see more discussion within the community.
**Sherry Goodwin,** resident residing on Cliff St. spoke and opposed the rezoning.
**Sarah Hodges** of 41 Caine St had questions about property taxes changing if the rezoning was approved.

**Commissioner Comments:**
**Commissioner O'Donnell** would like to move the vote to a later date given community concerns.
**Mayor Behnke** agreed with Commissioner O'Donnell that we need more time and is in favor of slowing down and more participation within the community.

**MOTION MADE BY COMMISSIONER O'DONNELL TO POSPONE A VOTE FOR AT LEAST THREE MONTHS AND HAVE SOME TYPE OF REPORT WITH RESIDENTIAL IMPUT. COMMISSIONER GODFREY SECONDED THE MOTION.**

**Commissioner Discussion:**
**Commissioner Morris** agrees to a workshop and supports the motion at hand.
**Darcy Schmitt, Planning Supervisor** asked for clarification as what information the body is requesting moving forward.
**Commissioner Godfrey** would like to see the City reach out to the NPC to set up a meeting.
**Commissioner Gray** would like to see the meeting held someplace within the neighborhood.

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**B) <u>ZONING MAP AMENDMENT #R2-24</u>**

Petition from the City of Battle Creek to rezone properties along W. Vanburen Street, W. Michigan Avenue, and W. Jackson Street between Cass Street and Wood Street, from "T-3 Neighborhood Commercial District" and "R-3 Multiple-Family Residential District" to "T-4 Downtown Commercial District". In addition, rezone properties west along W. Jackson Street between Wood Street and Angell Street from "R-3 Multiple-Family Residential District" to "T-3 Neighborhood Commercial District" and "T-4 Downtown Commercial District". Finally, continuing west to rezone properties along W. Michigan Avenue and W. Jackson Street between Angell Street and the western boundary of the City from "R-3 Multiple-Family Residential District" to "T-4 Downtown Commercial District" pursuant to Sections 1281.01 and 1240.14 of the zoning code.

**Staff Presentation:** Darcy Schmitt gave the staff report for #R2-24 rezoning along W. VanBuren St. W. Michigan Ave and W. Jackson St. with staff's recommendation for approval.

**Public Comment:**
**Codie Burt** representative for the property owner of 69 W. Michigan Ave spoke in favor of the rezoning.

**Commissioner Comments:**
**Mayor Behnke** thanked staff and others involved in the redevelopment of these properties.

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**MOTION MADE BY COMMISSIONER MORRIS TO APPROVE ITEM #R2-24. SECONDED BY COMMISSIONER HUGHES.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**C) <u>ZONING ORDINANCE AMENDMENT #A-24</u>**
Request from the City of Battle Creek to consider amendments to various sections of the City of Battle Creek zoning code pursuant to Section 1281.01.

**Staff Report:** Darcy Schmitt gave the staff report highlighting the changes to the Zoning Ordinance.

**Public Comment:**
James Moreno of 451 Main St. had a question and comments about Accessory Buildings.

**Commissioner Comments:**
**Commissioner Godfrey suggested the Body vote on each section separately due to the size of the packet.**

**COMMISSIONER GODFREY MADE A MOTION TO APPROVE THE AMENDMENT CHANGES AS PRESENTED CHAPTER BY CHAPTER. SECONDED BY COMMISSIONER MORRIS.**

**<u>Chapter 1240</u>**
**COMMISSIONER GODFREY MADE A MOTION TO APPROVE THE CHAPTER 1240 AMENDMENT CHANGES AS WRITTEN. SECONDED BY COMMISSIONER MORRIS.**

**ROLL VOTE: ALL IN FAVOR. MOTION APPROVED.**

**<u>Chapter 1241</u>**
**MOTION MADE BY COMMISSIONER GODFREY TO APPROVE THE CHAPTER 1241 AMENDMENT CHANGES AS PRESENTED. SECONDED BY COMMISSIONER O'DONNELL.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**<u>Chapter 1251</u>**
**MOTION MADE BY COMMISSIONER GODFREY TO APPROVE THE CHAPTER 1251 AMENDMENT CHANGES AS PRESENTED. SECONDED BY COMMISSIONER O'DONNELL.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**<u>Chapter 1260</u>**
**MOTION MADE BY COMMISSIONER GODFREY TO APPROVE THE CHAPTER 1260 AMENDMENT CHANGES AS PRESENTED. SECONDED BY COMMISSIONER O'DONNELL.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

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**Chapter 1281**

**MOTION MADE BY COMMISSIONER GODFREY TO APPROVE THE CHAPTER 1281 AMENDMENT CHANGES AS PRESENTED. SECONDED BY COMMISSIONER O'DONNELL.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**Commissioner Comments:**
**Commissioner Godfrey** thanked staff for their work on the packet.
**Commissioner Gray** echoed Commissioner Godfrey's comment.

**OLD BUSINESS:** None.

**NEW BUSINESS:**

**Election of Officers**

**COMMISSIONER MORRIS NOMINATED COMMISSIONER JOHN HUGHES AS COMMISSION CHAIRPERSON. SECONDED BY COMMISSIONER O'DONNELL.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**COMMISSIONER GODFREY MADE A MOTION TO NOMINATE COMMISSIONER PATRICK O'DONNELL AS COMMISSION VICE CHAIRPERSON.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**COMMISSIONER GODFREY NOMINATED COMMISSIONER LYNN GRAY AS COMMISSION SECRETARY. COMMISSIONER GRAY DID NOT ACCEPT THE NOMINATION.**

**MAYOR BEHNKE NOMINATED COMMISSIONER JOHN HUGHES AS COMMISSION SECRETARY.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**COMMENTS FROM THE PUBLIC:** None.

**COMMENTS FROM COMMISSION MEMBERS AND STAFF:**

**Commissioner Morris** thanked staff for their time in putting together the meeting packet.
**Commissioner O'Donnell** thanked everyone for voting to postpone item # R1-24.
**Darcy Schmitt** informed the Body of grant information and asked for their input moving forward and upcoming training information.
**Commissioner Godfrey** had questions about the upcoming training.
**Commissioner Gray** stated it was an honor and pleasure to serve as Chair and looks forward to continually serving on the Commission.

**ADJOURNMENT: Commissioner Gray** adjourned the meeting at 5:23 pm.

Submitted by: Melody Carlsen, Administrative Assistant, Planning & Zoning.



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CITY OF Battle Creek MICHIGAN

Ordinance NO.

A proposed Ordinance, #03-2024, seeking to rezone various properties located in two clusters along Michigan Avenue W, Jackson St W, Kendall St S, Van Buren St W, and Angell St currently zoned R-3, Multiple Family Residential District and T-3, Neighborhood Commercial District to T-4 Downtown Commercial District and T-3 Neighborhood Commercial District.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**The City of Battle Creek Ordains:**

Section 1. An ordinance to rezone parcels below from R-3, Multiple Family District and T-3 Neighborhood Commercial District to T-4 Downtown Commercial District and T-3 Neighborhood Commercial District.

| No. | Address | Parcel Number | Existing Zoning | Proposed Zoning |
|---|---|---|---|---|
| 1 | 384 W. Michigan Avenue | 0256-00-032-0 | T3 | T4 |
| 2 | W. Vanburen Street Vacant | 0256-00-024-0 | T3 | T4 |
| 3 | 400 W. Michigan Avenue | 0256-00-030-0 | T3 | T4 |
| 3.1 | 420 W. Michigan Avenue | 0257-00-042-0 | T3 | T4 |
| 3.2 | W. Michigan Avenue Vacant | 0257-00-022-1 | T3 | T4 |
| 3.3 | 440 W. Michigan Avenue | 0257-00-036-0 | T3 | T4 |
| 3.4 | 450 W. Michigan Avenue | 0257-00-035-0 | T3 | T4 |
| 3.5 | 485 W. Vanburen Street | 0257-00-031-0 | T3 | T4 |
| 3.6 | 458 W. Michigan Avenue | 0257-00-033-0 | T3 | T4 |
| 4 | 339 W. Michigan Avenue | 0256-00-050-0 | R3 | T4 |
| 5 | 373 W. Michigan Avenue | 0256-00-054-0 | T3 | T4 |
| 6 | W. Jackson Street Vacant | 0256-00-072-0 | R3 | T4 |
| 7 | 379 W. Michigan Avenue | 0256-00-057-0 | T3 | T4 |
| 8 | 385 W. Michigan Avenue | 0256-00-058-0 | T3 | T4 |
| 9 | 391 W. Michigan Avenue | 0256-00-059-0 | T3 | T4 |
| 10 | 395 W. Michigan Avenue | 0256-00-060-0 | T3 | T4 |
| 11 | 409 W. Michigan Avenue | 0256-00-061-0 | T3 | T4 |
| 12 | S. Kendall Street Vacant | 0256-00-063-0 | T3 | T4 |
| 12.1 | 413 W. Michigan Avenue | 0257-00-044-0 | T3 | T4 |
| 12.2 | W. Michigan Avenue Vacant | 0257-00-048-0 | T3 | T4 |
| 12.3 | 451 W. Michigan Avenue | 0601-30-167-0 | T3 | T4 |
| 12.4 | W. Michigan Avenue Vacant | 0257-00-055-0 | T3 | T4 |
| 12.5 | W. Michigan Avenue Vacant | 0257-00-056-0 | T3 | T4 |
| 12.6 | S. Wood Street Vacant | 0257-00-057-0 | T3 | T4 |
| 13 | S. Kendall Street Vacant | 0256-00-064-0 | R3 | T4 |
| 14 | W. Jackson Street Vacant | 0256-00-065-0 | R3 | T4 |
| 15 | W. Jackson Street Vacant | 0256-00-066-0 | R3 | T4 |
| 16 | W. Jackson Street Vacant | 0256-00-067-0 | R3 | T4 |
| | | | | |

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|---|---|---|---|---|
| 17 | W. Jackson Street Vacant | 0256-00-069-0 | R3 | T4 |
| 18 | 386 W. Jackson Street | 0256-00-070-0 | R3 | T4 |
| 19 | W. Jackson Street Vacant | 0601-33-076-0 | R3 | T4 |
| 19.1 | W. Jackson Street Vacant | 0601-34-000-1 | R3 | T4 |
| 19.2 | W. Jackson Street Vacant | 0601-31-400-1 | R3 | T4 |
| 20 | W. Jackson Street Vacant | 0256-00-088-0 | R3 | T4 |
| 21 | W. Jackson Street Vacant | 0256-00-089-0 | R3 | T4 |
| 22 | 371 W. Jackson Street | 0256-00-090-0 | R3 | T4 |
| 23 | W. Jackson Street Vacant | 0256-00-091-0 | R3 | T4 |
| 24 | 47.5 S Kendall Street | 0601-31-472-0 | R3 | T4 |
| 25 | S. Kendall Street Vacant | 0256-00-097-0 | R3 | T4 |
| 26 | S. Kendall Street Vacant | 0256-00-099-0 | R3 | T4 |
| 27 | S. Kendall Street Vacant | 0256-00-101-0 | R3 | T4 |
| 28 | 120 Service Street | 0256-00-106-0 | R3 | T4 |
| 28.1 | S. Kendall Street Vacant | 0256-00-120-0 | R3 | T4 |
| 29 | Service Street Vacant | 0256-00-110-0 | R3 | T4 |
| 30 | Service Street Vacant | 0256-00-111-0 | R3 | T4 |
| 31 | W. Jackson Street Vacant | 0257-00-075-0 | R3 | T4 |
| 32 | S. Kendall Street Vacant | 0257-00-074-0 | R3 | T4 |
| 33 | S. Kendall Street Vacant | 0257-00-095-0 | R3 | T4 |
| 34 | S. Kendall Street Vacant | 0257-00-096-0 | R3 | T4 |
| 35 | W. Jackson Street Vacant | 0257-00-077-0 | R3 | T4 |
| 36 | 425 W. Jackson Street | 0257-00-078-0 | R3 | T4 |
| 37 | S. Kendall Street Vacant | 0257-00-094-0 | R3 | T4 |
| 38 | 431 W. Jackson Street | 0257-00-080-1 | R3 | T4 |
| 39 | W. Jackson Street Vacant | 0257-00-083-0 | R3 | T4 |
| 40 | 457 W. Jackson Street | 0257-00-086-0 | R3 | T4 |
| 41 | 463 W. Jackson Street | 0257-00-088-0 | R3 | T4 |
| 42 | S. Wood Street Vacant | 0257-00-090-0 | R3 | T4 |
| 43 | W. Jackson Street Vacant | 5620-00-016-0 | R3 | T4 |
| 44 | S. Wood Street Vacant | 5620-00-015-0 | R3 | T4 |
| 45 | S. Wood Street Vacant | 5620-00-014-0 | R3 | T4 |
| 46 | W. Jackson Street Vacant | 5620-00-017-0 | R3 | T4 |
| 47 | W. Jackson Street Vacant | 5620-00-018-0 | R3 | T4 |
| 48 | W. Jackson Street Vacant | 0602-43-526-0 | R3 | T4 |
| 49 | W. Jackson Street Vacant | 5620-00-021-0 | R3 | T4 |
| 50 | W. Jackson Street Vacant | 6630-00-016-0 | R3 | T4 |
| 51 | W. Jackson Street Vacant | 6630-00-015-0 | R3 | T4 |
| 51.1 | W. Jackson Street Vacant | 6630-00-025-0 | R3 | T4 |
| 52 | 503 W. Jackson Street | 6630-00-017-0 | R3 | T4 |
| 53 | W. Jackson Street Vacant | 6630-00-018-0 | R3 | T4 |
| 54 | W. Jackson Street Vacant | 6630-00-019-0 | R3 | T4 |
| 55 | 519 W. Jackson Street | 0602-42-847-0 | R3 | T4 |
| 56 | 527 W. Jackson Street | 6630-00-022-0 | R3 | T4 |
| 57 | W. Jackson Street Vacant | 6650-00-019-0 | R3 | T4 |
| 58 | 541 W. Jackson Street | 0602-42-725-0 | R3 | T4 |
| 59 | 563 W. Jackson Street | 6650-00-025-0 | R3 | T4 |
| 60 | Angell Street Vacant | 0602-42-975-0 | R3 | T4 |
| 61 | 416 W. Jackson Street | 0257-00-072-0 | R3 | T4 |
| 62 | 422 W. Jackson Street | 0257-00-071-0 | R3 | T4 |

| | | | | |
|---|---|---|---|---|
| 63 | 426 W. Jackson Street | 0257-00-070-0 | R3 | T4 |
| 64 | W. Jackson Street Vacant | 0257-00-069-0 | R3 | T4 |
| 65 | 438 W. Jackson Street | 0257-00-067-0 | R3 | T4 |
| 66 | 446 W. Jackson Street | 0257-00-066-0 | R3 | T4 |
| 67 | 452 W. Jackson Street | 0257-00-065-0 | R3 | T3 |
| 68 | 458 W. Jackson Street | 0257-00-062-0 | R3 | T3 |
| 69 | W. Jackson Street Vacant | 0257-00-060-0 | R3 | T3 |
| 70 | 17 S. Wood Street | 0257-00-059-0 | R3 | T4 |
| 71 | S. Wood Street Vacant | 0257-00-058-0 | R3 | T4 |
| 72 | 14 S. Wood Street | 5620-00-012-0 | R3 | T3 |
| 73 | 16 S. Wood Street | 5620-00-013-0 | R3 | T3 |
| 74 | W. Jackson Street Vacant | 5620-00-011-0 | R3 | T3 |
| 75 | W. Jackson Street Vacant | 6630-00-014-0 | R3 | T3 |
| 76 | W. Jackson Street Vacant | 6630-00-013-0 | R3 | T3 |
| 77 | W. Jackson Street Vacant | 6630-00-012-1 | R3 | T3 |
| 78 | W. Jackson Street Vacant | 6630-00-011-0 | R3 | T3 |
| 79 | 518 W. Jackson Street Vacant | 6630-00-010-0 | R3 | T3 |
| 80 | 15 Thorne Street | 6630-00-008-0 | R3 | T3 |
| 81 | 526 W. Jackson Street | 6630-00-009-0 | R3 | T3 |
| 82 | Thorne Street Vacant | 6650-00-016-1 | R3 | T3 |
| 83 | Thorne Street Vacant | 6650-00-017-0 | R3 | T3 |
| 84 | Thorne Street Vacant | 6650-00-018-0 | R3 | T3 |
| 85 | 542 W. Jackson Street | 6650-00-015-0 | R3 | T3 |
| 86 | Angell Street Vacant | 6650-00-009-0 | R3 | T3 |
| 87 | Angell Street Vacant | 6650-00-026-0 | R3 | T3 |
| 88 | 583 W. Michigan Avenue | 1170-00-003-0 | R3 | T4 |
| 89 | 18 Angell Street | 1170-00-001-0 | R3 | T4 |
| 90 | 611 W. Michigan Avenue | 4360-00-006-0 | R3 | T4 |
| 91 | W. Jackson Street | 4360-00-027-5 | R3 | T4 |
| 92 | 619 W. Michigan Avenue | 4360-00-007-0 | R3 | T4 |
| 93 | 625 W. Michigan Avenue | 4360-00-008-0 | R3 | T4 |
| 94 | 637 W. Michigan Avenue | 4360-00-010-0 | R3 | T4 |
| 95 | W. Michigan Avenue Vacant | 4500-00-001-0 | R3 | T4 |
| 96 | 649 W. Michigan Avenue | 4500-00-002-0 | R3 | T4 |
| 97 | 659 W. Michigan Avenue | 4500-00-003-1 | R3 | T4 |
| 98 | W. Michigan Avenue Vacant | 4500-00-003-0 | R3 | T4 |
| 99 | W. Michigan Avenue Vacant | 4500-00-008-0 | R3 | T4 |
| 100 | W. Michigan Avenue Vacant | 4360-00-011-0 | R3 | T4 |
| 101 | W. Jackson Street Vacant | 4360-00-027-3 | R3 | T4 |
| 102 | 695 W. Michigan Avenue | 4360-00-012-0 | R3 | T4 |
| 103 | 705 W. Michigan Avenue | 4360-00-015-1 | R3 | T4 |
| 104 | W. Michigan Avenue Vacant | 4360-00-018-0 | R3 | T4 |
| 105 | W. Jackson Street Vacant | 4360-00-027-4 | R3 | T4 |
| 106 | W. Michigan Avenue Vacant | 4360-00-019-0 | R3 | T4 |
| 107 | 733 W. Michigan Avenue | 4360-00-020-0 | R3 | T4 |
| 108 | 739 W. Michigan Avenue | 4360-00-021-0 | R3 | T4 |
| 109 | 745 W. Michigan Avenue | 4360-00-022-0 | R3 | T4 |
| 110 | W. Michigan Avenue Vacant | 4360-00-024-0 | R3 | T4 |
| 111 | 757 W. Michigan Avenue | 4360-00-025-0 | R3 | T4 |
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|---|---|---|---|---|
| 112 | W. Michigan Avenue Vacant | 4360-00-026-0 | R3 | T4 |
| 112.1 | W. Michigan Avenue Vacant | 2690-00-001-0 | R3 | T4 |
| 113 | W. Jackson Street Vacant | 4360-00-027-2 | R3 | T4 |
| 114 | Angell Street Vacant | 1170-00-004-0 | R3 | T3 |

Section 2. Should any section, clause or phrase of this Ordinance be declared to be invalid, the same shall not affect the validity of the Ordinance as a whole or any part thereof, other than the part so declared to be invalid.

Section 3. All Ordinances or parts of Ordinances in conflict with any of the provisions of this Ordinance are hereby repealed, saving any prosecution, criminal or administrative appeal pending on, or violation cited on or before the effective date of this Ordinance, which shall remain subject to the Ordinance provision existing at the time of the alleged violation.

Section 4. Except as otherwise provided by law, this Ordinance shall take effect seven (7) days from the date of its publication, in accordance with the provisions of Section 401 of the Michigan Zoning Enabling Act.

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Darcy Schmitt, Planning Supervisor

**Department:** Planning

**SUMMARY**

A proposed Ordinance, #03-2024, seeking to rezone various properties located in two clusters along Michigan Avenue W, Jackson St W, Kendall St S, Van Buren St W, and Angell St currently zoned R-3, Multiple Family Residential District and T-3, Neighborhood Commercial District to T-4 Downtown Commercial District and T-3 Neighborhood Commercial District.

**BUDGETARY CONSIDERATIONS**

The rezoning of these properties will allow for more flexibility in how this area develops or redevelops in the future by creating additional uses for the properties that would otherwise not be allowed under the current zoning districts.

**HISTORY, BACKGROUND and DISCUSSION**

The City of Battle Creek has been approached by a property owner with interest in the rehabilitation of the

building located at 695 W Michigan Ave. for the purpose of establishing a craft liquor and cocktail tasting room (bar, tavern, or saloon use type). The building is currently vacant and has historically been used for commercial/industrial purposes.

During discussions with representatives of the party with interest in the 695 W Michigan Ave. property, staff discovered that the property (as well as many others in the vicinity between W Michigan Ave. and W Jackson St.) are zoned R-3 Multiple-Family Residential, prohibiting the properties from most commercial use categories.

Simultaneous to this request, staff also recognized the need for greater flexibility with regard to both use type and dimensional requirements as it pertains to properties within the Youth Village plan area (area bounded primarily by W Van Buren St. to the north, Kendall St. to the west, Cass St. to the east and immediately abutting the Kalamazoo River to the south). The aforementioned interest and needs, as well as the existing commercial nature of many of the properties which are the subject of this request provides the City with an opportunity to expand the T-4 Downtown Commercial District further to the west while creating a harmonious connection with the existing T-4 district to the east of Cass St.

As has been stated, expansion of the T-4 district will help accommodate existing commercial uses and buildings within the subject area by reducing the number of nonconforming uses, while also providing additional commercial options for vacant properties in an effort to stimulate economic investment in the area. Staff anticipates that the proposed rezoning would not create any new dimensional or use-related nonconformities, as any single-family uses within the subject area fall under a separate "Existing Uses" category, allowing for their continued use (and reconstruction, if necessary) into perpetuity until such time that a new conforming use is legally established. Additionally, the T-4 district also permits both two-family and multiple-family uses by right.

The subject area includes a total of 131 properties located primarily along Michigan Ave W and Jackson St W approximately between Limit St and Cass St. The majority of the parcels proposed for rezoning are vacant, with an additional number of parcels being active commercial and residential uses.

## DISCUSSION OF THE ISSUE

## POSITIONS

The Planning Commission held a public hearing on February 28, 2024 on the proposed rezoning. There was one public comment in favor of the proposal at the meeting. With seven (7) members present, the Planning Commission voted unanimously to recommend that the City Commission approve the proposed rezoning.

As this is a rezoning request, consideration should be given to the existing zoning district and the potential effect on the neighborhood, the proposed uses allowed by the new zoning classification as it relates to the surrounding zoning and land uses, existing infrastructure, and consistency with the Master Plan. Staff findings include the following:

- While the Land Use Plan within the adopted Master Plan identifies the subject properties as a combination of Neighborhood Commercial and Multi-Unit Residential, it is important to recognize that the Master Plan is not a binding document, and is only one factor intended to help guide development decisions pursued by the City. Additionally, the Master Plan is set to be updated during calendar year 2024, which would include an amendment to the Land Use Plan to reflect this

rezoning should it be approved.

- The existing infrastructure is unlikely to be impacted by the proposal as the target area of this rezoning has historically enjoyed a combination of various commercial and multiple-family zoning. The area is serviced by water and sewer, with the majority of the area zoned for intensive business purposes prior to the 2020 ordinance rewrite.

Based on the above findings planning staff recommends the approval of Ordinance 03-2024, a request for rezoning of 131 parcels as described in this staff report along W Michigan Avenue, W Jackson Street, Angell Street, Thorne Street, S Wood Street and Service Street currently zoned R-3 Multiple-Family Residential District and T-3 Neighborhood Commercial District to the T-4 Downtown Commercial District and T-3 Neighborhood Commercial District.

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ATTACHMENTS:

| File Name | Description |
|---|---|
| 1._Michigan_Ave_W_and_Jackson_St_W_Rezoning_Report.pdf | Staff Report |
| 2._Zoning_Map.pdf | Zoning Map |
| 3._R-3_Zoning_District.pdf | R-3 Zoning District |
| 4._T-3_Zoning_District.pdf | T-3 Zoning District |
| 5._T-4_Zoning_District.pdf | T-4 Zoning District |
| Proposed_Rezoning_Map.pdf | Proposed Zoning Map |
| 02.28.2024_Plannning_Commission_Meeting_Minutes_Draft.pdf | Draft Minutes_02.28.24 |

# Battle Creek City Planning Commission

**Staff report for the February 28, 2024 regular meeting**

**To:** Planning Commissioners

**From:** Travis Sullivan, Planner

**Subject:** Petition R02-24 from the City of Battle Creek to rezone various properties located in two clusters along Michigan Avenue W, Jackson St W, Kendall St S, Van Buren St W, and Angell St currently zoned R-3, Multiple Family Residential District and T-3, Neighborhood Commercial District due to the existing character and uses in the area. The City of Battle Creek is requesting the area be rezoned to T-4 Downtown Commercial District and T-3 Neighborhood Commercial District pursuant to Section 1281.01 of the zoning code.

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## Summary

Petition from the City of Battle Creek requesting a rezoning of 120 parcels located in two clusters along Michigan Avenue W, Jackson St W, Kendall St S, Van Buren St W, and Angell St from R-3 Multiple Family Residential District and T-3 Neighborhood Commercial District to T-4 Downtown Commercial District and T-3 Neighborhood Commercial District.

## Background/Property Information

The City of Battle Creek has been approached by a property owner with interest in the rehabilitation of the building located at 695 W Michigan Ave. for the purpose of establishing a craft liquor and cocktail tasting room (bar, tavern, or saloon use type). The building is currently vacant, and has historically been used for commercial/industrial purposes.

During discussions with representatives of the party with interest in the 695 W Michigan Ave. property, staff discovered that the property (as well as many others in the vicinity between W Michigan Ave. and W Jackson St.) are zoned R-3 Multiple-Family Residential, prohibiting the properties from most commercial use categories.

Simultaneous to this request, staff also recognized the need for greater flexibility with regard to both use type and dimensional requirements as it pertains to properties within the Youth Village plan area (area bounded primarily by W Van Buren St. to the north, Kendall St. to the west, Cass St. to the east and immediately abutting the Kalamazoo River to the south). The aforementioned interest and needs, as well as the existing commercial nature of the many of the properties which are the subject of this request provides the City with an opportunity to expand the T-4 Downtown Commercial District further to the west while creating a harmonious connection with the existing T-4 district to the to the east of Cass St.

As has been stated, expansion of the T-4 district will help accommodate existing commercial uses and buildings within the subject area by reducing the number of nonconforming uses, while also providing additional commercial options for vacant properties in an effort to stimulate economic investment in the area. Staff anticipates that the proposed rezoning would not create any new dimensional or use-related nonconformities, as any single-family uses within the subject area fall under a separate "Existing Uses" category, allowing for their continued use (and reconstruction, if necessary) into perpetuity until such time that a new conforming use is legally established. Additionally, the T-4 district also permits both two-family and multiple-family uses by right.

The subject area includes a total of 131 properties located primarily along Michigan Ave W and Jackson St W approximately between Limit St and Cass St. The majority of the parcels proposed for rezoning are vacant, with an additional number of parcels being active commercial and residential uses.

Please see Figures 1 and 2 below for aerial depictions of the subject parcels. Figure 3 below indicates the current zoning of the subject parcels and the surrounding area. Table 1 provides the address (if available), parcel number, and current zoning of each parcel included within the proposed area of rezoning.

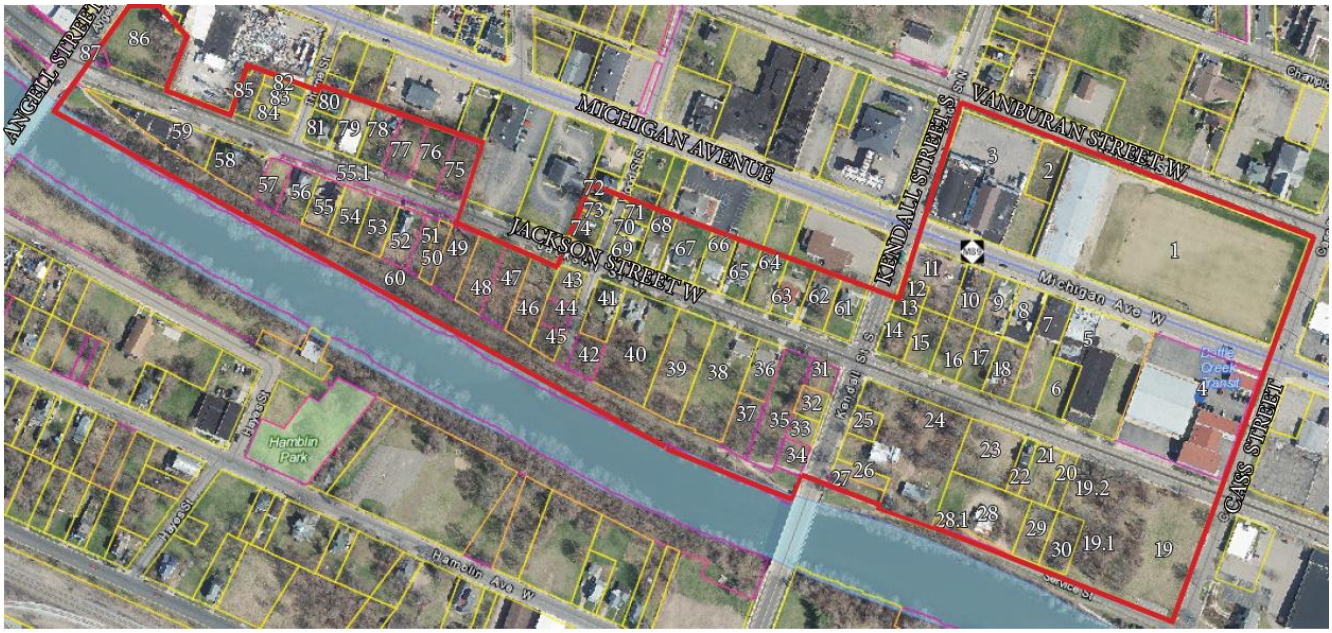



*Figure 1: Aerial depiction of subject parcels 1-87.*

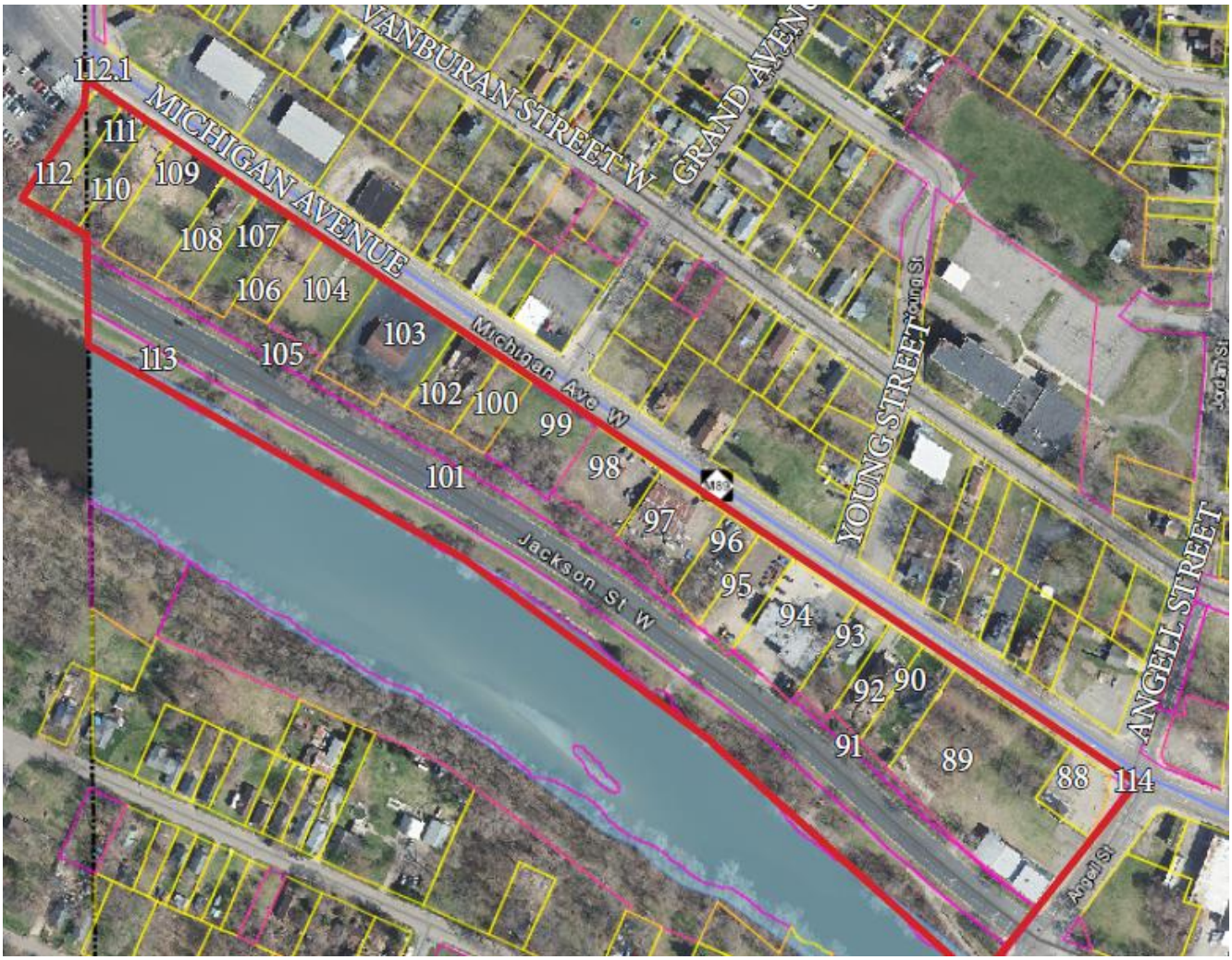



*Figure 2: Aerial depiction of subject parcels 88-114.*

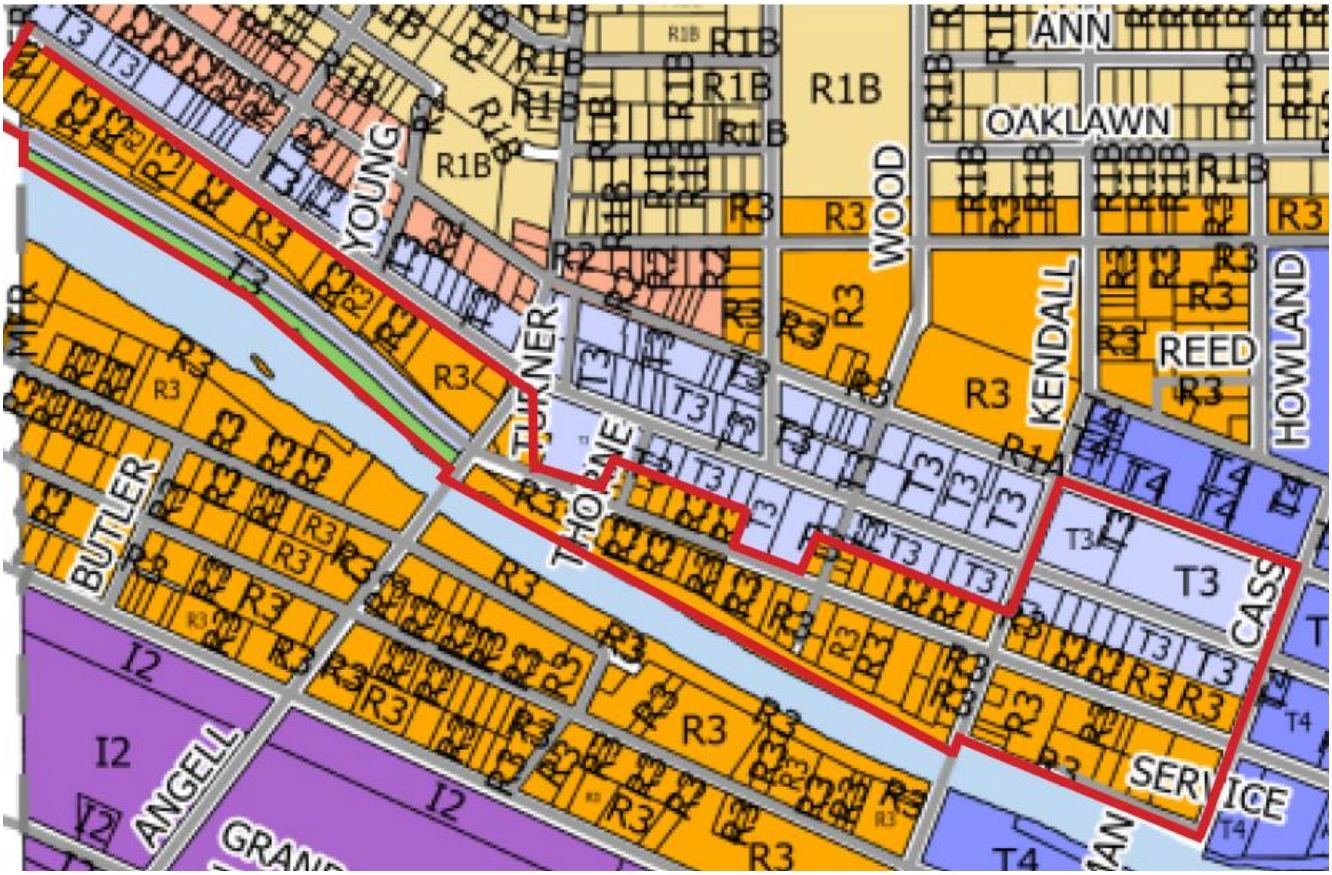



*Figure 3: Existing zoning of subject parcels and surrounding parcels.*

| No. | Address | Parcel # | Current Zoning |
|---|---|---|---|
| 1 | 384 W. Michigan Ave | 0256-00-032-0 | T-3, Neighborhood Commercial District |
| 2 | W. Van Buren St Vacant | 0256-00-024-0 | T-3, Neighborhood Commercial District |
| 3 | 400 W. Michigan Ave | 0256-00-030-0 | T-3, Neighborhood Commercial District |
| 4 | 339 W. Michigan Ave | 0256-00-050-0 | T-3, Neighborhood Commercial District; R-3, Multiple Family Residential District |
| 5 | 373 W. Michigan Ave | 0256-00-054-0 | T-3, Neighborhood Commercial District; R-3, Multiple Family Residential District |
| 6 | W. Jackson St Vacant | 0256-00-072-0 | R-3, Multiple Family Residential District |
| **7** | 379 W. Michigan Ave | 0256-00-057-0 | T-3, Neighborhood Commercial District; R-3, Multiple Family Residential District |
| 8 | 385 W. Michigan Ave | 0256-00-058-0 | T-3, Neighborhood Commercial District |
| 9 | 391 W. Michigan Ave | 0256-00-059-0 | T-3, Neighborhood Commercial District |
| 10 | 395 W. Michigan Ave | 0256-00-060-0 | T-3, Neighborhood Commercial District |
| 11 | 409 W. Michigan Ave | 0256-00-061-0 | T-3, Neighborhood Commercial District |
| 12 | S. Kendall St Vacant | 0256-00-063-0 | R-3, Multiple Family Residential District |
| 13 | S. Kendall St Vacant | 0256-00-064-0 | R-3, Multiple Family Residential District |
| 14 | W. Jackson St Vacant | 0256-00-065-0 | R-3, Multiple Family Residential District |
| 15 | W. Jackson St Vacant | 0256-00-066-0 | R-3, Multiple Family Residential District |
| 16 | W. Jackson St Vacant | 0256-00-067-0 | R-3, Multiple Family Residential District |
| 17 | W. Jackson St Vacant | 0256-00-069-0 | R-3, Multiple Family Residential District |
| 18 | 386 W. Jackson St | 0256-00-070-0 | R-3, Multiple Family Residential District |
| 19 | W. Jackson St Vacant | 0601-33-076-0 | R-3, Multiple Family Residential District |
| 19.1 | W. Jackson St Vacant | 0601-34-000-1 | R-3, Multiple Family Residential District |
| 19.2 | W. Jackson St Vacant | 0601-31-400-1 | R-3, Multiple Family Residential District |
| 20 | W. Jackson St Vacant | 0256-00-088-0 | R-3, Multiple Family Residential District |
| 21 | W. Jackson St Vacant | 0256-00-089-0 | R-3, Multiple Family Residential District |
| 22 | 371 W. Jackson St | 0256-00-089-0 | R-3, Multiple Family Residential District |
| 23 | W. Jackson St Vacant | 0256-00-091-0 | R-3, Multiple Family Residential District |
| 24 | 47.5 S. Kendall St | 0601-31-472-0 | R-3, Multiple Family Residential District |
| 25 | S. Kendall St Vacant | 0256-00-097-0 | R-3, Multiple Family Residential District |
| 26 | S. Kendall St Vacant | 0256-00-099-0 | R-3, Multiple Family Residential District |
| 27 | S. Kendall St Vacant | 0256-00-101-0 | R-3, Multiple Family Residential District |
| 28 | 120 Service St | 0256-00-106-0 | R-3, Multiple Family Residential District |
| 28.1 | S. Kendall St Vacant | 0256-00-120-0 | R-3, Multiple Family Residential District |
| 29 | Service St Vacant | 0256-00-110-0 | R-3, Multiple Family Residential District |
| 30 | Service St Vacant | 0256-00-111-0 | R-3, Multiple Family Residential District |
| 31 | W. Jackson St Vacant | 0257-00-075-0 | R-3, Multiple Family Residential District |
| 32 | S. Kendall St Vacant | 0257-00-074-0 | R-3, Multiple Family Residential District |
| 33 | S. Kendall St Vacant | 0257-00-095-0 | R-3, Multiple Family Residential District |
| 34 | S. Kendall St Vacant | 0257-00-096-0 | R-3, Multiple Family Residential District |
| 35 | W. Jackson St Vacant | 0257-00-077-0 | R-3, Multiple Family Residential District |
| 36 | 425 W. Jackson St | 0257-00-078-0 | R-3, Multiple Family Residential District |
| 37 | S. Kendall St Vacant | 0257-00-094-0 | R-3, Multiple Family Residential District |
| 38 | 431 W. Jackson St | 0257-00-080-1 | R-3, Multiple Family Residential District |
| 39 | W. Jackson St | 0257-00-080-1 | R-3, Multiple Family Residential District |
| 40 | 457 W. Jackson St | 0257-00-083-0 | R-3, Multiple Family Residential District |
| 41 | 463 W. Jackson St | 0257-00-088-0 | R-3, Multiple Family Residential District |
| 42 | S. Wood St Vacant | 0257-00-090-0 | R-3, Multiple Family Residential District |
| 43 | W. Jackson St Vacant | 5620-00-016-0 | R-3, Multiple Family Residential District |
| 44 | S. Wood St Vacant | 5620-00-015-0 | R-3, Multiple Family Residential District |

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| 45 | S. Wood St Vacant | 5620-00-014-0 | R-3, Multiple Family Residential District |
| 46 | W. Jackson St Vacant | 5620-00-017-0 | R-3, Multiple Family Residential District |
| 47 | W. Jackson St Vacant | 5620-00-018-0 | R-3, Multiple Family Residential District |
| 48 | W. Jackson St Vacant | 0602-43-526-0 | R-3, Multiple Family Residential District |
| 49 | W. Jackson St Vacant | 5620-00-021-0 | R-3, Multiple Family Residential District |
| 50 | W. Jackson St Vacant | 6630-00-016-0 | R-3, Multiple Family Residential District |
| 51 | W. Jackson St Vacant | 6630-00-015-0 | R-3, Multiple Family Residential District |
| 51.1 | W. Jackson St Vacant | 6630-00-025-0 | R-3, Multiple Family Residential District |
| 52 | 503 W. Jackson St | 6630-00-017-0 | R-3, Multiple Family Residential District |
| 53 | W. Jackson St Vacant | 6630-00-018-0 | R-3, Multiple Family Residential District |
| 54 | W. Jackson St Vacant | 6630-00-019-0 | R-3, Multiple Family Residential District |
| 55 | 519 W. Jackson St | 0602-42-847-0 | R-3, Multiple Family Residential District |
| 56 | 527 W. Jackson St | 6630-00-019-0 | R-3, Multiple Family Residential District |
| 57 | W. Jackson St Vacant | 6650-00-019-0 | R-3, Multiple Family Residential District |
| 58 | 541 W. Jackson St | 0602-42-725-0 | R-3, Multiple Family Residential District |
| 59 | 563 W. Jackson St | 6650-00-025-0 | R-3, Multiple Family Residential District |
| 60 | Angell St Vacant | 0602-42-725-0 | R-3, Multiple Family Residential District |
| 61 | 416 W. Jackson St | 0257-00-072-0 | R-3, Multiple Family Residential District |
| 62 | 422 W. Jackson St | 0257-00-071-0 | R-3, Multiple Family Residential District |
| 63 | 426 W. Jackson St | 0257-00-070-0 | R-3, Multiple Family Residential District |
| 64 | W. Jackson St Vacant | 0257-00-069-0 | R-3, Multiple Family Residential District |
| 65 | 438 W. Jackson St | 0257-00-067-0 | R-3, Multiple Family Residential District |
| 66 | 446 W. Jackson St | 0257-00-066-0 | R-3, Multiple Family Residential District |
| 67 | 452 W. Jackson St | 0257-00-065-0 | R-3, Multiple Family Residential District |
| 68 | 458 W. Jackson St | 0257-00-062-0 | R-3, Multiple Family Residential District |
| 69 | W. Jackson St Vacant | 0257-00-060-0 | R-3, Multiple Family Residential District |
| 70 | 17 S. Wood St | 0257-00-059-0 | R-3, Multiple Family Residential District |
| 71 | S. Wood St Vacant | 0257-00-058-0 | R-3, Multiple Family Residential District |
| 72 | 14 S. Wood St | 5620-00-012-0 | R-3, Multiple Family Residential District |
| 73 | 16 S. Wood St | 5620-00-013-0 | R-3, Multiple Family Residential District |
| 74 | W. Jackson St Vacant | 5620-00-011-0 | R-3, Multiple Family Residential District |
| 75 | W. Jackson St Vacant | 6630-00-014-0 | R-3, Multiple Family Residential District |
| 76 | W. Jackson St Vacant | 6630-00-013-0 | R-3, Multiple Family Residential District |
| 77 | W. Jackson St Vacant | 6630-00-012-1 | R-3, Multiple Family Residential District |
| 78 | W. Jackson St Vacant | 6630-00-011-0 | R-3, Multiple Family Residential District |
| 79 | 518 W. Jackson St | 6630-00-010-0 | R-3, Multiple Family Residential District |
| 80 | 15 Thorne St | 6630-00-008-0 | R-3, Multiple Family Residential District |
| 81 | 526 W. Jackson St | 6630-00-009-0 | R-3, Multiple Family Residential District |
| 82 | Thorne St Vacant | 6650-00-016-1 | R-3, Multiple Family Residential District |
| 83 | Thorne St Vacant | 6650-00-017-0 | R-3, Multiple Family Residential District |
| 84 | Thorne St Vacant | 6650-00-018-0 | R-3, Multiple Family Residential District |
| 85 | 542 W. Jackson St | 6650-00-015-0 | R-3, Multiple Family Residential District |
| 86 | Angell St Vacant | 6650-00-009-0 | R-3, Multiple Family Residential District |
| 87 | Angell St Vacant | 6650-00-026-0 | R-3, Multiple Family Residential District |
| 88 | 583 W. Michigan Ave | 1170-00-003-0 | R-3, Multiple Family Residential District |
| 89 | 18 Angell St | 1170-00-001-0 | R-3, Multiple Family Residential District |
| 90 | 611 W. Michigan Ave | 4360-00-006-0 | R-3, Multiple Family Residential District |
| 91 | W. Jackson St Vacant | 4360-00-027-5 | R-3, Multiple Family Residential District |
| 92 | 619 W. Michigan Ave | 4360-00-007-0 | R-3, Multiple Family Residential District |
| 93 | 625 W. Michigan Ave | 4360-00-008-0 | R-3, Multiple Family Residential District |
| 94 | 637 W. Michigan Ave | 4360-00-010-0 | R-3, Multiple Family Residential District |

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|---|---|---|---|
| 95 | W. Michigan Ave Vacant | 4500-00-001-0 | R-3, Multiple Family Residential District |
| 96 | 649 W. Michigan Ave | 4500-00-002-0 | R-3, Multiple Family Residential District |
| 97 | 659 W. Michigan Ave | 4500-00-003-1 | R-3, Multiple Family Residential District |
| 98 | W. Michigan Ave Vacant | 4500-00-003-0 | R-3, Multiple Family Residential District |
| 99 | W. Michigan Ave Vacant | 4500-00-008-0 | R-3, Multiple Family Residential District |
| 100 | W. Michigan Ave Vacant | 4360-00-011-0 | R-3, Multiple Family Residential District |
| 101 | W. Jackson St Vacant | 4360-00-027-3 | R-3, Multiple Family Residential District |
| 102 | 695 W. Michigan Ave | 4360-00-012-0 | R-3, Multiple Family Residential District |
| 103 | 705 W. Michigan Ave | 4360-00-015-1 | R-3, Multiple Family Residential District |
| 104 | W. Michigan Ave Vacant | 4360-00-018-0 | R-3, Multiple Family Residential District |
| 105 | W. Jackson St Vacant | 4360-00-027-4 | R-3, Multiple Family Residential District |
| 106 | W. Michigan Ave Vacant | 4360-00-019-0 | R-3, Multiple Family Residential District |
| 107 | 733 W. Michigan Ave | 4360-00-020-0 | R-3, Multiple Family Residential District |
| 108 | 739 W. Michigan Ave | 4360-00-021-0 | R-3, Multiple Family Residential District |
| 109 | 745 W. Michigan Ave | 4360-00-022-0 | R-3, Multiple Family Residential District |
| 110 | W. Michigan Ave Vacant | 4360-00-024-0 | R-3, Multiple Family Residential District |
| 111 | 757 W. Michigan Ave | 4360-00-025-0 | R-3, Multiple Family Residential District |
| 112 | W. Michigan Ave Vacant | 4360-00-026-0 | R-3, Multiple Family Residential District |
| 112.1 | W. Michigan Ave Vacant | 2690-00-001-0 | R-3, Multiple Family Residential District |
| 113 | W. Jackson St Vacant | 4360-00-027-0 | R-3, Multiple Family Residential District |
| 114 | Angell St Vacant | 1170-00-004-0 | R-3, Multiple Family Residential District |

*Table 1: Detailed information describing each subject parcel, including the address (if available), parcel number, and current zoning of the parcel.*

## Applicable Zoning Ordinance Provisions

The subject area contains parcels currently zoned R-3 Multiple Family Residential District and T-3 Neighborhood Commercial District. The proposed rezoning would move the subject parcels into the T-4 Downtown Commercial District and T-3 Neighborhood Commercial District classification, availing each parcel to the permitted uses and dimensional requirements as prescribed by Section 1240.14 (T-4 Downtown Commercial District) and Section 1240.13 (T-3 Neighborhood Commercial District).

The purpose of the T-4 Downtown Commercial District is as follows:

*"The T-4 Downtown Commercial (District) is established to encourage development, redevelopment and use of properties in a manner compatible with the character of the downtown area and consistent with the protection and enhancement of property values."*

The purpose of the T-3 Neighborhood Commercial District is as follows:

*"It is the purpose of this district to establish and preserve areas for those commercial uses and facilities which are especially useful in close proximity to residential areas, while minimizing the undesirable impact of such uses on the neighborhoods which they serve."*

Section 1281.01 details the regulations and process related to zoning ordinance and map amendments, and is attached as a supporting document to this staff report. In brief summary, Section 1281.01 requires that a public hearing as required under the Michigan Zoning Enabling Act be sufficiently noticed and held by the Planning Commission, at which time a recommendation is made to the City Commission regarding the amendment. Following the public hearing, the recommendation of the Planning Commission and all pertinent documents are forwarded to the City Commission for consideration, which

includes a process requiring two meetings (introduction of the proposed amendment, followed by Commission action on the proposed amendment at the following meeting).

## Master Plan

The Planning Enabling Act of 2008 requires a master plan be prepared and adopted that will "guide and accomplish development that is coordinated, adjusted, harmonious, efficient, and economical; that considers the character of the planning jurisdiction and its suitability for particular uses, judged in terms of such factors as trends in land and population development; and will, in accordance with present and future needs, best promote public health, safety, morals, order, convenience, prosperity, and general welfare."

The master plan focuses on desired land use patterns for typically a twenty year time frame, and the enabling legislation and case law require that zoning be based upon this master plan. The City of Battle Creek Master Plan was adopted in 2018, and includes a Land Use Plan map, which is intended to guide in decision making with regard to planning and future land use patterns in accordance with the goals and vision articulated in the Master Plan.

Figure 3 below is a portion of the Land Use Plan map depicting the subject properties and the corresponding legend:






*Figure 4: Section of the 2018 Land Use Plan depicting the subject properties and surrounding area.*

As can be seen, the subject area includes properties classified as the Multi-Unit Residential Neighborhood Commercial Place Types, and the Development Opportunity Center Overlay.

The Multi-Unit Residential Place Type is defined as follows:

> *"The Multi-Unit Residential Place Type includes existing and desired areas for high-density residential development. In most instances, the Multi-Unit Residential Place Type is closely related to other residential areas. The Place Type is largely comprised of residential structures. This includes apartment buildings, condos, attached residential areas, as well as planned developments and senior housing facilities such as Heritage Assisted Living. In addition, the Place Type includes areas dominated by multi-unit and high density residential development, but also may include other non-residential uses. It should be noted that a small amount of multi-family buildings may be appropriate in other residential place types, or as a component of mixed-use buildings within the Downtown Place Type."*

The Neighborhood Commercial Place Type is defined as follows:

> *"The Neighborhood Commercial Place Type is typically located adjacent to, or embedded within, existing residential neighborhoods. The Place Type acts as a neighborhood shopping district, supporting nearby residents with day-to-day goods and services within a short walk or convenient drive of their homes. They also serve as hubs of activity and socialization at the neighborhood level. Compared to other commercial place types, Neighborhood Commercial is the lowest in intensity and scale. Businesses catering to a more city-wide or regional market, drawing visitors from all over and generating non-local traffic, are better located in other appropriate commercial place types."*

The Development Opportunity Center Overlay is defined as follows:

> *"Development Opportunity Centers (DOC) are unique areas of the City that are well positioned for large-scale, transformative development and reinvestment. These areas contain large vacant or available parcels including many parcels owned by either the City of Battle Creek or the Calhoun County Land Bank. They represent unique opportunities for large-scale development*

*that can help reinvigorate surrounding areas and the City as a whole. The City should work with potential developers to seek creative development solutions that are responsive to the unique characteristics and needs of each DOC."*

While each individual section of the proposed area of rezoning may not sync in a one-to-one manner with the Land Use Plan map, it is important to remember that the Land Use Plan (as well as the Master Plan as a whole) is not a legally binding document, and that conditions with regard to economics and desired uses have, in some cases, changed drmatically during the period of time between the plan's adoption (2018) and the present. Proposed zoning changes, if approved by the City Commission, will be reflected in an updated Land Use Plan map which will be included in the coming update to the Master Plan.

Table 2 below includes a chart detailing the current uses of each parcel within the area of proposed rezoning:

| No. | Address | Parcel # | Current Use |
|---|---|---|---|
| 1 | 384 W. Michigan Ave | 0256-00-032-0 | Shed/Storage |
| 2 | W. Van Buren St Vacant | 0256-00-024-0 | Vacant |
| 3 | 400 W. Michigan Ave | 0256-00-030-0 | Clubhouse |
| 4 | 339 W. Michigan Ave | 0256-00-050-0 | Clubhouse |
| 5 | 373 W. Michigan Ave | 0256-00-054-0 | Retail Store |
| 6 | W. Jackson St Vacant | 0256-00-072-0 | Vacant |
| **7** | 379 W. Michigan Ave | 0256-00-057-0 | Retail Store |
| 8 | 385 W. Michigan Ave | 0256-00-058-0 | Service Garage |
| 9 | 391 W. Michigan Ave | 0256-00-059-0 | Single Family Residential |
| 10 | 395 W. Michigan Ave | 0256-00-060-0 | Single Family Residential |
| 11 | 409 W. Michigan Ave | 0256-00-061-0 | Office |
| 12 | S. Kendall St Vacant | 0256-00-063-0 | Vacant |
| 13 | S. Kendall St Vacant | 0256-00-064-0 | Vacant |
| 14 | W. Jackson St Vacant | 0256-00-065-0 | Vacant |
| 15 | W. Jackson St Vacant | 0256-00-066-0 | Vacant |
| 16 | W. Jackson St Vacant | 0256-00-067-0 | Vacant |
| 17 | W. Jackson St Vacant | 0256-00-069-0 | Vacant |
| 18 | 386 W. Jackson St | 0256-00-070-0 | Single Family Residential |
| 19 | W. Jackson St Vacant | 0601-33-076-0 | Vacant |
| 19.1 | W. Jackson St Vacant | 0601-34-000-1 | Vacant |
| 19.2 | W. Jackson St Vacant | 0601-31-400-1 | Vacant |
| 20 | W. Jackson St Vacant | 0256-00-088-0 | Vacant |
| 21 | W. Jackson St Vacant | 0256-00-089-0 | Vacant |
| 22 | 371 W. Jackson St | 0256-00-090-0 | Single Family Residential |
| 23 | W. Jackson St Vacant | 0256-00-091-0 | Vacant |
| 24 | 47.5 S. Kendall St | 0601-31-472-0 | Multiple Sheds |
| 25 | S. Kendall St Vacant | 0256-00-097-0 | Vacant |
| 26 | S. Kendall St Vacant | 0256-00-099-0 | Vacant |
| 27 | S. Kendall St Vacant | 0256-00-101-0 | Vacant |
| 28 | 120 Service St | 0256-00-106-0 | Storage Warehouses |
| 28.1 | S. Kendall St Vacant | 0256-00-120-0 | Vacant |
| 29 | Service St Vacant | 0256-00-110-0 | Vacant |
| 30 | Service St Vacant | 0256-00-111-0 | Vacant |
| 31 | W. Jackson St Vacant | 0257-00-075-0 | Vacant |
| 32 | S. Kendall St Vacant | 0257-00-074-0 | Vacant |
| 33 | S. Kendall St Vacant | 0257-00-095-0 | Vacant |
| 34 | S. Kendall St Vacant | 0257-00-096-0 | Vacant |
| 35 | W. Jackson St Vacant | 0257-00-077-0 | Vacant |
| 36 | 425 W. Jackson St | 0257-00-078-0 | Single Family Residential |
| 37 | S. Kendall St Vacant | 0257-00-094-0 | Vacant |
| 38 | 431 W. Jackson St | 0257-00-080-1 | Single Family Residential |
| 39 | W. Jackson St Vacant | 0257-00-083-0 | Vacant |
| 40 | 457 W. Jackson St | 0257-00-086-0 | Single Family Residential |
| 41 | 463 W. Jackson St | 0257-00-088-0 | Single Family Residential |
| 42 | S. Wood St Vacant | 0257-00-090-0 | Vacant |
| 43 | W. Jackson St Vacant | 5620-00-016-0 | Vacant |
| 44 | S. Wood St Vacant | 5620-00-015-0 | Vacant |
| 45 | S. Wood St Vacant | 5620-00-014-0 | Vacant |
| 46 | W. Jackson St Vacant | 5620-00-017-0 | Vacant |
| 47 | W. Jackson St Vacant | 5620-00-018-0 | Vacant |

| | | | |
|---|---|---|---|
| 48 | W. Jackson St Vacant | 0602-43-526-0 | Vacant |
| 49 | W. Jackson St Vacant | 5620-00-021-0 | Vacant |
| 50 | W. Jackson St Vacant | 6630-00-016-0 | Vacant |
| 51 | W. Jackson St Vacant | 6630-00-015-0 | Vacant |
| 51.1 | W. Jackson St Vacant | 6630-00-025-0 | Vacant |
| 52 | 503 W. Jackson St | 6630-00-017-0 | Single Family Residential |
| 53 | W. Jackson St Vacant | 6630-00-018-0 | Vacant |
| 54 | W. Jackson St Vacant | 6630-00-019-0 | Vacant |
| 55 | 519 W. Jackson St | 0602-42-847-0 | Single Family Residential |
| 56 | 527 W. Jackson St | 6630-00-022-0 | Single Family Residential |
| 57 | W. Jackson St Vacant | 6650-00-019-0 | Vacant |
| 58 | 541 W. Jackson St | 0602-42-725-0 | Single Family Residential |
| 59 | 563 W. Jackson St | 6650-00-025-0 | Light Manufacturing |
| 60 | Angell St Vacant | 0602-42-725-0 | Vacant |
| 61 | 416 W. Jackson St | 0257-00-072-0 | Single Family Residential |
| 62 | 422 W. Jackson St | 0257-00-071-0 | Single Family Residential |
| 63 | 426 W. Jackson St | 0257-00-070-0 | Single Family Residential |
| 64 | W. Jackson St Vacant | 0257-00-069-0 | Vacant |
| 65 | 438 W. Jackson St | 0257-00-067-0 | Single Family Residential |
| 66 | 446 W. Jackson St | 0257-00-066-0 | Single Family Residential |
| 67 | 452 W. Jackson St | 0257-00-065-0 | Single Family Residential |
| 68 | 458 W. Jackson St | 0257-00-062-0 | Single Family Residential |
| 69 | W. Jackson St Vacant | 0257-00-060-0 | Vacant |
| 70 | 17 S. Wood St | 0257-00-059-0 | Single Family Residential |
| 71 | S. Wood St Vacant | 0257-00-058-0 | Vacant |
| 72 | 14 S. Wood St | 5620-00-012-0 | Single Family Residential |
| 73 | 16 S. Wood St | 5620-00-013-0 | Single Family Residential |
| 74 | W. Jackson St Vacant | 5620-00-011-0 | Vacant |
| 75 | W. Jackson St Vacant | 6630-00-014-0 | Vacant |
| 76 | W. Jackson St Vacant | 6630-00-013-0 | Vacant |
| 77 | W. Jackson St Vacant | 6630-00-012-1 | Vacant |
| 78 | W. Jackson St Vacant | 6630-00-011-0 | Vacant |
| 79 | 518 W. Jackson St | 6630-00-010-0 | Residential 4 Units or Less |
| 80 | 15 Thorne St | 6630-00-008-0 | Single Family Residential |
| 81 | 526 W. Jackson St | 6630-00-009-0 | Single Family Residential |
| 82 | Thorne St Vacant | 6650-00-016-1 | Vacant |
| 83 | Thorne St Vacant | 6650-00-017-0 | Vacant |
| 84 | Thorne St Vacant | 6650-00-018-0 | Vacant |
| 85 | 542 W. Jackson St | 6650-00-015-0 | Single Family Residential |
| 86 | Angell St Vacant | 6650-00-009-0 | Vacant |
| 87 | Angell St Vacant | 6650-00-026-0 | Vacant |
| 88 | 583 W. Michigan Ave | 1170-00-003-0 | Snack Bar |
| 89 | 18 Angell St | 1170-00-001-0 | Clubhouse |
| 90 | 611 W. Michigan Ave | 4360-00-006-0 | Single Family Residential |
| 91 | W. Jackson St Vacant | 4360-00-027-5 | Vacant |
| 92 | 619 W. Michigan Ave | 4360-00-007-0 | Single Family Residential |
| 93 | 625 W. Michigan Ave | 4360-00-008-0 | Single Family Residential |
| 94 | 637 W. Michigan Ave | 4360-00-010-0 | Storage Warehouse, Office |
| 95 | W. Michigan Ave Vacant | 4500-00-001-0 | Vacant |
| 96 | 649 W. Michigan Ave | 4500-00-002-0 | Vacant |
| 97 | 659 W. Michigan Ave | 4500-00-003-1 | Service Garage |

| | | | |
|---|---|---|---|
| 98 | W. Michigan Ave Vacant | 4500-00-003-0 | Vacant |
| 99 | W. Michigan Ave Vacant | 4500-00-008-0 | Vacant |
| 100 | W. Michigan Ave Vacant | 4360-00-011-0 | Vacant |
| 101 | W. Jackson St Vacant | 4360-00-027-3 | Vacant |
| 102 | 695 W. Michigan Ave | 4360-00-012-0 | Retail Store |
| 103 | 705 W. Michigan Ave | 4360-00-015-1 | Retail Store |
| 104 | W. Michigan Ave Vacant | 4360-00-018-0 | Vacant |
| 105 | W. Jackson St Vacant | 4360-00-027-4 | Vacant |
| 106 | W. Michigan Ave Vacant | 4360-00-019-0 | Vacant |
| 107 | 733 W. Michigan Ave | 4360-00-020-0 | Single Family Residential |
| 108 | 739 W. Michigan Ave | 4360-00-021-0 | Vacant |
| 109 | 745 W. Michigan Ave | 4360-00-022-0 | Vacant |
| 110 | W. Michigan Ave Vacant | 4360-00-024-0 | Vacant |
| 111 | 757 W. Michigan Ave | 4360-00-025-0 | Single Family Residential |
| 112 | W. Michigan Ave Vacant | 4360-00-026-0 | Vacant |
| 112.1 | W. Michigan Ave Vacant | 2690-00-001-0 | Vacant |
| 113 | W. Jackson St Vacant | 4360-00-027-0 | Vacant |
| 114 | Angell St Vacant | 1170-00-004-0 | Vacant |

*Table 2: Table detailing current uses of the parcels proposed to be rezoned to T-4 Downtown Commercial and T-3 Neighborhood Commercial.*

## Request for Rezoning

Having considered the recent inquiry into the property at 695 W Michigan Ave., the future needs of the Youth Village development and the existing conditions within the subject area, as well as the number of existing commercial uses and vacant properties within the targeted area, staff believes that a shift from the current multiple-family residential zoning to a commercial designation (T-4 Downtown Business District) will accommodate current businesses within the district as well as provide more diverse development opportunities for property owners. The proposed extension of the T-4 district has the potential to encourage increased commercial (and potentially residential) activity along the W Michigan Ave. corridor, which has suffered from disinvestment in recent years. Additionally, the proposed rezoning would create a harmonious connection to the existing T-4 district to the east of Cass St.

## Public Hearing and Notice Requirements

This request has been scheduled for the February 28, 2024 Planning Commission meeting, with notice of hearing published in the February 8, 2024 edition of the Battle Creek Shopper. Appropriate notices were also mailed to all property owners within a 300-foot radius of the subject parcels no fewer than 15 days prior to the hearing. Both requirements pursuant to the Zoning Enabling Act of 2006, as amended, have been met.

## Neighborhood Outreach

These parcels are located within the boundaries of the North Central Neighborhood Planning Council (NPC). Staff presented plans for the proposed rezoning at the February 12 meeting of the NPC to solicit feedback from council members and members of the public. Following a presentation and discussion on the topic, the NPC provided support for the proposed rezoning.

Staff intends to provide updates to the NPC regarding future development and land use that may result should the proposed rezoning be approved.

## Analysis and Recommendation

As this is a rezoning request, consideration should be given to the existing zoning district and the potential effect on the neighborhood, the proposed uses allowed by the new zoning classification as it relates to the surrounding zoning and land uses, existing infrastructure, and consistency with the Master Plan. Staff findings include the following:

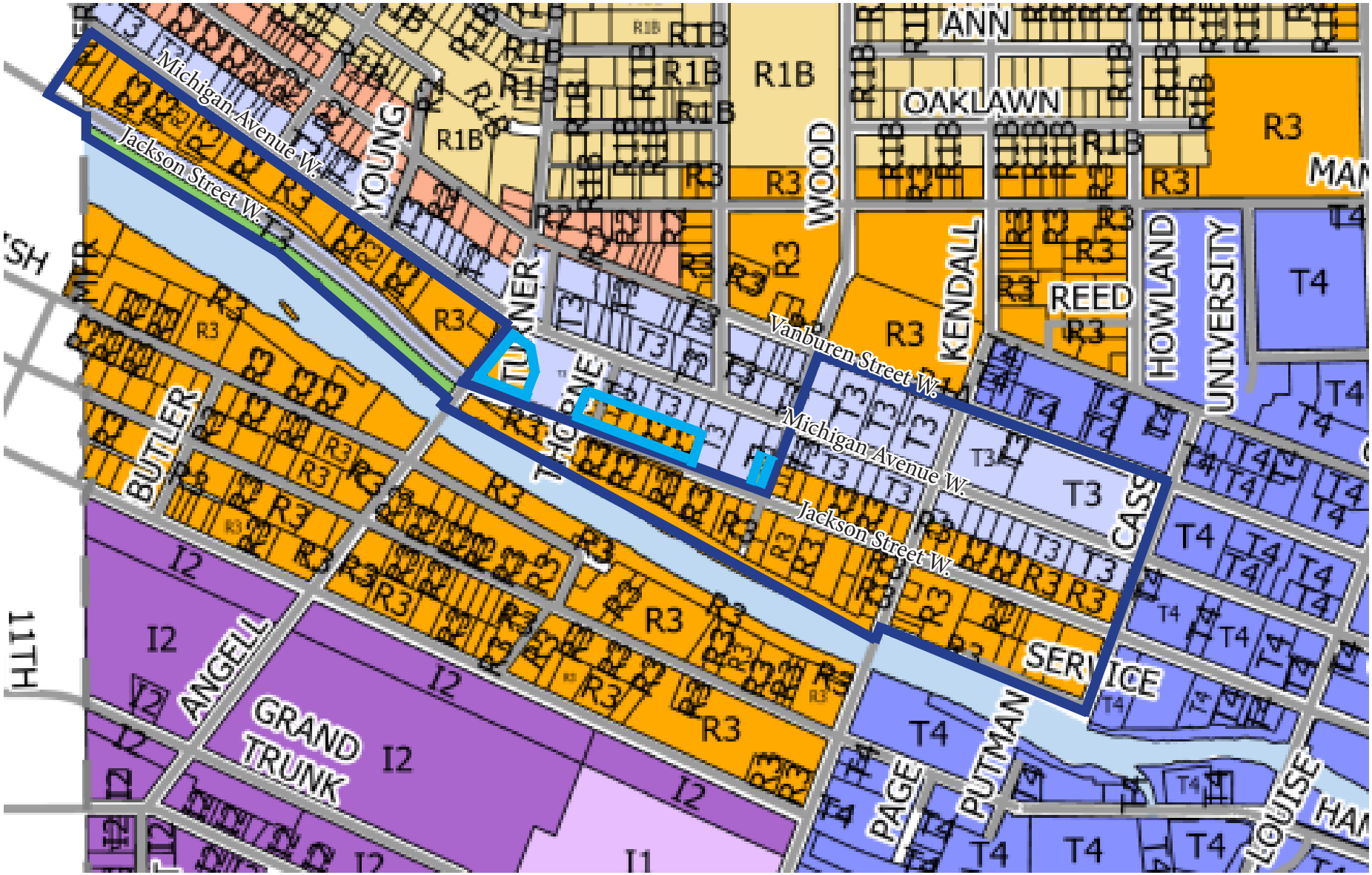
- While the Land Use Plan within the adopted Master Plan identifies the subject properties as a combination of Neighborhood Commercial and Multi-Unit Residential, it is important to recognize that the Master Plan is not a binding document, and is only one factor intended to help guide development decisions pursued by the City. Additionally, the Master Plan is set to be updated during calendar year 2024, which would include an amendment to the Land Use Plan to reflect this rezoning should it be approved.
- The existing infrastructure is unlikely to be impacted by the proposal as the target area of this rezoning has historically enjoyed a combination of various commercial and multiple-family zoning. The area is serviced by water and sewer, with the majority of the area zoned for intensive business purposes prior to the 2020 ordinance rewrite.

**Based on the above findings planning staff recommends that the Planning Commission recommend to the City Commission approval of Petition R02-24, a request for rezoning of 120 parcels as described in this staff report along W Michigan Avenue, W Jackson Street, Angell Street, Thorne Street, S Wood Street and Service Street currently zoned R-3 Multiple-Family Residential District to the T-4 Downtown Commercial District.**

## Support Material

Current Zoning Map (with proposed changes)
Section 1240.09 (R-3 Multiple Family Residential District, Current Zoning)
Section 1240.13 (T-3 Neighborhood Commercial District, Current Zoning, Proposed Zoning)
Section 1240.14 (T-4 Downtown Commercial District, Proposed Zoning)

# ZONING MAP




Proposed Rezoning to T4

Proposed Rezoning to T3

# 1240.09 R-3 MULTIPLE FAMILY RESIDENTIAL DISTRICT.

| (a) Purpose |
|---|
| It is the purpose of this district to establish high-density multi-family developments located in suburban and urban areas, and commercial development with relatively low intensities that often complement residential neighborhoods. Further, this district supports housing styles of mid- and high-level buildings consisting of garden apartments, and townhome condominiums. The high density of this district is intended to support nearby commercial districts, and provide a transition between commercial and mid-density districts. |

| (b) Permitted Uses | (c) Special Land Uses |
|---|---|
| • Assisted Senior Living (Section 1251.03)<br>• Bed and Breakfast (Section 1251.09)<br>• Community Garden (Section 1251.12)<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Essential Services<br>• Independent Senior Living with Services (Section 1251.21)<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Outdoor Recreation/ Public (Section 1251.36)<br>• Public K-12 Schools<br>• Rooming and Boarding Houses, up to ten boarders (Section 1251.43)<br>• Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached<br>• Two-Family Dwelling Units<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 persons (Section 1251.47)<br>• Transitional and Supportive Home (Section 1251.49), 1-6 persons | • Adaptive Reuse (Section 1251.01)<br>• Banquet and Meeting Hall < 100 capacity (Section 1251.08)<br>• Cemetery (Section 1251.11)<br>• Institutions of Higher Education<br>• Private K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• State licensed Residential Facility, Adult Foster Care Small Group Home, 7-12 persons (Section 1251.48)<br>• State licensed Residential Facility, Adult Foster Care Large Group Home, 13-20 persons (Section 1251.48)<br>• Transitional and Supportive Home, more than 6 persons (Section 1251.50) |
| Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. | |

| (d) Accessory Uses |
|---|
| • Accessory Buildings (Section 1260.01)<br>• Accessory Dwelling Unit<br>• Home Occupation (Section 1251.18)<br>• Private Gardens (Section 1251.39)<br>• State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)<br>• State Licensed Child Care Group Home, 8-14 Children (Section 1251.46) |

| (e) Dimension Regulations | |
|---|---|
| Lot Standards | R-3 |
| Minimum Lot Area (sq. ft.) | 2,900 |
| Minimum Lot Width (ft.) | 60 |
| Maximum Percent of Building Coverage | 25 |
| Front Yard Setback (ft.) | 25 (f) |
| Rear Yard Setback (ft.) | 25 (f) |
| Side Yard Setback (ft.) | 5 (f) |
| Maximum Building Height | 45 feet |
| Footnotes: Refer to Section 1241.03 Footnotes to Schedule of Regulations wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses. | |

(Ord. 10-2020. Passed 11-24-20; Ord. 04-2021. Passed 4-13-21; Ord. 03-2023. Passed 5-2-23; Ord. 12-2023. Passed 10-17-23.)

# 1240.13 T-3 NEIGHBORHOOD COMMERCIAL DISTRICT.

| (a) Purpose |
| --- |
| It is the purpose of this district to establish and preserve areas for those commercial uses and facilities which are especially useful in close proximity to residential areas, while minimizing the undesirable impact of such uses on the neighborhoods which they serve. |

| (b) Permitted Uses | (c) Special Land Uses |
| --- | --- |
| • Assisted Senior Living (Section 1251.03)<br>• Banquet and Meeting Hall < 100 capacity (Section 1251.08)<br>• Bed and Breakfast (Section 1251.09)<br>• Bookstore<br>• Carry-Out Restaurant<br>• Catering Businesses<br>• Child Care Centers<br>• Community Garden (Section 1251.12)<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Essential Services<br>• Financial Institutions<br>• Full-Service Restaurant<br>• Government/Public Uses (Section 1251.14)<br>• Indoor Recreation<br>• Independent Senior Living with Services (Section 1251.21)<br>• Limited Service Restaurant<br>• Medical or Dental Clinic < 5,000 s.f.<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Office < 17,000 s.f.<br>• Outdoor Recreation/ Public (Section 1251.36)<br>• Personal-Scale Wind Energy Facility (Section 1251.39)<br>• Personal Service Establishments (Section 1251.40)<br>• Private Club<br>• Public K-12 Schools<br>• Religious Institutions (Section 1251.42)<br>• Retail Sales < 17,000 s.f.<br>• Single Family Dwelling Unit Attached<br>• Single Family Dwelling Unit Detached<br>• Two-Family Dwelling Units<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 persons (Section 1251.47)<br>• Transitional and Supportive Home, 1-6 persons (Section 1251.49) | • Adaptive Reuse (Section 1251.01)<br>• Artisan/Maker Space<br>• Bar, Tavern, or Saloon<br>• Brewpub<br>• Cemetery (Section 1251.11)<br>• Distillery, Winery - w/ or w/o food<br>• Farmers' Market (Section 1251.15)<br>• Funeral Homes, Mortuaries<br>• Hotel<br>• Institutions of Higher Education<br>• Pawn Broker<br>• Private K-12 Schools<br>• Marihuana: Medical Marihuana Provisioning Center (Section 1251.24) (Section 1251.30)<br>• Marihuana: Adult-Use Marihuana Retailers (Section 1251.24) (Section 1251.25)<br>• Marihuana: Adult-Use Marihuana Microbusiness (Section 1251.24) (Section 1251.26)<br>• Marinas<br>• Medical or Dental Clinic 5,000 to < 20,000 s.f.<br>• Microbrewery<br>• Motel (Section 1251.20)<br>• Nightclub<br>• Office >, = 17,000 s.f.<br>• Retail Sales > or = 17,000 s.f. |

| | |
|---|---|
| • Transitional and Supportive Home, more than 6 persons (Section 1251.50) | |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. Refer to Section 1250.04, Form Based Development Standards for the T-3, T-5, and T-5 Districts for additional development requirements.

(d) Accessory Uses

- Accessory Buildings (Section 1260.02)
- Accessory Dwelling Unit
- Farmers Market (Section 1251.15)
- Private Gardens (Section 1251.41)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 8-14 Children (Section 1251.46)

(e) Dimension Regulations

| Lot Standards | T-3 |
|---|---|
| Minimum Lot Area (sq. ft.) | 2,900 (d) |
| Minimum Lot Width (ft.) | 60 |
| Maximum Percent of Building Coverage | 40 |
| Front Yard Setback (ft.) | 30 |
| Rear Yard Setback (ft.) | 20 (h) |
| Side Yard Setback (ft.) | 10 (g) |
| Maximum Building Height | 36 feet, 3 stories |

Footnotes: Refer to Section 1241.03 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations above under Section 1241.07. Refer to Chapter 1251 for additional dimensional regulations for specific uses.

(Ord. 10-2020. Passed 11-24-20; Ord. 04-2021. Passed 4-13-21; Ord. 03-2023. Passed 5-2-23; Ord. 12-2023. Passed 10-17-23.)

# 1240.14 T-4 DOWNTOWN COMMERCIAL DISTRICT.

| (a) Purpose |
| --- |
| It is the purpose of this district to encourage the development, redevelopment and use of properties in a manner compatible with the character of the downtown area and consistent with the protection and enhancement of property values. |

| (b) Permitted Uses | (c) Special Land Uses |
| --- | --- |
| • Artisan/Maker Space<br>• Assisted Senior Living (Section 1251.03)<br>• Banquet and Meeting Hall (Section 1251.08)<br>• Bar, Tavern, or Saloon<br>• Bookstore<br>• Brewpub<br>• Carry-Out Restaurant<br>• Catering Businesses<br>• Child Care Centers<br>• Convalescent Home, Nursing Home, or Home for the Aged (Section 1251.13)<br>• Distillery, Winery - w/ or w/o food<br>• Essential Services<br>• Event Center<br>• Farmers' Market (Section 1251.15)<br>• Financial Institutions<br>• Full-Service Restaurant<br>• Government/Public Uses (Section 1251.16)<br>• Hotel (Section 1251.20)<br>• Independent Senior Living with Services (Section 1251.21)<br>• Indoor Recreation<br>• Institutions of Higher Education<br>• Limited Service Restaurant<br>• Marihuana: Adult-Use Marihuana Retailers (Section 1251.24) (Section 1251.25)<br>• Marihuana: Medical Marihuana Provisioning Center (Section 1251.24) (Section 1251.30)<br>• Medical or Dental Clinic < 20,000 s.f.<br>• Microbrewery (Section 1251.35)<br>• Motel (Section 1251.34)<br>• Multi-Family Dwelling Units (Section 1251.33)<br>• Nightclub<br>• Office<br>• Outdoor Recreation/ Public (Section 1251.36)<br>• Personal Service Establishments (Section 1251.40)<br>• Private Club<br>• Public K-12 Schools<br>• Religious Institutions (Section 1251.42) | • Adaptive Reuse (Section 1251.01)<br>• Drive-In Restaurant<br>• Drive-Thru Restaurant (Section 1251.14)<br>• Funeral Homes, Mortuaries<br>• Hospital > 20,000 s.f. (Section 1251.19)<br>• Private K-12 Schools<br>• Parking as a Principal Use<br>• Research and Development |

| | |
|---|---|
| • Retail Sales<br>• Single Family Dwelling Unit Attached<br>• State Licensed Residential Facility, Adult Foster Care Family Home, 1-6 persons (Section 1251.48)<br>• Transitional and Supportive Home (Section 1251.49), 1-6 persons<br>• Transitional and Supportive Home, more than 6 persons (Section 1251.50)<br>• Two-Family Dwelling Units | |

Refer to Section 1230.06 for definitions of uses and refer to Chapter 1251 for development standards for specific uses. Refer to Section 1250.04, Form Based Development Standards for the T-3, T-5, and T-5 Districts for additional development requirements.

(d) Existing Uses

- Single Family Dwelling Unit Detached

(e) Accessory Uses

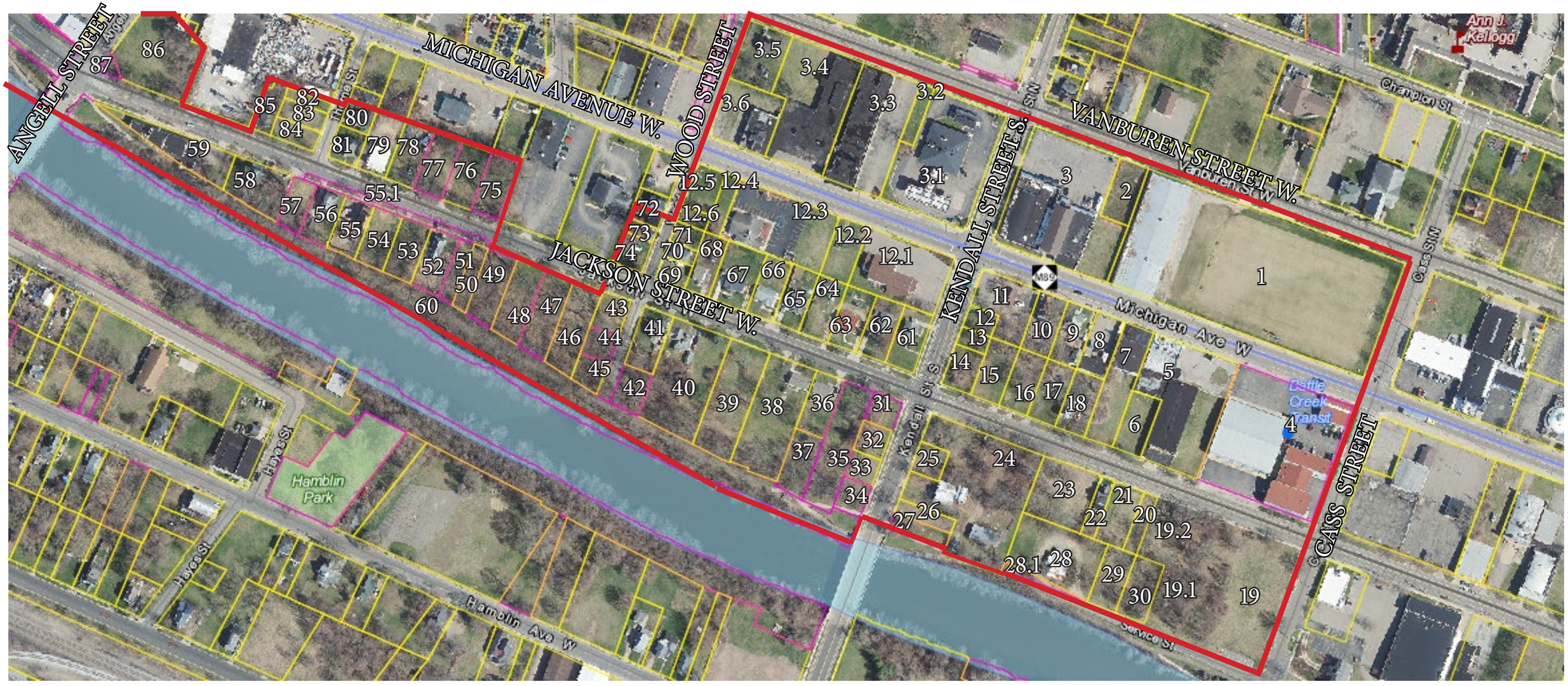
- Accessory Buildings (Section 1260.02)
- Accessory Dwelling Unit
- Farmers Market (Section 1251.15)
- Private Gardens (Section 1251.40)
- State Licensed Child Care Family Home, 1-7 Children (Section 1251.45)
- State Licensed Child Care Group Home, 7-12 Children (Section 1251.46)

(f) Dimension Regulations

| Lot Standards | T-4 |
|---|---|
| Minimum Lot Area (sq. ft.) | 2,900 (d) |
| Minimum Lot Width (ft.) | 60 |
| Maximum Percent of Building Coverage | Not Required |
| Front Yard Setback (ft.) | Not Required |
| Rear Yard Setback (ft.) | Not Required |
| Side Yard Setback (ft.) | Not Required |
| Maximum Building Height | Not Required |

Footnotes: Refer to Section 1241.03 wherever a footnote is referenced in lowercase letters in parentheses after one of the dimension regulations. Some uses have specific standards that overrule the dimensional regulations. Refer to Chapter 1251 for additional dimensional regulations for specific uses.

(Ord. 10-2020. Passed 11-24-20; Am. Ord. 04- 2021. Passed 4-13-21; Ord. 03-2023. Passed 5- 2-23; Ord. 12-2023. Passed 10-17-23.)

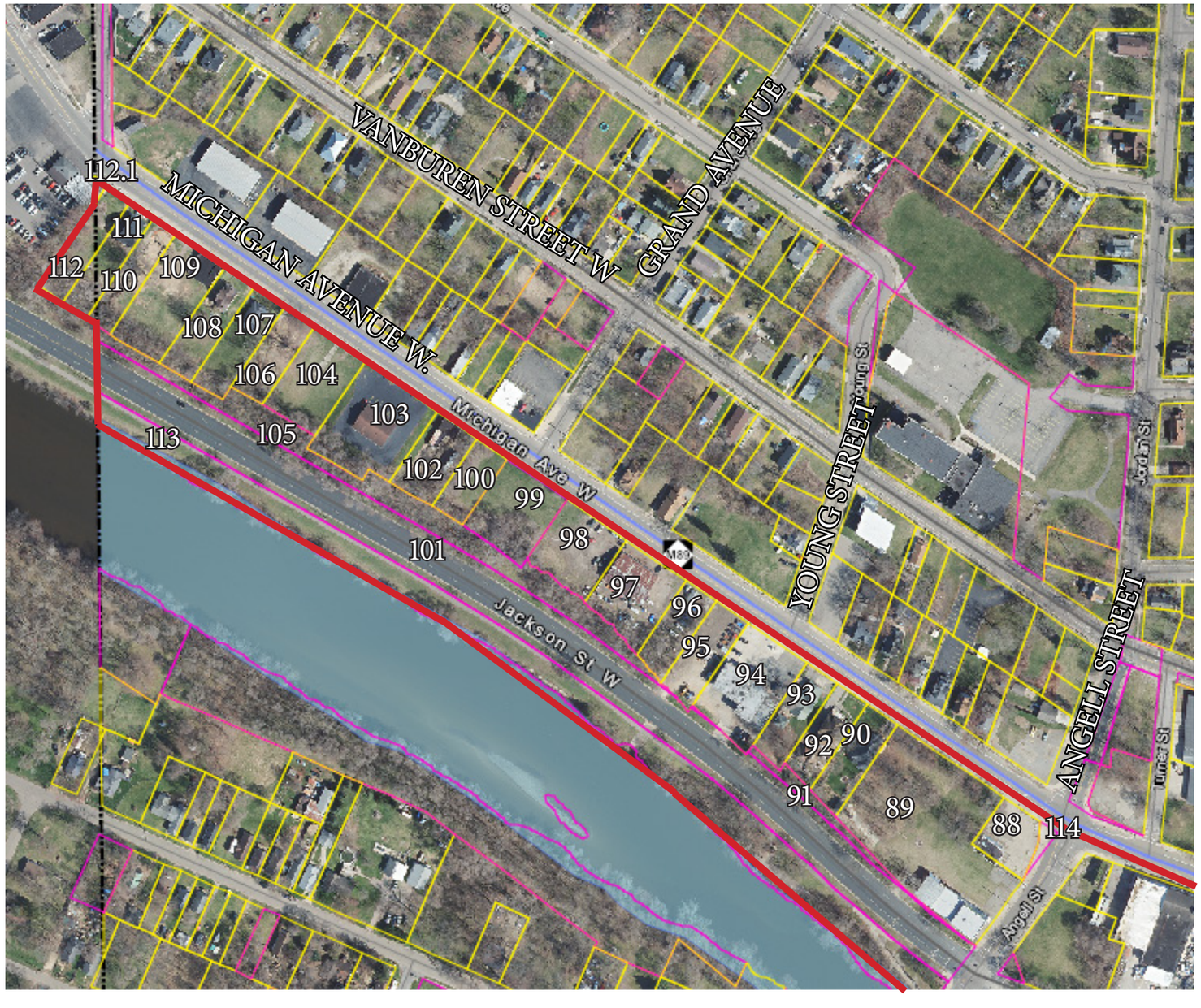



PROPOSED REZONING-PART ONE OF TWO PARTS

Proposed Rezoning Boundary

# PROPOSED REZONING-PART TWO OF TWO PARTS

Proposed Rezoning Boundary



CITY OF BATTLE CREEK
**PLANNING COMMISSION**
10 North Division, Battle Creek, MI 49014
**Minutes for February 28, 2024**

**MEETING CALLED TO ORDER:** By Commissioner Gray at 4:01 p.m.

**ATTENDANCE:** Roll call was taken.
**Commission Members Present:**

| | |
|---|---|
| **Comm. Gray,** present | **Comm. Denison,** present |
| **Comm. Godfrey III,** present | **Comm. Moton,** absent |
| **Comm, O'Donnell,** present | **Comm. White,** absent |
| **Comm. Hughes,** present | **Mayor Behnke,** present |
| **Comm. Morris,** present | |

S**taff Present:** Melody Carlsen, Administrative Assistant, Marcel Stoetzel, Deputy City Attorney, CJ Sivak-Schwennesen, Planner, Darcy Schmitt, Planning Supervisor.

**APPROVAL OF MINUTES:** December 20, 2023 Capital Improvement Plan Workshop, December 20, 2023 Meeting.

**MOTION MADE BY COMMISSIONER GODFREY TO APPROVE THE DECEMBER 20, 2023 CAPITAL IMPROVEMENT PLAN WORKSHOP MINUTES AND THE DECEMBER 20, 2023 PLANNING COMMISSION MEETING MINUTES, SECONDED BY COMMISSIONER MORRIS.**

**ROLL VOTE:** Commissioner Gray asked everyone in favor to signify by saying "aye".

**ALL IN FAVOR, NONE OPPOSED, MOTION APPROVED.**

**CORRESPONDENCE:**
Correspondence from resident, Sheila McDonald in opposition of #R1-24 rezoning along E. Michigan Avenue was submitted to the Chairperson. Read by Melody Carlson.

**ADDITIONS/DELETIONS:** None.

**PUBLIC HEARINGS/DELIBERATIONS:**

**A) ZONING MAP AMENDMENT #R1-24**

Petition from the City of Battle Creek to rezone properties along E. Michigan Avenue, between Caine Street, and Stiles Street currently zoned "R-3 Multiple-Family Residential District" and "R1-B Single-Family Residential District" to "T-3 Neighborhood Commercial District" pursuant to Sections 1281.01 and 1240.13 of the zoning code.

**Staff Presentation:** CJ Sivak-Schwennesen gave the staff report for #R1-24 rezoning with staff's recommendation for approval.

DRAFT

**Public Comment:**
**Cynthia Fritz** of 451 Main Street spoke and opposed the rezoning.
**James Moreno** of 451 Main Street spoke and opposed the rezoning, would like to see more discussion within the community.
**Sherry Goodwin,** resident residing on Cliff St. spoke and opposed the rezoning.
**Sarah Hodges** of 41 Caine St had questions about property taxes changing if the rezoning was approved.

**Commissioner Comments:**
**Commissioner O'Donnell** would like to move the vote to a later date given community concerns.
**Mayor Behnke** agreed with Commissioner O'Donnell that we need more time and is in favor of slowing down and more participation within the community.

**MOTION MADE BY COMMISSIONER O'DONNELL TO POSPONE A VOTE FOR AT LEAST THREE MONTHS AND HAVE SOME TYPE OF REPORT WITH RESIDENTIAL IMPUT. COMMISSIONER GODFREY SECONDED THE MOTION.**

**Commissioner Discussion:**
**Commissioner Morris** agrees to a workshop and supports the motion at hand.
**Darcy Schmitt, Planning Supervisor** asked for clarification as what information the body is requesting moving forward.
**Commissioner Godfrey** would like to see the City reach out to the NPC to set up a meeting.
**Commissioner Gray** would like to see the meeting held someplace within the neighborhood.

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**B) <u>ZONING MAP AMENDMENT #R2-24</u>**

Petition from the City of Battle Creek to rezone properties along W. Vanburen Street, W. Michigan Avenue, and W. Jackson Street between Cass Street and Wood Street, from "T-3 Neighborhood Commercial District" and "R-3 Multiple-Family Residential District" to "T-4 Downtown Commercial District". In addition, rezone properties west along W. Jackson Street between Wood Street and Angell Street from "R-3 Multiple-Family Residential District" to "T-3 Neighborhood Commercial District" and "T-4 Downtown Commercial District". Finally, continuing west to rezone properties along W. Michigan Avenue and W. Jackson Street between Angell Street and the western boundary of the City from "R-3 Multiple-Family Residential District" to "T-4 Downtown Commercial District" pursuant to Sections 1281.01 and 1240.14 of the zoning code.

**Staff Presentation:** Darcy Schmitt gave the staff report for #R2-24 rezoning along W. VanBuren St. W. Michigan Ave and W. Jackson St. with staff's recommendation for approval.

**Public Comment:**
**Codie Burt** representative for the property owner of 69 W. Michigan Ave spoke in favor of the rezoning.

**Commissioner Comments:**
**Mayor Behnke** thanked staff and others involved in the redevelopment of these properties.

DRAFT

**MOTION MADE BY COMMISSIONER MORRIS TO APPROVE ITEM #R2-24. SECONDED BY COMMISSIONER HUGHES.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**C) <u>ZONING ORDINANCE AMENDMENT #A-24</u>**
Request from the City of Battle Creek to consider amendments to various sections of the City of Battle Creek zoning code pursuant to Section 1281.01.

**Staff Report:** Darcy Schmitt gave the staff report highlighting the changes to the Zoning Ordinance.

**Public Comment:**
James Moreno of 451 Main St. had a question and comments about Accessory Buildings.

**Commissioner Comments:**
**Commissioner Godfrey suggested the Body vote on each section separately due to the size of the packet.**

**COMMISSIONER GODFREY MADE A MOTION TO APPROVE THE AMENDMENT CHANGES AS PRESENTED CHAPTER BY CHAPTER. SECONDED BY COMMISSIONER MORRIS.**

**<u>Chapter 1240</u>**
**COMMISSIONER GODFREY MADE A MOTION TO APPROVE THE CHAPTER 1240 AMENDMENT CHANGES AS WRITTEN. SECONDED BY COMMISSIONER MORRIS.**

**ROLL VOTE: ALL IN FAVOR. MOTION APPROVED.**

**<u>Chapter 1241</u>**
**MOTION MADE BY COMMISSIONER GODFREY TO APPROVE THE CHAPTER 1241 AMENDMENT CHANGES AS PRESENTED. SECONDED BY COMMISSIONER O'DONNELL.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**<u>Chapter 1251</u>**
**MOTION MADE BY COMMISSIONER GODFREY TO APPROVE THE CHAPTER 1251 AMENDMENT CHANGES AS PRESENTED. SECONDED BY COMMISSIONER O'DONNELL.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**<u>Chapter 1260</u>**
**MOTION MADE BY COMMISSIONER GODFREY TO APPROVE THE CHAPTER 1260 AMENDMENT CHANGES AS PRESENTED. SECONDED BY COMMISSIONER O'DONNELL.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

DRAFT

**Chapter 1281**

**MOTION MADE BY COMMISSIONER GODFREY TO APPROVE THE CHAPTER 1281 AMENDMENT CHANGES AS PRESENTED. SECONDED BY COMMISSIONER O'DONNELL.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**Commissioner Comments:**
**Commissioner Godfrey** thanked staff for their work on the packet.
**Commissioner Gray** echoed Commissioner Godfrey's comment.

**OLD BUSINESS:** None.

**NEW BUSINESS:**

**Election of Officers**

**COMMISSIONER MORRIS NOMINATED COMMISSIONER JOHN HUGHES AS COMMISSION CHAIRPERSON. SECONDED BY COMMISSIONER O'DONNELL.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**COMMISSIONER GODFREY MADE A MOTION TO NOMINATE COMMISSIONER PATRICK O'DONNELL AS COMMISSION VICE CHAIRPERSON.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**COMMISSIONER GODFREY NOMINATED COMMISSIONER LYNN GRAY AS COMMISSION SECRETARY. COMMISSIONER GRAY DID NOT ACCEPT THE NOMINATION.**

**MAYOR BEHNKE NOMINATED COMMISSIONER JOHN HUGHES AS COMMISSION SECRETARY.**

**ROLL VOTE: ALL IN FAVOR, MOTION APPROVED.**

**COMMENTS FROM THE PUBLIC:** None.

**COMMENTS FROM COMMISSION MEMBERS AND STAFF:**

**Commissioner Morris** thanked staff for their time in putting together the meeting packet.
**Commissioner O'Donnell** thanked everyone for voting to postpone item # R1-24.
**Darcy Schmitt** informed the Body of grant information and asked for their input moving forward and upcoming training information.
**Commissioner Godfrey** had questions about the upcoming training.
**Commissioner Gray** stated it was an honor and pleasure to serve as Chair and looks forward to continually serving on the Commission.

**ADJOURNMENT: Commissioner Gray** adjourned the meeting at 5:23 pm.

Submitted by: Melody Carlsen, Administrative Assistant, Planning & Zoning.



DRAFT

General Detail NO.

Minutes for the March 5, 2024 City Commission Regular Meeting

**BATTLE CREEK, MICHIGAN -** 3/19/2024

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Patti Worden, Executive Assistant

**Department:** City Manager

**SUMMARY**

Minutes for the March 5, 2024 City Commission Regular Meeting

**BUDGETARY CONSIDERATIONS**

**HISTORY, BACKGROUND and DISCUSSION**

**DISCUSSION OF THE ISSUE**

**POSITIONS**

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ATTACHMENTS:

| File Name | Description |
|---|---|
| Minutes_for_the_March_5__2024_City_Commission_Regular_Meeting.pdf | Minutes for the March 5, 2024 City Commission Regular Meeting |

# Agenda: Battle Creek City Commission

| | |
|---|---|
| Meeting Date: | March 5, 2024- 7:00 PM |
| Location: | City Commission Chambers |
| Chair: | Mayor Mark A. Behnke |
| Title: | Battle Creek City Hall - City Commission Chambers - 3rd Floor |

VIDEO

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**ATTENDANCE**

**COMMISSIONERS**

| | |
|---|---|
| Mayor Mark Behnke | Commissioner Roger Ballard |
| Commissioner Jim Lance | Commissioner Jenasia Morris |
| Commissioner Patrick O'Donnell | Commissioner Carla Reynolds |
| Commissioner Christopher Simmons | Commissioner Jake Smith |
| Vice Mayor Sherry Sofia | |

**CITY STAFF**

| | |
|---|---|
| Rebecca Fleury, City Manager | Jill Steele, City Attorney |
| Victoria Houser, City Clerk | Ted Dearing, Assistant City Manager |
| Shannon Bagely, Police Chief | Ron Osborne, Binder Park Manager |
| Bill Beaty, Fire Chief | Steve Skalski, Public Works Director |
| Duska Brumm, Recreation Director | Joby Purucker, Service Desk Tech. |
| Ryan Dingman, Golf Course Superintendent | Alex Johnson, Asst. Golf Course Manager |

**INVOCATION**

**PLEDGE OF ALLEGIANCE**

The Pledge of Allegiance was led by Commissioner Smith.

**ROLL CALL**

**PROCLAMATIONS AWARDS**

Proclamation for National Women's History Month 2024

Mayor Behnke proclaimed the month of March 2024 as "National Women's History Month" in the greater Battle Creek Area, encouraging all neighbors to honor the role of women in our community

and families and to recognize the significant contributions they make to not only our City but also our lives on a daily basis.

**PRESENTATIONS**

ARPA Community Project Presentation - Susan Balbaugh, The Music Center

Susan Balbaugh, The Music Center, shared information on their ARPA Community Project.

ARPA Community Project Presentation - Dr. Nakia Baylis, The Village Network

Dr. Nakia Baylis, The Village Network, shared information on their ARPA Community Project.

**CHAIR NOTES ADDED OR DELETED RESOLUTIONS**

Resolution 383 was removed form the agenda.

**PETITIONS COMMUNICATIONS REPORTS**

There were no petitions, communications or reports.

**PUBLIC HEARING**

A Public Hearing for the purpose of reviewing and receiving public comment on the proposed 161 East Michigan Ave Brownfield Plan.

Mayor Behnke declared the public hearing open, inviting attendees to participate in public comments.

Hearing no public comments, Mayor Behnke declared the public hearing closed.

**PUBLIC COMMENTS REGARDING CONSENT AGENDA AND RESOLUTIONS NOT ON CONSENT AGENDA**

Autumn Smith commented on resolution 382, asking if it is being processed with the Risk Department.

John Kenefick commented on resolution 382 regarding the fee schedule for Binder Park Golf Course, and resolution 379 regarding the sale of 3 parcels.

(Limited to three minutes per individual)

**COMMISSION COMMENT REGARDING MEETING BUSINESS**

There were no commission comments.

**CONSENT AGENDA**

Motion to Approve
Moved By: CARLA REYNOLDS
Supported By: CHRISTOPHER SIMMONS

Ayes: BALLARD, LANCE, MORRIS, O'DONNELL, BEHNKE, REYNOLDS, SIMMONS, SMITH, SOFIA

MOTION PASSED

City Manager's Report for March 5, 2024

Ambulance Report for December 2023

Ambulance Report for January 2024

**CONSENT RESOLUTIONS**

379 A Resolution seeking authorization for the City Manager to execute all documents necessary to sell three parcels of vacant city-owned land located in Newton Township and one vacant lot located in Emmett Township to Darian A. Niecko, Cole M. Vandybogurt, Glenn Elmen and Todd S. Wilson for $75,500.

Motion to Approve
Moved By: CARLA REYNOLDS
Supported By: CHRISTOPHER SIMMONS

Ayes: BALLARD, LANCE, MORRIS, O'DONNELL, BEHNKE, REYNOLDS, SIMMONS, SMITH, SOFIA

MOTION PASSED

**RESOLUTIONS NOT INCLUDED IN THE CONSENT AGENDA**

380 A Resolution approving the 161 East Michigan Ave Brownfield Plan for the Justice Service Center mound removal project at 161 E. Michigan Avenue in Battle Creek.

Motion to Approve
Moved By: CARLA REYNOLDS
Supported By: CHRISTOPHER SIMMONS

Ayes: BALLARD, LANCE, MORRIS, O'DONNELL, BEHNKE, REYNOLDS, SIMMONS, SMITH, SOFIA

MOTION PASSED

381 A Resolution seeking support for the rehabilitation of three Battle Creek bridges and authorizing the City Manager or City employee designee to seek Federal and/or State financial participation for these projects through the grant application process.

Motion to Approve
Moved By: CARLA REYNOLDS
Supported By: CHRISTOPHER SIMMONS

Ayes: BALLARD, LANCE, MORRIS, O'DONNELL, BEHNKE, REYNOLDS, SIMMONS, SMITH, SOFIA

MOTION PASSED

382 A Resolution seeking approval for an amendment to the 2023/2024 Fee, Bond, and Insurance Schedule.

Motion to Approve
Moved By: CARLA REYNOLDS
Supported By: CHRISTOPHER SIMMONS

Comm. Simmons noted he, along with Commissioners Lance and O'Donnell, serve on the Binder Park Golf Course Committee, expressing confidence city staff researched the need to increase fees, while comparing to them to similar golf courses.
Ayes: BALLARD, LANCE, MORRIS, O'DONNELL, BEHNKE, REYNOLDS, SIMMONS, SMITH, SOFIA

MOTION PASSED

383 A Resolution seeking to set a Closed Session on a labor matter for March 5, 2024. Pulled

Motion to
Moved By:
Supported By:

**This resolution was pulled from the agenda.**

MOTION

**GENERAL PUBLIC COMMENT**

David Moore agreed resolution 381 was necessary to ensure residents' safety, while expressing his opinion the golf course expenses were not necessary.

Steve Frisbee shared information as to why he is running for state representative, particularly alternative energy projects in local communities.

Christena Smith commented on the reduction of bus services, stating riders are very disappointed and feel the city does not care.

Autumn Smith commented on a refuge resettlement program at Community Action, and other local non-profit agencies. Ms. Smith also commented on water and sewer fees.

Kathy Antaya reminded everyone that people are not illegal, they are undocumented.

John Kenefick commented on resolution 355 from February 6, 2024, regarding the building of a permanent bathroom at Everyone's Playground, noting restrooms in other city parks are often vandalized.

(Limited to three minutes per individual)

**COMMISSION COMMENTS**

Comm. Ballard commented on the locked bathrooms at Fell Park that are being damaged by residents, asking why the city would build another bathroom at a different park.

Comm. O'Donnell noted that monies spent on city programs or improvements help to bring visitors to our community, which supports local companies with more business.

Comm. Simmons asked staff to provide the commission with a list of properties the city owns outside of the city and the purpose or future use of the property.

Comm. Morris asked Commissioners to meet with the 2 young ladies who attended the meeting this evening.

**ADJOURNMENT**

Mayor Behnke adjourned the meeting at 7:46 pm.

It is the desire of the City Commission to encourage public expression in the course of its meetings. Such expression can be integral to the decision-making process of the City Commission. It is the intention of the City Commission to respect the rights of persons addressing the Commission. Public comment periods are a time for citizens to make comments; they are not intended as a forum for debate or to engage in question-answer dialogues with the Commission or staff. Commissioners are encouraged not to directly respond to speakers during public comment periods. At the conclusion of the speakers remarks, the Mayor or individual Commissioners may refer a question to City staff, if appropriate. Also, individual Commissioners may choose to respond to speakers during the Commission Comment period. It is with these aims in mind, so as to promote decorum and civility and an orderly process for conducting its public meetings, that the following rules concerning public comments, consistent with applicable law, are adopted by the City Commission.

(1) Persons attending a regular or special Commission Meeting shall be permitted to address the City Commission in conformity with this rule. The opportunity to address the Commission shall be limited to the following:

(a) Persons desiring to address the City Commission are encouraged, but shall not be required, to fill out and turn in to either the City Clerk, Mayor, or presiding Commissioner, prior to the meeting, a comment card disclosing the following information: The person's name, address, and telephone number; the specific issue, topic or resolution the individual wishes to address.

(b) During public hearings when scheduled, speakers may present facts and opinions on the specific matter being heard by the Commission. A three-minute time limit is imposed per speaker. In the discretion of the Mayor or presiding officer, the time limit for individual speakers may be lengthened or shortened when appropriate.

(c) During the consideration of specific ordinances when scheduled, speakers may present facts and opinions on the specific ordinance being considered by the City Commission. Speakers addressing the City Commission during this time shall limit their comments to the specific issue being considered. A three-minute time limit, which may be lengthened or shortened by the Mayor or presiding officer when appropriate, is

imposed per speaker, per matter considered.

(d) During the public comment period on the consent agenda and resolutions not on the consent agenda, each speaker may address the Commission once, regarding anything on the consent agenda and resolutions not on the consent agenda, for a total not to exceed three minutes regardless of how many consent agenda items or regular resolutions the speaker is addressing, which time period may be lengthened or shortened by the Mayor or presiding officer when appropriate.

(e) During the General Public Comment portion of the meeting, speakers may address the City Commission on any matter within the control and jurisdiction of the City of Battle Creek. A speaker shall be permitted to address the City Commission once, for up to three minutes, during this portion of the meeting.

(f) Applicants or Appellants, as defined below, or an attorney retained to represent them, are not bound by the specific time limitations set out above but may have the amount of time deemed reasonably necessary by the Mayor or presiding official to present their case to the City Commission without violating the rules set out below in sub-section 4(a) through (g), with which they are obligated to comply.

(*i*) Applicant is defined an individual or business entity seeking a City Commission final decision on a matter for which the individual has made application to the City based upon a specific provision in a City Ordinance or state statute for permission to take a specific action;

(*ii*) Appelant is an individual appealing a decision of a City official or an inferior body based upon a specific provision in City ordinances entitling the individual to appeal the decision to the City Commission.

(2) An individual wishing to address the City Commission shall wait to be recognized by the Mayor or presiding Commissioner before speaking. An individual who has not filled out a card requesting to address the City Commission shall raise his or her hand and wait to be recognized by the Mayor or presiding Commissioner before speaking and shall identify themselves by name and address and, if appropriate, group affiliation for the record.

(3) Speakers shall address all remarks to the Mayor, or the presiding Commissioner or official, and not to individual Commissioners or staff members. Speakers shall not address their remarks to members of the public in attendance at the meeting.

(4) A speaker will be ruled out-of-order by the Mayor or presiding Commissioner and the Commission will continue with its business, and the speaker may be required to leave the meeting after having been ruled out-of-order for a breach of the peace committed at the meeting as permitted by the OMA, when the speaker violates above sub-section 3 or the following:

(a) Becomes repetitive or speaks longer than the allotted time;

(b) Attempts to yield any unused portion of time to other speakers;

(c) Engages in a personal attack upon a city employee, administrator or Commissioner only if the personal attack is totally unrelated to the manner in which the employee, administrator or Commissioner carries out their public duties or office;

(d) Uses obscene or profane language;

(e) Engages in slanderous or defamatory speech;

(f) Uses derogatory racial, sexual or ethnic slurs or epithets relating to any individual or category of persons; or

(g) Engages in conduct that interrupts or disrupts the meeting.

(5) Individuals attending City Commission meetings or workshops, excluding City staff, shall not pass the commission chambers bar upon which the podium is affixed (and which divides the audience section from the well of the chambers) without having been invided to do so by the Mayor or official presiding over the meeting, or after requesting and explicitly being granted permission to do so. Any individual violating this sub-section will be ruled out-of-order by the Mayor or presiding official and the individual may be required to leave the meeting for a breach of the peace committed at the meeting as permitted by the OMA.

General Detail NO.

City Manager's Report for March 19, 2024

**BATTLE CREEK, MICHIGAN -** 3/19/2024

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Patti Worden, Executive Assistant

**Department:** City Manager

**SUMMARY**

City Manager's Report for March 19, 2024

**BUDGETARY CONSIDERATIONS**

**HISTORY, BACKGROUND and DISCUSSION**

**DISCUSSION OF THE ISSUE**

**POSITIONS**

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ATTACHMENTS:

| File Name | Description |
| --- | --- |
| City_Manager_Report_03192024.pdf | City Manager's Report for March 19, 2024 |

# MEMO

**Date:** 03/19/2024

**To:** Mayor and City Commission

**From:** Ted Dearing, Assistant City Manager

**RE:** City Manager's March 19, 2024, Agenda Report

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**02-2024** **A proposed Ordinance, #02-2024, seeking to amend the Zoning Code of the City of Battle Creek.**

The proposed Ordinance, #02-2024, seeks to amend the Zoning Code of the City of Battle Creek. Staff finds that the proposed amendments to the Zoning Code are needed to fix errors, improve clarity and provide additional flexibility to land uses for residents and property owners in the community without compromising safety and quality of life for the residents.

The Planning Commission, at their February 28, 2024 meeting, held a Public Hearing on the draft amendments to the Zoning Code. There were no public comments during the Public Hearing. With seven members present, the Planning Commission voted unanimously to recommend the City Commission approve the proposed amendments to the Zoning Code.

**03-2024** **A proposed Ordinance, #03-2024, seeking to rezone various properties located in two clusters along Michigan Avenue W, Jackson St W, Kendall St S, Van Buren St W, and Angell St currently zoned R-3, Multiple Family Residential District and T-3, Neighborhood Commercial District to T-4 Downtown Commercial District and T-3 Neighborhood Commercial District.**

This proposed Ordinance, #03-2024, seeks to rezone various properties located in two clusters along Michigan Avenue W, Jackson St W, Kendall St S, Van Buren St W, and Angell St currently zoned R-3, Multiple Family Residential District and T-3, Neighborhood Commercial District to T-4 Downtown Commercial District and T-3 Neighborhood Commercial District.

The rezoning of these properties will allow for more flexibility in how this area develops or redevelops in the future by creating additional uses for the properties that would otherwise not be allowed under the current zoning districts.

The Planning Commission held a Public Hearing on February 28, 2024 on the proposed rezoning. There was one public comment in favor of the proposal at the meeting. With seven members present, the Planning Commission voted unanimously to recommend that the City Commission approve the proposed rezoning.

**392** **A Resolution seeking approval to direct staff to fly the Donate Life flag at City Hall from noon on April 1, 2024 through April 30, 2024.**

On May 2, 2023, the City Commission approved Resolution No. 134, establishing a revised policy regarding flag display. This policy declares that the City's flagpoles are not intended to serve as a forum for free expression of the public, but rather for the display of Federal, State, and City Flags, as well as the temporary addition the under the City Flag of any commemorative flag as may be authorized as by resolution of the City Commission as an expression of the City's official sentiments.

If approved, this Resolution, in accordance with the revised flag policy, hereby authorizes staff to fly the Donate Life flag at City Hall from noon on April 1, 2024 through April 30, 2024.

**393** **A Resolution authorizing the City Manager to submit a grant application to The Michigan Department of Natural Resources Trust Fund for the construction of a permanent and accessible restroom facility at the ANYbodies Playground and boat launch area in Bailey Park.**

In order to address the significant barriers to recreation caused by the lack of permanent, accessible restroom facilities near ANYbodies Playground and the popular eastern end of Bailey Park, The City is seeking a grant from the Michigan Department of Natural Resources Trust Fund to build a permanent, accessible, and more spacious restroom facility available to children and caregivers utilizing ANYbodies Playground and residents and visitors seeking to enjoy the many other popular park amenities and activities nearby.

The addition of the permanent and accessible restrooms will increase the ability of *all* people to enjoy the gatherings at the nearby pavilions, watch nearby sports practices and sporting events, enjoy fishing and kayaking at the nearby boat launch, and hike and bike the nearby linear trails.

If approved, this Resolution authorizes the City Manager to submit a grant application to The Michigan Department of Natural Resources Trust Fund for the construction of a permanent and accessible restroom facility at ANYbodies Playground in the amount of $290,800 with a 25% match requirement. The City would provide $325,000 in matching funds obtained from park millage for the project, which exceeds the minimum 25% matching fund requirement. **Approval is Recommended.**

**394** **A Resolution seeking approval for the editing and inclusion of certain ordinances and resolutions as parts of the various component codes of the codified ordinances; and repealing ordinances and resolutions in conflict therewith.**

Each year, American Legal Publishing updates and revises the City Code Book based upon the Ordinances and Resolutions previously adopted by the City Commission.

As required by the City Charter, Section 4.6 Codification, the City Commission shall, by resolution, within two years from the date this Charter is adopted by the electors and every 10 years thereafter, wholly or partially codify and recodify the ordinances of the City into one or more ordinances in loose-leaf or pamphlet form, and may provide for a reasonable charge for copies thereof.

This Resolution seeks approval for the editing and inclusion of certain ordinances and resolutions as parts of the various component codes of the codified ordinances; and repealing ordinances and resolutions in conflict therewith. **Approval is Recommended.**

**395** **A Resolution authorizing the City Manager, under the provisions of 296.09(c), to continue to employ Jill Wood who presently holds the position of Customer Service Rep II at the WWTP and to allow for Ms. Wood's years of service as a Fire Fighter with the BCFD to count towards vesting and eligibility with MERS.**

Pursuant to Employment Provision 296.09 " (c)  No person shall be employed by the City, or paid with City funds, who has retired under the provisions of . . . the Police and Fire Retirement System .

. . The City Manager may make exceptions to this provision, with the approval of the City Commission, when "she" feels the interests of the City would be served thereby."

The City Manager believes that the interests of the City would be best served by making an exception to the general prohibition of employing a person who has effectively retired under the Police and Fire Retirement System.

This Resolution, if approved, authorizes the City Manager, under the provisions of 296.09(c), to continue to employ Jill Wood who presently holds the position of Customer Service Rep II at the WWTP and to allow for Ms. Wood's years of service as a Fire Fighter with the BCFD to count towards vesting and eligibility with MERS. **Approval is Recommended.**

**396** **A Resolution seeking acceptance of the lowest responsive, responsible bid for Wastewater Treatment Plant HVAC project from Shouldice Industrial Manufacturers and Contractors, Inc., in a not-to-exceed amount of $769,757.00.**

A solicitation was issued January 20, 2024, for the demolition of existing pneumatic HVAC equipment and controls, and the furnishing and installation of a new system at the City's Wastewater Treatment Plant.

Copies of the IFB were provided to all contractors and construction plan houses registered in our online vendor registration system. The City received one bid from Shouldice Industrial Manufacturers and Contractors. The bid was reviewed by Tyler Kindle, Engineer at Jones and Henry, and the City's Engineering Administrator and a recommendation was made to accept the lowest responsive, responsible bid from Shouldice.

If approved, this Resolution accepts the lowest responsive, responsible bid for Wastewater Treatment Plant HVAC project from Shouldice Industrial Manufacturers and Contractors, Inc., in a not-to-exceed amount of $769,757.00. Furthermore, the City Manager or her designee is authorized to execute change orders up to 10% in aggregate for City-initiated and pre-approved increases in the scope of work. **Approval is Recommended.**

**383** **A Resolution seeking to set a Closed Session on a labor matter for March 19, 2024.**

As permitted under the Michigan Open Meetings Act, a public body, upon a majority vote, may meet in closed session for strategy and negotiation sessions connected with the negotiation of a collective bargaining agreement if either negotiating party requests a closed hearing, and the City has requested that closed session; and that, Ted Dearing, Assistant City Manager, is hereby appointed as the designated secretary to record and prepare appropriate Minutes of this Closed Session.

This Resolution, if approved, sets a Closed Session on a labor matter for March 19, 2024. **Approval is Recommended.**

General Detail NO.

Review Committee Meeting Minutes for March 13, 2024

**BATTLE CREEK, MICHIGAN -** 3/19/2024

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Patti Worden, Executive Assistant

**Department:** City Manager

**SUMMARY**

Review Committee Meeting Minutes for March 13, 2024

**BUDGETARY CONSIDERATIONS**

**HISTORY, BACKGROUND and DISCUSSION**

**DISCUSSION OF THE ISSUE**

**POSITIONS**

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ATTACHMENTS:

| File Name | Description |
|---|---|
| 03.13.2024_-_Review_Committee_Minutes.pdf | Review Committee Meeting Minutes for March 13, 2024 |
| Boards-Committees_Application_Report_-_2.15.2024_-_3.13.2024.pdf | Boards-Committees Application Report - 2.15.2024 - 3.13.2024 |

# CITY OF BATTLE CREEK
# REVIEW COMMITTEE AGENDA

## Wednesday, March 13, 2024 at 3:00 PM

Join Zoom Meeting
Click here to join meeting
Meeting ID: 269 441 1255
Passcode: 269269
One call in: 1-312-626-6799

## MINUTES

The Review Committee Meeting started at 3:07pm.

Attendees
*Mayor Mark Behnke
*Vice Mayor Sherry Sofia
*Ted Dearing, Assistant City Manager
*Joe Sobieralski, BCU President & CEO
*Patti Worden, Executive Assistant

**I. BATTLE CREEK DOWNTOWN DEVELOPMENT AUTHORITY (DDA)**

a. 1 application, 1 vacancy
   i. Ezra Bell – New Appointment – Term to expire 3/20/2028
b. Discussion: Behnke, Sofia, Fleury, Liaison (Ted Dearing), Chair (Paul Conkey)

**Battle Creek DDA –** (Appointing Authority) City Manager with City Commission approval. (Purpose) To correct and prevent deterioration in the downtown development district; To encourage historic preservation; To authorize the creation and implementation of development and financial plans in the district; To promote economic in the district; To own, operate, and maintain the Kellogg Center and other facilities in the downtown deployment district; and To authorize the acquisition and disposal of interest in real and personal property.

| | | |
|---|---|---|
| Behnke: | ☒Yes ☐No | Comment: **Comment: Next Commission Meeting for approval** |
| Sofia: | ☒Yes ☐No | Comment: |

## II. BATTLE CREEK TIFA / BROWNFIELD REDEVELOPMENT AUTHORITY

a. 1 application, 1 vacancy

   i. Tha Par – New Appointment – Term to expire 4/28/2028

b. Discussion: Behnke, Sofia, Fleury, Liaison (BCU), No Chair

**Battle Creek TIFA/Brownfield Redevelopment Authority –** (Appointing Authority) City Manager with City Commission approval. (Purpose) To halt a decline of property values, increase property tax valuation, eliminate causes of decline in value, and promote growth in the Fort Custer Industrial Park.

Behnke: ☒Yes ☐No Comment: **Comment: Next Commission Meeting for approval**

Sofia: ☒Yes ☐No Comment:

## III. LICENSE REVIEW BOARD

a. 5 applications, 5 reappointments

   i. Jana Davis – Reappointment – Term to expire 5/3/2025

   ii. James Eldridge – Reappointment – Term to expire 5/3/2025

   iii. Sharon Miller – Reappointment – Term to expire 5/3/2025

   iv. Karen Roebuck – Reappointment – Term to expire 5/3/2025

   v. Rebecca Squires – Reappointment – Term to expire 5/3/2025

b. Discussion: Behnke, Sofia, Fleury, Liaison (Vicki Houser), No Chair

**License Review Board –** (Appointing Authority) City Commission. (Purpose) Provides an opportunity to appeal when an application to operate as a vendor within the city limits is denied, or a current vendor's license becomes subject to suspension or revocation.

Behnke: ☒Yes ☐No Comment: **Comment: Next Commission Meeting for approval**

Sofia: ☒Yes ☐No Comment:

The Meeting ended at 3:10pm.

# Boards/Committees Applications
# (Received February 15, 2024 – March 13, 2024)

**Tha Par**
Battle Creek TIFA / Brownfield Redevelopment Authority

**James Eldridge**
License Review Board

**Ezra Bell**
Battle Creek Downtown Development Authority (DDA)
Economic Development Corporation

**Sharon Miller**
License Review Board

Resolution NO. 384

A Resolution appointing Ezra Bell as a new member to the Battle Creek Downtown Development Authority.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That Ezra Bell is appointed as a new member to the Battle Creek Downtown Development Authority, with a term to expire on March 20, 2028;

---

Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Patti Worden, Executive Assistant

**Department:** City Manager

**SUMMARY**

A Resolution appointing Ezra Bell as a new member to the Battle Creek Downtown Development Authority.

**BUDGETARY CONSIDERATIONS**

None.

**HISTORY, BACKGROUND and DISCUSSION**

The BCDDA was created and authorized by the City Commission pursuant to Act 197 of the Public Acts of 1975 of the State of Michigan (City Commission resolution of January 23, 1979). The membership is made up of the City Manager, plus eight other members, five of whom have an interest in property located in the downtown district.

The City Manager has the appointing authority to the BCDDA, with approval by the City Commission. Additionally, the City Commission can appoint two of its members to serve in an ex-officio capacity. Ex-officio members may attend all meetings of the board and receive copies of communications, records,

memorandums, or other Authority documents, but do not have a vote on any decision by the board.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

The Review Committee is supportive of this appointment.

---

ATTACHMENTS:

| File Name | Description |
| --- | --- |
| Bell__Ezra_-_2024.pdf | Ezra Bell Application |

**Patricia S Worden**

**From:** noreply@civicplus.com
**Sent:** Monday, March 4, 2024 10:22 AM
**To:** Rebecca D. Forbes; Patricia S Worden
**Subject:** Online Form Submittal: Current City of Battle Creek Boards and Commissions Application

Email sent from outside of the City of Battle Creek. Use caution before clicking links/attachments.

# Current City of Battle Creek Boards and Commissions Application

City of Battle Creek Board and Commission Application

Please select the **top 3** board(s) or commission(s) on which would like to serve. This application will remain active for one year from the date we receive it and will be posted on the City's website. Thank you for applying!

| | |
|---|---|
| Name | Ezra Bell |
| Are you 18 years or older? | Yes |
| Home address | 172 Van Buren St W |
| City | Battle Creek |
| State | MI |
| Zip code | 49017 |
| Email address | ebell@swmul.org |
| Home phone | 2699625553 |
| Work phone | *Field not completed.* |
| Cell phone | *Field not completed.* |
| Current occupation (students should list school activities) | Managing Director |
| Employer and work address (students should list school) | Southwest Michigan Urban League - 172 Van Buren St. W. |

| | |
|---|---|
| Educational background/degrees (students should list current year in school) | B.A - Sociology |
| List any appointed positions, boards, commissions, or committees on which you have served, and years of service | *Field not completed.* |
| List any organizations to which you belong (professional, technical, community, nonprofit; students should list school organizations) | *Field not completed.* |
| Briefly explain your interest, experience, and/or qualifications for the boards for which you are applying | As the Managing Director of the Southwest Michigan Urban League, Economic Development is at the core of our mission. The opportunity to serve on this board will increase the connection between the city and the communities we serve. |
| Attach additional information | *Field not completed.* |
| Please tell us how you found out about our boards and commissions and/or vacancies | My predecessor shared board opportunity with me. I was also invited by Ted Dearing. |
| Electronic Signature Agreement | I agree. |

*By signing this form, you acknowledge that any or all information on this form may be verified, and consent to the release of this information for publicity purposes.*

| | |
|---|---|
| Electronic Signature | Ezra Bell |
| Date | 03/04/24 |

Boards, Councils, and Commissions Interest

Please rank your first, second, and third choices for boards on which you would like to serve. Please check the boxes to indicate your experience and/or credentials for each of your three choices. Thank you!

Airport Advisory Board

Makes policy recommendations to support continued airport development and community economic growth; acts as advocate for current and potential economic value of the airport.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Area International Relations Committee

To foster cultural promotion of the city, and provide a positive environment toward foreign industrialists and their families

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Downtown Development Authority

Provides for a variety of funding options, including tax increment financing mechanism, which can be used to fund public improvements in the downtown district.

| | |
|---|---|
| Rank | 1 |
| Experience | Property owner, Business representative |

BC Housing Commission

Manages all public housing facilities and rental voucher (Section 8) programs in the city. Public housing facilities include scattered site rental housing, home purchase programs and senior residential developments.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC TIFA/Brownfield Redevelopment Authority

BC Tax Increment Finance Authority. Works to halt a decline of property values, increase property tax valuation, eliminate causes of decline in value, and promote growth in the Fort Custer Industrial Park.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Transit Local Advisory Council

Advises the City in areas relating to planning, delivery, and operation of public transportation in the community and to provide recommendations and input regarding accessibility including the annual approval of Battle Creek Transit's Vehicle Accessibility Plan.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Transit Local Coordinating Committee

Determines annually how the Specialized Services funds will be allocated among the various sub-recipients, related to transportation services for the elderly and those with disabilities.

| | |
|---|---|
| Rank | *Field not completed.* |

| | |
|---|---|
| Experience | *Field not completed.* |

Board of Appeals (Housing)

Hears and decides on appeals concerning application or interpretation of the provisions and standards of the Building Code, the International Property Maintenance Code and Chapter 842 of these Codified Ordinances, and to hear appeals of decisions of the Dangerous Buildings Hearing Officer.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Board of Review (Assessing)

Members serve for five years, and must be city electors and property owners. Members may correct/amend assessment rolls, and increase or decrease taxable property assessment or valuation.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Civil Service Commission

Establishes rules applicable to all regular and full-time Fire Department personnel, excluding civilian employees. Members must reside in the city limits for one year, reside within the county for three years, and hold no other government office. There may be no more than two members of the same political party.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Construction Board of Appeals

To hear appeals on building permit denials, and from any other decision pursuant or related to the Act or the State Construction Code. There are five members and one alternate. Members serve two-year terms. A member of the board shall be qualified by experience or training to perform the duties of the board. The board meets as needed.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Dangerous Buildings Hearing Officer

Identifies structures in the city considered to be a public nuisance; serves written notice of a hearing to the owner or party of interest at the address shown on the tax records; and shows cause why the structure(s) should not be ordered demolished, otherwise made safe, or properly maintained. Must have expertise in housing matters, including, but not limited to: engineer, architect, building contractor, building inspector, or member of a community housing organization.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Development Area Citizens Council

An advisory body to a development authority and, ultimately, the City Commission, related to updates to the authority's development plan.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Dickman Road Business Improvement District

Promotes economic activity in the BID along Dickman Road, and provides or contracts for the administration, security, and operation of the district, to include physical improvements and joint marketing.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Downtown Parking System Advisory Committee

Advises city staff and the city's parking administrator on issues related to the city-owned and operated parking system.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Economic Development Corporation

Alleviates unemployment conditions, assists in industry retention and promotes the general welfare of Battle Creek.

| | |
|---|---|
| Rank | 2 |
| Experience | Economic development |

Goguac Lake Board

Formed to protect the public health, safety and welfare, and conserve the natural resources and preserve property values around Goguac Lake.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Historic District Commission

Reviews plans for exterior modifications or demolition of buildings within the federal, state, or local historic districts.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Human Relations Board

To increase constructive communication among all people regardless of actual or perceived race, ethnicity, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability, family status, sexual orientation, gender identity, or socioeconomic status. To increase constructive communication between community members, public officials, and community organizations, thereby promoting harmonious and productive relationships within the community, and equitable access to community resources for all. Board shall be representative of management and labor, various religions, various races, and others who have an interest in human relations.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Income Tax Board of Appeals

Attempts to settle city income tax disputes.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Lakeview Downtown Development Authority

The definition of a development area; the origination of a development plan; and the implementation of a development program

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

License Review Board

Provides an opportunity to appeal when an application to operate as a vendor within the city limits is denied or a current Vendor's License becomes subject to suspension or revocation.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Local Development Financing Authority

To govern the affairs of the I-94 Business Park and Certified Technology Park (SmartZone) established by the City of Battle Creek, pursuant to an Agreement (The Battle Creek Aviation and E-Learning SmartZone Agreement) with the Michigan Economic Development Corporation.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Local Officers' Compensation Commission

Determine salaries of elected officials. Shall meet for at least one, and not more than 15, session days in each odd-numbered year. "Session day" is a calendar day on which the commission meets and for which a quorum is present.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Planning Commission

Adopts plans for the city. Also considers requests for zoning classifications and special use permits, and makes recommendations to the City Commission on amendments to the planning and zoning code.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Police/Fire Retirement System Board

Make rules and regulations necessary to properly conduct the business of the police and fire pension system, as directed by law.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Sustainable BC Committee

Increase the city's efforts to incorporate environmentally-responsible policies in the management of its facilities and services, including initiatives outlined in the Climate Protection Act Policy, adopted in August 2006, and the 15 percent by '15 renewable energy policy goal, adopted in March 2007. Will review and recommend environmental/conservation policy for the city, including recommendations for action to the City Commission.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Technical Review Committee

Provides review, input, and recommendations to the city and the City Commission regarding various aspects of the wastewater treatment system and rates.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Tree Advisory Council

Helps develop the annual Tree Work Plan, and issue rules and regulations supplementary to the city's tree ordinance. Establishment meets a Tree City USA criterion.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Water System Advisory Council

Advises and assists with creation of materials and plans to educate the community about the dangers of lead in drinking water, assist with development of public awareness campaign materials, advise and consult on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded, advise and consult on efforts to replace private lead service lines, assist in promoting transparency of data and documents related to lead in drinking water, and collaborate with local community groups to ensure those living in the city have the opportunity to be involved in efforts to educate the community about lead in drinking water.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Youth Advisory Board

To involve area youth in local government policy development and administrative procedures that will improve the leadership development of the community's youth.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Zoning Board of Appeals

Considers requests for variances to the requirement of the planning and zoning code. Typical variance requests include yard setback reductions and the size of commercial signage.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Email not displaying correctly? View it in your browser.

CITY OF Battle Creek MICHIGAN

# Resolution NO. 385

A Resolution appointing Tha Par as a new member to the BCTIFA / Brownfield Redevelopment Authority.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That Tha Par is appointed as a new member to the BCTIFA / Brownfield Redevelopment Authority with a term to expire on April 28, 2028.

---

Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Patti Worden, Executive Assistant

**Department:** City Manager

**SUMMARY**

A Resolution appointing Tha Par as a new member to the BCTIFA / Brownfield Redevelopment Authority.

**BUDGETARY CONSIDERATIONS**

None.

**HISTORY, BACKGROUND and DISCUSSION**

Resolution No. 27, dated April 28, 1981, authorized the establishment of an Authority for the Fort Custer Industrial Park District. Its purpose is to halt a decline of property values, increase property tax valuation, eliminate causes of decline in value, and promote growth in the Fort Custer Industrial Park.

Resolution No. 138, May 19, 2015, established the following criteria for the Board: city resident – 4 members; property owner, business owner or designee of the TIFA District – 4 members; City Manager or

designee – 1 member; not less than nine (9) nor more than thirteen (13).

Resolution No. 230, September 6, 2016, clarified the following criteria for the Board:

Each of the no more than thirteen members shall meet either the City resident criteria or the property owner, business owner or their designee of the TIFA district requirement, with the minimum numbers being four and four. The size of the Board shall not be less than nine nor more than thirteen members as determined and appointed by the City Manager subject to the approval of the City Commission. It, also, further clarified that Board Members shall serve no more than four consecutive, four-year terms, to be determined at the time a member is up for reappointment; and each person interested in a position on the TIFA Board, that meets the established criteria, shall submit an application using the City's Board and Commission application form for review and consideration by the City Manager.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

The Review Committee is supportive of this appointment.

---

ATTACHMENTS:

| File Name | Description |
|---|---|
| Par__Tha_-_2024.pdf | Tha Par Application |

**Patricia S Worden**

**From:** noreply@civicplus.com
**Sent:** Wednesday, February 28, 2024 9:26 AM
**To:** Rebecca D. Forbes; Patricia S Worden
**Subject:** Online Form Submittal: Current City of Battle Creek Boards and Commissions Application

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

Email sent from outside of the City of Battle Creek. Use caution before clicking links/attachments.

# Current City of Battle Creek Boards and Commissions Application

City of Battle Creek Board and Commission Application

Please select the **top 3** board(s) or commission(s) on which would like to serve. This application will remain active for one year from the date we receive it and will be posted on the City's website. Thank you for applying!

| | |
|---|---|
| Name | Tha Par |
| Are you 18 years or older? | Yes |
| Home address | 204 Brentwood Street |
| City | Battle Creek |
| State | Michigan |
| Zip code | 49015 |
| Email address | tpthapar@gmail.com |
| Home phone | 12695892292 |
| Work phone | *Field not completed.* |
| Cell phone | *Field not completed.* |
| Current occupation (students should list school activities) | Executive Director of a nonprofit organization |

| | |
|---|---|
| Employer and work address (students should list school) | Burma Center |
| Educational background/degrees (students should list current year in school) | Master's of Social Work |
| List any appointed positions, boards, commissions, or committees on which you have served, and years of service | None |
| List any organizations to which you belong (professional, technical, community, nonprofit; students should list school organizations) | Burma Center (Employer), Grace Health - Board of Directors, Substance Abuse Council - Board of Directors. Olivie Chin Baptist Church - Member, NAACP - Member |
| Briefly explain your interest, experience, and/or qualifications for the boards for which you are applying | I would like to contribute to the overall economic health and vitality of the community. Increasing property tax valuation and promoting growth in the industrial park will stimulate economic development. This growth can lead to job creation, attract new businesses, and enhance the area's competitiveness in the region, ultimately fostering a more prosperous community for residents and stakeholders alike. |
| Attach additional information | *Field not completed.* |
| Please tell us how you found out about our boards and commissions and/or vacancies | I was invited to apply.. |
| Electronic Signature Agreement | I agree. |

*By signing this form, you acknowledge that any or all information on this form may be verified, and consent to the release of this information for publicity purposes.*

| | |
|---|---|
| Electronic Signature | Tha T. Par |

| | |
|---|---|
| Date | 2/28/2024 |

(Section Break)

(Section Break)

Boards, Councils, and Commissions Interest

Please rank your first, second, and third choices for boards on which you would like to serve. Please check the boxes to indicate your experience and/or credentials for each of your three choices. Thank you!

Airport Advisory Board

Makes policy recommendations to support continued airport development and community economic growth; acts as advocate for current and potential economic value of the airport.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Area International Relations Committee

To foster cultural promotion of the city, and provide a positive environment toward foreign industrialists and their families

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Downtown Development Authority

Provides for a variety of funding options, including tax increment financing mechanism, which can be used to fund public improvements in the downtown district.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Housing Commission

Manages all public housing facilities and rental voucher (Section 8) programs in the city. Public housing facilities include scattered site rental housing, home purchase programs and senior residential developments.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC TIFA/Brownfield Redevelopment Authority

BC Tax Increment Finance Authority. Works to halt a decline of property values, increase property tax valuation, eliminate causes of decline in value, and promote growth in the Fort Custer Industrial Park.

| | |
|---|---|
| Rank | 1 |
| Experience | Live in BC city limits |

BC Transit Local Advisory Council

Advises the City in areas relating to planning, delivery, and operation of public transportation in the community and to provide recommendations and input regarding accessibility including the annual approval of Battle Creek Transit's Vehicle Accessibility Plan.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Transit Local Coordinating Committee

Determines annually how the Specialized Services funds will be allocated among the various sub-recipients, related to transportation services for the elderly and those with disabilities.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Board of Appeals (Housing)

Hears and decides on appeals concerning application or interpretation of the provisions and standards of the Building Code, the International Property Maintenance Code and Chapter 842 of these Codified Ordinances, and to hear appeals of decisions of the Dangerous Buildings Hearing Officer.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Board of Review (Assessing)

Members serve for five years, and must be city electors and property owners. Members may correct/amend assessment rolls, and increase or decrease taxable property assessment or valuation.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Civil Service Commission

Establishes rules applicable to all regular and full-time Fire Department personnel, excluding civilian employees. Members must reside in the city limits for one year, reside within the county for three years, and hold no other government office. There may be no more than two members of the same political party.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Construction Board of Appeals

To hear appeals on building permit denials, and from any other decision pursuant or related to the Act or the State Construction Code. There are five members and one alternate. Members serve two-year terms. A member of the board shall be qualified by experience or training to perform the duties of the board. The board meets as needed.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Dangerous Buildings Hearing Officer

Identifies structures in the city considered to be a public nuisance; serves written notice of a hearing to the owner or party of interest at the address shown on the tax records; and shows cause why the structure(s) should not be ordered demolished, otherwise made safe, or properly maintained. Must have expertise in housing matters, including, but not limited to: engineer, architect, building contractor, building inspector, or member of a community housing organization.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Development Area Citizens Council

An advisory body to a development authority and, ultimately, the City Commission, related to updates to the authority's development plan.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Dickman Road Business Improvement District

Promotes economic activity in the BID along Dickman Road, and provides or contracts for the administration, security, and operation of the district, to include physical improvements and joint marketing.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Downtown Parking System Advisory Committee

Advises city staff and the city's parking administrator on issues related to the city-owned and operated parking system.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Economic Development Corporation

Alleviates unemployment conditions, assists in industry retention and promotes the general welfare of Battle Creek.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Goguac Lake Board

Formed to protect the public health, safety and welfare, and conserve the natural resources and preserve property values around Goguac Lake.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Historic District Commission

Reviews plans for exterior modifications or demolition of buildings within the federal, state, or local historic districts.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Human Relations Board

To increase constructive communication among all people regardless of actual or perceived race, ethnicity, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability, family status, sexual orientation, gender identity, or socioeconomic status. To increase constructive communication between community members, public officials, and community organizations, thereby promoting harmonious and productive relationships within the community, and equitable access to community resources for all. Board shall be representative of management and labor, various religions, various races, and others who have an interest in human relations.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Income Tax Board of Appeals

Attempts to settle city income tax disputes.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Lakeview Downtown Development Authority

The definition of a development area; the origination of a development plan; and the implementation of a development program

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

License Review Board

Provides an opportunity to appeal when an application to operate as a vendor within the city limits is denied or a current Vendor's License becomes subject to suspension or revocation.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Local Development Financing Authority

To govern the affairs of the I-94 Business Park and Certified Technology Park (SmartZone) established by the City of Battle Creek, pursuant to an Agreement (The Battle Creek Aviation and E-Learning SmartZone Agreement) with the Michigan Economic Development Corporation.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Local Officers' Compensation Commission

Determine salaries of elected officials. Shall meet for at least one, and not more than 15, session days in each odd-numbered year. "Session day" is a calendar day on which the commission meets and for which a quorum is present.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Planning Commission

Adopts plans for the city. Also considers requests for zoning classifications and special use permits, and makes recommendations to the City Commission on amendments to the planning and zoning code.

Rank *Field not completed.*

Experience *Field not completed.*

Police/Fire Retirement System Board

Make rules and regulations necessary to properly conduct the business of the police and fire pension system, as directed by law.

Rank *Field not completed.*

Experience *Field not completed.*

Sustainable BC Committee

Increase the city's efforts to incorporate environmentally-responsible policies in the management of its facilities and services, including initiatives outlined in the Climate Protection Act Policy, adopted in August 2006, and the 15 percent by '15 renewable energy policy goal, adopted in March 2007. Will review and recommend environmental/conservation policy for the city, including recommendations for action to the City Commission.

Rank *Field not completed.*

Experience *Field not completed.*

Technical Review Committee

Provides review, input, and recommendations to the city and the City Commission regarding various aspects of the wastewater treatment system and rates.

Rank *Field not completed.*

Experience *Field not completed.*

Tree Advisory Council

Helps develop the annual Tree Work Plan, and issue rules and regulations supplementary to the city's tree ordinance. Establishment meets a Tree City USA criterion.

Rank *Field not completed.*

Experience *Field not completed.*

Water System Advisory Council

Advises and assists with creation of materials and plans to educate the community about the dangers of lead in drinking water, assist with development of public awareness campaign materials, advise and consult on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded, advise and consult on efforts to replace private lead service lines, assist in promoting transparency of data and documents related to lead in drinking water, and collaborate with local community groups to ensure those living in the city have the opportunity to be involved in efforts to educate the community about lead in drinking water.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Youth Advisory Board

To involve area youth in local government policy development and administrative procedures that will improve the leadership development of the community's youth.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Zoning Board of Appeals

Considers requests for variances to the requirement of the planning and zoning code. Typical variance requests include yard setback reductions and the size of commercial signage.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Email not displaying correctly? View it in your browser.

Resolution NO. 386

A Resolution reappointing James Eldridge, Sharon Miller, Jana Davis, Karen Roebuck and Rebecca Squires to the License Review Board.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That the following persons are hereby reappointed to the License Review Board for the City of Battle Creek for a term ending May 3, 2025:

James Eldridge (Ward 1)
128 Althea Avenue

Sharon Miller (Ward 2)
230 Irving Park Drive

Jana Davis (Ward 3)
150 Chestnut Street

Karen Roebuck (Ward 4)
544 Lakeview Avenue

Rebecca Squires (Ward 5)
141 Potter's Court

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Patti Worden, Executive Assistant

**Department:** City Manager

**SUMMARY**

A Resolution reappointing James Eldridge, Sharon Miller, Jana Davis, Karen Roebuck and Rebecca Squires to the License Review Board.

**BUDGETARY CONSIDERATIONS**

Members are paid $15 per day.

**HISTORY, BACKGROUND and DISCUSSION**

Section 864.10 of the Codified Ordinances for the City of Battle Creek provides for a License Review Board to hear appeals of those denied licenses or permits in the City. The License Review Board contains five members representing each Ward of the City and provides the applicant an opportunity to appeal the decision. The Board's charge is to rule on the evidence, with their decision being final.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

The Review Committee is supportive of these reappointments.

---

ATTACHMENTS:

| File Name | Description |
|---|---|
| Eldridge__James_-_2024.pdf | James Eldridge Application |
| Miller__Sharon_-_2024.pdf | Sharon Miller Application |
| Davis__Jana_-_2024.pdf | Jana Davis Application |
| Roebuck__Karen_-_2024.pdf | Karen Roebuck Application |
| Squires__Rebecca_-_2024.pdf | Rebecca Squires Application |

# BOARD AND COMMISSION APPLICATION

## CITY OF BATTLE CREEK

10 N. Division Street
Battle Creek, Michigan 49014-4004
269.966.3378

**PLEASE CHECK THE TOP (3) BOARD(S) OR COMMISSION(S) ON WHICH YOU ARE INTERESTED IN SERVING**

*(This application will remain active for one year from the date of receipt and will be posted on the City website.)*

_____Airport Advisory Board
_____AMSA Construction Board of Appeals
_____Battle Creek Downtown Development Authority
_____Battle Creek Housing Commission
_____Battle Creek Transit Local Advisory Council
_____Battle Creek Transit Local Coordinating Committee
_____Battle Creek TIFA/Brownfield Development Authority
_____Bicycle Advisory Committee
_____Board of Appeals
_____Board of Review (Assessing)
_____Civil Service Commission
_____Columbia Avenue Business Improvement District
_____Dangerous Building Hearings Officer
_____Development Area Citizen's Council
_____Dickman Road Business Improvement District
_____Downtown Parking System Advisory Committee
_____Economic Development Corporation
_____Goguac Lake Board
_____Historic District Commission
_____Human Relations Board
_____Income Tax Board of Appeals
_____International Relations Committee
_____Lakeview Downtown Development Authority
__✓__License Review Board
_____Local Development Financing Authority
_____Local Officers' Compensation Commission
_____Planning Commission
_____Police/Fire Retirement System Board
_____Sustainable BC Committee
_____Technical Review Committee
Tree Advisory Council
_____Water System Advisory Council
_____Youth Advisory Board
_____Zoning Board of Appeals

Name Eldridge (Last) James (First) A (M.I.)

Home Address: 128 Althea Ave, Battle Creek, MI E-mail jameseldridge120@comcast.net

Telephone: Home N/A Work N/A Cell (269) 962-9503

Are you at least 18 years of age? Yes ✓ No ___

Current occupation (students, list school activities) retired

Employer/work address (students, list school) n/a

Educational background/degrees (students, list year in school) 2 years Kellogg Community College

List any appointive positions/boards/commissions or committees on which you have served and year(s) of service Board of Review (Assessor's Office)

List any organizations to which you belong (professional, technical, community, nonprofit; students, list school organizations) Christ United Methodist Church, Battle Creek Pride

Briefly indicate your interest, experience, and/or qualifications for the board for which you are applying. Please be specific (use back of form if necessary. I worked for the City Assessor's Office 35+ years.

I understand that any or all information on this form may be verified. I consent to the release of this information for publicity purposes.

Signature James D. Eldridge Date 2/28/2024

RETURN APPLICATION TO: City Manager's Office, 10 N. Division Street,
Room 206, Battle Creek, MI 49014

# Board and Commission Application

## City of Battle Creek

10 N. Division S.
Battle Creek, MI 49014
269-966-3311

**Please check the top three boards or commissions on which you are interested in serving.**

*(This application will remain active for one year from the date of receipt and will be posted on the City website.)*

| | |
|---|---|
| _____ Airport Advisory Board | _____ Historic District Commission |
| _____ Battle Creek Area International Relations Committee | _____ Human Relations Board |
| _____ Battle Creek Downtown Development Authority | _____ Income Tax Board of Review |
| _____ Battle Creek Housing Commission | _____ Lakeview Downtown Development Authority |
| _____ Battle Creek TIFA/Brownfield Development Authority | X License Review Board |
| _____ Battle Creek Transit Local Advisory Council | _____ Local Development Financing Authority |
| _____ Battle Creek Transit Local Coordinating Committee | _____ Local Officers' Compensation Commission |
| _____ Board of Appeals (Housing) | _____ Planning Commission |
| _____ Board of Review (Assessing) | _____ Police/Fire Retirement System Board |
| _____ Civil Service Commission | _____ Sustainable BC Committee |
| _____ Construction Board of Appeals | _____ Technical Review Committee |
| _____ Dangerous Buildings Hearing Officer | _____ Tree Advisory Council |
| _____ Development Area Citizens Council | _____ Water System Advisory Council |
| _____ Dickman Road Business Improvement District | _____ Youth Advisory Board |
| _____ Downtown Parking System Advisory Committee | _____ Zoning Board of Appeals |
| _____ Economic Development Corporation | |
| _____ Goguac Lake Board | |

**Please tell us how you found out about our boards and commissions and/or vacancies** _____

Name Sharon Miller
Last First M.I.

Home Address 230 Irving Park Drive, Battle Creek, MI 49037 Email butterfly6053@yahoo.com

Telephone Home _____ Work _____ Cell 269-317-8900

Are you at least 18 years of age? Yes X No ____

Current occupation (students, list school activities) Retiree - also volunteer with church and local organizations

Employer/work address (students, list school) Retired - Kelloggs

Educational background/degrees (students, list year in school) _____

List any appointive positions/boards/commissions or committees on which you have served and year(s) of service _____
License Review Board - 3 years

List any organizations to which you belong (professional, technical, community, nonprofit; students, list school organizations) _____

Briefly indicate your interest, experience, and/or qualifications for the board for which you are applying. Please be specific (use back of form if necessary. I serve my community by volunteering in my neighborhood and city. I would be pleased to continue to serve on the License Review Board, serving my city, as needed.

I understand that any or all information on this form may be verified. I consent to the release of this information for publicity purposes.

Signature Sharon K Miller Date 3/7/24

**Return application to:** City Manager's Office, 10 N. Division St., Room 206, Battle Creek, MI 49014

# BOARD AND COMMISSION APPLICATION

## CITY OF BATTLE CREEK

10 N. Division Street
Battle Creek, Michigan 49014-4004
269.966.3378

**PLEASE CHECK THE TOP (3) BOARD(S) OR COMMISSION(S) ON WHICH YOU ARE INTERESTED IN SERVING**

*(This application will remain active for one year from the date of receipt and will be posted on the City website.)*

| | |
|---|---|
| ____ Airport Advisory Board | ____ Goguac Lake Board |
| ____ AMSA Construction Board of Appeals | ✓ Historic District Commission - on |
| ____ Battle Creek Downtown Development Authority | ____ Human Relations Board |
| ____ Battle Creek Housing Commission | ____ Income Tax Board of Appeals |
| ____ Battle Creek Transit Local Advisory Council | ____ International Relations Committee |
| ____ Battle Creek Transit Local Coordinating Committee | ____ Lakeview Downtown Development Authority |
| ____ Battle Creek TIFA/Brownfield Development Authority | 1 License Review Board |
| ____ Bicycle Advisory Committee | ____ Local Development Financing Authority |
| ____ Board of Appeals | ____ Local Officers' Compensation Commission |
| ____ Board of Review (Assessing) | ____ Planning Commission |
| ____ Civil Service Commission | ____ Police/Fire Retirement System Board |
| ____ Columbia Avenue Business Improvement District | ____ Sustainable BC Committee |
| ____ Dangerous Building Hearings Officer | ____ Technical Review Committee |
| ____ Development Area Citizen's Council | 2 Tree Advisory Council |
| ____ Dickman Road Business Improvement District | ____ Water System Advisory Council |
| ____ Downtown Parking System Advisory Committee | ____ Youth Advisory Board |
| ____ Economic Development Corporation | ____ Zoning Board of Appeals |

Name Davis (Last) Jana (First) M. (M.I.)

Home Address: 150 Chestnut St. E-mail janamdavis73@yahoo.com

Telephone: Home 269-275-0923 Work — Cell Same

Are you at least 18 years of age? Yes ✓ No ____

Current occupation (students, list school activities) Administration

Employer/work address (students, list school) 34 - W. Jackson St.

Educational background/degrees (students, list year in school) BS Political Science

List any appointive positions/boards/commissions or committees on which you have served and year(s) of service License Review Board - current Hist dist commission - current

List any organizations to which you belong (professional, technical, community, nonprofit; students, list school organizations) none

Briefly indicate your interest, experience, and/or qualifications for the board for which you are applying. Please be specific (use back of form if necessary. resident. Degree in Finance & Accounting

I understand that any or all information on this form may be verified. I consent to the release of this information for publicity purposes.

Signature _____ Date 2-5-24

RETURN APPLICATION TO: City Manager's Office, 10 N. Division Street, Room 206, Battle Creek, MI 49014

**Patricia S Worden**

**From:** noreply@civicplus.com
**Sent:** Friday, February 2, 2024 5:22 PM
**To:** Rebecca D. Forbes; Ted E. Dearing; Patricia S Worden
**Subject:** Online Form Submittal: *New* City of Battle Creek Boards and Commissions Application

Email sent from outside of the City of Battle Creek. Use caution before clicking links/attachments.

# *New* City of Battle Creek Boards and Commissions Application

City of Battle Creek Board and Commission Application

Please select the **top 3** board(s) or commission(s) on which would like to serve. This application will remain active for one year from the date we receive it and will be posted on the City's website. Thank you for applying!

| | |
|---|---|
| Name | Karen Roebuck |
| Are you 18 years or older? | Yes |
| Home address | 544 Lakeview Ave |
| City | Battle Creek |
| State | MI |
| Zip code | 49015 |
| Email address | Meematoad@sncglobal.net |
| Home phone | 2694255806 |
| Work phone | NA |
| Cell phone | 2694255806 |
| Current occupation (students, list school activities) | Retired |
| Employer and work address (students, list school) | Retired from Summit Pointe |
| Educational background/degrees (students, list current year in school) | BA degree in criminal justice |

| | |
|---|---|
| List any appointed positions, boards, commissions, or committees on which you have served, and years of service | Board of review for the past 2 years, former secretary for the Share Center board of directors |
| List any organizations to which you belong (professional, technical, community, nonprofit; students, list school organizations) | *Field not completed.* |
| Briefly explain your interest, experience, and/or qualifications for the boards for which you are applying | Interested in community involvement. In addition to the board of review for the city assessor I also work the elections. |
| Attach additional information | *Field not completed.* |
| Please tell us how you found out about our boards and commissions and/or vacancies | Vickie Houset asked me if I would be willing to do it |
| Electronic Signature Agreement | I agree. |

*By signing this form, you acknowledge that any or all information on this form may be verified, and consent to the release of this information for publicity purposes.*

| | |
|---|---|
| Electronic Signature | Karen S Roebuck |
| Date | February 2, 2024 |

Boards, Councils, and Commissions Interest

Please rank your first, second, and third choices for boards on which you would like to serve. Please check the boxes to indicate your experience and/or credentials for each of your three choices. Thank you!

Airport Advisory Board

Makes policy recommendations to support continued airport development and community economic growth; acts as advocate for current and potential economic value of the airport.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Area International Relations Committee

To foster cultural promotion of the city, and provide a positive environment toward foreign industrialists and their families

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Downtown Development Authority

Provides for a variety of funding options, including tax increment financing mechanism, which can be used to fund public improvements in the downtown district.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Housing Commission

Manages all public housing facilities and rental voucher (Section 8) programs in the city. Public housing facilities include scattered site rental housing, home purchase programs and senior residential developments.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Transit Local Advisory Council

Advises the City in areas relating to planning, delivery, and operation of public transportation in the community and to provide recommendations and input regarding accessibility including the annual approval of Battle Creek Transit's Vehicle Accessibility Plan.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Transit Local Coordinating Committee

Determines annually how the Specialized Services funds will be allocated among the various sub-recipients, related to transportation services for the elderly and those with disabilities.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC TIFA/Brownfield Redevelopment Authority

BC Tax Increment Finance Authority. Works to halt a decline of property values, increase property tax valuation, eliminate causes of decline in value, and promote growth in the Fort Custer Industrial Park.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Board of Review (Assessing)

Members serve for five years, and must be city electors and property owners. Members may correct/amend assessment rolls, and increase or decrease taxable property assessment or valuation.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Civil Service Commission

Establishes rules applicable to all regular and full-time Fire Department personnel, excluding civilian employees. Members must reside in the city limits for one year, reside within the county for three years, and hold no other government office. There may be no more than two members of the same political party.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Construction Board of Appeals

To hear appeals on building permit denials, and from any other decision pursuant or related to the Act or the State Construction Code. There are five members and one alternate. Members serve two-year terms. A member of the board shall be qualified by experience or training to perform the duties of the board. The board meets as needed.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Community Development Advisory Council

Recommend to City Commission effective and efficient spending of federal Community Development Block Grant Funds. Meets at least once per year, then as needed.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Dangerous Buildings Hearing Officer

Identifies structures in the city considered to be a public nuisance; serves written notice of a hearing to the owner or party of interest at the address shown on the tax records; and shows cause why the structure(s) should not be ordered demolished, otherwise made safe, or properly maintained. Must have expertise in housing matters, including, but not limited to: engineer, architect, building contractor, building inspector, or member of a community housing organization.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Development Area Citizens Council

An advisory body to a development authority and, ultimately, the City Commission, related to updates to the authority's development plan.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Dickman Road Business Improvement District

Promotes economic activity in the BID along Dickman Road, and provides or contracts for the administration, security, and operation of the district, to include physical improvements and joint marketing.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Downtown Parking System Advisory Committee

Advises city staff and the city's parking administrator on issues related to the city-owned and operated parking system.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Economic Development Corporation

Alleviates unemployment conditions, assists in industry retention and promotes the general welfare of Battle Creek.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Goguac Lake Board

Formed to protect the public health, safety and welfare, and conserve the natural resources and preserve property values around Goguac Lake.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Historic District Commission

Reviews plans for exterior modifications or demolition of buildings within the federal, state, or local historic districts.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Housing Board of Appeals

Hears and decides on appeals concerning application or interpretation of the provisions and standards of the Building Code, the International Property Maintenance Code and Chapter 842 of these Codified Ordinances, and to hear appeals of decisions of the Dangerous Buildings Hearing Officer.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Human Relations Board

To increase constructive communication among all people regardless of actual or perceived race, ethnicity, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability, family status, sexual orientation, gender identity, or socioeconomic status. To increase constructive communication between community members, public officials, and community organizations, thereby promoting harmonious and productive relationships within the community, and equitable access to community resources for all. Board shall be representative of management and labor, various religions, various races, and others who have an interest in human relations.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Income Tax Board of Appeals

Attempts to settle city income tax disputes.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Lakeview Downtown Development Authority

The definition of a development area; the origination of a development plan; and the implementation of a development program

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

License Review Board

Provides an opportunity to appeal when an application to operate as a vendor within the city limits is denied or a current Vendor's License becomes subject to suspension or revocation.

| | |
|---|---|
| Rank | 1 |
| Experience | Live in BC city limits |

Local Development Financing Authority

To govern the affairs of the I-94 Business Park and Certified Technology Park (SmartZone) established by the City of Battle Creek, pursuant to an Agreement (The Battle Creek Aviation and E-Learning SmartZone Agreement) with the Michigan Economic Development Corporation.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Local Officers' Compensation Commission

Determine salaries of elected officials. Shall meet for at least one, and not more than 15, session days in each odd-numbered year. "Session day" is a calendar day on which the commission meets and for which a quorum is present.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Planning Commission

Adopts plans for the city. Also considers requests for zoning classifications and special use permits, and makes recommendations to the City Commission on amendments to the planning and zoning code.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Police/Fire Retirement System Board

Make rules and regulations necessary to properly conduct the business of the police and fire pension system, as directed by law.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Sustainable BC Committee

Increase the city's efforts to incorporate environmentally-responsible policies in the management of its facilities and services, including initiatives outlined in the Climate Protection Act Policy, adopted in August 2006, and the 15 percent by '15 renewable energy policy goal, adopted in March 2007. Will review and recommend environmental/conservation policy for the city, including recommendations for action to the City Commission.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Technical Review Committee

Provides review, input, and recommendations to the city and the City Commission regarding various aspects of the wastewater treatment system and rates.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Tree Advisory Council

Helps develop the annual Tree Work Plan, and issue rules and regulations supplementary to the city's tree ordinance. Establishment meets a Tree City USA criterion.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Water System Advisory Council

Advises and assists with creation of materials and plans to educate the community about the dangers of lead in drinking water, assist with development of public awareness campaign materials, advise and consult on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded, advise and consult on efforts to replace private lead service lines, assist in promoting transparency of data and documents related to lead in drinking water, and collaborate with local community groups to ensure those

living in the city have the opportunity to be involved in efforts to educate the community about lead in drinking water.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Youth Advisory Board

To involve area youth in local government policy development and administrative procedures that will improve the leadership development of the community's youth.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Zoning Board of Appeals

Considers requests for variances to the requirement of the planning and zoning code. Typical variance requests include yard setback reductions and the size of commercial signage.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Email not displaying correctly? View it in your browser.

**Patricia S Worden**

**From:** noreply@civicplus.com
**Sent:** Friday, February 2, 2024 12:32 PM
**To:** Rebecca D. Forbes; Ted E. Dearing; Patricia S Worden
**Subject:** Online Form Submittal: *New* City of Battle Creek Boards and Commissions Application

Email sent from outside of the City of Battle Creek. Use caution before clicking links/attachments.

# *New* City of Battle Creek Boards and Commissions Application

City of Battle Creek Board and Commission Application

Please select the **top 3** board(s) or commission(s) on which would like to serve. This application will remain active for one year from the date we receive it and will be posted on the City's website. Thank you for applying!

| | |
|---|---|
| Name | Rebecca A Squires |
| Are you 18 years or older? | Yes |
| Home address | 141 Potter's Ct |
| City | Battle Creek |
| State | MI |
| Zip code | 49015 |
| Email address | beckys141@live.com |
| Home phone | 2692682364 |
| Work phone | *Field not completed.* |
| Cell phone | *Field not completed.* |
| Current occupation (students, list school activities) | Retired |
| Employer and work address (students, list school) | 141 Potter's Ct |
| Educational background/degrees (students, list current year in school) | BS in Business Admin |

| | |
|---|---|
| List any appointed positions, boards, commissions, or committees on which you have served, and years of service | City Commissioner 1999-2002?, Currently Officers compensation Committee, Past ZBA, Many other boards in BC over the last 40 years. |
| List any organizations to which you belong (professional, technical, community, nonprofit; students, list school organizations) | *Field not completed.* |
| Briefly explain your interest, experience, and/or qualifications for the boards for which you are applying | Past City Commissioner so familiar with City policies, etc. |
| Attach additional information | *Field not completed.* |
| Please tell us how you found out about our boards and commissions and/or vacancies | Victoria Houser |
| Electronic Signature Agreement | I agree. |

*By signing this form, you acknowledge that any or all information on this form may be verified, and consent to the release of this information for publicity purposes.*

| | |
|---|---|
| Electronic Signature | Rebecca A Squires |
| Date | 2/2/2024 |

Boards, Councils, and Commissions Interest

Please rank your first, second, and third choices for boards on which you would like to serve. Please check the boxes to indicate your experience and/or credentials for each of your three choices. Thank you!

Airport Advisory Board

Makes policy recommendations to support continued airport development and community economic growth; acts as advocate for current and potential economic value of the airport.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Area International Relations Committee

To foster cultural promotion of the city, and provide a positive environment toward foreign industrialists and their families

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Downtown Development Authority

Provides for a variety of funding options, including tax increment financing mechanism, which can be used to fund public improvements in the downtown district.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Housing Commission

Manages all public housing facilities and rental voucher (Section 8) programs in the city. Public housing facilities include scattered site rental housing, home purchase programs and senior residential developments.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Transit Local Advisory Council

Advises the City in areas relating to planning, delivery, and operation of public transportation in the community and to provide recommendations and input regarding accessibility including the annual approval of Battle Creek Transit's Vehicle Accessibility Plan.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC Transit Local Coordinating Committee

Determines annually how the Specialized Services funds will be allocated among the various sub-recipients, related to transportation services for the elderly and those with disabilities.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

BC TIFA/Brownfield Redevelopment Authority

BC Tax Increment Finance Authority. Works to halt a decline of property values, increase property tax valuation, eliminate causes of decline in value, and promote growth in the Fort Custer Industrial Park.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Board of Review (Assessing)

Members serve for five years, and must be city electors and property owners. Members may correct/amend assessment rolls, and increase or decrease taxable property assessment or valuation.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Civil Service Commission

Establishes rules applicable to all regular and full-time Fire Department personnel, excluding civilian employees. Members must reside in the city limits for one year, reside within the county for three years, and hold no other government office. There may be no more than two members of the same political party.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Construction Board of Appeals

To hear appeals on building permit denials, and from any other decision pursuant or related to the Act or the State Construction Code. There are five members and one alternate. Members serve two-year terms. A member of the board shall be qualified by experience or training to perform the duties of the board. The board meets as needed.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Community Development Advisory Council

Recommend to City Commission effective and efficient spending of federal Community Development Block Grant Funds. Meets at least once per year, then as needed.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Dangerous Buildings Hearing Officer

Identifies structures in the city considered to be a public nuisance; serves written notice of a hearing to the owner or party of interest at the address shown on the tax records; and shows cause why the structure(s) should not be ordered demolished, otherwise made safe, or properly maintained. Must have expertise in housing matters, including, but not limited to: engineer, architect, building contractor, building inspector, or member of a community housing organization.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Development Area Citizens Council

An advisory body to a development authority and, ultimately, the City Commission, related to updates to the authority's development plan.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Dickman Road Business Improvement District

Promotes economic activity in the BID along Dickman Road, and provides or contracts for the administration, security, and operation of the district, to include physical improvements and joint marketing.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Downtown Parking System Advisory Committee

Advises city staff and the city's parking administrator on issues related to the city-owned and operated parking system.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Economic Development Corporation

Alleviates unemployment conditions, assists in industry retention and promotes the general welfare of Battle Creek.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Goguac Lake Board

Formed to protect the public health, safety and welfare, and conserve the natural resources and preserve property values around Goguac Lake.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Historic District Commission

Reviews plans for exterior modifications or demolition of buildings within the federal, state, or local historic districts.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Housing Board of Appeals

Hears and decides on appeals concerning application or interpretation of the provisions and standards of the Building Code, the International Property Maintenance Code and Chapter 842 of these Codified Ordinances, and to hear appeals of decisions of the Dangerous Buildings Hearing Officer.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Human Relations Board

To increase constructive communication among all people regardless of actual or perceived race, ethnicity, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability, family status, sexual orientation, gender identity, or socioeconomic status. To increase constructive communication between community members, public officials, and community organizations, thereby promoting harmonious and productive relationships within the community, and equitable access to community resources for all. Board shall be representative of management and labor, various religions, various races, and others who have an interest in human relations.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Income Tax Board of Appeals

Attempts to settle city income tax disputes.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Lakeview Downtown Development Authority

The definition of a development area; the origination of a development plan; and the implementation of a development program

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

License Review Board

Provides an opportunity to appeal when an application to operate as a vendor within the city limits is denied or a current Vendor's License becomes subject to suspension or revocation.

| | |
|---|---|
| Rank | 2 |
| Experience | Live in BC city limits |

Local Development Financing Authority

To govern the affairs of the I-94 Business Park and Certified Technology Park (SmartZone) established by the City of Battle Creek, pursuant to an Agreement (The Battle Creek Aviation and E-Learning SmartZone Agreement) with the Michigan Economic Development Corporation.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Local Officers' Compensation Commission

Determine salaries of elected officials. Shall meet for at least one, and not more than 15, session days in each odd-numbered year. "Session day" is a calendar day on which the commission meets and for which a quorum is present.

| | |
|---|---|
| Rank | 1 |
| Experience | Live in BC city limits |

Planning Commission

Adopts plans for the city. Also considers requests for zoning classifications and special use permits, and makes recommendations to the City Commission on amendments to the planning and zoning code.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Police/Fire Retirement System Board

Make rules and regulations necessary to properly conduct the business of the police and fire pension system, as directed by law.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Sustainable BC Committee

Increase the city's efforts to incorporate environmentally-responsible policies in the management of its facilities and services, including initiatives outlined in the Climate Protection Act Policy, adopted in August 2006, and the 15 percent by '15 renewable energy policy goal, adopted in March 2007. Will review and recommend environmental/conservation policy for the city, including recommendations for action to the City Commission.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Technical Review Committee

Provides review, input, and recommendations to the city and the City Commission regarding various aspects of the wastewater treatment system and rates.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Tree Advisory Council

Helps develop the annual Tree Work Plan, and issue rules and regulations supplementary to the city's tree ordinance. Establishment meets a Tree City USA criterion.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Water System Advisory Council

Advises and assists with creation of materials and plans to educate the community about the dangers of lead in drinking water, assist with development of public awareness campaign materials, advise and consult on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded, advise and consult on efforts to replace private lead service lines, assist in promoting transparency of data and documents related to lead in drinking water, and collaborate with local community groups to ensure those

living in the city have the opportunity to be involved in efforts to educate the community about lead in drinking water.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Youth Advisory Board

To involve area youth in local government policy development and administrative procedures that will improve the leadership development of the community's youth.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Zoning Board of Appeals

Considers requests for variances to the requirement of the planning and zoning code. Typical variance requests include yard setback reductions and the size of commercial signage.

| | |
|---|---|
| Rank | *Field not completed.* |
| Experience | *Field not completed.* |

Email not displaying correctly? View it in your browser.

# Resolution NO. 387

A Resolution seeking authorization for a change order for mobile video equipment and software services for the City of Battle Creek Police Department with Motorola Solutions, Inc., in an estimated amount of $39,000.88, with unit prices prevailing.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That the City Manager or her designee is authorized to execute a change order to contract no. 2024-039C with Motorola Solutions, Inc., to add recording equipment to an additional interview room, in the estimated amount of $39,000.88, with unit prices prevailing, which will be paid from account 101.14.3080.972.020.

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Chris Huff, Purchasing Agent

**Department:** Purchasing

**SUMMARY**

A Resolution seeking authorization for a change order for mobile video equipment and software services for the City of Battle Creek Police Department with Motorola Solutions, Inc., in an estimated amount of $39,000.88, with unit prices prevailing.

**BUDGETARY CONSIDERATIONS**

**HISTORY, BACKGROUND and DISCUSSION**

Resolution #321 dated 12/19/23 approved a contract #2024-039C for mobile video equipment and software services for the City of Battle Creek Police Department with Motorola Solutions, Inc., in an estimated five-year amount of $1,312,948.53, with unit prices prevailing.

An interview room was mistakenly left off the quote, and the equipment for that room needs to be added to the project. A Resolution is required because of adding items that were not all itemized in the previous contract.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

---

ATTACHMENTS:

| File Name | Description |
|---|---|
| Motorola_Change_order_Interview_Room.pdf | Change order quote |
| 2024-039C_Mobile_Recording_Motorola_Police_PD.pdf | Original contract |

Billing Address,
City of Battle Creek, a Michigan municipal corporation
10 North Division Street, Battle Creek, Michigan 49014

Shipping Address:
BATTLE CREEK POLICE DEPT, CITY OF
BATTLE CREEK POLICE DEPT
195 E MICHIGAN
BATTLE CREEK, MI 49014
US

Quote Date:01/18/2024
Expiration Date:04/17/2024
Quote Created By:
Conor Kelly
Conor.Kelly@motorolasolutions.com

End Customer:
City of Battle Creek, a Michigan municipal corporation
Doug Bagwell
dabagwell@battlecreekmi.gov
269-966-3418

| Line # | Item Number | Description | Qty | Term | Sale Price | Ext. Sale Price |
|---|---|---|---|---|---|---|
| | CommandCentral Interview Room | | | | | |
| 1 | DDN3480A | 5M (16 FT) HD BNC CABLE FOR MODULAR CAMERA | 2 | | $84.80 | $169.60 |
| 2 | TT4144A | 3MP PIN HOLE IMAGER FOR SARIX MODULAR CAMERA | 1 | | $263.94 | $263.94 |
| 3 | TT4145A | 3MP FIXED MICRO BULLET IMAGER FOR SARIX MODULAR CAMERA | 1 | | $263.94 | $263.94 |
| 4 | DS425359 | LOUROE ASK-4 #300 MICROPHONE | 1 | | $636.00 | $636.00 |
| 5 | DDN3425A | SARIX MODULAR CAMERA 2 PORT PROCESSOR UNIT | 1 | | $556.50 | $556.50 |
| 6 | ISV00S02379A | INSTALLATION | 1 | | $4,880.00 | $4,880.00 |

| Line # | Item Number | Description | Qty | Term | Sale Price | Ext. Sale Price |
|---|---|---|---|---|---|---|
| 7 | DDN3486A | 8-PORT GIGABIT MANAGED SWITCH (8) POE+ BUDGET 130W, (2) SFP - NA | 1 | | $810.90 | $810.90 |
| 8 | DSR250XS5YR | COMMANDCENTRAL EDGE APPLIANCE R250XE - 5YR SUPPORT | 1 | | Included | Included |
| 9 | SSV00S03616A | SOFTWARE,COMMANDCENTRAL INTERVIEW ROOM SUBSCRIPTION* | 1 | 5 YEAR | $4,885.00 | $4,885.00 |
| 10 | WGP02310-KIT | ROCKER SWITCH WALLPLATE ASSYINTVWROOM | 1 | | $35.00 | $35.00 |
| 11 | WGW00121-200 | EQUIPMENT INSTALLATION SERVICE | 1 | | $500.00 | $500.00 |
| 12 | WGP20080 | HOLSTER TRIGGER SENSOR, PRIMER, USBCABLE | 100 | | $260.00 | $26,000.00 |

Grand Total $39,000.88(USD)

## Pricing Metric :

Price is indicative of the following -
# of Named Users for CommandCentral - 1
# of Cameras (Streaming Devices) - 4

## Pricing Summary

| | Sale Price | |
|---|---|---|
| Upfront Costs for Hardware, Accessories and Implementation (if applicable), plus Subscription Fee | $35,092.88 | $0.00 |
| Year 2 Subscription Fee | $977.00 | $0.00 |
| Year 3 Subscription Fee | $977.00 | $0.00 |
| Year 4 Subscription Fee | $977.00 | $0.00 |
| Year 5 Subscription Fee | $977.00 | $0.00 |
| Grand Total System Price | $39,000.88 | $0.00 |

**Ship To**
CITY OF BATTLE CREEK
34 DIVISION ST N
BATTLE CREEK, MI 49014

**Bill To**
CITY OF BATTLE CREEK
34 DIVISION ST N
BATTLE CREEK, MI 49014

# Purchase Order

**No.** 2024-00000354

**DATE** 12/20/23

**Accounts payable email:**
**AccountsPayable@battlecreekmi.gov**

**VENDOR** 20911 - MOTOROLA SOLUTIONS INC

**Contact**
MOTOROLA SOLUTIONS INC - REMIT
13104 COLLECTIONS CENTER DR
CHICAGO, IL 60693

PURCHASE ORDER NUMBER MUST APPEAR ON ALL INVOICES, SHIPPERS, BILL OF LADING AND CORRESPONDENCE

**DELIVER BY**
**SHIP VIA**
**FREIGHT TERMS**
PAGE **1 of 1**
**ORIGINATOR:** Christine Huff

**REFERENCE #** Contract #2024-039C

| QUANTITY | UNIT | DESCRIPTION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| 1.0000 | Each | SAFETY/SECURITY EQUIPMENT &SERVICES - Upfront Cost: Hardware/Accessories/Implementation/Subscript. fee<br>101.14.3080.972.020 - General Equipment Equipment & Machinery<br>377,505.20 | 377,505.2000 | $377,505.20 |
| 1.0000 | Each | SAFETY/SECURITY EQUIPMENT &SERVICES - Year 2 Subscription Fee<br>101.14.3080.972.020 - General Equipment Equipment & Machinery<br>234,381.67 | 234,381.6700 | $234,381.67 |
| 1.0000 | Each | SAFETY/SECURITY EQUIPMENT &SERVICES - Year 3 Subscription Fee<br>101.14.3080.972.020 - General Equipment Equipment & Machinery<br>234,381.67 | 234,381.6700 | $234,381.67 |
| 1.0000 | Each | SAFETY/SECURITY EQUIPMENT &SERVICES - Year 4 Subscription Fee<br>101.14.3080.972.020 - General Equipment Equipment & Machinery<br>233,340.00 | 233,340.0000 | $233,340.00 |
| 1.0000 | Each | SAFETY/SECURITY EQUIPMENT &SERVICES - Year 5 Subscription Fee<br>101.14.3080.972.020 - General Equipment Equipment & Machinery<br>233,340.00 | 233,340.0000 | $233,340.00 |
| | | **THIS PURCHASE ORDER SERVES AS YOUR OFFICIAL NOTICE TO PROCEED** | | |
| | | **ACCOUNTS PAYABLE:**<br>AccountsPayable@battlecreekmi.gov<br>Natalie Koopman<br>10 N. Division, Suite 204<br>Battle Creek, MI 49014<br>269-966-3355 x1420 | | |
| | | | TOTAL DUE | $1,312,948.54 |

BLANKET
PURCHASE ORDER

Special Instructions

The City of Battle Creek is a tax exempt municipal agency. See certificate on following page.

Christine L Huff
Purchasing Agent
269-966-1646
clhuff@battlecreekmi.gov

**The articles listed on this order are purchases solely for municipal use and are exempt from all Federal Excise Tax and Sales Tax
**Purchases are exempt from state and local taxes
**Federal Tax ID number 38-6004523
**This order is subject to the PO Terms and Conditions available from our office or website (www.battlecreekmi.gov)

CITY OF Battle Creek MICHIGAN

# Resolution NO. 321

A Resolution authorizing a five-year contract for mobile video equipment and software services for the City of Battle Creek Police Department with Motorola Solutions, Inc., in estimated five-year amount of $1,312,948.53, with unit prices prevailing.

**BATTLE CREEK, MICHIGAN -** 12/19/2023

**Resolved by the Commission of the City of Battle Creek:**

That the City Manager is authorized to execute Contract No. 2024-039C with Motorola Solutions, Inc., for mobile video equipment and software services for the Police Department in an estimated five-year amount of $1,312,948.53, with unit prices prevailing, which will be paid from account 101.14.3080.972.020.

I, Victoria Houser, City Clerk of the City of Battle Creek, hereby certify the above and foregoing is a true and correct copy of a Resolution adopted by the Battle Creek City Commission at a Regular meeting held on December 19, 2023.

Victoria L. Houser

Victoria Houser

---

Battle Creek City Commission
12/19/2023

## Action Summary

**Staff Member:** Chris Huff, Purchasing Agent

**Department:** Purchasing

**SUMMARY**

A Resolution authorizing a five-year contract for mobile video equipment and software services for the City of Battle Creek Police Department with Motorola Solutions, Inc., in estimated five-year amount of $1,312,948.53, with unit prices prevailing.

**BUDGETARY CONSIDERATIONS**

**HISTORY, BACKGROUND and DISCUSSION**

Resolution #213 dated 10/20/20 approved a contract with Utility Associates Inc., for body-worn cameras for the Police Department.

The attached memo from Police Chief Shannon Bagley explains the history and need for this contract for mobile video equipment and software services. Deputy City Attorney Marcel Stoetzel has drafted this contract, and that draft is attached. As always, the City Attorney's Office reviews every contract before the City Manager signs it.

The City's Administrative Code provides exceptions to the sealed bid requirement when it is in the City's best interest to do so, but requires City Commission approval for purchases exceeding $50,000.

**POSITIONS**

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ATTACHMENTS:

| File Name | Description |
|---|---|
| Sole_Source_Justification_Motorola_BWC_s.pdf | Police Chief Bagley memo |

Michigan Department of Treasury
3372 (Rev. 01-21)

# Michigan Sales and Use Tax Certificate of Exemption

**This exemption claim should be completed by the purchaser, provided to the seller, and is not valid unless the information in all four sections is complete. Do not send a copy to Treasury unless one is requested.**

## SECTION 1: TYPE OF PURCHASE Check one of the following:

☐ A. One-Time Purchase
Order or Invoice Number: _____

☐ C. Blanket Certificate
Expiration Date (maximum of four years): _____

☒ B. Blanket Certificate. Recurring Business Relationship

The purchaser completing this form hereby claims exemption from tax on the purchase of tangible personal property or services purchased from the seller named below. This claim is based upon: the purchaser's proposed use of the property or services; OR the purchaser's exempt status.

Seller's Name and Address
MOTOROLA SOLUTIONS INC - COLLECTIONS CENTER DR CHICAGO, IL 60693

## SECTION 2: ITEMS COVERED BY THIS CERTIFICATE

**Check one of the following:**

1. ☒ All items purchased.
2. ☐ Limited to the following items: _____

## SECTION 3: BASIS FOR EXEMPTION CLAIM

**Check one of the following:**

1. ☐ For Lease. Purchaser will lease the property and elects to pay tax based on rental receipts. Enter sales tax license or use tax registration number: _____
2. ☐ For Resale at Retail. Enter Sales Tax License Number: _____
3. ☐ Direct Pay - Authorized to pay use tax on qualified transactions directly to Michigan Treasury under account number: _____

**The following exemptions DO NOT require the purchaser to provide a number:**

4. ☐ Agricultural Production. Enter percentage: _____%
5. ☒ Government Entity (U.S. or its instrumentalities, State of Michigan or its political subdivisions), Nonprofit School, Nonprofit Hospital, Church or House of Religious Worship (circle type of organization)
6. ☐ Contractor (provide *Michigan Sales and Use Tax Contractor Eligibility Statement* (Form 3520)).
7. ☐ For Resale at Wholesale.
8. ☐ Industrial Processing. Enter percentage: _____%
9. ☐ Nonprofit Internal Revenue Code Section 501(c)(3), 501(c)(4), or 501(c)(19) Exempt Organization.
10. ☐ Nonprofit Organization with an authorized letter issued by Michigan Department of Treasury prior to July 17, 1998 (sales tax) or June 13, 1994 (use tax).
11. ☐ Rolling Stock purchased by an Interstate Motor Carrier.
12. ☐ Other (explain): _____

## SECTION 4: CERTIFICATION

*I declare, under penalty of perjury, that the information on this certificate is true, that I have consulted the statutes, administrative rules and other sources of law applicable to my exemption, and that I have exercised reasonable care in assuring that my claim of exemption is valid under Michigan law. In the event this claim is disallowed, I accept full responsibility for the payment of tax, penalty and any accrued interest, including, if necessary, reimbursement to the vendor for tax and accrued interest.*

| Business Name | | Type of Business (see codes on page 2) |
|---|---|---|
| City of Battle Creek | | Government |
| Business Address | City, State, ZIP Code | |
| 10 N Division Street | Battle Creek, MI 49014 | |
| Business Telephone Number (include area code) | Name (Print or Type) | |
| (269) 966-3336 | Aaron B Kuhn | |
| Signature: Aaron B Kuhn | Title: Revenue Services Director | Date Signed: 08/01/2023 |

# Motorola Solutions Customer Agreement

This Motorola Solutions Customer Agreement (the "**MCA**") is entered into between Motorola Solutions, Inc., with offices at 500 W. Monroe Street, Suite 4400, Chicago, IL 60661 ("**Motorola**") and the entity set forth in the signature block below ("**Customer**"). Motorola and Customer will each be referred to herein as a "**Party**" and collectively as the "**Parties**". This Agreement (as defined below) is effective as of the date of the last signature (the "**Effective Date**").

## 1. Agreement.

**1.1.** Scope; Agreement Documents. This MCA governs Customer's purchase of Products (as defined below) and Services (as defined below) from Motorola. Additional terms and conditions applicable to specific Products and Services are set forth in one or more addenda attached to this MCA (each an "**Addendum**", and collectively the "**Addenda**"). In addition, the Parties may agree upon solution descriptions, equipment lists, statements of work, schedules, technical specifications, and other ordering documents setting forth the Products and Services to be purchased by Customer and provided by Motorola and additional rights and obligations of the Parties (the "**Ordering Documents**"). To the extent required by applicable procurement law, a proposal submitted by Motorola in response to a competitive procurement process will be included within the meaning of the term Ordering Documents. This MCA, the Addenda, and any Ordering Documents collectively form the Parties' "**Agreement**".

**1.2.** Order of Precedence. Each Addendum will control with respect to conflicting terms in the MCA, but only as applicable to the Products and Services described in such Addendum. Each Ordering Document will control with respect to conflicting terms in the MCA or any Addenda, but only as applicable to the Products and Services described on such Ordering Document.

## 2. Products and Services.

**2.1.** Products. Motorola will (a) sell hardware provided by Motorola ("**Equipment**"), (b) license software which is either preinstalled on Equipment or installed on Customer-Provided Equipment (as defined below) and licensed to Customer by Motorola for a perpetual or other defined license term ("**Licensed Software**"), and (c) license cloud-based software as a service products and other software which is either preinstalled on Equipment or installed on Customer-Provided Equipment, but licensed to Customer by Motorola on a subscription basis ("**Subscription Software**") to Customer, to the extent each is set forth in an Ordering Document, for Customer's own use in accordance with this Agreement. The Equipment, Licensed Software, and Subscription Software shall collectively be referred to herein as "**Products**", or individually as a "**Product**". At any time during the Term (as defined below), Motorola may substitute any Products at no cost to Customer, if the substitute is substantially similar to the Products set forth in the applicable Ordering Documents.

**2.2.** Services.

2.2.1. Motorola will provide services related to purchased Products ("**Services**"), to the extent set forth in an Ordering Document.

2.2.2. Integration Services; Maintenance and Support Services. If specified in an Ordering Document, Motorola will provide, for the term of such Ordering Document, (a) design, deployment, and integration Services in order to design, install, set up, configure, and/or integrate the applicable Products at the applicable locations ("**Sites**"), agreed upon by the Parties ("**Integration Services**"), or (b)

break/fix maintenance, technical support, or other Services (such as software integration Services) ("**Maintenance and Support Services**"), each as further described in the applicable statement of work. Maintenance and Support Services and Integration Services will each be considered "Services", as defined above.

2.2.3. Service Ordering Documents. The Fees for Services will be set forth in an Ordering Document and any applicable project schedules. A Customer point of contact will be set forth in the applicable statement of work for the Services. For purposes of clarity, each statement of work will be incorporated into, and form an integral part of, the Agreement.

2.2.4. Service Completion. Unless otherwise specified in the applicable Ordering Document, Services described in an Ordering Document will be deemed complete upon Motorola's performance of all Services listed in such Ordering Document ("**Service Completion Date**"); provided, however, that Maintenance and Support Services may be offered on an ongoing basis during a given Ordering Document term, in which case such Maintenance and Support Services will conclude upon the expiration or termination of such Ordering Document.

**2.3.** Non-Preclusion. If, in connection with the Products and Services provided under this Agreement, Motorola makes recommendations, including a recommendation to purchase other products or services, nothing in this Agreement precludes Motorola from participating in a future competitive bidding process or otherwise offering or selling the recommended products or other services to Customer. Customer represents that this paragraph does not violate its procurement standards or other laws, regulations, or policies.

**2.4.** Customer Obligations. Customer will ensure that information Customer provides to Motorola in connection with receipt of Products and Services are accurate and complete in all material respects. Customer will make timely decisions and obtain any required management approvals that are reasonably necessary for Motorola to provide the Products and Services and perform its other duties under this Agreement. Unless the applicable Ordering Document states otherwise, Motorola may rely upon and is not required to evaluate, confirm, reject, modify, or provide advice concerning any assumptions or Customer information, decisions, or approvals described in this Section. If any assumptions in the Ordering Documents or information provided by Customer prove to be incorrect, or if Customer fails to perform any of its obligations under this Agreement, Motorola's ability to perform its obligations may be impacted and changes to the Agreement, including the scope, Fees, and performance schedule may be required.

**2.5.** Documentation. Products and Services may be delivered with documentation for the Equipment, software Products, or data that specifies technical and performance features, capabilities, users, or operation, including training manuals, and other deliverables, such as reports, specifications, designs, plans, drawings, analytics, or other information (collectively, "**Documentation**"). Documentation is and will be owned by Motorola, unless otherwise expressly agreed in an Addendum or Ordering Document that certain Documentation will be owned by Customer. Motorola hereby grants Customer a limited, royalty-free, worldwide, non-exclusive license to use the Documentation solely for its internal business purposes in connection with the Products and Services.

**2.6.** Motorola Tools and Equipment. As part of delivering the Products and Services, Motorola may provide certain tools, equipment, models, and other materials of its own. Such tools and equipment will remain the sole property of Motorola unless they are to be purchased by Customer as Products and are explicitly listed on an Ordering Document. The tools and equipment may be held by Customer for Motorola's use without charge and may be removed from Customer's

premises by Motorola at any time without restriction. Customer will safeguard all tools and equipment while in Customer's custody or control, and be liable for any loss or damage. Upon the expiration or earlier termination of this Agreement, Customer, at its expense, will return to Motorola all tools and equipment in its possession or control.

**2.7.** Authorized Users. Customer will ensure its employees and Authorized Users comply with the terms of this Agreement and will be liable for all acts and omissions of its employees and Authorized Users. Customer is responsible for the secure management of Authorized Users' names, passwords and login credentials for access to Products and Services. "**Authorized Users**" are Customer's employees, full-time contractors engaged for the purpose of supporting the Products and Services that are not competitors of Motorola, and the entities (if any) specified in an Ordering Document or otherwise approved by Motorola in writing (email from an authorized Motorola signatory accepted), which may include affiliates or other Customer agencies.

**2.8.** Export Control. Customer, its employees, and any other Authorized Users will not access or use the Products and Services in any jurisdiction in which the provision of such Products and Services is prohibited under applicable laws or regulations (a "**Prohibited Jurisdiction**"), and Customer will not provide access to the Products and Services to any government, entity, or individual located in a Prohibited Jurisdiction. Customer represents and warrants that (a) it and its Authorized Users are not named on any U.S. government list of persons prohibited from receiving U.S. exports, or transacting with any U.S. person; (b) it and its Authorized Users are not a national of, or a company registered in, any Prohibited Jurisdiction; (c) Customer will not permit its Authorized Users to access or use the Products or Services in violation of any U.S. or other applicable export embargoes, prohibitions or restrictions; and (d) Customer and its Authorized Users will comply with all applicable laws regarding the transmission of technical data exported from the U.S. and the country in which Customer, its employees, and the Authorized Users are located.

**2.9.** Change Orders. Unless a different change control process is agreed upon in writing by the Parties, a Party may request changes to an Addendum or an Ordering Document by submitting a change order to the other Party (each, a "**Change Order**"). If a requested change in a Change Order causes an increase or decrease in the Products or Services, the Parties by means of the Change Order will make appropriate adjustments to the Fees, project schedule, or other matters. Change Orders are effective and binding on the Parties only upon execution of the Change Order by an authorized representative of both Parties.

## 3. Term and Termination.

**3.1.** Term. The term of this MCA ("**Term**") will commence on the Effective Date and continue until six (6) months after the later of (a) the termination, expiration, or discontinuance of services under the last Ordering Document in effect, or (b) the expiration of all applicable warranty periods, unless the MCA is earlier terminated as set forth herein. The applicable Addendum or Ordering Document will set forth the term for the Products and Services governed thereby.

**3.2.** Termination. Either Party may terminate the Agreement or the applicable Addendum or Ordering Document if the other Party breaches a material obligation under the Agreement and does not cure such breach within thirty (30) days after receipt of notice of the breach or fails to produce a cure plan within such period of time. Each Addendum and Ordering Document may be separately terminable as set forth therein.

**3.3.** Suspension of Services. Motorola may terminate or suspend any Products or Services under an Ordering Document if Motorola determines: (a) the related Product license has expired or has terminated for any reason; (b) the applicable Product is being used on a hardware platform,

operating system, or version not approved by Motorola; (c) Customer fails to make any payments when due; or (d) Customer fails to comply with any of its other obligations or otherwise delays Motorola's ability to perform.

**3.4.** Effect of Termination or Expiration. Upon termination for any reason or expiration of this Agreement, an Addendum, or an Ordering Document, Customer and the Authorized Users will return or destroy (at Motorola's option) all Motorola Materials and Motorola's Confidential Information in their possession or control and, as applicable, provide proof of such destruction, except that Equipment purchased by Customer should not be returned. If Customer has any outstanding payment obligations under this Agreement, Motorola may accelerate and declare all such obligations of Customer immediately due and payable by Customer. Notwithstanding the reason for termination or expiration, Customer must pay Motorola for Products and Services already delivered. Customer has a duty to mitigate any damages under this Agreement, including in the event of default by Motorola and Customer's termination of this Agreement.

## 4. Payment and Invoicing.

**4.1.** Fees. Fees and charges applicable to the Products and Services (the "**Fees**") will be as set forth in the applicable Addendum or Ordering Document, and such Fees may be changed by Motorola at any time, except that Motorola will not change the Fees for Products and Services purchased by Customer during the term of an active Ordering Document or during a Subscription Term (as defined and further described in the applicable Addendum). Changes in the scope of Services described in an Ordering Document may require an adjustment to the Fees due under such Ordering Document. If a specific invoicing or payment schedule is set forth in the applicable Addendum or Ordering Document, such schedule will apply solely with respect to such Addendum or Ordering Document. Unless otherwise specified in the applicable Ordering Document, the Fees for any Services exclude expenses associated with unusual and costly Site access requirements (e.g., if Site access requires a helicopter or other equipment), and Customer will reimburse Motorola for these or other expenses incurred by Motorola in connection with the Services.

**4.2.** Taxes. The Fees do not include any excise, sales, lease, use, property, or other taxes, assessments, duties, or regulatory charges or contribution requirements (collectively, "**Taxes**"), all of which will be paid by Customer, except as exempt by law, unless otherwise specified in an Ordering Document. If Motorola is required to pay any Taxes, Customer will reimburse Motorola for such Taxes (including any interest and penalties) within thirty (30) days after Customer's receipt of an invoice therefore. Customer will be solely responsible for reporting the Products for personal property tax purposes, and Motorola will be solely responsible for reporting taxes on its income and net worth.

**4.3.** Invoicing. Motorola will invoice Customer at the frequency set forth in the applicable Addendum or Ordering Document, and Customer will pay all invoices within thirty (30) days of the invoice date or as otherwise specified in the applicable Addendum or Ordering Document. Late payments will be subject to interest charges at the maximum rate permitted by law, commencing upon the due date. Motorola may invoice electronically via email, and Customer agrees to receive invoices via email at the email address set forth in an Ordering Document. Customer acknowledges and agrees that a purchase order or other notice to proceed is not required for payment for Products or Services.

## 5. Sites; Customer-Provided Equipment; Non-Motorola Content.

**5.1.** Access to Sites. Customer will be responsible for providing all necessary permits, licenses, and other approvals necessary for the installation and use of the Products and the performance of the Services at each applicable Site, including for Motorola to perform its obligations hereunder,

and for facilitating Motorola's access to the Sites. No waivers of liability will be imposed on Motorola or its subcontractors by Customer or others at Customer facilities or other Sites, but if and to the extent any such waivers are imposed, the Parties agree such waivers are void.

**5.2.** Site Conditions. Customer will ensure that (a) all Sites are safe and secure, (b) Site conditions meet all applicable industry and legal standards (including standards promulgated by OSHA or other governmental or regulatory bodies), (c) to the extent applicable, Sites have adequate physical space, air conditioning, and other environmental conditions, electrical power outlets, distribution, equipment, connections, and telephone or other communication lines (including modem access and interfacing networking capabilities), and (d) Sites are suitable for the installation, use, and maintenance of the Products and Services. This Agreement is predicated upon normal soil conditions as defined by the version of E.I.A. standard RS-222 in effect on the Effective Date.

**5.3.** Site Issues. Motorola will have the right at any time to inspect the Sites and advise Customer of any deficiencies or non-conformities with the requirements of this **Section 5 – Sites; Customer-Provided Equipment; Non-Motorola Content**. If Motorola or Customer identifies any deficiencies or non-conformities, Customer will promptly remediate such issues or the Parties will select a replacement Site. If a Party determines that a Site identified in an Ordering Document is not acceptable or desired, the Parties will cooperate to investigate the conditions and select a replacement Site or otherwise adjust the installation plans and specifications as necessary. A change in Site or adjustment to the installation plans and specifications may cause a change in the Fees or performance schedule under the applicable Ordering Document.

**5.4.** Customer-Provided Equipment. Certain components, including equipment and software, not provided by Motorola may be required for use of the Products and Services ("**Customer-Provided Equipment**"). Customer will be responsible, at its sole cost and expense, for providing and maintaining the Customer-Provided Equipment in good working order. Customer represents and warrants that it has all rights in Customer-Provided Equipment to permit Motorola to access and use the applicable Customer-Provided Equipment to provide the Products and Services under this Agreement, and such access and use will not violate any laws or infringe any third-party rights (including intellectual property rights). Customer (and not Motorola) will be fully liable for Customer-Provided Equipment, and Customer will immediately notify Motorola of any Customer-Provided Equipment damage, loss, change, or theft that may impact Motorola's ability to provide the Products and Services under this Agreement, and Customer acknowledges that any such events may cause a change in the Fees or performance schedule under the applicable Ordering Document.

**5.5.** Non-Motorola Content. In certain instances, Customer may be permitted to access, use, or integrate Customer or third-party software, services, hardware, content, and data that is not provided by Motorola (collectively, "**Non-Motorola Content**") with or through the Products and Services. If Customer accesses, uses, or integrates any Non-Motorola Content with the Products or Services, Customer will first obtain all necessary rights and licenses to permit Customer's and its Authorized Users' use of the Non-Motorola Content in connection with the Products and Services. Customer will also obtain the necessary rights for Motorola to use such Non-Motorola Content in connection with providing the Products and Services, including the right for Motorola to access, store, and process such Non-Motorola Content (e.g., in connection with Subscription Software), and to otherwise enable interoperation with the Products and Services. Customer represents and warrants that it will obtain the foregoing rights and licenses prior to accessing, using, or integrating the applicable Non-Motorola Content with the Products and Services, and that Customer and its Authorized Users will comply with any terms and conditions applicable to such Non-Motorola Content. If any Non-Motorola Content require access to Customer Data (as

defined below), Customer hereby authorizes Motorola to allow the provider of such Non-Motorola Content to access Customer Data, in connection with the interoperation of such Non-Motorola Content with the Products and Services. Customer acknowledges and agrees that Motorola is not responsible for, and makes no representations or warranties with respect to, the Non-Motorola Content (including any disclosure, modification, or deletion of Customer Data resulting from use of Non-Motorola Content or failure to properly interoperate with the Products and Services). If Customer receives notice that any Non-Motorola Content must be removed, modified, or disabled within the Products or Services, Customer will promptly do so. Motorola will have the right to disable or remove Non-Motorola Content if Motorola believes a violation of law, third-party rights, or Motorola's policies is likely to occur, or if such Non-Motorola Content poses or may pose a security or other risk or adverse impact to the Products or Services, Motorola, Motorola's systems, or any third party (including other Motorola customers). Motorola may provide certain Non-Motorola Content as an authorized sales representative of a third party as set out in an Ordering Document. As an authorized sales representative, the third party's terms and conditions, as set forth in the Ordering Document, will apply to any such sales. Any orders for such Non-Motorola Content will be filled by the third party. Nothing in this Section will limit the exclusions set forth in **Section 7.2 – Intellectual Property Infringement**.

**5.6.** End User Licenses. Notwithstanding any provision to the contrary in the Agreement, certain Non-Motorola Content software are governed by a separate license, EULA, or other agreement, including terms governing third-party equipment or software, such as open source software, included in the Products and Services. Customer will comply, and ensure its Authorized Users comply, with any such additional terms applicable to third-party equipment or software. If provided for in the separate third party license, Customer may have a right to receive source code for such software; a copy of such source code may be obtained free of charge by contacting Motorola.

## 6. Representations and Warranties.

**6.1.** Mutual Representations and Warranties. Each Party represents and warrants to the other Party that (a) it has the right to enter into the Agreement and perform its obligations hereunder, and (b) the Agreement will be binding on such Party.

**6.2.** Motorola Warranties. Subject to the disclaimers and exclusions below, Motorola represents and warrants that (a) Services will be provided in a good and workmanlike manner and will conform in all material respects to the descriptions in the applicable Ordering Document; and (b) for a period of ninety (90) days commencing upon the Service Completion Date for one-time Services, the Services will be free of material defects in materials and workmanship. Other than as set forth in subsection (a) above, recurring Services are not warranted but rather will be subject to the requirements of the applicable Addendum or Ordering Document. Motorola provides other express warranties for Motorola-manufactured Equipment, Motorola-owned software Products, and certain Services. Such express warranties are included in the applicable Addendum or Ordering Document. Such representations and warranties will apply only to the applicable Product or Service that is the subject of such Addendum or Ordering Document.

**6.3.** Warranty Claims; Remedies. To assert a warranty claim, Customer must notify Motorola in writing of the claim prior to the expiration of any warranty period set forth in this MCA or the applicable Addendum or Ordering Document. Unless a different remedy is otherwise expressly set forth for a particular warranty under an Addendum, upon receipt of such claim, Motorola will investigate the claim and use commercially reasonable efforts to repair or replace any confirmed materially non-conforming Product or re-perform any non-conforming Service, at its option. Such remedies are Customer's sole and exclusive remedies for Motorola's breach of a warranty.

Motorola's warranties are extended by Motorola to Customer only, and are not assignable or transferrable.

**6.4.** Pass-Through Warranties. Notwithstanding any provision of this Agreement to the contrary, Motorola will have no liability for third-party software or hardware provided by Motorola; provided, however, that to the extent offered by third-party providers of software or hardware and to the extent permitted by law, Motorola will pass through express warranties provided by such third parties.

**6.5.** WARRANTY DISCLAIMER. EXCEPT FOR THE EXPRESS AND PASS THROUGH WARRANTIES IN THIS AGREEMENT, PRODUCTS AND SERVICES PURCHASED HEREUNDER ARE PROVIDED "AS IS" AND WITH ALL FAULTS. WARRANTIES SET FORTH IN THE AGREEMENT ARE THE COMPLETE WARRANTIES FOR THE PRODUCTS AND SERVICES AND MOTOROLA DISCLAIMS ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND QUALITY. MOTOROLA DOES NOT REPRESENT OR WARRANT THAT USE OF THE PRODUCTS AND SERVICES WILL BE UNINTERRUPTED, ERROR-FREE, OR FREE OF SECURITY VULNERABILITIES, OR THAT THEY WILL MEET CUSTOMER'S PARTICULAR REQUIREMENTS.

## 7. Indemnification.

**7.1.** General Indemnity. Motorola will defend, indemnify, and hold Customer harmless from and against any and all damages, losses, liabilities, and expenses (including reasonable fees and expenses of attorneys) arising from any actual third-party claim, demand, action, or proceeding ("**Claim**") for personal injury, death, or direct damage to tangible property to the extent caused by Motorola's negligence, gross negligence or willful misconduct while performing its duties under an Ordering Document or an Addendum, except to the extent the claim arises from Customer's negligence or willful misconduct. Motorola's duties under this **Section 7.1 – General Indemnity** are conditioned upon: (a) Customer promptly notifying Motorola in writing of the Claim; and (b) Customer cooperating with Motorola and, if requested by Motorola, providing reasonable assistance in the defense of the Claim.

**7.2.** Intellectual Property Infringement. Motorola will defend Customer against any third-party claim alleging that a Motorola-developed or manufactured Product or Service (the "**Infringing Product**") directly infringes a United States patent or copyright ("**Infringement Claim**"), and Motorola will pay all damages finally awarded against Customer by a court of competent jurisdiction for an Infringement Claim, or agreed to in writing by Motorola in settlement of an Infringement Claim. Motorola's duties under this **Section 7.2 – Intellectual Property Infringement** are conditioned upon: (a) Customer promptly notifying Motorola in writing of the Infringement Claim; (b) Motorola having sole control of the defense of the suit and all negotiations for its settlement or compromise; and (c) Customer cooperating with Motorola and, if requested by Motorola, providing reasonable assistance in the defense of the Infringement Claim.

7.2.1. If an Infringement Claim occurs, or in Motorola's opinion is likely to occur, Motorola may at its option and expense: (a) procure for Customer the right to continue using the Infringing Product; (b) replace or modify the Infringing Product so that it becomes non-infringing; or (c) grant Customer (i) a pro-rated refund of any amounts pre-paid for the Infringing Product (if the Infringing Product is a software Product, i.e., Licensed Software or Subscription Software) or (ii) a credit for the Infringing Product, less a reasonable charge for depreciation (if the Infringing Product is Equipment, including Equipment with embedded software).

7.2.2. In addition to the other damages disclaimed under this Agreement, Motorola will have no duty to defend or indemnify Customer for any Infringement Claim that arises from or is based upon: (a) Customer Data, Customer-Provided Equipment, Non-Motorola Content, or third-party equipment, hardware, software, data, or other third-party materials; (b) the combination of the Product or Service with any products or materials not provided by Motorola; (c) a Product or Service designed, modified, or manufactured in accordance with Customer's designs, specifications, guidelines or instructions; (d) a modification of the Product or Service by a party other than Motorola; (e) use of the Product or Service in a manner for which the Product or Service was not designed or that is inconsistent with the terms of this Agreement; or (f) the failure by Customer to use or install an update to the Product or Service that is intended to correct the claimed infringement. In no event will Motorola's liability resulting from an Infringement Claim extend in any way to any payments due on a royalty basis, other than a reasonable royalty based upon revenue derived by Motorola from Customer from sales or license of the Infringing Product.

7.2.3. This **Section 7.2 – Intellectual Property Infringement** provides Customer's sole and exclusive remedies and Motorola's entire liability in the event of an Infringement Claim. For clarity, the rights and remedies provided in this Section are subject to, and limited by, the restrictions set forth in **Section 8 – Limitation of Liability** below.

**7.3.** Customer Indemnity. To the extent allowed by law, Customer will defend, indemnify, and hold Motorola and its subcontractors, subsidiaries and other affiliates harmless from and against any and all damages, losses, liabilities, and expenses (including reasonable fees and expenses of attorneys) arising from any actual or threatened third-party claim, demand, action, or proceeding arising from or related to (a) Customer-Provided Equipment, Customer Data, or Non-Motorola Content, including any claim, demand, action, or proceeding alleging that any such equipment, data, or materials (or the integration or use thereof with the Products and Services) infringes or misappropriates a third-party intellectual property or other right, violates applicable law, or breaches the Agreement; (b) Customer-Provided Equipment's failure to meet the minimum requirements set forth in the applicable Documentation or match the applicable specifications provided to Motorola by Customer in connection with the Products or Services; (c) Customer's (or its service providers, agents, employees, or Authorized User's) negligence or willful misconduct; and (d) Customer's or its Authorized User's breach of this Agreement. This indemnity will not apply to the extent any such claim is caused by Motorola's use of Customer-Provided Equipment, Customer Data, or Non-Motorola Content in violation of the Agreement. Motorola will give Customer prompt, written notice of any claim subject to the foregoing indemnity. Motorola will, at its own expense, cooperate with Customer in its defense or settlement of the claim.

## 8. Limitation of Liability.

**8.1.** DISCLAIMER OF CONSEQUENTIAL DAMAGES. EXCEPT FOR PERSONAL INJURY OR DEATH, MOTOROLA, ITS AFFILIATES, AND ITS AND THEIR RESPECTIVE OFFICERS, DIRECTORS, EMPLOYEES, SUBCONTRACTORS, AGENTS, SUCCESSORS, AND ASSIGNS (COLLECTIVELY, THE "**MOTOROLA PARTIES**") WILL NOT BE LIABLE IN CONNECTION WITH THIS AGREEMENT (WHETHER UNDER MOTOROLA'S INDEMNITY OBLIGATIONS, A CAUSE OF ACTION FOR BREACH OF CONTRACT, UNDER TORT THEORY, OR OTHERWISE) FOR ANY INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, PUNITIVE, OR CONSEQUENTIAL DAMAGES OR DAMAGES FOR LOST PROFITS OR REVENUES, EVEN IF MOTOROLA HAS BEEN ADVISED BY CUSTOMER OR ANY THIRD PARTY OF THE

POSSIBILITY OF SUCH DAMAGES OR LOSSES AND WHETHER OR NOT SUCH DAMAGES OR LOSSES ARE FORESEEABLE.

**8.2.** DIRECT DAMAGES. EXCEPT FOR PERSONAL INJURY OR DEATH, THE TOTAL AGGREGATE LIABILITY OF THE MOTOROLA PARTIES, WHETHER BASED ON A CLAIM IN CONTRACT OR IN TORT, LAW OR EQUITY, RELATING TO OR ARISING OUT OF THE AGREEMENT WILL NOT EXCEED THE FEES SET FORTH IN THE ORDERING DOCUMENT UNDER WHICH THE CLAIM AROSE. NOTWITHSTANDING THE FOREGOING, FOR ANY SUBSCRIPTION SOFTWARE OR FOR ANY RECURRING SERVICES, THE MOTOROLA PARTIES' TOTAL LIABILITY FOR ALL CLAIMS RELATED TO SUCH PRODUCT OR RECURRING SERVICES IN THE AGGREGATE WILL NOT EXCEED THE TOTAL FEES PAID FOR SUCH SUBSCRIPTION SOFTWARE OR RECURRING SERVICE, AS APPLICABLE, DURING THE CONSECUTIVE TWELVE (12) MONTH PERIOD IMMEDIATELY PRECEDING THE EVENT FROM WHICH THE FIRST CLAIM AROSE.

**8.3.** ADDITIONAL EXCLUSIONS. NOTWITHSTANDING ANY OTHER PROVISION OF THIS AGREEMENT, MOTOROLA WILL HAVE NO LIABILITY FOR DAMAGES ARISING OUT OF (A) CUSTOMER DATA, INCLUDING ITS TRANSMISSION TO MOTOROLA, OR ANY OTHER DATA AVAILABLE THROUGH THE PRODUCTS OR SERVICES; (B) CUSTOMER-PROVIDED EQUIPMENT, NON-MOTOROLA CONTENT, THE SITES, OR THIRD-PARTY EQUIPMENT, HARDWARE, SOFTWARE, DATA, OR OTHER THIRD-PARTY MATERIALS, OR THE COMBINATION OF PRODUCTS AND SERVICES WITH ANY OF THE FOREGOING; (C) LOSS OF DATA OR HACKING, RANSOMWARE, OR OTHER THIRD-PARTY ATTACKS OR DEMANDS; (D) MODIFICATION OF PRODUCTS OR SERVICES BY ANY PERSON OTHER THAN MOTOROLA; (E) RECOMMENDATIONS PROVIDED IN CONNECTION WITH OR BY THE PRODUCTS AND SERVICES; (F) DATA RECOVERY SERVICES OR DATABASE MODIFICATIONS; OR (G) CUSTOMER'S OR ANY AUTHORIZED USER'S BREACH OF THIS AGREEMENT OR MISUSE OF THE PRODUCTS AND SERVICES.

**8.4.** Voluntary Remedies. Motorola is not obligated to remedy, repair, replace, or refund the purchase price for the disclaimed issues in **Section 8.3 – Additional Exclusions** above, but if Motorola agrees to provide Services to help resolve such issues, Customer will reimburse Motorola for its reasonable time and expenses, including by paying Motorola any Fees set forth in an Ordering Document for such Services, if applicable.

**8.5.** Statute of Limitations. Customer may not bring any claims against a Motorola Party in connection with this Agreement or the Products and Services more than one (1) year after the date of accrual of the cause of action.

**9. Confidentiality.**

**9.1.** Confidential Information. "**Confidential Information**" means any and all non-public information provided by one Party ("**Discloser**") to the other ("**Recipient**") that is disclosed under this Agreement in oral, written, graphic, machine recognizable, or sample form, being clearly designated, labeled or marked as confidential or its equivalent or that a reasonable businessperson would consider non-public and confidential by its nature. With respect to Motorola, Confidential Information will also include Products and Services, and Documentation, as well as any other information relating to the Products and Services. The nature and existence of this Agreement are considered Confidential Information of the Parties. In order to be considered Confidential Information, information that is disclosed orally must be identified as confidential at the time of disclosure and confirmed by Discloser by submitting a written document to Recipient within thirty (30) days after such disclosure. The written document must contain a summary of the

Confidential Information disclosed with enough specificity for identification purpose and must be labeled or marked as confidential or its equivalent.

**9.2.** Obligations of Confidentiality. During the Term and for a period of three (3) years from the expiration or termination of this Agreement, Recipient will (a) not disclose Confidential Information to any third party, except as expressly permitted in this **Section 9 - Confidentiality**; (b) restrict disclosure of Confidential Information to only those employees (including, employees of any wholly owned subsidiary, a parent company, any other wholly owned subsidiaries of the same parent company), agents or consultants who must access the Confidential Information for the purpose of, and who are bound by confidentiality terms substantially similar to those in, this Agreement; (c) not copy, reproduce, reverse engineer, de-compile or disassemble any Confidential Information; (d) use the same degree of care as for its own information of like importance, but at least use reasonable care, in safeguarding against disclosure of Confidential Information; (e) promptly notify Discloser upon discovery of any unauthorized use or disclosure of the Confidential Information and take reasonable steps to regain possession of the Confidential Information and prevent further unauthorized actions or other breach of this Agreement; and (f) only use the Confidential Information as needed to fulfill its obligations and secure its rights under this Agreement.

**9.3.** Exceptions. Recipient is not obligated to maintain as confidential any information that Recipient can demonstrate by documentation (a) is publicly available at the time of disclosure or becomes available to the public without breach of this Agreement; (b) is lawfully obtained from a third party without a duty of confidentiality to Discloser; (c) is otherwise lawfully known to Recipient prior to such disclosure without a duty of confidentiality to Discloser; or (d) is independently developed by Recipient without the use of, or reference to, any of Discloser's Confidential Information or any breach of this Agreement. Additionally, Recipient may disclose Confidential Information to the extent required by law, including a judicial or legislative order or proceeding.

**9.4.** Ownership of Confidential Information. All Confidential Information is and will remain the property of Discloser and will not be copied or reproduced without the express written permission of Discloser (including as permitted herein). Within ten (10) days of receipt of Discloser's written request, Recipient will return or destroy all Confidential Information to Discloser along with all copies and portions thereof, or certify in writing that all such Confidential Information has been destroyed. However, Recipient may retain (a) one (1) archival copy of the Confidential Information for use only in case of a dispute concerning this Agreement and (b) Confidential Information that has been automatically stored in accordance with Recipient's standard backup or recordkeeping procedures, provided, however that Recipient will remain subject to the obligations of this Agreement with respect to any Confidential Information retained subject to clauses (a) or (b). No license, express or implied, in the Confidential Information is granted to the Recipient other than to use the Confidential Information in the manner and to the extent authorized by this Agreement. Discloser represents and warrants that it is authorized to disclose any Confidential Information it discloses pursuant to this Agreement.

## 10. Proprietary Rights; Data; Feedback.

**10.1.** Data Definitions. The following terms will have the stated meanings: "**Customer Contact Data**" means data Motorola collects from Customer, its Authorized Users, and their end users for business contact purposes, including marketing, advertising, licensing and sales purposes; "**Service Use Data**" means data generated by Customer's use of the Products and Services or by Motorola's support of the Products and Services, including personal information, product performance and error information, activity logs and date and time of use; "**Customer Data**" means data, information, and content, including images, text, videos, documents, audio, telemetry, location and structured data base records, provided by, through, or on behalf of

Customer, its Authorized Users, and their end users through the use of the Products and Services. Customer Data does not include Customer Contact Data, Service Use Data, or information from publicly available sources or other Third-Party Data or Motorola Data; **"Third-Party Data"** means information obtained by Motorola from publicly available sources or its third party content providers and made available to Customer through the Products or Services; "**Motorola Data**" means data owned or licensed by Motorola; "**Feedback**" means comments or information, in oral or written form, given to Motorola by Customer or Authorized Users, including their end users, in connection with or relating to the Products or Services; and **"Process"** or **"Processing"** means any operation or set of operations which is performed on personal information or on sets of personal information, whether or not by automated means, such as collection, recording, copying, analyzing, caching, organization, structuring, storage, adaptation, or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction.

**10.2.** Motorola Materials. Customer acknowledges that Motorola may use or provide Customer with access to software, tools, data, and other materials, including designs, utilities, models, methodologies, systems, and specifications, which Motorola has developed or licensed from third parties (including any corrections, bug fixes, enhancements, updates, modifications, adaptations, translations, de-compilations, disassemblies, or derivative works of the foregoing, whether made by Motorola or another party) (collectively, "**Motorola Materials**"). The Products and Services, Motorola Data, Third-Party Data, and Documentation, are considered Motorola Materials. Except when Motorola has expressly transferred title or other interest to Customer by way of an Addendum or Ordering Document, the Motorola Materials are the property of Motorola or its licensors, and Motorola or its licensors retain all right, title and interest in and to the Motorola Materials (including, all rights in patents, copyrights, trademarks, trade names, trade secrets, know-how, other intellectual property and proprietary rights, and all associated goodwill and moral rights). For clarity, this Agreement does not grant to Customer any shared development rights in or to any Motorola Materials or other intellectual property, and Customer agrees to execute any documents and take any other actions reasonably requested by Motorola to effectuate the foregoing. Motorola and its licensors reserve all rights not expressly granted to Customer, and no rights, other than those expressly granted herein, are granted to Customer by implication, estoppel or otherwise. Customer will not modify, disassemble, reverse engineer, derive source code or create derivative works from, merge with other software, distribute, sublicense, sell, or export the Products and Services or other Motorola Materials, or permit any third party to do so.

**10.3.** Ownership of Customer Data. Customer retains all right, title and interest, including intellectual property rights, if any, in and to Customer Data. Motorola acquires no rights to Customer Data except those rights granted under this Agreement including the right to Process and use the Customer Data as set forth in **Section 10.4 – Processing Customer Data** below and in other applicable Addenda. The Parties agree that with regard to the Processing of personal information which may be part of Customer Data, Customer is the controller and Motorola is the processor, and may engage sub-processors pursuant to **Section 10.4.3 – Sub-processors**.

**10.4.** Processing Customer Data.

10.4.1. Motorola Use of Customer Data. To the extent permitted by law, Customer grants Motorola and its subcontractors a right to use Customer Data and a royalty-free, worldwide, non-exclusive license to use Customer Data (including to process, host, cache, store, reproduce, copy, modify, combine, analyze, create derivative works from such Customer Data and to communicate, transmit, and distribute such Customer Data to third parties engaged by Motorola) to (a) perform Services and provide Products under the Agreement, (b) analyze the Customer Data to operate,

maintain, manage, and improve Motorola Products and Services, and (c) create new products and services. Customer agrees that this Agreement, along with the Documentation, are Customer's complete and final documented instructions to Motorola for the processing of Customer Data. Any additional or alternate instructions must be agreed to according to the Change Order process. Customer represents and warrants to Motorola that Customer's instructions, including appointment of Motorola as a processor or sub-processor, have been authorized by the relevant controller.

10.4.2. Collection, Creation, Use of Customer Data. Customer further represents and warrants that the Customer Data, Customer's collection, creation, and use of the Customer Data (including in connection with Motorola's Products and Services), and Motorola's use of such Customer Data in accordance with the Agreement, will comply with all laws and will not violate any applicable privacy notices or infringe any third-party rights (including intellectual property and privacy rights). It is Customer's responsibility to obtain all required consents, provided all necessary notices, and meet any other applicable legal requirements with respect to collection and use (including Motorola's use) of the Customer Data as described in the Agreement.

10.4.3. Sub-processors. Customer agrees that Motorola may engage sub-processors who in turn may engage additional sub-processors to Process personal data in accordance with this Agreement. When engaging sub-processors, Motorola will enter into agreements with the sub-processors to bind them to data processing obligations to the extent required by law.

**10.5.** Data Retention and Deletion. Except as expressly provided otherwise under the Agreement, Motorola will delete all Customer Data following termination or expiration of this MCA or the applicable Addendum or Ordering Document, with such deletion to occur no later than ninety (90) days following the applicable date of termination or expiration, unless otherwise required to comply with applicable law. Any requests for the exportation or download of Customer Data must be made by Customer to Motorola in writing before expiration or termination, subject to **Section 13.9 – Notices**. Motorola will have no obligation to retain such Customer Data beyond expiration or termination unless the Customer has purchased extended storage from Motorola through a mutually executed Ordering Document.

**10.6.** Service Use Data. Customer understands and agrees that Motorola may collect and use Service Use Data for its own purposes, including the uses described below. Motorola may use Service Use Data to (a) operate, maintain, manage, and improve existing and create new products and services, (b) test products and services, (c) to aggregate Service Use Data and combine it with that of other users, and (d) to use anonymized or aggregated data for marketing, research or other business purposes. Service Use Data may be disclosed to third parties. It is Customer's responsibility to notify Authorized Users of Motorola's collection and use of Service Use Data and to obtain any required consents, provide all necessary notices, and meet any other applicable legal requirements with respect to such collection and use, and Customer represents and warrants to Motorola that it has complied and will continue to comply with this Section.

**10.7.** Third-Party Data and Motorola Data. Motorola Data and Third-Party Data may be available to Customer through the Products and Services. Customer and its Authorized Users may use Motorola Data and Third-Party Data as permitted by Motorola and the applicable Third-Party Data provider, as described in the applicable Addendum. Unless expressly permitted in the applicable Addendum, Customer will not, and will ensure its Authorized Users will not: (a) use the Motorola Data or Third-Party Data for any purpose other than Customer's internal business purposes; (b)

disclose the data to third parties; (c) “white label” such data or otherwise misrepresent its source or ownership, or resell, distribute, sublicense, or commercially exploit the data in any manner; (d) use such data in violation of applicable laws; (e) remove, obscure, alter, or falsify any marks or proprietary rights notices indicating the source, origin, or ownership of the data; or (f) modify such data or combine it with Customer Data or other data or use the data to build databases. Additional restrictions may be set forth in the applicable Addendum. Any rights granted to Customer or Authorized Users with respect to Motorola Data or Third-Party Data will immediately terminate upon termination or expiration of the applicable Addendum, Ordering Document, or this MCA. Further, Motorola or the applicable Third-Party Data provider may suspend, change, or terminate Customer’s or any Authorized User’s access to Motorola Data or Third-Party Data if Motorola or such Third-Party Data provider believes Customer’s or the Authorized User’s use of the data violates the Agreement, applicable law or Motorola’s agreement with the applicable Third-Party Data provider. Upon termination of Customer’s rights to use any Motorola Data or Third-Party Data, Customer and all Authorized Users will immediately discontinue use of such data, delete all copies of such data, and certify such deletion to Motorola. Notwithstanding any provision of the Agreement to the contrary, Motorola will have no liability for Third-Party Data or Motorola Data available through the Products and Services. Motorola and its Third-Party Data providers reserve all rights in and to Motorola Data and Third-Party Data not expressly granted in an Addendum or Ordering Document.

**10.8.** Feedback. Any Feedback provided by Customer is entirely voluntary, and will not create any confidentiality obligation for Motorola, even if designated as confidential by Customer. Motorola may use, reproduce, license, and otherwise distribute and exploit the Feedback without any obligation or payment to Customer or Authorized Users and Customer represents and warrants that it has obtained all necessary rights and consents to grant Motorola the foregoing rights.

**10.9.** Improvements; Products and Services. The Parties agree that, notwithstanding any provision of this MCA or the Agreement to the contrary, all fixes, modifications and improvements to the Services or Products conceived of or made by or on behalf of Motorola that are based either in whole or in part on the Feedback, Customer Data, or Service Use Data (or otherwise) are the exclusive property of Motorola and all right, title and interest in and to such fixes, modifications or improvements will vest solely in Motorola. Customer agrees to execute any written documents necessary to assign any intellectual property or other rights it may have in such fixes, modifications or improvements to Motorola.

## 11. Force Majeure; Delays Caused by Customer.

**11.1.** Force Majeure. Except for Customer’s payment obligations hereunder, neither Party will be responsible for nonperformance or delayed performance due to events outside of its reasonable control. If performance will be significantly delayed, the affected Party will provide notice to the other Party, and the Parties will agree (in writing) upon a reasonable extension to any applicable performance schedule.

**11.2.** Delays Caused by Customer. Motorola’s performance of the Products and Services will be excused for delays caused by Customer or its Authorized Users or subcontractors, or by failure of any assumptions set forth in this Agreement (including in any Addendum or Ordering Document). In the event of a delay under this **Section 11.2 – Delays Caused by Customer**, (a) Customer will continue to pay the Fees as required hereunder, (b) the Parties will agree (in writing) upon a reasonable extension to any applicable performance schedule, and (c) Customer will compensate Motorola for its out-of-pocket costs incurred due to the delay (including those incurred by Motorola’s affiliates, vendors, and subcontractors).

**12. Disputes.** The Parties will use the following procedure to resolve any disputes relating to or arising out of this Agreement (each, a "**Dispute**"):

**12.1.** Governing Law. All matters relating to or arising out of the Agreement are governed by the laws of the State of Michigan. The terms of the U.N. Convention on Contracts for the International Sale of Goods and the Uniform Computer Information Transactions Act will not apply.

**12.2.** Negotiation; Mediation. Either Party may initiate dispute resolution procedures by sending a notice of Dispute ("**Notice of Dispute**") to the other Party. The Parties will attempt to resolve the Dispute promptly through good faith negotiations, including timely escalation of the Dispute to executives who have authority to settle the Dispute (and who are at a higher level of management than the persons with direct responsibility for the matter). All in person meetings under this **Section 12.2 – Negotiation; Mediation** will take place in Battle Creek, Michigan, and all communication relating to the Dispute resolution will be maintained in strict confidence by the Parties. Notwithstanding the foregoing, any Dispute arising from or relating to Motorola's intellectual property rights will not be subject to negotiation or mediation in accordance with this Section, but instead will be decided by a court of competent jurisdiction, in accordance with **Section 12.3 – Litigation, Venue, Jurisdiction** below.

**12.3.** Litigation, Venue, Jurisdiction. If a Third-Party intellectual property rights Dispute under **7.2 – Intellectual Property Infringement** has not been resolved by good faith negotiation, Motorola may submit the Dispute exclusively to a court in Calhoun County, Michigan. Each Party expressly consents to the exclusive jurisdiction of such courts for resolution of any intellectual property rights Dispute.

**12.4.** Litigation, Venue, Jurisdiction generally. If a Dispute between the Parties is not resolved by good faith negotiation, the Parties consent to the exclusive jurisdiction of the courts (i) in the United States District Court for the Western District of Michigan; or (ii) in any court of the State of Michigan sitting in Calhoun County, if there is no federal subject matter jurisdiction.

**13. General.**

**13.1.** Compliance with Laws. Each Party will comply with applicable laws in connection with the performance of its obligations under this Agreement, including that Customer will ensure its and its Authorized Users' use of the Products and Services complies with law (including privacy laws), and Customer will obtain any FCC and other licenses or authorizations (including licenses or authorizations required by foreign regulatory bodies) required for its and its Authorized Users' use of the Products and Services. Motorola may, at its discretion, cease providing or otherwise modify Products and Services (or any terms related thereto in an Addendum or Ordering Document), in order to comply with any changes in applicable law.

**13.2.** Audit; Monitoring. Motorola will have the right to monitor and audit use of the Products, which may also include access by Motorola to Customer Data and Service Use Data. Customer will provide notice of such monitoring to its Authorized Users and obtain any required consents, including individual end users, and will cooperate with Motorola in any monitoring or audit. Customer will maintain during the Term, and for two (2) years thereafter, accurate records relating to any software licenses granted under this Agreement to verify compliance with this Agreement. Motorola or a third party ("**Auditor**") may inspect Customer's and, as applicable, Authorized Users' premises, books, and records. Motorola will pay expenses and costs of the Auditor, unless Customer is found to be in violation of the terms of the Agreement, in which case Customer will be responsible for such expenses and costs.

**13.3.** Assignment and Subcontracting. Neither Party may assign or otherwise transfer this Agreement without the prior written approval of the other Party. Motorola may assign or otherwise transfer this Agreement or any of its rights or obligations under this Agreement without consent (a) for financing purposes, (b) in connection with a merger, acquisition or sale of all or substantially all of its assets, (c) as part of a corporate reorganization, or (d) to a subsidiary corporation. Subject to the foregoing, this Agreement will be binding upon the Parties and their respective successors and assigns.

**13.4.** Waiver. A delay or omission by either Party to exercise any right under this Agreement will not be construed to be a waiver of such right. A waiver by either Party of any of the obligations to be performed by the other, or any breach thereof, will not be construed to be a waiver of any succeeding breach or of any other obligation. All waivers must be in writing and signed by the Party waiving its rights.

**13.5.** Severability. If any provision of the Agreement is found by a court of competent jurisdiction to be invalid, illegal, or otherwise unenforceable, such provision will be deemed to be modified to reflect as nearly as possible the original intentions of the Parties in accordance with applicable law. The remaining provisions of this Agreement will not be affected, and each such provision will be valid and enforceable to the full extent permitted by applicable law.

**13.6.** Independent Contractors. Each Party will perform its duties under this Agreement as an independent contractor. The Parties and their personnel will not be considered to be employees or agents of the other Party. Nothing in this Agreement will be interpreted as granting either Party the right or authority to make commitments of any kind for the other. This Agreement will not constitute, create, or be interpreted as a joint venture, partnership, or formal business organization of any kind.

**13.7.** Third-Party Beneficiaries. The Agreement is entered into solely between, and may be enforced only by, the Parties. Each Party intends that the Agreement will not benefit, or create any right or cause of action in or on behalf of, any entity other than the Parties. Notwithstanding the foregoing, a licensor or supplier of third-party software included in the software Products will be a direct and intended third-party beneficiary of this Agreement.

**13.8.** Interpretation. The section headings in this Agreement are included only for convenience The words “including” and “include” will be deemed to be followed by the phrase “without limitation”. This Agreement will be fairly interpreted in accordance with its terms and conditions and not for or against either Party.

**13.9.** Notices. Notices required under this Agreement to be given by one Party to the other must be in writing and either personally delivered or sent to the address provided by the other Party by certified mail, return receipt requested and postage prepaid (or by a recognized courier service, such as FedEx, UPS, or DHL), and will be effective upon receipt.

**13.10.** Cumulative Remedies. Except as specifically stated in this Agreement, all remedies provided for in this Agreement will be cumulative and in addition to, and not in lieu of, any other remedies available to either Party at law, in equity, by contract, or otherwise. Except as specifically stated in this Agreement, the election by a Party of any remedy provided for in this Agreement or otherwise available to such Party will not preclude such Party from pursuing any other remedies available to such Party at law, in equity, by contract, or otherwise.

**13.11.** Survival. The following provisions will survive the expiration or termination of this Agreement for any reason: **Section 2.4 – Customer Obligations**; **Section 3.4 – Effect of Termination or Expiration**; **Section 4 – Payment and Invoicing**; **Section 6.5 – Warranty**

**Disclaimer**; **Section 7.3 – Customer Indemnity**; **Section 8 – Limitation of Liability**; **Section 9 – Confidentiality**; **Section 10 – Proprietary Rights; Data**; **Feedback**; **Section 11 – Force Majeure; Delays Caused by Customer**; **Section 12 – Disputes**; and **Section 13 – General**.

**13.12.** Entire Agreement. This Agreement, including all Addenda and Ordering Documents, constitutes the entire agreement of the Parties regarding the subject matter hereto, and supersedes all previous agreements, proposals, and understandings, whether written or oral, relating to this subject matter. This Agreement may be executed in multiple counterparts, and will have the same legal force and effect as if the Parties had executed it as a single document. The Parties may sign in writing or by electronic signature. An electronic signature, facsimile copy, or computer image of a signature, will be treated, and will have the same effect as an original signature, and will have the same effect, as an original signed copy of this document. This Agreement may be amended or modified only by a written instrument signed by authorized representatives of both Parties. The preprinted terms and conditions found on any Customer purchase order, acknowledgment, or other form will not be considered an amendment or modification or part of this Agreement, even if a representative of each Party signs such document.

The Parties hereby enter into this MCA as of the Effective Date.

**Motorola: Motorola Solutions, Inc.**

By: _____

Name: Norberto Colon

Title: TVP, MSSI

Date: 12/20/23

**Customer: City of Battle Creek, a Michigan municipal corporation**

By: _____

Name: Ted Dearing

Title: Assist. City Manager

Date: 12/20/23

Marcel Stoetzel
To: Chris L Huff

Wed 12/20/2023 2:39 PM

Chris,

I have reviewed and approve for the City Manager's signature contract no. 2024-039C with Motorola Solutions, Inc.

CITY OF
**Battle Creek**
MICHIGAN

# Resolution NO. 197

A Resolution seeking authorization for legal signatures in the absence of the City Manager.

**BATTLE CREEK, MICHIGAN -** 7/18/2023

**Resolved by the Commission of the City of Battle Creek:**

That Ted Dearing-Assistant City Manager, Marcie Gillette-Community Services Director, and Aaron Kuhn-Assistant Revenue Services Director, are authorized, respectively, to sign any and all documents on behalf of the City Manager during any period she is absent from the City, effective July 19, 2023.

I, Victoria Houser, City Clerk of the City of Battle Creek, hereby certify the above and foregoing is a true and correct copy of a Resolution adopted by the Battle Creek City Commission at a Regular meeting held on July 18, 2023.

Victoria L. Houser
Victoria Houser

Battle Creek City Commission
7/18/2023
**Action Summary**

**Staff Member:** Rebecca Forbes, Executive Assistant

**Department:** City Manager

**SUMMARY**
A Resolution seeking authorization for legal signatures in the absence of the City Manager.
**BUDGETARY CONSIDERATIONS**

**HISTORY, BACKGROUND and DISCUSSION**
The administration needs authorization in place for legal signatures on behalf of the City in the absence of the City Manager.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

ATTACHMENTS:

| File Name | Description |
|---|---|
| No Attachments Available | |

## Equipment Purchase and Software License Addendum

This Equipment Purchase and Software License Addendum (this "**EPSLA**") is entered into between Motorola Solutions, Inc., with offices at 500 W. Monroe Street, Suite 4400, Chicago, IL 60661 ("**Motorola**") and the entity set forth in the MCA ("**Customer**"), and will be subject to, and governed by, the terms of the Motorola Solutions Customer Agreement entered into between the Parties, effective as of [12-20-23 ] (the "**MCA**"). Capitalized terms used in this EPSLA, but not defined herein, will have the meanings set forth in the MCA.

**1. Addendum.** This EPSLA governs Customer's purchase of Equipment and license of Licensed Software (and, if set forth in an Ordering Document, related Services) from Motorola, and will form part of the Parties' Agreement.

**2. Delivery of Equipment and Licensed Software.**

**2.1.** Delivery and Risk of Loss. Motorola will provide to Customer the Products (and, if applicable, related Services) set forth in an Ordering Document, in accordance with the terms of the Agreement. Motorola will, using commercially reasonable practices, pack the ordered Equipment and ship such Equipment to the Customer address set forth in the applicable Ordering Document or otherwise provided by Customer in writing, using a carrier selected by Motorola. Notwithstanding the foregoing, delivery of Equipment (and any incorporated Licensed Software) will occur, and title and risk of loss for the Equipment will pass to Customer, upon shipment by Motorola in accordance with Ex Works, Motorola's premises (Incoterms 2020). Customer will pay all shipping costs, taxes, and other charges applicable to the shipment and import or export of the Products and Services, as applicable, and Customer will be responsible for reporting the Products for personal property tax purposes. Delivery of Licensed Software for installation on Equipment or Customer-Provided Equipment will occur upon the earlier of (a) electronic delivery of the Licensed Software by Motorola, and (b) the date Motorola otherwise makes the Licensed Software available for download by Customer. If agreed upon in an Ordering Document, Motorola will also provide Services related to such Products.

**2.2.** Delays. Any shipping dates set forth in an Ordering Document are approximate, and while Motorola will make reasonable efforts to ship Products by any such estimated shipping date, Motorola will not be liable for any delay or related damages to Customer. Time for delivery will not be of the essence, and delays will not constitute grounds for cancellation, penalties, termination, or a refund.

**2.3.** Beta Services. If Motorola makes any beta version of a software application ("**Beta Service**") available to Customer, Customer may choose to use such Beta Service at its own discretion, provided, however, that Customer will use the Beta Service solely for purposes of Customer's evaluation of such Beta Service, and for no other purpose. Customer acknowledges and agrees that all Beta Services are offered "as-is" and without any representations or warranties or other commitments or protections from Motorola. Motorola will determine the duration of the evaluation period for any Beta Service, in its sole discretion, and Motorola may discontinue any Beta Service at any time. Customer acknowledges that Beta Services, by their nature, have not been fully tested and may contain defects or deficiencies.

**3. Licensed Software License and Restrictions.**

**3.1.** Licensed Software License. Subject to Customer's and its Authorized Users' compliance with the Agreement (including payment terms), Motorola hereby grants Customer and its Authorized Users a limited, non-transferable, non-sublicenseable, and non-exclusive license to use the Licensed Software identified in an Ordering Document, in object code form only, and the

associated Documentation, solely in connection with the Equipment provided by Motorola or authorized Customer-Provided Equipment (as applicable, the "**Designated Products**") and solely for Customer's internal business purposes. Unless otherwise stated in an Addendum or the Ordering Document, the foregoing license grant will be limited to the number of licenses set forth in the applicable Ordering Document and will continue for the life of the applicable Designated Product. Except as otherwise permitted in an applicable Addendum or Ordering Document, Customer may install, access, and use Licensed Software only in Customer's owned or controlled facilities, including any authorized mobile sites; provided, however, that Authorized Users using authorized mobile or handheld devices may also log into and access the Licensed Software remotely from any location.

**3.2.** Subscription License Model. If the Parties mutually agree that any Licensed Software purchased under this EPSLA will be replaced with or upgraded to Subscription Software, then upon such time which the Parties execute the applicable Ordering Document, the licenses granted under this EPSLA will automatically terminate, and such Subscription Software will be governed by the terms of the applicable Addendum under this Agreement.

**3.3.** Customer Restrictions. Customers and Authorized Users will comply with the applicable Documentation in connection with their use of the Products. Customer will not and will not allow others, including the Authorized Users, to: (a) make the Licensed Software available for use by unauthorized third parties, including via a commercial rental or sharing arrangement; (b) reverse engineer, disassemble, or reprogram the Licensed Software or any portion thereof to a human-readable form; (c) modify, create derivative works of, or merge the Licensed Software with other software or equipment; (d) copy, reproduce, distribute, lend, lease, or transfer the Licensed Software or Documentation for or to any third party without the prior express written permission of Motorola; (e) take any action that would cause the Licensed Software or Documentation to be placed in the public domain; (f) use the Licensed Software to compete with Motorola; or (g) remove, alter, or obscure, any copyright or other notice.

**3.4.** Copies. Customer may make one (1) copy of the Licensed Software solely for archival, back-up, or disaster recovery purposes during the term of the applicable Licensed Software license. Customer may make as many copies of the Documentation reasonably required for the internal use of the Licensed Software during such Licensed Software's license term. Unless otherwise authorized by Motorola in writing, Customer will not, and will not enable or allow any third party to: (a) install a licensed copy of the Licensed Software on more than one (1) unit of a Designated Product; or (b) copy onto or transfer Licensed Software installed in a unit of a Designated Product onto another device. Customer may temporarily transfer Licensed Software installed on a Designated Product to another device if the Designated Product is inoperable or malfunctioning, if Customer provides written notice to Motorola of the temporary transfer and identifies the device on which the Licensed is transferred. Temporary transfer of the Licensed Software to another device must be discontinued when the original Designated Product is returned to operation and the Licensed Software must be removed from the other device. Customer must provide prompt written notice to Motorola at the time temporary transfer is discontinued.

**3.5.** Resale of Equipment. Equipment contains embedded Licensed Software. If Customer desires to sell its used Equipment to a third party, Customer must first receive prior written authorization from Motorola and obtain written acceptance of the applicable Licensed Software license terms, including the obligation to pay relevant license fees, from such third party.

**4. Term.**

**4.1.** Term. The term of this EPSLA (the "**EPSLA Term**") will commence upon either (a) the Effective Date of the MCA, if this EPSLA is attached to the MCA as of such Effective Date, or (b) the EPSLA Date set forth on the signature page below, if this EPSLA is executed after the MCA Effective Date, and will continue until the later of (i) three (3) years after the first order for Products is placed via an Ordering Document, or (ii) the expiration of all applicable warranty periods (as set forth in **Section 6.1 – Motorola Warranties** below) under this EPSLA, unless this EPSLA or the Agreement is earlier terminated in accordance with the terms of the Agreement.

**4.2.** Termination. Notwithstanding the termination provisions of the MCA, Motorola may terminate this EPSLA (and any Ordering Documents hereunder) immediately upon notice to Customer if Customer breaches **Section 3 – Licensed Software License and Restrictions** of this EPSLA, or any other provision related to Licensed Software license scope or restrictions set forth in an Ordering Document, EULA, or other applicable Addendum. For clarity, upon termination or expiration of the EPSLA Term, all Motorola obligations under this EPSLA (including with respect to Equipment and Licensed Software delivered hereunder) will terminate. If Customer desires to purchase additional Services in connection with such Equipment or Licensed Software, Customer may enter into a separate Addendum with Motorola, governing such Services. Customer acknowledges that Motorola made a considerable investment of resources in the development, marketing, and distribution of the Licensed Software and Documentation, and that Customer's breach of the Agreement will result in irreparable harm to Motorola for which monetary damages would be inadequate. If Licensee breaches this Agreement, in addition to termination, Motorola will be entitled to all available remedies at law or in equity, including immediate injunctive relief and repossession of all non-embedded Licensed Software and associated Documentation.

**4.3.** Equipment as a Service. In the event that Customer purchases any Equipment at a price below the MSRP for such Equipment in connection Customer entering into a fixed- or minimum required-term agreement for Subscription Software, and Customer or Motorola terminates the Agreement, this EPSLA, or other applicable Addendum (such as the Addendum governing the purchase of such Subscription Software) prior to the expiration of such fixed- or minimum required-term, then Motorola will have the right to invoice Customer for, and Customer will pay, the amount of the discount to the MSRP for the Equipment or such other amount set forth in the applicable Addendum or Ordering Document. This Section will not limit any other remedies Motorola may have with respect to an early termination.

**5. Payment.** Customer will pay invoices for the Products and Services provided under this EPSLA in accordance with the invoice payment terms set forth in the MCA. Generally, invoices are issued after shipment of Equipment or upon Motorola's delivery of Licensed Software (in accordance with **Section 2.1 – Delivery and Risk of Loss**), as applicable, but if a specific invoicing or payment schedule is set forth in the applicable Ordering Document, EULA or other Addendum, such schedule will control with respect to the applicable Products and Services referenced therein. Motorola will have the right to suspend future deliveries of Products and Services if Customer fails to make any payments when due.

**6. Representations and Warranties; Liability.**

**6.1.** Motorola Warranties. Subject to the disclaimers and exclusions set forth in the MCA and this EPSLA, (a) for a period of one (1) year commencing upon the delivery of Motorola-manufactured Equipment under **Section 2.1 – Delivery and Risk of Loss**, Motorola represents and warrants that such Motorola-manufactured Equipment, under normal use, will be free from material defects in materials and workmanship; (b) to the extent permitted by the providers of third-party software or hardware included in the Products and Services, Motorola will pass through

to Customer any warranties provided by such third parties, which warranties will apply for the period defined by the applicable third party; and (c) for a period of ninety (90) days commencing upon the delivery of Motorola-owned Licensed Software under **Section 2.1 – Delivery and Risk of Loss**, Motorola represents and warrants that such Licensed Software, when used in accordance with the Documentation and the Agreement, will be free from reproducible defects that prevent operation of features critical to the primary functionality or successful operation of the Motorola-developed Licensed Software (as determined by Motorola). The warranty set forth in subsection (c) will be referred to as the "**Motorola Licensed Software Warranty**". As Customer's sole and exclusive remedy for any breach of the Motorola Licensed Software Warranty, Motorola will use commercially reasonable efforts to remedy the material defect in the applicable Licensed Software; provided, however, that if Motorola does not remedy such material defect within a reasonable time, then at Motorola's sole option, Motorola will either replace the defective Licensed Software with functionally-equivalent software, provide substitute software to Customer, or terminate the applicable software license and refund any paid license fees to Customer on a pro-rata basis. For clarity, the Motorola Licensed Software Warranty applies only to the most current version of the Licensed Software issued by Motorola, and issuance of updated versions of any Licensed Software does not result in a renewal or extension of the Motorola Licensed Software Warranty beyond the ninety (90) day warranty period.

**6.2.** ADDITIONAL EXCLUSIONS. IN ADDITION TO THE EXCLUSIONS FROM DAMAGES SET FORTH IN THE MCA, AND NOTWITHSTANDING ANY PROVISION OF THE AGREEMENT TO THE CONTRARY, MOTOROLA WILL HAVE NO LIABILITY FOR (A) DEFECTS IN OR DAMAGE TO PRODUCTS RESULTING FROM USE OTHER THAN IN THE NORMAL AUTHORIZED MANNER, OR FROM ACCIDENT, LIQUIDS, OR NEGLECT; (B) TESTING, MAINTENANCE, REPAIR, INSTALLATION, OR MODIFICATION BY PARTIES OTHER THAN MOTOROLA; (C) CUSTOMER'S OR ANY AUTHORIZED USER'S FAILURE TO COMPLY WITH INDUSTRY AND OSHA OR OTHER LEGAL STANDARDS; (D) DAMAGE TO RADIO ANTENNAS, UNLESS CAUSED BY DEFECTS IN MATERIAL OR WORKMANSHIP; (E) EQUIPMENT WITH NO SERIAL NUMBER; (F) BATTERIES OR CONSUMABLES; (G) FREIGHT COSTS FOR SHIPMENT TO REPAIR DEPOTS; (H) COSMETIC DAMAGE THAT DOES NOT AFFECT OPERATION; (I) NORMAL WEAR AND TEAR; (J) ISSUES OR OBSOLESCENCE OF LICENSED SOFTWARE DUE TO CHANGES IN CUSTOMER OR AUTHORIZED USER REQUIREMENTS, EQUIPMENT, OR SYSTEMS; (K) TRACKING AND LOCATION-BASED SERVICES; OR (L) BETA SERVICES.

**6.3.** Voluntary Remedies. Motorola is not obligated to remedy, repair, replace, or refund the purchase price for the disclaimed or excluded issues in the MCA or **Section 6.2 – Additional Exclusions** above, but if Motorola agrees to provide Services to help resolve such issues, Customer will reimburse Motorola for its reasonable time and expenses, including by paying Motorola any Fees set forth in an Ordering Document for such Services, if applicable.

**7. Copyright Notices.** The existence of a copyright notice on any Licensed Software will not be construed as an admission or presumption of publication of the Licensed Software or public disclosure of any trade secrets associated with the Licensed Software.

**8. Survival.** The following provisions will survive the expiration or termination of this EPSLA for any reason: **Section 3 – Licensed Software License and Restrictions**; **Section 4 – Term**; **Section 5 – Payment**; **Section 6.2 – Additional Exclusions**; **Section 8 – Survival**.

## Software Products Addendum

This Software Products Addendum (this "**SPA**") is entered into between Motorola Solutions, Inc., with offices at 500 W. Monroe Street, Suite 4400, Chicago, IL 60661 ("**Motorola**") and the entity set forth in the MCA ("**Customer**"), and will be subject to, and governed by, the terms of the Motorola Solutions Customer Agreement entered into between the Parties, effective as of [ 12-20-23 ] (the "**MCA**"), and the applicable Addenda. Capitalized terms used in this SPA, but not defined herein, will have the meanings set forth in the MCA or the applicable Addenda.

**1. Addendum.** This SPA governs Customer's purchase of certain Motorola software Products, including Software Systems, and will form part of the Parties' Agreement. A "**Software System**" is a solution that includes at least one command center software Product and requires Integration Services to deploy such software Product at a Customer Site or onto any Customer-Provided Equipment or Equipment provided to Customer. In addition to the MCA, other Addenda may be applicable to the Software System or other software Products, including the Subscription Software Addendum ("**SSA**"), with respect to Subscription Software, and the Equipment Purchase and Software License Addendum ("**EPSLA**"), with respect to Licensed Software and Equipment, as further described below. This SPA will control with respect to conflicting or ambiguous terms in the MCA or any other applicable Addendum, but only as applicable to the Software System or other software Products purchased under this SPA and not with respect to other Products and Services.

**2. Software Systems; Applicable Terms and Conditions.**

**2.1.** On-Premise Software System. If Customer purchases an "on-premises Software System," where Equipment and Licensed Software are installed at Customer Sites or on Customer-Provided Equipment, then, unless the Ordering Document(s) specify that any software is being purchased on a subscription basis (i.e., as Subscription Software), such Equipment and Licensed Software installed at Customer Sites or on Customer-Provided Equipment are subject to the EPSLA. On-premises Software Systems described in this Section qualify for the System Warranty as described in **Section 5 – On-Premises Software System Warranty** (the "**System Warranty**"). In connection with the on-premises Software System, Customer may also purchase additional Subscription Software that integrates with its on-premises Software System (e.g., CommandCentral Aware) (each, an "**Add-On Subscription**"). Any Add-On Subscription will be subject to the terms and conditions of the SSA and excluded from the System Warranty.

**2.2.** On-Premise Software System as a Service. If Customer purchases an "on-premises Software System as a service," where Equipment and software Products are installed at Customer Sites or on Customer-Provided Equipment, and such software is generally licensed on a subscription basis (i.e., as Subscription Software), then such Subscription Software will be subject to the SSA and not the EPSLA. Any (a) Equipment purchased, (b) firmware preinstalled on such Equipment, and (c) Microsoft operating system Licensed Software are subject to the EPSLA. On-premises Software Systems as a service described in this Section are provided as a service and, accordingly, do not qualify for the System Warranty. System completion, however, is determined in accordance with the provisions of **Section 3 – Software System Completion** below.

**2.3.** Cloud Hosted Software System. If Customer purchases a "cloud hosted Software System," where the applicable software is hosted in a data center and provided to Customer as a service (i.e., as hosted Subscription Software), including CommandCentral Products, then such Subscription Software is subject to the SSA. Any Equipment purchased in connection with a cloud

Software System is subject to the EPSLA. Cloud hosted Software Systems described in this Section do not qualify for the System Warranty. System completion, however, is determined in accordance with the provisions of **Section 3 – Software System Completion** below.

**2.4.** Services. Any Integration Services or Maintenance and Support Services purchased in connection with, or included as a part of, a Software System are subject to the MCA, and as described in the applicable Ordering Document.

**3. Software System Completion.** Any Software System described in an Ordering Document hereunder (including the Products, Integration Services, and all other components thereof) will be deemed completed upon Customer's (or the applicable Authorized User's) Beneficial Use of each Product that is included in the Software System (unless alternative acceptance procedures are set forth in the applicable Ordering Document) (the "**System Completion Date**"). Customer will not unreasonably delay Beneficial Use of any Product within a Software System, and in any event, the Parties agree that Beneficial Use of a Product will be deemed to have occurred thirty (30) days after functional demonstration. For clarity, if a Software System is comprised of more than one Product, Motorola may notify Customer that all Integration Services for a particular Product within the Software System have been completed, and Customer may have Beneficial Use of such Product prior to having Beneficial Use of other Products in the Software System, or of the Software System as a whole. In such case, the Integration Services applicable to such Product will be deemed complete upon Customer's Beneficial Use of the Product ("**Product Completion Date**"), which may occur before the System Completion Date. As used in this Section, "**Beneficial Use**" means use by Customer or at least one (1) Authorized User of the material features and functionalities of a Product within a Software System, in material conformance with Product descriptions in the applicable Ordering Document. This Section applies to Products purchased as part of a Software System notwithstanding the delivery provisions of the Addendum applicable to such Products, such as the SSA or EPSLA, and this Section will control over such other delivery provisions to the extent of a conflict.

**4. Payment.** Customer will pay invoices for the Products and Services covered by this SPA in accordance with the invoice payment terms set forth in the MCA. Fees for Software Systems will be invoiced as of the System Completion Date, unless another payment process or schedule or milestones are set forth in an Ordering Document or applicable Addendum. In addition to Equipment, Licensed Software, Subscription Software and Integration Services (as applicable) sold as part of a Software System, the Ordering Documents for a Software System may also include post-deployment Integration Services or other Services which are to be provided following the date of functional demonstration ("**Post-Deployment Services**"). Post-Deployment Services will be invoiced upon their completion and paid by Customer in accordance with the terms of the MCA.

**5. On-Premises Software System Warranty.** Subject to the disclaimers in the MCA and any other applicable Addenda, Motorola represents and warrants that, on the System Completion Date for an on-premises Software System described in **Section 2.1 – On-Premises Software System**, or on the applicable Product Completion Date for a specific Product within such on-premises Software System, if earlier, (a) such Software System or Product will perform in accordance with the descriptions in the applicable Ordering Documents in all material respects, and (b) if Customer has purchased any Equipment or Motorola Licensed Software (but, for clarity, excluding Subscription Software) as part of such on-premises Software System, the warranty period applicable to such Equipment and Motorola Licensed Software will continue for a period of one (1) year commencing upon the System Completion Date for the Software System that includes such Products, or on the applicable Product Completion Date, if earlier, instead of commencing upon delivery of the Products in accordance with the terms and conditions set forth

in **Section 6 – Representations and Warranties; Liabilities** of the EPSLA. The warranties set forth in the applicable Addenda are not otherwise modified by this SPA.

**6. Prohibited Use.** Customer will not integrate or use, or permit a third party or an Authorized User to integrate or use, any Non-Motorola Content with or in connection with a Software System or other software Product provided by Motorola under this SPA, without the express written permission of Motorola.

**7. API Support.** Motorola will use commercially reasonable efforts to maintain its Application Programming Interface ("**API**") offered sold in connection with any Software System. APIs will evolve and mature over time, requiring changes and updates. Motorola will use reasonable efforts to continue supporting any version of an API for 6 months after such version is introduced, but if Motorola determines, in its sole discretion, to discontinue support of an API for any reason, Motorola will provide reasonable advance notification to Customer. If an API presents a security risk, Motorola may discontinue an API without prior notice.

**8. Support of Downloaded Clients.** If Customer purchases any software Product that requires a client installed locally on any Customer-Provided Equipment or Equipment in possession of Customer, Customer will be responsible for downloading and installing the current version of such client, as it may be updated from time to time. Motorola will use reasonable efforts to continue supporting any version of a client for forty-five (45) days following its release, but Motorola may update the current version of its client at any time, including for bug fixes, product improvements, and feature updates, and Motorola makes no representations or warranties that any software Product will support prior versions of a client.

**9. Applicable End User Terms**. Additional license terms apply to third-party software included in certain software Products which are available online at www.motorolasolutions.com/legal-flow-downs. Customer will comply, and ensure its Authorized Users comply, with all such additional license terms.

**10. Additional Terms for On-Premise Software System as a Service.** The terms set forth in this **Section 10 – Additional Terms for On-Premise Software System as a Service** apply in the event Customer purchases an on-premises Software System as a service under this SPA.

**10.1.** Transition to Subscription License Model. If the Parties mutually agree that any on-premises Subscription Software purchased under this SPA as part of an on-premises Software System as a service will be replaced with or upgraded to Subscription Software hosted in a data center, then upon such time which the Parties execute the applicable Ordering Document, (a) the licenses granted to such on-premises Subscription Software under the applicable Ordering Document will automatically terminate, (b) Customer and its Authorized Users will cease use of the applicable on-premises copies of Subscription Software, and (c) the replacement hosted Subscription Software provided hereunder will be governed by the terms of the SSA and this SPA.

**10.2.** Transition Fee. Motorola will not charge additional Fees for Services related to the transition to hosted Subscription Software, as described in **Section 10.1 – Transition to Subscription License Model**. Notwithstanding the foregoing, subscription Fees for the applicable hosted Subscription Software are subject to the SSA and the applicable Ordering Document, and may be greater than Fees paid by Customer for on-premises Subscription Software.

**10.3.** Software Decommissioning. Upon (a) transition of the on-premises Software System as a service to Subscription Software hosted in a data center or (b) any termination of the Subscription Software license for the on-premises Software System as a service, Motorola will have the right

to enter Customer Sites and decommission the applicable on-premises Subscription Software that is installed at Customer's Site or on Customer-Provided Equipment. For clarity, Customer will retain the right to use Licensed Software that is firmware incorporated into Equipment purchased by Customer from Motorola and any Microsoft operating system Licensed Software.

**11. Additional Terms for CAD and Records Products.** The terms set forth in this **Section 11 – Additional Terms for CAD and Records Products** apply in the event Customer purchases any Computer Aided Dispatch ("**CAD**") or Records Products under this SPA.

**11.1.** Support Required. Customer acknowledges and agrees that the licenses granted by Motorola under the Agreement to CAD and Records Products for on-premises Software Systems are conditioned upon Customer purchasing Maintenance and Support Services for such Products during the term of the applicable license. If at any time during the term of any such license, Customer fails to purchase associated Maintenance and Support Services (or pay the fees for such Services), Motorola will have the right to terminate or suspend the software licenses for CAD and Record Products, and this SPA or the applicable Ordering Document.

**11.2.** CJIS Security Policy. Motorola agrees to support Customer's obligation to comply with the Federal Bureau of Investigation Criminal Justice Information Services ("**CJIS**") Security Policy and will comply with the terms of the CJIS Security Addendum for the term of the Addendum or Ordering Document for the applicable Product. Customer hereby consents to Motorola screened personnel serving as the "escort" within the meaning of CJIS Security Policy for unscreened Motorola personnel that require access to unencrypted Criminal Justice Information for purposes of Product support and development.

**12. Additional Cloud Terms**. The terms set forth in this **Section 12 – Additional Cloud Terms** apply in the event Customer purchases any cloud-hosted software Products.

**12.1.** Data Storage**.** Motorola will determine, in its sole discretion, the location of the stored content for cloud hosted software Products. All data, replications, and backups will be stored at a location in the United States for Customers in the United States.

**12.2.** Data Retrieval**.** Cloud hosted software Products will leverage different types of storage to optimize software, as determined in Motorola's sole discretion. For multimedia data, such as videos, pictures, audio files, Motorola will, in its sole discretion, determine the type of storage medium used to store the content. The type of storage and medium selected by Motorola will determine the data retrieval speed. Access to content in archival storage may take up to twenty-four (24) hours to be viewable.

**12.3.** Availability. Motorola will make reasonable efforts to provide monthly availability of 99.9% for cloud hosted software Products with the exception of maintenance windows. There are many factors beyond Motorola's control that may impact Motorola's ability to achieve this goal.

**12.4.** Maintenance. Scheduled maintenance of cloud-hosted software Products will be performed periodically. Motorola will make commercially reasonable efforts to notify customers one (1) week in advance of any such maintenance. Unscheduled and emergency maintenance may be required from time to time. Motorola will make commercially reasonable efforts to notify customers of any unscheduled or emergency maintenance twenty-four (24) hours in advance.

**13. Survival.** The following provisions will survive the expiration or termination of this SPA for any reason: **Section 1 – Addendum**; **Section 2 – Software Systems; Applicable Terms and Conditions**; **Section 6 – Prohibited Use**; **Section 9 – Applicable End User Terms**; **Section 13 – Survival**.

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## Subscription Software Addendum

This Subscription Software Addendum (this "**SSA**") is entered into between Motorola Solutions, Inc., with offices at 500 W. Monroe Street, Suite 4400, Chicago, IL 60661 ("**Motorola**") and the entity set forth in the MCA ("**Customer**"), and will be subject to, and governed by, the terms of the Motorola Solutions Customer Agreement entered into between the Parties, effective as of [ 12-20-23 ] (the "**MCA**"). Capitalized terms used in this SSA, but not defined herein, will have the meanings set forth in the MCA.

**1. Addendum.** This SSA governs Customer's purchase of Subscription Software (and, if set forth in an Ordering Document, related Services) from Motorola, and will form part of the Parties' Agreement. Additional Subscription Software-specific Addenda or other terms and conditions may apply to certain Subscription Software, where such terms are provided or presented to Customer.

**2. Delivery of Subscription Software.**

**2.1.** Delivery. During the applicable Subscription Term (as defined below), Motorola will provide to Customer the Subscription Software set forth in an Ordering Document, in accordance with the terms of the Agreement. Motorola will provide Customer advance notice (which may be provided electronically) of any planned downtime. Delivery will occur upon Customer's receipt of credentials required for access to the Subscription Software or upon Motorola otherwise providing access to the Subscription Software. If agreed upon in an Ordering Document, Motorola will also provide Services related to such Subscription Software.

**2.2.** Modifications. In addition to other rights to modify the Products and Services set forth in the MCA, Motorola may modify the Subscription Software, any associated recurring Services and any related systems so long as their functionality (as described in the applicable Ordering Document) is not materially degraded. Documentation for the Subscription Software may be updated to reflect such modifications. For clarity, new features or enhancements that are added to any Subscription Software may be subject to additional Fees.

**2.3.** User Credentials. If applicable, Motorola will provide Customer with administrative user credentials for the Subscription Software, and Customer will ensure such administrative user credentials are accessed and used only by Customer's employees with training on their proper use. Customer will protect, and will cause its Authorized Users to protect, the confidentiality and security of all user credentials, including any administrative user credentials, and maintain user credential validity, including by updating passwords. Customer will be liable for any use of the Subscription Software through such user credential (including through any administrative user credentials), including any changes made to the Subscription Software or issues or user impact arising therefrom. To the extent Motorola provides Services to Customer in order to help resolve issues resulting from changes made to the Subscription Software through user credentials, including through any administrative user credentials, or issues otherwise created by Authorized Users, such Services will be billed to Customer on a time and materials basis, and Customer will pay all invoices in accordance with the payment terms of the MCA.

**2.4.** Beta Services. If Motorola makes any beta version of a software application ("**Beta Service**") available to Customer, Customer may choose to use such Beta Service at its own discretion, provided, however, that Customer will use the Beta Service solely for purposes of Customer's evaluation of such Beta Service, and for no other purpose. Customer acknowledges and agrees that all Beta Services are offered "as-is" and without any representations or warranties or other commitments or protections from Motorola. Motorola will determine the duration of the evaluation period for any Beta Service, in its sole discretion, and Motorola may discontinue any

Beta Service at any time. Customer acknowledges that Beta Services, by their nature, have not been fully tested and may contain defects or deficiencies.

**3. Subscription Software License and Restrictions.**

**3.1.** Subscription Software License. Subject to Customer's and its Authorized Users' compliance with the Agreement, including payment terms, Motorola hereby grants Customer and its Authorized Users a limited, non-transferable, non-sublicenseable, and non-exclusive license to use the Subscription Software identified in an Ordering Document, and the associated Documentation, solely for Customer's internal business purposes. The foregoing license grant will be limited to use in the territory and to the number of licenses set forth in an Ordering Document (if applicable), and will continue for the applicable Subscription Term. Customer may access, and use the Subscription Software only in Customer's owned or controlled facilities, including any authorized mobile sites; provided, however, that Authorized Users using authorized mobile or handheld devices may also log into and access the Subscription Software remotely from any location. No custom development work will be performed under this Addendum.

**3.2.** End User Licenses. Motorola may use, engage, resell, or otherwise interface with third-party software, hardware or services providers (such as, for example, third-party end point detection and response providers) and other sub-processors, who in turn may engage additional sub-processors to process personal data and other Customer Data. Customer agrees that such third-party software or services providers, sub-processors or their respective sub-processors may process and use personal and other Customer Data in accordance with and subject to their own respective licenses or terms and in accordance with applicable law. Customer authorizes and will provide and obtain all required notices and consents, if any, and comply with other applicable legal requirements, if any, with respect to such collection and use of personal data and other Customer Data by Motorola, and its subcontractors, sub-processors and/or third-party software, hardware or services providers. Notwithstanding any provision to the contrary, to the extent the use or performance of certain Services is governed by any separate license, data requirement, EULA, privacy statement, or other applicable agreement, including terms governing third-party software, hardware or services, including open source software, Customer will comply, and ensure its Authorized Users comply, with any such agreements or terms, which shall govern any such Services.

**3.3.** Customer Restrictions. Customers and Authorized Users will comply with the applicable Documentation and the copyright laws of the United States and all other relevant jurisdictions (including the copyright laws where Customer uses the Subscription Software) in connection with their use of the Subscription Software. Customer will not, and will not allow others including the Authorized Users, to make the Subscription Software available for use by unauthorized third parties, including via a commercial rental or sharing arrangement; reverse engineer, disassemble, or reprogram software used to provide the Subscription Software or any portion thereof to a human-readable form; modify, create derivative works of, or merge the Subscription Software or software used to provide the Subscription Software with other software; copy, reproduce, distribute, lend, or lease the Subscription Software or Documentation for or to any third party; take any action that would cause the Subscription Software, software used to provide the Subscription Software, or Documentation to be placed in the public domain; use the Subscription Software to compete with Motorola; remove, alter, or obscure, any copyright or other notice; share user credentials (including among Authorized Users); use the Subscription Software to store or transmit malicious code; or attempt to gain unauthorized access to the Subscription Software or its related systems or networks.

**4. Term.**

**4.1.** Subscription Terms. The duration of Customer's subscription to the first Subscription Software and any associated recurring Services ordered under this SSA (or the first Subscription Software or recurring Service, if multiple are ordered at once) will commence upon delivery of such Subscription Software (and recurring Services, if applicable) and will continue for a twelve (12) month period or such longer period identified in an Ordering Document (the "**Initial Subscription Period**"). Following the Initial Subscription Period, Customer's subscription to the Subscription Software and any recurring Services will automatically renew for additional twelve (12) month periods (each, a "**Renewal Subscription Year**"), unless either Party notifies the other Party of its intent not to renew at least thirty (30) days before the conclusion of the then-current Subscription Term. (The Initial Subscription Period and each Renewal Subscription Year will each be referred to herein as a "**Subscription Term**".) Motorola may increase Fees prior to any Renewal Subscription Year. In such case, Motorola will notify Customer of such proposed increase no later than thirty (30) days prior to commencement of such Renewal Subscription Year. Unless otherwise specified in the applicable Ordering Document, if Customer orders any additional Subscription Software or recurring Services under this SSA during an in-process Subscription Term, the subscription for each new Subscription Software or recurring Service will (a) commence upon delivery of such Subscription Software or recurring Service, and continue until the conclusion of Customer's then-current Subscription Term (a "**Partial Subscription Year**"), and (b) automatically renew for Renewal Subscription Years thereafter, unless either Party notifies the other Party of its intent not to renew at least thirty (30) days before the conclusion of the then-current Subscription Term. Thus, unless otherwise specified in the applicable Ordering Document, the Subscription Terms for all Subscription Software and recurring Services hereunder will be synchronized.

**4.2.** Term. The term of this SSA (the "**SSA Term**") will commence upon either (a) the Effective Date of the MCA, if this SSA is attached to the MCA as of such Effective Date, or (b) the SSA Date set forth on the signature page below, if this SSA is executed after the MCA Effective Date, and will continue until the expiration or termination of all Subscription Terms under this SSA, unless this SSA or the Agreement is earlier terminated in accordance with the terms of the Agreement.

**4.3.** Termination. Notwithstanding the termination provisions of the MCA, Motorola may terminate this SSA (or any Addendum or Ordering Documents hereunder), or suspend delivery of Subscription Software or Services, immediately upon notice to Customer if (a) Customer breaches **Section 3 – Subscription Software License and Restrictions** of this SSA, or any other provision related to Subscription Software license scope or restrictions set forth in an Addendum or Ordering Document, or (b) it determines that Customer's use of the Subscription Software poses, or may pose, a security or other risk or adverse impact to any Subscription Software, Motorola, Motorola's systems, or any third party (including other Motorola customers). Customer acknowledges that Motorola made a considerable investment of resources in the development, marketing, and distribution of the Subscription Software and Documentation, and that Customer's breach of the Agreement will result in irreparable harm to Motorola for which monetary damages would be inadequate. If Customer breaches this Agreement, in addition to termination, Motorola will be entitled to all available remedies at law or in equity (including immediate injunctive relief).

**4.4.** Wind Down of Subscription Software. In addition to the termination rights in the MCA, Motorola may terminate any Ordering Document and Subscription Term, in whole or in part, in the event Motorola plans to cease offering the applicable Subscription Software or Service to customers.

**5. Payment.**

**5.1.** Payment. Unless otherwise provided in an Ordering Document (and notwithstanding the provisions of the MCA), Customer will prepay an annual subscription Fee set forth in an Ordering Document for each Subscription Software and associated recurring Service, before the commencement of each Subscription Term. For any Partial Subscription Year, the applicable annual subscription Fee will be prorated based on the number of months in the Partial Subscription Year. The annual subscription Fee for Subscription Software and associated recurring Services may include certain one-time Fees, such as start-up fees, license fees, or other fees set forth in an Ordering Document. Motorola will have the right to suspend the Subscription Software and any recurring Services if Customer fails to make any payments when due. The parties acknowledge that pricing for Cyber Services is dependent on the full term or subscription periods specified in any such Ordering Document. Motorola will have the right to suspend the Services if Customer fails to make any payments when due

**5.2.** License True-Up. Motorola will have the right to conduct an audit of total user licenses credentialed by Customer for any Subscription Software during a Subscription Term, and Customer will cooperate with such audit. If Motorola determines that Customer's usage of the Subscription Software during the applicable Subscription Term exceeded the total number of licenses purchased by Customer, Motorola may invoice Customer for the additional licenses used by Customer, pro-rated for each additional license from the date such license was activated, and Customer will pay such invoice in accordance with the payment terms in the MCA.

**5.3.** Customer Data. For avoidance of doubt, for Cyber Services so long as not specifically identifying the Customer, "Customer Data," as defined in the MCA, shall not include, and Motorola shall be free to use, share and leverage security threat intelligence and mitigation data generally, including without limitation, third party threat vectors and IP addresses, file hash information, domain names, malware signatures and information, information obtained from third party sources, indicators of compromise, and tactics, techniques, and procedures used, learned or developed in the course of providing Services

**5.4.** Future Regulatory Requirements. The Parties acknowledge and agree that Cyber Service is an evolving technological area and therefore, laws and regulations regarding Services may change. Changes to existing Services required to achieve regulatory compliance may be available for an additional fee. Any required changes may also impact the price for Services.

**6. Liability.**

**6.1.** ADDITIONAL EXCLUSIONS. IN ADDITION TO THE EXCLUSIONS FROM DAMAGES SET FORTH IN THE MCA, AND NOTWITHSTANDING ANY PROVISION OF THE AGREEMENT TO THE CONTRARY, MOTOROLA WILL HAVE NO LIABILITY FOR (A) INTERRUPTION OR FAILURE OF CONNECTIVITY, VULNERABILITIES, OR SECURITY EVENTS; (B) DISRUPTION OF OR DAMAGE TO CUSTOMER'S OR THIRD PARTIES' SYSTEMS, EQUIPMENT, OR DATA, INCLUDING DENIAL OF ACCESS TO USERS, OR SHUTDOWN OF SYSTEMS CAUSED BY INTRUSION DETECTION SOFTWARE OR HARDWARE; (C) AVAILABILITY OR ACCURACY OF ANY DATA AVAILABLE THROUGH THE SUBSCRIPTION SOFTWARE OR SERVICES, OR INTERPRETATION, USE, OR MISUSE THEREOF; (D) TRACKING AND LOCATION-BASED SERVICES; OR (E) BETA SERVICES.

**6.2.** Direct Damages . For avoidance of doubt, notwithstanding the limitation set out in Section 8.2 of the MCA, the direct damages limitation for Cyber services provided under this SSA and limited to the fees, or the portion of fees, relating only to the Cyber Security Services under this SSA, even if such Services are offered or bundled with other Motorola services.

**6.3.** Voluntary Remedies. Motorola is not obligated to remedy, repair, replace, or refund the purchase price for the disclaimed or excluded issues in the MCA or **Section 6.1 – Additional Exclusions** above, but if Motorola agrees to provide Services to help resolve such issues, Customer will reimburse Motorola for its reasonable time and expenses, including by paying Motorola any Fees set forth in an Ordering Document for such Services, if applicable.

**7. Motorola as a Controller or Joint Controller.** In all instances where Motorola acts as a controller of data, it will comply with the applicable provisions of the Motorola Privacy Statement at https://www.motorolasolutions.com/en_us/about/privacy-policy.html#privacystatement, as may be updated from time to time. Motorola holds all Customer Contact Data as a controller and shall Process such Customer Contact Data in accordance with the Motorola Privacy Statement. In instances where Motorola is acting as a joint controller with Customer, the Parties will enter into a separate Addendum to the Agreement to allocate the respective roles as joint controllers.

**8. Survival.** The following provisions will survive the expiration or termination of this SSA for any reason: **Section 4 – Term**; **Section 5 – Payment**; **Section 6.1 – Additional Exclusions**; **Section 8 – Survival**.

## Mobile Video Addendum

This Mobile Video Addendum (this "**MVA**") is entered into between Motorola Solutions, Inc., with offices at 500 W. Monroe Street, Suite 4400, Chicago, IL 60661 ("**Motorola**") and the entity set forth in the MCA ("**Customer**"), and will be subject to, and governed by, the terms of the Motorola Solutions Customer Agreement entered into between the Parties, effective as of [ 12-20-23 ] (the "**MCA**"), and the applicable Addenda. Capitalized terms used in this MVA, but not defined herein, will have the meanings set forth in the MCA or the applicable Addenda.

**1. Addendum.** This MVA governs Customer's purchase of any Motorola mobile video Products, including participation in Motorola's Video-as-a-Service Program ("**VaaS Program**"). A "**Mobile Video System**" is a solution that includes at least one mobile video Product and requires Integration Services to deploy such mobile video Product or the associated evidence management Product at a Customer Site. In addition to the MCA, other Addenda may be applicable to Products offered under this MVA, including the Subscription Software Addendum ("**SSA**"), with respect to Subscription Software, and the Equipment Purchase and Software License Addendum ("**EPSLA**"), with respect to Licensed Software and Equipment, as each of those terms are defined therein, and as further described below. This MVA will control with respect to conflicting or ambiguous terms in the MCA or any other applicable Addendum, but only as applicable to the Mobile Video System or other Products purchased under this MVA and not with respect to other Products or Services.

**2. Evidence Management Systems; Applicable Terms and Conditions.**

**2.1.** On-Premise Evidence Management. If Customer purchases a Mobile Video System where Equipment and Licensed Software for evidence management is installed at Customer Sites (an "**On-Premises Evidence Management System**"), then, unless the Ordering Document(s) specify that any software is being purchased on a subscription basis (i.e., as Subscription Software), any (i) Equipment and (ii) Licensed Software installed at Customer Sites or on Customer-Provided Equipment, in each case purchased in connection with the On-Premises Evidence Management System, are subject to the EPSLA. On-Premises Evidence Management Systems described in this Section qualify for the System Warranty as described in **Section 4 – On-Premises Evidence Management System Warranty** (the "**System Warranty**").

**2.2.** Cloud Hosted Evidence Management. If Customer purchases Mobile Video System where the software for evidence management is hosted in a data center and provided to Customer as a service ("**Cloud Hosted Evidence Management System"),** including but not limited to CommandCentral Evidence, VideoManager EX, and VideoManager EL Products, then such Cloud Hosted Evidence Management System is subject to the SSA. Any Equipment purchased in connection with Cloud Hosted Evidence Management System is subject to the EPSLA. Cloud Hosted Evidence Management System described in this Section do not qualify for the System Warranty. System completion, however, is determined in accordance with the provisions of **Section 7 –System Completion** below.

**2.3.** Services. Any Integration Services or Maintenance and Support Services purchased in connection with, or included as a part of, a Mobile Video System are subject to the MCA, and as described in the applicable Ordering Document(s).

**3. Payment.** Customer will pay invoices for the Products and Services covered by this MVA in accordance with the invoice payment terms set forth in the MCA. Fees for Mobile Video Systems will be invoiced as of the System Completion Date, unless another payment process or schedule or milestones are set forth in an Ordering Documents or applicable Addendum. In addition to Equipment, Licensed Software, Subscription Software and Integration Services (as

applicable) sold as part of a Mobile Video System, the Ordering Documents for a Mobile Video System may also include post-deployment Integration Services or other Services which are to be provided following the date of functional demonstration ("**Post-Deployment Services**"). Post-Deployment Services will be invoiced upon their completion and paid by Customer in accordance with the terms of the MCA.

**4. On-Premises Evidence Management System Warranty.** Subject to the disclaimers in the MCA and any other applicable Addenda, Motorola represents and warrants that, on the System Completion Date (as defined below) for an On-Premises Evidence Management System described in **Section 2.1 – On-Premises Evidence Management** (a) such On-Premises Evidence Management System will perform in accordance with the descriptions in the applicable Ordering Documents in all material respects, and (b) if Customer has purchased any Equipment or Motorola Licensed Software (but, for clarity, excluding Subscription Software) as part of such On-Premises Evidence Management System, the warranty period applicable to such Equipment and Motorola Licensed Software will continue for a period of one (1) year commencing upon the System Completion Date for the On-Premises Evidence Management System that includes such Products, or on the applicable Product Completion Date, if earlier, instead of commencing upon delivery of the Products in accordance with the terms and conditions set forth in **Section 6 – Representations and Warranties; Liabilities** of the EPSLA. The warranties set forth in the applicable Addenda are not otherwise modified by this MVA.

**5. Additional Software and Video Terms.**

**5.1.** Unlimited Storage. Storage shall be specifically described in an Ordering Documents. In the event Customer purchases a Cloud Hosted Evidence Management System with "Unlimited Storage", as specified in the Ordering Documents, then "Unlimited Storage" means storage of all data captured using Equipment sold under this MVA, provided that (1) video recordings are recorded in an event-based setting where users are not recording an entire shift under one video footage and (2) Customer's data retention policies and practices do not result in the retention of data beyond the statutory minimums set forth by the State in which the Customer resides. In the event Customer does not comply with the preceding clauses (1) and (2), Motorola shall have the right to charge Customer for such excess data storage at the prevailing rates. Motorola also has the right to place any data that has not been accessed for a consecutive six (6) month period into archival storage, retrieval of which may take up to twenty-four (24) hours from any access request.

**5.2.** Applicable End User Terms. Additional license terms apply to third-party software included in certain software Products which are available online at: www.motorolasolutions.com/legal-flow-downs. Customer will comply, and ensure its Authorized Users comply, with all such additional license terms.

**5.3.** WatchGuard Detector Mobile. Any order by Customer of WatchGuard Detector Mobile is on a subscription basis and subject to the SSA.

**5.4.** Vigilant Access. Customer may opt for subscription to additional Subscription Software, including use of the Law Enforcement Archival Network ("**Vigilant VehicleManager**"), which is subject to the terms and conditions of the SSA and the Vigilant Addendum. If Customer purchases a subscription to commercial license plate recognition data, then Customer will execute and agree to the terms of Motorola's standard Data License Addendum.

**5.5.** License Plate Recognition Data. License plate recognition ("**LPR**") data collected by Customer is considered Customer Data (as defined in the MCA) and is therefore subject to the Customer's own retention policy. Customer, at its option, may share its LPR data with other similarly situated Law Enforcement Agencies ("**LEAs**") which contract with Motorola to access

Vigilant VehicleManager by selecting this option within Vigilant VehicleManager. Other similarly situated LEAs may similarly opt to share their LPR data with Customer using Vigilant VehicleManager. Such LPR data generated by other LEAs is considered Third-Party Data (as defined in the MCA), is governed by the retention policy of the respective LEA, and shall be used by Customer only in connection with its use of Vigilant VehicleManager. LPR data that has reached its expiration date will be deleted from Vigilant VehicleManager. Only individuals who are agents and/or sworn officers of Customer and who are authorized by Customer to access Vigilant VehicleManager on behalf of Customer through login credentials provided by Customer ("**User Eligibility Requirements**") may access Vigilant VehicleManager. Vigilant in its sole discretion may deny access to Vigilant VehicleManager to any individual based on such person's failure to meet the User Eligibility Requirements. Customer will ensure no user logins are provided to agents or officers of other local, state, or Federal LEAs without the express written consent of Vigilant. Customer will be responsible for all individuals' access to, and use of, Vigilant VehicleManager through use of Customer login credentials, including ensuring their compliance with this Agreement.

**5.6.** API Support. Motorola will use commercially reasonable efforts to maintain its Application Programming Interface ("**API**") sold in connection with any Mobile Video System. APIs will evolve and mature over time, requiring changes and updates. Motorola will use reasonable efforts to continue supporting any version of an API for six (6) months after such version is introduced, but if Motorola determines, in its sole discretion, to discontinue support of an API for any reason, Motorola will provide reasonable advance notification to Customer. If an API presents a security risk, Motorola may discontinue an API without prior notice.

**5.7.** Support of Downloaded Clients. If Customer purchases any software Product that requires a client installed locally on Customer-Provided Equipment or Equipment in possession of Customer, Customer will be responsible for downloading and installing the current version of such client, as it may be updated from time to time. Motorola will use reasonable efforts to continue supporting any version of a client for forty-five (45) days following its release, but Motorola may update the current version of its client at any time, including for bug fixes, product improvements, and feature updates, and Motorola makes no representations or warranties that any software Product will support prior versions of a client.

**5.8.** CJIS Security Policy. Motorola agrees to support Customer's obligation to comply with the Federal Bureau of Investigation Criminal Justice Information Services ("**CJIS**") Security Policy, incorporated herein, and will comply with the terms of the CJIS Security Addendum for the term of the Addendum or Ordering Documents for the applicable Product. Customer hereby consents to Motorola screened personnel serving as the "escort" within the meaning of CJIS Security Policy for unscreened Motorola personnel that require access to unencrypted Criminal Justice Information for purposes of Product support and development.

**6. VaaS Program Terms.** All hardware provided by Motorola to Customer under the VaaS Program will be considered "Equipment", as defined in the EPSLA, and constitutes a purchase of such Equipment subject to the terms of the EPSLA. Additionally, the following terms and conditions apply to any Equipment purchased under the VaaS Program:

**6.1.** Technology Refresh. Body cameras and associated batteries purchased under the VaaS Program ("**Body Cameras**") may be eligible for a technology refresh as described in the Ordering Documents. If included in the Ordering Documents, and in the event the Body Camera is eligible for replacement applicable under this **Section 6.1 – Technology Refresh**, Customer must return the existing Body Camera to Motorola in working condition. The corresponding replacement Body Camera will be the then-current model of the Body Camera at the same tier as the Body Camera that is returned to Motorola. For clarity, any other Equipment received by Customer as part of the

VaaS Program, other than Body Cameras, or associated batteries (if specified in the Ordering Documents) will not be eligible for a technology refresh hereunder.

**6.2.** No-Fault Warranty. If specified in the Ordering Documents, and subject to the disclaimers set forth in the MCA and EPSLA, upon delivery of Equipment purchased as part of the VaaS Program, Motorola will provide a No-fault Warranty to Customer for such Equipment that extends until the end of the Commitment Term (as defined below) applicable to such Equipment; except that the No-fault Warranty will not apply to: (i) any Equipment with intentionally altered or removed serial numbers, (ii) any other damages disclaimed under the MCA or EPSLA, or (iii) any Equipment that Motorola determines was changed, modified, or repaired by Customer or any third party. The "**No-fault Warranty**" means that Motorola will repair or replace any Equipment components or parts that render the applicable Equipment unable to perform its intended purpose. With respect to any batteries in Body Cameras, a battery will be considered faulty and covered under this No-fault Warranty if it falls below sixty percent (60%) of rated capacity.

**6.3.** Commitment Term. Customer accepts that following the delivery of any Equipment under the VaaS Program, Customer commits to a five (5) year subscription term for such Equipment at the rate provided in the Ordering Documents (the "**Initial Commitment Term**"). If Customer, for any reason, terminates any of its obligations to Motorola prior to expiration of the applicable Commitment Term (as defined below), Customer will be subject to the payments described in **Section 6.7.2 – Termination** hereunder.

**6.4.** Additional Devices. Any additional Equipment, including any accessory items, ordered by Customer after Customers' initial purchase of Equipment hereunder may be subject to an incremental increase in Fees. In the event Customer orders additional Equipment under the VaaS Program within the ninety (90) days immediately following its initial purchase, such Equipment will be included in and subject to the Initial Commitment Term. Any additional Equipment purchased under the VaaS Program subsequent to such ninety (90) day period, will commence an additional subscription term commitment for such Equipment of five (5) years (a "**Subsequent Commitment Term**") with respect to the monthly Fee associated with such additional Equipment. For purposes of this Addendum, the Initial Commitment Term and each Subsequent Commitment Term are each also referred to herein as a "**Commitment Term**".

**6.5.** Included Subscription Software.

6.5.1. VideoManager EL. Subject to **Section 6.7.1 – VaaS Term**, if the Equipment purchased under the VaaS Program provides Customer with a subscription to the Cloud Hosted Evidence Management System specified in the Ordering Documents during the VaaS Term (as defined below), the use of which is subject to the SSA. Customer's subscription will include unlimited users, Unlimited Storage and unlimited sharing, provided any media or data uploaded to the Cloud Hosted Evidence Management System is done so using Motorola Equipment actively enrolled in the VaaS Program. Following expiration of the applicable Commitment Term, if Customer desires to continue use of expired Equipment with the Cloud Hosted Evidence Management System, Customer must purchase additional access to Cloud Hosted Evidence Management System based on Motorola's prevailing rates, or Motorola may disconnect connectivity of any expired Equipment to the Cloud Hosted Evidence Management System.

6.5.2. CommandCentral. If specified and included in the Ordering Documents, for each applicable Body Camera, in-car system or integrated system purchased, Customer will receive one user license for Motorola CommandCentral, which provides access to CC Community, CC Capture, CC Vault and CC Records. If the

Customer requires additional licenses to CommandCentral they must be purchased for an additional fee.

6.5.3. CarDetector Mobile. If Customer's VaaS Program order includes an in-car system, Customer, will receive a subscription to WatchGuard CarDetector Mobile during the VaaS Term, the use of which is subject to the SSA.

6.5.4. VideoManager EX: Subject to **Section 6.7.1 – VaaS Term,** if specified in the Ordering Documents, Equipment purchased under the VaaS Program provides Customer with a single subscription to Video Manager EX during the VaaS Term (as defined below), the use of which is subject to the SSA. Following expiration of the applicable Commitment Term, if Customer desires to continue use of expired Equipment with the VideoManager EX, Customer must purchase additional access to VideoManager EX based on Motorola's prevailing rates, or Motorola may disconnect connectivity of any expired Equipment to VideoManager EX.

**6.6.** VaaS Program Payment. Unless otherwise provided in an Ordering Documents (and notwithstanding the provisions of the MCA), Customer will prepay a subscription Fee quarterly (each a "**Subscription Quarter**"), as set forth in an Ordering Documents. If Customer orders any additional Product(s) under the VaaS Program subsequent to the initial purchase by Customer, Fees for such additional Product will be added to the quarterly subscription Fee, and will be payable on the same Fee payment schedule as the initial Product purchased under the VaaS Program; provided, however, that for the first Subscription Quarter during which such additional Product is purchased, the subscription Fee for the applicable additional Product will be pro-rated based on the applicable number of days remaining in the such initial Subscription Quarter.

**6.7.** VaaS Program Term and Termination.

6.7.1. VaaS Term. Customer's participation in the VaaS Program will commence upon the System Completion Date under this MVA, and will continue through the end of the final Commitment Term hereunder ("the "**VaaS Term**"). Following the end of any Commitment Term, Customer's access to the Cloud Hosted Evidence Management System with respect to the Equipment purchased relative to that Commitment Term will expire, and Customer must download or transfer all Customer Data associated with the applicable Equipment within thirty (30) days following expiration unless Customer purchases extended access to the Cloud Hosted Evidence Management System from Motorola at the prevailing rates. Motorola has no obligation to retain Customer Data for expired Equipment beyond thirty (30) days following expiration of the applicable Commitment Term. For example, if Customer purchases 100 devices on January 1 of Year 1 of the VaaS Term, and then 100 additional devices on January 1 of Year 3, on December 31 of Year 5 (i.e., the conclusion of the Initial Commitment Term), Customer's access to the Cloud Hosted Evidence Management System with respect to the first 100 devices will be discontinued, and Customer must purchase extended storage or transfer all Customer Data associated with the first 100 devices within thirty (30) days of expiration of the Initial Commitment Term. In the foregoing example, the Cloud Hosted Evidence Management System access and data storage for the second 100 devices purchase will extend until December 31 of Year 7.

6.7.2. Termination. The termination provisions applicable to the VaaS Program will be those set forth in the MCA, EPSLA and SSA, as applicable. If Customer's participation in the VaaS Program is terminated for any reason prior to the end of the Initial Commitment Term or any Subsequent Commitment Term, Customer will

pay the pro-rated remainder of the aggregate Equipment MSRP price (prevailing as of the time of delivery), calculated by multiplying the MSRP price of all Equipment purchased under the VaaS Program by the percentage resulting from dividing the number of months remaining in the Commitment Term applicable to such Equipment by sixty (60). In the event Customer purchased Equipment on multiple dates, resulting in separate Commitment Terms for certain Equipment, the preceding calculation will be made relative to the applicable Commitment Term for each Equipment order. For example, if Customer purchased $1,000 worth of Equipment on January 1 of Year 1 of the VaaS Term, and then $1,000 worth of Equipment on January 1 of Year 2, and then Customer's VaaS Program terminates on December 31 of Year 3, Customer will be required to repay: $1,000 x (24/60) + $1,000 x (36/60), which is equal to $1,000 in the aggregate.

**7. System Completion.** Any Mobile Video System sold hereunder will be deemed completed upon Customer's (or the applicable Authorized User's) Beneficial Use of the applicable Mobile Video System (the "**System Completion Date**"). Customer will not unreasonably delay Beneficial Use, and in any event, the Parties agree that Beneficial Use will be deemed to have occurred thirty (30) days after functional demonstration. As used in this Section, "**Beneficial Use**" means use by Customer or at least one (1) Authorized User of the material features and functionalities of Mobile Video System, in material conformance with Product descriptions in the applicable Ordering Documents. Any additional Equipment sold in connection with the initial Mobile Video System shall be deemed delivered in accordance of the terms of the EPSLA. Any additional Subscription Software purchased under the VaaS Program will be deemed delivered upon Customer's receipt of credentials required for access to the Cloud Hosted Evidence Management System or upon Motorola otherwise providing access to the Cloud Hosted Evidence Management System. This Section applies to Products purchased under the MVA notwithstanding the delivery provisions of the Addendum applicable to such Products, such as the SSA or EPSLA, and this Section will control over such other delivery provisions to the extent of a conflict.

**8. Additional Cloud Terms**. The terms set forth in this **Section 8 – Additional Cloud Terms** apply in the event Customer purchases any cloud hosted software Products under this MVA, including a Cloud Hosted Evidence Management System.

**8.1.** Data Storage. Motorola will determine, in its sole discretion, the location of the stored content for cloud hosted software Products. All data, replications, and backups will be stored at a location in the United States for Customers in the United States.

**8.2.** Data Retrieval. Cloud hosted software Products will leverage different types of storage to optimize software, as determined in Motorola's sole discretion. For multimedia data, such as videos, pictures, audio files, Motorola will, in its sole discretion, determine the type of storage medium used to store the content. The type of storage and medium selected by Motorola will determine the data retrieval speed. Access to content in archival storage may take up to twenty-four (24) hours to be viewable.

**8.3.** Availability. Unless otherwise specified in the Ordering Documents, Motorola will make reasonable efforts to provide monthly availability of 99.9% for cloud hosted software Products with the exception of maintenance windows. There are many factors beyond Motorola's control that may impact Motorola's ability to achieve this goal.

**8.4.** Maintenance. Scheduled maintenance of cloud hosted software Products will be performed periodically. Motorola will make commercially reasonable efforts to notify customers one (1) week in advance of any such maintenance. Unscheduled and emergency maintenance

may be required from time to time. Motorola will make commercially reasonable efforts to notify customers of any unscheduled or emergency maintenance twenty-four (24) hours in advance.

**9. Survival.** The following provisions will survive the expiration or termination of this MVA for any reason: **Section 1 – Addendum; 2 – Evidence Management Systems; Applicable Terms and Conditions; Section 3 – Payment; Section 5.2 – Applicable End User Terms; Section 6.5.1 – VideoManager EL Section 6.7 – VaaS Program Term and Termination; Section 9 – Survival.**

## DRONE SERVICE ADDENDUM

This Drone Service Addendum (this "**DSA**") is entered into between Motorola Solutions, Inc., with offices at 500 W. Monroe Street, Suite 4400, Chicago, IL 60661 ("**Motorola**") and the entity purchasing Products or Services (set for in the MCA) from Motorola ("**Customer**"), and will be subject to, and governed by, the terms of the Master Customer Agreement and Subscription Software Addendum (collectively, the "**MCA**") or Subscription Software Agreement ("**SSA**"), as applicable, entered into between the Parties, effective as of the earlier of (a) the first purchase of a Product or Service from Motorola, and (b) the date of the last signature on the first Ordering Document (as defined below) between the Parties (the "**Agreement**"), and the applicable Addenda. Capitalized terms used in this DSA, but not defined herein, will have the meanings set forth in the MCA, SSA or the applicable Addenda.

If you are purchasing Software or Services on behalf of your employer or another entity, you warrant that: (a) you have authority to bind your employer or the applicable entity, as "Customer" to this DSA; (b) you have read and understand this DSA; and (c) on behalf of the Customer that you represent, you agree to this DSA. If you do not have the legal authority to bind your employer or the applicable entity as Customer to this DSA, please do not complete the purchase of Motorola's CAPE solution, as set forth in the Ordering Documents ("**CAPE**") from Motorola.

This DSA governs Customer's purchase of Motorola's CAPE solution and will form part of the Parties' Agreement. This DSA will control with respect to conflicting or ambiguous terms in the MCA or SSA or any other applicable Addendum, but only as applicable to the CAPE system purchased under this DSA and not with respect to other Products and Services.

### 1. DRONE SOFTWARE AND SERVICES

1.1 CAPE is a cloud platform for unmanned aerial vehicles ("**Drones**" or "**Drone Hardware**") that provides the ability for Authorized Users to remotely operate a flying Drone camera in real-time. The CAPE platform combines flight control and real time video streaming on Drones.

1.2 Access to CAPE is offered on an annual subscription basis, priced according to the tier of the CAPE solution to be deployed. Pricing is provided in the applicable Ordering Document.

1.3 Limitations. Customer may access and use CAPE solely for its own benefit and in accordance with the terms of this DSA and the Agreement.

### 2. RESPONSIBILITIES

Customer will provide email addresses for Authorized Users who need access to Software and Services. Motorola will establish user accounts and provide access to Software and Services for Authorized Users defined by Customer. Motorola will provide initial Software and Services setup and initial training to specified customer pilots on the usage of the solution as set out in the applicable Ordering Document.

Customer is responsible for all Drone Hardware, Drone operations, operating policies and procedures, internet connectivity and all IT equipment and infrastructure. Customer is also responsible for providing Drone pilots and ensuring all such pilots have appropriate Federal Aviation Administration ("**FAA**") authorizations for all Drone operations. Customer is responsible

for also obtaining any FAA Certificate of Authorizations ("**CoA**") and regulatory approvals and waivers needed to ensure safe and FAA compliant Drone operations. Customer is responsible for selecting Drone pilots capable of operating Drone Hardware. Motorola will solely provide access to Software and Services that supplements Customer's Drone operations.

**3. ACCESSING THE SERVICES**

**3.1 Account Authorization.** Motorola will establish the customer account ("**Account**") and provide Customer with an administrative portal. Customer may access the Software and Services and administer permissions, including establishing Authorized Users authorized to access it's Account. Access information for the Customer Account is its internal use only. Customer agrees not to sell, transfer or sublicense the access information to any other entity or person, except that Customer may enable access by its agents and subcontractors performing work on its behalf. Customer is responsible for the security of its passwords, use of its Account and for all activities that occur under its Account. Motorola, its affiliates and suppliers specifically disclaim any and all responsibility for unauthorized access to Customer Account. Customer agrees to diligently monitor its Account, to restrict use by unauthorized persons. Customer accepts full responsibility for any unauthorized use of the Services. Customer shall notify Motorola immediately of any unauthorized use of its password(s) or any other breach of security.

**3.2 Necessary Equipment and Software:** The Software and Services is a cloud service provided over the internet. Customer must provide all equipment and software necessary to connect to the Software and Services. Customer is solely responsible for any fees, including Internet connection or mobile fees, that incur when accessing the Software and Services and transferring data.

**3.3. Security, Availability and Backup:** Motorola will implement reasonable and appropriate measures designed to help Customer secure content and data against accidental or unlawful loss, access or disclosure. Motorola procures cloud hosting services from reputable third party vendors (such as AWS and Google) and has no control over the methods they use for security and integrity of data on their servers. Motorola will use reasonable efforts to coordinate platform maintenance activities with such providers but is not responsible for service interruptions or breach or other loss of data caused due to such third party providers. Customer is responsible for properly configuring and using the Software and Subscription Service and otherwise taking appropriate action to secure, protect and backup accounts and content in a manner that will provide appropriate security and protection, which might include use of encryption to protect content and routinely archiving content and data. Motorola does not provide an archiving service and only agrees that it will not intentionally delete any content or data prior to termination of this DSA.

**4. DATA STORAGE**

The Software and Services is not intended to be used as a video storage solution. Motorola does not provide an archiving service for Drone photo and video data, flight information, or any other information. Motorola expressly disclaims any and all obligations with respect to storage. Motorola reserves the right to delete any data stored in the solution, such as video or pictures that are over thirty (30) calendar days old.

**5. DATA RETRIEVAL**

Motorola will leverage different types of storage to optimize the Software and Services, as determined by Motorola's sole discretion. For multimedia data, such as videos, pictures, audio

files, Motorola will, in its sole discretion, determine the type of storage medium used to store the content. The type of storage and medium selected by Motorola will determine the data retrieval speed.

**6. MAINTENANCE**

Motorola will periodically perform maintenance of the Software and Services. Motorola will provide advance notice of such maintenance via email. Authorized Users may experience an interruption in service during such maintenance efforts.

**7. NETWORK / INTERNET / OTHER REQUIREMENTS**

**7.1** The Software and Services requires the availability of appropriate network and internet connections. If any of the below items apply, additional deployment services may be needed to enable a successful deployment. Such additional deployment services will be provided for an additional fee.

· Customer's internet is through private IT strict firewall policies, not able to install software on PC's

· Customer requires multiple upload locations through different internet providers at each site

· Customer has slow internet (<20MBps or higher for 4k video upload)

· Customer doesn't have Wi-Fi

· Customer doesn't use Google Chrome or uses conflicting Google Chrome extensions

· Customer requires multiple upload locations

· Customer has multicast disabled on their wireless network

· Customer wants to utilize MAC address filtering

**7.2 The following are not supported:**

· Wi-Fi AP's do not support 802.11AC

· Customer AP does not support DNS-SD, and/or the Apple Bonjour suite

**8. TERMINATION**

**8.1 Termination of Software and Services by Motorola.** Motorola has the right to suspend or terminate use of the Software and Services at any time if it determines in its sole discretion that Customer or its Authorized Users are in violation of the terms of this DSA or if necessary to avoid a violation of applicable law. Motorola will use reasonable efforts to notify Customer of its determination. In suspending or terminating the Software and Services, Motorola reserves and does not waive any rights or remedies available to it under this DSA or at law. Motorola shall not be liable to Customer or any third-party for any termination of Customer Account.

**8.2 Termination of Software and Services by Customer**. Customer may terminate the Agreement at any time by (a) notifying Motorola and (b) closing your Account. Your notice should be sent, in writing, to the following Motorola address: Attn: Motorola 2009 Corp., 200 2nd Ave S., #143, St. Petersburg, FL 33701.

**8.3 Effect of Termination.** Termination by Customer for convenience during a subscription term does not entitle Customer to a refund of fees. Upon termination of the Software and Services, Customer will be prevented from further access and use of the portal and passwords, files, and all information associated with or inside the Account will be deleted.

## 9. REMEDIES FOR VIOLATIONS

If Motorola becomes aware of any possible violations of this DSA, Motorola reserves the right to investigate such violations. If, as a result of the investigation, Motorola believes that unlawful activity has occurred, Motorola reserves the right to refer the matter to, and to cooperate with, any and all applicable legal authorities. Motorola is entitled, except to the extent prohibited by applicable law, to disclose any information or materials on or in the Software and Services to (1) comply with applicable laws, legal process or governmental request; (2) enforce the Agreement and DSA; (3) respond to requests for customer assistance; (4) protect the rights, property or personal safety of Motorola, its employees, subcontractors, agents, or the public, or (5) in connection with all enforcement actions or to government officials, as Motorola in its sole discretion believes to be necessary or appropriate.

## 10. DRONE OPERATION INDEMNITY

To the extent permitted by applicable law, Customer shall defend, indemnify and hold harmless Motorola from all liability, expense, judgment, suit, or cause of action, which may accrue against Motorola for damages arising from or related to personal injury, property damage or loss of life caused by Customer's Drone Hardware during Customer's Drone operations.

## 11. DJI'S DATA COLLECTON TERMS AND CONDTIONS

If Customer has requested the interface of CAPE with Drones provided by SZ DJI Technology Co., Ltd. and its affiliated companies (collectively, "**DJI**"), Customer agrees to DJI's Software Development Kit ("**SDK**") data collection terms and conditions provided below:

11.1 Definitions: For purposes for this Section, **"Analytics Data"** means information collected from a DJI product (e.g., a DJI UAV) that is used in connection with an Application and/or devices used to operate the DJI product (e.g., a mobile device). The Analytics Data may include Header Data and/or Event Data; **"Application"** means a software program that is developed using the SDK for use with DJI Products; **"Event Data"** means information about time of operation or events, session identification numbers, event types, and flight operation information, including but not limited to GPS data, navigation, operation, speed, distance, modes, mission, command, altitude, takeoff and landing, payload and other component use, battery levels, etc.; "**Header Data"** means information about the software (including but not limited to installation identification, app key, SDK version of an Application) and hardware (including but not limited to product identifiers and names of UAVs, payloads, remote controllers, etc.); **"Privacy Policy"** means DJI's privacy policy located at https://developer.dji.com/policies/privacy/; "**Warranty Logs"** means information provided to and/or received by the SDK that is necessary for determining warranty eligibility and product reliability, including without limitation SDK function calls (including without limitation time, function name, results/feedback, etc.), protocol or commands sent from or to a mobile device, an Application, and/or a remote controller (including without limitation time, name, type, command/action, etc.).

11.2 Subject to DJI's Privacy Policy, DJI may collect information including but not limited to usage statistics, unique identifiers, associated IP addresses, Analytics Data, such as Header Data

and/or Event Data, Warranty Logs information and any other information on which tools and services in the DJI's SDK are being used and how they are being used. DJI may share this information with third-parties for purposes of providing its products and services and as otherwise permitted by DJIs Privacy Policy.

11.3 For sake of clarity and not by way of limitation, the Analytics Data and Warranty Logs information may be used by DJI for any lawful purposes, including without limitation for use in research or improving its SDK or products and determining warranty eligibility and product reliability. The Warranty Logs are stored locally on a device running the Application (e.g., mobile device) and Customer hereby consents to make the Warranty Logs available to DJI to support any warranty claims regarding the SDK.

11.4 Customer represents and warrants that it will provide clear and conspicuous notice to each Authorized User and obtain any legally required consents for DJI to collect, use, or otherwise process information as set forth in this Section.

11.5 MOTOROLA DISCLAIMS ANY LIABILITY FOR DJI'S COLLECTION, USE, TRANSFER, AND ANY OTHER PROCESSING OF CUSTOMER'S INFORMATION. CUSTOMER ACKNOWLEDGES AND AGREES THAT MOTOROLA DOES NOT HAVE CONTROL AND SHALL HAVE NO LIABILITY REGARDING THE INFORMATION THAT MAY BE COLLECTED BY DJI'S SDK AND HOW SUCH DATA MAY BE USED BY DJI AND/OR THIRD PARTIES RECEIVING SUCH INFORMATION FROM DJI. CUSTOMER WILL INDEMNIFY AND HOLD MOTOROLA HARMLESS FOR CUSTOMER'S FAILURE TO PROVIDE NOTICE AND OBTAIN THE NECESSARY CONSENTS AS PROVIDED IN THIS SECTION.

**[END OF DOCUMENT]**








# BATTLE CREEK POLICE DEPT, CITY OF

V700-M500-Interview Rm VAAS

10/17/2023

The design, technical, pricing, and other information ( " Information " ) furnished with this submission is confidential proprietary information of Motorola Solutions, Inc. or the Motorola Solutions entity providing this quote ( " Motorola " ) and is submitted with the restriction that it is to be used for evaluation purposes only. To the fullest extent allowed by applicable law, the Information is not to be disclosed publicly or in any manner to anyone other than those required to evaluate the Information without the express written permission of Motorola.
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MOTOROLA SOLUTIONS

# Budgetary

QUOTE-2381956

10/17/2023

BATTLE CREEK POLICE DEPT, CITY OF
20 N DIVISION
BATTLE CREEK, MI 49017

RE: Motorola Quote for V700-M500-Interview Rm VAAS
Dear Doug Bagwell,

Motorola Solutions is pleased to present BATTLE CREEK POLICE DEPT, CITY OF with this quote for quality communications equipment and services. The development of this quote provided us the opportunity to evaluate your requirements and propose a solution to best fulfill your communications needs.

This information is provided to assist you in your evaluation process. Our goal is to provide BATTLE CREEK POLICE DEPT, CITY OF with the best products and services available in the communications industry. Please direct any questions to Jason Bernard at jason.bernard@motorolasolutions.com.

We thank you for the opportunity to provide you with premier communications and look forward to your review and feedback regarding this quote.

Sincerely,

Jason Bernard

MOTOROLA SOLUTIONS

# Budgetary

QUOTE-2381956
V700-M500-Interview Rm VAAS

Billing Address:
BATTLE CREEK POLICE DEPT,
CITY OF
20 N DIVISION
BATTLE CREEK, MI 49017
US

Quote Date:10/17/2023
Expiration Date:12/21/2023
Quote Created By:
Jason Bernard
jason.bernard@
motorolasolutions.com

End Customer:
BATTLE CREEK POLICE DEPT, CITY OF
Doug Bagwell
DABagwell@battlecreekmi.gov
269-966-3418

Payment Terms:30 NET

## Summary:

Any sales transaction resulting from Motorola's quote is based on and subject to the applicable Motorola Standard Terms and Conditions, notwithstanding terms and conditions on purchase orders or other Customer ordering documents. Motorola Standard Terms and Conditions are found at www.motorolasolutions.com/product-terms. In addition to the Motorola Standard Terms and Conditions, the purchase of CommandCentral Interview Room is also governed by the attached Subscription Services Addendum which shall be executed by the Customer.

| Line # | Item Number | Description | Qty | Term | List Price | Sale Price | Ext. Sale Price | Refresh Duration |
|---|---|---|---|---|---|---|---|---|
| | Video as a Service | | | | | | | |
| 1 | AAS-M5-3CAM-BWC | M500 3-CAMERA IN-CAR SYSTEM WITH BODY WORN CAMERA AND VIDEO MANAGER EL CLOUD- 5 YEARS VIDEO-AS-A-SERVICE | 45 | 5 YEAR | $15,600.00 | $15,600.00 | $702,000.00 | |
| 2 | AAS-BWC-XFS-DOC | V300/V700 TRANSFER STATION - 5 YEARS VIDEO-AS-A-SERVICE ($30 PER MON) | 4 | 5 YEAR | $1,800.00 | $1,800.00 | $7,200.00 | |
| 3 | SSV00S01450B | LEARNER LXP SUBSCRIPTION | 125 | 5 YEAR | $0.00 | $0.00 | $0.00 | |
| 4 | WGB-0138AAS | VIDEO EQUIPMENT, V300/V700 TRANSFER STATION ($30 PER MON) | 5 | | Included | Included | Included | |

Any sales transaction following Motorola's quote is based on and subject to the terms and conditions of the valid and executed written contract between Customer and Motorola (the ""Underlying Agreement"") that authorizes Customer to purchase equipment and/or services or license software (collectively ""Products""). If no Underlying Agreement exists between Motorola and Customer, then Motorola's Standard Terms of Use and Motorola's Standard Terms and Conditions of Sales and Supply shall govern the purchase of the Products.
Motorola Solutions, Inc.: 500 West Monroe, United States - 60661 ~ #: 36-1115800

| Line # | Item Number | Description | Qty | Term | List Price | Sale Price | Ext. Sale Price | Refresh Duration |
|---|---|---|---|---|---|---|---|---|
| 5 | WGB-0708A | M500 ICV SYSTEM W/ RCAM V300 WIFI DCK,SPS | 45 | | Included | Included | Included | |
| 6 | WGW00502 | M500 EXTENDED WARRANTY | 45 | 5 YEAR | Included | Included | Included | |
| 7 | WGP01394-001 | CBL, WIFI VHCL ANT MNT, NMO, 17'L | 45 | | Included | Included | Included | |
| 8 | WGP02225-230-KIT2 | BRKT KIT DISP/BWC/CAM TAHOE/SILV 2021 | 45 | | Included | Included | Included | |
| 9 | WGW00122-301 | MOBILE VIDEO DEPLOYMENT SERVICES | 50000 | | $1.25 | $1.00 | $50,000.00 | |
| 10 | WGC02001-VAAS | VIDEOMANAGER EL CLOUD, ANNUAL UNLIMITED STORAGE PER BODY WORN CAMERA VAAS | 45 | 5 YEAR | Included | Included | Included | |
| 11 | WGC02003-VAAS | VIDEOMANAGER EL CLOUD, ANNUAL UNLIMITED STORAGE FOR IN-CAR VIDEO SYSTEM PER ADDITIONAL CAMERA VAAS | 45 | 5 YEAR | Included | Included | Included | |
| 12 | WGC02002-VAAS | VIDEOMANAGER EL CLOUD, ANNUAL UNLIMITED STORAGE PER IN-CAR VIDEO SYSTEM WITH 2 CAMERAS VAAS | 45 | 5 YEAR | Included | Included | Included | |
| 13 | WGA00668-KIT | V300/V700 LOCKING MOLLE MNT WITH BWC BOX | 45 | | Included | Included | Included | |
| 14 | WGB-0741A | V700 BODY WORN CAMERA FIRSTNET READY | 45 | | Included | Included | Included | 3 YEAR |

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Motorola Solutions, Inc.: 500 West Monroe, United States - 60661 ~ #: 36-1115800

| Line # | Item Number | Description | Qty | Term | List Price | Sale Price | Ext. Sale Price | Refresh Duration |
|---|---|---|---|---|---|---|---|---|
| 15 | LSV07S03512A | ESSENTIAL SERVICE WITH ACCIDENTAL DAMAGE AND ADVANCED REPLACEMENT | 45 | 5 YEAR | Included | Included | Included | |
| 16 | SWV07S03593A | SOFTWARE ENHANCEMENTS | 45 | 5 YEAR | Included | Included | Included | |
| 17 | WGB-0189A | MTIK CONF KIT,802.11AC,M500POE ,5GHZANT | 45 | | Included | Included | Included | |
| 18 | WGW00122-302 | BODY WORN CAMERA CONFIGURATION SERVICE | 45 | | $69.00 | $55.20 | $2,484.00 | |
| 19 | WGW00122-303 | IN-CAR VIDEO SYSTEM CONFIGURATION SERVICE | 45 | | $347.00 | $277.60 | $12,492.00 | |
| 20 | WCM000111-020 | INTEGRATION VIDEOMANAGER EL WITH MOTOROLA CAD/RMS | 1 | | $0.00 | $0.00 | $0.00 | |
| | Video as a Service | | | | | | | |
| 21 | AAS-BWC-5YR-001 | BODY WORN CAMERA AND VIDEO MANAGER EL CLOUD - 5 YEARS VIDEO-AS-A-SERVICE | 55 | 5 YEAR | $4,140.00 | $4,140.00 | $227,700.00 | |
| 22 | AAS-BWC-XFS-DOC | V300/V700 TRANSFER STATION - 5 YEARS VIDEO-AS-A-SERVICE ($30 PER MON) | 6 | 5 YEAR | $1,800.00 | $1,800.00 | $10,800.00 | |
| 23 | WGB-0138AAS | VIDEO EQUIPMENT, V300/V700 TRANSFER STATION ($30 PER MON) | 7 | | Included | Included | Included | |
| 24 | WGW00122-301 | MOBILE VIDEO DEPLOYMENT SERVICES | 50000 | | $1.25 | $1.00 | $50,000.00 | |

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| Line # | Item Number | Description | Qty | Term | List Price | Sale Price | Ext. Sale Price | Refresh Duration |
|---|---|---|---|---|---|---|---|---|
| 25 | WGC02001-VAAS | VIDEOMANAGER EL CLOUD, ANNUAL UNLIMITED STORAGE PER BODY WORN CAMERA VAAS | 55 | 5 YEAR | Included | Included | Included | |
| 26 | WGP03085-KIT | V300/V700 JACKET MAG MOUNT WITH BWC BOX | 55 | | Included | Included | Included | |
| 27 | WGB-0740A | V700 BODY WORN CAMERA VERIZON READY | 55 | | Included | Included | Included | 3 YEAR |
| 28 | LSV07S03512A | ESSENTIAL SERVICE WITH ACCIDENTAL DAMAGE AND ADVANCED REPLACEMENT | 55 | 5 YEAR | Included | Included | Included | |
| 29 | SWV07S03593A | SOFTWARE ENHANCEMENTS | 55 | 5 YEAR | Included | Included | Included | |
| 30 | WGP02950 | V700 BATTERY, 3.8V, 4180MAH, REMOVABLE | 100 | | $137.50 | $110.00 | $11,000.00 | |
| 31 | WGW00122-302 | BODY WORN CAMERA CONFIGURATION SERVICE | 55 | | $170.00 | $136.00 | $7,480.00 | |
| 32 | WCM000111-020 | INTEGRATION VIDEOMANAGER EL WITH MOTOROLA CAD/RMS | 1 | | $0.00 | $0.00 | $0.00 | |
| | CommandCentral Interview Room | | | | | | | |
| 33 | ISV00S02379A | DELIVERY SERVICES | 1 | | $4,877.83 | $4,877.83 | $4,877.83 | |
| 34 | SSV00S01450B | LEARNER LXP SUBSCRIPTION | 10 | 5 YEAR | $0.00 | $0.00 | $0.00 | |
| 35 | DDN3480A | 5M (16 FT) HD BNC CABLE FOR MODULAR CAMERA | 10 | | $84.80 | $84.80 | $848.00 | |
| 36 | TT4144A | 3MP PIN HOLE IMAGER FOR SARIX MODULAR CAMERA | 5 | | $263.94 | $263.94 | $1,319.70 | |

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| Line # | Item Number | Description | Qty | Term | List Price | Sale Price | Ext. Sale Price | Refresh Duration |
|---|---|---|---|---|---|---|---|---|
| 37 | TT4145A | 3MP FIXED MICRO BULLET IMAGER FOR SARIX MODULAR CAMERA | 5 | | $263.94 | $263.94 | $1,319.70 | |
| 38 | DS425359 | LOUROE ASK-4 #300 MICROPHONE | 5 | | $586.00 | $586.00 | $2,930.00 | |
| 39 | DDN3425A | SARIX MODULAR CAMERA 2 PORT PROCESSOR UNIT | 5 | | $556.50 | $556.50 | $2,782.50 | |
| 40 | DDN3486A | 8-PORT GIGABIT MANAGED SWITCH (8) POE+ BUDGET 130W, (2) SFP - NA | 2 | | $810.90 | $810.90 | $1,621.80 | |
| 41 | DSR250XS5YR | COMMANDCENTRAL EDGE APPLIANCE R250XE - 5YR SUPPORT | 2 | | $3,534.22 | $3,534.22 | $7,068.44 | |
| 42 | SSV00S03616A | SOFTWARE,COMMAND CENTRAL INTERVIEW ROOM SUBSCRIPTION | 1 | 5 YEAR | $27,905.00 | $27,905.00 | $27,905.00 | |
| | CommandCentral Evidence | | | | | | | |
| 43 | ISV00S01459A | DIGITAL EVIDENCE DELIVERY SERVICES | 1 | | $2,224.04 | $2,224.04 | $2,224.04 | |
| 44 | SSV00S01450B | LEARNER LXP SUBSCRIPTION | 10 | 5 YEAR | $0.00 | $0.00 | $0.00 | |
| 45 | SSV00S02778A | EVIDENCE INTERFACE: MOTOROLA SOLUTIONS CAD/RMS INTEGRATION* | 1 | 5 YEAR | $10,650.00 | $10,650.00 | $10,650.00 | |
| 46 | SSV00S02604A | FIELD RESPONSE APPLICATION | 1 | 5 YEAR | Included | Included | Included | |
| 47 | SSV00S02605A | RECORDS MANAGEMENT | 1 | 5 YEAR | Included | Included | Included | |
| 48 | SSV00S02783A | COMMANDCENTRAL STORAGE GB | 10000 | 5 YEAR | $3.75 | $3.75 | $37,500.00 | |

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| Line # | Item Number | Description | Qty | Term | List Price | Sale Price | Ext. Sale Price | Refresh Duration |
|---|---|---|---|---|---|---|---|---|
| 49 | SSV00S02601A | COMMANDCENTRAL EVIDENCE PLUS | 1 | 5 YEAR | $23,400.00 | $33,995.52 | $33,995.52 | |
| 50 | SSV00S02606A | OPTIMIZED DIGITAL EVIDENCE | 1 | 5 YEAR | $0.00 | $0.00 | $0.00 | |
| 51 | SSV00S02782A | COMMUNITY INTERACTION TOOL | 1 | 5 YEAR | $0.00 | $0.00 | $0.00 | |
| 52 | SSV00S03751A | INTEGRATION: VIDEO MANAGER EL (CLOUD) TO EVIDENCE | 1 | 5 YEAR | $0.00 | $0.00 | $0.00 | |
| | CommandCentral Aware Starter | | | | | | | |
| 53 | ISV00S02379A | DELIVERY SERVICES | 1 | | $0.00 | $0.00 | $0.00 | |
| 54 | SSV00S01450B | LEARNER LXP SUBSCRIPTION | 1 | 5 YEAR | $0.00 | $0.00 | $0.00 | |
| 55 | SSV00S03376A | INTEGRATION: MOBILE VIDEO M500, V300, V700, 4RE STREAMING | 1 | 5 YEAR | Included | Included | Included | |
| 56 | SSV00S03369A | CC AWARE PATROL STARTER BUNDLE | 1 | 5 YEAR | $96,750.00 | $96,750.00 | $96,750.00 | |
| 57 | SSV00S03375A | INTEGRATION: CAPE STREAMING | 1 | 5 YEAR | Included | Included | Included | |
| 58 | SSV00S03374A | INTEGRATION: MOBILE VIDEO M500, V300, V700, 4RE TELEMETRY | 1 | 5 YEAR | Included | Included | Included | |
| 59 | SSV00S03373A | INTEGRATION: CAPE TELEMETRY | 1 | 5 YEAR | Included | Included | Included | |
| 60 | SSV00S03372A | INTEGRATION: VIGILANT | 1 | 5 YEAR | Included | Included | Included | |
| 61 | SSV00S03660A | INTEGRATION: COMMANDCENTRAL EDGE APPLIANCE | 1 | 5 YEAR | $0.00 | $0.00 | $0.00 | |
| 62 | SSV00S03661A | INTEGRATION: COMMANDCENTRAL STREAMING | 1 | 5 YEAR | $0.00 | $0.00 | $0.00 | |

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| Line # | Item Number | Description | Qty | Term | List Price | Sale Price | Ext. Sale Price | Refresh Duration |
|---|---|---|---|---|---|---|---|---|
| 63 | WGW00121-200 | EQUIPMENT INSTALLATION SERVICE | 5 | | $500.00 | $0.00 | $0.00 | |
| | Vigilant | | | | | | | |
| 64 | DDN3420A | BASIC REMOTE SUPPORT FOR WG LPR LICENSE | 1 | | $500.00 | $0.00 | $0.00 | |
| 65 | TT4131A | M500 BASIC LPR ANNUAL SERVICE FEE | 45 | | $550.00 | $0.00 | $0.00 | |
| | CAPE | | | | | | | |
| 66 | SSV00S03214A | CAPE PLUS SUBSCRIPTION | 1 | 2 YEAR | $38,352.00 | $0.00 | $0.00 | |
| 67 | PSV00S03215A | MSI DEPLOYMENT STANDARD/PLUS SUBSCRIPTION | 1 | | $2,150.00 | $0.00 | $0.00 | |
| 68 | PSV00S03216A | EXTENDED POST DEPLOYMENT SUPPORT | 1 | | $800.00 | $0.00 | $0.00 | |

Grand Total $1,312,948.53(USD)

## Pricing Metric :

Price is indicative of the following -
# of Named Users for CommandCentral Evidence - 10
# of Named Users for CommandCentral Aware Starter - 25
# of Location Devices for CommandCentral Aware Starter - 150
# of Video Streaming Devices for CommandCentral Aware Starter - 150
# of Learner LxP Subscriptions for CommandCentral Aware Starter - 25

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## Pricing Summary

| | List Price | Sale Price |
|---|---|---|
| Upfront Costs for Hardware, Accessories and Implementation (if applicable), plus Subscription Fee | $470,469.01 | $389,348.11 |
| Year 2 Subscription Fee | $247,957.00 | $230,900.10 |
| Year 3 Subscription Fee | $228,781.00 | $230,900.10 |
| Year 4 Subscription Fee | $228,781.00 | $230,900.10 |
| Year 5 Subscription Fee | $228,781.00 | $230,900.10 |
| Grand Total System Price | $1,404,769.01 | $1,312,948.53 |

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# COMMANDCENTRAL AWARE PATROL STARTER OFFER SOLUTION DESCRIPTION

## OVERVIEW

CommandCentral Aware is a situational awareness software solution designed to deliver real-time intelligence across the public safety workflow. The Patrol Starter offering of CommandCentral Aware provides a map-based and list view of location data and resource details from V300 Body-Worn Cameras, 4RE In-Car Video Systems, CAPE-equipped drones, license plate recognition (LPR) cameras sourced from Vigilant VehicleManager, and compatible APX radios. These resources can also send status information, such as a radio entering an emergency state, a body-worn camera recording activation, or an LPR camera registering a hot hit, to CommandCentral Aware that can trigger an alert. Live video from enabled camera resources can also be viewed. This offer is designed to help command staff and patrol or shift supervisors gain valuable visibility to the field, more quickly identify emergency situations and provide supervision.

CommandCentral Aware is hosted in the Microsoft Azure Government cloud and is offered as-a-service for an annual subscription cost.

**Solution Elements**

CommandCentral Aware is comprised of a series of core, functional modules and integrated systems that power the solution. The CommandCentral Aware Patrol Starter offer includes the following:

**Modules:**

- ESRI-based unified map
- Configurable event monitor
- Workflow automation rules engine

**Integrations:**

- Vigilant VehicleManager - LPR camera locations and details, hot hit alerts, search
- APX Next, XE, XN and N70 radios - Radio locations, details and statuses
- CAPE-equipped drones - Drone locations, details and livestreams
- V300 Body-Worn Cameras - Camera locations, details and livestreams
- 4RE In-Car Video Systems - System locations, details and livestreams

Cloud anchor server hardware and required software is also available if not already present, to establish a connection between on-premises systems and the CommandCentral cloud.

## MODULES INCLUDED WITH THE COMMANDCENTRAL AWARE PATROL STARTER OFFER

The CommandCentral Aware Patrol Starter offer includes the following modules, described in the sections below.

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**Unified Map**

CommandCentral Aware offers a unified mapping interface, powered by ESRI, to display resource and event locations and alerts. Users can view all location-based data on the map display. The CommandCentral Aware map also includes the following:

- Custom Map Layers - Add your custom map layers from ArcGIS, Mapbox or GeoServer.
- Data Layer Panel – Show or hide data and custom map layers to refine the map view.
- Event Detail Display – View details associated with each event on the map.
- Incident Recreation – Replay a timelapse of mapped events over a set period of time for up to 90 days. This history can be exported and viewed in Google Earth or ESRI ArcGIS Pro.
- Traffic and Weather - Overlay real-time traffic data and a weather radar map layer.
- Building Floor Plans - Enhance your map view with the addition of static indoor floor plans.
- Collaborative Drawing Tools - Draw polygons, polylines and points onto the map. Annotations are visible by all users as a data layer.
- Zones of Interest - Create geofences that geographically filter information in a defined area.
- Directed Patrol Alerts - Specify geographic areas, set alerts and define rules for resources to enter and remain in for a user-determined period of time.
- Unit Management - From CommandCentral Admin, affiliate various resources into a single unit that can be named and intelligently tracked based on data from all affiliated resources.

**Event Monitor**

CommandCentral Aware offers an event monitor to display a running list of event and resource alerts. The event monitor is highly configurable to meet the needs and preferences of each user. Filter events by type, create separate tabs for different event types and show, hide or reorder columns of event information within the tabs. Pin an event to the top of your monitor as well as apply your event monitor filter to the map to maintain a consistent view of information. Details from any event can be opened in a dialogue box to give users all information about an event provided by the source system.

**Rules Engine**

CommandCentral Aware’s workflow automation rules engine allows users to create rule-sets with “AND” or “OR” operators to trigger actions based on event types. For example, rows in the Event Monitor can be highlighted, and audible alerts for critical events can be customized. These visual or auditory triggers reduce the number of steps needed to support an incident.

## INTEGRATIONS INCLUDED WITH THE COMMANDCENTRAL AWARE PATROL STARTER OFFER

The CommandCentral Aware Patrol Starter offer provides a specific set of integrations, described in the sections below.

**4RE In-Car Video Systems**

The CommandCentral Aware Patrol Starter offer comes with integration to 4RE In-Car Video Systems. With this integration, users can view real-time location, system details and livestreams from systems in the field that are actively recording. Your agency can provision up to 500 4RE systems in CommandCentral Aware, and administrators can add, edit, or remove systems as needed.

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When 4REs are active in the field and the in-vehicle modem is on, the CommandCentral Aware user can view the system's location on the map, see it listed in the event monitor and open up a video livestream - upon recording being initiated in the field. CommandCentral Aware users can control the livestream to see front, side, rear, and panoramic views of events both in and outside of the patrol car. CommandCentral Aware users can access up to ten simultaneous 4RE live-streams.

**V300 Body-Worn Cameras**

The CommandCentral Aware Patrol Starter offer comes with integration to V300 Body-Worn Cameras. This integration brings V300 location, device details and the livestream from an actively recording camera into CommandCentral Aware on the map and in the event monitor. When the body-worn camera is on and within WiFi range of a vehicle or other agency authorized hotspot, the location of the V300 will be displayed on the CommandCentral Aware map. When the V300 is recording, you can view the video livestream remotely from CommandCentral Aware.

**APX Next, XN, XE and N70 Radios**

The CommandCentral Aware Patrol Starter offer comes with integration to APX NEXT, XN, XE and N70 radios equipped with an active SmartLocate subscription. Once SmartLocate is activated, these APX radios can send device location, details and status over a broadband network. This data is available in CommandCentral Aware on the map and event monitor. Broadband connectivity via SmartLocate increases the frequency of location reporting beyond the capability of an LMR system to improve location accuracy and enable more devices to be tracked.

**CAPE-Equipped Drones**

The CommandCentral Aware Patrol Starter offer comes with integration to CAPE-equipped drones. This integration brings any active drone's location, device details and a link to the livestream into CommandCentral Aware on the map and in the event monitor.

**Vigilant VehicleManager**

The CommandCentral Aware Patrol Starter offer comes with integration to Vigilant VehicleManager. The locations of LPR cameras integrated with Vigilant VehicleManager can be viewed on the map in CommandCentral Aware as a data layer that can be toggled on or off. In addition to LPR camera locations, hits that match a hot list are also displayed on the map at the location of the camera that generated the scan. Hits are also displayed in the event monitor and can trigger an alert.

Additionally, with the Vigilant VehicleManager, CommandCentral Aware users have the ability to initiate a search for historical license plate data directly from within CommandCentral Aware. By simply highlighting a license plate and right clicking, an option will be presented to run a search. This will open up a new window displaying the results directly within Vigilant VehicleManager. From there, users can conduct additional searches or analysis on the vehicle of interest.

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# CLOUD SECURITY & COMPLIANCE

**Proactive Security Design**

Security is proactively incorporated into the design of our applications, not applied reactively when incidents occur. Applications undergo security reviews at each phase of their development, and continue with ongoing assessments after deployment to find and repair vulnerabilities.

**Compliance with Industry Best Practices**

Our cloud solutions comply with key industry best practices for security, including: NIST Security and Privacy Controls for Information Systems and Organizations (800-53), ISO 27001, 27017, 27018 - Specification for an Information Security Management System, Open Web Application Security Project (OWASP), and Center for Internet Security (CIS) and Criminal Justice Information System (CJIS) Security Policy. We are also annually audited for Service Organization Control (SOC) 1 and 2.

We conduct continuous and comprehensive risk assessments following the guidelines and best practices provided by NIST, OWASP, CIS and ISO.

**Expert Knowledge on Your Team**

Over 350 specially trained and certified Cybersecurity Champions ensure that a culture of cybersecurity is instilled into the fabric of our product and services teams. Programmers receive ongoing security training and updates on the latest hacker tactics so they can layer security into every stage of the application development process.

**Enhancing Cybersecurity Awareness**

Our CISA-recognized Public Safety Threat Alliance shares threat information and raises cybersecurity awareness across Public Safety member organizations. Our Threat Intelligence team shares a holistic view of the cyber threat landscape to provide decision makers with the information needed to make better security decisions.

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# COMMANDCENTRAL AWARE STARTER STATEMENT OF WORK

## OVERVIEW

In accordance with the terms and conditions of the Agreement, this Statement of Work ("SOW") defines the principal activities and responsibilities of all parties for the delivery of the Motorola Solutions, Inc. ("Motorola") system as presented in this offer to Customer. When assigning responsibilities, the phrase "Motorola" includes our subcontractors and third party partners.
Deviations and changes to this SOW are subject to mutual agreement between Motorola and the Customer and will be addressed in accordance with the change provisions of the Agreement.
Unless specifically stated, Motorola work will be performed remotely. Customer will provide Motorola resources with unrestricted direct network access to enable Motorola to fulfill its delivery obligations.
Motorola's Project Manager will use the SOW to guide the deployment process and coordinate the activities of Motorola resources.
The scope of this project is limited to supplying the contracted equipment and software as described in the Product Description and system integration and or subscription services as described in this SOW and contract agreements.

## Contract Administration and Project Initiation

After the contract is dually executed, the project is set up in Motorola's information and management systems, project resources are assigned, and Project Planning activities commence. Motorola and Customer will work to complete their respective responsibilities in accordance with the mutually agreed upon and executed project schedule. Any changes in the project schedule will be mutually agreed upon via change order in order to avert delay.

## Completion and Acceptance Criteria

Motorola's work is considered complete upon Motorola completing the last task listed in a series of responsibilities or as specifically stated in Completion Criteria. Customer task completion will occur in a way that enables Motorola to complete its tasks without delay.
The Customer will provide Motorola with written notification that it does not accept the completion of a task or rejects a Motorola deliverable within five (5) business days of completion or receipt of a deliverable.
As CommandCentral Aware is provided as a subscription service, the subscription service period will begin upon activation of service unless mutually agreed otherwise by project change order. Customer will not unreasonably delay beneficial use. In any event, absent a written notice of non-acceptance, beneficial use will be deemed to have occurred thirty (30) days after functional demonstration of the product.

Note - Motorola has no responsibility for the performance and/or delays caused by other contractors or vendors engaged by the Customer for this project, even if Motorola has recommended such contractors.

## Project Roles and Responsibilities

### Motorola Roles and Responsibilities

A Motorola team, made up of specialized personnel, will be assigned to the project under the direction of the Motorola Project Manager. Team members will be multi-disciplinary and may fill more than one role. Team members will be engaged in different phases of the project as necessary.
In order to maximize efficiencies, Motorola's project team will provide services remotely via teleconference, web-conference, or other remote methods in fulfilling its commitments as outlined in this SOW.
The personnel role descriptions noted below provide an overview of typical project team members. One or more resources of the same type may be engaged as needed throughout the project. There may be other personnel engaged in the project under the direction of the Project Manager.

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Motorola's project management approach has been developed and refined based on lessons learned in the execution of hundreds of system implementations. Using experienced and dedicated people, industry-leading processes, and integrated software tools for effective project execution and control, we have developed and refined practices that support the design, production, and validation required to deliver a high-quality, feature-rich system.

**Project Manager**

A Motorola Project Manager will be assigned as the principal business representative and point of contact for the organization. The Project Manager's responsibilities include the following:

- Manage the Motorola responsibilities related to the delivery of the project.
- Maintain the project schedule and manage the assigned Motorola personnel and applicable subcontractors/supplier resources.
- Manage the Change Order process per the Agreement.
- Maintain project communications with the Customer.
- Identify and manage project risks.
- Collaborative coordination of Customer resources to minimize and avoid project delays.
- Measure, evaluate, and report the project status against the Project Schedule.
- Conduct remote status meetings on mutually agreed dates to discuss project status.
- Provide timely responses to issues related to project progress.

**Solutions Architect**

The Solutions Architect is responsible for the delivery of the technical and equipment elements of the solution. Specific responsibilities include the following:

- Confirmation that the delivered technical elements and enablement of applications meets contracted requirements.
- Delivery of interfaces and integrations between Motorola products.
- Engagement throughout the duration of the delivery.

**Customer Success Advocate**

A Customer Success Advocate will be assigned to the Customer post Go Live event. By being the Customer's trusted advisor, the Customer Success Advocate's responsibilities include the following:

- Assist the Customer with maximizing the use of their Motorola software and service investment.
- Actively manage, escalate, and log issues with Support, Product Management, and Sales.
- Provide ongoing customer communication about progress, timelines, and next steps.
- Liaise with the Customer on industry trends and Motorola evolutions.

**Customer Support Services Team**

The Customer Support Services team provides ongoing support following commencement of beneficial use of the Customer's System(s) as defined in the Agreement.

**Customer Core Team, Roles and Responsibilities Overview**

The success of the project is dependent on early assignment of a Customer Core Team. During the Project Planning review, the customer will be required to deliver names and contact information for the below listed roles that will make up the Customer Core Team. In many cases, the Customer will provide project roles that correspond with Motorola's project roles. It is critical that these resources are empowered to make decisions based on the Customer's operational and administration needs. The Customer Core Team should be engaged from project initiation through beneficial use of the system. The continued involvement in the project and use of the system will convey the required knowledge to maintain the system post-completion of the project. In some cases, one person may fill multiple project roles. The Customer Core Team must be committed to participate in activities for a successful implementation. In the event that

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the Customer is unable to provide the roles identified in this section, Motorola may be able to supplement Customer resources at an additional price.

**Project Manager**

The Project Manager will act as the primary Customer point of contact for the duration of the project. The Project Manager is responsible for management of any third party vendors that are the Customer's subcontractors. In the event that the project involves multiple agencies, Motorola will work exclusively with a single Customer-assigned Project Manager (the primary Project Manager). The Project Manager's responsibilities include the following:

- Communicate and coordinate with other project participants.
- Manage the Customer project team, including timely facilitation of efforts, tasks, and activities.
- Maintain project communications with the Motorola Project Manager.
- Identify the efforts required of Customer staff to meet the task requirements and milestones in this SOW and Project Schedule.
- Consolidate all project-related questions and queries from Customer staff to present to the Motorola Project Manager.
- Review the Project Schedule with the Motorola Project Manager and finalize the detailed tasks, task dates, and responsibilities.
- Measure and evaluate progress against the Project Schedule.
- Monitor the project to ensure resources are available as scheduled.
- Attend status meetings.
- Provide timely responses to issues related to project progress.
- Liaise and coordinate with other agencies, Customer vendors, contractors, and common carriers.
- Review and administer change control procedures, hardware and software certification, and all related project tasks required to maintain the Project Schedule.
- Ensure Customer vendors' adherence to overall Project Schedule and Project Plan.
- Assign one or more personnel who will work with Motorola staff as needed for the duration of the project, including at least one Application Administrator for CommandCentral Aware and one or more representative(s) from the IT department.
- Identify the resource with authority to formally acknowledge and approve change orders, approval letter(s), and milestone recognition certificates, as well as approve and release payments in a timely manner.
- Provide building access to Motorola personnel to all Customer facilities where system equipment is to be installed during the project. Temporary identification cards are to be issued to Motorola personnel, if required for access to facilities.
- Ensure remote network connectivity and access to Motorola resources.
- As applicable to this project, assume responsibility for all fees for licenses and inspections and for any delays associated with inspections due to required permits.
- Provide reasonable care to prevent equipment exposure to contaminants that cause damage to the equipment or interruption of service.
- Ensure a safe work environment for Motorola personnel.
- Provide signatures of Motorola-provided milestone certifications and Change Orders within five business days of receipt.

**System Administrator**

The System Administrator manages the technical efforts and ongoing tasks and activities of their system, as defined in the Customer Support Plan ("CSP").

**Application Administrator(s)**

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The Application Administrator(s) manage the Customer-owned provisioning maintenance and Customer code tables required to enable and maintain system operation. The Application Administrator's involvement will start at the Project Kickoff stage of the project. They are engaged throughout the project to ensure they are able to maintain the provisioning post-handoff. The Application Administrator's responsibilities include the following:

- Participate in overall delivery activities to understand the software, interfaces, and functionality of the system.
- Authorize global provisioning choices and decisions, and be the point(s) of contact for reporting and verifying problems and maintaining provisioning.
- Obtain inputs from other user agency stakeholders related to business processes and provisioning.

**Subject Matter Experts**

The Subject Matter Experts ("SME" or Super Users) are the core group of users involved with the Business Process Review ("BPR") and analysis, training, and the provisioning process, including making global provisioning choices and decisions. These members should be experienced users in the working area(s) they represent (dispatch, patrol, real time crime center, etc.), and should be empowered to make decisions related to provisioning elements, workflows, and screen layouts.

**IT Personnel**

IT personnel provide required information related to LAN, WAN, and wireless networks. They will provide required information related to the devices and infrastructure related to servers, clients, radio, video, and other devices ancillary to the implementation. They must also be familiar with connectivity to internal, external, and third party systems to which the Motorola system will interface.

**User Agency Stakeholders**

User Agency Stakeholders, if the system is deployed in a multi-agency environment, are those resources representing agencies outside of the Customer's agency. These resources will provide provisioning inputs to the Customer Core Team if operations for these agencies differ from that of the Customer. The Customer will manage User Agency Stakeholder involvement, as needed, to fulfill Customer responsibilities.

**General Customer Responsibilities**

In addition to the Customer Responsibilities stated elsewhere in this SOW, the Customer is responsible for the following:

- All Customer-provided equipment, including hardware and third party software, necessary for delivery of the System not specifically listed as a Motorola deliverable. This will include end user workstations, network equipment, telephone, radios, cameras, sensors, or TDD equipment and the like.
- Configuration, maintenance, testing, and supporting the third party systems the Customer operates that will be interfaced to as part of this project.
- Customer is responsible for providing the Applications Programming Interface ("API") or Software Development Kit ("SDK") software licenses and documentation that details the integration process and connectivity for the level of interface integration defined by Motorola.
- Communication between Motorola and Customer's third party vendors, as required, to enable Motorola to perform its duties.
- All necessary third-party upgrades of their existing system(s) as may be required to support the solution. Motorola does not include any services, support, or pricing to support Customer third-party upgrades in this proposal.
- Mitigate the impact to third-party systems, to include interfaces that result from Customer upgrading a third-party system. Motorola strongly recommends working with Motorola to understand the impact of such upgrades prior to taking any upgrade action.
- Motorola will have no responsibility for the performance and/or delays caused by other contractors or vendors engaged by Customer for this project, even if Motorola has recommended such contractors.

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- Active participation of Customer Core Team in project delivery meetings and working sessions during the course of the project. Customer Core Team will possess requisite knowledge of Customer operations and legacy system(s) and possess skills and abilities to operate and manage the system.
- The provisioning of Customer code tables and GIS map services as requested by Motorola. This information must be provided in a timely manner in accordance with the Project Schedule.
- Electronic versions of any documentation associated with the business processes identified.
- Provide a facility with the computer and audio-visual equipment for work sessions.
- Ability to participate in remote project meeting sessions using Google Meet or a mutually agreeable, Customer-provided, alternate remote conferencing solution.

### Project Planning and Pre-Implementation Review

A clear understanding of the needs and expectations of both Motorola and the Customer are critical to the successful implementation and ongoing operation of CommandCentral. In order to establish initial expectations for system deployment and to raise immediate visibility to ongoing operation and maintenance requirements, Motorola will work with the Customer to help understand the impact of introducing a new solution and your preparedness for the implementation and support of the CommandCentral system.
Shortly after contract signing, Motorola will conduct a one-on-one teleconference with the Customer Project Manager to review the task requirements of each phase of the project and help to identify areas of potential risk due to lack of resource availability, experience, or skill.
The teleconference discussion will focus on the scope of implementation requirements, resource commitment requirements, cross-functional team involvement, a review of the required technical resource aptitudes and a validation of existing skills, and resource readiness.

**Motorola Responsibilities**

- Make initial contact with the Customer Project Manager and schedule the Pre-Implementation Review.
- Discuss the overall project deployment methodologies, inter-agency/inter-department decision considerations and third party engagement/considerations, as applicable.
- Discuss Customer involvement in system provisioning and data gathering to understand scope and time commitment required.
- Discuss the Learning eXperience Portal (“LXP”) training approach.
- Review the Implementation Packet.
- Review the roles of the project participants to identify communication flows and decision-making authority between project participants.
- Review the resource and scheduling requirements.
- Review the teams’ interactions (meetings, reports, milestone acceptance) and Customer participation.
- Obtain and complete all paperwork and/or forms (i.e. fingerprints, background checks, card keys and any other security requirement) required of Motorola resources to gain access to each of the sites identified for this project.
- Coordinate enabling designated Customer Application Administrator with access to the LXP and CommandCentral Admin Portal.

**Customer Responsibilities**

- Provide Motorola with the names and contact information for the designated LXP and application administrators.
- Acknowledge understanding of the Implementation Packet.
- Review the roles of the project participants to identify communication flows and decision-making authority between project participants.
- Provide VPN access to Motorola staff to facilitate delivery of services described in this SOW.

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- Validate any necessary non-disclosure agreements, approvals, and other related issues are complete in time so as not to introduce delay in the project schedule. Data exchange development must adhere to third party licensing agreements.
- Provide all paperwork and/or forms (i.e. fingerprints, background checks, card keys and any other security requirement) required of Motorola resources to obtain access to each of the sites identified for this project.
- Provide the contact information for the license administrator for the project; i.e. IT Manager, CAD Manager, and any other key contact information as part of this project.

**Completion Criteria**

Implementation Packet.

## ENVIRONMENTAL DESIGN CONSIDERATIONS

The following environmental requirements must be met by Customer before enablement finish in order to enable Motorola to complete installation activities presented in this SOW:

- Provide connectivity between the various networks.
- Provide VPN remote access for Motorola deployment personnel to configure the system and for Customer Support to conduct diagnostics
- Provide backup power, as necessary.
- Provide Internet access to CommandCentral Aware server(s). This includes software licenses and media and installation support from the Customer's IT personnel.
- Perform any electrical or infrastructure improvements required at the Customer's facility.
- Provide backhaul equipment, installation, and support costs.
- Provide devices such as workstations, tablets, and smartphones with Internet access in order to use the CommandCentral Aware solution. Chrome Browser is recommended for optimal performance. CommandCentral Aware workstations to support MS Windows 10 Enterprise.
- Provide Antivirus software for the CommandCentral Aware client.
- Ensure existing APX subscribers will be at software version R15.00.00 or later and equipped with GPS and IV&D options in order to use the Location on PTT feature.
- Provide Motorola access with administrative rights to Active Directory for the purpose of installation/configuration and support.
- If interfaces are being included in this offer, the Customer is responsible for all necessary third party upgrades of their existing system(s) as may be required to support the CommandCentral solution. Our offer does not include any services, support, or pricing to support Customer third party upgrades.
- If interfaces are being included in this offer, the Customer is responsible to mitigate the impact to third party systems, to include CommandCentral interfaces that result from the customer upgrading a third party system. Motorola strongly recommends working with Motorola to understand the impact of such upgrades prior to taking any upgrade action.
- Provide all environmental conditions as outlined in the Product Description; such as power, firewall, and network requirements.

## COMMANDCENTRAL ENABLEMENT

The Customer will work with Motorola on setup and configuration of the Customer's firewall in order to allow traffic from CommandCentral.

### Agency and User Setup

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The Customer's agency(s) and CommandCentral users must be provisioned within the CommandCentral cloud platform using the CommandCentral Admin Portal. The provisioning process allows the agency(s) to define the specific capabilities and permissions of each user.

**Motorola Responsibilities**

- Use the CommandCentral Admin tool to establish the Customer and the Customer's agency(s) within the CommandCentral cloud platform. This activity is completed during the order process.
- Provision agency's CommandCentral initial users and permissions.

**Customer Responsibilities**

- Identify a System Administrator(s).
- Ensure all System Administrators complete the CommandCentral Admin training.
- Ensure needed traffic is allowed through Customer's firewall as requested by Motorola.
- Use the CommandCentral Admin Portal to set up CommandCentral administration and user passwords, and provision agency's CommandCentral users and permissions.

**Completion Criteria**

Initial agencies and users have been configured.

## SOFTWARE INSTALLATION AND CONFIGURATION

### CloudConnect Installation and Configuration

**Motorola Responsibilities**

- Verify remote access capability.
- Remotely configure CloudConnect Virtual Machine within the Cloud Anchor Server.
- Configure network connectivity and test connection to the CloudConnect Virtual Machine.

**Customer Responsibilities**

- Give Motorola two static IP addresses, corresponding subnet masks/default gateway, and available NTP and DNS IP to the CloudConnect Server.

**Completion Criteria**

CloudConnect Virtual Machine configuration is complete.

## INTERFACES AND INTEGRATION

The installation, configuration, and demonstration of interfaces may be an iterative series of activities depending upon access to third party systems. Interfaces will be installed and configured in accordance with the project schedule. Integrations of functionality between Motorola developed products will be completed through software installation and provisioning activities in accordance with the Project Schedule dates. Integration activities that have specific requirements will be completed as outlined in this SOW.

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## Integration Activities

Proprietary processes enable the transfer and receipt of data between Motorola systems, as described in the Product Description.

**Motorola Responsibilities**

- Establish and validate connectivity between the Motorola systems.
- Validate that each system can transmit and/or receive data.

**Customer Responsibilities**

- Provide personnel proficient with and authorized to make changes to the network and third-party systems to support Motorola's integration efforts.
- Provide network connectivity between the Motorola systems.

## CommandCentral Solution Geospatial Mapping Configuration

**Motorola Responsibilities**

- Installation and configuration of the connection to the Customer mapping system (ArcGIS Online, ESRI ArcGIS Server, or ArcGIS Portal).
- Validate mapping layers and links to validate CommandCentral Solution is accessing and using Customer-published GIS data.

**Customer Responsibilities**

- Provide access to ESRI/GIS system and/or GIS personnel.
- Provide published GIS map services.
- Publish specific maps beneficial to the Customer use.

## COMMANDCENTRAL SOLUTION PROVISIONING

Motorola will discuss industry best practices, current operations environment, and subsystem integration in order to determine the optimal configuration for CommandCentral Solution.

**Motorola Responsibilities**

- Using the CommandCentral Admin Portal, provision users, groups, and rules based on Customer Active Directory data.

**Customer Responsibilities**

- Supply the access and credentials to Customer's Active Directory for the purpose of Motorola conducting CommandCentral Solution provisioning.
- Respond to Motorola inquiries regarding users/groups/agency mapping to CommandCentral Solution functionality.

**Completion Criteria**

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CommandCentral Solution provisioning is complete upon Motorola completing provisioning activities.

## FUNCTIONAL DEMONSTRATION

The objective of functional demonstration is to validate Customer access to the CommandCentral features and functions and system integration via configured interfaces (as applicable).

**Motorola Responsibilities**

- Update functional demonstration script.
- Provide script to Customer for review and acknowledgement.
- Conduct functional demonstration.
- Correct any configuration issues impacting access to cloud based features, such as map display, location updates, video display and/or interface and integrations.
- Document, in the Implementation Packet, any corrective actions taken by Customer or Motorola during the demonstration
- Provide Customer instruction on using the Customer Feedback Tool for feature/enhancement requests.

**Customer Responsibilities**

- Review and agree to the scope of the demonstration script.
- Witness the functional demonstration and acknowledge its completion.
- Resolve any provisioning impacting the functional demonstration.

**Completion Criteria**

Conclusion of the functional demonstration.

## SYSTEM TRAINING

The objective of this task is to prepare for and deliver the contracted training. Motorola training consists of both computer-based (online) and instructor-led.

### Learning eXperience Portal (LXP Online Training)

Training is made available to Customer, in part, via Motorola's LXP. This subscription service provides your users with continual access to Motorola's library of online learning content and allows your users the benefit of learning at times convenient to them.

**Motorola Responsibilities**

- Configure a Customer specific portal view.
- Create learner access account to the portal for each user name provided by the Customer.
- Provide instruction to Customer LXP Administrator on building groups.

**Customer Responsibilities**

- Provide Motorola with names (first and last) and email addresses for each learner.
- Complete LXP Administrator training.

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- Advise users of the availability of the LXP.
- Build groups as desired.

### Instructor-Led Training (On-site and/or Remote)

**Motorola Responsibilities**

- Deliver training materials in electronic format.
- Deliver Remote Training.
- Deliver On-Site Training.
- Provide Customer with training Attendance Rosters and summarize any pertinent observations.

**Customer Responsibilities**

- Supply classroom, one login per attendee, and one workstation per attendee.
- Designate a single point of contact who will work with Motorola to ensure training environment is ready for training delivery.
- Facilitate training of all Customer end users in accordance with Customer's training delivery plan.

**Motorola Deliverables**

- Electronic versions of Training Materials.
- Attendance Rosters.

## COMPLETION MILESTONE

Following the conclusion of delivery of the functional demonstration, the project is considered complete and the completion milestone will be recognized.

## TRANSITION TO SUPPORT AND CUSTOMER SUCCESS

Customer Success is the main point of contact as you integrate this solution into your agency's business processes. Our Customer Support team will be the point of contact for technical support concerns you might have and can be reached either by phone or by emailing support.

**Motorola Responsibilities**

- Transition Customer to Motorola Customer Support.
- Supply Customer with instructions when engaging support.

**Customer Responsibilities**

- Provide Motorola with specific contact information for those users authorized to engage Motorola's support.
- Engage the Motorola support organization as needed.

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# M500 In-Car Video System License Plate Recognition (LPR) – Solution Description

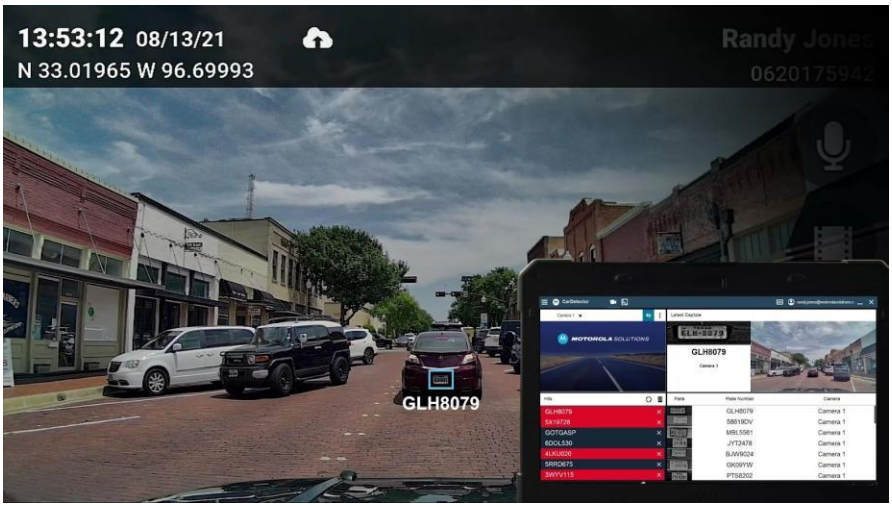
## DESCRIPTION

Safety is your primary concern. You have to ensure that every officer has the best possible information before engaging with a suspect. And a vehicle's license plate can unlock critical data to inform your response to a situation.

The M500 in-car video system has powerful License Plate Recognition (LPR) capabilities, and is carefully integrated with our market-leading Vigilant LEARN LPR platform. The M500's 120-degree 4K front camera can capture license plate and vehicle make/model information in up to three lanes of traffic simultaneously, while moving at up to 70mph. The process is completely automated, with no requirement for interaction with the camera or software. Officers can concentrate on other important tasks, while the M500 continuously scans its environment.

## DETAILS

The M500 in-car video system is designed around a high-power processing core optimized for AI applications such as LPR. Using a high-accuracy OCR algorithm, the 4K front camera sensor can capture multiple license plates moving at normal highway speeds from up to 40 feet away.




The M500 is not recommended for high-speed (>70 mph), long-range or high-throughput LPR applications, or where target vehicles will not be visible through the front windshield. For these situations we offer our L5M purpose-designed mobile LPR camera.

The M500 system connects to CarDetector Mobile (CDM) software running on your in-car Mobile Data Terminal (MDT). CDM gives officers a convenient dashboard, showing the video stream(s), recently-captured license plates and recent "hits". It can be configured to give visible and audible alerts whenever a plate matches an entry on a hotlist. Hotlists can be agency-owned or shared.

You also have access to the market-leading Vigilant PlateSearch application, for analysis of LPR data captured by agency cameras. Optionally, you can extend this to include LPR data from neighboring agencies and commercial customers.

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MOTOROLA SOLUTIONS

# Purchase Order Checklist

| |
|---|
| **Marked as PO/ Contract/ Notice to Proceed on Company Letterhead**<br>**(PO will not be processed without this)** |
| **PO Number/ Contract Number** |
| **PO Date** |
| **Vendor = Motorola Solutions, Inc.** |
| **Payment (Billing) Terms/ State Contract Number** |
| **Bill-To Name on PO must be equal to the *Legal* Bill-To Name** |
| **Bill-To Address** |
| **Ship-To Address (If we are shipping to a MR location, it must be documented on PO)** |
| **Ultimate Address (If the Ship-To address is the MR location then the Ultimate Destination address must be documented on PO )** |
| **PO Amount must be equal to or greater than Order Total** |
| **Non-Editable Format (Word/ Excel templates cannot be accepted)** |
| **Bill To Contact Name & Phone # and EMAIL for customer accounts payable dept** |
| **Ship To Contact Name & Phone #** |
| **Tax Exemption Status** |
| **Signatures (As required)** |

# Resolution NO. 388

A Resolution seeking to authorize the City Manager to execute an easement agreement between Consumers Energy Company and the City of Battle Creek in order to install two streetlights on the Capital Avenue bridge at Capital Avenue and Beckley Road.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That the City Manager is authorized to amend the contract between Consumers Energy Company and the City of Battle Creek in order to add two streetlights on the Capital Avenue bridge at Capital Avenue and Beckley Road.

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Jarret Geering, City Engineer

**Department:** Engineering

**SUMMARY**

A Resolution seeking to authorize the City Manager to execute an easement agreement between Consumers Energy Company and the City of Battle Creek in order to install two streetlights on the Capital Avenue bridge at Capital Avenue and Beckley Road.

**BUDGETARY CONSIDERATIONS**

$15,133.00 - 402.22.4021.801.310 24MAJS-8412

**HISTORY, BACKGROUND and DISCUSSION**

Consumers Energy requires a Resolution signed by the City Manager whenever there are additions, subtractions or changes to the existing street lighting. Upon completion of construction of the Capital Avenue Bridge over I-94, DPW requested an estimate of costs from Consumers Energy to reinstall street lighting to better luminate the intersection at night. Consumers Energy provided an estimate of $15,133.00 to complete the required work, and this amount has been accounted for in the budget. DPW is seeking authorization for this work, and recommends the City Manager to sign the Resolution.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

---

ATTACHMENTS:

| | File Name | Description |
|---|---|---|
| 🗋 | CAPITAL_AVE_AND_BECKLEY_RD__BATTLE_CREEK.pdf | Capital Ave Streetlight |

Consumers Energy
Count on Us
A CMS Energy Company

***CEM Support Center***
Consumers Energy, Lansing Service Center, Rm. 122, 530 W. Willow St., Lansing, MI 48906-4754

January 12, 2024

NOTIFICATION #:
1065648636

CITY OF BATTLE CREEK
PO BOX 1717
BATTLE CREEK, MI 49016-1717

REFERENCE: CAPITAL AVE AND BECKLEY RD, BATTLE CREEK

Dear Valued Customer,

Thank you for contacting Consumers Energy for your energy needs. Please note the Notification Number above and include it on any correspondence you send. Please note the Account Number, located above the Account Name on your invoice, when submitting payment.

Enclosed for approval and signature is the original Authorization for Change and Resolution covering the replacement and/or installation of streetlight(s). You are responsible for the final restoration.

The estimated cost for your energy request is as follows:

| | |
|---|---|
| Non Refundable Agreement for Installation of Electric Facilities: | $ 15,133.00 |
| Winter Construction Costs: | $ - |
| Installation Charge: | $ - |
| Additional Costs | |
| **Total Estimated Cost:** | **$ 15,133.00** |
| Less Prepayment Received: | $ - |
| **Total Estimated Cost Due:** | **$15,133.00** |

Please sign and return the original Authorization for Change and Resolution in the enclosed self-addressed envelope or email to: POBoxCEServiceRequest@cmsenergy.com. Payment in full is required before the installation can be scheduled for construction.

Please review all attached materials carefully and direct inquiries for your request to:

Jayson Landers at 269-223-1854 .

Consumers Energy
Count on Us®

A CMS Energy Company

Dear New Electric Customer:

Thank you for your request for electric service. In order to expedite your request and meet your schedule, we have deleloped the following list of items requiring action by you (Customer Responsibilities). These requirements must be met before we can install your service.

CUSTOMER RESPONSIBILITIES

| | | |
|---|---|---|
| 1) | Service Location: | A copy of our design document may be included in your customer packet. If included, your service entrance equipment should be located at the spot indicated by an "X" as shown on the design document (Form 2804). Install the meter socket 3½ - 5 feet above final grade of this location. |
| 2) | Meter Socket: | Residential metering equipment furnished free of charge, owned and maintained by Consumers Energy includes: meters and one or two position self-contained meter sockets. Contact the company representative assigned to your notification for locations to pick-up the meter socket. For metering installations that require a three or more position self-contained meter socket, the customer will be required to purchase approved meter sockets from a distributor or supplier of their choice. |
| 3) | Payment: | An invoice may be included in your customer packet. If included, the deposit amount on the invoice must be paid prior to installation of your service. Additional charges may apply and will be billed/or a refund issued upon completion of your service installation. |
| 4) | Site Conditions: | The site must be within three (3) inches of final grade before we can install your service. If you have requested an underground service, you will need to clear a 12-foot wide path that is free of building materials, brush, trees, shrubs, etc, along the proposed service route to avoid delays. Our Forestry Department can provide this service for you at an additional charge. For overhead service, nominal line clearing will be provided at no charge. Any extensive line clearing may require additional charges. After your service is installed, we will backfill and place excavated earth over the trench. You are responsible for the final restoration and ensuring that the grading over the trench is at the required level. |
| 5) | Staking: | To avoid damage, you must mark (stake) your existing private underground facilities such as: well, septic systems, sprinkler system, any underground wires, buried LPG tanks, piping, or other unusual buried facilities. These stakes must be apparent when we arrive to install the service. We cannot reimburse you for damage to facilities that are not properly staked. You do not need to stake the utilities' electric, gas or communication lines. |
| 6) | Mobile Home or Temporary Service: | If you requested service to a mobile home or temporary electric service, you will be required to set your own pole or install a pipe for underground service in accordance with Consumers Energy specifications. Contact the Consumers Energy representative assigned to your notification for additional information. |
| 7) | Construction Repair: | If additional line work is required to reach your location due to site conditions or other unusual circumstances, extra charges may be incurred. |
| **8)** | **ELECTRICAL INSPECTION:** | **YOU ARE RESPONSIBLE FOR ENSURING THAT ALL ELECTRICAL PERMITS AND INSPECTIONS ARE OBTAINED BEFORE ANY SERVICE CONNECTIONS CAN BE MADE. WIRINGS MUST COMPLY WITH LOCAL AND STATE ELECTRICAL CODES. NOTE: CAUTION SHOULD BE USED WHEN WORKING INSIDE FUSE PANEL. PANEL MAY BE ENERGIZED AFTER SERVICE IS** |
| 9) | Additional Charges: | Underground services installed during the months of December through April may be subject to an additional charge. Unusual site conditions may also require an additional charge. These charges will be communicated to you in advance of construction. |
| 10) | Joint Trenching: | Discounts for installation of electric and gas service in the same trench (joint trench) are applied in calculating the gas service contribution. |
| 11) | Usage Rate: | Customers are billed at a general service rate while the structure is under construction. If the structure is a home, then the owner of the home, upon receiving a Certificate of Occupancy, should call 1-800-477-5050 to ensure the gas and/or electric rates are changed to an appropriate rate. |

Please keep these procedures in a convenient location to review as we proceed with designing your service and constructing the job. If any of the characteristics of the service request are changed and not communicated to us, you may experience delays and/or additional charges.

**If you have any questions regarding these requirements please direct inquiries to:**

**Jayson Landers** at **269-223-1854**

Consumers Energy
Count on Us®

A CMS Energy Company

| ***PLEASE RETURN THE CHECKED DOCUMENTS BELOW TO CONSUMERS ENERGY IN THE ENVELOPE PROVIDED*** | |
|---|---|
| ***TO EXPEDITE SERVICE, RETURN VIA EMAIL TO:*** [POBoxCEServiceRequest@cmsenergy.com](mailto:POBoxCEServiceRequest@cmsenergy.com) | |
| ☐ | AGREEMENT FOR INSTALLATION (Please return all pages of contracts)<br>(Form 93, Form 94 and Form 95 - 2 Page Document Each)<br>(Form 861, Form 862 and Form 230 - 4 Page Document Each) |
| ☑ | PAYMENT WITH INVOICE STUB<br>(BOTTOM STUB IS REQUIRED FOR PROCESSING) |
| ☐ | REQUEST FOR ELEVATED CUSTOMER DELIVERY PRESSURE |
| ☑ | STANDARD LIGHTING CONTRACT<br>(MUST BE CERTIFIED BY CLERK) |
| ☐ | SIGNED CUSTOMER ATTACHMENT PROGRAM (CAP) CONTRACT<br>(PLEASE ENSURE TO CHECK PAYMENT OPTION ON CONTRACT) |
| ☐ | GO READY FORM (FORM 1250)<br>TO EXPEDITE SERVICE, RETURN VIA EMAIL TO:<br>POBoxCEServiceRequest@cmsenergy.com |
| ☐ | SITE READY PHOTO(S)<br>TO EXPEDITE SERVICE, RETURN VIA EMAIL TO:<br>POBoxCEServiceRequest@cmsenergy.com |
| ☐ | OTHER: |

| | |
|---|---|
| ELECTRIC SERVICE NOTIFICATION: | |
| GAS SERVICE NOTIFICATION: | |
| ELECTRIC OH DISTRIBUTION NOTIFICATION: | |
| ELECTRIC UG DISTRIBUTION NOTIFICATION: | |
| GAS MAIN NOTIFICATION: | |
| STREETLIGHT NOTIFICATION: | 1065648636 |

# *GO-READY* Checklist
# Natural Gas & Electric Request

Consumers Energy
Count on Us®

**Thank you for contacting Consumers Energy for your energy needs. This form is required to schedule your service installation, retirement, or alteration. Consumers Energy will contact you one to two days before our scheduled arrival. If it is deemed that any of the requirements are not met upon our arrival, Consumers Energy reserves the right to reschedule your job.**

Please return completed Checklist either (1) by E-mail: poboxceservicerequest@cmsenergy.com (preferred) or (2) by Fax: 517-374-2424.

*If neither option is available, you can mail a completed application to: CEM Support Center, Rm. 122, 530 W Willow St, Lansing MI 48906-4754*

**Notification #:** 1065648636

**Service Address:** CAPITAL AVE AND BECKLEY RD, BATTLE CREEK

**Please check all requirements on the checklist below before returning this document. Providing accurate information upon completion when submitting your form helps assure construction execution upon crew arrival.**

| | YES | N/A |
|---|---|---|
| 1. Has your payment been submitted to Consumers Energy? | ☐ | ☐ |
| 2. Has your gas meter location been clearly marked, and/or your electric meter socket properly installed at the agreed upon location (service installation or alteration)? | ☐ | ☐ |
| 3. Has your electric meter been inspected and approved by the local city/township inspector? | ☐ | ☐ |
| 4. Is the site at rough grade? | ☐ | ☐ |
| 5. Is a 12' wide path clear of debris and construction equipment? | ☐ | ☐ |
| 6. Site Ready Photo. Include photo with Checklist. | ☐ | |

**Making Consumers Energy aware of any customer-owned, underground facilities present, by clearly identifying and indicating the facility location reduces the risk of damages. Locate or expose any privately owned underground facilities or buried obstructions including, but not limited to:**

| | YES | N/A | | YES | N/A |
|---|---|---|---|---|---|
| Septic tank (Existing or future) | ☐ | ☐ | Underground yard lighting | ☐ | ☐ |
| Drain field (Existing or future) | ☐ | ☐ | Sprinkler systems | ☐ | ☐ |
| Well (Existing or future) | ☐ | ☐ | Electronic dog fences | ☐ | ☐ |

**Other:** _____

These facilities must be marked with stakes, spray paint, or flags. Consumers Energy and/or its agents will not be held responsible for damage that occurs to customer-owned underground facilities that are not properly located and marked before service installation.

After services are installed, excavation will be backfilled. Final restoration is your responsibility.

Thank you for your partnership!

Printed Name: _____

Signature: _____ Date: _____

Consumers Energy
Count on Us®

| | |
|---|---|
| **Amount Due:** | **$15,133.00** |
| **Please pay by:** | **January 26, 2024** |

CITY OF BATTLE CREEK
PO BOX 1717
BATTLE CREEK MI 49016-1717

| | |
|---|---|
| **Invoice Number** | 9326151310 |
| **PO Number** | |
| **PO Date** | |
| **Bill Date** | 01/12/24 |

**Account: 3000 2181 0902**

CAPITAL AVE AND BECKLEY RD BATTLE CREEK - STREETLIGHTING - NOTIFICATION NUMBER (s): 1065648636 -

# NONENERGY INVOICE

| DESCRIPTION | QUANTITY | UNIT PRICE | AMOUNT |
|---|---|---|---|
| Electric Streetlights | 1.0 EA | $15,133.00 | $15,133.00 |

**TOTAL DUE:** $15,133.00

**See Page 2 for Payment Options.**

Consumers Energy is regulated by the Michigan Public Service Commission, Lansing, Michigan

**INVOICE QUESTIONS - Contact:** Jayson Landers -269-223-1854 -

---

Fold, detach and mail this stub with your check made payable to Consumers Energy. Please write your account number on your check.

Consumers Energy
Count on Us®

**Account: 3000 2181 0902**

CONSUMERS ENERGY
CEM Support Ctr - Lansing RM 122
530 W Willow St
Lansing, MI 48906-4754

**PREPAYMENT REQUEST**

| | |
|---|---|
| **Amount Due:** | **$15,133.00** |
| **Please pay by:** | **January 26, 2024** |
| **Enclosed:** | |

6 330035272325 000015133002 0000 2056 3 300021810902 H

## Ways to pay your nonenergy bill:



**Same-day payment**
ConsumersEnergy.com

Discover® MasterCard®
Visa® or eCheck



**Same-day payment**
866-329-9593

Discover® MasterCard®
Visa® or eCheck



**By mail**
Check, money order

Consumers Energy
Payment Center
P.O. Box 740309
Cincinnati, OH 45274-0309



**In person**
Cash, check, card
or money order

Varies by authorized payment location

Fee may apply

Form 547 11-2014

# AUTHORIZATION FOR CHANGE IN STANDARD LIGHTING CONTRACT(COMPANY-OWNED) FORM 547

Contract Number: 103029849215
Consumers Energy Company is authorized as of _____ by the City of BATTLE CREEK, to make changes, as listed below, in the lighting system(s) covered by the existing Standard Lighting Contract between the Company and the City of BATTLE CREEK, dated 11/1/2017.

Lighting Type: General Unmetered Light Emitting Diode Lighting Rate GU-LED

Except for the changes in the lighting system(s) as herein authorized, all provisions of the aforesaid Standard Lighting Contract dated 11/1/2017 shall remain in full force and effect.

Notification Number(s): 1065648636

Comments: adding 2 new lights

City of BATTLE CREEK

By: _____

(Signature)

_____

(Printed)

Its: _____

(Title)

This Agreement may be executed and delivered in counterparts, including by a facsimile or an electronic transmission thereof, each of which shall be deemed an original. Any document generated by the parties with respect to this Agreement, including this Agreement, may be imaged and stored electronically and introduced as evidence in any proceeding as if original business records. Neither party will object to the admissibility of such images as evidence in any proceeding on account of having been stored electronically.

Form 547 11-2014

**RESOLUTION**

RESOLVED, that it is hereby deemed advisable to authorize Consumers Energy Company to make changes in the lighting service as provided in the Standard Lighting Contract between the Company and the City of BATTLE CREEK, dated 11/1/2017, in accordance with the Authorization for Change in Standard Lighting Contract dated _____,

heretofore submitted to and considered by this ☐ commission ☐ council ☐ board; and

RESOLVED, further, that the _____ Clerk be and are authorized to execute such authorization for change on the behalf of the City.

STATE OF MICHIGAN
COUNTY OF CALHOUN

I, _____, clerk of the City of BATTLE CREEK do hereby certify that the foregoing resolution was duly adopted by the

☐ commission ☐ council ☐ board of said municipality, at the meeting held on _____.

_____

Dated:

_____

Municipal Customer Type: City

GENERAL UNMETERED LIGHT EMITTING DIODE LIGHTING RATE GU-LED

- (2) 150 watt LED Cobrahead Cutoff to Install at location Beckley & capital, along i-94 bridge;

NORTH LIGHT

NOTE: NO LOADS FOUND IN GIS
ALL LOADS ESTIMATED

PROPOSED VOLTAGE DROP

| | |
|---|---|
| ADDED LOAD | 1 |
| XFMR LOAD | 5 |
| FLICKER LOAD | - |
| VOLT DROP | .98 |
| FLICKER | - |

**CAUTION! TRANSMISSION PIPELINE IN AREA.**

PIPELINE OWNER: PANHANDLE

PIPELINE OWNER CONTACT INFO:
NAME: NATHANIEL CARLSON
ADDRESS:
PHONE: 7139897079

SPECIAL NOTES:

KNAPP RD

CAPTIAL AVE

WATKINS SUB MINGES CREEK
LCP 401, DS
ACROSS FROM 50 KNAPP DR

1/0TX
795 KCMIL AL+SN
190'

55'4
40-3
6DX 110'
6DX 85'
150 L
45-3
42'
SOURCE

795+1/0NB
295'

I-94

SOUTH LIGHT

NOTE: NO LOADS FOUND IN GIS
ALL LOADS ESTIMATED

PROPOSED VOLTAGE DROP

| | |
|---|---|
| ADDED LOAD | 1 |
| XFMR LOAD | 5.27 |
| FLICKER LOAD | - |
| VOLT DROP | .89 |
| FLICKER | - |

45-3
6DX 60'
150 L
45-4
UG
4997
4TX 80'
4TX 80'
115
336+1/0NB
45-2
336+1/0NB 230'
6DX 165'
336+1/0NB 130'
4TX 170'
80'
25X 4406
4TX 95'
UG 4999

55-2
54 L
50-2
1/0TX 795+SN 200'
50'
135'

BECKLEY RD

403 DS
55-2
795A+SN
1/0TX
105'
25 2207 120/208V
50

50XZ 100Y 1109
45 2802
1/0TX 4+SN
336+NB 125'
50
336+NB
50
50 1104 120/208V
UG 2810

CAPTIAL AVE
795A+SN

1 INSTALL
6DX SEC DE
FIGURE 23-302-1 DETAIL A
SAG TO 4' AT SERVICE TENSION

2 INSTALL
45'3
6DX SEC DE
FIGURE 23-302-1 DETAIL A
SAG TO 4' AT SERVICE TENSION
150W LED & 12' BRKT
FIGURE 42-103-1, 42-105-1 DETAIL B

3 INSTALL
6DX SEC DE
FIGURE 23-302-1 DETAIL A
SAG TO 4' AT SERVICE TENSION

4 INSTALL
40'3
SEC TAN BRKT
FIGURE 23-301-1
SAG TO 4' AT SERVICE TENSION

5 INSTALL
45'3
6DX SEC DE
FIGURE 23-302-1 DETAIL A
SAG TO 4' AT SERVICE TENSION
150W LED & 12' BRKT
FIGURE 42-103-1, 42-105-1 DETAIL B

| | | | |
|---|---|---|---|
| METER NUMBER | | METER ORDER NUMBER | |
| | | READ | |
| METER LOCATION | | | |
| SUBSTATION | WD NO. | CAPITAL AVE AND BECKLEY RD | |
| WATKINS | 1339 | | |
| CIRCUIT | CKT NO. | CM NO.100007236582 | |
| MINGES CREEK | 04 | TLM NUMBER / # OF RODS / OHMS: 52082644 | |
| CE STAKING REQ'D [X] Yes [ ] No | | FORESTRY REQ'D [ ] Yes [X] No | |

| ORDER TYPE | MAT. TYPE | NOTIFICATION NUMBER | DESIGN NUMBER | ORDER NUMBER |
|---|---|---|---|---|
| ECNC | LED | 1065648636 | 11537341 | |

JOB PURPOSE: INSTALLING NEW LIGHTING ON BRIDGE CROSSING I-94

UPSTREAM SECTIONALIZING DEVICE: XXXX-###A

LOCATION: ENTER LOCATION INTO THIS TEXT FIELD

CONSUMERS ENERGY CONTACTS

| DEPARTMENT | NAME | NUMBER |
|---|---|---|
| COORDINATOR | JAYSON LANDERS | 269-223-1854 |
| DESIGNER | JACOB CHALUT | 517-374-2329 |

Consumers Energy — A CMS Energy Company — ELECTRIC

| SHEET B | SHEET 1 OF 1 | SCALE 1"=100' | CALHOUN CO | BATTLE CREEK TWP | T 02S R 08W SEC. 26 |
|---|---|---|---|---|---|

ELECTRIC CAD TITLE BLOCK (2020)
07-11-2023 13:20:31 SA_BOUD_JS_PROD_Design2013122.dgn

CITY OF Battle Creek MICHIGAN

# Resolution NO. 389

A Resolution seeking acceptance of the proposal of best value from Union Electric, Inc., for a new fire alarm system at the Valentine Center in a not to exceed amount of $51,475.00.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That the proposal of best value for fire alarm system at the Valentine Center is accepted from Union Electric Inc., in a not to exceed amount of $51,475.00. The City Manager is authorized to execute Contract No. 2024-041R, which will be paid from 401.16.4261.6385.931.050, General Capital Improvements, Valentine Center.

---

Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Christine Huff, Purchasing Agent

**Department:** Purchasing

**SUMMARY**

A Resolution seeking acceptance of the proposal of best value from Union Electric, Inc., for a new fire alarm system at the Valentine Center in a not to exceed amount of $51,475.00.

**BUDGETARY CONSIDERATIONS**

**HISTORY, BACKGROUND and DISCUSSION**

The solicitation was issued January 4, 2024, seeking proposals for the planning and complete installation of a full fire alarm system throughout the building that meets building codes for a childcare facility, including a monitoring system, at the Valentine Center in Battle Creek, MI in Irving Park.

Copies of the RFP were provided to over thirty companies, as a combination of those registered in our vendor database as providing this service or product, and Internet search. Planhouses were also notified who broadcast such bids around the state. In addition, an advertisement was placed in the Battle Creek

Shopper and on the City's bid management site, VendorRegistry.

An advertised pre-proposal conference was held at the Valentine Center on January 22, 2024, in which vendors were given an overview of the project, and had an opportunity to walk around the building and take measurements.

Questions were raised at the pre-proposal meeting about the possibility of asbestos that might need to be remediated. That was addressed in Addendum 1 (attached), which stated that the asbestos condition was unknown, but that asbestos would be accounted for with a change order if the contractor encountered it upon breaking into the ceilings or walls. That is the reason for the possible 20% increase to the contract: asbestos remediation. Anything exceeding a 20% increase would require Commission approval.

This was our only option aside from paying for a professional hazmat survey, and writing up a specification for remediation, rebidding, and costing us critical time.

Proposals were due February 12, 2024. We received two proposals, from Shouldice and from Union Electric. Since this was a "best value" solicitation (i.e., price and other factors considered for award), there was no bid tabulation of prices.

The initial undisclosed prices were:

$51,475 Union Electric
$72,964 Shouldice

**Neither vendor knew who the other proposers were or their prices because of this best-value process (as opposed to a lowest responsive, responsible bidder).**

Estimates prior to issuing the RFP had been that this project would be less than $50,000, so prevailing wages and bonding requirements had not been **initially** included in the RFP, so the vendors would have to be given a chance to provide revised pricing to include prevailing wages and bonding. Such changes are allowed during the RFP best-value process, as long as vendors are blind to their competition and instructions are fair and clear to all vendors.

The selection committee was comprised of Katie Norton (Facilities Manager), Todd Gerber (Field Services Superintendent), and Don Wilkinson (Building Inspector). The committee met on February 15, 2024, to discuss the proposals and decide next steps.

We invited both companies to have on site interviews and to provide a further description of their proposed scope of work to provide a fire alarm system. The meetings were held at the Valentine Center:

February 29: Shouldice
March 6: Union Electric

Pricing changes are allowed in the RFP best-value process, so along with their more detailed scope, vendors were asked to make sure their pricing was all-inclusive of the project with prevailing wages (which they were given) and bonding. The prevailing wages dated 1/19/24 were the latest up to date revision by the US Department of Labor when we pulled them. They are generally updated annually.

The revised proposals came back as follows:

$51,475 Union Electric
$82,684 Shouldice

We did not inquire of Shouldice why their price went up so much because the committee believed that Union Electric's work plan was thorough and selected them for award. Union Electric did not modify their pricing, but acknowledged the prevailing wages and bonding as being included in the price. They are a known, reputable vendor that has worked on many City projects as a sub-contractor, and the selection committee unanimously recommend Union Electric for award of this project.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

---

ATTACHMENTS:

| File Name | Description |
|---|---|
| 2024-041R_Valentine_Center_Fire_Alarm.docx | Original RFP |
| 2024-041R_Fire_Alarm_System_Valentine_Center_Union_Electric_SIGNED.pdf | Draft Contract |
| Valentine_Center_1973_Drawings.pdf | Valentine Center Drawings from 1973 |
| 2024-041R_Addendum_1.docx | Addendum 1 |
| STANDARD_CONTRACT_PROTECTIONS.docx | Standard contract protections |

**CITY OF BATTLE CREEK**

**NOTICE OF REQUEST FOR PROPOSALS**

**RFP#: 2024-041R**

**TITLE: Fire Alarm System at Valentine Center**

**ISSUE DATE: January 4, 2024**

**PROPOSAL DUE DATE:** **February 1, 2024, at 2:00 PM Local Time**

**LOCATION for submittal:** **Proposals must be submitted online. See page 9 for instructions.**
**DO NOT EMAIL PROPOSALS.**

**PRE-PROPOSAL CONFERENCE:** **January 22, 2024, 2:00pm at** 155 Walter Ave, Battle Creek, MI 49037
**Email clhuff@battlecreekmi.gov to verify there is no weather cancelation.**

**Purchasing Contact:** **Christine Huff**
E-mail: clhuff@battlecreekmi.gov questions only: do not email proposals

**DESCRIPTION:** The City is soliciting proposals for the planning and complete installation of a full fire alarm system throughout the building that meets building codes for a childcare facility, including a monitoring system, at the Valentine Center in Battle Creek, MI located at 155 Walter Ave, Battle Creek, MI.

## PROPOSAL SUBMITTAL:

Proposals must be submitted through our secure online portal by registered vendors by the date and time listed above.

Please upload **ONE pdf file** that includes all requested submittals, rather than several parts of the bid uploaded.

Please visit http://battlecreekmi.gov/230/Bid-Proposal-Solicitations and click on Bid & Proposal Solicitations. This will redirect you to our secure VendorRegistry website where you can register as a vendor (required) and obtain this full document and upload your bid.

Email the purchasing contact listed above if the above link doesn't work.

PROPOSERS ARE STRONGLY ENCOURAGED TO CAREFULLY READ THE ENTIRE REQUEST FOR PROPOSALS.

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ATTACHMENT A - DISADVANTAGED BUSINESS (DBE) FORM ..... 12

## 1.0 - GENERAL INFORMATION FOR THE RESPONDING FIRM

1.1 **ISSUING OFFICE:** This RFP is issued for the City of Battle Creek, Michigan (hereinafter referred to as the "City") through the Purchasing Office, which shall be referred to as the "Issuing Office."

1.2 **GENERAL SUBMITTAL INFORMATION:** (See Section 4.0 for detailed information)

A. Proposals must be submitted in complete original form as **one pdf** submitted through our secure online portal by registered vendors: please visit http://battlecreekmi.gov/230/Bid-Proposal-Solicitations and click on Bid & Proposal Solicitations OR email purchasing@battlecreekmi.gov for links.

B. Proposals will be accepted via the method listed until the time and date specified herein. There will be no public reading because this is an RFP, wherein price is only one factor in selection and subject to negotiation. All proposals will be available after contract award, under the FOIA.

C. Late proposals will not be accepted, and the online system will automatically shut off at exactly the specified time.

D. All proposals submitted in response to this solicitation shall become the property of the City and be a matter of public record available for review. **Vendors are advised that their proposals are subject to FOIA, and are not confidential and should not be marked as such.** However, proposals shall not be considered fully received for the purpose of Freedom of Information Act requests until the City has determined that no additional clarifications or revisions of offers shall be accepted.

E. The proposal shall be legally signed on the OFFER TO CONTRACT page and the complete address of the proposer given thereon.

F. The City is exempt from Federal Excise and State Sales Taxes, and such taxes shall not be included in proposal prices

1.3 **TENTATIVE SCHEDULE:** The City may deviate from this schedule. The City will not discuss the status of any proposal or the selection process. All proposers will be notified in writing of the City's decision. Please do not contact City staff for status updates. Interviews, if necessary, will be scheduled at mutually agreed upon times.

| | |
|---|---|
| Proposal Reviews: | week of February 5, 2024 |
| Interviews, if applicable: | week of February 12, 2024 |
| Final Decision: | March 2024 |

1.4 **AWARD OF CONTRACT**: This project will be awarded to a single contractor who submits the proposal deemed to be in the best interest of the City, unless otherwise noted in this document. Notwithstanding any other provision of the Request for Proposal, the City reserves the right to: (1) waive any immaterial defect or informality; or (2) reject any or all proposals, or portions thereof; or (3) reissue the Request for Proposal.

A response to any Request for Proposal is an offer to contract with the City based upon the terms, conditions, and specifications contained in the City's Request for Proposal. Proposals do not become contracts unless and until the City executes them. A contract has its inception in the award, eliminating a formal signing of a separate contract. For that reason, all of the terms and conditions of the contract are contained in the Request for Proposal, unless any of the terms and conditions are modified by a Request for Proposal amendment, a contract amendment, a Best and Final Offer, or by mutually agreed terms and conditions.

1.5 **SPECIAL INFORMATION**

A. Addenda to the RFP: In the event it becomes necessary to revise any part of the RFP, addenda will be provided to all contractors who are recorded as having received the RFP. It shall be the proposer's responsibility to make inquiry as to changes or addenda issued. All such changes or addenda shall become part of the contract and all bidders shall be bound by such addenda.

B. News Releases: News releases pertaining to this RFP or the services, study or project to which it relates will not be made without prior approval, and then only in coordination with the Issuing Office.

1.6 **INDEPENDENT PRICE DETERMINATION**

By submission of a proposal, the offeror certifies that in connection with this proposal:

A. The fees in the proposal have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such fees with any other offeror or with any competitor; and,

B. Unless otherwise required by law, the fees that have been quoted in the proposal have not been knowingly disclosed by the offeror directly or indirectly to any other offeror or city staff member or to any competitor; and,
C. No attempt has been made or will be made by the offeror to induce any other person or firm to submit or not to submit a proposal for the purpose of restricting competition.

1.7 **CURRENCY:** Prices calculated by the bidder shall be stated in U.S. dollars.

1.8 **DEFINITIONS:**
A. The "City" – The City of Battle Creek
B. "Contractor," "Vendor," "Firm," or "Proposer" - The firm submitting a proposal, ultimately responsible for any contract that results from this RFP.
C. "RFP" – This Request for Proposals.

1.9 **INTERVIEWS**: The City may or may not shortlist the proposers based upon responses to the submittal requirements. If necessary, the City shall conduct interviews/demonstrations. However, the City may determine that shortlisting and/or interviews/demonstrations are not necessary.

1.10 **FIRM QUALIFICATIONS**: Experiences with the City and entities that evaluation committee members represent shall be taken into consideration when evaluating qualifications and experience. The City reserves the right to make any such additional investigations as it deems necessary to establish the competency and financial stability of any firm submitting a proposal.

1.11 **DELIVERY:** Where applicable, proposals shall include all charges for delivery, packing, crating, containers, etc. Prices bid will be considered as being based on F.O.B. Delivered, freight included.

1.12 **VENUE:** Any party bringing a legal action or proceeding against any other party arising out of or relating to this Agreement or the transactions it contemplates shall bring the legal action or proceeding:

(i) in the United States District Court for the Western District of Michigan; or

(ii) in any court of the State of Michigan sitting in Calhoun County, if there is no federal subject matter jurisdiction.

1.13 **GOVERNING LAW:** This agreement shall be enforced under the laws of the State of Michigan. Contractor must comply with all applicable federal, state, county, and City laws, ordinances, and regulations. Contractor shall ensure payment of all taxes, licenses, permits, and other expenses of any nature associated with the provision of services herein. Contractor shall maintain in current status all Federal, State and Local licenses and permits required for the operation of the business conducted by the Contractor.

1.14 **BID PROTEST PROCEDURE:** Protests about the bid procedure must be in writing. This written protest must be received by the City of Battle Creek, located at 10 N. Division, Suite 214, Battle Creek, MI 49014. This written protest must be received by the City no later than ten (10) working days after notification to all bidders of the contract award decision. The City of Battle Creek must issue its written decision no more than ten (10) business days from the day the written protest was received.

If a protester thinks that the City of Battle Creek has not followed these protest procedures, the protester has ten (10) business days from the alleged infraction to file a subsequent protest with the City of Battle Creek City Manager or federal granting agency if applicable.

**1.15 FEDERAL TERMS AND CONDITIONS**
If there are federal terms and conditions attached to this solicitation, they are hereby incorporated as a material part of this contract. In cases of conflict between terms in this agreement, the federal terms shall prevail.

## 2.0 - GENERAL TERMS AND CONDITIONS

**2.1 MATERIALS AND WORKMANSHIP**: Unless otherwise specified, all materials and workmanship shall be new and of the best grade of their respective kinds for the purpose.

**2.2 NON-DISCRIMINATION CLAUSE:** The bidder agrees not to discriminate against any employee or applicant for employment, to be employed in the performance of such contract, with respect to hire, tenure, terms, conditions or privileges, of employment, or any matter directly or indirectly related to employment, because of his or her actual or perceived race, color, religion, national origin, age, sex, height, weight, physical or mental disability, family status, sexual orientation, gender identity or marital status. Breach of this covenant may be regarded as material breach of the contract as provided for in Act 220 and Act 453 of the Public Acts of 1976, as amended, entitled "Michigan Handicapper's Civil Rights Act" and the Michigan Elliott Larson Civil Rights Act." The bidder further agrees to require similar provisions from any subcontractors, or suppliers. The contractor and any subcontractors shall comply with E.O. 11246, "Equal Employment Opportunity," as amended by E.O. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

**2.3 ASSIGNMENT OF CONTRACT**: The contractor shall assign no right or interest in this contract in whole or in part and no delegation of any duty of Contractor shall be made without prior written permission of the City.

**2.4 INDEMNIFICATION**: The contractor shall protect, defend, and save the City, its officials, employees, departments and agents harmless from and against any claims, demands, suits, actions, or proceedings of any kind or nature, in any way resulting from negligent acts or omissions of the contractor or any of its agents, employees, boards, commissions, divisions, departments, or authorities in performing obligations under this agreement. Each party to this agreement agrees that any bond or insurance protection required by this agreement shall limit the terms of this indemnification provision. In case of any action brought against the City by reason of any such claim, suit, action or demand, upon prompt notice from the City, contractor covenants to defend such action or proceeding by counsel that is reasonably satisfactory to the City.

**2.5 CONTRACT**: The contract shall contain the entire agreement between the City and the Contractor relating to this requirement and shall prevail over any previous contracts, proposals, negotiations, or master agreements in any form. By signing the Offer to Contract, it is agreed that the RFP in its entirety and all enclosed forms are fully incorporated herein as a material part of the contract. In case of conflicts, the most recent document will prevail.

**2.6 PROVISIONS REQUIRED BY LAW:** Each provision required by law to be in the contract shall be enforced as though it were included herein, and if any such provision is not inserted, the contract shall be amended to make such insertion or correction.

**2.7 RELATIONSHIP OF PARTIES**: It is clearly understood that each party shall act in its individual capacity and not as an agent, employee, partner, joint venture, or associate of the other. An employee or agent of one party shall not be deemed or construed to be the employee or agent of the other party for any purpose. Taxes or social security payments shall not be withheld from a City payment issued hereunder; Contractor should make arrangements to directly pay such expenses, if any.

**2.8 RIGHTS AND REMEDIES**: No provision in this contract shall be construed as a waiver by either party of any existing or future right or remedy available by law in the event of any claim, default, or breach of contract. The failure of either party to insist upon the strict performance of any term or condition of the contract or to exercise or delay the exercise of any right or remedy provided in the contract, or by law, or the acceptance of materials or services, obligations imposed by this contract or by law, shall not be deemed a waiver of any right of either party to insist upon the strict performance of the contract.

**2.9 ADVERTISING**: Contractor shall not advertise, issue a press release or otherwise publish information concerning this RFP or contract without prior written consent of the City. The City shall not unreasonably withhold permission.

**2.10 APPLICABLE REGULATIONS/POLICIES:** The Revised Code of the State of Michigan, the Charter of the City of Battle Creek, all City Ordinances, Rules and Regulations and Policies shall apply. It shall be the responsibility of the Proposer to be familiar and comply with said regulations/policies.

**2.11 RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT**: Contractor shall give all notices and pay all royalties and fees. Contractor shall defend all suits or claims for infringement of any patent rights and shall save the City harmless from loss on account thereof. Contractor shall comply with all laws, ordinances and codes applicable to any portion of the work. All services, information, computer program elements, reports, and other

deliverables that are created under this Agreement shall be the property of the City. The Contractor shall place no restrictions on the City with regard to the distribution of any of these materials; the City shall have full, unrestricted rights to make and distribute unlimited copies of any services, information, computer programs/elements, reports, or any other deliverable. Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention in accordance with 37 CFR part 401, "Rights to Invention Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

**2.12 SUBCONTRACTORS:** No subcontract shall be made by the contractor with any other party for furnishing any of the services herein contracted for without the advance written approval of the City. All subcontractors shall comply with Federal and State laws and regulations that are applicable to the services covered by the subcontractor and shall include all the terms and conditions set forth herein, which shall apply with equal force to the subcontract, as if the subcontractor were the Contractor referred to herein. Contractor is responsible for contract performance whether or not subcontractors are used.

**2.13 OTHER FEDERAL COMPLIANCE:** Where applicable, contractor shall comply with: Copeland Anti-kickback Act (18 U.S.C. 874); Sections 3702 and 3704 of the Contract Work Hours and Safety Standards Act (40 USC 40 USC 3701-3708); Section 306 of the Clean Air Act (42 USC 7602, Air Pollution Prevention and Control); Section 508 of the Clean Water Act (33 U.S.C. 1368); Executive Order 11738, and EPA regulations (40 CFR, Part 15); and the Energy Policy and Conservation Act (Pub. L. 94A 163, 89 Stat. 871).

**2.14 RECORD ACCESS:** Contract shall grant access, if requested, by the City, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor that are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

**2.15 RECORD RETENTION:** Contractor shall retain all required records for three years after final payments and all other pending matters are closed.

**2.16 CLEAN AIR ACT**: Contractor shall comply with all applicable standards, orders, or requirements issued under Clean Air Act (42 U. S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), as amended. For contracts and subcontracts of amounts in excess of $100,000 the contractor or subcontractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.). Violations shall be reported to the Federal awarding agency and the Regional Agency (EPA).

**2.17 ENERGY EFFICIENCY:** Contractor shall maintain mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163).

**2.18 Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)** Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

**2.19 Debarment and Suspension (E.O.s 12549 and 12689)** No contract shall be made to parties listed on the General Services Administration's List of Parties Excluded from Federal Procurement or Nonprocurement Programs in accordance with E.O.s 12549 and 12689, "Debarment and Suspension." This list contains the names of parties debarred, suspended or otherwise excluded by agencies, and contractors declared ineligible under statutory or regulatory authority other than E.O. 12549. Contractors with awards that exceed the small purchase threshold shall provide the required certification regarding its exclusion status and that of its principal employees.

**2.20 SAFETY RULES:** Contractor shall perform all work under this contract in conformance with the State of Michigan general safety rules and regulations for the construction industry, as set out or authorized by the Michigan Occupational Safety and Health Act, Public Act 154 of 1974, as amended.

# 3.0 - SPECIAL TERMS AND CONDITIONS

**3.1 KEY PERSONNEL**: It is essential that the contractor provide adequate experienced personnel, capable of and devoted to the successful accomplishment of work to be performed under this contract. The Contractor must agree to assign specific individuals to the key positions.

A. The Contractor agrees that, once assigned to work under this contract, key personnel shall not be removed or replaced without written notice to the City.

B. If key personnel are not available for work under this contract for a continuous period exceeding thirty calendar days, or are expected to devote substantially less effort to the work than initially anticipated, the Contractor shall immediately notify the City, and shall, subject to the concurrence of the City, replace such personnel with personnel of substantially equal ability and qualifications.

**3.2 CANCELLATION FOR CAUSE (BREACH):** The City reserves the right to cancel the whole or any part of this contract due to failure by the contractor to carry out any obligation under this contract. The City shall issue written notice to the contractor for any of the following circumstances:

A. The contractor fails to adequately perform the services set forth in the specifications of the contract:

B. The contractor fails to make progress in the performance of the contract or gives the City reason to believe that the contractor will not or cannot perform to the requirements of the contract.

Upon receipt of the written notice of concern, the contractor shall have ten (10) calendar days to provide a satisfactory response to the City. Failure on the part of the contractor to adequately address all issues of concern may result in the City resorting to any single or combination of the following remedies.

1. Cancel any contract. If the contract is canceled by the City as provided herein, the Contractor will be paid a fair payment as negotiated with the City for the work completed as of the date of termination.
2. Reserve all rights or claims to damage for breach of any covenant of the Contract:
3. In case of default, the City reserves the right to complete the required work. The City may recover reasonable excess costs from the contractor by any remedies provided by law.

**3.3 CANCELLATION FOR CONVENIENCE:** The City may terminate this contract at any time for any reason by giving at least 30 days' notice in writing to Contractor. If the contract is canceled by the City as provided herein, the Contractor will be paid a fair payment as negotiated with the City for the work completed as of the date of termination.

**3.4 PAYMENT:** Payment shall be made monthly, upon pre-agreed milestones, or at the end of each project, within 30 days following the submittal of a correct invoice for goods received or work performed. Where applicable, expenses shall be billed at cost without markup, and must be supported by actual receipts. Mileage and per diem rates, if applicable, shall not exceed the federal rates.

**3.5 INSURANCE**:

a. The Contractor shall at the time of execution of this contract, file with the City the Certificate of Insurance, which shall cover all insurance as required herein, including evidence of payment of premiums thereon, and the policy or policies or insurance covering said City and their officers, agents and employees. Each such policy and certificate shall be satisfactory to the City. Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from their operations under this Contract.

b. The contractor shall maintain insurances in force at all times during the term of this agreement at the minimum amounts and types as indicated.

| **Coverage Afforded** | | **Limits of Liability** |
|---|---|---|
| Workers' Compensation: | | $ 100,000 or statutory limit |
| Commercial General Liability: | Bodily Injury | $1,000,000 each occurrence |
| (including XCU if appropriate) | Property Damage | $1,000,000 each occurrence |
| | or Combined Single Limit | $1,000,000 |
| Automobile Liability: | Bodily Injury | $ 300,000 each person |
| | Liability | $ 500,000 each occurrence |
| | Property Damage | $ 500,000 |
| | or Combined Single Limit | $ 500,000 |

The City of Battle Creek shall be listed as a certificate holder and as an **additional insured** on general liability coverage, and shall be provided with a Certificate of Insurance that reflects this additional insured status. A 30-day notice of cancellation or material change shall be provided to the City and so noted on the Certificate of Insurance. All certificates and notices shall be sent to City of Battle Creek, Purchasing Division Suite 214, 10 N. Division, Battle Creek, Michigan 49016.

# 4.0 - SUBMITTAL INFORMATION

## 4.1 SUBMITTAL TERMS AND CONDITIONS

A. **Basic Submittal Instructions**: Each proposal received by the City in response to this RFP becomes the property of the City and:

1. Shall be signed by an individual authorized to bind the contractor to its provisions.

2. Proposals shall not be considered fully received for the purpose of Freedom of Information Act requests until the City has determined that no additional clarifications or revisions of offers shall be accepted.

3. Is an irrevocable offer and may not be withdrawn within 90 days after the deadline for submission. Requests for clarifications or revisions automatically establish a new 90-day period.

B. **Proposal Costs**: The City is not liable for any costs incurred by contractors in the development of their proposals.

C. **Exceptions To Contract Terms And Specifications:** Offeror shall clearly identify and reference by paragraphs any proposed deviations from the Contract Terms or Scope in the RFP. Exceptions shall include, the Offeror's proposed substitute language. If no exceptions are noted in the Offeror's proposal, the City will assume complete conformance with this specification and the successful Offeror will be required to perform accordingly. Proposals submitted not meeting all requirements may be rejected.

## 4.2 SUBMITTAL REQUIREMENTS

**Submit online your proposal IN THIS ORDER in ONE PDF (please do not upload multiple files):**

**A table of contents and page numbers would be appreciated and very helpful**

1. Your proposal, organized as requested in section 4.3 on the next page. A table of contents and page numbers would be extremely helpful.
2. SIGNED and completed offer section on the Offer and Acceptance Form
3. Completed DBE forms contained in Attachment A

## Instructions for online submittal: DO NOT EMAIL PROPOSALS

- http://battlecreekmi.gov/228/Purchasing
- Follow the link to the VendorRegistry page or email purchasing@battlecreekmi.gov for links.
- Register as a vendor if you have not already
- Navigate to this RFP (name and number on the front page)
- Click on “Submit bid” and follow the instructions
- You may rescind your proposal in the system at any time before the due date/time
- Secure: City staff can see who has submitted, but the system will not allow City staff to see submittal content until after the deadline has passed.
- If you have questions about the process in VendorRegistry, please use their “help” function. They are extremely helpful. City staff can’t see what the vendor sees, so we are unable to help.

## 4.3 EVALUATION CRITERIA:

All proposals received will be evaluated by the City of Battle Creek for selection purposes. The following main categories, listed in relative order of importance, will be considered in selection. The response to this RFP shall focus on these criteria, and shall be submitted in the same order as requested and must contain, at a minimum, all of the items listed below:

### A. WORK PLAN

1. Provide a detailed work plan for a turnkey fire alarm system, including all equipment quantities.
2. Provide a schedule of work with a final completion date based on “X calendar days from Notice to Proceed.” Please do not put an actual date.
3. Describe the monitoring system.

### B. PRICE

1. Submit detailed pricing of all equipment as installed. Pricing shall be **ALL INCLUSIVE** of (but not limited to) labor, materials, PERMITS, insurance, mobilization, overhead, equipment, etc.
2. Provide detailed pricing of system monitoring for 5 years.

### C. FIRM QUALIFICATIONS

1. Describe the qualifications of your firm.
2. Describe your experience and strengths with planning and installing fire alarm systems, including monitoring.
3. List three references that we may contact. Include name and email.

# 5.0 - SCOPE OF WORK

## 5.1 BACKGROUND

The Valentine Center located at 75 Irving park drive in Battle Creek was previously a child care facility, and the City would like it to continue to be a child care facility. In order to have a proprietor continue running this facility as a child care, the current fire alarm system needs to be upgraded to meet today's required child care building code. We are looking for a vendor to help us define and recommend what that upgrade looks like for this specific facility.

## 5.2 DESCRIPTION OF WORK TO BE PERFORMED

Before submitting a proposal, firms shall carefully examine the scope of work and shall fully inform themselves as to all existing conditions and limitations and shall indicate in the proposal all items requested.

Contractor shall:

- Provide a plan for the fire alarms that are in compliance with all codes and requirements for a day care facility.
- Supply and install the fire alarms according to the plan.
- Provide and install a monitoring system.

Please note the pre-proposal conference date, time, and location on the front page of this document. That meeting will give vendors the opportunity to look at the building and ask questions.

## 6.0 - OFFER AND ACCEPTANCE FORM

**TO THE CITY OF BATTLE CREEK**: We propose to furnish all services, labor, materials, equipment, tools, or transportation required to complete the work in accordance with the specifications and conditions contained herein in consideration of the sum or sums stated in this contract, and agree that this document will constitute the contract if accepted by the City.

We hereby offer and agree to furnish the material or service in compliance with all terms, conditions, specifications, and amendments in the Request for Proposals and any written exceptions in the offer. We understand that the items in this Request for Proposals, including, but not limited to, all required certificates are fully incorporated herein as a material and necessary part of the contract. Warranty, where applicable: Contractor shall remove and replace at no additional cost to the City any defects in workmanship or materials that may be apparent or may develop within a period of one (1) year from the date of final acceptance.

We agree to complete the contract within the times specified in this Request for Proposals.

We acknowledge receipt of the following addendum(s): | | | | | |

I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder, and that our firm is not debarred from doing business under the Federal Excluded Parties List System (epls.gov).

I, the Contractor or Contractor's legally authorized signer, further certify compliance with the City of Battle Creek Ordinance Chapter 214, Discrimination Prohibited. I further acknowledge and agree that the Contractor's violation of Chapter 214 shall be a material breach of this contract. In addition, Contractor acknowledges and agrees that it shall be liable for any costs or expenses incurred by the City in obtaining from other sources, the work and services to be rendered or performed or the goods or properties to be furnished or delivered to the City under the contract as a result of a material breach in the Contract for violations of Chapter 214.

_____
Company Name

_____
Address

_____
City State Zip

_____
Signature of Person Authorized to Sign

_____
Printed Name

_____
Title

For clarification of this offer, contact:

Name: _____

Phone: _____

Fax: _____

Email: _____

## ACCEPTANCE OF OFFER:

The Offer is hereby accepted.

The Contractor is now bound to sell the materials or services listed by the attached contract and based upon the Request for Proposal, including all terms, conditions, specification, amendments, etc. and the Contractor's Offer as accepted by the City.

This contract shall henceforth be referred to as Contract No. **2024-041R**. The Contractor has been cautioned not to commence any billable work or to provide any material or service under this contract until Contractor receives purchase order and/or a notice to proceed from the City of Battle Creek Purchasing Agent.

**COUNTERSIGNED:**

_____
City Manager Date

_____
Witness Signature

**APPROVED AS TO FORM BY:**

_____
City Attorney

_____
Date

# ATTACHMENT A - DISADVANTAGED BUSINESS (DBE) FORM

## I. YOUR FIRM'S BACKGROUND:

Is your firm an MBE (at least 51% minority ownership)? _____YES _____NO

Is your firm a WBE (at least 51% woman ownership)? _____YES _____NO

Are you subcontracting any part of this project? _____YES _____NO

## II. SUBCONTRACTING INFORMATION: If subcontracting any part of the project, the bidder/contractor expressly agrees that:

(1) If awarded a contract as a result of this bid, the major subcontractors used in the prosecution of the work will be those listed below, and
(2) The following list includes all subcontractors who will perform work representing approximately five percent (5%) or more of the Total Base Bid.
(3) The Bidder represents that the subcontractors listed below are financially responsible and are qualified to do the work required.

| SUBCONTRACTOR NAME | City/State | Trade or Commodity | MBE Yes or no? | WBE Yes or no? | Approximate dollar value |
|---|---|---|---|---|---|
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# CONTRACT FORM
## CONTRACT NO. 2024-041R

THIS AGREEMENT, made and entered into this **20th** day of **March, 2024**, by and between **Union Electric, Inc.** hereinafter called the "Contractor" and the City of Battle Creek, hereinafter called the "Owner."

WITNESSETH: In consideration for the mutual covenants hereinafter stated, the parties agree for themselves, their personal representatives, successors, assigns as follows:

**I. The Contractor promises and agrees** that the following documents form the contract for the Fire Alarm system at the Valentine Center. In case of conflict, the most recent document takes precedence.

*Vendor response dated 3/8/24*
*Request for further details email dated February 20, 2024*
*Vendor response submitted February 12, 2024*
*Addendum 1 RFP 2024-041R*
*Request for Proposals 2024-041R*

Contractor shall abide by all the requirements set forth in Section 208.09, Prevailing Wages on City projects, of the City's Administrative Code, with wages and fringes attached as General Decision **Number: MI20240079 01/19/2024** and keep performance and payment bonds in the amount of 100% of the project cost in full force through project completion.

A. To furnish all materials, construction water, equipment, tools, dewatering devices, skill and labor of every description necessary or reasonable incidental to carrying forth and completing in good, firm, substantial and workmanlike manner, the work specified, in strict conformity with the true intent of the NOTICE TO BIDDERS, SPECIAL INSTRUCTIONS, GENERAL INSTRUCTIONS, INVITATION FOR BID, SPECIAL CONDITIONS, GENERAL CONDITIONS, AGREEMENT, BONDS, GENERAL SPECIFICATIONS, Contractor's bid, and Project Specifications, and other contract documents and addenda thereto, which are hereby made a part hereof as fully and to the same effect as though they had been set forth at length herein. In cases of conflict, the most recent document shall take precedence.

B. To commence work under this contract on or before a date to be specified by the owner in a written Notice to Proceed and complete the project by the date specified in Invitation for Bid.

C. Requirements for a specific trade or contract will generally be described in that portion of the specifications or drawings related to that trade or contract. Such requirements may, however, be described in other sections of the Contract Documents. The Contractor will be held responsible for having carefully examined all drawings and read all requirements of the specifications and all Contract Documents to avoid omissions or duplications and to insure a complete job.

D. The Contractor must be fully informed about conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of their obligation to furnish all material and labor necessary to carry out the provisions of their contract.

E. Any claim by the Contractor of an inability to meet any requirement set forth in the Contract Documents, or that any requirement of these documents is impractical or unreasonable, will not be recognized, unless the claim was made at the time their bid was submitted, and specific provision is made for such claim in the Agreement between Owner and Contractor (Bid and Agreement).

F. Warranty: Contractor shall remove and replace at no additional cost to the City any defects in workmanship or materials that may be apparent or may develop within a period of one (1) year from the date of final acceptance.

G. NON-DISCRIMINATION CLAUSE: The bidder agrees not to discriminate against any employee or applicant for employment, to be employed in the performance of such contract with respect to hire tenure, terms, conditions or privileges, of employment, or any matter directly or indirectly related to employment because of his or her actual or perceived race, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability, family status, sexual orientation, or gender identity. Breach of this covenant may be regarded as a material breach of the contract as provided for in Act 220 and Act 453 of the Public Acts of 1976, as amended, entitled "Michigan Handicapper's Civil Rights Act" and/or the "Michigan Elliott Larson Civil Rights Act" and/or City of Battle Creek Chapter 214 "Discrimination Prohibited" Ordinance. The bidder further agrees to require similar provisions from any subcontractors, or suppliers. The bidder agrees to comply with the Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity," as amended by Executive Order 11375 of October 13, 1967, as supplemented in Department of Labor regulations (41 CFR, Chapter 60).

**II. The Owner promises and agrees:**

A. To pay the Contractor for said work when completed in accordance with the provisions of these contract documents, and for the all-inclusive contract sum of:
**Fifty-one thousand, four hundred seventy-five thousand and 00/100 $51,475.00.** Payment for work is subject to additions provided therein and for the authorized work complete in place and accepted by the Owner or its authorized representatives.

III. It is further understood and agreed between the parties hereto as follows:
A. The said work is to be done in accordance with the laws of the State of Michigan to the entire satisfaction and approval of the Owner or its duly authorized representatives.

B. The decision of said Owner's authorized representative upon any questions connected with the execution of this Agreement or any failure or delay in the prosecution of the work by said Contractor shall be final and conclusive.

C. If, at any time after the execution of the Agreement and the Bond for its faithful performance, the Owner shall deem the surety or sureties then upon said bond to be unsatisfactory or, if, for any reason said bond shall cease to be adequate security for the performance of the work, the Contractor shall, at their expense, within fifteen (15) calendar days after receipt of written notice from the Owner to do so, furnish an additional bond or bonds in such form and amount and with such surety or sureties as shall be satisfactory to the Owner. In such event, no further payment to the Contractor shall be deemed to be due under this Agreement until such new or additional security for the faithful performance of the work shall be furnished in a manner and form satisfactory to the Owner.

D. VENUE: Any party bringing a legal action or proceeding against any other party arising out of or relating to this Agreement or the transactions it contemplates shall bring the legal action or proceeding:

(i) in the United States District Court for the Western District of Michigan; or

(ii) in any court of the State of Michigan sitting in Calhoun County, if there is no federal subject matter jurisdiction.

E. GOVERNING LAW: This agreement shall be enforced under the laws of the State of Michigan. Contractor must comply with all applicable federal, state, county, and City laws, ordinances, and regulations. Contractor shall ensure payment of all taxes, licenses, permits, and other expenses of any nature associated with the provision of services herein. Contractor shall maintain in current status all Federal, State and Local licenses and permits required for the operation of the business conducted by the Contractor.

IN WITNESS WHEREOF, the said parties have hereunto set their hands and affixed their seals, the day and year first above written.

STATE OF MICHIGAN)
) ss
COUNTY OF CALHOUN)

**I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder, and that our firm is not debarred from doing business under the Federal Excluded Parties List System (epls.gov).**

**I, the Contractor or Contractor's legally authorized signer, further certify compliance with the City of Battle Creek Ordinance Chapter 214, Discrimination Prohibited. I further acknowledge and agree that the Contractor's violation of Chapter 214 shall be a material breach of this contract. In addition, Contractor acknowledges and agrees that it shall be liable for any costs or expenses incurred by the City in obtaining from other sources, the work and services to be rendered or performed or the goods or properties to be furnished or delivered to the City under the contract as a result of a material breach in the Contract for violations of Chapter 214.**

In the Presence of:

_____

_____
Notary Public

CONTRACT FORM APPROVED BY:

_____
City Attorney

SIGNED, SEALED, AND
EXECUTED BY CONTRACTOR:

**I swear, under penalty of perjury, that I have the legal authorization to bind the firm hereunder:**

By: _____ Tim Klacking

Title: Project Manager

SIGNED, SEALED, & EXECUTED
BY CITY OF BATTLE CREEK

_____
City Manager

# PERFORMANCE BOND

KNOW ALL BY THESE PRESENTS, that _____, as Principal, and_____ _____, as Surety, are held and firmly bound unto the City of Battle Creek in the full and just sum of _____Dollars ($_____) lawful money of the United States of America for the payment of which sum of money well and truly to be made, we bind ourselves, heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract dated the_____ day of _____, 20_____ for the _____ complete, as described in the foregoing Bid and Agreement.

NOW THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that if the said Principal shall in all respects well and truly keep and perform the said contract, and shall pay all sums of money due or to become due, for any labor, materials, apparatus, fixtures or equipment furnished for the purpose of constructing the work provided in said contract, and shall defend, indemnify and save harmless said City of Battle Creek and any Consultant working on this project against any and all liens, encumbrances, damages, claims, demands, expenses, costs and charges of every kind except as otherwise provided in said specifications and other Contract Documents arising out of or in relation to the performance of said work and the provisions of said contract, and shall remove and replace any defects in workmanship or materials which may be apparent or may develop within a period of one (1) year from the date of final acceptance, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

And the said Surety, for value received, hereby stipulates and agreed that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Agreement or to the work or to the specifications.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20__.

**PRINCIPAL ATTEST:**

| | |
|---|---|
| _____ | _____ |
| Principal Business Name | Principal Secretary Signature & Seal |
| _____ | _____ |
| Address | Principal Secretary Printed Name |
| _____ | _____ |
| City, State, Zip | Witness of Principal |

**SURETY ATTEST:**

| | |
|---|---|
| _____ | BY:_____ |
| Surety Business Name | Attorney-in-Fact Signature & Seal |
| _____ | _____ |
| Address | Attorney-in-Fact Printed Name |
| _____ | |
| City, State, Zip | |

# LABOR AND MATERIALS BOND

KNOW ALL BY THESE PRESENT, that we, the undersigned, _____, hereinafter called the "Principal," and _____, a corporation organized and existing under the laws of the State of _____, having its principal office at _____, hereinafter called the "Surety," are held and firmly bound unto the City of Battle Creek, hereinafter called the "Owner," for use of any and every person, co-partnership, association or corporation interested in the full and just sum of _____Dollars ($_____), lawful money of the United States of America, to be paid to the said obligees or its or their assigns, to which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents. Sealed with our respective seals and dated this ____ day of _____, 20___.

WHEREAS, the above bounded _____, Principal, has entered into a contract with the City of Battle Creek.

Dated the _____ day of _____, 20___, for the _____.

NOW, THEREFORE, THE CONDITION OF THIS CONDITION IS SUCH, that if the above bounded Principal shall and will promptly pay or cause to be paid all sums of money which may be due any person, co-partnership, association or corporation for all material furnished and labor supplied or performed in the prosecution of the work, whether or not the said material or labor enter into and become component parts of the work or improvement contemplated, then this obligation to be void; otherwise to remain in full force and effect.

The Principal and Surety further jointly and severally agree with the obligee herein that every person, co-partnership, association or corporation who, whether as subcontractor or otherwise, has furnished material or supplied or performed labor in the prosecution of the work as above provided and who has not been paid therefore may sue in assumption on this bond in the name of the Owner for their use, prosecute the same to final judgment for such sum or sums as may be justly due them, and have execution thereon, provided, however, that the Owner shall not be liable for payment of any costs or expenses of any such suit.

IT IS FURTHER AGREED, that any alterations which may be made in the terms of the contract or in the work to be done or materials to be furnished or labor to be supplied or performed under it or the giving by the Owner or any extension of time for the performance of the contract or any other forbearance on the part of either the Owner or the Principal to the other, shall not in any way release the Principal and Surety or Sureties or either or any of them their heirs, executors, administrators, successors or assigns, from their liability hereunder, notice to the Surety or Sureties of any such alteration, extension or forbearance being hereby waived.

IN WITNESS WHEREOF, the said Principal and Surety have duly executed this bond under the seal and day and year first above written.

ATTEST:

_____
Principal

_____ BY:_____
(Seal)

_____
Surety

ATTEST BY:_____
Attorney-in-Fact

_____

Union Electric Inc.
CONTRACTORS

February 12 2024,
March 8th 2024 (R1)

City of Battle Creek
Battle Creek MI 49017

Attn: Christine Huff

Regarding: Valentine Center (Fire Alarm Replacement).

We are pleased to send you this quote for the above captioned work.

We propose to furnish all labor, material, tools, equipment, and supervision for the time and material price not to exceed of:

**FIFTY ONE THOUSAND FOUR HUNDRED SEVENTY FIVE DOLLARS. ($51,475.00)**

Union Electric's scope of work:

1) Provide and install per documents provided and information gathered during walk thru of site.
2) Addendum # 1 is included and acknowledged for this bid package.
3) Revised and included all items listed below along with answers to questions on this project.

If you have any questions regarding this matter please contact me as soon as possible. My telephone number is (269) 962-7583; my fax number is (269) 962-5520.
Sincerely
Union Electric, Inc.

Tim Klacking


**P.O. BOX 1453 * 109 ELM STREET * BATTLE CREEK, MI * 49016 * TEL: 269-962-7583 * FAX: 269-962-5520**
AN EQUAL OPPORTUNITY EMPLOYER

1. **Provide a detailed list of equipment that will be supplied with this monitoring system. This could also be something that vendor provides to you that you pass on to us. Show (preferably on the drawing itself) the locations of the sensors.**

   The proposed equipment for monitoring the fire alarm system encompasses the DMP DualCom LTE Fire Communicator, a state-of-the-art cellular communicator seamlessly integrated with the fire alarm control panel. This device offers a comprehensive, fully supervised alarm communication path, incorporating both primary and secondary communication on a singular PCB. Noteworthy is the exclusion of traditional phone lines, as communication is efficiently facilitated through LTE cellular signal and/or a network connection.

   The selected cellular communicator aligns with industry standards and complies with the NFPA 72 standard for single communication technology. This solution ensures constant vigilance, monitoring the system for trouble and alarm conditions 24 hours a day, 365 days a year, guaranteeing a robust and reliable fire monitoring infrastructure.

2. **Provide a detailed work plan from Notice to Proceed, including completion of "x calendar days from Notice to Proceed" (Please don't give an actual date). This plan should be detailed enough that you will explain how the lines will be run (e.g., raceways or inserted above the drop-ceiling).**
   - Provide PO to fire alarm supplier. (1 Day)
   - Use existing PDF documents and work on creating a CAD file of those drawings for fire alarm supplier. (1 Week)
   - Work on product data submittals during CAD file rework (1 Week)
   - Work on engineering drawings once complete with CAD drawings for laying out new device locations and preparing the submitting of prints to the ~~State of Michigan~~ City of Battle Creek for approval. (1-2 Weeks for submitting, unknown on returned approvals)
   - Release of material from fire alarm supplier (1-2 Weeks)
   - Installation of fire alarm cabling and devices (2 Weeks). All cabling will be above drop ceilings and in rooms with hard ceilings we will install surface mounted wire way (Wire mold) and necessary boxes for a complete turnkey installation.
   - Test and check of new fire alarm system. (1-2 Days)
   - Once final approval is accepted demo of existing fire alarm devices. (2 Days)
   - Final inspection, punch list items and cleaning (1 Day)

3. **Describe how the project will be in compliance with NFPA72-13. This could also be something that vendor provides to you.**

The fire alarm system designed for this child day care facility (Group E Occupancy) in Battle Creek, Michigan, aligns meticulously with NFPA 72 standards. The proposed system is a manual fire alarm system, activating the occupant notification signal through an emergency voice/alarm communication system, as mandated for Group E Occupancies. Notification devices, including speakers and strobes are designed to be located to comply with NFPA-72 standards regarding audibility and visibility. This ensures that staff and children, receive timely and effective alerts, meeting the requirements for emergency notification in child day care facilities.

It is imperative to note that our system incorporates NFPA-72 compliant single station smoke and carbon monoxide detectors strategically placed to cover all use areas and their corresponding means of egress. Adherence to NFPA-72 guidelines is maintained concerning the location and spacing of these detectors. This compliance extends to all notification devices, pull stations, as well as smoke and combination smoke/carbon monoxide detectors proposed within the facility. This comprehensive approach ensures that the fire alarm system is not only effective but also in strict accordance with the regulatory requirements set forth by NFPA 72.

4. **There will be a contract developed (draft attached) incorporating the attached prevailing wages and bonding requirement is added in there. Your price must include all costs, including the prevailing wages and the performance and payment bonds at 100% of the project cost.**

All bonding, state permits, COI's and prevailing wages are included in this above price.

5. **State that your proposed cost is all-inclusive and valid if the contract is signed before April 15, 2024, and then it holds through job completion. All-inclusive means bonds, insurance, overhead, permits...everything EXCEPT monitoring (monitoring will be paid separately and in addition to the final contract price)**

This proposal is all inclusive and valid for completion of this work if the contract is signed before the 15th of April 2024.

6. **Please provide details on the monitoring system, such as how that works on the user side. What the training for the system. Is it 911 or do they have their own dispatch service.**

The Communicator enables precise point-to-point monitoring, allowing the central station to pinpoint the specific device in alarm, trouble, or supervisory state during emergencies, such as an infant room pull station or entryway smoke detector. An emergency contact form will be provided to the end user, ensuring accurate information for notifications. The end user will fill out this form and provide a list of emergency contacts for the central station.

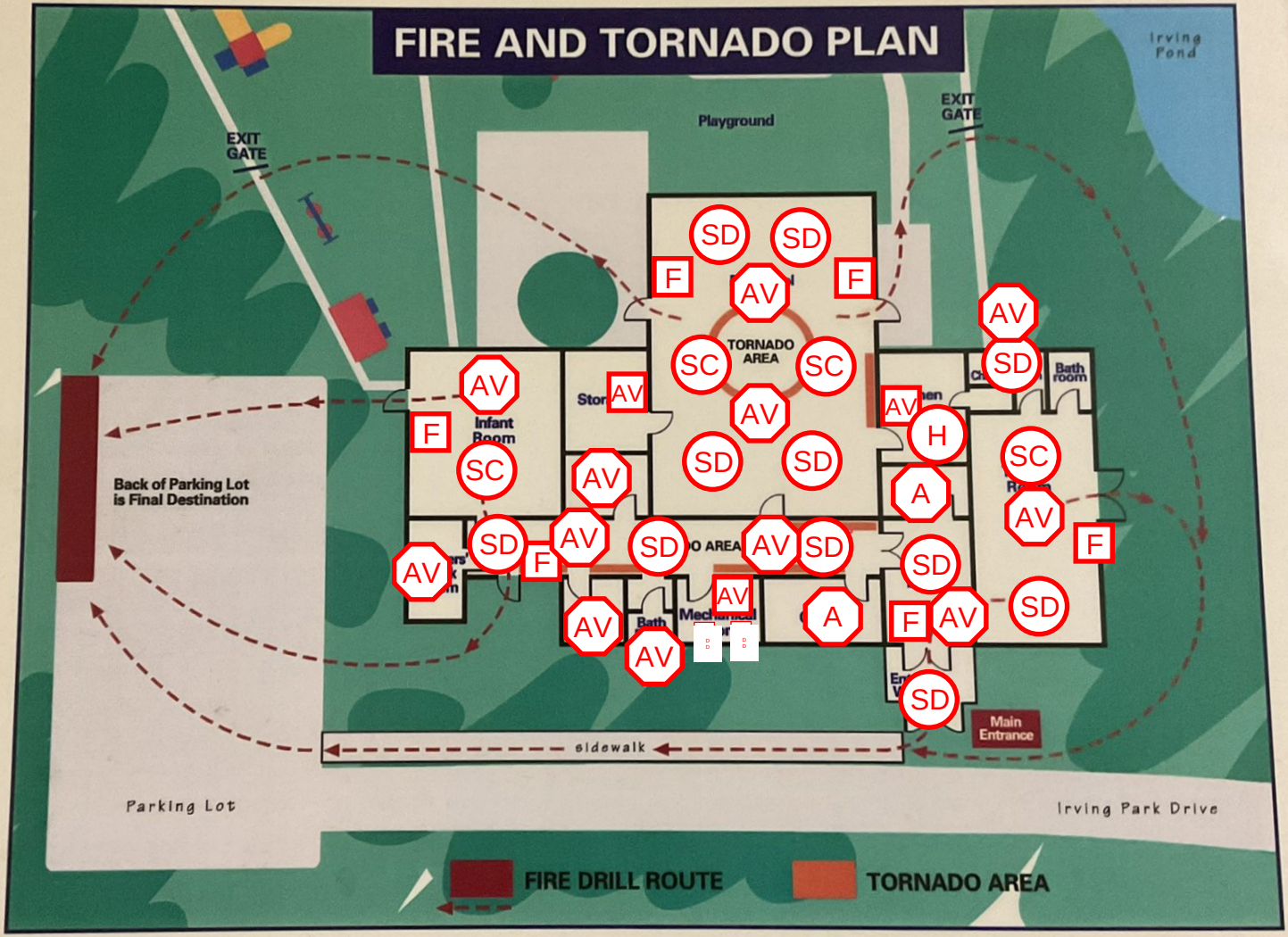
We use Michigan Monitoring Services to monitor the fire alarm system, who then will dispatch emergency services (911) in the event of an emergency. Riverside staff will provide training at the time of installation.

In the event of a fire alarm, the central station overseeing the system will promptly contact the provided emergency contacts to seek confirmation. The end user will have the opportunity to confirm the emergency or decline. If, however, the emergency contacts cannot be reached, a proactive measure is in place— emergency services will be promptly dispatched to the building's address, ensuring a swift and efficient response to potential fire incidents.

7. **Itemize the monitoring price per year leave OUT of the final price. 5 years monitoring.**

Monitoring is $540.00 a year ($45/month) and is billed one year in advance. 5 year cost would be $2,700.00.

This cost would be directly with Riverside and the City of Battle Creek and no cost are included in this proposal .


FIRE AND TORNADO PLAN
Irving Pond
EXIT GATE
Playground
EXIT GATE
TORNADO AREA
Infant Room
Bath room
Back of Parking Lot is Final Destination
Main Entrance
sidewalk
Parking Lot
Irving Park Drive
FIRE DRILL ROUTE
TORNADO AREA

# PREVAILING WAGES

"General Decision Number: MI20240079 01/19/2024
Superseded General Decision Number: MI20230079
State: Michigan
Construction Type: Building
County: Calhoun County in Michigan.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

| | |
|---|---|
| If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022: | . Executive Order 14026 generally applies to the contract.<br>. The contractor must pay all covered workers at least $17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024. |
| If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022: | . Executive Order 13658 generally applies to the contract.<br>. The contractor must pay all covered workers at least $12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024. |

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

| Modification Number | Publication Date |
|---|---|
| 0 | 01/05/2024 |
| 1 | 01/19/2024 |

ASBE0047-002 07/01/2023

| | Rates | Fringes |
|---|---|---|
| ASBESTOS WORKER/HEAT & FROST INSULATOR | $ 36.62 | 19.78 |

BOIL0169-001 06/01/2023

| | Rates | Fringes |
|---|---|---|
| BOILERMAKER | $ 39.95 | 35.38 |

BRMI0009-031 08/01/2023

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 33.95 | 23.52 |
| TILE FINISHER | $ 26.35 | 17.90 |
| TILE SETTER | $ 24.30 | 23.77 |

CARP0525-003 06/01/2023

| | Rates | Fringes |
|---|---|---|
| CARPENTER, Includes Acoustical Ceiling Installation, Drywall Hanging, and Form Work | $ 28.29 | 21.42 |

* CARP1102-001 06/01/2023

| | Rates | Fringes |
|---|---|---|
| MILLWRIGHT | $ 32.00 | 26.52 |

ELEC0445-011 05/31/2023

| | Rates | Fringes |
|---|---|---|
| ELECTRICIAN | $ 35.97 | 24.49 |

ENGI0324-002 06/01/2023

| | Rates | Fringes |
|---|---|---|
| OPERATOR: Power Equipment | | |
| GROUP 1 | $ 45.48 | 25.25 |
| GROUP 2 | $ 42.18 | 25.25 |
| GROUP 3 | $ 40.50 | 25.25 |
| GROUP 4 | $ 37.82 | 25.25 |
| GROUP 5 | $ 37.82 | 25.25 |
| GROUP 6 | $ 31.96 | 25.25 |
| GROUP 7 | $ 29.48 | 25.25 |

FOOTNOTES:
Crane operator with main boom and jib 300' or longer: $1.50 per hour above the group 1 rate.
Crane operator with main boom and jib 400' or longer: $3.00 per hour above the group 1 rate.

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane operator with main boom and jib 400', 300', or 220' or longer.

GROUP 2: Crane operator with main boom and jib 140' or longer, tower crane, gantry crane, whirley derrick

GROUP 3: Backhoe/Excavator/Trackhoe; Crane; Concrete Pump; Grader/Blade; Highlift; Hoist; Loader; Roller; Scraper; Stiff Leg Derrick; Trencher

GROUP 4: Bobcat/Skid Loader; Broom/Sweeper; Fork Truck (over 20' lift)

GROUP 5: Boom Truck (non-swinging)

GROUP 6: Fork Truck (20' lift and under for masonry work)

GROUP 7: Oiler

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IRON0025-005 06/01/2022

| | Rates | Fringes |
|---|---|---|
| IRONWORKER (REINFORCING) | $ 31.43 | 34.77 |
| IRONWORKER (STRUCTURAL) | $ 34.50 | 38.44 |

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LABO0355-022 06/01/2022

| | Rates | Fringes |
|---|---|---|
| LABORER | | |
| Common or General; Grade Checker; Mason Tender - Brick; Mason Tender - Cement/Concrete; Sandblaster | $ 26.70 | 12.95 |
| Pipelayer | $ 20.34 | 12.85 |

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PAIN0312-002 06/01/2023

| | Rates | Fringes |
|---|---|---|
| PAINTER: Brush and Roller | $ 23.74 | 13.35 |
| PAINTER: Drywall Finishing/Taping | $ 23.74 | 13.35 |
| PAINTER: Spray | $ 26.18 | 15.86 |

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PLAS0016-007 04/01/2014

| | Rates | Fringes |
|---|---|---|
| PLASTERER | $ 21.18 | 12.43 |

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PLUM0333-006 06/01/2023

| | Rates | Fringes |
|---|---|---|
| PIPEFITTER, Includes HVAC Pipe and Unit Installation | $ 43.29 | 24.94 |
| PLUMBER, Excludes HVAC Pipe and Unit Installation | $ 43.29 | 24.94 |

FOOTNOTE:
Paid Holidays: Memorial Day, Independence Day and Labor Day, if the employee works the work day preceding and following the holiday unless proven illness or injury prevents the employee from working.

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ROOF0070-002 06/01/2022

| | Rates | Fringes |
|---|---|---|
| ROOFER | $ 30.03 | 16.84 |

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* SFMI0669-001 01/01/2024

| | Rates | Fringes |
|---|---|---|
| SPRINKLER FITTER (Fire Sprinklers) | $ 40.48 | 25.80 |

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SHEE0007-004 05/01/2023

| | Rates | Fringes |
|---|---|---|
| SHEET METAL WORKER (Including HVAC Duct Installation; Excluding HVAC System Installation) | $ 38.09 | 19.66 |

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* SUMI2011-004 02/01/2011

| | Rates | Fringes |
|---|---|---|
| CEMENT MASON/CONCRETE FINISHER | $ 25.23 | 1.80 |
| IRONWORKER, ORNAMENTAL | $ 18.48 | 7.93 |
| LABORER: Landscape & Irrigation | $ 10.38 ** | 0.50 |
| OPERATOR: Bulldozer | $ 19.68 | 6.64 |
| OPERATOR: Compactor | $ 17.68 | 6.70 |
| OPERATOR: Tractor | $ 19.10 | 8.48 |
| TRUCK DRIVER, Includes Dump and Tandem Truck | $ 17.26 | 11.42 |
| TRUCK DRIVER: Lowboy Truck | $ 14.50 ** | 0.44 |
| TRUCK DRIVER: Tractor Haul Truck | $ 13.57 ** | 1.18 |

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.20) or 13658 ($12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1,2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers
Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

Union Electric Inc.
CONTRACTORS

February 12 2024,

City of Battle Creek
Battle Creek MI 49017

Attn: Christine Huff

Regarding: Valentine Center (Fire Alarm Replacement).

We are pleased to send you this quote for the above captioned work.

We propose to furnish all labor, material, tools, equipment, and supervision for the time and material price not to exceed of:

**FIFTY ONE THOUSAND FOUR HUNDRED SEVENTY FIVE DOLLARS. ($51,475.00)**

Union Electric's scope of work:

1) Provide and install per documents provided and information gathered during walk thru of site.
2) Addendum # 1 is included and acknowledged for this bid package.
3) Offsite Monitoring service agreement is not included and if accepted would be set up directly with the City of Battle Creek and Riverside Integrated Systems direct. ($540/Year billed 1 year in advance). This cost is not included in install price listed above.

If you have any questions regarding this matter please contact me as soon as possible. My telephone number is (269) 962-7583; my fax number is (269) 962-5520.
Sincerely
Union Electric, Inc.

Tim Klacking


**P.O. BOX 1453 * 109 ELM STREET * BATTLE CREEK, MI * 49016 * TEL: 269-962-7583 * FAX: 269-962-5520**
AN EQUAL OPPORTUNITY EMPLOYER

## 6.0 - OFFER AND ACCEPTANCE FORM

**TO THE CITY OF BATTLE CREEK**: We propose to furnish all services, labor, materials, equipment, tools, or transportation required to complete the work in accordance with the specifications and conditions contained herein in consideration of the sum or sums stated in this contract, and agree that this document will constitute the contract if accepted by the City.

We hereby offer and agree to furnish the material or service in compliance with all terms, conditions, specifications, and amendments in the Request for Proposals and any written exceptions in the offer. We understand that the items in this Request for Proposals, including, but not limited to, all required certificates are fully incorporated herein as a material and necessary part of the contract. Warranty, where applicable: Contractor shall remove and replace at no additional cost to the City any defects in workmanship or materials that may be apparent or may develop within a period of one (1) year from the date of final acceptance.

We agree to complete the contract within the times specified in this Request for Proposals.

We acknowledge receipt of the following addendum(s):

| | | | | |
|---|---|---|---|---|
| 1 | | | | |

I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder, and that our firm is not debarred from doing business under the Federal Excluded Parties List System (epls.gov).

I, the Contractor or Contractor's legally authorized signer, further certify compliance with the City of Battle Creek Ordinance Chapter 214, Discrimination Prohibited. I further acknowledge and agree that the Contractor's violation of Chapter 214 shall be a material breach of this contract. In addition, Contractor acknowledges and agrees that it shall be liable for any costs or expenses incurred by the City in obtaining from other sources, the work and services to be rendered or performed or the goods or properties to be furnished or delivered to the City under the contract as a result of a material breach in the Contract for violations of Chapter 214.

Union Electric Inc.
Company Name

109 Elm Street
Address

Battle Creek | MI | 49017
City | State | Zip

Signature of Person Authorized to Sign

Tim Klacking
Printed Name

Title

For clarification of this offer, contact:

Name: Tim Klacking

Phone: 269-962-7583

Fax:

Email: tklacking@unionelectric-bc.com

## ACCEPTANCE OF OFFER:

The Offer is hereby accepted.

The Contractor is now bound to sell the materials or services listed by the attached contract and based upon the Request for Proposal, including all terms, conditions, specification, amendments, etc. and the Contractor's Offer as accepted by the City.

This contract shall henceforth be referred to as Contract No. **2024-041R**. The Contractor has been cautioned not to commence any billable work or to provide any material or service under this contract until Contractor receives purchase order and/or a notice to proceed from the City of Battle Creek Purchasing Agent.

**COUNTERSIGNED:**

City Manager Date

Witness Signature

**APPROVED AS TO FORM BY:**

City Attorney

Date

# ATTACHMENT A - DISADVANTAGED BUSINESS (DBE) FORM

## I. YOUR FIRM'S BACKGROUND:

Is your firm an MBE (at least 51% minority ownership)? _____YES ____✓__NO

Is your firm a WBE (at least 51% woman ownership)? _____YES ____✓__NO

Are you subcontracting any part of this project? ____✓__YES _____NO

## II. SUBCONTRACTING INFORMATION: If subcontracting any part of the project, the bidder/contractor expressly agrees that:

(1) If awarded a contract as a result of this bid, the major subcontractors used in the prosecution of the work will be those listed below, and
(2) The following list includes all subcontractors who will perform work representing approximately five percent (5%) or more of the Total Base Bid.
(3) The Bidder represents that the subcontractors listed below are financially responsible and are qualified to do the work required.

| SUBCONTRACTOR NAME | City/State | Trade or Commodity | MBE Yes or no? | WBE Yes or no? | Approximate dollar value |
|---|---|---|---|---|---|
| Riverside Integrated Systems ~~Material and test and check.~~ | MI | Fire Alarm | | | 28,275.00 |
| | | | | | |
| | | | | | |
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# CITY OF BATTLE CREEK

## ADDENDUM # 1

**IFB#: 2024-041R**

**TITLE: Fire Alarm System at Valentine Center**

**ADDENDUM ISSUED: January 29, 2024**

**The following changes, additions and deletions have been provided:**

**CHANGE DUE DATE** from February 1, 2024, to **MONDAY, FEBRUARY 12, 2024, at 12:00PM NOON.**

**FOR YOUR INFORMATION**: Asbestos condition unknown. If asbestos is encountered at the time of installation, we will address abatement and its additional cost at that time with a change order. The work may stop until after the issue is resolved, and the City will issue a completion date extension.

As a reminder, the completion date will be the date that the successful contractor says they can meet in their proposal. Please remember to state completion in terms of "x calendar days from Notice to Proceed" as instructed in Section 4.3 of Submittal, Evaluation Criteria.

**FOR YOUR INFORMATION, DRAWINGS:** . see original building drawings from 1973, which is all we have. Please note that substantial changes may or may not have been made since that time, and these drawings are not to be considered accurate renderings of the current building. The following FTP link contains both small (3006KB) size and large (198,521 KB) size pdfs:

https://secure.battlecreekmi.gov/public/folder/i1_fvHqhd065qosYij83cw/Valentine%20Center%201973%20Drawings

**This addendum must be acknowledged on the Offer and Acceptance or Offer to Contract page of your proposal or your proposal may be deemed non-responsive.**

# CITY OF BATTLE CREEK

## NOTICE OF REQUEST FOR PROPOSALS

**RFP#: 2024-041R**

**TITLE: Fire Alarm System at Valentine Center**

**ISSUE DATE: January 4, 2024**

**PROPOSAL DUE DATE:** **February 1, 2024, at 2:00 PM Local Time**

**LOCATION for submittal:** **Proposals must be submitted online. See page 9 for instructions.**
**DO NOT EMAIL PROPOSALS.**

**PRE-PROPOSAL CONFERENCE:** **January 22, 2024, 2:00pm at** 155 Walter Ave, Battle Creek, MI 49037
**Email clhuff@battlecreekmi.gov to verify there is no weather cancelation.**

**Purchasing Contact:** **Christine Huff**
E-mail: clhuff@battlecreekmi.gov questions only: do not email proposals

**DESCRIPTION:** The City is soliciting proposals for the planning and complete installation of a full fire alarm system throughout the building that meets building codes for a childcare facility, including a monitoring system, at the Valentine Center in Battle Creek, MI located at 155 Walter Ave, Battle Creek, MI.

## PROPOSAL SUBMITTAL:

Proposals must be submitted through our secure online portal by registered vendors by the date and time listed above.

Please upload **ONE pdf file** that includes all requested submittals, rather than several parts of the bid uploaded.

Please visit http://battlecreekmi.gov/230/Bid-Proposal-Solicitations and click on Bid & Proposal Solicitations. This will redirect you to our secure VendorRegistry website where you can register as a vendor (required) and obtain this full document and upload your bid.

Email the purchasing contact listed above if the above link doesn't work.

PROPOSERS ARE STRONGLY ENCOURAGED TO CAREFULLY READ THE ENTIRE REQUEST FOR PROPOSALS.

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## 1.0 - GENERAL INFORMATION FOR THE RESPONDING FIRM

1.1 **ISSUING OFFICE:** This RFP is issued for the City of Battle Creek, Michigan (hereinafter referred to as the "City") through the Purchasing Office, which shall be referred to as the "Issuing Office."

1.2 **GENERAL SUBMITTAL INFORMATION:** (See Section 4.0 for detailed information)

A. Proposals must be submitted in complete original form as **one pdf** submitted through our secure online portal by registered vendors: please visit http://battlecreekmi.gov/230/Bid-Proposal-Solicitations and click on Bid & Proposal Solicitations OR email purchasing@battlecreekmi.gov for links.

B. Proposals will be accepted via the method listed until the time and date specified herein. There will be no public reading because this is an RFP, wherein price is only one factor in selection and subject to negotiation. All proposals will be available after contract award, under the FOIA.

C. Late proposals will not be accepted, and the online system will automatically shut off at exactly the specified time.

D. All proposals submitted in response to this solicitation shall become the property of the City and be a matter of public record available for review. **Vendors are advised that their proposals are subject to FOIA, and are not confidential and should not be marked as such.** However, proposals shall not be considered fully received for the purpose of Freedom of Information Act requests until the City has determined that no additional clarifications or revisions of offers shall be accepted.

E. The proposal shall be legally signed on the OFFER TO CONTRACT page and the complete address of the proposer given thereon.

F. The City is exempt from Federal Excise and State Sales Taxes, and such taxes shall not be included in proposal prices

1.3 **TENTATIVE SCHEDULE:** The City may deviate from this schedule. The City will not discuss the status of any proposal or the selection process. All proposers will be notified in writing of the City's decision. Please do not contact City staff for status updates. Interviews, if necessary, will be scheduled at mutually agreed upon times.

| | |
|---|---|
| Proposal Reviews: | week of February 5, 2024 |
| Interviews, if applicable: | week of February 12, 2024 |
| Final Decision: | March 2024 |

1.4 **AWARD OF CONTRACT**: This project will be awarded to a single contractor who submits the proposal deemed to be in the best interest of the City, unless otherwise noted in this document. Notwithstanding any other provision of the Request for Proposal, the City reserves the right to: (1) waive any immaterial defect or informality; or (2) reject any or all proposals, or portions thereof; or (3) reissue the Request for Proposal.

A response to any Request for Proposal is an offer to contract with the City based upon the terms, conditions, and specifications contained in the City's Request for Proposal. Proposals do not become contracts unless and until the City executes them. A contract has its inception in the award, eliminating a formal signing of a separate contract. For that reason, all of the terms and conditions of the contract are contained in the Request for Proposal, unless any of the terms and conditions are modified by a Request for Proposal amendment, a contract amendment, a Best and Final Offer, or by mutually agreed terms and conditions.

1.5 **SPECIAL INFORMATION**

A. Addenda to the RFP: In the event it becomes necessary to revise any part of the RFP, addenda will be provided to all contractors who are recorded as having received the RFP. It shall be the proposer's responsibility to make inquiry as to changes or addenda issued. All such changes or addenda shall become part of the contract and all bidders shall be bound by such addenda.

B. News Releases: News releases pertaining to this RFP or the services, study or project to which it relates will not be made without prior approval, and then only in coordination with the Issuing Office.

1.6 **INDEPENDENT PRICE DETERMINATION**

By submission of a proposal, the offeror certifies that in connection with this proposal:

A. The fees in the proposal have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such fees with any other offeror or with any competitor; and,

B. Unless otherwise required by law, the fees that have been quoted in the proposal have not been knowingly disclosed by the offeror directly or indirectly to any other offeror or city staff member or to any competitor; and,
C. No attempt has been made or will be made by the offeror to induce any other person or firm to submit or not to submit a proposal for the purpose of restricting competition.

1.7 **CURRENCY:** Prices calculated by the bidder shall be stated in U.S. dollars.

1.8 **DEFINITIONS:**
A. The "City" – The City of Battle Creek
B. "Contractor," "Vendor," "Firm," or "Proposer" - The firm submitting a proposal, ultimately responsible for any contract that results from this RFP.
C. "RFP" – This Request for Proposals.

1.9 **INTERVIEWS**: The City may or may not shortlist the proposers based upon responses to the submittal requirements. If necessary, the City shall conduct interviews/demonstrations. However, the City may determine that shortlisting and/or interviews/demonstrations are not necessary.

1.10 **FIRM QUALIFICATIONS**: Experiences with the City and entities that evaluation committee members represent shall be taken into consideration when evaluating qualifications and experience. The City reserves the right to make any such additional investigations as it deems necessary to establish the competency and financial stability of any firm submitting a proposal.

1.11 **DELIVERY:** Where applicable, proposals shall include all charges for delivery, packing, crating, containers, etc. Prices bid will be considered as being based on F.O.B. Delivered, freight included.

1.12 **VENUE:** Any party bringing a legal action or proceeding against any other party arising out of or relating to this Agreement or the transactions it contemplates shall bring the legal action or proceeding:

(i) in the United States District Court for the Western District of Michigan; or

(ii) in any court of the State of Michigan sitting in Calhoun County, if there is no federal subject matter jurisdiction.

1.13 **GOVERNING LAW:** This agreement shall be enforced under the laws of the State of Michigan. Contractor must comply with all applicable federal, state, county, and City laws, ordinances, and regulations. Contractor shall ensure payment of all taxes, licenses, permits, and other expenses of any nature associated with the provision of services herein. Contractor shall maintain in current status all Federal, State and Local licenses and permits required for the operation of the business conducted by the Contractor.

1.14 **BID PROTEST PROCEDURE:** Protests about the bid procedure must be in writing. This written protest must be received by the City of Battle Creek, located at 10 N. Division, Suite 214, Battle Creek, MI 49014. This written protest must be received by the City no later than ten (10) working days after notification to all bidders of the contract award decision. The City of Battle Creek must issue its written decision no more than ten (10) business days from the day the written protest was received.

If a protester thinks that the City of Battle Creek has not followed these protest procedures, the protester has ten (10) business days from the alleged infraction to file a subsequent protest with the City of Battle Creek City Manager or federal granting agency if applicable.

**1.15 FEDERAL TERMS AND CONDITIONS**
If there are federal terms and conditions attached to this solicitation, they are hereby incorporated as a material part of this contract. In cases of conflict between terms in this agreement, the federal terms shall prevail.

## 2.0 - GENERAL TERMS AND CONDITIONS

**2.1 MATERIALS AND WORKMANSHIP**: Unless otherwise specified, all materials and workmanship shall be new and of the best grade of their respective kinds for the purpose.

**2.2 NON-DISCRIMINATION CLAUSE:** The bidder agrees not to discriminate against any employee or applicant for employment, to be employed in the performance of such contract, with respect to hire, tenure, terms, conditions or privileges, of employment, or any matter directly or indirectly related to employment, because of his or her actual or perceived race, color, religion, national origin, age, sex, height, weight, physical or mental disability, family status, sexual orientation, gender identity or marital status. Breach of this covenant may be regarded as material breach of the contract as provided for in Act 220 and Act 453 of the Public Acts of 1976, as amended, entitled "Michigan Handicapper's Civil Rights Act" and the Michigan Elliott Larson Civil Rights Act." The bidder further agrees to require similar provisions from any subcontractors, or suppliers. The contractor and any subcontractors shall comply with E.O. 11246, "Equal Employment Opportunity," as amended by E.O. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

**2.3 ASSIGNMENT OF CONTRACT**: The contractor shall assign no right or interest in this contract in whole or in part and no delegation of any duty of Contractor shall be made without prior written permission of the City.

**2.4 INDEMNIFICATION**: The contractor shall protect, defend, and save the City, its officials, employees, departments and agents harmless from and against any claims, demands, suits, actions, or proceedings of any kind or nature, in any way resulting from negligent acts or omissions of the contractor or any of its agents, employees, boards, commissions, divisions, departments, or authorities in performing obligations under this agreement. Each party to this agreement agrees that any bond or insurance protection required by this agreement shall limit the terms of this indemnification provision. In case of any action brought against the City by reason of any such claim, suit, action or demand, upon prompt notice from the City, contractor covenants to defend such action or proceeding by counsel that is reasonably satisfactory to the City.

**2.5 CONTRACT**: The contract shall contain the entire agreement between the City and the Contractor relating to this requirement and shall prevail over any previous contracts, proposals, negotiations, or master agreements in any form. By signing the Offer to Contract, it is agreed that the RFP in its entirety and all enclosed forms are fully incorporated herein as a material part of the contract. In case of conflicts, the most recent document will prevail.

**2.6 PROVISIONS REQUIRED BY LAW:** Each provision required by law to be in the contract shall be enforced as though it were included herein, and if any such provision is not inserted, the contract shall be amended to make such insertion or correction.

**2.7 RELATIONSHIP OF PARTIES**: It is clearly understood that each party shall act in its individual capacity and not as an agent, employee, partner, joint venture, or associate of the other. An employee or agent of one party shall not be deemed or construed to be the employee or agent of the other party for any purpose. Taxes or social security payments shall not be withheld from a City payment issued hereunder; Contractor should make arrangements to directly pay such expenses, if any.

**2.8 RIGHTS AND REMEDIES**: No provision in this contract shall be construed as a waiver by either party of any existing or future right or remedy available by law in the event of any claim, default, or breach of contract. The failure of either party to insist upon the strict performance of any term or condition of the contract or to exercise or delay the exercise of any right or remedy provided in the contract, or by law, or the acceptance of materials or services, obligations imposed by this contract or by law, shall not be deemed a waiver of any right of either party to insist upon the strict performance of the contract.

**2.9 ADVERTISING**: Contractor shall not advertise, issue a press release or otherwise publish information concerning this RFP or contract without prior written consent of the City. The City shall not unreasonably withhold permission.

**2.10 APPLICABLE REGULATIONS/POLICIES:** The Revised Code of the State of Michigan, the Charter of the City of Battle Creek, all City Ordinances, Rules and Regulations and Policies shall apply. It shall be the responsibility of the Proposer to be familiar and comply with said regulations/policies.

**2.11 RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT**: Contractor shall give all notices and pay all royalties and fees. Contractor shall defend all suits or claims for infringement of any patent rights and shall save the City harmless from loss on account thereof. Contractor shall comply with all laws, ordinances and codes applicable to any portion of the work. All services, information, computer program elements, reports, and other

deliverables that are created under this Agreement shall be the property of the City. The Contractor shall place no restrictions on the City with regard to the distribution of any of these materials; the City shall have full, unrestricted rights to make and distribute unlimited copies of any services, information, computer programs/elements, reports, or any other deliverable. Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention in accordance with 37 CFR part 401, "Rights to Invention Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

**2.12 SUBCONTRACTORS:** No subcontract shall be made by the contractor with any other party for furnishing any of the services herein contracted for without the advance written approval of the City. All subcontractors shall comply with Federal and State laws and regulations that are applicable to the services covered by the subcontractor and shall include all the terms and conditions set forth herein, which shall apply with equal force to the subcontract, as if the subcontractor were the Contractor referred to herein. Contractor is responsible for contract performance whether or not subcontractors are used.

**2.13 OTHER FEDERAL COMPLIANCE:** Where applicable, contractor shall comply with: Copeland Anti-kickback Act (18 U.S.C. 874); Sections 3702 and 3704 of the Contract Work Hours and Safety Standards Act (40 USC 40 USC 3701-3708); Section 306 of the Clean Air Act (42 USC 7602, Air Pollution Prevention and Control); Section 508 of the Clean Water Act (33 U.S.C. 1368); Executive Order 11738, and EPA regulations (40 CFR, Part 15); and the Energy Policy and Conservation Act (Pub. L. 94A 163, 89 Stat. 871).

**2.14 RECORD ACCESS:** Contract shall grant access, if requested, by the City, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor that are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

**2.15 RECORD RETENTION:** Contractor shall retain all required records for three years after final payments and all other pending matters are closed.

**2.16 CLEAN AIR ACT**: Contractor shall comply with all applicable standards, orders, or requirements issued under Clean Air Act (42 U. S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), as amended. For contracts and subcontracts of amounts in excess of $100,000 the contractor or subcontractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.). Violations shall be reported to the Federal awarding agency and the Regional Agency (EPA).

**2.17 ENERGY EFFICIENCY:** Contractor shall maintain mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163).

**2.18 Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)** Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

**2.19 Debarment and Suspension (E.O.s 12549 and 12689)** No contract shall be made to parties listed on the General Services Administration's List of Parties Excluded from Federal Procurement or Nonprocurement Programs in accordance with E.O.s 12549 and 12689, "Debarment and Suspension." This list contains the names of parties debarred, suspended or otherwise excluded by agencies, and contractors declared ineligible under statutory or regulatory authority other than E.O. 12549. Contractors with awards that exceed the small purchase threshold shall provide the required certification regarding its exclusion status and that of its principal employees.

**2.20 SAFETY RULES:** Contractor shall perform all work under this contract in conformance with the State of Michigan general safety rules and regulations for the construction industry, as set out or authorized by the Michigan Occupational Safety and Health Act, Public Act 154 of 1974, as amended.

# 3.0 - SPECIAL TERMS AND CONDITIONS

**3.1 KEY PERSONNEL**: It is essential that the contractor provide adequate experienced personnel, capable of and devoted to the successful accomplishment of work to be performed under this contract. The Contractor must agree to assign specific individuals to the key positions.

A. The Contractor agrees that, once assigned to work under this contract, key personnel shall not be removed or replaced without written notice to the City.

B. If key personnel are not available for work under this contract for a continuous period exceeding thirty calendar days, or are expected to devote substantially less effort to the work than initially anticipated, the Contractor shall immediately notify the City, and shall, subject to the concurrence of the City, replace such personnel with personnel of substantially equal ability and qualifications.

**3.2 CANCELLATION FOR CAUSE (BREACH):** The City reserves the right to cancel the whole or any part of this contract due to failure by the contractor to carry out any obligation under this contract. The City shall issue written notice to the contractor for any of the following circumstances:

A. The contractor fails to adequately perform the services set forth in the specifications of the contract:

B. The contractor fails to make progress in the performance of the contract or gives the City reason to believe that the contractor will not or cannot perform to the requirements of the contract.

Upon receipt of the written notice of concern, the contractor shall have ten (10) calendar days to provide a satisfactory response to the City. Failure on the part of the contractor to adequately address all issues of concern may result in the City resorting to any single or combination of the following remedies.

1. Cancel any contract. If the contract is canceled by the City as provided herein, the Contractor will be paid a fair payment as negotiated with the City for the work completed as of the date of termination.
2. Reserve all rights or claims to damage for breach of any covenant of the Contract:
3. In case of default, the City reserves the right to complete the required work. The City may recover reasonable excess costs from the contractor by any remedies provided by law.

**3.3 CANCELLATION FOR CONVENIENCE:** The City may terminate this contract at any time for any reason by giving at least 30 days' notice in writing to Contractor. If the contract is canceled by the City as provided herein, the Contractor will be paid a fair payment as negotiated with the City for the work completed as of the date of termination.

**3.4 PAYMENT:** Payment shall be made monthly, upon pre-agreed milestones, or at the end of each project, within 30 days following the submittal of a correct invoice for goods received or work performed. Where applicable, expenses shall be billed at cost without markup, and must be supported by actual receipts. Mileage and per diem rates, if applicable, shall not exceed the federal rates.

**3.5 INSURANCE**:

a. The Contractor shall at the time of execution of this contract, file with the City the Certificate of Insurance, which shall cover all insurance as required herein, including evidence of payment of premiums thereon, and the policy or policies or insurance covering said City and their officers, agents and employees. Each such policy and certificate shall be satisfactory to the City. Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from their operations under this Contract.

b. The contractor shall maintain insurances in force at all times during the term of this agreement at the minimum amounts and types as indicated.

| **Coverage Afforded** | | **Limits of Liability** |
|---|---|---|
| Workers' Compensation: | | $ 100,000 or statutory limit |
| Commercial General Liability: | Bodily Injury | $1,000,000 each occurrence |
| (including XCU if appropriate) | Property Damage | $1,000,000 each occurrence |
| | or Combined Single Limit | $1,000,000 |
| Automobile Liability: | Bodily Injury | $ 300,000 each person |
| | Liability | $ 500,000 each occurrence |
| | Property Damage | $ 500,000 |
| | or Combined Single Limit | $ 500,000 |

The City of Battle Creek shall be listed as a certificate holder and as an **additional insured** on general liability coverage, and shall be provided with a Certificate of Insurance that reflects this additional insured status. A 30-day notice of cancellation or material change shall be provided to the City and so noted on the Certificate of Insurance. All certificates and notices shall be sent to City of Battle Creek, Purchasing Division Suite 214, 10 N. Division, Battle Creek, Michigan 49016.

# 4.0 - SUBMITTAL INFORMATION

## 4.1 SUBMITTAL TERMS AND CONDITIONS

A. **Basic Submittal Instructions**: Each proposal received by the City in response to this RFP becomes the property of the City and:

1. Shall be signed by an individual authorized to bind the contractor to its provisions.

2. Proposals shall not be considered fully received for the purpose of Freedom of Information Act requests until the City has determined that no additional clarifications or revisions of offers shall be accepted.

3. Is an irrevocable offer and may not be withdrawn within 90 days after the deadline for submission. Requests for clarifications or revisions automatically establish a new 90-day period.

B. **Proposal Costs**: The City is not liable for any costs incurred by contractors in the development of their proposals.

C. **Exceptions To Contract Terms And Specifications:** Offeror shall clearly identify and reference by paragraphs any proposed deviations from the Contract Terms or Scope in the RFP. Exceptions shall include, the Offeror's proposed substitute language. If no exceptions are noted in the Offeror's proposal, the City will assume complete conformance with this specification and the successful Offeror will be required to perform accordingly. Proposals submitted not meeting all requirements may be rejected.

## 4.2 SUBMITTAL REQUIREMENTS

**Submit online your proposal IN THIS ORDER in ONE PDF (please do not upload multiple files):**

**A table of contents and page numbers would be appreciated and very helpful**

1. Your proposal, organized as requested in section 4.3 on the next page. A table of contents and page numbers would be extremely helpful.
2. SIGNED and completed offer section on the Offer and Acceptance Form
3. Completed DBE forms contained in Attachment A

## Instructions for online submittal: DO NOT EMAIL PROPOSALS

- http://battlecreekmi.gov/228/Purchasing
- Follow the link to the VendorRegistry page or email purchasing@battlecreekmi.gov for links.
- Register as a vendor if you have not already
- Navigate to this RFP (name and number on the front page)
- Click on “Submit bid” and follow the instructions
- You may rescind your proposal in the system at any time before the due date/time
- Secure: City staff can see who has submitted, but the system will not allow City staff to see submittal content until after the deadline has passed.
- If you have questions about the process in VendorRegistry, please use their “help” function. They are extremely helpful. City staff can’t see what the vendor sees, so we are unable to help.

## 4.3 EVALUATION CRITERIA:

All proposals received will be evaluated by the City of Battle Creek for selection purposes. The following main categories, listed in relative order of importance, will be considered in selection. The response to this RFP shall focus on these criteria, and shall be submitted in the same order as requested and must contain, at a minimum, all of the items listed below:

### A. WORK PLAN

1. Provide a detailed work plan for a turnkey fire alarm system, including all equipment quantities.

2. Provide a schedule of work with a final completion date based on “X calendar days from Notice to Proceed.” Please do not put an actual date.

3. Describe the monitoring system.

### B. PRICE

1. Submit detailed pricing of all equipment as installed. Pricing shall be **ALL INCLUSIVE** of (but not limited to) labor, materials, PERMITS, insurance, mobilization, overhead, equipment, etc.

2. Provide detailed pricing of system monitoring for 5 years.

### C. FIRM QUALIFICATIONS

1. Describe the qualifications of your firm.
2. Describe your experience and strengths with planning and installing fire alarm systems, including monitoring.
3. List three references that we may contact. Include name and email.

# 5.0 - SCOPE OF WORK

## 5.1 BACKGROUND

The Valentine Center located at 75 Irving park drive in Battle Creek was previously a child care facility, and the City would like it to continue to be a child care facility. In order to have a proprietor continue running this facility as a child care, the current fire alarm system needs to be upgraded to meet today's required child care building code. We are looking for a vendor to help us define and recommend what that upgrade looks like for this specific facility.

## 5.2 DESCRIPTION OF WORK TO BE PERFORMED

Before submitting a proposal, firms shall carefully examine the scope of work and shall fully inform themselves as to all existing conditions and limitations and shall indicate in the proposal all items requested.

Contractor shall:

- Provide a plan for the fire alarms that are in compliance with all codes and requirements for a day care facility.
- Supply and install the fire alarms according to the plan.
- Provide and install a monitoring system.

Please note the pre-proposal conference date, time, and location on the front page of this document. That meeting will give vendors the opportunity to look at the building and ask questions.

## 6.0 - OFFER AND ACCEPTANCE FORM

**TO THE CITY OF BATTLE CREEK**: We propose to furnish all services, labor, materials, equipment, tools, or transportation required to complete the work in accordance with the specifications and conditions contained herein in consideration of the sum or sums stated in this contract, and agree that this document will constitute the contract if accepted by the City.

We hereby offer and agree to furnish the material or service in compliance with all terms, conditions, specifications, and amendments in the Request for Proposals and any written exceptions in the offer. We understand that the items in this Request for Proposals, including, but not limited to, all required certificates are fully incorporated herein as a material and necessary part of the contract. Warranty, where applicable: Contractor shall remove and replace at no additional cost to the City any defects in workmanship or materials that may be apparent or may develop within a period of one (1) year from the date of final acceptance.

We agree to complete the contract within the times specified in this Request for Proposals.

We acknowledge receipt of the following addendum(s): | | | | | |

I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder, and that our firm is not debarred from doing business under the Federal Excluded Parties List System (epls.gov).

I, the Contractor or Contractor's legally authorized signer, further certify compliance with the City of Battle Creek Ordinance Chapter 214, Discrimination Prohibited. I further acknowledge and agree that the Contractor's violation of Chapter 214 shall be a material breach of this contract. In addition, Contractor acknowledges and agrees that it shall be liable for any costs or expenses incurred by the City in obtaining from other sources, the work and services to be rendered or performed or the goods or properties to be furnished or delivered to the City under the contract as a result of a material breach in the Contract for violations of Chapter 214.

_____
Company Name

_____
Address

_____
City State Zip

_____
Signature of Person Authorized to Sign

_____
Printed Name

_____
Title

For clarification of this offer, contact:

Name: _____

Phone: _____

Fax: _____

Email: _____

## ACCEPTANCE OF OFFER:

The Offer is hereby accepted.

The Contractor is now bound to sell the materials or services listed by the attached contract and based upon the Request for Proposal, including all terms, conditions, specification, amendments, etc. and the Contractor's Offer as accepted by the City.

This contract shall henceforth be referred to as Contract No. **2024-041R**. The Contractor has been cautioned not to commence any billable work or to provide any material or service under this contract until Contractor receives purchase order and/or a notice to proceed from the City of Battle Creek Purchasing Agent.

**COUNTERSIGNED:**

_____
City Manager Date

_____
Witness Signature

**APPROVED AS TO FORM BY:**

_____
City Attorney

_____
Date

# ATTACHMENT A - DISADVANTAGED BUSINESS (DBE) FORM

## I. YOUR FIRM'S BACKGROUND:

Is your firm an MBE (at least 51% minority ownership)? _____YES _____NO

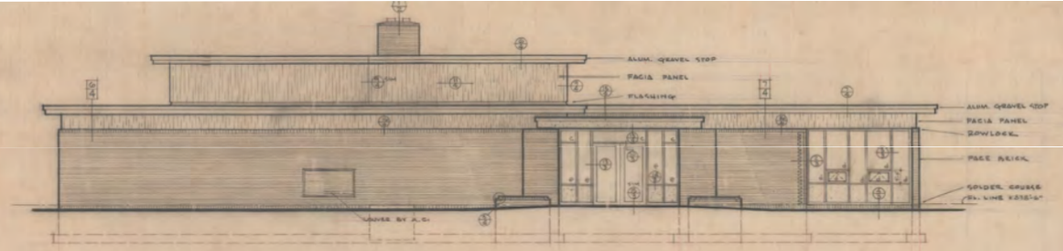
Is your firm a WBE (at least 51% woman ownership)? _____YES _____NO

Are you subcontracting any part of this project? _____YES _____NO

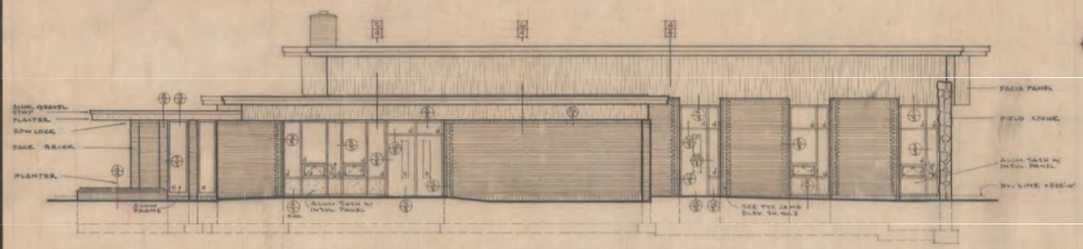
## II. SUBCONTRACTING INFORMATION: If subcontracting any part of the project, the bidder/contractor expressly agrees that:

(1) If awarded a contract as a result of this bid, the major subcontractors used in the prosecution of the work will be those listed below, and
(2) The following list includes all subcontractors who will perform work representing approximately five percent (5%) or more of the Total Base Bid.
(3) The Bidder represents that the subcontractors listed below are financially responsible and are qualified to do the work required.

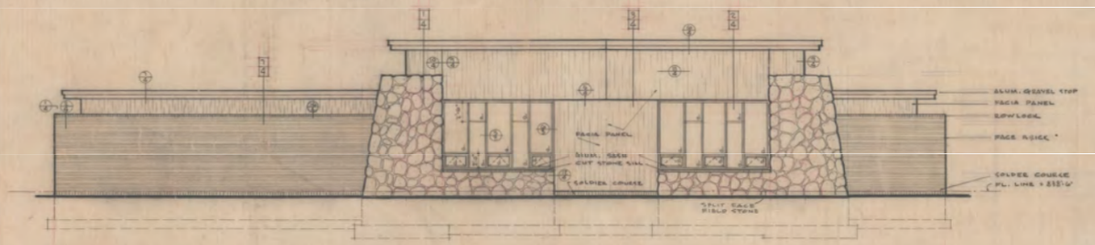
| SUBCONTRACTOR NAME | City/State | Trade or Commodity | MBE Yes or no? | WBE Yes or no? | Approximate dollar value |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
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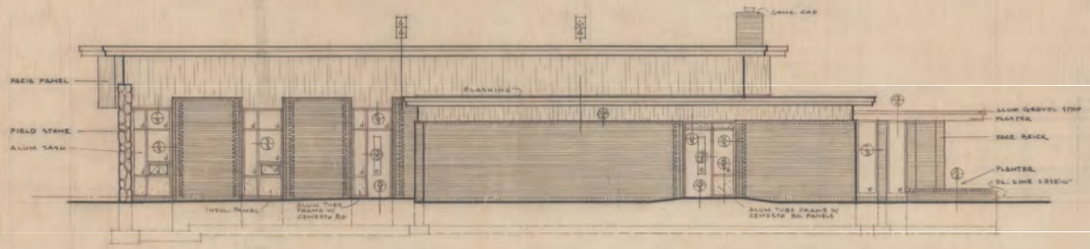
WEST ELEVATION
SCALE : 1/8" = 1'-0"



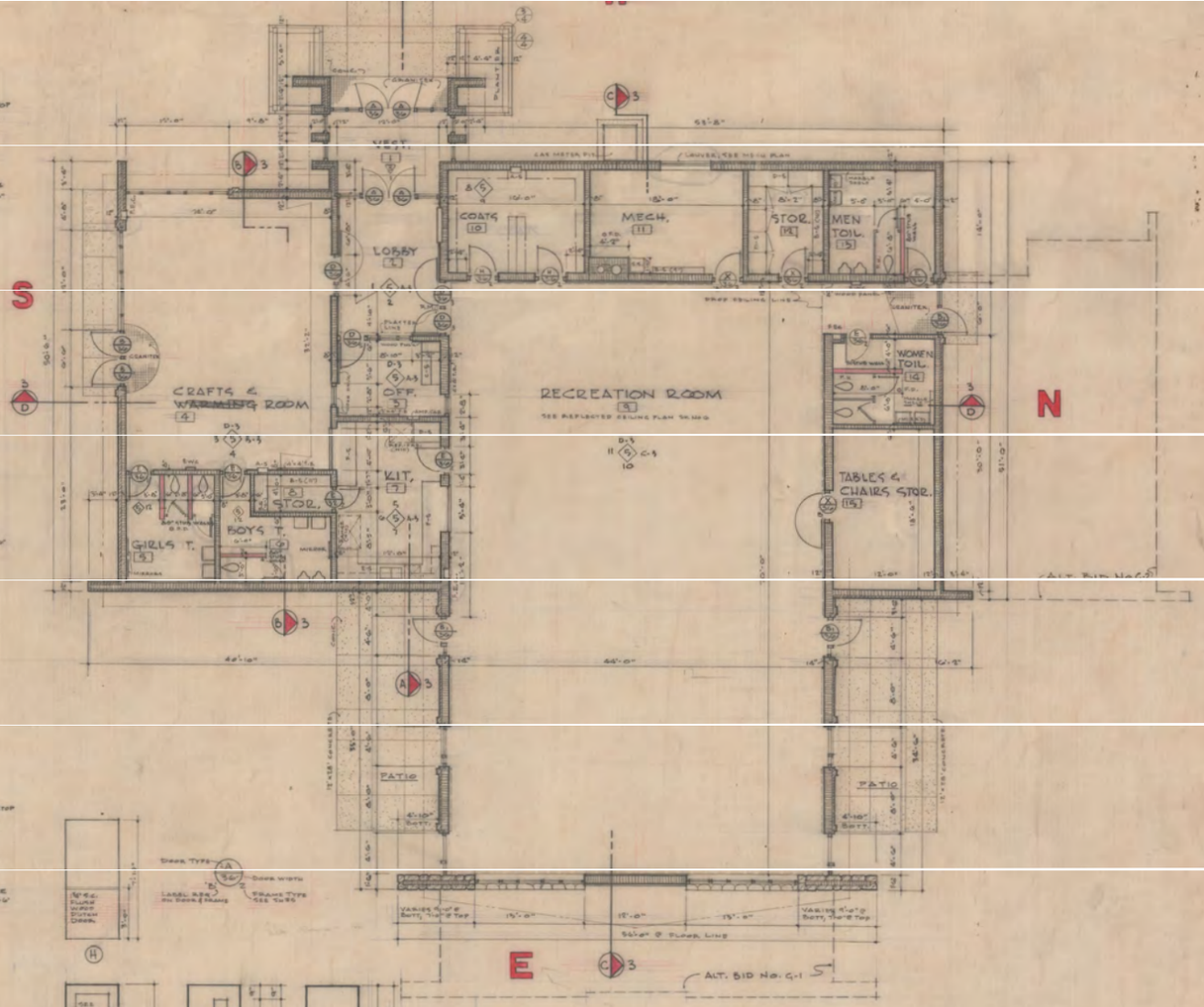
SOUTH ELEVATION
SCALE : 1/8" = 1'-0"

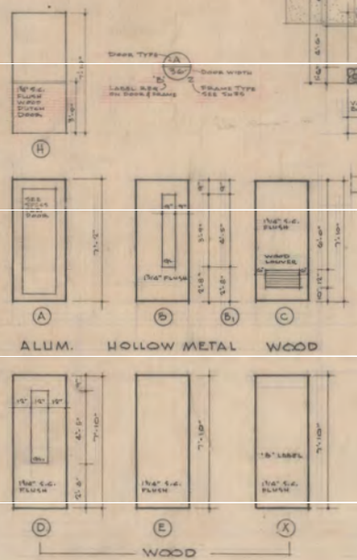


EAST ELEVATION
SCALE : 1/8" = 1'-0"



NORTH ELEVATION
SCALE : 1/8" = 1'-0"




FLOOR PLAN
SCALE: 1/8" = 1'-0"

REVISED AUG. 21, 1775

ROOM FINISH SCHEDULE

| ROOM No. | ROOM NAME | FLOOR | BASE | WALLS | CEILING | FINISH | REMARKS |
|---|---|---|---|---|---|---|---|
| 1 | VESTIBULE | | B | P | | C | |
| 2 | LOBBY | | B | V | | C | PLASTER BULKHEADS AT CEILING |
| 5 | OFFICE | | B | P | | C | |
| 4 | CRAFTS & WARM. | | B | P | | D | |
| 3 & 6 | GIRLS & BOYS T. | | | | | D | |
| 7 | KITCHEN | | B | P | | D | |
| 8 & 15 | STORAGE | | B | R | | D | BIRCH DOORS, PINE SHELVING |
| 9 | RECREATION RM. | | B | P | | C | STUCCO ACOUS. TILE CEILING @ PARA. (NOTICE) |
| 10 | COATS | | B | P | | D | |
| 11 | MECH. | | | | | | |
| 12 | STORAGE | | B | R | | D | BIRCH DOORS, PINE SHELVING |
| 13 & 14 | MEN & WOMEN T. | | | | | C | |
| 16 | PASSAGE | | B | P | | C | ALTERNATE BID NO. G-2 |
| 10 | READING RM. | | B | V | | W | ALTERNATE BID NO. G-2 |
| 17 | STORAGE | | B | R | | D | ALTERNATE BID NO. G-2 |

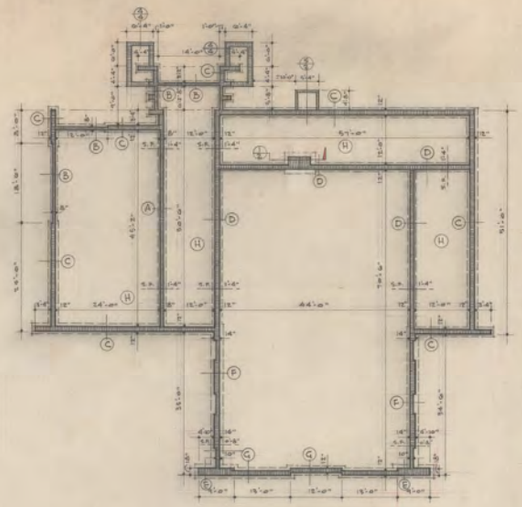
P. = PAINT
V. = VARNISH
R. = RUBBER BASE, PAINT
B. = BIRCH
W. = WALNUT P. = PINE, FIR.

P.H. PHYSICALLY HANDICAPPED REQ'MT.
F.E.C. FIRE EXTINGUISHER CABINET
E.W.C. ELECTRIC WATER COOLER
S.S. SERVICE SINK
F.D. FLOOR DRAIN
R.M. REMOVABLE MULLION

# IRVING PARK RECREATION BUILDING

IRVING PARK RECREATION BUILDING
FOR
CITY OF BATTLE CREEK
CALHOUN COUNTY . . . . . MICHIGAN

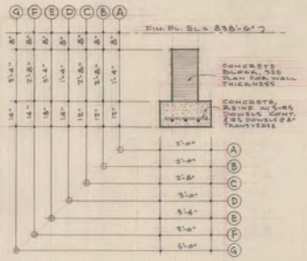
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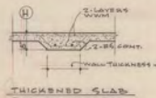


FOUNDATION PLAN

SCALE: 1/16"=1'-0"

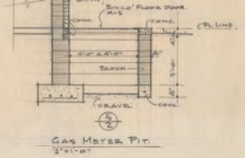
SEE SHTG FOR ALTERNATE BIDS





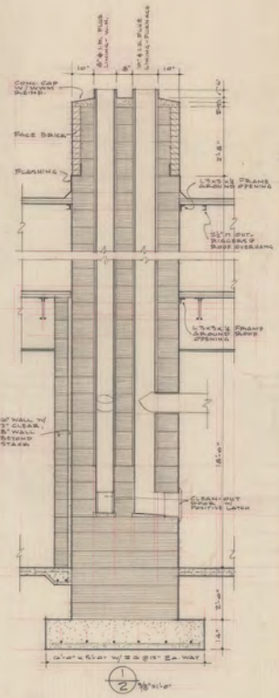
THICKENED SLAB

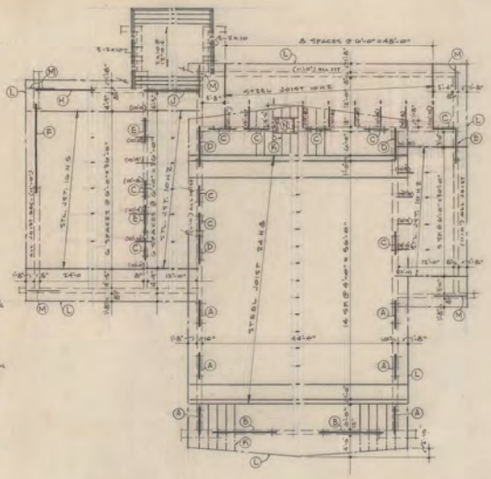
REQUIRED UNDER ALL BLOCK WALLS FOR WHICH A FOOTING IS NOT OTHERWISE SHOWN



GAS METER PIT

1"=1'-0"





STRUCTURAL FRAMING PLAN

SCALE: 1/16"=1'-0"

| | |
|---|---|
| (A) | LINTEL — W8X10 + PL ½X9 ; +8" EACH END |
| (B) | LINTEL — W8X28 + PL ½X13 ; +8" EACH END |
| (C) | LINTEL — L3½X3½X5/16 FOR 8" BLOCK OR W8 WALL THICKNESS; +6" EACH END |
| (D) | LINTEL — W8X18 + PL ½X8½ ; +12" EACH END |
| (E) | LINTEL — W8X10 + PL ½X7 ; + 8" EACH END |
| (F) | BEAM — W12X22 ; +10" EA END W/ B.P. ½"X7"X1'-6" |
| (H) | BEAM — W8X15 ; +6" EA. END W/ B.P. ½"X7"X1'-6" |
| (J) | LINTEL — W8X15 + PL ½X7 ; + 8" EACH END |
| (K) | OUTRIGGERS — 3½"X 3.5# C15 @ 5'-0" O.C. WELD TO CONT. L3½X3½X ¼ TOP CHORD LAST JOIST. |
| (L) | CONT. FASCIA L 3½ X 3½ X ¼ |
| (M) | OUTRIGGER — 3½"X 3.5# C7, WELD TO STEEL BEAM OR BULB 'T' IN CONC. BOND BEAM |
| (N) | L3X3X¼ FRAME AROUND ROOF OPENINGS |
| (P) | BEAM (ALT. BID) — W12X19 + 8" EA. END W/ B.P. ½"X7" |

GENERAL NOTES:

ROOF DECK & STEEL JOISTS SHALL BE 18" SPAN, TYP. 'A' PER 'INRYCO' 'S' SPAN CONDITION. AT 2'-10½" USE ½" PLYWOOD.

UNDER BEAM & BEAM PLATE LINTEL BEARING POINTS, SLUSH BLOCKS FULL 3 BLOCKS WIDE BELOW FOUNDATION UP. INSTALL 5-#3 PENCIL RODS X 4'-0" LONG PER JOINT FOR 3 JOINTS BELOW BEARING POINT.

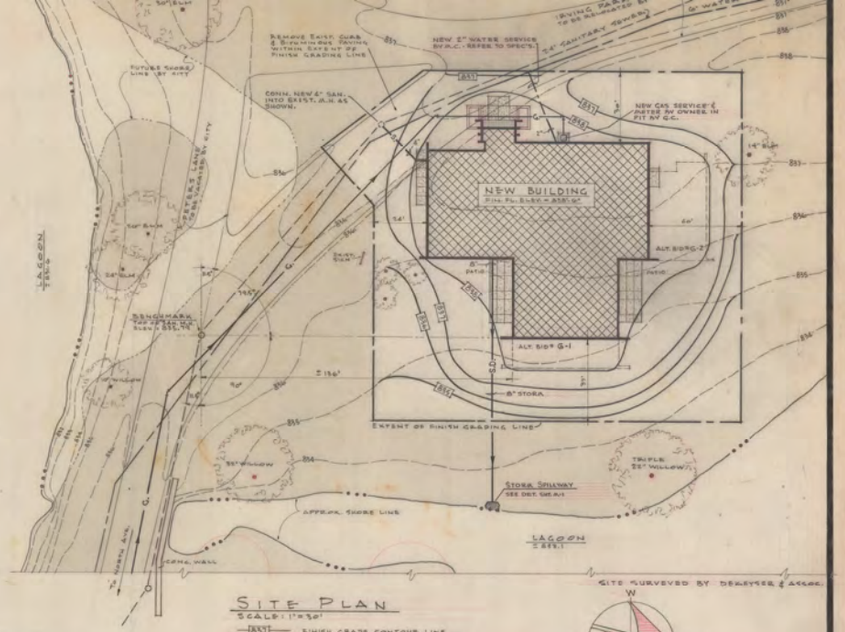
VERIFY ALL DIMENSIONS W/ FLOOR PLAN

CHECK PLANS FOR LINTELS & MISC. STEEL NOT SHOWN ON STRUCTURAL PLANS.

SEE SH. NO. 6 FOR ALT. BIDS

JST. SPEC. SHOWN THUS (10-10)

NON ROOF JST SPEC W-8" THRU-OUT



SITE PLAN

SCALE: 1"=30'

SITE SURVEYED BY DEMEYER & ASSOC.

EXISTING GRADE CONTOUR LINE

PROPOSED GRADE CONTOUR LINE

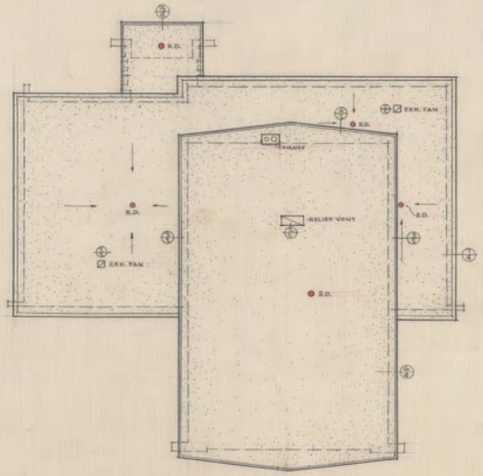
EXISTING SHORE LINE

FUTURE SHORE LINE BY CITY

EXTENT OF FINISH GRADING LINE

EXIST. 8" WATER MAIN

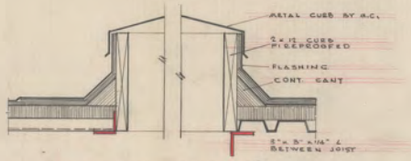
EXIST. 24" SANITARY SEWER LINE



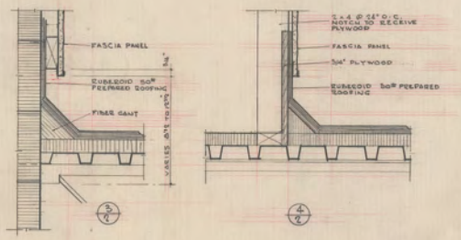
ROOF PLAN

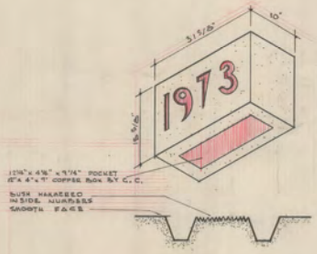
SCALE: 1/16"=1'-0"

LOCATE DRAINS @ LOW POINTS



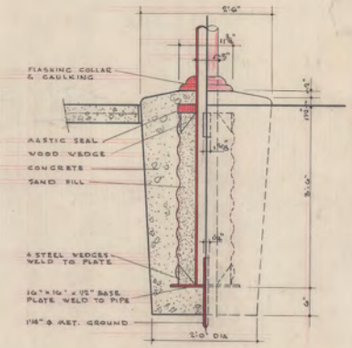
ROOF CURB DET. 4/4





CORNERSTONE DETAIL

NO SCALE



FLAGPOLE DETAIL

SCALE: 3/4"=1'-0"

LOCATE AS DIRECTED BY ARCHITECT

IRVING PARK RECREATION BUILDING

FOR

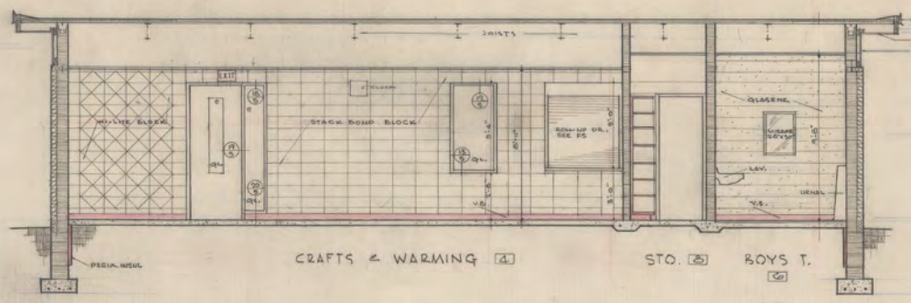
CITY OF BATTLE CREEK

CALHOUN COUNTY . . . . . MICHIGAN

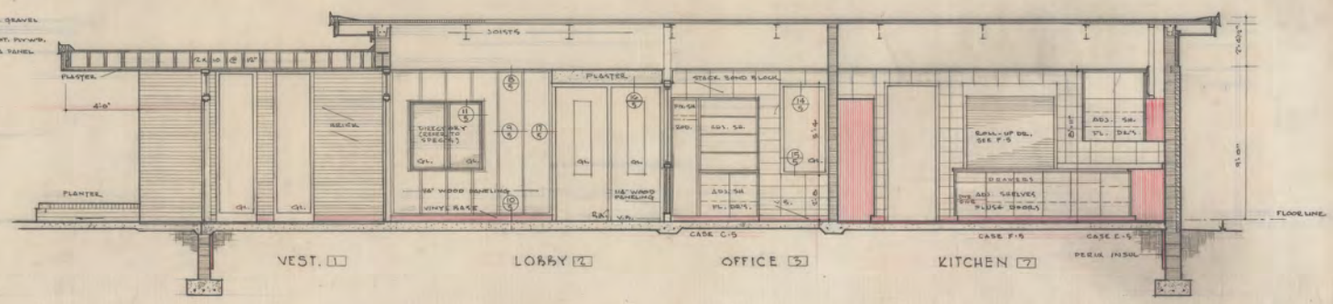
SHEET NO. 2

SHAW & SHAW AND ASSOCIATES, INC.

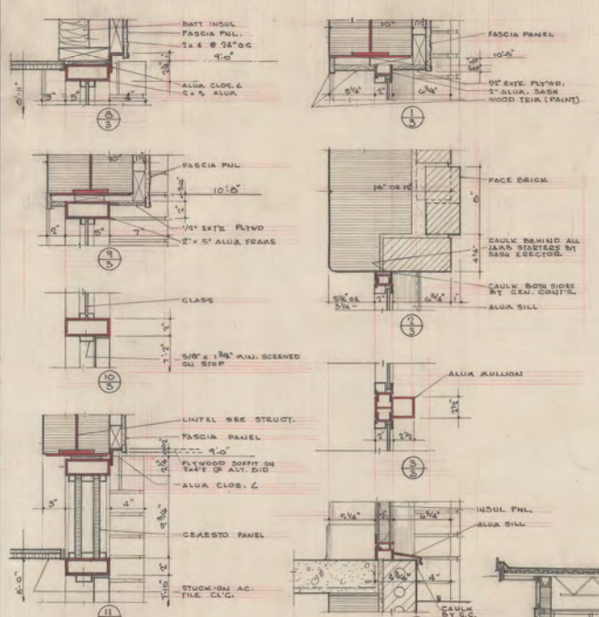
MAY 1973

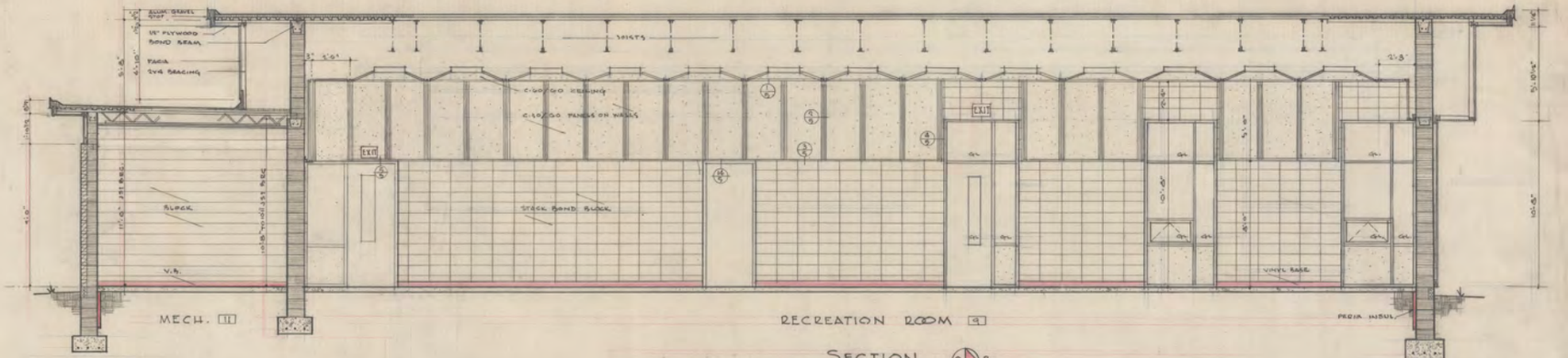



SECTION B 3
SCALE : 1/4" = 1'-0"

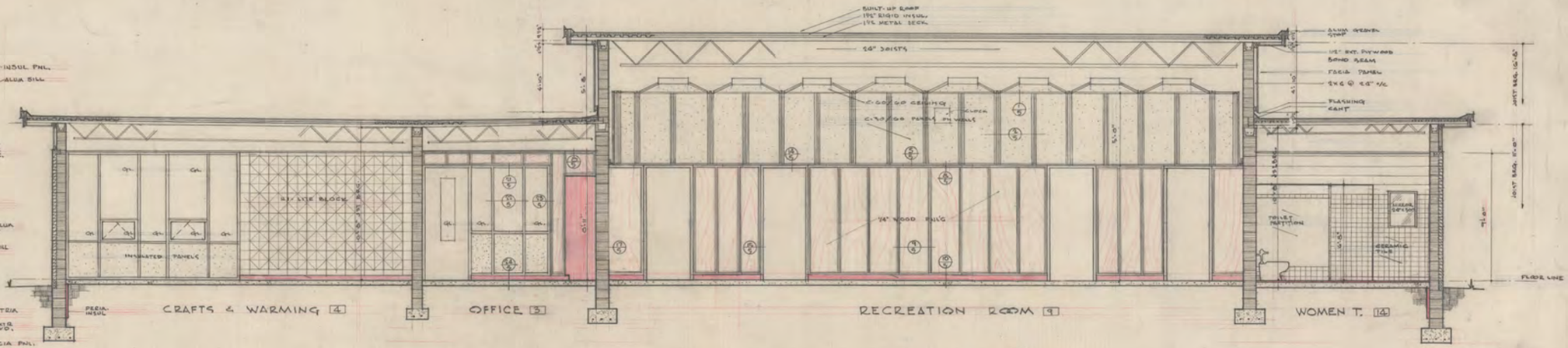



SECTION A 3
SCALE : 1/4" = 1'-0"

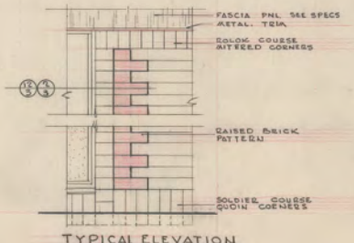


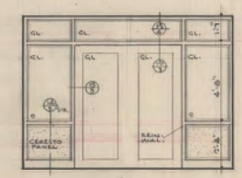

SECTION C 3
SCALE : 1/4" = 1'-0"




SECTION D 3
SCALE : 1/4" = 1'-0"




TYPICAL ELEVATION

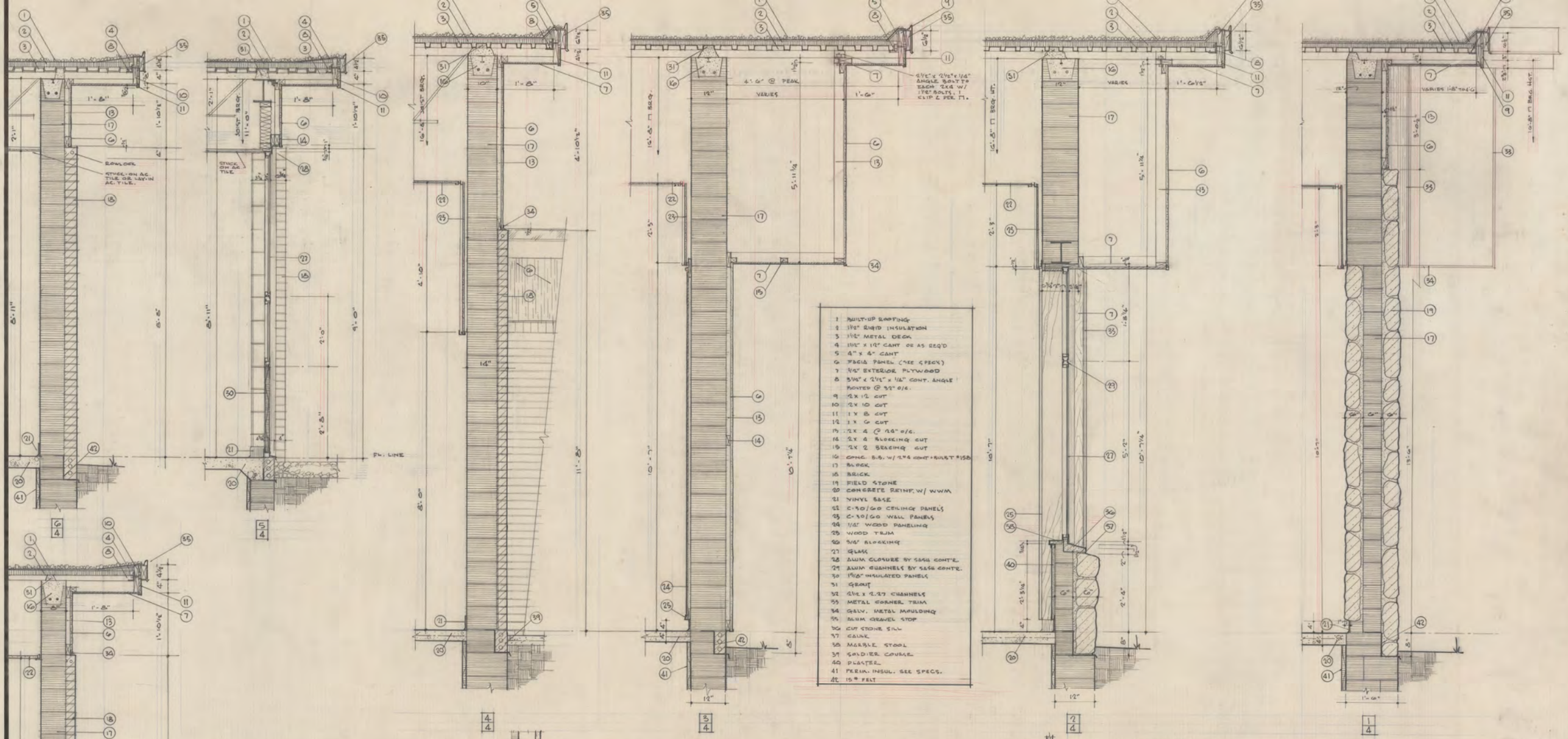



3/1

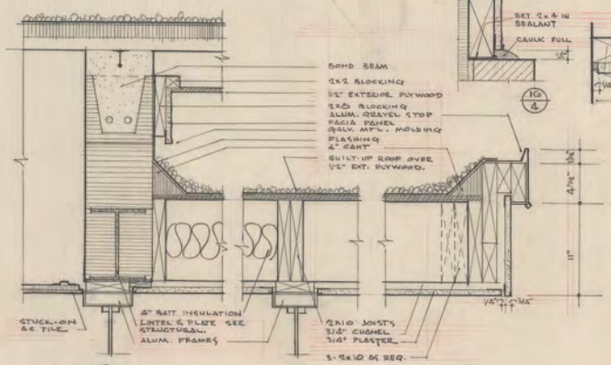
# IRVING PARK RECREATION BUILDING
FOR
CITY OF BATTLE CREEK
CALHOUN COUNTY . . . . . MICHIGAN

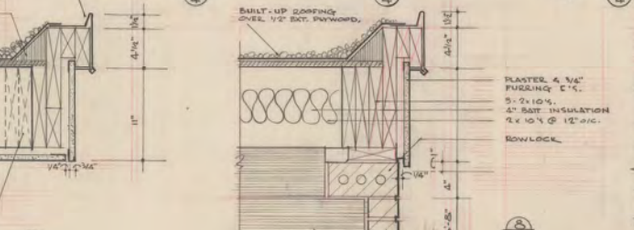
SHEET NO. 3

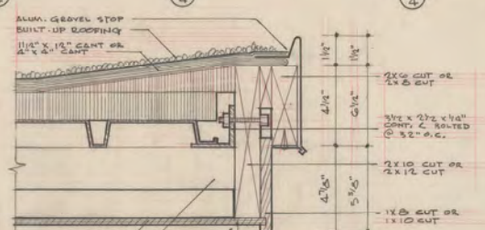
MAY, 1973

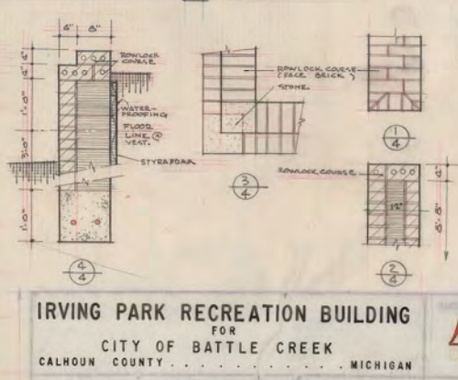



1. BUILT-UP ROOFING
2. 1½" RIGID INSULATION
3. 1½" METAL DECK
4. 11½" x 12" CANT OR AS REQ'D
5. 4" x 4" CANT
6. FACIA PANEL (SEE SPECS)
7. ¾" EXTERIOR PLYWOOD
8. 3½" x 2½" x ⅛" CONT. ANGLE BOLTED @ 32" O/C.
9. 2 X 12 CUT
10. 2 X 10 CUT
11. 1 X 8 CUT
12. 1 X 6 CUT
13. 2 X 4 @ 16" O/C.
14. 2 X 4 BLOCKING CUT
15. 2 X 2 BRACING CUT
16. CONC. S.G. W/ ¾" CONT. + BULT #15B
17. BLOCK
18. BRICK
19. FIELD STONE
20. CONCRETE REINF. W/ WWM
21. VINYL BASE
22. C-30/60 CEILING PANELS
23. C-30/60 WALL PANELS
24. ⅛" WOOD PANELING
25. WOOD TRIM
26. 5/16" BLOCKING
27. GLASS
28. ALUM. CLOSURE BY SASH CONT'R.
29. ALUM. GUARNELS BY SASH CONTR.
30. 1⅜" INSULATED PANELS
31. GROUT
32. 2½" x 1.27 CHANNELS
33. METAL CORNER TRIM
34. GALV. METAL MOULDING
35. ALUM. GRAVEL STOP
36. CUT STONE SILL
37. CAULK
38. MARBLE STOOL
39. SOLDIER COURSE
40. PLANTER
41. PERIM. INSUL. SEE SPECS.
42. 15# FELT




# IRVING PARK RECREATION BUILDING

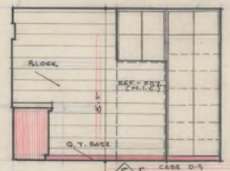
FOR

CITY OF BATTLE CREEK

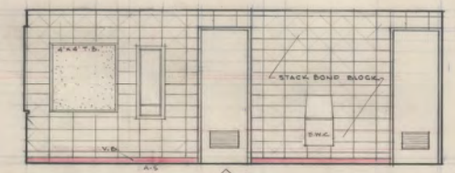
CALHOUN COUNTY . . . . . MICHIGAN

4

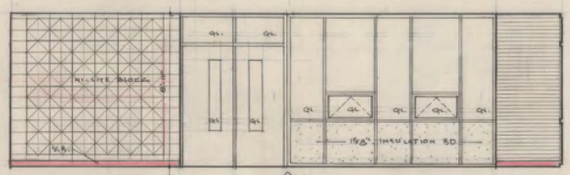
MAY, 1973



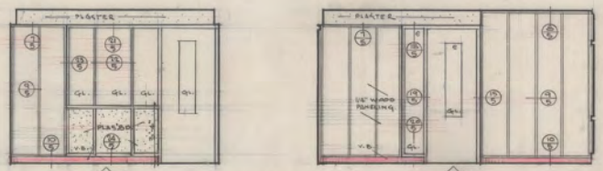

KITCHEN [7]



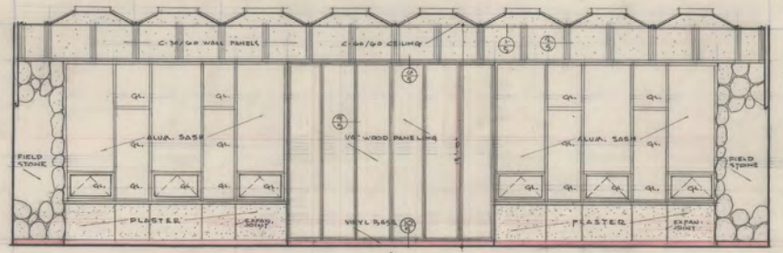

CRAFTS & WARMING [4]



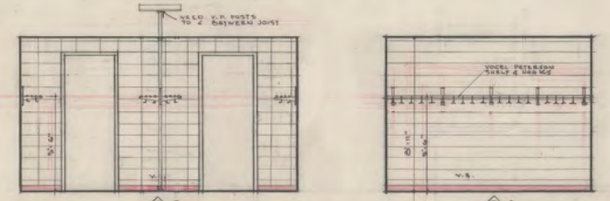

LOBBY [2]



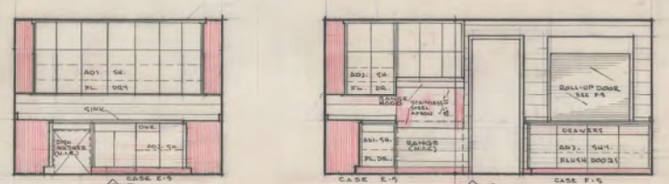

RECREATION ROOM [9]

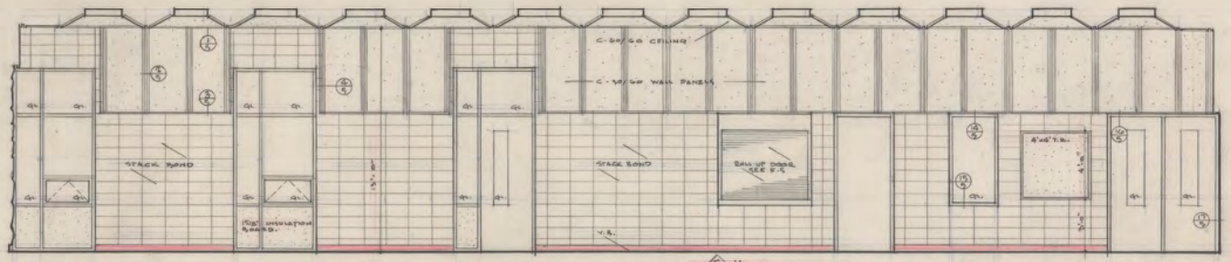



COATS [10]

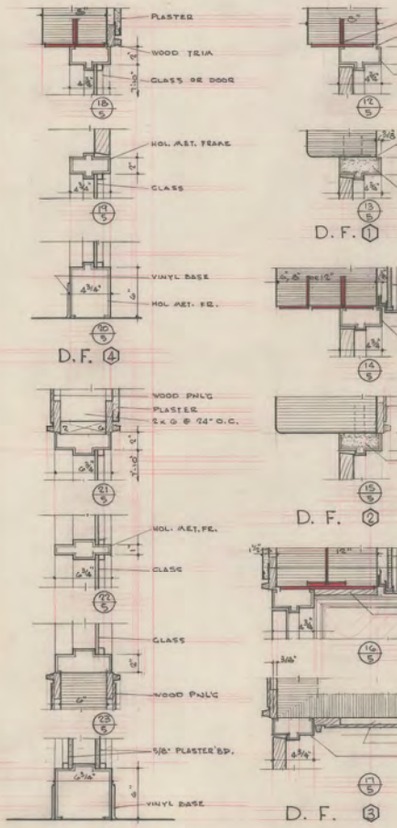


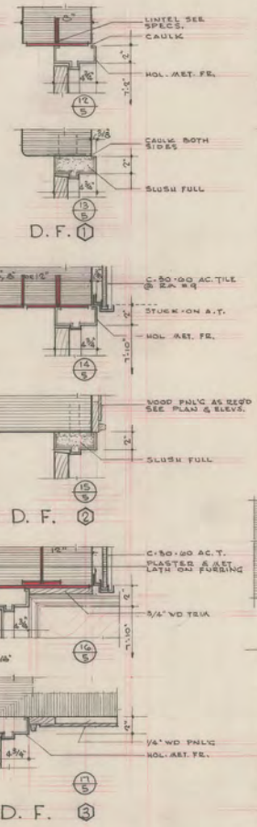

KITCHEN [7]

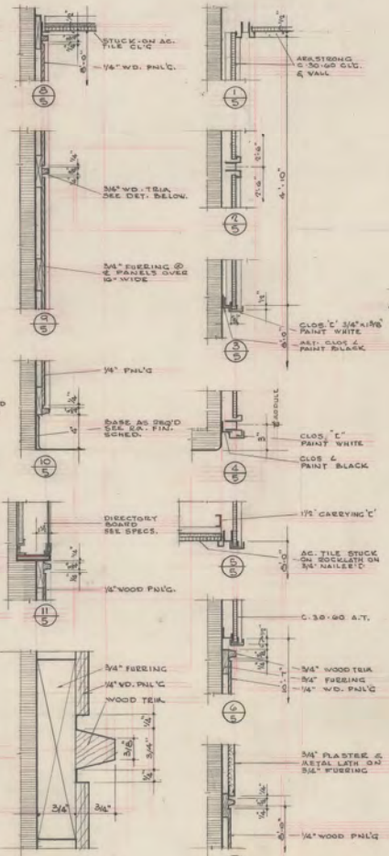



RECREATION ROOM [9]

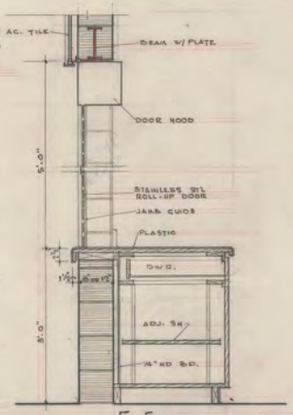


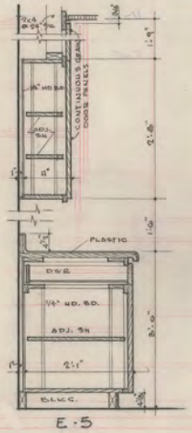



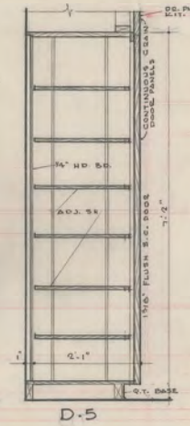



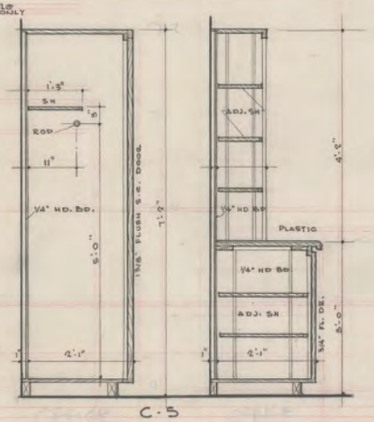


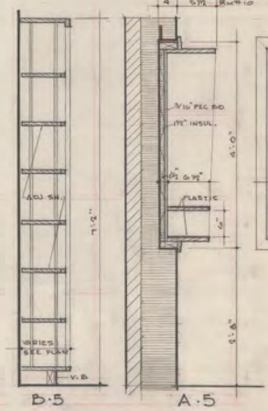


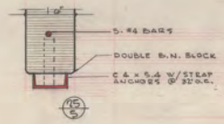


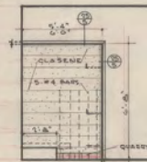



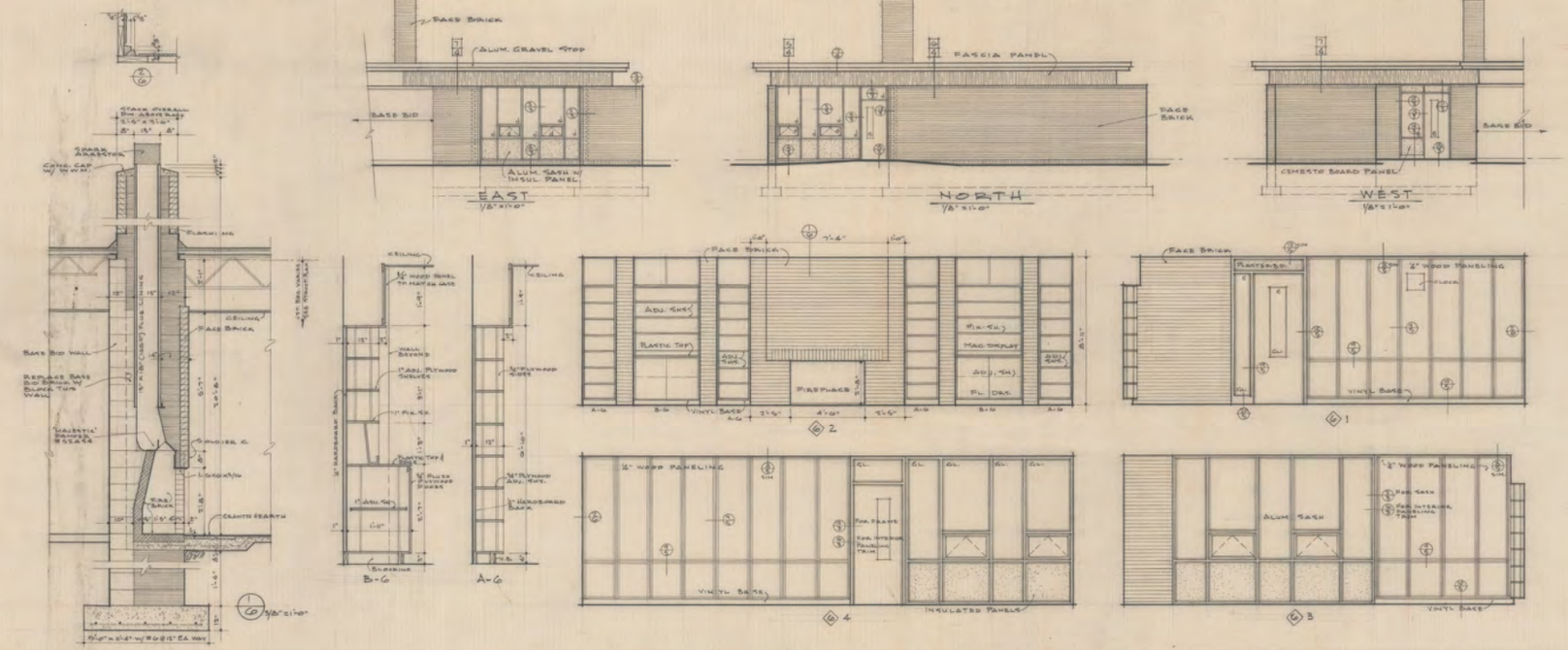




TYPICAL TOILET PIN

HOLLOW METAL FRAMES
SCALE: 1/2" = 1'-0"

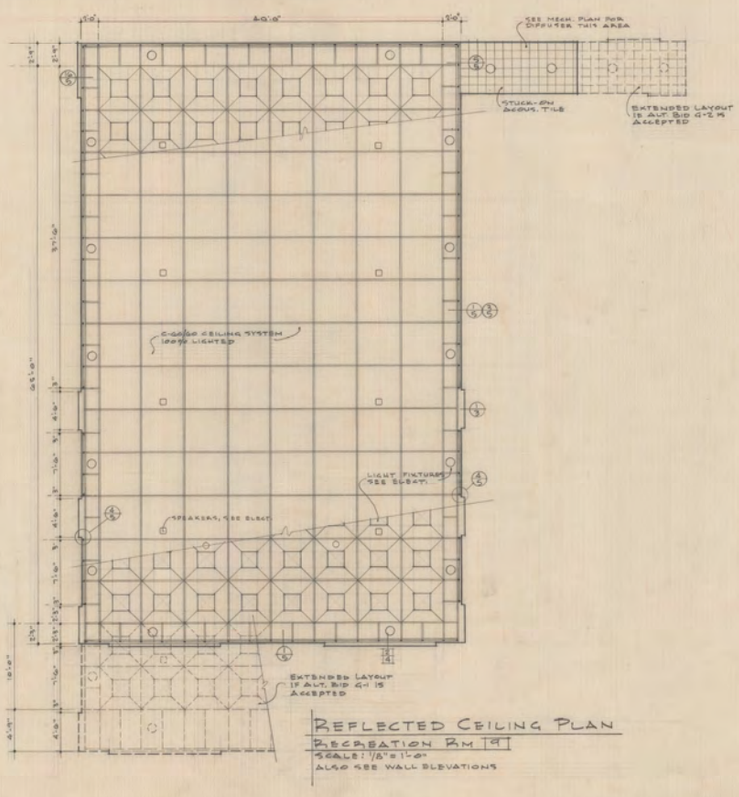
# IRVING PARK RECREATION BUILDING
FOR
CITY OF BATTLE CREEK
CALHOUN COUNTY . . . . . MICHIGAN

SHEET NO. 5




# ALT. BID #G-2

READING RM, STO. RM. ADDITION

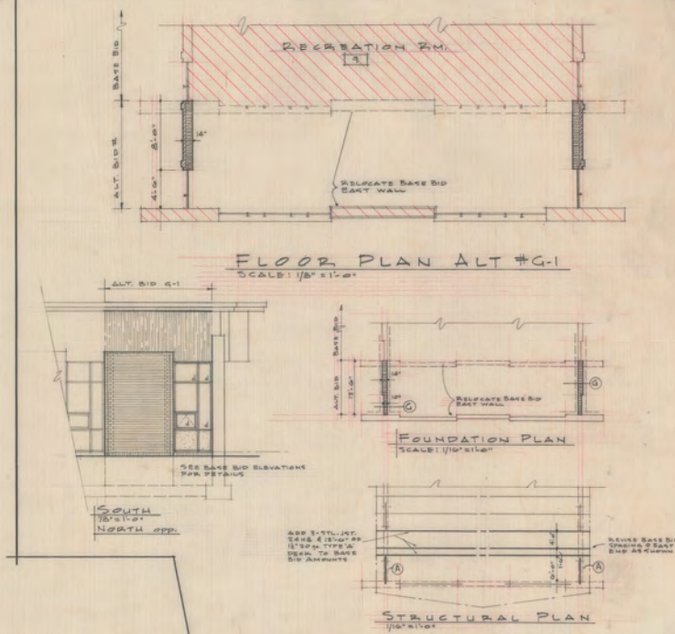



REFLECTED CEILING PLAN

RECREATION RM. 9

SCALE: 1/8"=1'-0"

ALSO SEE WALL ELEVATIONS




# ALT. BID #G-1

MAKE RECREATION ROOM LONGER (12'-0")
EXTERIOR & INTERIOR ELEVATIONS & DETAILS ARE LIKE BASE BID.

**IRVING PARK RECREATION BUILDING**
FOR
CITY OF BATTLE CREEK
CALHOUN COUNTY . . . . . MICHIGAN

SHEET NO. 6

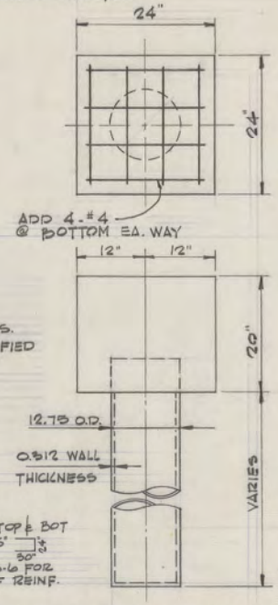
| MARK | STRAIGHT W | STRAIGHT D | STIRRUPS NO. | STIRRUPS SIZE | CONT. TOP NO. | CONT. TOP SIZE | STIRRUPS SIZE | SPACING | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| GB-1 | 18" | 38" | 2 | #8 | 2 | #8 | #3 | @ 6½" | ADD 3-#4 ON EA. FACE (LONG.) |
| GB-2 | 14" | 38" | 2 | #7 | 2 | #7 | #3 | @ 6½" | ADD 2-#4 ON EA. FACE (LONG.) |
| GB-3 | 12" | 36" | 2 | #7 | 2 | #7 | #3 | @ 6½" | ADD 2-#4 ON EA. FACE (LONG.) |
| GB-4 | 12" | 30" | 4 | #8 | 4 | #8 | #3 | @ 7½" EA. END REM. @ 12" | TOP & BOT. BARS IN 2 LAYERS |
| GB-5 | 12" | 30" | 4 | #9 | 4 | #8 | #3 | @ 8½" EA. END REM @ 12" | TOP & BOT. BARS IN 2 LAYERS |
| GB-6 | 12" | 30" | 2 | #8 | 2 | #8 | #3 | @ 12" | |
| GB-3A | GRADE BEAM | | REINF | | SAME AS GB-3 | | | SEE DET'LS FOR ADDITIONAL REINF. & SHAPE MODIF. | |
| GB-6A | GRADE BEAM | | REINF | | SAME AS GB-6 | | | SEE DET'LS FOR ADDITIONAL REINF. & SHAPE MODIF. | |

NOTE:
1. ALL LONGITUDINAL REINFORCING SHOULD BE HOOKED @ END SUPPORTS AND CONTINUOUS OVER INTERIOR SUPPORTS.
2. CONCRETE - HARD ROCK 150 PCF $f'c = 3000$ PSI
3. STEEL - ASTM A-615 $fy = 60{,}000$ #5 & LARGER $fy = 40{,}000$ #4 & SMALLER
4. CONCRETE COVER FOR RE-STEEL SHALL CONFORM TO ACI 318-71
5. TOP BAR SPLICES SHOULD BE PROVIDED @ MIDSPAN

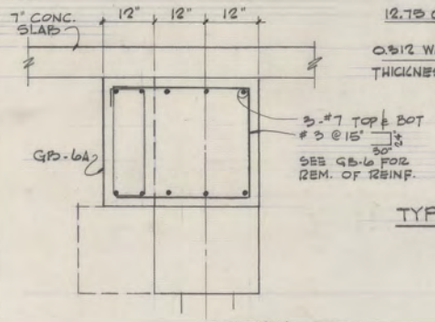
## PILE SCHEDULE

| PILE TYPE | REQD CAPY | BIDDING LENGTH |
|---|---|---|
| P-1 | 95 K | 58'-0" |
| P-2 | 85 K | 55'-0" |
| P-3 | 75 K | 50'-0" |
| P-4 | 60 K | 45'-0" |
| P-5 | 40 K | 40'-0" |
| P-6 | 105 K | 60'-0" |

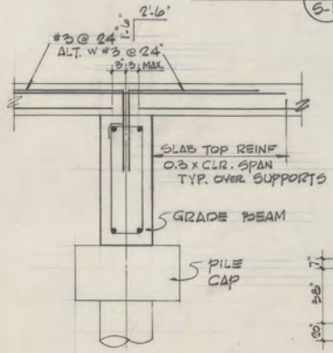
1. SOIL RECOMMENDATIONS PER MATERIALS TESTING CONSULTANTS INC. SOIL REPORT DATED JULY 17, 1973.
2. ALL PILES SHALL BE 12"ϕ STL. PIPE PILES.
3. CAPACITY OF EACH PILE SHALL BE VERIFIED DURING INSTALLATION USING MODIFIED ENGINEERING NEWS FORMULA



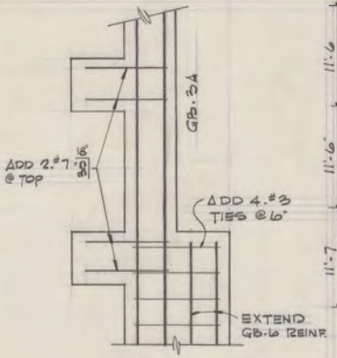

TYPICAL PILE DIAGRAM



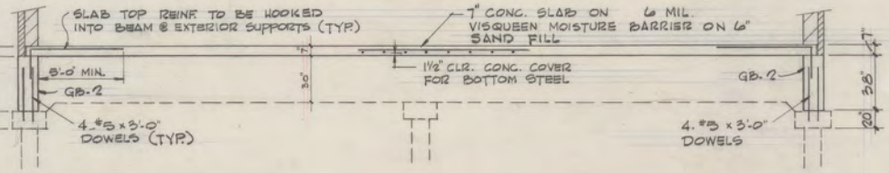

DETAIL (1 / S-1)



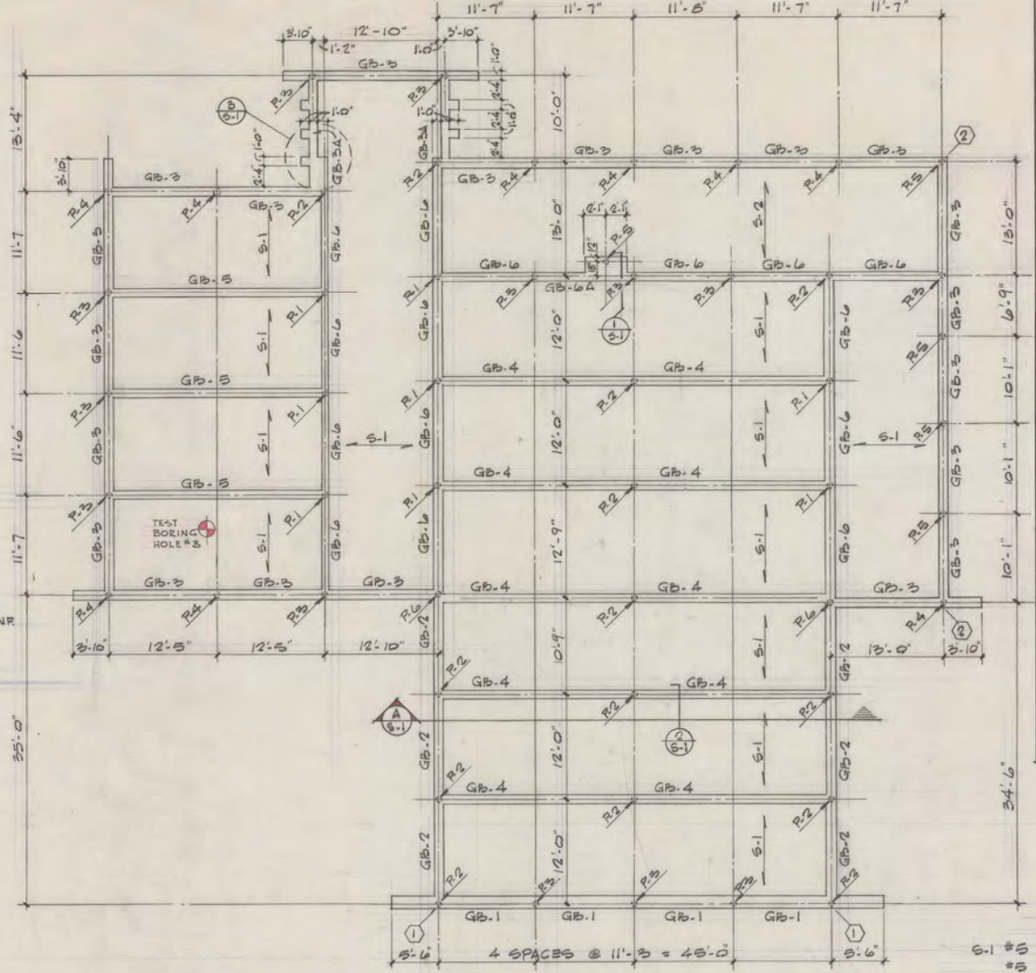

DETAIL (2 / S-1)




DETAIL (3 / S-1)

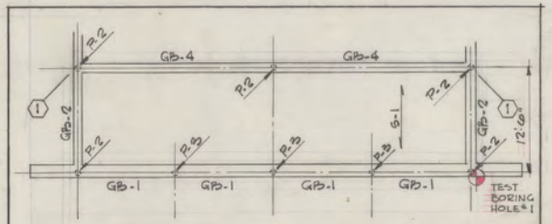



SECTION (A / S-1)

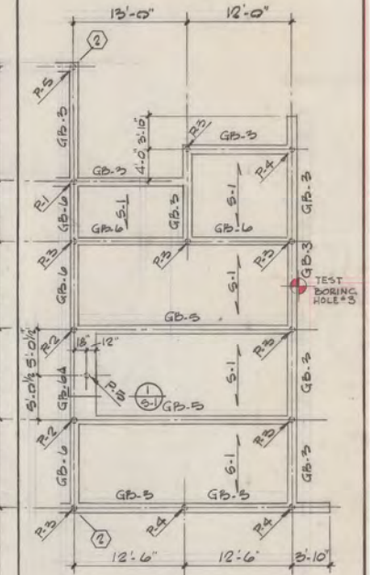



BASE BID

FOUNDATION PLAN
SCALE 1/8" = 1'-0"




ALTERNATE No. G-1




ALTERNATE No. G-2

## SLAB REINFORCING

S-1 #5 @ 15" @ BOTTOM
#5 @ 15" @ TOP OVER SUPPORTS
#3 @ 7½" TEMP. REINF.

S-2 #5 @ 12" @ BOTTOM
#5 @ 12" @ TOP OVER SUPPORTS
#3 @ 7½" TEMP. REINF.

ADD #5 @ 15" @ TOP OVER SUPPORTS IN LONG DIRECTION FOR BOTH S-1 & S-2 EXTEND BARS A MINIMUM OF 5'-0" INTO THE SLAB.
SLAB BOTTOM STEEL SHALL EXTEND A MIN OF 6" OVER EXTERIOR SUPPORTS.

NOTE: SCALE OF DETAILS 3/4" = 1'-0"

CARL WALKER & ASSOCIATES, inc.
CONSULTING ENGINEERS
Kalamazoo, Michigan Minneapolis, Minnesota

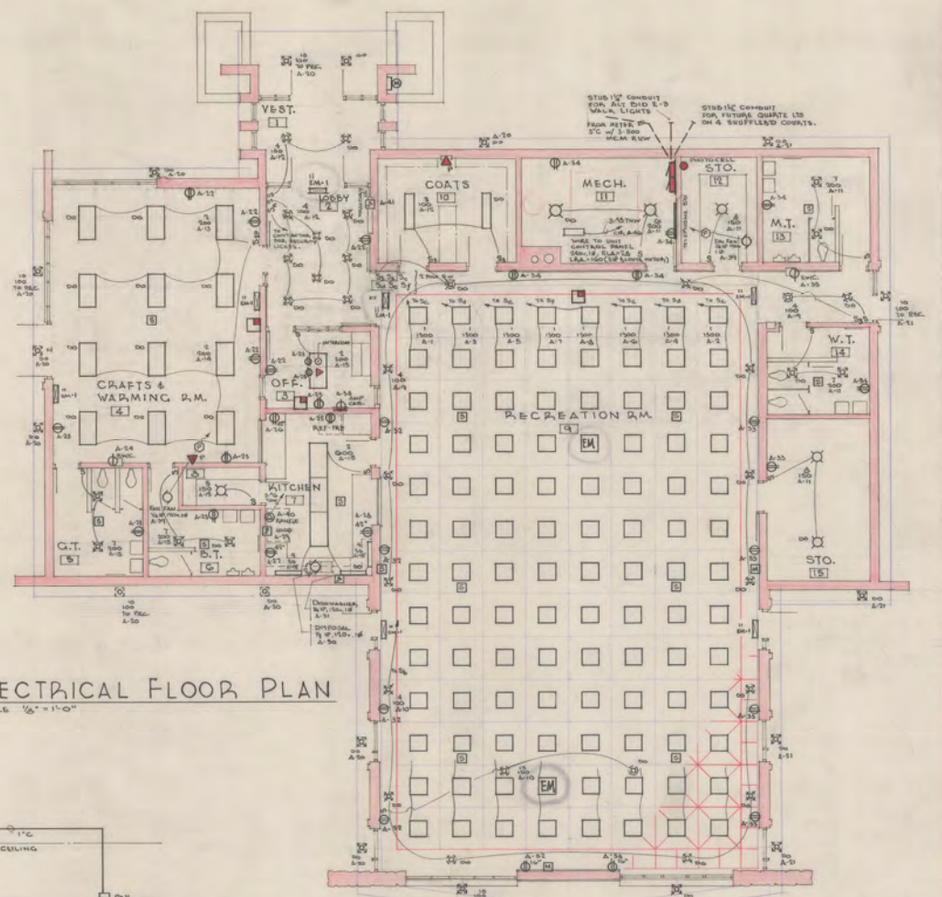
IRVING PARK RECREATION BUILDING
FOR
CITY OF BATTLE CREEK
CALHOUN COUNTY MICHIGAN

SHEET NO. S-1

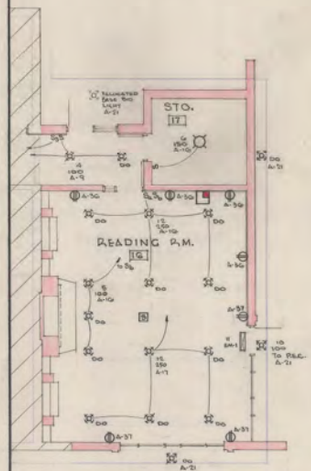
| NO | MANUFACTURER | CATALOG Nº | VOLTS | LENS | REMARKS |
|---|---|---|---|---|---|
| 1 | BENJAMIN | GR.H-7224-2 | 120 | 7/16" R-12 VIR. ACR. | 2-40 w., U, R.S., HEAT REMOVAL, VOLUME CONTROL DAMPERS ON HEAT REMOVAL SLOT. DAMPER TO BE ADJUSTIBLE w/o REMOVING LAMP. C-GO/GO CEILING |
| | CRESCENT | 22U 240-1M-7SQ2 | | | |
| | LITHONIA | 2GI 2040 A-12 | | | |
| 2 | BENJAMIN | GRS-7244-4 | " | " " " " | 4-40 w., R.S. RECESSED FLANGE TROFFER, STECK-ON TILE |
| | CRESCENT | 24 FL 440-1M | | | |
| | LITHONIA | 2F 440 A-12 | | | |
| 3 | BENJAMIN | CD-2224-4 | " | VIRGIN ACRYLIC | 2-40 w., R.S., SURFACE MOUNTED |
| | CRESCENT | NJN 240 | | | |
| | LITHONIA | LB 240 A | | | |
| 4 | KIRLIN | 1002-450-555-570 | " | GLASS | 1-100 w., A-19, INCAND. RECESSED |
| | PRESCOLITE | 90AM-TI | | | |
| 5 | KIRLINN | 1002-451-591-595 | " | LOUVER | 1-100 w., R-30, INCAND, RECESSED, EYE BALL |
| | PRESCOLITE | 99 HP-5 | | | |
| 6 | BENJAMIN | V 9042L | " | OPEN | 150/200 w., INCAND. R.L.M. |
| 7 | KIRLIN | 1289-10-101-107 | " | GLASS | 200 w., INCAND., RECESSED |
| 8 | MOE | M4ID | " | " | 2-75 w., INCAND., SURFACE MTD. |
| 9 | ALKCO | 135L-C | " | VIRGIN ACRYLIC | 1-30 w., R.S. w/ CONV. OUTLET |
| 10 | ALKCO | PL-1322 MV-100 | " | FIBERGLASS | 100 w., MER. VAPOR EXTR. |
| 11 | ALKCO | G88 | " | | EXIT LIGHT |
| 12 | PRESCOLITE | 72 HM | " | GLASS | 250 w., QUARTZ |
| 13 | PRESCOLITE | 1221-412 | " | | 150 w., PAR-38 |

NOTE: IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO VERIFY THE TYPE OF CEILING, AND THUS THE FIXTURE TYPE IN EACH ROOM WITH THE CEILING CONTRACTOR BEFORE ORDERING FIXTURES.

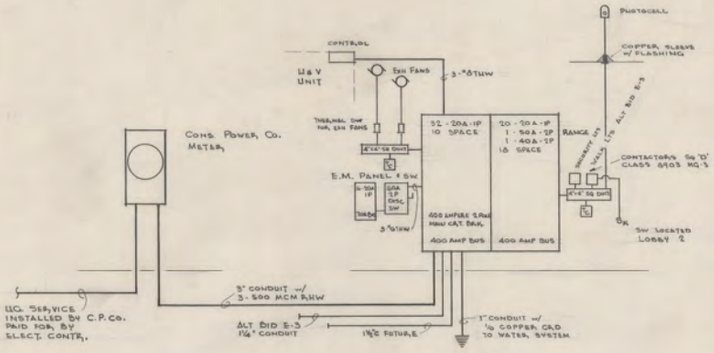
- CLG. MTD. INCAND.
- RECESSED LIGHT
- EXIT LIGHT
- S SINGLE POLE SWITCH
- $S_{2P}$ DOUBLE POLE SWITCH
- $S_3$ $S_4$ SWITCH - 3 WAY, 4 WAY
- DUPLEX CONVENIENCE OUTLET
- JUNCTION BOX
- COMBINATION STARTER, DISC.
- FUSIBLE DISC. SWITCH
- $S_P$ SWITCH w/PILOT LIGHT
- MANUAL MOTOR SW. ALLEN-BRADLEY BULL DOG w/THERMALS
- SINGLE PHASE MOTOR
- ELECTRIC PANEL
- TELEPHONE OUTLET
- CLOCK
- RECESSED CLG. SPEAKER
- FIRE ALARM BREAKER STATION
- FIRE ALARM HORN
- TC. TIME CLOCK
- SPECIAL PURPOSE OUTLET SEE SPECS
- EM EMERGENCY LIGHTING BATTERY PACKAGE, MFG. STD.



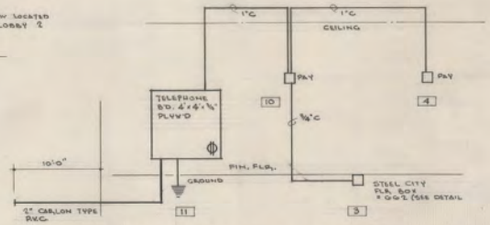

ELECTRICAL FLOOR PLAN
SCALE 1/8" = 1'-0"



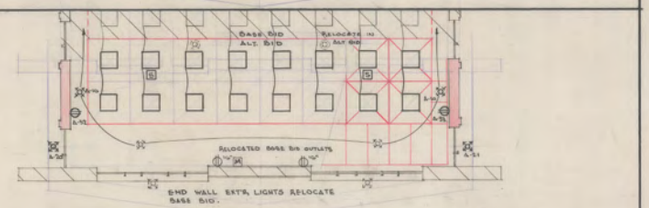

ELECTRICAL PLAN - ALT BID E-2
SCALE 1/8" = 1'-0"




ELECTRICAL RISER DIAGRAM

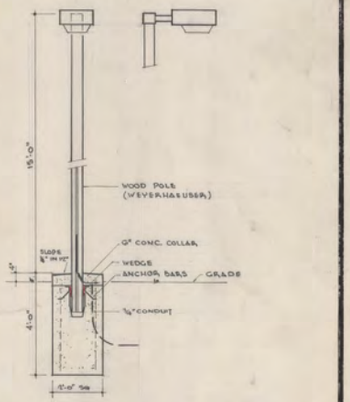



TELEPHONE RISER DIAGRAM
NOT TO SCALE



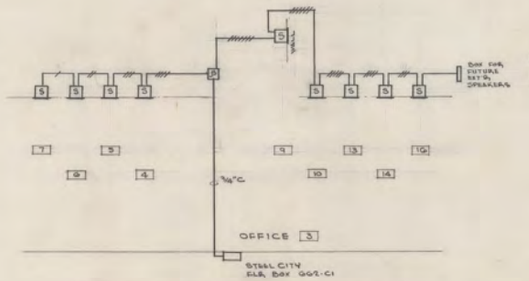

ELECTRICAL PLAN ALT. BID E-1
SCALE 1/8" = 1'-0"

NOTE: IN ALT. BID E-1 ADD; 16 FIXTURE #1, 2 FIXTURE #4, 2 FIXTURE #10, & 2 DUPLEX OUTLETS.

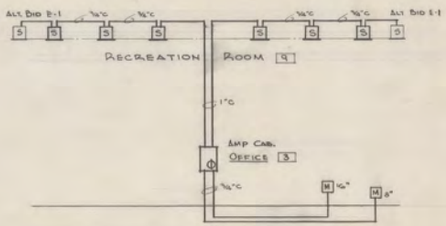



WALK LIGHTS - ALT. BID E-3

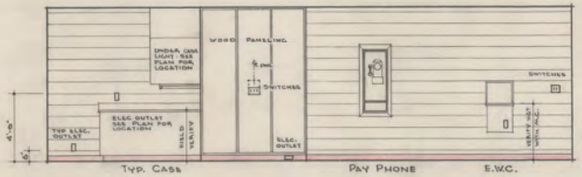
NOTE: 10 LIGHTS REQ'D - 5 LTS. CIR. A-18, 5 LTS. CIR. A-19
TOTAL LENGTH OF 300', 2#10 w/GRD OF LIG. CABLE.
2 LIGHTING CIRCUITS



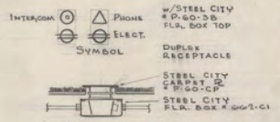

INTERCOM RISER DIAGRAM




AMPLIFIER RISER DIAGRAM




TYPICAL FIXTURE ELEVATION



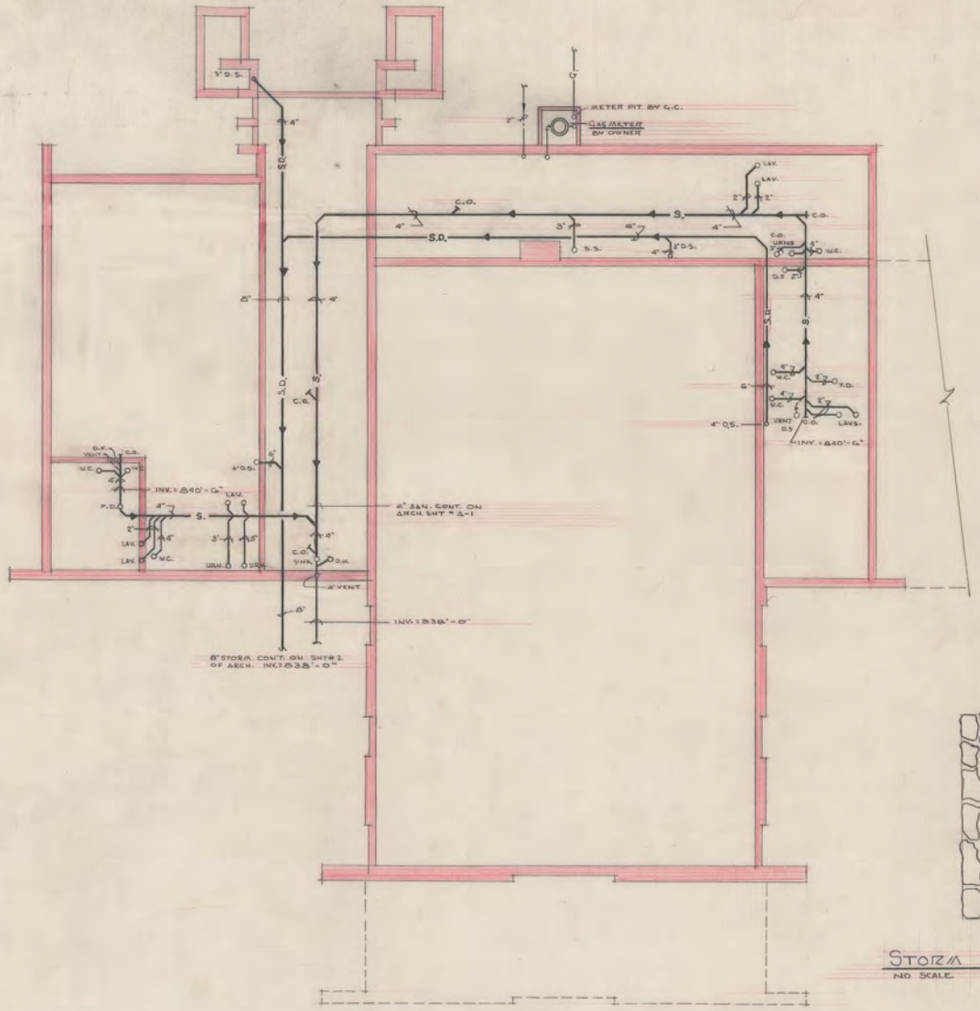

# IRVING PARK RECREATION BUILDING

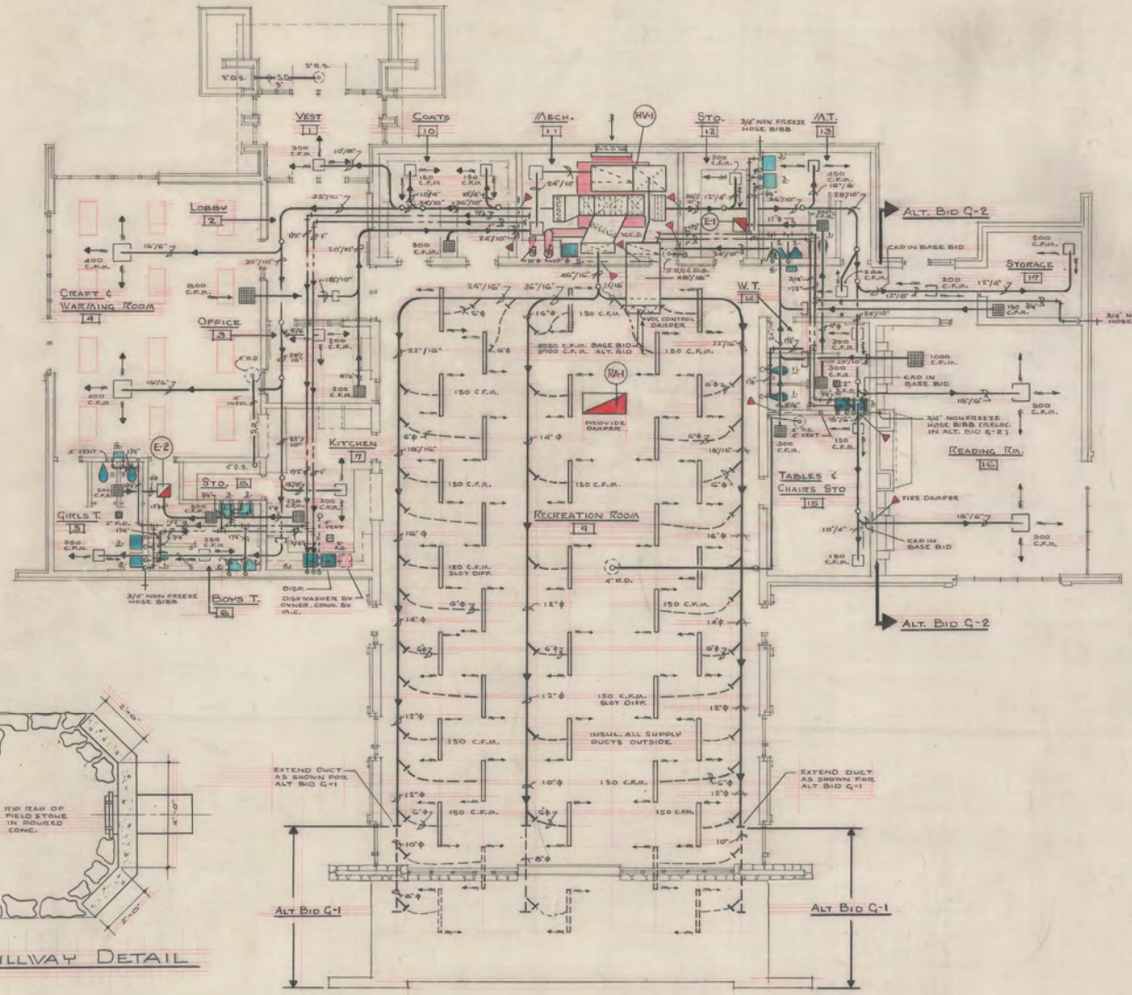
FOR

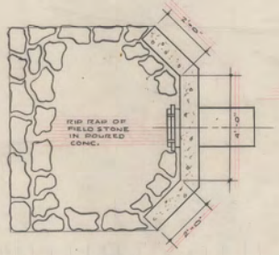
CITY OF BATTLE CREEK

CALHOUN COUNTY . . . . . MICHIGAN

SHEET NO. E-1



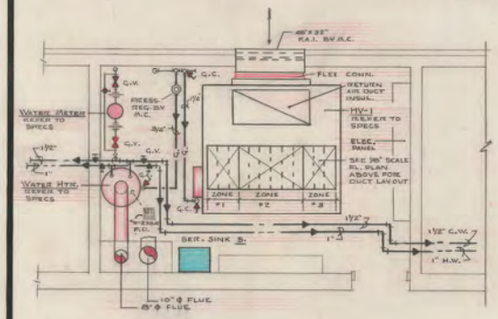




STORM SPILLWAY DETAIL
NO SCALE

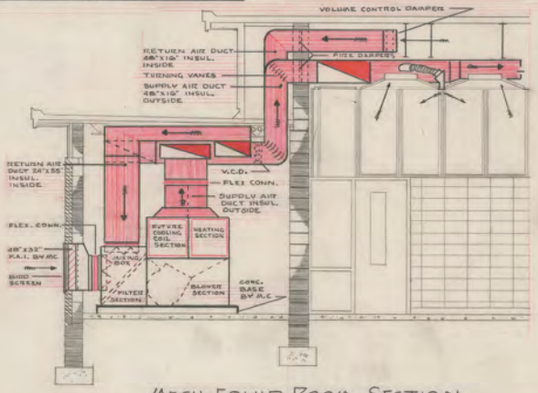
MECHANICAL FOUNDATION PLAN
SCALE 1/8" = 1'-0"

NORTH

MECHANICAL FLOOR PLAN
SCALE 1/8" = 1'-0"




MECH. EQUIP. ROOM # 11




MECH EQUIP. ROOM SECTION

## GRILLES - REGISTERS - DIFFUSERS

"TUTTLE - BAILEY"

| C.F.M. | SIZE | V.C. DAMPER | TYPE | CONST. | FINISH | REMARKS |
|---|---|---|---|---|---|---|
| EXHAUST - RETURN AIR | | | | | | |
| 150 X | 8"X8" | YES | CRE-50B | ALUM. | ALUM. | REG. W/A-45 FRAME |
| 200-350 | 10"X10" | YES | CRE-50B | ALUM. | ALUM. | REG. W/A-45 FRAME |
| 400 | 12"X12" | YES | CRE-50B | ALUM. | ALUM. | REG. W/A-45 FRAME |
| 500 | 16"X16" | YES | CRE-50B | ALUM. | ALUM. | REG. WA-45 FRAME |
| 1000 ± | 18"X18" | YES | CRE-50B | ALUM. | ALUM. | REG. WA-45 FRAME |
| SUPPLY AIR | | | | | | |
| 150 | 9"X9" | YES | /AE-2C | STEEL | OFF WHITE | |
| 200-350 | 12"X12" | YES | AE-2C | STEEL | OFF WHITE | |
| 200-400 | 12"X12" | YES | /AE-3 | STEEL | OFF WHITE | |
| 500 ± | 18"X18" | YES | /AE-3 | STEEL | OFF WHITE | |
| 200-350 | 12"X12" | YES | /AE-2 | STEEL | OFF WHITE | |
| 450 | 15"X15" | YES | /AE-2 | STEEL | OFF WHITE | |

ALT BID G-2

## RELIEF VENT

"LOREN COOK CO."

| TAG | MODEL | THROAT | ROOF CURB | CONST. | REMARKS |
|---|---|---|---|---|---|
| RV-1 | 1500 | 24"X24" | 24"X24" | ALUM. | |

## HEATING UNIT

"LENNOX"

| TAG | CATOLOG MODEL | C.F.M. | NO. ZONES | EXT. S.P. | HEATING GAS FIRED | | | | MAIN BLOWER H.P. | ELECTRICAL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | E.A.T. | L.A.T. | IN PUT M.B.H. | OUT PUT M.B.H. | | |
| HV-1 | DAS2-275 | 4888 TO 10,800 | 3 | 1.0 | 60° | 106 | 550.0 | 448.0 | 7½ | 240 V.; 60 ~, 1 ϕ |
| UNIT ZONES | | | | | | | | | | |
| ZONE # 1 | | | ZONE # 2 | | | | | | ZONE # 3 | |
| 2600 C.F.M. 3 DAMPER SECTION | | | 5700 C.F.M. - 6 DAMPER SECTION | | | | | | 2500 C.F.M. 3 DAMPER SECTION | |

## EXHAUST FANS

"LOREN COOK CO."

| TAG | MODEL | ROOF CURB | C.F.M. | S.P. | H.P. | R.P.M. | ELECTRICAL | PLENUM SIZE | SONE VALVE |
|---|---|---|---|---|---|---|---|---|---|
| E-1 | 150 CO 1B | BKG.C. | 700 | 1/4" | ½ | 735 | 120V. - 60 - 1 ϕ | 16"X16" | 0-5 |
| E-2 | 150 CO 1B | BKG.C. | 850 | 1/8" | ½ | 785 | 120V. - 60 - 1 ϕ | 16"X16" | 0-5 |

# IRVING PARK RECREATION BUILDING

FOR

CITY OF BATTLE CREEK

CALHOUN COUNTY . . . . . MICHIGAN

SHEET NO. M-1

MAY-1975

# CITY OF BATTLE CREEK

## ADDENDUM # 1

**IFB#: 2024-041R**

**TITLE: Fire Alarm System at Valentine Center**

**ADDENDUM ISSUED: January 29, 2024**

**The following changes, additions and deletions have been provided:**

**CHANGE DUE DATE** from February 1, 2024, to **MONDAY, FEBRUARY 12, 2024, at 12:00PM NOON.**

**FOR YOUR INFORMATION**: Asbestos condition unknown. If asbestos is encountered at the time of installation, we will address abatement and its additional cost at that time with a change order. The work may stop until after the issue is resolved, and the City will issue a completion date extension.

As a reminder, the completion date will be the date that the successful contractor says they can meet in their proposal. Please remember to state completion in terms of "x calendar days from Notice to Proceed" as instructed in Section 4.3 of Submittal, Evaluation Criteria.

**FOR YOUR INFORMATION, DRAWINGS:** . see original building drawings from 1973, which is all we have. Please note that substantial changes may or may not have been made since that time, and these drawings are not to be considered accurate renderings of the current building. The following FTP link contains both small (3006KB) size and large (198,521 KB) size pdfs:

https://secure.battlecreekmi.gov/public/folder/i1_fvHqhd065qosYij83cw/Valentine%20Center%201973%20Drawings

**This addendum must be acknowledged on the Offer and Acceptance or Offer to Contract page of your proposal or your proposal may be deemed non-responsive.**

# STANDARD CONTRACT PROTECTIONS

The City values our contractors and seeks to maintain good relationships with them. The City also has an obligation to protect the taxpayer money that we spend, and to that end we have protections in place for our contracts, which vary depending on type of contract. **Commission approval is required by a surety before they will issue bonds for a contract.** Once the bonds and insurance certificates are obtained, the City Attorney reviews the contract and then the City Manager signs it.

**Prevailing wages:** Required for construction projects over $50,000 (and sometimes on state or federal for lesser amounts). This is the hourly wage, usual benefits and overtime, paid to the majority of workers, laborers, and mechanics within a particular area. This is usually the union wage. Prevailing wages are established by regulatory agencies for each trade and occupation employed in the performance of public work, as well as by State Departments of Labor (DOL) or their equivalents, are specific to Calhoun County. Purchasing pulls the current wages from the DOL at the time of publication of the Invitation for Bid; those wages do not change after that point and become part of the contract. Prevailing wage compliance is monitored by our Department of Public Works, and they collect the certified payrolls.

**Performance bond**: Required for construction contracts over $50,000. In the amount of 100% of the contract value, a performance bond is a surety bond that guarantees satisfactory completion of a project. Very rare to ever call on a bond. A performance bond can also be used for non-construction; we require a performance bond for residential waste and land application of sludge, which are both high dollar and high risk should the contract fail.

**Payment/Labor/Materials bond**: Required for construction contracts over $50,000. In the amount of 100% of the contract value, a PLM bond protects subs. A contractor cannot put a lien on a public building, so our subcontractors who provide both goods and services require protection in the event that the general contractor can't or won't pay their subs. Rare for our subs to call on any of our general contractors' bonds.

**General liability insurance**: Required for all contracts. Certificates of insurance for general commercial liability, workers' compensation, auto liability, and property damage are obtained prior to contract award. The City is always named as "additional insured" with respect to general liability, meaning the policy provides coverage to the City for work done under that contract. The Purchasing Office tracks all contracts and associated insurance, and we ensure that policies are kept current.

**Liquidated damages**: Used in most construction contracts. A clause as a material part of the contract, which is an amount to be withheld from payment for each calendar day that the contractor fails to complete the work within the time allowed. Liquidated damages are held in lieu of actual damages, which can be difficult to calculate, and may not be used as penalty. This amount is pre-determined by the engineer, usually anywhere from $500 - $2000 per calendar day, and is published in the Invitation for Bid along with the project completion date that must be met. Contractors know the liquidated damages amount and the completion date before they submit their bids. Delays outside the control of a contractor will not result in liquidated damages being withheld. A reason *not* to have a liquidated damages clause would be times of unusually long lead times or times when contractors are very busy because it could discourage bids.

**Cancellation Clauses:** All contracts contain clauses that allow the City to cancel a contract due to breach, poor performance, or convenience (i.e., no reason needed). Term contracts, those that can go on for many years, are typically executed for 1-2 years at a time, with renewals that are always mutual and optional. Very rare to cancel a contract. Most often, we simply don't renew a term contract if there were unresolved performance issues throughout the year, if we want to change the scope of work substantially, or if we no longer require those goods/services.

**Bid bond/bid surety:** for construction bids over $50,000, contractors must submit with their bid a bid bond in the amount of 5% of their bid, which ensures they sign the contract after Commission approval. If the low bidder refuses to sign the contract, then the City could seek recourse on the bid bond and move to the next lowest responsive, responsible bidder. **A bid bond has no value or purpose after the contract is signed**. In the very rare case that a bidder has made an obvious and honest error, we would allow them to withdraw their bid. The City has not called on a bid bond during current Purchasing Agent's time (since 2001), so it's extremely rare.

# Resolution NO. 390

A Resolution seeking to correct the identity of the Grantee/Buyer in Resolution 126, approved May 2, 2023.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That the name of the Grantee/Buyer in Resolution 126, approved May 2, 2023 was erroneously listed as Battle Creek Unlimited (BCU) and should be Battle Creek Tax Increment Financing Authority (BCTIFA) and is therefore corrected accordingly in this Resolution.

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Jill Humphreys Steele, City Attorney

**Department:** City Attorney

**SUMMARY**

A Resolution seeking to correct the identity of the Grantee/Buyer in Resolution 126, approved May 2, 2023.

**BUDGETARY CONSIDERATIONS**

There are none.

**HISTORY, BACKGROUND and DISCUSSION**

BCU acts as the administrator for BCTIFA in many instances, and was in communication with the Assistant City Manager regarding this real estate transaction. The Resolution erroneously listed the Grantee/Buyer of the Parcel of real estate authorized to be sold in Resolution 126, approved on May 2, 2023 as BCU. This Resolution corrects that error and authorizes the sale of real estate to be made to BCTIFA as the Grantee/Buyer.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

The Assistant City Manager supports this Resolution.

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ATTACHMENTS:

| File Name | Description |
| --- | --- |
| Resolution_126_5.2.23.pdf | Resolution 126 dated 5.2.23 |

CITY OF Battle Creek MICHIGAN

# Resolution NO. 126

A Resolution authorizing the City Manager to execute all documents necessary to sell a city-owned parcel of vacant land in the Fort Custer Industrial Park area (Parcel number 3020-01-005-0) to Battle Creek Unlimited (BCU) for $1.

**BATTLE CREEK, MICHIGAN -** 5/2/2023

**Resolved by the Commission of the City of Battle Creek:**

That, Section 12.1 of the Charter of the City of Battle Creek authorizes the City to sell real property and the City believes it is in its best interest to do so in this instance.

BCU is assembling land in the industrial park seeking to incentivize a local expansion. The targeted property is on Dickman Rd consisting of two parcels, one owned by the TIFA (parcel 3020-01-003-0) and one owned by the City, parcel #3020-01-005-0, (hereafter "City-owned Parcel").

The City believes selling this City-owned parcel to BCU is in its best interests in this instance in order to facilitate business expansion and realize the community benefits that accompany such expansions.

The City may sell the City-owned Parcel by Quit Claim Deed to BCU for $1.00, provided that when BCU sells the parcel, the City will receive 33% of the total net proceeds from the sale including the TIFA parcel, reflecting that the City parcel is approximately 33% of the total land area when combined with TIFA parcel # 3020-01-003-0.

The City Manager is authorized to sell the city-owned parcel located in the Fort Custer Industrial Park area, fronting on Dickman Road identified as Parcel #3020-01-005-0 ("City-owned parcel"), with the city receiving a portion of the ultimate sales proceeds for development in one of two amounts: If the City-owned parcel is combined with TIFA Parcel # 3020-01-003-0, then the City shall receive 33% of the total net sales proceeds of the two combined parcels, reflecting its portion of the total land being sold. If the City-owned parcel is sold independently from the TIFA parcel for development, then the City shall receive all of the net sales proceeds. The City Manager is authorized to sell the City-owned Parcel by Quit Claim Deed to BCU, as legally described below, provided the terms and conditions meet with the approval of the City Attorney, which shall include the reservation of utility easements:

BC – FORT CUSTER URBAN RENEWAL PLAT LOT 5 which will be subject to correction of scrivener's errors or revised descriptions approved by the City Attorney.

The City Manager of Battle Creek is authorized to execute any closing documents necessary to effectuate the sale of this City-owned provided they meet with the approval of the City Attorney.

I, Victoria Houser, City Clerk of the City of Battle Creek, hereby certify the above and foregoing is a true and correct copy of a Resolution adopted, as Amended, by the Battle Creek City Commission at a Regular meeting held on May 2, 2023.

Victoria L. Houser

Victoria Houser

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Battle Creek City Commission
5/2/2023

## Action Summary

**Staff Member:** Jill Humphreys Steele, City Attorney

**Department:** City Attorney

**SUMMARY**

A Resolution authorizing the City Manager to execute all documents necessary to sell a city-owned parcel of vacant land in the Fort Custer Industrial Park area (Parcel number 3020-01-005-0) to Battle Creek Unlimited (BCU) for $1.

**BUDGETARY CONSIDERATIONS**

The City will initially receive $1.00 for the sale of this parcel, but will later receive an undetermined amount equal to 33% of the total net sales proceeds from the two parcels being sold together to a Developer, or the total net sales proceeds if it is sold independently to a Developer.

**HISTORY, BACKGROUND and DISCUSSION**

BCU is assembling land in the industrial park seeking to incentivize a local expansion. The targeted property is on Dickman Rd consisting of two parcels, one owned by the TIFA (parcel 3020-01-003-0) and one owned by the City (parcel 3020-01-005-0). The City seeks to sell its land to BCU for $1.00 with the agreement that the City will receive 33% of the proceeds from any sale. The 33% is based on the city parcel being 33% of the total land area if the city parcel is combined with the TIFA owned parcel directly to the west (parcel 3020-01-004-0).

The City will receive 100% of the net sales proceeds if this parcel is sold independently to a Developer without the TIFA parcel.

The City will convey by Quit-Claim deed, with BCU being responsible for all closing costs.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

The Assistant City Manager supports this Resolution.

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ATTACHMENTS:

| File Name | Description |
|---|---|

No Attachments Available

CITY OF Battle Creek MICHIGAN

# Resolution NO. 391

A Proposed Resolution authorizing the City Manager to execute all documents necessary to sell the city-owned vacant land located in Assyria Township in Barry County, Parcel #08-01-031-020-00, to Barry County for $1.00.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That, Section 12.1 of the Charter of the City of Battle Creek authorizes the City to sell real property and the City believes it is in its best interest to do so in this instance.

The City Manager is authorized to sell the vacant city-owned land in Assyria Township, Barry County, Michigan, Parcel #08-01-031-020-00 by Quit Claim Deed to Barry County for $1.00, subject to the existing deed restrictions and conditions, pursuant to terms and conditions to be set out in a purchase agreement which has been approved by the City Attorney. The property is legally described as:

ASSYRIA TWP SW 1/4 SEC 31-1-7 EX BEG ON W SEC LINE 113.31 FT N OF SW COR OF SEC, S 113. 31 FT, E ON S SEC LINE 374.18 FT, NWLY 391.27 FT TO BEG.

Rebecca L. Fleury, the City Manager of Battle Creek, is authorized to execute any required closing documents including, but not limited to, a Quit Claim Deed of conveyance to effectuate this sale.

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Jill Humphreys Steele, City Attorney

**Department:** City Attorney

**SUMMARY**

A Proposed Resolution authorizing the City Manager to execute all documents necessary to sell the city-owned vacant land located in Assyria Township in Barry County, Parcel #08-01-031-020-00, to Barry County for $1.00.

**BUDGETARY CONSIDERATIONS**

This will not cost the City anything - instead, it will relieve it of staff time and expenses related to the ownership of this parcel.

## HISTORY, BACKGROUND and DISCUSSION

On November 9, 1999, David and Eleanor Bailey deeded the City a parcel of land located in Assyria Township, Barry County Michigan to be used primarily as a nature preserve. (See attached deed.)

Ownership of the property and attempting to use it as a nature preserve presented challenges for the City since the property needed work to make it more accessible to the public and keep it safe from vandalism. The largest challenge is that it is not located in the City nor even in Calhoun County. It also raised questions about spending taxpayer dollars and sending City staff to the site for any of the work since it was not likely to serve many City residents. The city entered into a management agreement with the Calhoun Conservation District to improve, develop, operate, and maintain the property with programming, but that also proved to be a challenge.

The City terminated its agreement with the Calhoun Conservation District last month and has been in discussions with the Barry County Parks and Recreation Commission to take control of this parcel of land and put it to the use intended by the Bailey Family. The children of David and Eleanor Bailey have been involved in the discussions regarding this property and are very much in support of this proposed transfer. The Barry County Parks and Recreation Commission intends to seek approval of the Barry County Board of Commissioners to accept ownership of this parcel of land from the City for $1.00 at a meeting in April.

## DISCUSSION OF THE ISSUE

## POSITIONS

The Assistant City Manager supports this Resolution.

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ATTACHMENTS:

| | File Name | Description |
|---|---|---|
| 🗋 | Metcalf_Lake_Warranty_Deed_and_Conditions_1999_(1).pdf | 1999 Warranty Deed from Baileys to City |

WARRANTY DEED

THIS INDENTURE, Made NOVEMBER 9 1999 between DAVID M. BAILEY and ELEANOR S. BAILEY, husband and wife, whose address is 4766 Gull Lake Drive, Hickory Corners, MI 49060, hereinafter "Grantor", and the CITY OF BATTLE CREEK, a Michigan municipal corporation, whose address is P. O. Box 1717, Battle Creek, MI 49016-1717, hereinafter "Grantee",

WITNESSETH, that the Grantor, for and in consideration of the sum of ZERO ($-0-) DOLLARS does by these presents, grant, bargain, sell, remise, release, alien and confirm unto the said Grantee, its successors and assigns, upon and so long as the conditions stated at Attachment A hereto are observed by Grantee, its successors and assigns, all those certain pieces or parcels of land situate and being in the Township of Assyria, County of Barry, and State of Michigan, and described as follows, to-wit:

> The southwest 1/4 of Section 31, Town 1 North, Range 7 West, excepting therefrom: A triangular parcel of land in the southwest 1/4 of Section 31, Town 1 North, Range 7 West, described as follows: Beginning at the southwest corner of said Section; running thence S. 89 Deg. 38' 30" E. along the south line of said Section 374.18 feet; thence N. 72 Deg. 48' 30" W. 391.27 feet to the west line of said Section; thence S. 00 Deg. 11' 40" W. along said west line of said Section 113.31 feet tot he place of beginning.
>
> Also excepting therefrom any and all that land deeded and being used for public highway purposes.

NOTE: This deed is exempt from Michigan Real Estate Transfer Tax under Public Act 134 of 1966, Sec. 5(a), as amended, MCL 207.505(h), and Public Act 330 of 1993, Sect. 6(h)(i), being MCL 207.526(a).

NOTE: If the land being conveyed is unplatted, the following is deemed to be included: "This property may be located within the vicinity of farmland or a farm operation. Generally accepted agricultural and management practices which may generate noise, dust, odors, and other

associated conditions may be used and are protected by the Michigan Right to Farm Act.

NOTE: The Grantor grants to the Grantee the right to make four (4) divisions under Section 108 of the Land Division Act, Act No. 288 of the P.A. of 1967, the intent is to grant all future divisions to this Grantee.

TOGETHER with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining: TO HAVE AND TO HOLD the said premises, as herein described, with the appurtenances, unto the said Grantee, its successors and assigns, FOREVER. And the said Grantor for itself, its successors and assigns, does covenant, grant, bargain and agree to and with the said Grantee, their successors and assigns, that at the time of delivery of these presents it is well seized of the above granted premises in fee simple; that they are free from all incumbrances whatever, and that it will, and its successors and assigns shall WARRANT AND DEFEND the same against all lawful claims whatsoever.

When applicable, pronouns and relative words shall be read as plural, feminine or neuter.

IN WITNESS WHEREOF, the said Grantor has hereunto set their hand the day and year first above written.

SIGNED AND DELIVERED IN THE PRESENCE OF:

Linn D. Kracht

Linn D. Kracht

Kevin S. Smith

Linn D. Kracht

Linn D. Kracht

Kevin S. Smith

GRANTOR:

David M. Bailey

David M. Bailey

Eleanor S. Bailey

Eleanor S. Bailey

STATE OF MICHIGAN )
) ss
COUNTY OF CALHOUN )

The foregoing instrument was acknowledged before me this 9 day of NOVEMBER 1999 by David M. Bailey and Eleanor S. Bailey, who made oath that they executed the instrument of their own free act and deed.

Linda S. Brizendine
Notary Public
CALHOUN County, MI
My Commission Expires: 6-30-2001

LINDA S. BRIZENDINE
Notary Public, Calhoun County, MI
My Commission Expires June 30, 2001

This Instrument Drafted By:
Clyde J. Robinson, Esquire
P. O. Box 1717
Battle Creek, MI 49016-1717
(616) 966-3385

ATTACHMENT A

WARRANTY DEED CONDITIONS

Said grant shall be subject to, and together with, restrictions, covenants of record, and apparent or beneficial easements affecting said property, and subject to the following conditions:

1. That it shall be kept as a nature preserve for use by the public.

2. That Grantee not engage in any improvements to create or otherwise permit use of the property as a campground for any motorized or towed vehicles provided, however, Grantee shall be permitted to engage in limited overnight rustic camping by persons in tents and sleeping bags as part of its recreation programs.

3. That Grantee not allow or permit any unsupervised general public use or use without an approved Personal Flotation Device (PFD) for each participant, of any boat, canoe or other water craft, whether motorized or not, on the lake located on the property, provided, however, Grantee shall be permitted to build a dock onto the lake.

4. The property shall be used for public park and recreation purposes only. It is the intention of this grant to create a natural space for individuals who may study and appreciate nature and is made on the condition that the Grantee shall keep and properly maintain said premises for these purposes and on the conditions set forth above.

5. Nothing in this Agreement shall be construed to prohibit or prevent the Grantee from assessing or collecting a fee associated with admission to, or participation in recreation programs at, the above-described real property.

ACCEPTANCE OF CONDITIONS

The undersigned, Merrill R. Stanley, hereby accepts the stated conditions on behalf of Grantee City of Battle Creek, pursuant to authority granted by Resolution _____ dated _____.

CITY OF BATTLE CREEK
A Michigan Municipal Corporation

DATED: 10-29-99

BY: Merrill R. Stanley
Its City Manager

CITY OF Battle Creek MICHIGAN

# Resolution NO. 392

A Resolution seeking approval to direct staff to fly the Donate Life flag at City Hall from noon on April 1, 2024 through April 30, 2024.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

**Whereas**, on May 2, 2023, by way of Resolution 134, the City Commission established a revised policy regarding: (1) the display of the United States Flag, the Michigan State Flag, and the City of Battle Creek flag at City facilities; and (2) the display of commemorative flags on city property; and

**Whereas**, in adopting this revised policy, the City Commission declared that the City's flagpoles are not intended to serve as a forum for free expression of the public, but rather for the display of Federal, State, and City Flags, as well as the temporary addition under the City Flag of any commemorative flag as may be authorized by resolution of the City Commission as an expression of the City's official sentiments; and

**Whereas**, the United States Flag, the Michigan State Flag, and the City of Battle Creek Flag shall be displayed as may be required by law and in accordance with this policy; and

**Whereas**, no other flag shall be placed above the United States Flag; and

**Whereas**, commemorative flags may be displayed only as authorized by resolution of the City Commission and as an expression of the City's official sentiments and, as such, commemorative flags shall be displayed for a period of time that is reasonable or customary for the subject that is to be commemorated, but no longer than thirty (30) continuous days; and

**Whereas**, at the first instance of considering the display of a commemorative flag and whether such action would be in compliance with this revised policy, the City Manager shall notify all City Commissioners of the issue; and

**Whereas**, any Resolution seeking authorization to display a commemorative flag as set out in this revised policy shall contain a photo of the commemorative flag intended to be displayed; and

**Whereas**, the City will not display a commemorative flag based on a request from a third party, nor will the City use its flagpoles to sponsor the expression of a third party; and

**Whereas**, at no time will the City of Battle Creek display flags supporting discrimination, prejudice, religious movements, political parties, or candidates appearing on or intending to appear on a ballot for election; and

**Whereas**, flags shall be displayed as follows: The United States Flag shall be displayed in the first position of honor, the Michigan State Flag shall be placed in the second position of honor, the City of Battle Creek Flag shall be placed in the third position of honor. Commemorative flags, when authorized by the City Commission for a period of less than thirty (30) consecutive days, shall be displayed in the third position of

honor, temporarily, placed underneath the City of Battle Creek flag; and

**Whereas**, if all flags are displayed on one flagpole, the order from top to bottom shall be: the United States Flag, the Michigan State Flag, the City of Battle Creek Flag, and then commemorative flags underneath the City of Battle Creek Flag.

**Now therefore, be it resolved** that the City Commission of the City of Battle Creek, in accordance with the established revised flag policy, hereby authorizes staff to fly the Donate Life flag at City Hall from noon on April 1, 2024 through April 30, 2024.

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Rebecca Fleury, City Manager

**Department:** City Manager

**SUMMARY**

A Resolution seeking approval to direct staff to fly the Donate Life flag at City Hall from noon on April 1, 2024 through April 30, 2024.

**BUDGETARY CONSIDERATIONS**

There are none.

**HISTORY, BACKGROUND and DISCUSSION**

On May 2, 2023, the City Commission approved Resolution No. 134, establishing a revised policy regarding flag display. This policy declares that the City's flagpoles are not intended to serve as a forum for free expression of the public, but rather for the display of Federal, State, and City Flags, or the temporary replacement of the City Flag with any commemorative flag as may be authorized by resolution of the City Commission as an expression of the City's official sentiments.

Per the revised policy, commemorative flags may be displayed only as authorized by Resolution of the City Commission and as an expression of the City's official sentiments and, as such, commemorative flags shall be displayed for a period of time that is reasonable or customary for the subject that is to be commemorated, but no longer than thirty (30) continuous days.

The City will not display a commemorative flag based on a request from a third party, nor will the City use its flagpoles to sponsor the expression of a third party.

At no time will the City of Battle Creek display flags supporting discrimination, prejudice, or religious movements.

Flags shall be displayed as follows: The United States Flag shall be displayed in the first position of honor, the Michigan State Flag shall be placed in the second position of honor, the City of Battle Creek Flag shall be placed in the third position of honor. Commemorative flags, when authorized by the City Commission for a period of less than thirty (30) consecutive days, shall be displayed in the third position of honor, temporarily placed underneath the City of Battle Creek flag.

If all flags are displayed on one flagpole, the order from top to bottom shall be: the United States Flag, the Michigan State Flag, the City of Battle Creek Flag, and then commemorative flags.

## DISCUSSION OF THE ISSUE

## POSITIONS

This request comes to the City Commission by way of Mayor Behnke with the support of Commissioner Ballard and Commissioner Reynolds.

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ATTACHMENTS:

| File Name | Description |
| --- | --- |
| Donate_Life_Flag_.jpg | Donate Life Flag Photo |


DONATE
LIFE
Donation Saves Lives

CITY OF Battle Creek MICHIGAN

# Resolution NO. 393

A Resolution authorizing the City Manager to submit a grant application to The Michigan Department of Natural Resources Trust Fund for the construction of a permanent and accessible restroom facility at the ANYbodies Playground and boat launch area in Bailey Park.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That, in order to address the significant barriers to recreation caused by the lack of accessible restroom facilities near ANYbodies Playground, the City is seeking a grant from the Michigan Department of Natural Resources Trust Fund to build a permanent, accessible restroom facility.

ANYbodies Playground is one of few wheelchair accessible playgrounds in the area. Historically, portable toilets have been placed by the playground entrance to help meet the needs of playground visitors. However, portable toilets are not as accessible and do not easily accommodate people using mobility aids or a caregiver. The addition of a permanent and accessible restroom facility will better meet the needs of all people, especially children, adults, and seniors with disabilities and using mobility aids, such as a walker or cane. Given the location of ANYbodies Playground is in the most utilized area of the park, the proposed facility will be intentionally designed to also accommodate park visitors attending gatherings at the nearby pavilions, watching nearby sports practices and sporting events, fishing and kayaking at the nearby boat launch, and hiking and biking the nearby linear trails.

If approved, this Resolution authorizes the City Manager to submit a grant application to The Michigan Department of Natural Resources Trust Fund for the construction of a permanent and accessible restroom facility with a funding request total of $290,800. The City will provide $325,000 in matching funds obtained from park millage dollars for the project, which exceeds the minimum 25% matching fund requirement.

---

Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Laura Otte, Grants Administrator

**Department:** City Manager

## SUMMARY

A Resolution authorizing the City Manager to submit a grant application to The Michigan Department of Natural Resources Trust Fund for the construction of a permanent and accessible restroom facility at the ANYbodies Playground and boat launch area in Bailey Park.

## BUDGETARY CONSIDERATIONS

The grant request is for $290,800 from the Michigan Natural Resources Trust Fund and requires a 25% match. The City will provide $325,000 in matching funds obtained from park millage dollars for the project, which exceeds the minimum 25% matching fund requirement.

## HISTORY, BACKGROUND and DISCUSSION

In order to address the significant barriers to recreation caused by the lack of permanent, accessible restroom facilities near ANYbodies Playground and the popular eastern end of Bailey Park, The city is seeking a grant from the Michigan Department of Natural Resources Trust Fund to build a permanent, accessible, and more spacious restroom facility available to children and caregivers utilizing ANYbodies Playground and residents and visitors seeking to enjoy the many other popular park amenities and activities nearby.

ANYbodies Playground is one of few wheelchair accessible playgrounds in the Southwest Michigan area, however, the lack of permanent and accessible restrooms significantly limits usage of the playground and even prevents some families from being able to visit the playground at all. The addition of permanent and accessible restrooms will benefit all residents and visitors of Bailey Park, especially children, adults and seniors with disabilities and mobility challenges and parents and caregivers for children and adults with disabilities.

The proposed facility design exceeds ADA minimum standards and is being informed by a design review conducted by Disability Network, safety and maintenance best practices, public input obtained through the recent Recreation Master Plan process, a community-wide survey and letters of support from local residents, businesses, organizations and neighboring governing bodies. The addition of the permanent and accessible restrooms will increase the ability of *all* people to enjoy the gatherings at the nearby pavilions, watch nearby sports practices and sporting events, enjoy fishing and kayaking at the nearby boat launch, and hike and bike the nearby linear trails. This Resolution authorizes the City Manager to submit a grant application to The Michigan Natural Resources Trust Fund for construction of a permanent, accessible restroom facility in the amount of $290,800 with a 25% match requirement. The City will provide $325,000 in matching funds obtained from park millage dollars for the project, which exceeds the minimum 25% matching fund requirement.

## DISCUSSION OF THE ISSUE

## POSITIONS

The addition of the permanent and accessible restrooms will increase the ability of *all* people to enjoy the gatherings at the nearby pavilions, watch nearby sports practices and sporting events, enjoy fishing and kayaking at the nearby boat launch, and hike and bike the nearby linear trails. The City's Street's Field Services Superintendent and Recreation Director support the application.

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ATTACHMENTS:

| File Name | Description |
|---|---|

No Attachments Available

CITY OF Battle Creek MICHIGAN

# Resolution NO. 394

A Resolution seeking approval for the editing and inclusion of certain ordinances and resolutions as parts of the various component codes of the codified ordinances; and repealing ordinances and resolutions in conflict therewith.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That American Legal Publishing Corporation has completed its updating and revision of the Codified Ordinances of the City; and

Various ordinances and resolutions of a general or permanent nature have been passed by the City Commission since the date of the last updating and revision of the Codified Ordinances and have been included in the Codified Ordinances of the City; and

The City of Battle Creek hereby ordains the editing, arrangement and numbering or renumbering of the following ordinances and resolutions and parts of ordinances and resolutions are hereby approved as parts of the various component codes of the Codified Ordinances of the City, so as to conform to the classification and numbering system of the Codified Ordinances:

| *Ord. No.* | *Date* | *C.O. Section* |
|---|---|---|
| 01-2023 | 2-21-23 | 1064.25,1064.55 |
| 02-2023 | 2-21-23 | 430.02-430.06 |
| 03-2023 | 5-2-23 | 1230.06,1240.01to1240.18,1241.02,1241.03,1241.05, 1241.06,1241.07,1250.04,1251.02,1251.18,1251.21, 1251.25,1251.28to1251.32,1251.45,1251.46,1251.51, 1260.01,1260.02,1261.01,1263.07,1263.09,1263.10, 1270.04,1281.04,1281.05 |
| 04-2023 | 5-2-23 | 608.30 |
| 05-2023 | 5-16-23 | 270.01-270.07,1422.01-1422.06,1422.08,1422.09, 1422.11,1422.12,1424.01,1424.025,1424.03,1424.05, 1424.06,1424.08,1424.09,1424.10,1424.11,1424.15, 1424.16,1424.17,1426.01,1426.03,1426.09,1426.13 |
| 06-2023 | 6-6-23 803.01 | 803.07,803.99 |
| 07-2023 | 8-1-23 | 222.02,226.03,230.01-230.05, 282.04, 288.01, 290.10, 1040.20,1040.78,1040.83, Repeals 230.06 |
| 08-2023 | 9-5-23 | 608.30 |
| 09-2023 | 9-5-23 | Repeals Ch. 282 |
| 10-2023 | 10-17-23 | 833.03,833.04,833.06,833.11 |
| 11-2023 | 10-17-23 | 835.03,835.04,835.06,835.07,835.11 |

| | | |
|---|---|---|
| 12-2023 | 10-17-23 | 1230.06,1240.02-1240.17,1240.21,1241.02,1241.03, 1241.05-1241.07,1250.01,1250.04,1250.05,1251.01, 1251.12,1251.28,1251.29,1251.37,1251.41,1251.47, 1251.48,1260.01,1260.02,1261.01,1261.02,1263.04, 1263.08,1263.09,1281.01-1281.06 |
| 14-2023 | 11-7-23 | Repeals 882.20 |
| 15-2023 | 11-7-23 | 882.21 |
| 16-2023 | 11-7-23 | 882.22 |
| 17-2023 | 11-21-23 | 882.01 |
| 18-2023 | 11-27-23 | 882.23 |
| 19-2023 | 11-27-23 | 882.24 |
| 20-2023 | 12-19-23 | 244.01to244.03 |

(Ordinances 13-2023 related to Zoning changes to several properties located along E. Michigan, Green Street and Yuba Street)

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Victoria L. Houser, City Clerk

**Department:** City Clerk

### SUMMARY

A Resolution seeking approval for the editing and inclusion of certain ordinances and resolutions as parts of the various component codes of the codified ordinances; and repealing ordinances and resolutions in conflict therewith.

### BUDGETARY CONSIDERATIONS

Codification editing costs approximately $3,500.00 per year, depending on the number of ordinances and the amount of changes.

### HISTORY, BACKGROUND and DISCUSSION

Each year, American Legal Publishing updates and revises the City Code Book based upon the Ordinances and Resolutions previously adopted by the City Commission.

As required by the City Charter, Section 4.6 Codification, the City Commission shall, by resolution, within two (2) years from the date this Charter is adopted by the electors and every ten (10) years thereafter

wholly or partially codify and recodify the ordinances of the City into one or more ordinances in loose-leaf or pamphlet form, and may provide for a reasonable charge for copies thereof. Each such codification or recodification may omit such ordinance material as is out of date and no longer needed, may eliminate inconsistencies between existing ordinance provisions, and may substitute comparable ordinance provisions for existing provisions, without the necessity of formal repeal, amendment or original enactment.

This Resolution is necessary due to editing changes and to formally approve the new pages as part of the Code book.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

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ATTACHMENTS:

| File Name | Description |
| --- | --- |
| No Attachments Available | |

# Resolution NO. 395

A Resolution authorizing the City Manager, under the provisions of 296.09(c), to continue to employ Jill Wood who presently holds the position of Customer Service Rep II at the WWTP and to allow for Ms. Wood's years of service as a Fire Fighter with the BCFD to count towards vesting and eligibility with MERS.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That the City Manager is authorized under 296.09(c) to continue to employ Jill Wood as a City employee and to allow for Ms. Wood's years of service as a Fire Fighter with the BCFD to count towards vesting and eligibility with MERS.

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Michelle Hull, HR Director

**Department:** Human Resources

**SUMMARY**

A Resolution authorizing the City Manager, under the provisions of 296.09(c), to continue to employ Jill Wood who presently holds the position of Customer Service Rep II at the WWTP and to allow for Ms. Wood's years of service as a Fire Fighter with the BCFD to count towards vesting and eligibility with MERS.

**BUDGETARY CONSIDERATIONS**

Ms. Wood currently holds a position that is governed by the terms and conditions of the SEIU Collective Bargaining Agreement. There is no additional cost to the City as all budgetary considerations remain constant regardless of the person in the position.

The City has requested and MERS has agreed to administer a grant of service credit exclusively for purposes of vesting and eligibility, and not for any benefit credit purposes whatsoever, under the City's MERS Defined Benefit Plan.

## HISTORY, BACKGROUND and DISCUSSION

Pursuant to Employment Provision 296.09 " (c) No person shall be employed by the City, or paid with City funds, who has retired under the provisions of . . . the Police and Fire Retirement System . . . The City Manager may make exceptions to this provision, with the approval of the City Commission, when "she" feels the interests of the City would be served thereby."

On February 20, 2024, Jill Wood's retirement from the Battle Creek Fire Department (dating back to September 2023) was approved by the Police and Fire Pension Board. While awaiting approval from the Board, Jill accepted an open role as a Customer Service Rep at the Waste Water Treatment Plant. Since September 2023, Jill has been consistently fulfilling all the duties and obligations of her current position and has been an effective member of the team.

The City Manager believes that the interests of the City would be best served by making an exception to the general prohibition of employing a person who has effectively retired under the Police and Fire Retirement System.

## DISCUSSION OF THE ISSUE

## POSITIONS

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ATTACHMENTS:

| File Name | Description |
|---|---|

No Attachments Available

Resolution NO. 396

A Resolution seeking acceptance of the lowest responsive, responsible bid for Wastewater Treatment Plant HVAC project from Shouldice Industrial Manufacturers and Contractors, Inc., in a not-to-exceed amount of $769,757.00.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That the lowest responsive, responsible bid for Wastewater Treatment Plant HVAC project is accepted from Shouldice Industrial Manufacturers and Contractors, Inc., in a not-to-exceed amount of $769,757.00. The City Manager is authorized to execute Contract No. 2024-042B, which will be paid from 590.24.6530.801.310 – WWTP Solids Handling Rehab.

The City Manager or her designee is authorized to execute change orders up to 10% in aggregate for City-initiated and pre-approved increases in the scope of work.

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Chris Huff, Purchasing Agent

**Department:** Purchasing

**SUMMARY**

A Resolution seeking acceptance of the lowest responsive, responsible bid for Wastewater Treatment Plant HVAC project from Shouldice Industrial Manufacturers and Contractors, Inc., in a not-to-exceed amount of $769,757.00.

**BUDGETARY CONSIDERATIONS**

**HISTORY, BACKGROUND and DISCUSSION**

The solicitation was issued January 20, 2024, for the above-mentioned project. This project consists of

performing all work necessary for the demolition of existing pneumatic HVAC equipment and controls, and the furnishing and installation as scheduled for a new system, as shown on the drawings and specifications, at the City's Wastewater Treatment Plant (WWTP).

Copies of the IFB were provided to all contractors and construction plan houses registered in our online vendor registration system. Construction companies and the trades subscribe to planhouses to be aware of all jobs being bid around the region. In addition, an advertisement was placed on the City's website and the Battle Creek Shopper. Bid responses were initially due on February 8, 2024, and they were to be submitted to our online secure website, and read aloud via Zoom.

An advertised pre-bid conference was held at WWTP on February 1, 2024, to discuss the project, provide a walk-through, and answer contractors' questions.

The bid due date was extended to March 7, 2024, while consultant engineer Jones and Henry worked through contractor questions and issues related to the project. Those issues were addressed in Addendum 1, issued February 21, 2024, which was distributed to all contractors.

Bids were open via Zoom on March 7, 2024.

**We received one bid, from Shouldice. As Kurt Tribbett says in his attached memo, with the current influx of contracting work available throughout the nation, it is not surprising to only get one bidder.** Bids were reviewed by Tyler Kindle, Engineer at Jones and Henry, and Kurt Tribbett, Engineering Administrator City of Battle Creek and a recommendation was made to accept the lowest responsive, responsible bid as indicated in the Resolution.

## DISCUSSION OF THE ISSUE

## POSITIONS

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ATTACHMENTS:

| File Name | Description |
|---|---|
| DRAFT_contract.pdf | DRAFT Contract |
| Tribbett_Memo.docx | Tribbett memo |
| Jones_and_Henry_memo.pdf | Jones and Henry memo |
| 2024-042B_Addendum_1_COMPLETE.pdf | Addendum 1 |
| 2024-042B_Addendum_2_COMPLETE.pdf | Addendum 2 |
| 2024-042B_Original_Drawings.pdf | Original Drawings |
| 2024-042B_COMPLETE_WWTP_Administration_Building_HVAC_Improvements.pdf | Original IFB |
| STANDARD_CONTRACT_PROTECTIONS.docx | Standard contract protections |

# CONTRACT FORM DRAFT
## CONTRACT NO. 2024-042B

THIS AGREEMENT, made and entered into this **20th** day of **March**, 2024, by and between **Shouldice Industrial Manufacturers and Contractors, Inc.** hereinafter called the "Contractor" and the City of Battle Creek, hereinafter called the "Owner."

In consideration for the mutual covenants hereinafter stated, the parties agree for themselves, their personal representatives, successors, assigns as follows:

**I. The Contractor promises and agrees**, for the Waste Water Treatment Plant (WWTP) Administration Building HVAC Improvements project, to furnish and perform all work necessary for the demolition of existing pneumatic HVAC equipment and controls, as scheduled, shown on the Drawings and specifications.

A. To furnish all materials, construction water, equipment, tools, dewatering devices, skill and labor of every description necessary or reasonable incidental to carrying forth and completing in good, firm, substantial and workmanlike manner, the work specified, in strict conformity with the true intent of the NOTICE TO BIDDERS, SPECIAL INSTRUCTIONS, GENERAL INSTRUCTIONS, INVITATION FOR BID, SPECIAL CONDITIONS, GENERAL CONDITIONS, AGREEMENT, BONDS, GENERAL SPECIFICATIONS, CONTRACTOR'S BID and Project Specifications, and other contract documents and addenda thereto, which are hereby made a part hereof as fully and to the same effect as though they had been set forth at length herein.

B. To commence work under this contract on or before a date to be specified by the owner in a written Notice to Proceed and complete the project by the date specified in the Invitation for Bid.

C. Requirements for a specific trade or contract will generally be described in that portion of the specifications or drawings related to that trade or contract. Such requirements may, however, be described in other sections of the Contract Documents. The Contractor will be held responsible for having carefully examined all drawings and read all requirements of the specifications and all Contract Documents to avoid omissions or duplications and to insure a complete job.

D. The Contractor must be fully informed about conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of their obligation to furnish all material and labor necessary to carry out the provisions of this contract.

E. Any claim by the Contractor of an inability to meet any requirement set forth in the Contract Documents, or that any requirement of these documents is impractical or unreasonable, will not be recognized, unless the claim was made at the time their Bid was submitted, and specific provision is made for such claim in the Agreement between Owner and Contractor (Bid and Agreement).

F. Warranty: Contractor shall remove and replace at no additional cost to the City any defects in workmanship or materials that may be apparent or may develop within a period of one (1) year from the date of final acceptance.

G. NON-DISCRIMINATION CLAUSE: The bidder agrees not to discriminate against any employee or applicant for employment, to be employed in the performance of such contract with respect to hire tenure, terms, conditions or privileges, of employment, or any matter directly or indirectly

related to employment because of his or her actual or perceived race, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability, family status, sexual orientation, or gender identity. Breach of this covenant may be regarded as a material breach of the contract as provided for in Act 220 and Act 453 of the Public Acts of 1976, as amended, entitled "Michigan Handicapper's Civil Rights Act" and/or the "Michigan Elliott Larson Civil Rights Act" and/or City of Battle Creek Chapter 214 "Discrimination Prohibited" Ordinance. The bidder further agrees to require similar provisions from any subcontractors, or suppliers. The bidder agrees to comply with the Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity," as amended by Executive Order 11375 of October 13, 1967, as supplemented in Department of Labor regulations (41 CFR, Chapter 60).

**II. The Owner promises and agrees:**

A. To pay the Contractor for said work when completed in accordance with the provisions of these contract documents, and for the contract sum of:

**Seven-hundred sixty-nine thousand, seven-hundred fifty-seven dollars and 00/100 dollars ( $769,757.00 ).** Payment for work is subject to additions provided therein and for the authorized work complete in place and accepted by the Owner or its authorized representatives.

III. It is further understood and agreed between the parties hereto as follows:

A. The said work is to be done in accordance with the laws of the State of Michigan to the entire satisfaction and approval of the Owner or its duly authorized representatives.

B. The decision of said Owner's authorized representative upon any questions connected with the execution of this Agreement or any failure or delay in the prosecution of the work by said Contractor shall be final and conclusive.

C. If, at any time after the execution of the Agreement and the Bond for its faithful performance, the Owner shall deem the surety or sureties then upon said bond to be unsatisfactory or, if, for any reason said bond shall cease to be adequate security for the performance of the work, the Contractor shall, at their expense, within fifteen (15) calendar days after receipt of written notice from the Owner to do so, furnish an additional bond or bonds in such form and amount and with such surety or sureties as shall be satisfactory to the Owner. In such event, no further payment to the Contractor shall be deemed to be due under this Agreement until such new or additional security for the faithful performance of the work shall be furnished in a manner and form satisfactory to the Owner.

D. VENUE: Any party bringing a legal action or proceeding against any other party arising out of or relating to this Agreement or the transactions it contemplates shall bring the legal action or proceeding:

(i) in the United States District Court for the Western District of Michigan; or

(ii) in any court of the State of Michigan sitting in Calhoun County, if there is no federal subject matter jurisdiction.

E. GOVERNING LAW: This agreement shall be enforced under the laws of the State of Michigan. Contractor must comply with all applicable federal, state, county, and City laws, ordinances, and regulations. Contractor shall ensure payment of all taxes, licenses, permits, and other expenses of any nature associated with the provision of services herein. Contractor shall maintain in current status all Federal, State and Local licenses and permits required for the operation of the business conducted by the Contractor.

IN WITNESS WHEREOF, the said parties have hereunto set their hands and affixed their seals, the day and year first above written.

In the Presence of:

_____

_____
Notary Public

CONTRACT FORM APPROVED BY:

_____
City Attorney

SIGNED, SEALED, AND
EXECUTED BY CONTRACTOR:

**I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder, and that our firm is not debarred from doing business under the Federal Excluded Parties List System (epls.gov):**

By:_____

Title:_____

SIGNED, SEALED, & EXECUTED
BY CITY OF BATTLE CREEK

_____
City Manager

# PERFORMANCE BOND

Let it be known that_____, as Principal, and_____ _____, as Surety, are held and firmly bound unto the City of Battle Creek in the sum of ____ _____dollars and _____/100 ($_____) for the payment of which sum of money to be made, we bind ourselves, heirs, executors, administrators, successors and assigns, jointly and severally, firmly as required by written contract.

WHEREAS, the Principal has entered into a certain written contract dated the_____ day of _____, 20_____ for the _____ complete, as described in the foregoing Bid and Agreement.

NOW THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that if the said Principal shall in all respects well and truly keep and perform the said contract, and shall pay all sums of money due or to become due, for any labor, materials, apparatus, fixtures or equipment furnished for the purpose of constructing the work provided in said contract, and shall defend, indemnify and save harmless said City of Battle Creek against any liens, encumbrances, damages, claims, demands, expenses, costs and charges of every kind except as otherwise provided in said specifications and other Contract Documents arising out of or in relation to the performance of said work and the provisions of said contract, and shall remove and replace any defects in workmanship or materials which may be apparent or may develop within a period of one (1) year from the date of final acceptance, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

And the said Surety, for value received, hereby stipulates and agreed that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Agreement or to the work or to the specifications.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20__.

**PRINCIPAL ATTEST:**

| | |
|---|---|
| Principal Business Name | Principal Secretary Signature & Seal |
| Address | Principal Secretary Printed Name |
| City, State, Zip | Witness of Principal |

**SURETY ATTEST:**

| | |
|---|---|
| Surety Business Name | BY:_____ Attorney-in-Fact Signature & Seal |
| Address | Attorney-in-Fact Printed Name |
| City, State, Zip | |

# LABOR AND MATERIALS BOND

Let it be known that, that we, the undersigned, _____, hereinafter called the "Principal," and _____, a corporation organized and existing under the laws of the State of _____, having its principal office at _____, hereinafter called the "Surety," are held and firmly bound unto the City of Battle Creek, hereinafter called the "Owner," for use of any and every person, co-partnership, association or corporation interested in sum of _____dollars and _____/100 ($_____), to be paid to the said obligees or its or their assigns, to which payment be made we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents. Sealed with our respective seals and dated this ____ day of _____, 20___.

WHEREAS, the above bounded _____, Principal, has entered into a contract with the City of Battle Creek.

Dated the _____ day of _____, 20___, for the _____.

NOW, THEREFORE, THE CONDITION OF THIS CONDITION IS SUCH, that if the above bounded Principal shall and will promptly pay or cause to be paid all sums of money which may be due any person, co-partnership, association or corporation for all material furnished and labor supplied or performed in the prosecution of the work, whether or not the said material or labor enter into and become component parts of the work or improvement contemplated, then this obligation to be void; otherwise to remain in full force and effect.

The Principal and Surety further jointly and severally agree with the obligee herein that every person, co-partnership, association or corporation who, whether as subcontractor or otherwise, has furnished material or supplied or performed labor in the prosecution of the work as above provided and who has not been paid therefore may sue in assumption on this bond in the name of the Owner for their use prosecute the same to final judgment for such sum or sums as may be justly due to them, and have execution thereon, provided, however, that the Owner shall not be liable for payment of any costs or expenses of any such suit.

IT IS FURTHER AGREED, that any alterations that may be made in the terms of the contract or in the work to be done or materials to be furnished or labor to be supplied or performed under it or the giving by the Owner or any extension of time for the performance of the contract or any other forbearance on the part of either the Owner or the Principal to the other, shall not in any way release the Principal and Surety or Sureties or either or any of them their heirs, executors, administrators, successors or assigns, from their liability hereunder, notice to the Surety or Sureties of any such alteration, extension or forbearance being hereby waived.

IN WITNESS WHEREOF, the said Principal and Surety have duly executed this bond under the seal and day and year first above written.

ATTEST:

_____
Principal

_____ BY:_____
(Seal)

_____
Surety

ATTEST BY:_____
Attorney-in-Fact

_____

(SEAL)

# MEMORANDUM

To: Chris Huff, Purchasing Agent
From: Kurt Tribbett, Engineering Administrator
Cc: Steve Skalski, DPW Director; Perry Hart, Utilities Administrator; Jarret Geering, City Engineer; Rodney Clifton, WWTP Superintendent
Date: March 4, 2024

Subject: Award of BC WWTP Admin HVAC Improvements – 2024-042B

The HVAC system for the Admin building at the Wastewater Treatment Plant (WWTP) has an antiquated heating system that functions poorly. It also utilize a pneumatic system to operate control valves and dampers. Most of the valves and dampers are no longer working properly with the pneumatic system and controlling the air supply from the main compressor in the solids handling building is energy inefficient. The harsh environment at WWTP has also worn out heaters and coils for cool and hot air transfer.

This project will replace heaters, coils, valves, and dampers along with changing the pneumatic controls to electrical controls for more efficiency. Submitting energy rebates to SEMCO for this improved system is part of the project's scope.

Jones & Henry Engineers assisted DPW with contract plans and specifications for Purchasing to advertise this project for bids. On March 7th of this year, Purchasing received one bid for this project from Shouldice Industrial Manufactures and Contractors, Inc. for **$769,757.00**. With the current influx of contracting work available throughout the nation, it is not surprising to only get one bidder. Shouldice is currently working on the Scum Ejector project at the WWTP, which gave them a competitive edge. In addition, Jones & Henry has reviewed and recommended Shouldice Industrial Manufacturers and Contractors, Inc. as the lowest responsible bidder – please see attached recommendation letter and bid tab.

Project costs are within the Capital Improvement Plan budget, therefore DPW is in concurrence with awarding contract 2024-042B, BC WWTP Admin HVAC Improvements to Shouldice Industrial Manufacturers and Contractors, Inc. for **$769,757.00** along with adding 10% for contingencies. Project costs are to be charged to the following GL string:

590.24.6530.801.***3***10 – ***WWTP Solids Handling Rehab***

We are asking that your office prepare a resolution for action by the City Commission for the March 19, 2024 City Commission meeting. Your collaboration on this project is appreciated.

Do not hesitate to ask any questions or provide comments for Rodney Clifton or me.

Jones & Henry
ENGINEERS, LTD.

Fluid thinking®
4791 Campus Drive, Kalamazoo, MI 49008
Phone: 269.353.9650 JHeng.com

March 8, 2024

Kurt Tribbett
Engineering Administrator
City of Battle Creek
DPW Engineering
150 South Kendall Street
Battle Creek, MI 49037

Subject: City of Battle Creek, Michigan
WWTP Administration Building HVAC Improvements - Recommendation of Award
008-8021.001

Dear Mr. Tribbett:

We have reviewed the Bids received on March 7, 2024 for the WWTP Administration Building HVAC Improvements project. One bid was received, opened, and read. The bids received are as follows:

| **Bidder** | **Total Bid Price** |
|---|---|
| Shouldice | $769,757 |

The low bidder is Shouldice Industrial Manufacturers & Contractors, Incorporated out of Battle Creek, Michigan. Shouldice has worked for the City of Battle Creek on past projects and Jones & Henry has no concerns of the Contractor's ability to perform the work.

The Bid Form required the bidding Contractors to provide prices for a major 'A' equipment item along with an approved or proposed optional alternative. After discussion with the City the following major equipment manufacturer has been selected:

- **Glycol Feed System** – Wessels
- **Inline Pumps** – Bell & Gossett
- **Air Compressor** – Quincy
- **Condensing Unit** – Trane Technologies
- **Air Handling Units** – Trane Technologies
- **Fan Coil Units** – Trane Technologies
- **Instrumentation and Controls** – Johnson Controls

We recommend the City of Battle Creek award the WWTP Administration Building HVAC Improvements project to Shouldice Industrial Manufacturers & Contractors, Inc. for the estimated cost of $769,757.

If the City decides to award the project to Shouldice, a Notice of Award should be sent to them. Please notify Jones & Henry when you issue the Notice of Award. If you have any additional comments or concerns, please feel free to contact us at your convenience.

Sincerely,

JONES & HENRY ENGINEERS, LTD.

Tyler L. Kindle, PE
Project Manager
TLK/abd

CC: Aaron Davenport, PE – J&H
Rodney Clifton – City of Battle Creek
Chris Pratt – City of Battle Creek

# CITY OF BATTLE CREEK

## ADDENDUM # 1
**IFB# 2024-042B**

**TITLE: WWTP Administrative Building HVAC Improvements**

**ADDENDUM ISSUED: February 21, 2024**

**The following changes, additions and deletions have been provided:**

**ADD revised and attached price page**

**ADD attached Addendum 01 from Jones and Henry**

**This addendum must be acknowledged on the Offer and Acceptance or Offer to Contract page of your bid/proposal or your bid/proposal may be deemed non-responsive.**

# ADDENDUM 1

# PRICE PAGE

## Battle Creek WWTP – Admin HVAC Improvements

| ITEM | DESCRIPTION | ESTIMATED QUANTITY | UNITS | BID AMOUNT |
|---|---|---|---|---|
| 1 | Admin HVAC Improvements | 1 | LSUM | |

Grand Total of Work Items Based on 'A' Equipment Items $_____

**MAJOR EQUIPMENT ITEMS:** In connection with the items of Major Equipment to be furnished and installed under the Agreement and Contract Documents, the Bidder expressly agrees to the following provisions:

**A.** The base bid lump sum or total base bid price stated hereinbefore includes the furnishing and installation of all items of Major Equipment of the manufacturers or suppliers listed in the following tabulation. The items listed with a letter "A" shall be the equipment included in the Contractor's base bid cost. Any other equipment shall require Owner's approval;

**B.** The City of Battle Creek may select items of any manufacturer or supplier as listed in the following tabulation, that the undersigned Bidder agrees to furnish and install such items as selected and for a contract price equal to the base bid lump sum or total base bid price stated above, adjusted by the difference between the sum of the installed prices for the items selected by the City of Battle Creek as stated in the following tabulation;

**C.** The installed price stated in the following tabulation on **all** sub-items includes the preparation and submission to the Engineer by the Bidder of detailed Drawings showing all modifications, if any, of the Drawings necessary to accommodate the Major Equipment;

**D.** The installed cost stated in the following tabulation on **all** sub-items includes a complete operating installation, including the furnishing and installation of any and all changes or additions in structures, piping, buildings, mechanical and electrical work, accessories and controls necessary to accommodate the Major Equipment; and

**E.** All items offered in the following tabulation, if any, fully comply with the Specifications.

*The City may weigh all factors in determining low bid, using the Tabulation of Major Equipment, and assessing base bids and alternate manufacturers and lead times to determine which combination of options is in the best interest of the City.*

**ADDENDUM 1**
**TABULATION OF MAJOR EQUIPMENT ITEMS**

| Section No. | Item No. | Description | Manufacturer or Supplier | Installed Price |
|---|---|---|---|---|
| 15120 | 1 | Glycol Feed System | (A) Neptune<br>(B) J.L Wingert Co<br>(C) Budzar Industries Inc.<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____<br>$ _____ |
| 15130 | 2 | Inline Pumps | (A) Bell & Gossett<br>(B) Armstrong<br>(C) Taco<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____<br>$ _____ |
| 15214 | 3 | Air Compressor | (A) Quincy<br>(B) Sullair<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____ |
| 15720 | 4 | Condensing Unit | (A) Trane Technologies<br>(B) Carrier Corporation<br>(C) York<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____<br>$ _____ |
| 15720 | 5 | Air Handling Units | (A) Trane Technologies<br>(B) Carrier Corporation<br>(C) Daikin/McQuay<br>(D) York<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____<br>$ _____<br>$ _____ |
| 15760 | 6 | Fan Coil Units | (A) Trane Technologies<br>(B) Carrier Corporation<br>(C) York<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____<br>$ _____ |
| 15905 | 7 | Instrumentation and Controls | (A) Johnson Controls<br>( ) Owner Approved Alternate | $ _____<br>$ _____ |

Jones & Henry
ENGINEERS, LTD.

# INVITATION FOR BID NO. 2024-042B
City of Battle Creek, Michigan
WWTP Administration Building HVAC Improvements

# ADDENDUM 01

February 20, 2024

Planholders on the City of Battle Creek, Michigan – WWTP Administration HVAC project are hereby notified of the following amendments to the Contract Documents. This Addendum is hereby made a part of the Contract Documents.

## REFERENCE NOTES

- Questions received as of February 19, 2024 are as follows:

    - Q: The existing AHU-2-2 appears to be a 5-zone multi-zone AHU with a hot deck and cold deck with hot and cold control dampers for each zone. The control flow schematic on M-0.2 shows a single damper for each zone. The mechanical plan M-1.4 appears to show a single damper for each zone. Please clarify is the new AHU-2-2 to remain a 5-zone multi-zone system with a hot deck, cold deck with new hot deck and cold deck control dampers?
      A: The new AHU-2-2 is not a hot deck, cold deck system. It will be a 5-zone system with cooling coil and heating coil integral to the unit and individual zone dampers located in the ductwork of each zone.
    - Q: The existing unit heaters do not have existing heating control valves. The unit heater flow schematics on M-0.7 and M-0.8 show heating control valves. Are new heating control valves to be added to the existing unit heaters?
      A: No.
    - Q: The existing mixing boxes shown on M-1.1 and M-1.2 note to “replace the mixing box dampers and motor actuators.” The dampers are integral to the mixing boxes and cannot be replaced without replacing the mixing box as a whole. Is it acceptable to retrofit the existing damper with a new electronic actuator? Or another option is to add (2) new control dampers per mixing box in the duct upstream of the existing mixing box and demo the existing control damper. Please clarify.
      A: Install new dampers upstream of the existing mixing box. Demo old mixing box dampers.
    - Q: AHU-13-1 currently does not have a heating valve. Is the intent to add a new 3-way heating valve to the existing AHU?
      A: Yes.
    - Q: UH-13-1 and UH-13-4 in the storage area have been replaced with gas radiant tube heaters. Please clarify the control requirement for the tube heaters.
      A: Use existing local t-stats.
    - Q: Unit heaters UH-13-1 & UH-13-4. Drawings M-1.3 indicate two Unit Heaters that no longer exist. During the walkthrough it was noticed there are now two gas fired radiant heaters in that location. The question is; will the two gas fired heaters be required on the new building automation system?
      A: No.


4791 Campus Drive, Kalamazoo, Michigan 49008 – *269.353.9650*

- Q: Drawing M-0.3 has the control sequence for fume hoods #1 & #2. In the flow diagram it indicates new dampers in the ductwork. The question is; will the dampers need to be replaced or just the pneumatic actuators with electronic actuators?
  A: Both the dampers & the actuators will need to be replaced.
- Q: Drawing M-1.8 indicates the location of TCV-13-3 & TCV-13-4. On that drawing it indicates to replace the pneumatic actuator with electronic. The question is; would it be better to replace the valve and actuator for these two zones? The valves are of unknown age and the cost for a retrofit kit versus the entire valve and actuator are not that different. However, there will be additional cost from the mechanical contractor to replace them.
  A: Yes, both the valves and actuators shall be replaced.
- Q: It was noticed during the walkthrough that several exterior offices have radiant heat. For example, offices 13-113, 13-114, & 13-115 on drawing M-1.1 all have pneumatic thermostat and radiant panels. The question is; will all the existing radiant panels need to be added to the new building management system? If so, will they require new control valves that the mechanical contractor will need to install?
  A: Yes. All radiant panels will need new control valves wired to the new BMS. These valves are TCV-13-3 & TCV-13-4 located in the crawlspace.
- Q: Many systems are indicated to be controlled/wired to a remote-control panel, I.E. UH-13-1 thru UH-13-18 are shown to be controlled/wired from UCP-13-1. Is it acceptable to provide a local controller in lieu of a central control panel for such systems?
  A: Yes, provide a local line voltage thermostat at each unit.
- Q: While on a site visit it was determined that the unit heaters are currently controlled by line voltage thermostats, and not pneumatically controlled thermostats. Is the intent to remove the line voltage thermostat and replace with a DDC thermostat or leave on line voltage thermostats and NOT on the DDC/BMS?
  A: The intent is to remove & replace the line voltage thermostats.
- Q: HWP-1 & HWP-2 are shown on M-0.11, however there is not any indication of DDC/BMS scope of work. Is the intent for the electrical contactor to wire these pumps direct to an existing boiler controller or is the DDC/BMS contractor to connect them to the DDC/BMS?
  A: The pumps HWP-1 & HWP-2 will be connected to DDC/BMS.
- Q: Is the intent for the DDC/BMS system to be on the city's existing Metasys server or stand alone with an operator workstation for the "front end"?
  A: There is not an existing Metasys server. The intent is to send a general fault to the PLC/SCADA system from the stand-alone workstation. Access to the DDC/BMS directory will be required.
- Q: Drawing M-0.4 has the control flow and sequence for TCV-13-5 and drawing M-0.7 has the control flow and sequence for TCV-2-3. The question is; I am unable to locate either valve on the floorplan drawings, can these be located and documented.
  A: See sheet M-1.3 for TCV-13-5 and sheet M-1.7 for TCV-2-3.

- Q: Are there any special coil coatings that are needed for these units? The only coil coating we are seeing in the spec would be for the terminal units (they're assuming this would be the blower coil). Or should it really be applicable to both units?
  A: Special coil coatings will not be required for AHU-2-2 or AHU-2-3.
- Q: The AHU spec is not Trane's spec and we can't meet some of the requirements with a UCCA. Can you confirm if the following are needed?
  - Lights in all access sections (UCCA is just the supply fan section)
  - Windows
  - GFCI
  - Both side access to filters and Motor

  A: Lights in all access sections, windows, GFCI all are not needed. The unit only needs access doors on the left side.

## DRAWINGS

Replace the following drawings(s) with the attached:

- Sheet G-0.1
  - Addition of sheet R-1.5.
- Sheet G-1.1
  - Inclusion of Solids Handling Building into the scope.
- Sheet R-1.5
  - Demo of IA pipe to cap line heading out to the Admin building.
- Sheet M-0.4
  - Added 3-way heating valve & TCV-13-5 valve as proposed equipment. Removed room thermostat from AHU-13-1.
- Sheet M-0.6
  - Removed UH-2-1 - UH-2-6, UH-13-1 – UH-13-18 from BMS. Changed point list totals.
- Sheet M-0.7
  - TCV-13-3, TCV-13-4, TCV-2-3 all shown as a full valve replacement. Removed heating valve & any DDC reference from UH-13-2,3, UH-13-5-18. Changed controls of unit heaters. UH-13-1 & UH-13-4 removed from sheet.
- Sheet M-0.8
  - Removed heating control valves & any DDC reference from UH-2-1 – UH-2-6. Changed controls of unit heaters.
- Sheet M-0.11
  - Added controls of main hydronic pumps HWP-1 & HWP-2.
- Sheet M-1.1
  - Reissued sheet.
- Sheet M-1.2
  - Added dampers upstream of every mixing box shown on the sheet. Existing dampers within the mixing boxes are being removed and not replaced. Changed "New Control Panel UCP-13-2" to "Proposed Control Panel UCP-13-2".

- Sheet M-1.3
    - Removed UH-13-1 & UH-13-4 from work being done. Added TCV-13-5 to sheet.
- Sheet M-1.4
    - Removed “zone 5” from UH-2-4 description.
- Sheet M-1.7
    - Changed title from grade floor plan to basement plan. Added TCV-2-3 to sheet.
- Sheet M-1.8
    - Full removal & replacement of TCV-13-3 & TCV-13-4

## SPECIFICATIONS

Replace the following specification(s) with the attached:

- 15760 – Terminal Heating and Cooling Units
    - 1.08 G removed. No special coil coatings are required.

**RECEIPT OF THIS ADDENDUM MUST BE ACKNOWLEDGED IN SECTION II – OFFER TO CONTRACT, PAGE 11 OF 35 OF THE CITY OF BATTLE CREEK PURCHASING, INVITATION TO BID NO. 2024-042B.**

## STANDARD ABBREVIATIONS

| | | | |
|---|---|---|---|
| ALUM. | ALUMINUM | MAX. | MAXIMUM |
| AVE. | AVENUE | MH | MANHOLE |
| BM | BENCH MARK | MJ | MECHANICAL JOINT |
| BF | BLIND FLANGE | MIN. | MINIMUM |
| BLDG. | BUILDING | N | NORTH |
| C/C | CENTER TO CENTER | NTS | NOT TO SCALE |
| CK'D PL. | CHECKERED PLATE | OC | ON CENTER |
| CONC. | CONCRETE | OD | OUTSIDE DIAMETER |
| DIA. | DIAMETER | PE | PLAIN END |
| DWG. | DRAWING | R | RADIUS |
| EMB. | EMBEDMENT | RR | RAILROAD |
| EW | EACH WAY | S | SOUTH |
| EF | EACH FACE | SCH. | SCHEDULE |
| ECC. | ECCENTRIC | SH. | SHEET |
| EL. | ELEVATION | SS | STAINLESS STEEL |
| E | EAST | ST. | STREET |
| EXIST. | EXISTING | STA. | STATION |
| F | FLANGE | T&B | TOP AND BOTTOM |
| ' OR FT. | FEET OR FOOT | TYP. | TYPICAL |
| GAL. | GALLON | VERT. | VERTICAL |
| GR. | GRADE | W | WEST |
| HOR. | HORIZONTAL | W/ | WITH |
| " OR IN. | INCH | | |
| ID | INSIDE DIAMETER | | |
| INV. EL. | INVERT ELEVATION | | |

* SEE DISCIPLE LEGEND SHEETS FOR ADDITIONAL ABBREVIATIONS.

## PIPING ABBREVIATIONS

### MATERIAL

| | |
|---|---|
| ABS | ABS ACRYLONITRILE-BUTADIENE-STYRENE |
| ABSC | ABS COMPOSITE SEWER PIPE (TRUSS PIPE) |
| BSP | BLACK STEEL PIPE |
| CIP | CAST IRON PIPE |
| CISP | CAST IRON SOIL PIPE |
| CMP | CORRUGATED METAL PIPE |
| CPP | CONCRETE PRESSURE PIPE |
| CPT | CORRUGATED POLYETHYLENE TUBING |
| CPVC | CHLORINATED POLYVINYL CHLORIDE PIPE |
| CU | COPPER TUBING OR PIPING |
| DIP | DUCTILE IRON PIPE |
| FRP | FIBERGLASS REINFORCED PIPE |
| GLDIP | GLASS-LINED DUCTILE IRON PIPE |
| GSP | GALVANIZED STEEL PIPE |
| HDPE | HIGH DENSITY POLYETHYLENE |
| PCP | PLAIN CONCRETE PIPE |
| PE | POLYETHYLENE |
| PP | POLYPROPYLENE |
| PPVC | PERFORATED POLYVINYL CHLORIDE PIPE |
| PVC | POLYVINYL CHLORIDE PIPE |
| PVCP | PERFORATED VITRIFIED CLAY PIPE |
| PVDF | POLYVINYLIDENE FLUORIDE (KYNAR) |
| RCP | REINFORCED CONCRETE PIPE |
| SP | STEEL PIPE |
| SSP | STAINLESS STEEL PIPE |
| SWS | SPIRAL WELDED STEEL |
| UPVC | UNPLASTICIZED POLYVINYL CHLORIDE PIPE |
| VCP | VITRIFIED CLAY PIPE |

### WWTP SERVICE

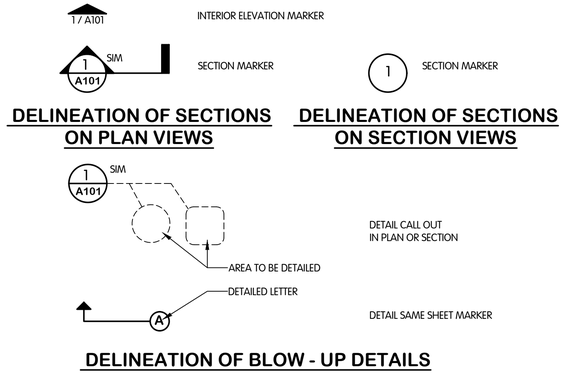
| | |
|---|---|
| AA | AERATION AIR |
| AL | ALUM |
| C | CABLE (UNDERGROUND)* |
| CA | COMPRESSED AIR |
| CLG | CHLORINE GAS |
| CL | CHLORINE SOLUTION |
| CO | COMBINED SEWER |
| DE | DECANT |
| DG | DIGESTER GAS |
| DS | DIGESTED SLUDGE |
| DW | DILUTION WATER |
| DCW | DOMESTIC COLD WATER |
| DHW | DOMESTIC HOT WATER |
| DTW | DOMESTIC TEMPERED WATER |
| EW | EFFLUENT WATER |
| E | ELECTRICAL (UNDERGROUND)* |
| ED | EQUIPMENT DRAIN |
| FC | FERRIC/FERROUS CHLORIDE |
| FO | FIBER OPTIC |
| FE | FINAL EFFLUENT |
| FI | FILTRATE |
| FM | FORCE MAIN |
| FD | FOUNDATION DRAIN |
| FU | FUEL OIL |
| GR | GREASE |
| HWR | HOT WATER RETURN |
| HWS | HOT WATER SUPPLY |
| IA | INSTRUMENT AIR |
| IC | IRON CHLORIDE |
| ML | MIXED LIQUOR |
| NG | NATURAL GAS |
| NPW | NON POTABLE WATER |
| P | POLYMER |
| PE | PRIMARY EFFLUENT |
| PS | PRIMARY SLUDGE |
| RAS | RETURN ACTIVATED SLUDGE |
| RS | RAW SEWAGE |
| RW | RAW WATER |
| REF | REFRIGERANT |
| RD | ROOF DRAIN |
| SA | SANITARY SEWER |
| SB | SECONDARY BYPASS |
| SC | SCUM |
| SE | SECONDARY EFFLUENT |
| S | SIGNAL (UNDERGROUND)* |
| SPA | SPARE |
| ST | STORM SEWER |
| SM | STEAM |
| SP | DIGESTER SUPERNATANT |
| TD | TANK DRAIN |
| T | TELEPHONE (UNDERGROUND)* |
| TE | THICKENER EFFLUENT |
| TS | THICKENED SLUDGE |
| TWAS | THICKENED WASTE ACTIVATED SLUDGE |
| VSA | VACUUM SANITARY SEWER |
| W | CITY WATER |
| WAS | WASTE ACTIVATED SLUDGE |

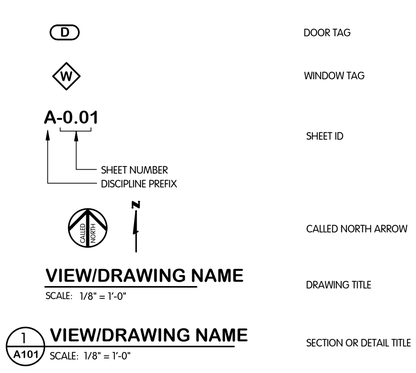
### WTP SERVICE

| | |
|---|---|
| AA | AERATION AIR |
| AL | ALUM |
| AMM | AMMONIA |
| BW | BACKWASH WASTE |
| C | CABLE (UNDERGROUND)* |
| CS | CARBON SLURRY |
| CAS | CAUSTIC SODA |
| CA | COMPRESSED AIR |
| CD | CHLORINE DIOXIDE |
| CLG | CHLORINE GAS |
| CL | CHLORINE SOLUTION |
| CO | COMBINED SEWER |
| DCW | DOMESTIC COLD WATER |
| DHW | DOMESTIC HOT WATER |
| DTW | DOMESTIC TEMPERED WATER |
| E | ELECTRICAL (UNDERGROUND)* |
| ED | EQUIPMENT DRAIN |
| FO | FIBER OPTIC |
| FL | FLOURIDE |
| FD | FOUNDATION DRAIN |
| FU | FUEL OIL |
| HWR | HOT WATER RETURN |
| HWS | HOT WATER SUPPLY |
| LS | LIME SLURRY |
| NG | NATURAL GAS |
| OZ | OZONE |
| PH | PHOSPHATE COMPOUND |
| P | POLYMER |
| PP | POTASSIUM PERMANGANATE |
| RCW | RAW CLARIFIED WATER |
| RW | RAW WATER |
| RD | ROOF DRAIN |
| SA | SANITARY SEWER |
| S | SIGNAL (UNDERGROUND)* |
| SL | SLUDGE |
| SOD | SODA ASH |
| SPA | SPARE |
| ST | STORM SEWER |
| SM | STEAM |
| SUD | SULFUR DIOXIDE |
| SUL | SULFURIC ACID |
| TD | TANK DRAIN |
| T | TELEPHONE (UNDERGROUND)* |
| VSA | VACUUM SANITARY SEWER |
| W | CITY WATER |

## DRAWING INDEX


| CAD No. | CONST. No. | SHEET No. | DESCRIPTION |
|---|---|---|---|
| | | | **GENERAL** |
| 8021001G01 | 1 | G-0.1 | DRAWING INDEX, ABBREVIATIONS |
| 8021001G11 | 2 | G-1.1 | EXISTING SITE PLAN |
| | | | **REMOVALS** |
| 8021001R11 | 3 | R-1.1 | ADMINISTRATION BUILDING, MECHANICAL ROOM, FIRST FLOOR PLAN |
| 8021001R12 | 4 | R-1.2 | ADMINISTRATION BUILDING, MECHANICAL ROOM, BASEMENT FLOOR PLAN |
| 8021001R13 | 5 | R-1.3 | ADMINISTRATION BUILDING, MAINTENANCE AREA, FIRST FLOOR PLAN |
| 8021001R14 | 6 | R-1.4 | ADMINISTRATION BUILDING, SHOP/STORAGE ROOM, FIRST FLOOR PLAN |
| 1 8021001SHB_R14 | 7 | R-1.5 | SLUDGE HANDLING BUILDING, INCINERATION AREA, BASEMENT FLOOR PLAN |
| | | | **MECHANICAL** |
| 8021001M01 | 8 | M-0.1 | LEGEND, STANDARDS |
| 802100M02 | 9 | M-0.2 | LABORATORY, HVAC CONTROLS |
| 802100M03 | 10 | M-0.3 | LABORATORY, HVAC CONTROLS |
| 802100M04 | 11 | M-0.4 | SHOP/STORAGE AREA, HVAC CONTROLS |
| 802100M05 | 12 | M-0.5 | OFFICE AND ADMINIATRATION AREA, HVAC CONTROLS |
| 802100M06 | 13 | M-0.6 | HVAC CONTROLS |
| 802100M07 | 14 | M-0.7 | HVAC CONTROLS |
| 802100M08 | 15 | M-0.8 | HVAC CONTROLS |
| 802100M09 | 16 | M-0.9 | HVAC DETAILS |
| 802100M10 | 17 | M-0.10 | HVAC DETAILS |
| 802100M11 | 18 | M-0.11 | HVAC SCHEDULES AND HEATING COIL DATA |
| 802100M11 | 19 | M-1.1 | HVAC, ADMINISTRATION BUILDING, FIRST FLOOR PLAN, OFFICE AND LABORATORY AREA |
| 802100M12 | 20 | M-1.2 | HVAC, ADMINISTRATION BUILDING, FIRST FLOOR PLAN, MAINTENANCE AREA |
| 802100M13 | 21 | M-1.3 | HVAC, ADMINISTRATION BUILDING, FIRST FLOOR PLAN, SHOP/ STORAGE ROOM |
| 802100M14 | 22 | M-1.4 | HVAC, ADMINISTRATION BUILDING, FIRSTFLOOR PLAN, MECHANICAL ROOM |
| 802100M15 | 23 | M-1.5 | HVAC, ADMINISTRATION BUILDING, ROOF PLAN, MECHANICAL ROOM |
| 802100M16 | 24 | M-1.6 | MECHANICAL, ADMINISTRATION BUILDING, FIRST FLOOR PLAN, MECHANICAL ROOM |
| 802100M17 | 25 | M-1.7 | MECHANICAL, ADMINISTRATION BUILDING, BASEMENT PLAN, MECHANICAL ROOM |
| 802100M18 | 26 | M-1.8 | MECHANICAL, ADMINISTRATION BUILDING, CRAWL SPACE, OFFICE AREA |
| 802100M19 | 27 | M-1.9 | MECHANICAL, BASEMENT FLOOR PLAN, SETTLED SEWAGE PUMP STATION |
| | | | **ELECTRICAL** |
| 8021001E01 | 28 | E-0.1 | LEGEND, STANDARDS |
| 8021001E02 | 29 | E-0.2 | REMOVALS, MCC SINGLE LINE, LIGHTING PANELS |
| 8021001E03 | 30 | E-0.3 | MCC SINGLE LINE, LIGHTING PANELS |
| 8021001E11 | 31 | E-1.1 | ADMINISTRATION BUILDING, FIRST FLOOR PLAN, SHOP/STORAGE ROOM AND MAINTENANCE BUILDING |
| 8021001E12 | 32 | E-1.2 | ADMINISTRATION BUILDING, FIRST FLOOR PLAN, MAINTENANCE AND LABORATORY AREA |
| 8021001E13 | 33 | E-1.3 | ADMINISTRATION BUILDING, BASEMENT, FIRST AND ROOF PLAN, MECHANICAL ROOM |
| 8021001E14 | 34 | E-1.4 | SETTLED SEWAGE PUMP STATION, BASEMENT FLOOR PLAN |


NOTES:
- ACCURACY OF EXISTING ELEVATIONS AND DIMENSIONS IS NOT GUARANTEED. FIELD VERIFY BEFORE CONSTRUCTION.
- ALL NOTES ON THE DRAWINGS BEAR THE SAME IMPORTANCE. SOME NOTES AND DIMENSIONS ARE BOLD TO AID IN READING THE DRAWINGS IN AREAS OF HIGH GRAPHIC DENSITY.

DRAWING INDEX ABBREVIATIONS

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
|---|---|---|---|
| 5 | | | |
| 4 | | | |
| 3 | | | |
| 2 | | | |
| 1 | 02/20/2024 | ADDENDUM #1 | TLK |

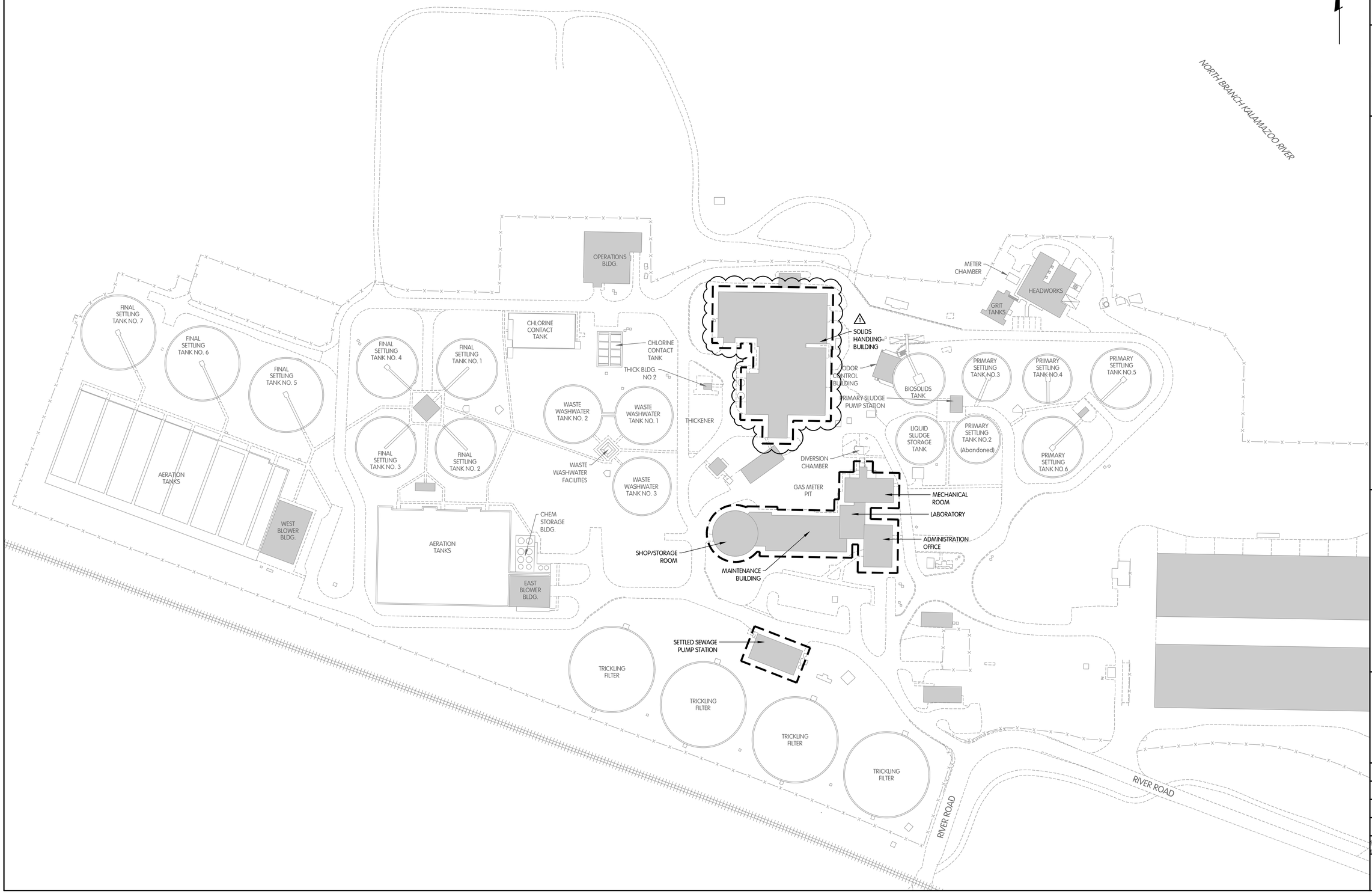

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JOB NO. 008-8021.001
SCALE AS NOTED
THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| ASB | AJB | BPW |

STATUS: ISSUED FOR BID
DATE: OCTOBER 2023
SHEET NO. G-0.1
1 OF 34


FTW-8021001G01-G-0.1 INDEX LEGENDS ABBRIVIATIONS GENERAL NOTES-ANSI-D
2/20/2024 1:27 PM
2/20/2024 1:27 PM - ABLASING




EXISTING
SITE PLAN

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
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| ASB | AJB | BPW |

STATUS: ISSUED FOR BID

DATE: OCTOBER 2023

SHEET NO.
G-1.1
2 OF 34


PTW-8021001I-G-1 | SITE
2/20/2024 | 12:27 PM - ABLAISING

INCINERATOR NO. 4

DUPLEX SUMP PUMP

EQUIPMENT ROOM

ELEV.

CP-11-6

CP-11-7

CP-11-4

CP-11-5

AIR COMP. AC-11-1

AIR COMP. AC-11-2

AIR COMP. AC-11-3

PROTECTED WATER PUMP

PROTECTED WATER PUMP

PROTECTED WATER TANK

ASH CONVEYOR EXHAUSTERS

AHU-11-2

DEMO IA PIPE AND CAP AT TEE

DEMO IA PIPE AND CAP AT WALL

HHWS

HHWR

SMHH

NMHH

IA

A

FOR

FOS

G

M

N

R-1.5

SLUDGE DISPOSAL FACILITY
KEYMAP

KEY MAP

FTW-8021001SHB_JR15-R-1.5
2/21/2024 1:27 PM
2/21/2024 1:27 PM - ABLAISING

# REMOVALS
# SLUDGE HANDLING BUILDING
# INCINERATION AREA
# BASEMENT FLOOR PLAN

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
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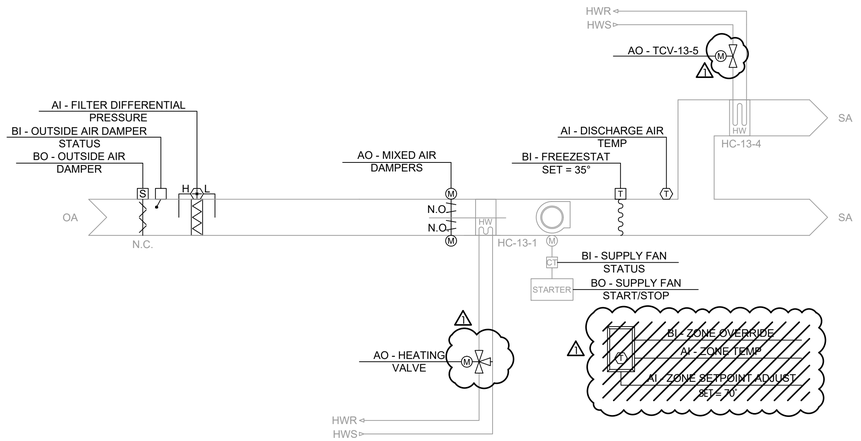
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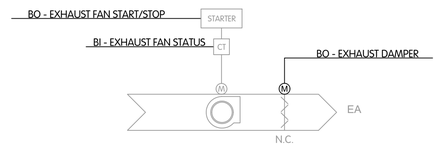
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DATE: OCTOBER 2023

SHEET NO.
R-1.5
7 OF 34

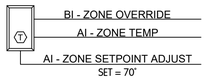



## AHU-13-1 AIRFLOW SCHEMATIC

AHU LOCATED IN
STORAGE AREA




## EXHAUST FAN EF-13-1,2,4,5 AIRFLOW SCHEMATIC




## RADIATION CONTROL TCV-13-5 SCHEMATIC

AHU-13-1 HVAC SEQUENCE OF OPERATION:

RUN CONDITIONS - CONTINUOUS:
THE UNIT SHALL RUN CONTINUOUSLY.

EMERGENCY SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN EMERGENCY SHUTDOWN SIGNAL.

FREEZE PROTECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT STATUS.

SMOKE DETECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A SMOKE DETECTOR STATUS.

OUTSIDE AIR DAMPER:
THE OUTSIDE AIR DAMPER SHALL OPEN ANYTIME THE UNIT RUNS AND SHALL CLOSE ANYTIME THE UNIT STOPS. THE SUPPLY FAN SHALL START ONLY AFTER THE DAMPER STATUS HAS PROVEN THE DAMPER IS OPEN. THE OUTSIDE AIR DAMPER SHALL CLOSE 4 SEC (ADJ.) AFTER THE SUPPLY FAN STOPS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- OUTSIDE AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- OUTSIDE AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME, UNLESS SHUTDOWN ON SAFETIES.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

EXHAUST FANS EF-13-1, EF-13-2, EF-13-4, EF-13-5:
THE EXHAUST FAN SHALL RUN WHENEVER THE SUPPLY FAN RUNS, UNLESS SHUTDOWN ON SAFETIES.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- EXHAUST FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- EXHAUST FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- EXHAUST FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SUPPLY AIR TEMPERATURE SETPOINT - FIXED:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND SHALL MAINTAIN A FIXED SUPPLY AIR TEMPERATURE SETPOINT OF 65°F (ADJ.).

HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE SUPPLY AIR TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN STATUS IS ON.

THE HEATING COIL VALVE SHALL OPEN TO 100% (ADJ.) WHENEVER THE FREEZESTAT IS ON.

AHU-13-1 HVAC SEQUENCE OF OPERATION (CONT.):

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME, UNLESS SHUTDOWN ON SAFETIES.

THE HEATING COIL VALVE SHALL OPEN TO 100% (ADJ.) WHENEVER THE FREEZESTAT IS ON.

FILTER DIFFERENTIAL PRESSURE MONITOR:
THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FILTER CHANGE REQUIRED: FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SUPPLY AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

TCV-13-5 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| REHEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| TOTAL HARDWARE (4) | | | | | TOTAL SOFTWARE (7) | | | | | | |

AHU-13-1 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| DISCHARGE AIR TEMP | X | | | | | | | | X | | X |
| FILTER DIFFERENTIAL PRESSURE | X | | | | | | | | X | | X |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| FREEZESTAT | | | X | | | | | | X | X | X |
| SMOKE DETECTOR | | | X | | | | | | X | X | X |
| OUTDOOR AIR DAMPER STATUS | | | X | | | | | | X | | X |
| EF-13-1 EXHAUST DAMPER STATUS | | | X | | | | | | X | | X |
| EF-13-2 EXHAUST DAMPER STATUS | | | X | | | | | | X | | X |
| EF-13-4 EXHAUST DAMPER STATUS | | | X | | | | | | X | | X |
| EF-13-5 EXHAUST DAMPER STATUS | | | X | | | | | | X | | X |
| SUPPLY FAN STATUS | | | X | | | | | | X | | X |
| EF-13-1 FAN STATUS | | | X | | | | | | X | | X |
| EF-13-2 FAN STATUS | | | X | | | | | | X | | X |
| EF-13-4 FAN STATUS | | | X | | | | | | X | | X |
| EF-13-5 FAN STATUS | | | X | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| OUTSIDE AIR DAMPER | | | | X | | | | | X | | X |
| SUPPLY FAN START/STOP | | | | X | | | | | X | | X |
| EF-13-1 START/STOP | | | | X | | | | | X | | X |
| EF-13-2 START/STOP | | | | X | | | | | X | | X |
| EF-13-4 START/STOP | | | | X | | | | | X | | X |
| EF-13-5 START/STOP | | | | X | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| EMERGENCY SHUTDOWN | | | | | | X | | | X | X | X |
| SCHEDULE | | | | | | | | X | | | |
| FILTER CHANGE REQUIRED | | | | | | | | | | X | X |
| HIGH DISCHARGE AIR TEMP | | | | | | | | | | X | |
| LOW DISCHARGE AIR TEMP | | | | | | | | | | X | |
| OUTSIDE AIR DAMPER FAILURE | | | | | | | | | | X | |
| OUTSIDE AIR DAMPER IN HAND | | | | | | | | | | X | |
| SUPPLY FAN FAILURE | | | | | | | | | | X | |
| SUPPLY FAN IN HAND | | | | | | | | | | X | |
| SUPPLY FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| TOTALS | 4 | 1 | 13 | 6 | 1 | 1 | 0 | 1 | 25 | 11 | 27 |
| TOTAL HARDWARE (24) | | | | | TOTAL SOFTWARE (39) | | | | | | |

SHOP/STORAGE AREA
HVAC
CONTROLS

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
|---|---|---|---|
| 1 | 02/13/2024 | ADDENDUM #1 | TLK |
| 2 | | | |
| 3 | | | |
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| 5 | | | |

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JOB NO. 008-8021.001
SCALE AS NOTED
THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE
DESIGNED ASB | DRAWN AJB | CHECKED BDL
STATUS: ISSUED FOR BID
DATE: OCTOBER 2023
SHEET NO. M-0.4
11 OF 34

FTW-8021001-M-0.4 HVAC CONTROLS
2/20/2024 11:41 AM - ABLASING
2/20/2024 1:23 PM

## AHU-13-2 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-2:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| COOLING SUPPLY AIR TEMP | X | | | | | | | | X | | X |
| HEATING SUPPLY AIR TEMP | X | | | | | | | | X | | X |
| MIXED AIR TEMP | X | | | | | | | | X | | X |
| FILTER DIFFERENTIAL PRESSURE | X | | | | | | | | X | | X |
| RETURN AIR TEMP | X | | | | | | | | X | | X |
| OUTDOOR AIR TEMP - MIN OA DUCT | X | | | | | | | | X | | X |
| OUTDOOR AIR TEMP - MAX OA DUCT | X | | | | | | | | X | | X |
| COOLING VALVE | | X | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| MIXING AIR DAMPERS | | X | | | | | | | X | | X |
| PREHEATING VALVE | | X | | | | | | | X | | X |
| FREEZESTAT | | | X | | | | | | X | X | X |
| RETURN AIR SMOKE DETECTOR | | | X | | | | | | X | X | X |
| CP-13-1 STATUS | | | X | | | | | | X | | X |
| CP-13-2 STATUS | | | X | | | | | | X | | X |
| RETURN FAN STATUS | | | X | | | | | | X | | X |
| SUPPLY FAN STATUS | | | X | | | | | | X | | X |
| EF-13-6 STATUS | | | X | | | | | | X | | X |
| EF-13-7 STATUS | | | X | | | | | | X | | X |
| EF-13-8 STATUS | | | X | | | | | | X | | X |
| EF-13-9 STATUS | | | X | | | | | | X | | X |
| EF-13-10 STATUS | | | X | | | | | | X | | X |
| CP-13-1 START/STOP | | | | X | | | | | X | | X |
| CP-13-2 START/STOP | | | | X | | | | | X | | X |
| MINIMUM OUTSIDE AIR DAMPER | | | | X | | | | | X | | X |
| RETURN FAN START/STOP | | | | X | | | | | X | | X |
| SUPPLY FAN START/STOP | | | | X | | | | | X | | X |
| EF-13-6 DAMPER | | | | X | | | | | | | |
| EF-13-7 DAMPER | | | | X | | | | | | | |
| EF-13-8 DAMPER | | | | X | | | | | | | |
| EF-13-9 DAMPER | | | | X | | | | | | | |
| EF-13-10 DAMPER | | | | X | | | | | | | |
| EF-13-6 START/STOP | | | | X | | | | | X | | X |
| EF-13-7 START/STOP | | | | X | | | | | X | | X |
| EF-13-8 START/STOP | | | | X | | | | | X | | X |
| EF-13-9 START/STOP | | | | X | | | | | X | | X |
| EF-13-10 START/STOP | | | | X | | | | | X | | X |
| COOLING SUPPLY AIR TEMP SETPOINT | | | | | X | | | | X | | X |
| ECONOMIZER MIXING AIR TEMP SETPOINT | | | | | X | | | | X | | X |
| HEATING SUPPLY AIR TEMP SETPOINT | | | | | X | | | | X | | X |
| PREHEATING MIXED AIR TEMP SETPOINT | | | | | X | | | | X | | X |
| EMERGENCY SHUTDOWN | | | | | | X | | | X | X | X |
| SCHEDULE | | | | | | | | X | | | |
| HIGH COOLING SUPPLY AIR TEMP | | | | | | | | | | X | |
| HIGH HEATING SUPPLY AIR TEMP | | | | | | | | | | X | |
| HIGH MIXED AIR TEMP | | | | | | | | | | X | |
| HIGH RETURN AIR TEMP | | | | | | | | | | X | |
| LOW HEATING SUPPLY AIR TEMP | | | | | | | | | | X | |
| LOW MIXED AIR TEMP | | | | | | | | | | X | |
| LOW RETURN AIR TEMP | | | | | | | | | | X | |
| PREFILTER CHANGE REQUIRED | | | | | | | | | | X | X |
| RETURN FAN FAILURE | | | | | | | | | | X | |
| RETURN FAN IN HAND | | | | | | | | | | X | |
| RETURN FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| SUPPLY FAN FAILURE | | | | | | | | | | X | |
| SUPPLY FAN IN HAND | | | | | | | | | | X | |
| SUPPLY FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| EF-13-6 FAN FAILURE | | | | | | | | | | X | |
| EF-13-7 FAN FAILURE | | | | | | | | | | X | |
| EF-13-8 FAN FAILURE | | | | | | | | | | X | |
| EF-13-9 FAN FAILURE | | | | | | | | | | X | |
| EF-13-10 FAN FAILURE | | | | | | | | | | X | |
| EF-13-6 FAN IN HAND | | | | | | | | | | X | |
| EF-13-7 FAN IN HAND | | | | | | | | | | X | |
| EF-13-8 FAN IN HAND | | | | | | | | | | X | |
| EF-13-9 FAN IN HAND | | | | | | | | | | X | |
| EF-13-10 FAN IN HAND | | | | | | | | | | X | |
| EF-13-6 FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| EF-13-7 FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| EF-13-8 FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| EF-13-9 FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| EF-13-10 FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-1 FAILURE | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-2 FAILURE | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-1 IN HAND | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-2 IN HAND | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-1 RUNTIME EXCEEDED | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-2 RUNTIME EXCEEDED | | | | | | | | | | X | |
| TOTALS | 8 | 4 | 11 | 15 | 4 | 1 | 0 | 1 | 42 | 38 | 41 |
| TOTAL HARDWARE (33) | | | | | TOTAL SOFTWARE (81) | | | | | | |

## OVERALL PROJECT POINTS LIST:

| | | | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONTROL PANEL | POINT NAME | QTY | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| UCP-2-1 | AHU-2-2 | EACH | 16 | 7 | 11 | 5 | 2 | 1 | 0 | 1 | 37 | 20 | 43 |
| | TYPICAL OF 1 | TOTAL (X1) | 16 | 7 | 11 | 5 | 2 | 1 | 0 | 1 | 37 | 20 | 43 |
| | AHU-2-3 | EACH | 2 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 14 | 8 | 14 |
| | TYPICAL OF 1 | TOTAL (X1) | 2 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 14 | 8 | 14 |
| | ~~UH-2-1,UH-2-4, UH-2-6~~ | ~~EACH~~ | ~~2~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~0~~ | ~~0~~ | ~~1~~ | ~~5~~ | ~~1~~ | ~~6~~ |
| | ~~TYPICAL OF 5~~ | ~~TOTAL (X5)~~ | ~~10~~ | ~~5~~ | ~~5~~ | ~~5~~ | ~~5~~ | ~~0~~ | ~~0~~ | ~~5~~ | ~~25~~ | ~~5~~ | ~~30~~ |
| | ~~UH-2-5~~ | ~~EACH~~ | ~~2~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~0~~ | ~~0~~ | ~~1~~ | ~~5~~ | ~~1~~ | ~~6~~ |
| | ~~TYPICAL OF 1~~ | ~~TOTAL (X1)~~ | ~~2~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~0~~ | ~~0~~ | ~~1~~ | ~~5~~ | ~~1~~ | ~~6~~ |
| | EF-2-2, EF-2-3 | EACH | 2 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 4 | 1 | 5 |
| | TYPICAL OF 2 | TOTAL (X2) | 4 | 2 | 6 | 2 | 2 | 0 | 0 | 0 | 8 | 2 | 10 |
| | TCV-2-3 | EACH | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| | TYPICAL OF 1 | TOTAL (X1) | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| UCP-13-1 | AHU-13-1 | EACH | 4 | 1 | 13 | 6 | 1 | 1 | 0 | 1 | 25 | 11 | 27 |
| | TYPICAL OF 1 | TOTAL (X1) | 4 | 1 | 13 | 6 | 1 | 1 | 0 | 1 | 25 | 11 | 27 |
| | ~~UH-13-1,UH-13-18~~ | ~~EACH~~ | ~~2~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~0~~ | ~~0~~ | ~~1~~ | ~~5~~ | ~~1~~ | ~~6~~ |
| | ~~TYPICAL OF 18~~ | ~~TOTAL (X18)~~ | ~~36~~ | ~~18~~ | ~~18~~ | ~~18~~ | ~~18~~ | ~~0~~ | ~~0~~ | ~~18~~ | ~~90~~ | ~~18~~ | ~~108~~ |
| | TCV-13-3 | EACH | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 |
| | TYPICAL OF 1 | TOTAL (X1) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 |
| | TCV-13-4 | EACH | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| | TYPICAL OF 1 | TOTAL (X1) | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| | TCV-13-5 | EACH | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| | TYPICAL OF 1 | TOTAL (X1) | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| UCP-13-2 | AHU-13-2 | EACH | 8 | 4 | 11 | 15 | 4 | 1 | 0 | 1 | 42 | 38 | 41 |
| | TYPICAL OF 1 | TOTAL (X1) | 8 | 4 | 11 | 15 | 4 | 1 | 0 | 1 | 42 | 38 | 41 |
| | MIXING BOXES | EACH | 3 | 1 | 0 | 0 | 4 | 0 | 0 | 1 | 6 | 4 | 7 |
| | TYPICAL OF 11 | TOTAL (X11) | 33 | 11 | 0 | 0 | 44 | 0 | 0 | 11 | 66 | 44 | 77 |
| | | PROJECT TOTALS | ~~121~~ 73 | ~~54~~ 30 | ~~73~~ 49 | ~~58~~ 34 | ~~81~~ 57 | 3 | 0 | ~~43~~ 19 | ~~324~~ 204 | ~~150~~ 126 | ~~373~~ 229 |
| | | TOTAL HARDWARE ~~(306)~~ (186) | | | | | TOTAL SOFTWARE ~~(681)~~ (409) | | | | | | |

## MIXING BOX CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-2:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| DISCHARGE AIR TEMP | X | | | | | | | | X | | X |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| ZONE DAMPER | | X | | | | | | | | | |
| COLD DECK DAMPER POSITION | | | | | X | | | | X | | X |
| COOLING SETPOINT | | | | | X | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| HOT DECK DAMPER POSITION | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| HIGH DISCHARGE AIR TEMP | | | | | | | | | | X | |
| LOW DISCHARGE AIR TEMP | | | | | | | | | | X | |
| HIGH ZONE TEMP | | | | | | | | | | X | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 3 | 1 | 0 | 0 | 4 | 0 | 0 | 1 | 6 | 4 | 7 |
| TOTAL HARDWARE (4) | | | | | TOTAL SOFTWARE (15) | | | | | | |

HVAC CONTROLS

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
|---|---|---|---|
| 5 | | | |
| 4 | | | |
| 3 | | | |
| 2 | | | |
| 1 | 02/13/2024 | ADDENDUM #1 | TLK |

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SCALE AS NOTED

THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

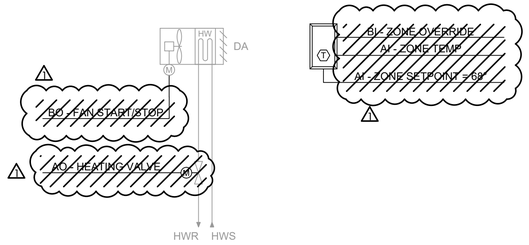
| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| ASB | AJB | BDL |

STATUS: ISSUED FOR BID

DATE: OCTOBER 2023

SHEET NO.
M-0.6
13 OF 34

FTW-8021001M06-M-0.6 HVAC CONTROLS
2/13/2024 11:55 AM - ABLASING
2/20/2024 1:23 PM




## UH-13-2, UH-13-3, UH-13-5 THRU UH-13-18 (TYP. 16) AIRFLOW SCHEMATIC

UNIT HEATERS UH-13-1 - UH-13-18 (TYP. 16) SEQUENCE OF OPERATION

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| FAN START/STOP | | | | X | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |

UH-13-2, UH-13-3, UH-13-5 THRU UH-13-18 (TYP. 16) SEQUENCE OF OPERATION:

HYDRONIC UNIT HEATERS UH-13-2, UH-13-3, UH-13-5 - UH-13-18 SHALL EACH BE CONTROLLED BY SINGLE TEMPERATURE, WALL-MOUNTED THERMOSTATS THAT MAINTAIN SPACE TEMPERATURE BY CONTROLLING UNIT HEATING ELEMENTS AND FAN SIMULTANEOUSLY.

VERIFY THAT ALL UNITS ARE IN WORKING CONDITION.

- OCCUPIED MODE: THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 68°F (ADJ.).
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 50°F (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:
TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

FAN:
THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE DROPS BELOW HEATING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN IS ON.




## RADIATION CONTROL TCV-13-4 AIRFLOW SCHEMATIC

TCV-13-4 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |

TCV-13-4 SEQUENCE OF OPERATION:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

- OCCUPIED MODE: THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 68°F (ADJ.).
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 50°F (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:
TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

REHEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE REHEATING COIL VALVE TO MAINTAIN ITS SETPOINT.

THE REHEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW SETPOINT.
- AND SUFFICIENT AIRFLOW IS PROVIDED




## RADIATION CONTROL TCV-13-3 AIRFLOW SCHEMATIC

TCV-13-3 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| HEATING VALVE | | X | | | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| TOTALS | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 |

TCV-13-3 SEQUENCE OF OPERATION:
THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 37°F (ADJ.).




## RADIATION CONTROL TCV-2-3 AIRFLOW SCHEMATIC

TCV-2-3 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-2-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |

TCV-2-3 SEQUENCE OF OPERATION:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

- OCCUPIED MODE: THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 68°F (ADJ.).
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 50°F (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:
TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

REHEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE REHEATING COIL VALVE TO MAINTAIN ITS SETPOINT.

THE REHEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW SETPOINT.
- AND SUFFICIENT AIRFLOW IS PROVIDED

HVAC CONTROLS

CITY OF BATTLE CREEK, MICHIGAN
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| 5 | | | |
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| 1 | 02/13/2024 | ADDENDUM #1 | TLK |

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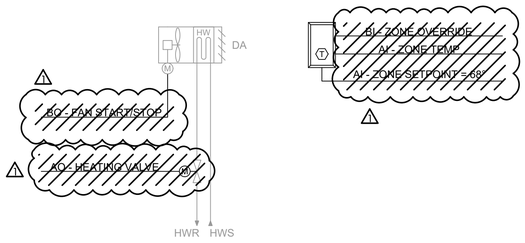
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DATE: OCTOBER 2023

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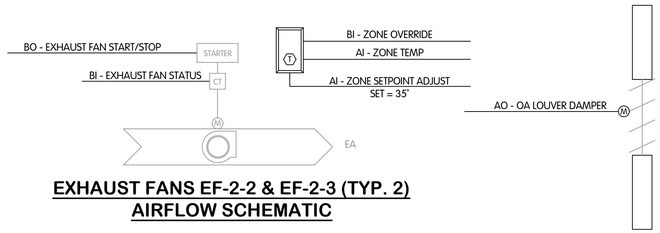
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## UH-2-5 AIRFLOW SCHEMATIC

EXPLOSION PROOF UNIT HEATER UH-2-5 CONTROL PANEL POINTS LIST
CONTROL PANEL UCP-2-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| FAN START/STOP | | | | X | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |



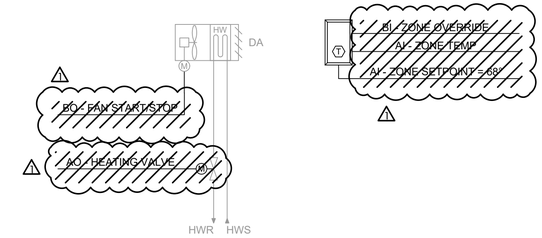

## EXHAUST FANS EF-2-2 & EF-2-3 (TYP. 2) AIRFLOW SCHEMATIC

EXHAUST FANS EF-2-2 & EF-2-3 (TYP. 2) CONTROL PANEL POINTS LIST
CONTROL PANEL UCP-2-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| INTERLOCKED LOUVER DAMPER | | X | | | | | | | | | |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| FAN STATUS | | | X | | | | | | | | |
| INTERLOCKED DAMPER STATUS | | | X | | | | | | | | |
| FAN START/STOP | | | | X | | | | | X | | X |
| TEMP SETPOINT | | | | | X | | | | X | | X |
| HIGH ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 4 | 1 | 5 |

EXHAUST FANS EF-2-2 & EF-2-3 SEQUENCE OF OPERATION:

A ROOM THERMOSTAT ON A RISE IN SPACE TEMPERATURE ABOVE ITS SET POINT WILL ENERGIZE THE EXHAUST FAN. WITH THE EXHAUST FAN ENERGIZED, THE EXHAUST DAMPER WILL OPEN.




## UH-2-1 - UH-2-4, UH-2-6 (TYP. 5) AIRFLOW SCHEMATIC

UNIT HEATERS UH-2-1 - UH-2-4, UH-2-6 (TYP. 5) CONTROL PANEL POINTS LIST
CONTROL PANEL UCP-2-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| FAN START/STOP | | | | X | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |

UNIT HEATERS UH-2-1 - UH-2-6 SEQUENCE OF OPERATION:

HYDRONIC UNIT HEATERS UH-2-1 - UH-2-6 SHALL EACH BE CONTROLLED BY SINGLE TEMPERATURE, WALL-MOUNTED THERMOSTATS THAT MAINTAIN SPACE TEMPERATURE BY CONTROLLING UNIT HEATING ELEMENTS AND FAN SIMULTANEOUSLY.

VERIFY THAT ALL UNITS ARE IN WORKING CONDITION.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER-DEFINABLE AMOUNT (ADJ.)

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:
TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THE ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD, WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

FAN:
THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE DROPS BELOW HEATING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 68°F (ADJ.)
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN IS ON.

HVAC CONTROLS

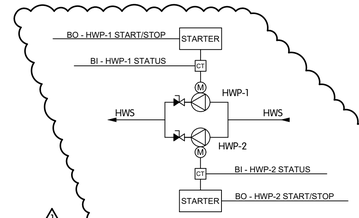
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DATE: OCTOBER 2023
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15 OF 34

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HOT WATER SYSTEM SEQUENCE OF OPERATION:
HOT WATER CIRCULATION PUMP HWP-1 LOCATED IN THE GRADE FLOOR MECHANICAL ROOM SHALL CIRCULATE HOT WATER THROUGH THE HYDRONIC SUPPLY AND RETURN PIPING SYSTEM TO SUPPLY BUILDING HEAT. HWP-1 & HWP-2 SHALL BE INTERLOCKED AND AUTOMATICALLY ACTIVATED BY THE EXISTING BOILERS. N ALTERNATOR LOCATED IN THE CONTROL PANEL SHALL SWITCH THE PRIMARY AND STAND-BY EXHAUST FANS (LEAD/LAG OPERATION) AND AUTOMATIC START OF HWP-2 UPON FAILURE OF HWP-1 TO RUN ON COMMAND.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- PUMP FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- PUMP IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- PUMP RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| HWP-1 STATUS | | | X | | | | | | X | | X |
| HWP-2 STATUS | | | X | | | | | | X | | X |
| HWP-1 START/STOP | | | | X | | | | | X | | X |
| HWP-2 START/STOP | | | | X | | | | | X | | X |
| HWP-1 FAILURE | | | | | | | | | | X | |
| HWP-2 FAILURE | | | | | | | | | | X | |
| HWP-1 IN HAND | | | | | | | | | | X | |
| HWP-2 IN HAND | | | | | | | | | | X | |
| HWP-1 RUNTIME EXCEEDED | | | | | | | | | | X | |
| HWP-2 RUNTIME EXCEEDED | | | | | | | | | | X | |
| TOTALS | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 4 | 6 | 4 |
| TOTAL HARDWARE (4) | | | | | TOTAL SOFTWARE (10) | | | | | | |

## PUMP SCHEDULE

| TAG | LOCATION | TYPE | SERVICE | WATER DATA | | | ELECTRICAL | | | MAKE | MODEL | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | FLOW (GPM) | HEAD (FT) | PUMP EFFICIENCY (%) | FAN MOTOR (HP) | MOTOR (RPM) | V/PH/HZ | | | |
| HWP-1 | MECHANICAL ROOM | VERTICAL INLINE | HOT WATER | 288 | 89 | 73.9 | 15 | 3,600 | 480/3/60 | BELL & GOSSETT | AHU | 1,2 |
| HWP-2 | MECHANICAL ROOM | VERTICAL INLINE | HOT WATER | 288 | 89 | 73.9 | 15 | 3,600 | 480/3/60 | BELL & GOSSETT | AHU | 1,2 |

NOTES:

1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. INSTALL WITH FLEXIBLE PIPE CONNECTIONS.

| TAG | LOCATION | TYPE | SUPPLY AIRFLOW (CFM) | OUTSIDE AIRFLOW (CFM) | FAN SECTION | | | HEATING COIL DATA | | | | | | | FILTER | | ELECTRICAL | | | MAKE | MODEL | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | E.S.P. (IN. W.C.) | HP | FAN TYPE | TOTAL (MBH) | FLOW (GPM) | EAT ($^{o}$F) | LAT ($^{o}$F) | EWT ($^{o}$F) | LWT ($^{o}$F) | WPD (FT) | APD (IN) | TYPE | MERV | (V/PH/HZ) | MCA | MFS | | | |
| AHU-2-3 | RAW SEWAGE PUMP STATION | MODULAR | 1400 | 1400 | 0.25 | 1 | PLENUM | 101.4 | 12.0 | 0 | 62 | 180 | 162 | 6.2 | 0.08 | 2" PLEATED | 8 | 480/3/60 | 3.13 | 15.0 | TRANE | BCHE054 | 1,2,3,4,5,6 |

NOTES:

1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. MAXIMUM COIL FACE VELOCITY SHALL NOT EXCEED 550 FPM.
3. COPPER COILS WITH ALUMINUM FINS.
4. PROVIDE INTERNAL VIBRATION ISOLATION AT SUPPLY FANS.
5. PROVIDE ACCESS SECTION BETWEEN COIL SECTIONS.
6. FAB SHALL BE SELECTED SO THAT FAN SURGE DOES NOT OCCUR AS SPEED REDUCES TO MINIMUM AIRFLOW.

## SPLIT SYSTEM AIR HANDLING UNIT/CONDENSING UNIT SCHEDULE

| TAG | LOCATION | TYPE | SUPPLY AIRFLOW (CFM) | OUTSIDE AIRFLOW (CFM) | SUPPLY FAN | | | HEATING COIL DATA | | | | | | | | COOLING CAPACITY | | AHU | | | | | FILTER | | CU | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | E.S.P. (IN. W.C.) | HP | BLOWER | TOTAL (MBH) | FLOW (GPM) | EAT ($^{o}$F) | LAT ($^{o}$F) | EWT ($^{o}$F) | LWT ($^{o}$F) | WPD (FT) | APD (IN) | TOTAL (BTUH) | SENSIBLE (BTUH) | MAKE | MODEL | V/PH/HZ | MCA | MFS | TYPE | MERV | MAKE | MODEL | V/PH/HZ | MCA | MFS | |
| AHU-2-2/CCU-2-1 | RAW SEWAGE PUMP STATION | MODULAR | 6,000 | 6,000 | 0.55 | 5 | PLENUM | 550 | 54.6 | 0 | 88 | 180 | 158 | 7.0 | 0.14 | 293 | 185 | TRANE | UCCAG14 | 480/3/60 | 9.50 | 15.0 | 2" PLEATED | 8 | TRANE | TTA30044CAA | 480/3/60 | 48.0 | 60.0 | 1,2,3,4,5,6,7,8,9 |

NOTES:

1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. PROVIDE AIR HANDLING UNIT WITH SPRING VIBRATION ISOLATORS FOR HORIZONTAL INSTALLATION.
3. PROVIDE EVAPORATOR COIL WITH REMOVABLE COMPOSITE DRAIN PAN.
4. EVAPORATOR COIL ENTERING AIR DRY BULB/WET BULB TEMPERATURES: 80/67 DEGREES F.
5. CONDENSING UNIT ENTERING AIR DRY BULB TEMPERATURE: 95 DEGREES F.
6. PROVIDE PRE-CHARGED LINE SETS FOR INSTALLTION OF REFRIGERANT PIPING, REFRIGERNT R-410A.
7. PROVIDE 24 VOLT TWO STAGE HEATING, TWO STAGE COOLING THERMOSTAT WITH AUTOMATIC CHANGEOVER.
8. PROVIDE CONDENSING UNIT WITH LOW AMBIENT CONTROL FOR COOLING OPERATION TO OUTDOOR AMBIENT OF 0 DEGREES F.
9. HARD WIRED REMOTE CONTROLLER WITH MODE, FAN SPEED, AND TEMPERATURE SELECTION.

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2/20/2024 1:28 PM

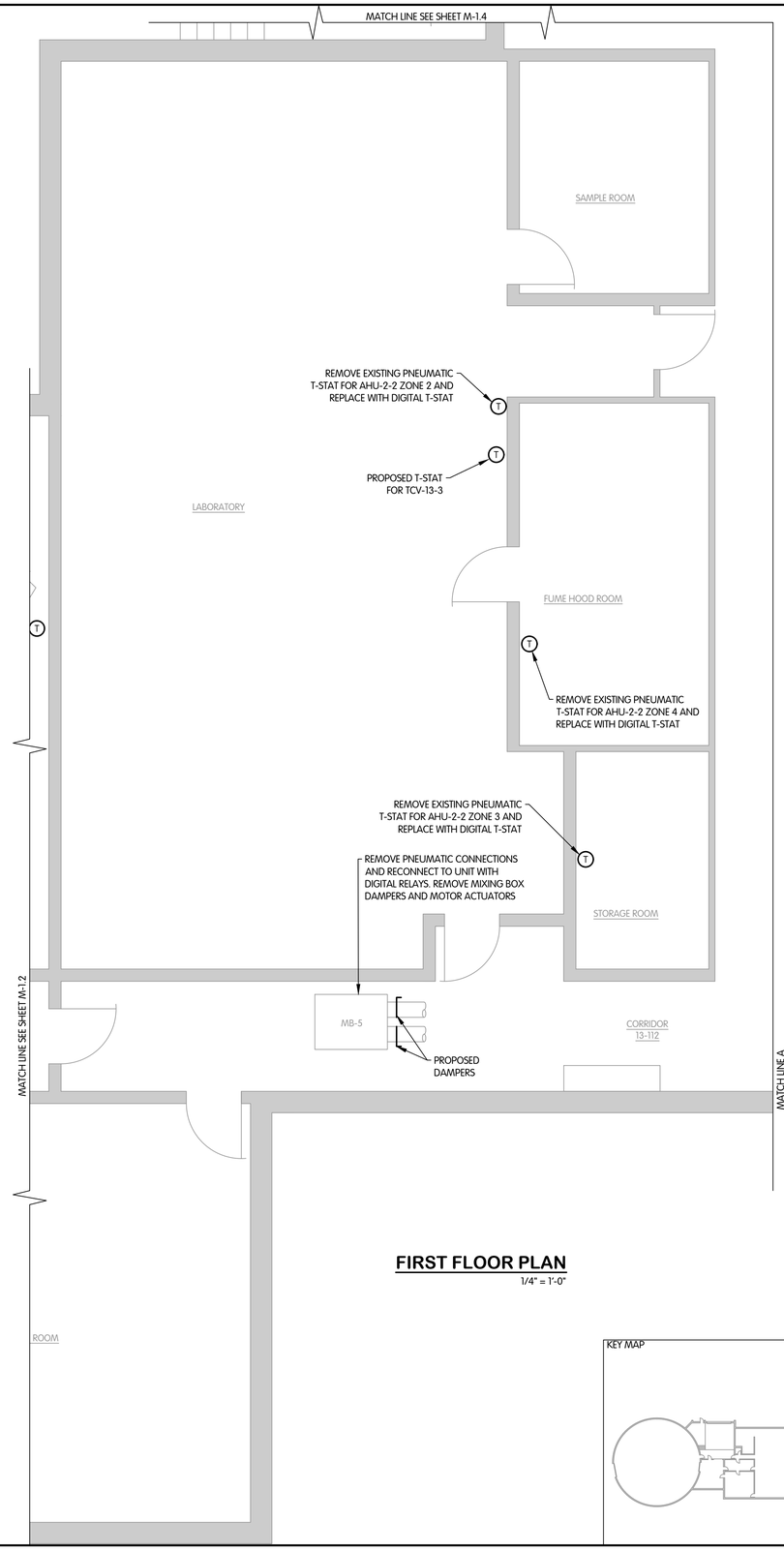
HVAC CONTROLS SCHEDULES AND HEATING COIL DATA

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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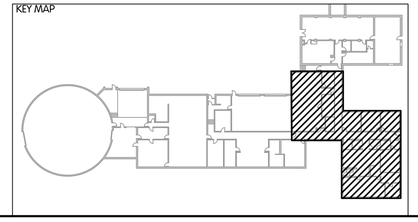
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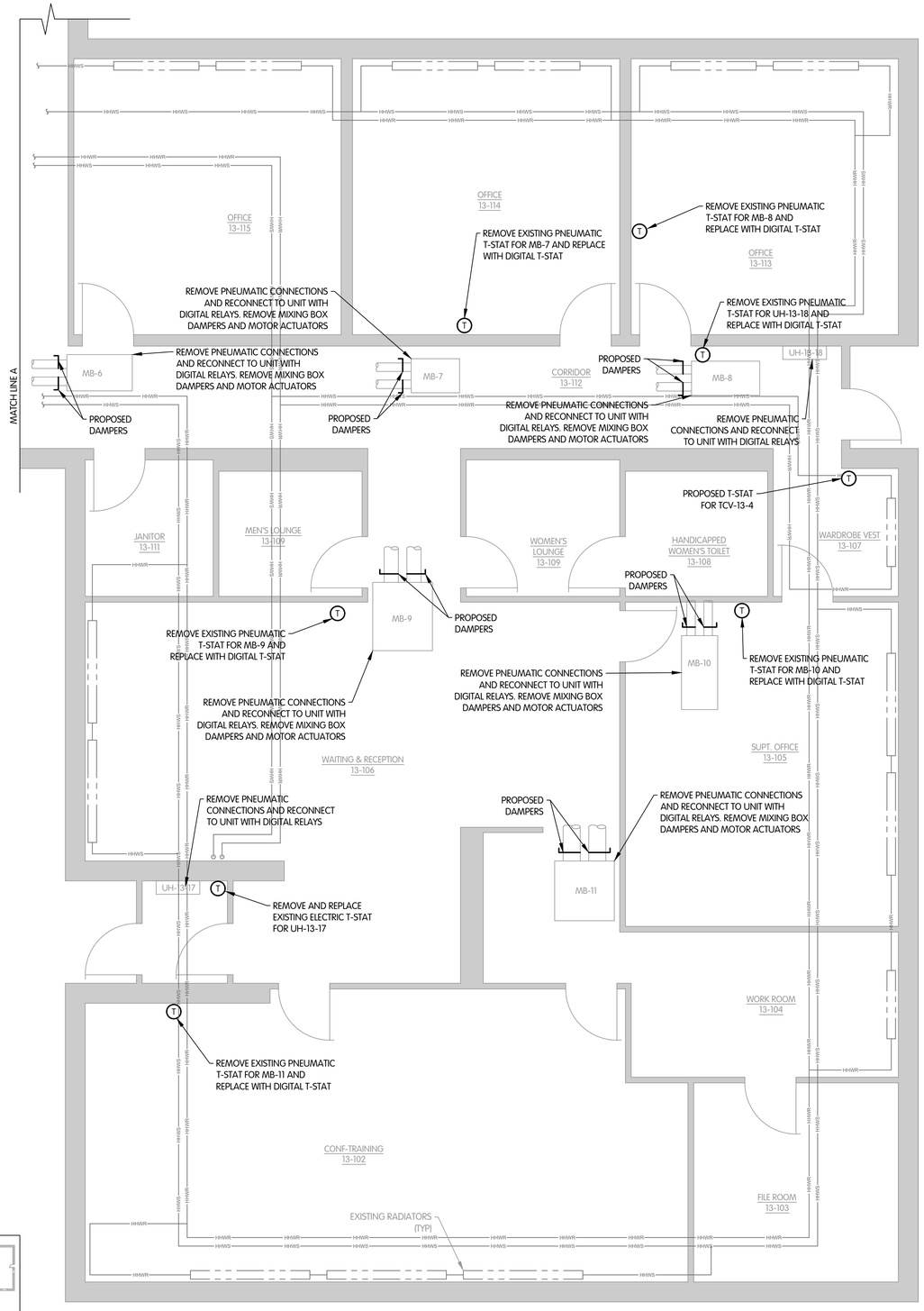
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SHEET NO.
M-0.11
18 OF 34




## FIRST FLOOR PLAN
1/4" = 1'-0"

KEY MAP






## FIRST FLOOR PLAN
1/4" = 1'-0"

# HVAC
# ADMINISTRATION BUILDING
# FIRST FLOOR PLAN
# OFFICE AND LABORATORY AREA

**CITY OF BATTLE CREEK, MICHIGAN**
**WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS**

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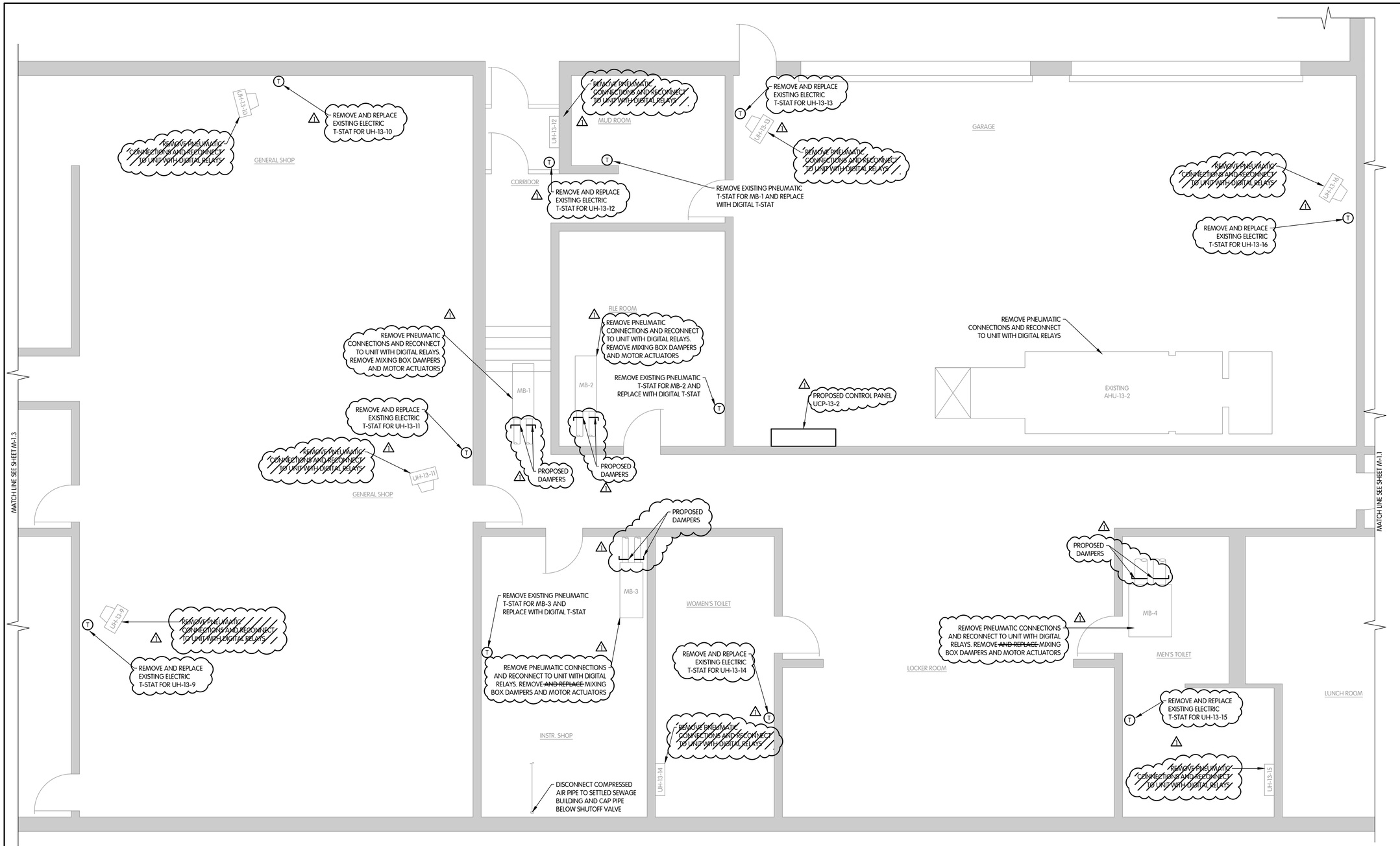

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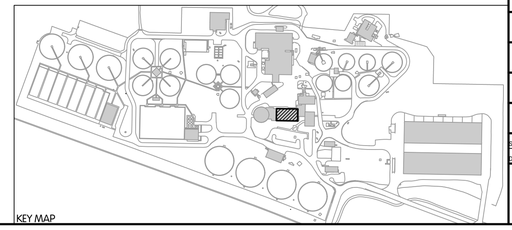
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19 OF 34


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## FIRST FLOOR PLAN

1/4" = 1'-0"




# HVAC
# ADMINISTRATION BUILDING
# FIRST FLOOR PLAN
# MAINTENACE AREA

**CITY OF BATTLE CREEK, MICHIGAN**
**WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS**

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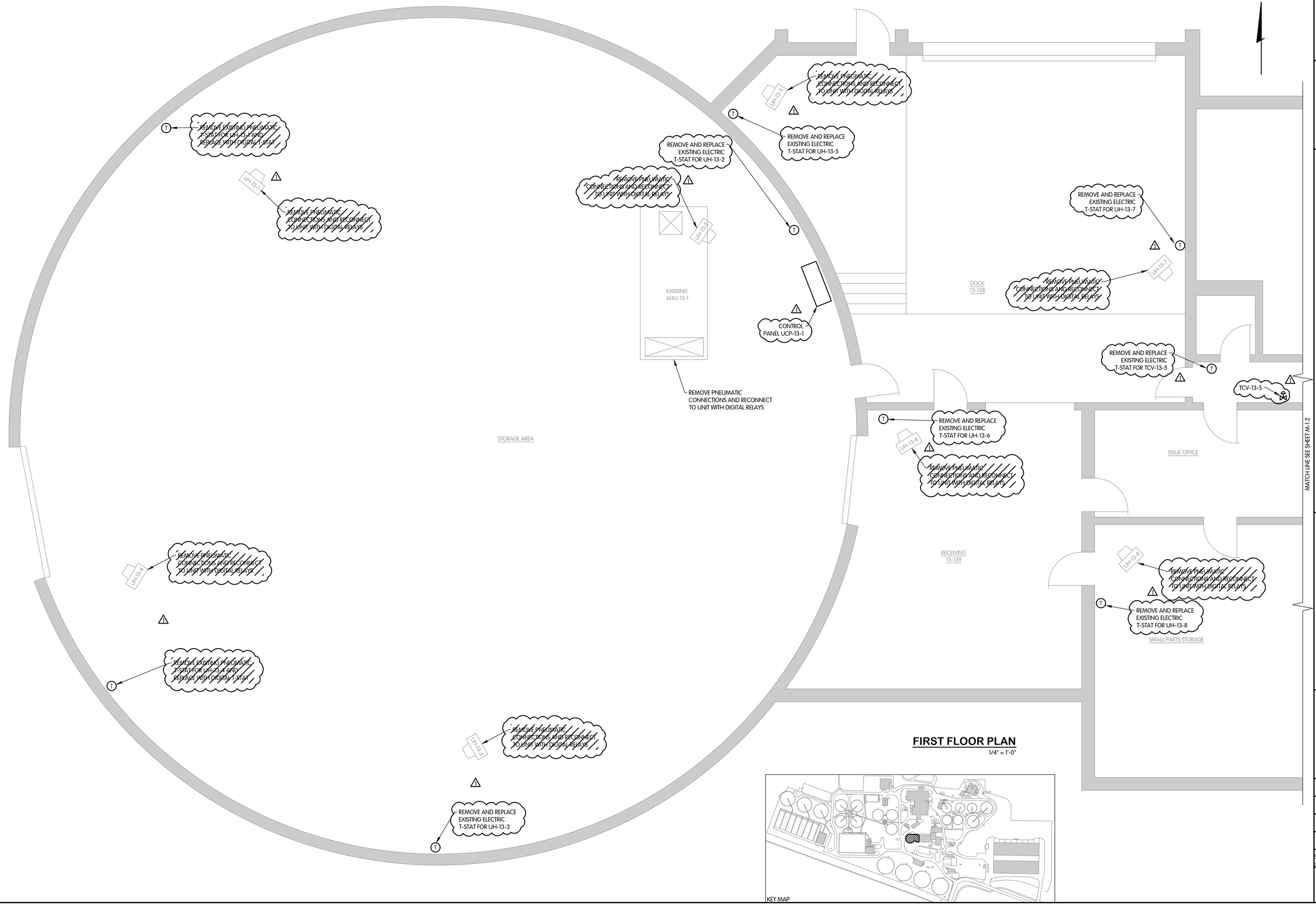
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20 OF 34


FTW-8020IMH12-M-1_2 MAINT EAST
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2/20/2024 1:28 PM




## FIRST FLOOR PLAN

1/4" = 1'-0"

KEY MAP

# HVAC
# ADMINISTRATION BUILDING
# FIRST FLOOR PLAN
# DIGESTER AREA

**CITY OF BATTLE CREEK, MICHIGAN**
**WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS**

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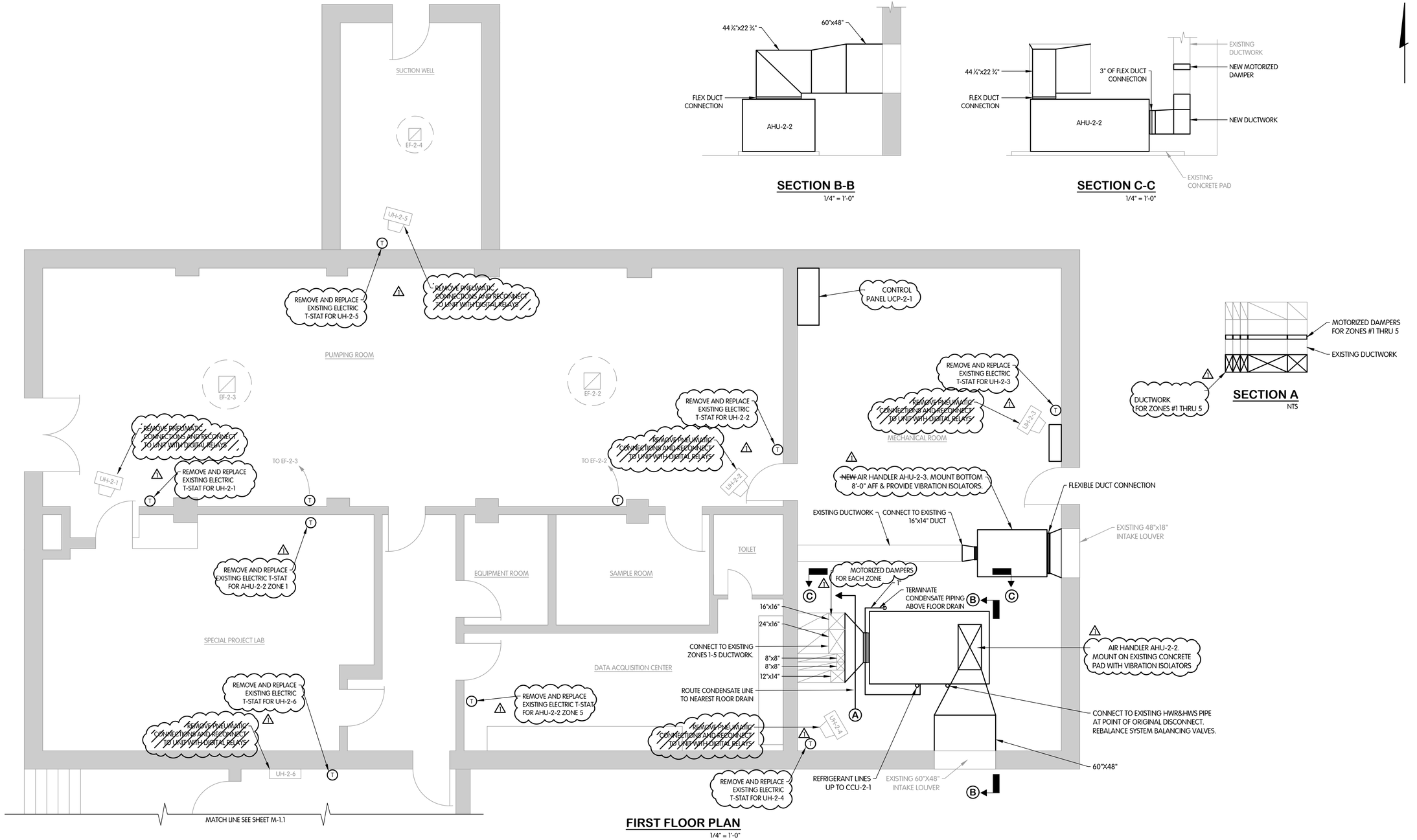
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21 OF 34


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## FIRST FLOOR PLAN
1/4" = 1'-0"



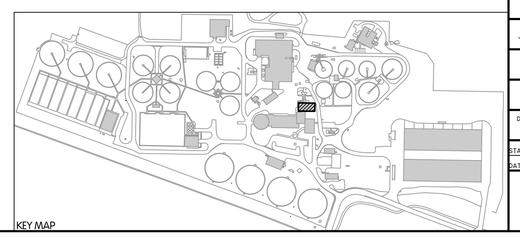

## SECTION B-B
1/4" = 1'-0"




## SECTION C-C
1/4" = 1'-0"




## SECTION A
NTS




HVAC
ADMINISTRATION BUILDING
FIRST FLOOR PLAN
RAW SEWAGE PUMP STATION

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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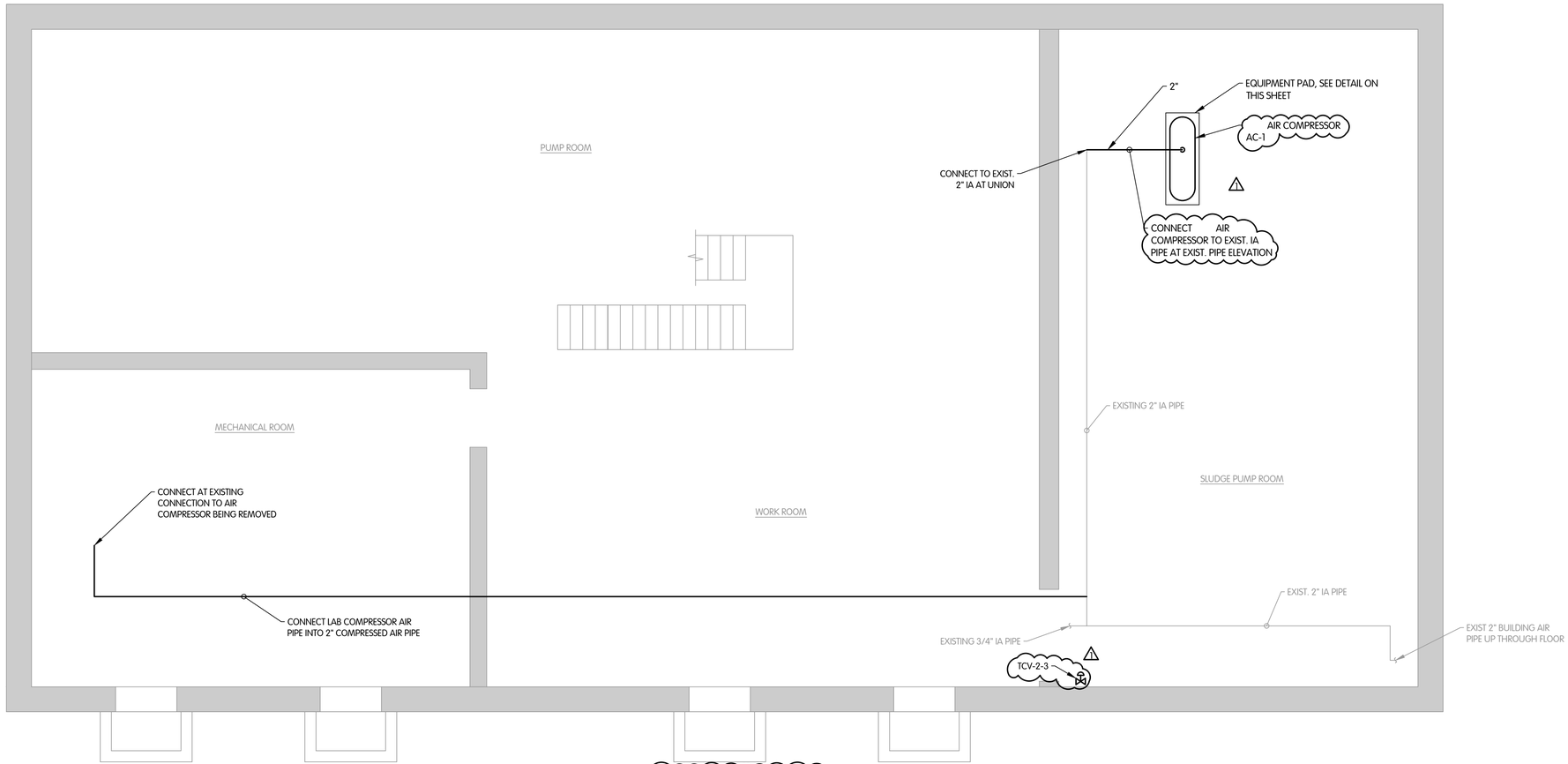
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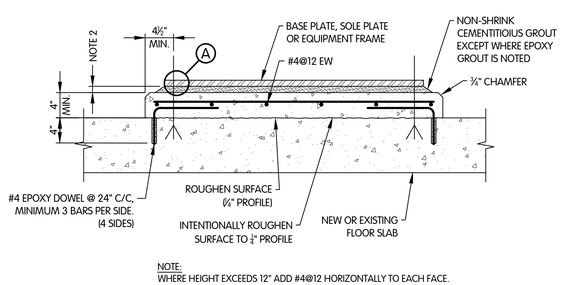
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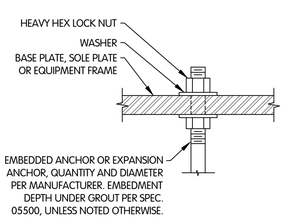



## BASEMENT PLAN
1/4" = 1'-0"

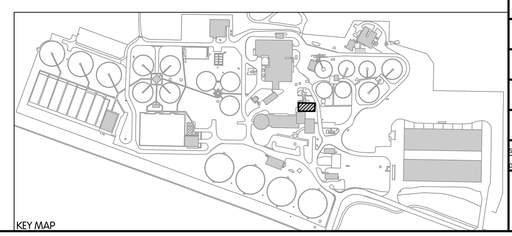



NOTE:
WHERE HEIGHT EXCEEDS 12" ADD #4@12 HORIZONTALLY TO EACH FACE.

## EQUIPMENT BASE PAD DETAIL




## DETAIL A
(TYPICAL) 3"=1'-0"


KEY MAP

MECHANICAL
ADMINISTRATION BUILDING
BASEMENT PLAN
MECHANICAL ROOM

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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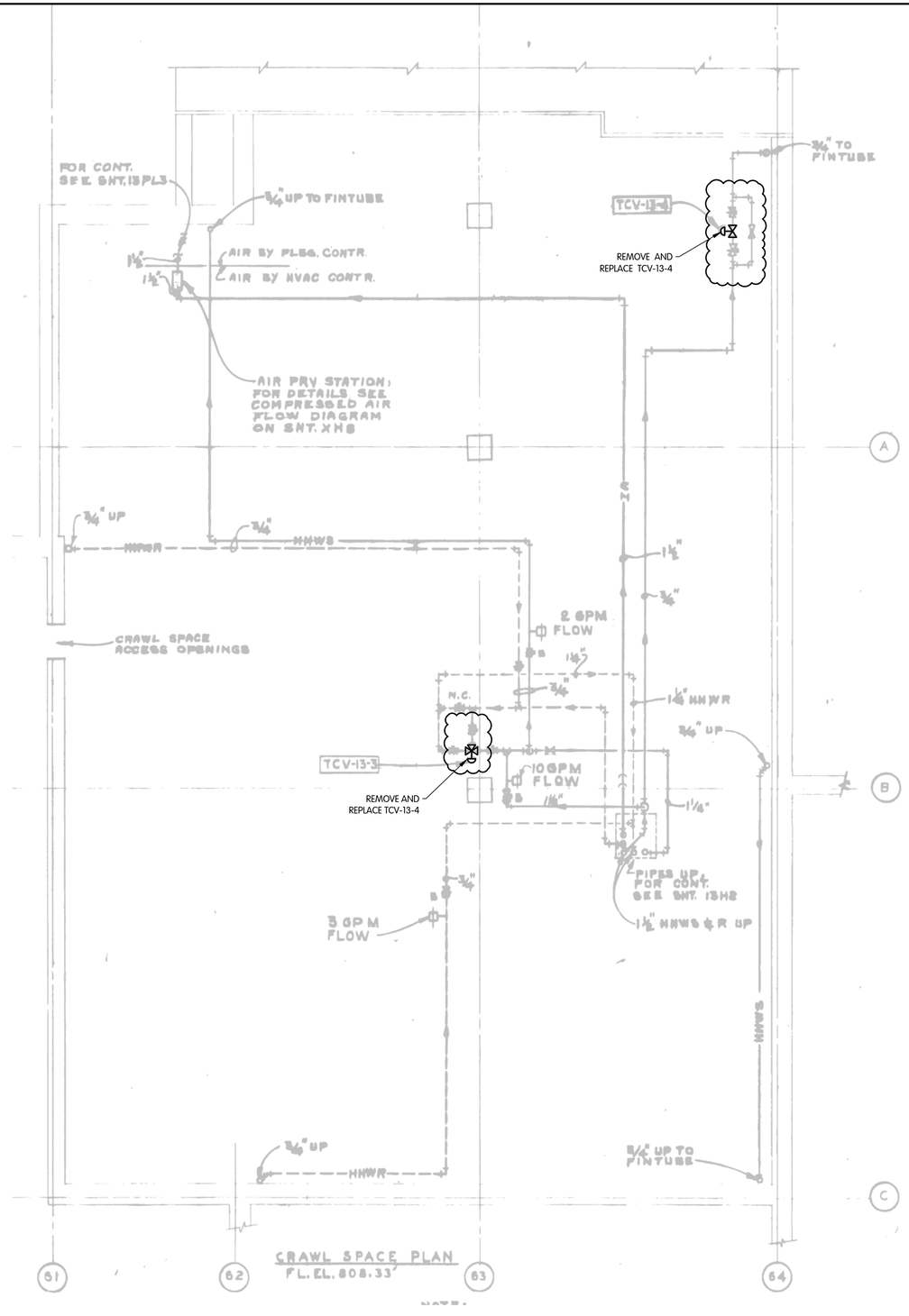
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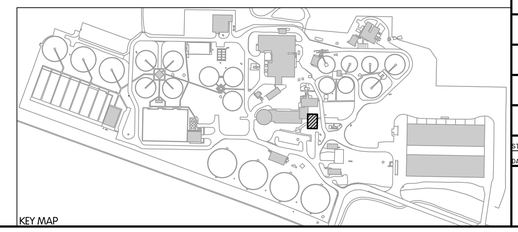
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## CRAWL SPACE PLAN

1/4" = 1'-0"




N

MECHANICAL
ADMINISTRATION BUILDING
CRAWL SPACE
OFFICE AREA

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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26 OF 34

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# SECTION 15760
# TERMINAL HEATING AND COOLING UNITS

## PART 1 GENERAL

### 1.01 SCOPE

A. Section Includes:

1. Fan coil units.

### 1.02 REFERENCES

A. Air-Conditioning and Refrigeration Institute:

1. AHRI 410 – Forced-Circulation Air-Conditioning and Air-Heating Coils.

B. Sheet Metal and Air Conditioning Contractors:

1. SMACNA – HVAC Duct Construction Standard – Metal and Flexible.

### 1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. The Contractor shall indicate all variances from the requirements of the Contract Documents.

b. Descriptive information of all mechanical and electrical items used in providing a complete job.

c. Indicate cross sections of cabinets, grilles, bracing and reinforcing, and typical elevations. Indicate schedules of equipment and enclosures typically indicating length and number of pieces of element and enclosure, corner pieces, end caps, cap strips, access doors, pilaster covers.

d. Provide and submit manufacturer's product data including coil and frame configurations, materials of construction, dimensions, materials, rows, connections, and rough-in dimensions, mechanical and electrical service locations, capacities, and accessories or optional items.

e. Schematic wiring diagrams and electrical load requirements.

f. Shop Drawings shall include data for all equipment, piping, and valves, controls, accessories, and electrical apparatus to be supplied with equipment.

2. Information for the Record:

   a. Operation and maintenance manual. Submit installation instructions, servicing requirements, assembly views, lubrication instructions, and replacement parts list.

## 1.04 ELECTRICAL AND CONTROL COORDINATION

A. All equipment shall be powered electrically and wired as required in Division 16.

## 1.05 PROTECTION FROM DAMAGE

A. Delivery, Handling, and Storage:

1. Material delivery, handling, and storage shall meet the requirements of Section 01350.

2. All equipment and appurtenances shall be accepted on site in factory packaging. Inspect for damage.

B. After Installation:

1. Protect installed equipment from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

2. Suitable covers shall be placed to protect against any equipment damage after it is installed and during the final days of construction.

3. Before acceptance, all covers and protective material shall be removed and the equipment cleaned and ready for use.

## 1.06 PROTECTION FROM DAMAGE

A. Delivery, Handling, and Storage:

1. Accept heaters and controls on site in factory packaging. Inspect for damage.

## 1.07 DELIVERY, STORAGE, AND HANDLING

A. Accept units on site in factory packing. Inspect for damage. Store under roof.

B. Protect coil fins from crushing and bending by leaving in shipping cases until installation, and by strong indoors. Protect coils from entry of dirt and debris with pipe caps or plugs.

## 1.08 DELIVERY, STORAGE, AND HANDLING

A. Conform to applicable code for internal wiring of factory-wired equipment.

B. Heating units shall be UL listed and comply with the requirements of the National Electrical Code.

C. Fans shall be AMCA certified.

D. Contractor shall check electrical, architectural, and piping drawings for possible interferences and shall coordinate installation with other contractors.

E. Equipment shall be as indicated in the Specifications and on the Drawings.

F. Water coils shall be ARI certified.

G. ~~Where noted, all coils shall be coated externally with a thermal setting, two coat, corrosive resistance to sulfides coating such as Liberty Plastics & Metals, Libcote-7, Heresite P-403 or equal. Coil to be completely degreased and free of paint and soft solder. Unit to be coated by a dip and baking operation and repeated for a 2-mil minimum thickness. Coating to reduce heat transfer rate by less than 5% with a thermal conductivity of 7000 Btuh/mil-SF. Application when finished must meet requirements of the USDA and FDA.~~

## PART 2 PRODUCTS

### 2.01 FAN COIL UNITS

A. Manufacturers: Trane, Carrier, or equal.

B. Coils: Evenly spaced aluminum fins mechanically bonded to copper tubes, designed for 200 psi and 220 degrees F.

C. Cabinet: 0.0598-inch-thick steel with exposed corners and edges rounded, easily removed panels, glass fiber insulation.

D. Finish: Factory applied baked enamel of color as selected on visible surfaces on visible surfaces of enclosure or cabinet.

E. Fans: Centrifugal forward-curved double-width wheels, statically and dynamically balanced, direct driven.

F. Motor: Tap wound multiple speed permanent split capacitor with sleeve bearings, resiliently mounted.

G. Control: Multiple speed switch, factory wired, located in cabinet.

H. Filter: Easily removed 1-inch-thick glass fiber throw-away type, located to filter air before coil.

I. Capacity: As scheduled, based on 65 degrees F entering temperature, 180 degrees F average water temperature.

### 2.02 CONTROLS

A. Controls: Refer to Section 15905.

### 2.03 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Disconnect Switch: Factory mount on equipment.

## PART 3 EXECUTION

### 3.01 EXAMINATION

A. For recessed units, verify recess dimensions are correct size.

B. Verify wall construction is ready for installation.

C. Verify ductwork is ready for installation.

D. Verify concealed blocking and supports are in place and connections are correctly located.

E. Verify that space is ready to receive Work and opening dimensions are as instructed by the unit manufacturer.

F. Verify required utilities are available, in proper location, and ready for use.

### 3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install air coils in ducts and casings in accordance with SMACNA HVAC Duct Construction Standards, Metal and Flexible. Refer to Section 15810.

C. Protect coils to prevent damage to fins and flanges. Comb out bent fins.

D. Install coils level.

E. Make connections to coils with unions and flanges.

F. On water coils, install shut-off valve on supply piping and lockshield balancing valve on return piping. Locate water supply at bottom of supply header and return water connection at top. Install float operated automatic air vents at high points complete with stop valve. Install water coils to be drainable and install drain connection at low points. Refer to Section 15180.

G. On water and glycol heating coils, connect water supply piping to leaving airside of coil (counter flow arrangement). Refer to Section 15180.

H. Insulate headers located outside airflow, insulate as specified for piping. Refer to Section 15081.

I. Install equipment exposed to finished areas after walls and ceilings are finished and painted. Avoid damage.

J. Protection: Install finished cabinet units with protective covers during remainder of construction.

K. Fan-Coil Units: install at locations as indicated on Drawings. Coordinate to assure correct recess size for recessed units.

## 3.03 CLEANING

A. After construction is completed, including painting, clean exposed surfaces of units. Vacuum clean coils and inside of cabinets.

B. Touch-up marred or scratched surfaces of factory-finished cabinets, using finish materials furnished by manufacturer.

C. Install new filters.

D. Details of material and equipment installation shall conform to manufacturer's latest printed instructions, where not covered by the Drawings and Specifications.

E. Terminal heating and cooling units shall be installed complete as shown on the Drawings and as specified.

F. Hang unit heaters from building structure, with pipe hangers anchored to building, not from piping. Mount as high as possible to maintain greatest headroom unless otherwise indicated.

G. Provide hydronic units with shut-off valves on supply and lockshield balancing valve on return piping. If not easily accessible, extend vent to exterior surface of cabinet for easy servicing. For cabinet unit heaters, fan soil units, and unit heaters, provide float-operated, automatic air vents with stop valve.

H. Install electric heating equipment including devices furnished by manufacturer but not factory mounted. Furnish copy of manufacturer's wiring diagram submittal. Verify that electrical wiring installation is in accordance with manufacturer's submittals and installation requirements of Division 16 Sections.

I. Connect hot water supply and return or steam supply and condensate return piping to coils and test for leaks.

## 3.04 TESTING AND ADJUSTING

A. When the terminal and heating cooling unit systems are complete and ready to be turned over and before final acceptance, Contractor shall run systems for the purpose of testing and adjusting. Air shall circulate freely and there shall be no evidence of leaks or air binding.

B. All equipment shall run at full capacity without undesirable singing, undue vibration, or objectionable noise. All equipment shall deliver specified capacities and Contractor shall deliver to Engineer complete data sheets covering results of tests.

## 3.05 PROTECTION

A. Protect units with protective covers during balance of construction.

### 3.06 CLEANING

A. After construction is completed including painting, clean exposed surfaces of units. Vacuum clean coils and inside of cabinets.

B. Touch up marred or scratched surfaces of factory-finished cabinets using finish materials furnished by manufacturer.

C. Install new filters.

### 3.07 MOUNTING AND ATTACHMENT

A. The Contractor shall provide all devices and materials such as expansion bolts, foundation bolts, screws, channels, angles, and other attaching means required to fasten all equipment and materials to be installed on or in concrete bases or structures which are existing or provided under other sections of the Contract. Foundation bolts shall be set by using manufacturer's templates.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

# CITY OF BATTLE CREEK

## ADDENDUM # 2

**IFB#: 2024-042B**

**TITLE: WWTP Administration Building HVAC Improvements**

**ADDENDUM ISSUED: February 29, 2024**

**The following changes, additions and deletions have been provided:**

**The following Addendum 2 has been provided from Jones and Henry**

**Due date/time/method remains the same.**

**This addendum must be acknowledged on the Offer and Acceptance or Offer to Contract page of your bid/proposal or your bid/proposal may be deemed non-responsive.**

Jones & Henry
ENGINEERS, LTD.

# INVITATION FOR BID NO. 2024-042B
City of Battle Creek, Michigan
WWTP Administration Building HVAC Improvements

# ADDENDUM 02

February 28, 2024

Planholders on the City of Battle Creek, Michigan – WWTP Administration HVAC project are hereby notified of the following amendments to the Contract Documents. This Addendum is hereby made a part of the Contract Documents.

## REFERENCE NOTES

- None

## SPECIFICATIONS

Replace the following specification(s) with the attached:

- 15720 – Indoor Central-Station Air-Handling Units
    - 2.11 Adds coil coating to condensing units.

**RECEIPT OF THIS ADDENDUM MUST BE ACKNOWLEDGED IN SECTION II – OFFER TO CONTRACT, PAGE 11 OF 35 OF THE CITY OF BATTLE CREEK PURCHASING, INVITATION TO BID NO. 2024-042B.**


4791 Campus Drive, Kalamazoo, Michigan 49008 – *269.353.9650*

# SECTION 15720
# INDOOR CENTRAL-STATION AIR-HANDLING UNITS

## PART 1 GENERAL

### 1.01 SCOPE

A. Section includes modular factory fabricated air-handling units, condensing units, and accessories.

B. This Section shall include but not limited to all appurtenances required for complete installation.

C. All Work performed under this Section shall comply and be in accordance with all approved trade practices and manufacturer's recommendations.

D. Additional equipment and installation requirements in Division 15 as included shall be provided by this Contract.

E. Additional product requirements are specified in Section 01350.

### 1.02 REFERENCES

A. American Bearing Manufacturers Association:

1. ABMA 9 – Load Ratings and Fatigue Life for Ball Bearings.
2. ABMA 11 – Load Ratings and Fatigue Life for Roller Bearings.

B. Air Movement and Control Association International, Inc.:

1. AMCA 99 – Standards Handbook.
2. AMCA 210 – Laboratory Methods of Testing Fans for Aerodynamic Performance Rating.
3. AMCA 300 – Reverberant Room Method for Sound Testing of Fans.
4. AMCA 301 – Methods for Calculating Fan Sound Ratings from Laboratory Test Data.
5. AMCA 500 – Test Methods for Louvers, Dampers, and Shutters.

C. Air-Conditioning and Refrigeration Institute:

1. AHRI 410 – Forced-Circulation Air-Cooling and Air-Heating Coils.
2. AHRI 430 – Central-Station Air-Handling Units.
3. AHRI 610 – Central System Humidifiers for Residential Applications.
4. ARI Guideline D – Application and Installation of Central Station Air-Handling Units.

D. National Electrical Manufacturers Association:

1. NEMA MG 1 – Motors and Generators.

E. Sheet Metal and Air Conditioning Contractors:

1. SMACNA – HVAC Duct Construction Standard – Metal and Flexible.

F. Underwriters Laboratories Inc.:

1. UL 900 – Air Filter Units.
2. UL – Fire Resistance Directory.

## 1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:
    a. Indicate assembly, unit dimensions, weight loading, required clearances, construction details, field connection details, and electrical characteristics and connection requirements.
2. Product Data, Submit the following:
    a. Published Literature: Indicate capacities, ratings, gages and finishes of materials, and electrical characteristics and connection requirements.
    b. Filters: Data for filter media, filter performance data, filter assembly, and filter frames.
    c. Fans: Performance and fan curves with specified operating point plotted, power, RPM.
    d. Sound Power Level Data: Fan outlet and casing radiation at rated capacity.
    e. Dampers: Include leakage, pressure drop, and sample calibration curves. Indicate materials, construction, dimensions, and installation details.
    f. Electrical Requirements: Power supply wiring including wiring diagrams for interlock and control wiring. Indicate factory installed and field installed wiring.
3. Information for the Record:
    a. Operation and maintenance manual. Submit instructions for lubrication, filter replacement, motor and drive replacement, spare parts lists, and wiring diagrams.

**1.04 QUALITY ASSURANCE**

A. Outside Air Damper Leakage: Test in accordance with AMCA 500.

**1.05 DELIVERY, STORAGE, AND HANDLING**

A. Delivery, Handling, and Storage:

1. Material delivery, handling, and storage shall meet the requirements of Section 01350.
2. Accept units and components on site in factory protective containers, with factory shipping skids and lifting lugs. Inspect for damage.
3. Protect units from weather and construction traffic by storing in dry, roofed location.

**1.06 EXTRA MATERIALS**

A. Furnish two spare sets of fan belts for each unit.

B. Furnish three spare sets of filters for each unit.

**PART 2 PRODUCTS**

**2.01 AIR HANDLING UNITS**

A. Manufacturers:

1. Trane Technologies.
2. Carrier Corporation.
3. Daikan/McQuay.
4. Or equal.

B. Configuration: Fan section plus accessories, including:

1. Cooling coil section.
2. Heating coil.
3. Filter section.
4. Combination filter section.
5. Face and bypass damper section.
6. Multi-zone damper section.

C. Performance Base: Sea level pressure or altitude.

D. Fabrication: Conform to AMCA 99 and AHRI 430.

## 2.02 CASING

A. Channel base and drain pan of welded steel. Assemble sections with gaskets and bolts.

B. Outside Casing:

1. Galvanized Steel: 0.0635 inch.

C. Inside Casing:

1. Galvanized Steel: Solid, 0.0276 inch thick.

D. Floor Plate:

1. Galvanized Steel: 1.382 inch thick.

E. Insulation: Neoprene coated, glass fiber, applied to internal surfaces with adhesive and weld pins with exposed edges of insulation coated with adhesive.

1. 'K' factor at 75 degrees F: Maximum 0.077 Btuh inch/ sq ft/ degrees F.

F. Finish: Baked enamel Finish: Manufacturers standard paint on exterior.

G. Inspection Doors: galvanized steel for flush mounting, with gasket, latch, and handle assemblies and 12 x 12-inch inspection window of 1/4 inch thick Plexiglas. Furnish welded channel frame to set door out from casing to permit external insulation.

H. Lights: Located in accessible sections suitable for damp locations with wire guards, factory wired to switch and pilot light and duplex outlet mounted on casing exterior. In humidifier sections, furnish lights suitable for wet locations.

I. Drain Pans: Double thickness galvanized steel with welded corners. Cross break and pitch to drain connection. Furnish drain pans under cooling coil section.

J. Bottom Inlet Units: Furnish steel or aluminum walking grate on structural supports.

K. Strength: Furnish structure to brace casings for suction pressure of 2.5-inch wg, with maximum deflection of 1 in 200.

## 2.03 FANS

A. Type: plenum type fan.

B. Performance Ratings: Conform to AMCA 210 and label with AMCA Certified Rating Seal.

C. Bearings: Self-aligning, grease lubricated, ball or roller bearings with lubrication fittings extended to exterior of casing with [plastic] [aluminum] [copper] tube and grease fitting rigidly attached to casing.

D. Mounting: Locate fan and motor internally on welded steel base coated with corrosion resistant paint. Factory mount motor on slide rails. Furnish access to motor, drive, and bearings through removable casing panels or hinged access doors. Mount base on vibration isolators.

E. Fan Modulation: Variable frequency drive (VFD). Refer to Division 16.

F. Flexible Connection: Separate unit from connecting ductwork.

## 2.04 MOTORS

A. Refer to Division 16 for motor requirements.

## 2.05 BEARINGS AND DRIVES

A. Bearings: Pillow block type, self-aligning, grease-lubricated ball bearings, with ABMA 11, L-10 life at 250,000 hours.

B. Shafts: Solid, hot rolled steel, ground and polished, with key-way, and protectively coated with lubricating oil.

C. V-Belt Drive: Cast iron or steel sheaves, dynamically balanced, bored to fit shafts, and keyed. Variable and adjustable pitch sheaves for motors 15 hp and under selected so required rpm is obtained with sheaves set at mid-position; fixed sheave for 20 hp and over, matched belts, and drive rated as recommended by manufacturer or minimum 1.5 times nameplate rating of motor.

D. Belt Guard: Fabricate to SMACNA Standard; 0.106 inch thick, ¾-inch diamond mesh wire screen welded to steel angle frame or equivalent, prime coated. Secure to fan or fan supports without short circuiting vibration isolation, with provision for adjustment of belt tension, lubrication, and use of tachometer with guard in place.

## 2.06 COILS

A. Casing with access to both sides of coils. Enclose coils with headers and return bends fully contained within casing. Slide coils into casing through removable end panel.

B. Drain Pans: 24-inch downstream of coil and down spouts for cooling coil banks more than one coil high.

C. Eliminators: Three break of galvanized steel, mounted over drain pan.

D. Air Coils: Certify capacities, pressure drops, and selection procedures in accordance with AHRI 410.

E. Fabrication:

1. Tubes: 5/8-inch OD seamless copper expanded into fins, brazed joints.

2. Fins: Aluminum.

3. Casing: Die formed channel frame of galvanized steel.

F. Water Heating Coils:

1. Headers: Cast iron, seamless copper tube, or prime coated steel pipe with brazed joints.

2. Configuration: Drainable, with threaded plugs for drain and vent; serpentine type with return bends on smaller sizes and return headers on larger sizes.

G. Refrigerant Coils:

1. Headers: Seamless copper tubes with silver brazed joints.

2. Liquid Distributors: Brass or copper venturi distributor with seamless copper distributor tubes.

3. Configuration: Down feed with bottom suction.

**2.07 FILTERS**

A. Filter Box: Section with filter guides, access doors from both sides, for side loading with gaskets and blank-off plates.

B. Angle: 2-inch disposable panel filters.

**2.08 CONDENSING UNIT**

A. Manufacturers: Trane Model TTA, Carrier, York, or equal.

B. General: Factory assembled and tested air-cooled condensing units, consisting of casing, compressors, condensers, coils, condenser fans and motors, and unit controls.

C. Unit Casings: Exposed casing surfaces constructed of galvanized steel with manufacturer's weather resistant baked enamel finish. Designed for outdoor installation and complete with weather protection for components and controls, and complete with removable single sided maintenance access panels with lifting handles for required access to compressors, controls, condenser fans, motors, and drives.

D. Compressor: Single refrigeration circuit with single direct drive hermetic scroll compressor resiliently mounted, with positive lubrication, suction gas-cooled motors, crankcase heaters, and internal temperature and current sensitive motor overload protection.

E. Condenser Coil: Constructed of aluminum flat tube with microchannels, factory leak and pressure tested.

F. Condenser Fans and Drives: Direct drive propeller fans statically and dynamically balanced. Wired to operate with compressor. Permanently lubricated ball bearing type motors with built-in thermal overload protection.

G. Controls: Furnish operating and safety controls including high- and low-pressure cutouts. Control transformer. Furnish magnetic contactors for compressor and condenser fan motors.

H. Condensing Unit Accessories:

1. Controls to provide low ambient cooling to 0 degrees F.

2. Time delay relay.

3. Anti-short cycle timer.
4. Disconnect switch.
5. Vibration Isolators: Spring type.
6. Hot gas bypass kit.
7. Suction and discharge pressure gauges.

I. Refrigeration specialties: Furnish the following for each circuit:

1. Charge of compressor oil.
2. Holding charge of refrigerant.
3. Replaceable core type filter drier.
4. Liquid line sight glass and moisture indicator.
5. Shut-off valves on suction and liquid piping.
6. Liquid line solenoid valve.
7. Charging valve.
8. Oil level sight glass.
9. Hot gas muffler.
10. Pressure relief device.
11. Refrigerant: Furnish charge of refrigerant R-410a.

**2.09 CONTROLS**

A. Controls: Refer to Section 15905.

**2.10 ELECTRICAL CHARACTERISTICS AND COMPONENTS**

A. Disconnect Switch: Factory mount on equipment.

**2.11 COATING**

A. The condenser coils shall be coated with Blygold PoluAI XT, or equal.

B. The coating product manufacturer shall be able to document a Class 5B result on a Cross Hatch Adhesion Test (ASTM D5339) and the successful completion of accelerated product testing for a minimum 11,000 hours salt spray (ASTM B117) tests.

C. Blygold® PoluAI XT aluminum-impregnated polyurethane coil coating shall be applied ensuring total penetration and coverage without bridging or significantly affecting the heat transfer ability of the coil. The total dry film thickness of the coating shall be 25 microns. The coating shall provide inherent protection against ultraviolet radiation and have a dry temperature resistance from -4°F to 302° F.

D. The u-bends and headers of the coils shall be coated with Sherwin-Williams polyamide epoxy prime coating, or equal.

E. U-bends and headers shall be coated with a dry film thickness of 100-200 microns. Plus, a topcoat of Sherwin-Williams UV-resistant high-gloss acrylic polyurethane, or equal, topcoat with a dry film thickness of 50-75 microns. The coatings shall be rated for at least 9,000 hours salt spray.

## PART 3 EXECUTION

### 3.01 INSTALLATION

A. Install in accordance with AHRI 430.

B. Install flexible connections between unit and inlet and discharge ductwork. Install metal bands of connectors parallel with minimum 1 inch flex between ductwork and fan while running. Refer to Section 15820.

C. Install assembled units with vibration isolators. Install isolated fans with resilient mountings and flexible electrical leads. Install restraining snubbers as required. Adjust snubbers to prevent tension in flexible connectors when fan is operating.

D. Install floor mounted units on concrete housekeeping pads at least 4 inches high and 6 inches wider than unit.

E. Provide fixed sheaves required for final air balance.

F. Insulate coil headers located outside airflow as specified for piping. Refer to Section 15081.

G. Install condensate piping with trap and route from drain pan to nearest floor drain.

### 3.02 INSTALLATION - REFRIGERANT COILS

A. Install sight glass in liquid line within 12 inches of coil.

### 3.03 INSTALLATION HOT WATER HEATING COIL

A. Make connections to coils with unions or flanges.

B. Connect water supply to leaving airside of coil (counter flow arrangement).

C. Locate water supply at bottom of supply header and return water connection at top.

D. Install water coils to allow draining and install drain connection at low points.

E. Install the following piping accessories on hot water piping connections. Refer to Section 15120 and Section 15180.

F. Install valves and piping specialties in accordance with details as indicated on Drawings.

G. Install automatic air vents at high points complete with shutoff valve. Refer to Section 15180.

### 3.04 MANUFACTURER'S FIELD SERVICES

A. Furnish services of factory trained representative for minimum of one days to leak test, refrigerant pressure test, evacuate, dehydrate, charge, start-up, calibrate controls, and instruct Owner on operation and maintenance.

### 3.05 CLEANING

A. Vacuum clean coils and inside of unit cabinet.

B. Install new throwaway filters in units at Substantial Completion.

### 3.06 DEMONSTRATION

A. Demonstrate unit operation and maintenance.

B. Furnish services of manufacturer's technical representative for one 8-hour day to instruct Owner's personnel in operation and maintenance of units. Schedule training with Owner, provide at least 7 days' notice to Engineer of training date.

### 3.07 PROTECTION OF FINISHED WORK

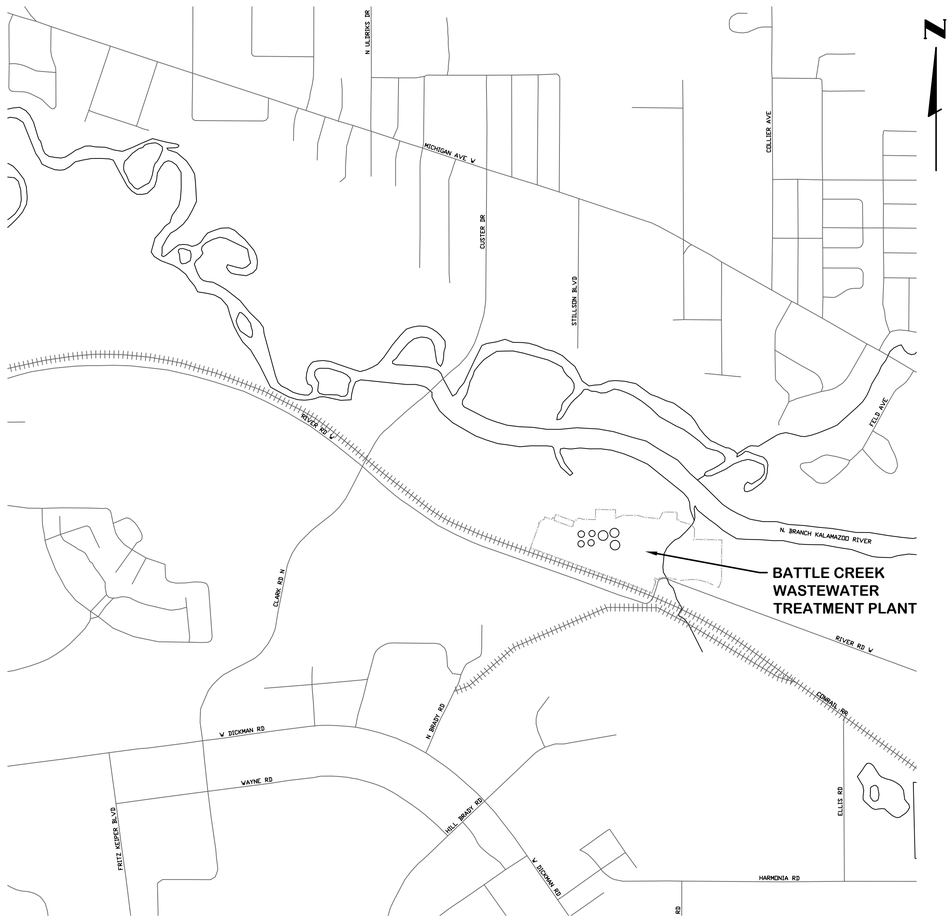
A. Do not operate units until ductwork is clean, filters are in place, bearings lubricated, and fan has been test run under observation.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION




LOCATION MAP

0 500 1000 2000

SCALE IN FEET

**ENGINEER:**
**JONES & HENRY ENGINEERS, LTD.**
**4791 CAMPUS DRIVE**
**KALAMAZOO, MICHIGAN 49008**

**OWNER:**
**BATTLE CREEK WASTEWATER TREATMENT PLANT**
**2000 RIVER RD W**
**BATTLE CREEK, MI 49037**

CITY OF BATTLE CREEK, MICHIGAN

# WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

OCTOBER 2023

## COMMISSION MEMBERS

**MARK BEHNKE - MAYOR**

**SHERRY SOFIA - VICE MAYOR**
**JENASIA MORRIS**
**PATRICK O'DONNELL**
**CHRISTOPHER SIMMONS**
**JIM LANCE**
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**JAKE W. SMITH**

## CITY OF BATTLE CREEK ADMINISTRATION

**STEPHEN SKALSKI, PE - DPW DIRECTOR**
**JARRET GEERING, PE - CITY ENGINEER**
**PERRY HART - UTILITY ADMINISTRATOR**
**KURT TRIBBETT - ENGINEERING ADMINISTRATOR**
**ROBERT KOEHN - CHIEF OPERATOR**

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JOB NO. 008-8021.001
STATUS: ISSUED FOR BID
DATE: NOVEMBER 2023

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10/19/2023 12:04:14 PM - CLENDER
12/7/2023 11:06 AM

## STANDARD ABBREVIATIONS

| | | | |
|---|---|---|---|
| ALUM. | ALUMINUM | MAX. | MAXIMUM |
| AVE. | AVENUE | MH | MANHOLE |
| BM | BENCH MARK | MJ | MECHANICAL JOINT |
| BF | BLIND FLANGE | MIN. | MINIMUM |
| BLDG. | BUILDING | N | NORTH |
| C/C | CENTER TO CENTER | NTS | NOT TO SCALE |
| CK'D PL. | CHECKERED PLATE | OC | ON CENTER |
| CONC. | CONCRETE | OD | OUTSIDE DIAMETER |
| DIA. | DIAMETER | PE | PLAIN END |
| DWG. | DRAWING | R | RADIUS |
| EMB. | EMBEDMENT | RR | RAILROAD |
| EW | EACH WAY | S | SOUTH |
| EF | EACH FACE | SCH. | SCHEDULE |
| ECC. | ECCENTRIC | SH. | SHEET |
| EL. | ELEVATION | SS | STAINLESS STEEL |
| E | EAST | ST. | STREET |
| EXIST. | EXISTING | STA. | STATION |
| F | FLANGE | T&B | TOP AND BOTTOM |
| ' OR FT. | FEET OR FOOT | TYP. | TYPICAL |
| GAL. | GALLON | VERT. | VERTICAL |
| GR. | GRADE | W | WEST |
| HOR. | HORIZONTAL | W/ | WITH |
| " OR IN. | INCH | | |
| ID | INSIDE DIAMETER | | |
| INV. EL. | INVERT ELEVATION | | |

* SEE DISCIPLE LEGEND SHEETS FOR ADDITIONAL ABBREVIATIONS.

## PIPING ABBREVIATIONS

### MATERIAL

| | |
|---|---|
| ABS | ABS ACRYLONITRILE-BUTADIENE-STYRENE |
| ABSC | ABS COMPOSITE SEWER PIPE (TRUSS PIPE) |
| BSP | BLACK STEEL PIPE |
| CIP | CAST IRON PIPE |
| CISP | CAST IRON SOIL PIPE |
| CMP | CORRUGATED METAL PIPE |
| CPP | CONCRETE PRESSURE PIPE |
| CPT | CORRUGATED POLYETHYLENE TUBING |
| CPVC | CHLORINATED POLYVINYL CHLORIDE PIPE |
| CU | COPPER TUBING OR PIPING |
| DIP | DUCTILE IRON PIPE |
| FRP | FIBERGLASS REINFORCED PIPE |
| GLDIP | GLASS-LINED DUCTILE IRON PIPE |
| GSP | GALVANIZED STEEL PIPE |
| HDPE | HIGH DENSITY POLYETHYLENE |
| PCP | PLAIN CONCRETE PIPE |
| PE | POLYETHYLENE |
| PP | POLYPROPYLENE |
| PPVC | PERFORATED POLYVINYL CHLORIDE PIPE |
| PVC | POLYVINYL CHLORIDE PIPE |
| PVCP | PERFORATED VITRIFIED CLAY PIPE |
| PVDF | POLYVINYLIDENE FLUORIDE (KYNAR) |
| RCP | REINFORCED CONCRETE PIPE |
| SP | STEEL PIPE |
| SSP | STAINLESS STEEL PIPE |
| SWS | SPIRAL WELDED STEEL |
| UPVC | UNPLASTICIZED POLYVINYL CHLORIDE PIPE |
| VCP | VITRIFIED CLAY PIPE |

### WWTP SERVICE

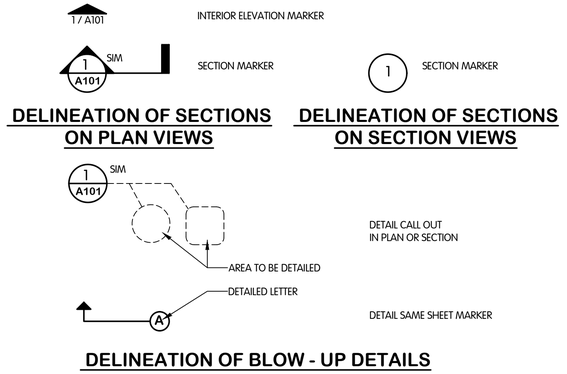
| | |
|---|---|
| AA | AERATION AIR |
| AL | ALUM |
| C | CABLE (UNDERGROUND)* |
| CA | COMPRESSED AIR |
| CLG | CHLORINE GAS |
| CL | CHLORINE SOLUTION |
| CO | COMBINED SEWER |
| DE | DECANT |
| DG | DIGESTER GAS |
| DS | DIGESTED SLUDGE |
| DW | DILUTION WATER |
| DCW | DOMESTIC COLD WATER |
| DHW | DOMESTIC HOT WATER |
| DTW | DOMESTIC TEMPERED WATER |
| EW | EFFLUENT WATER |
| E | ELECTRICAL (UNDERGROUND)* |
| ED | EQUIPMENT DRAIN |
| FC | FERRIC/FERROUS CHLORIDE |
| FO | FIBER OPTIC |
| FE | FINAL EFFLUENT |
| FI | FILTRATE |
| FM | FORCE MAIN |
| FD | FOUNDATION DRAIN |
| FU | FUEL OIL |
| GR | GREASE |
| HWR | HOT WATER RETURN |
| HWS | HOT WATER SUPPLY |
| IA | INSTRUMENT AIR |
| IC | IRON CHLORIDE |
| ML | MIXED LIQUOR |
| NG | NATURAL GAS |
| NPW | NON POTABLE WATER |
| P | POLYMER |
| PE | PRIMARY EFFLUENT |
| PS | PRIMARY SLUDGE |
| RAS | RETURN ACTIVATED SLUDGE |
| RS | RAW SEWAGE |
| RW | RAW WATER |
| REF | REFRIGERANT |
| RD | ROOF DRAIN |
| SA | SANITARY SEWER |
| SB | SECONDARY BYPASS |
| SC | SCUM |
| SE | SECONDARY EFFLUENT |
| S | SIGNAL (UNDERGROUND)* |
| SPA | SPARE |
| ST | STORM SEWER |
| SM | STEAM |
| SP | DIGESTER SUPERNATANT |
| TD | TANK DRAIN |
| T | TELEPHONE (UNDERGROUND)* |
| TE | THICKENER EFFLUENT |
| TS | THICKENED SLUDGE |
| TWAS | THICKENED WASTE ACTIVATED SLUDGE |
| VSA | VACUUM SANITARY SEWER |
| W | CITY WATER |
| WAS | WASTE ACTIVATED SLUDGE |

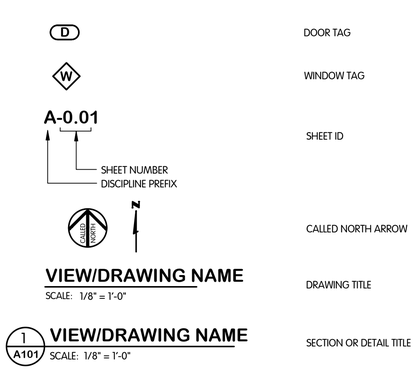
### WTP SERVICE

| | |
|---|---|
| AA | AERATION AIR |
| AL | ALUM |
| AMM | AMMONIA |
| BW | BACKWASH WASTE |
| C | CABLE (UNDERGROUND)* |
| CS | CARBON SLURRY |
| CAS | CAUSTIC SODA |
| CA | COMPRESSED AIR |
| CD | CHLORINE DIOXIDE |
| CLG | CHLORINE GAS |
| CL | CHLORINE SOLUTION |
| CO | COMBINED SEWER |
| DCW | DOMESTIC COLD WATER |
| DHW | DOMESTIC HOT WATER |
| DTW | DOMESTIC TEMPERED WATER |
| E | ELECTRICAL (UNDERGROUND)* |
| ED | EQUIPMENT DRAIN |
| FO | FIBER OPTIC |
| FL | FLOURIDE |
| FD | FOUNDATION DRAIN |
| FU | FUEL OIL |
| HWR | HOT WATER RETURN |
| HWS | HOT WATER SUPPLY |
| LS | LIME SLURRY |
| NG | NATURAL GAS |
| OZ | OZONE |
| PH | PHOSPHATE COMPOUND |
| P | POLYMER |
| PP | POTASSIUM PERMANGANATE |
| RCW | RAW CLARIFIED WATER |
| RW | RAW WATER |
| RD | ROOF DRAIN |
| SA | SANITARY SEWER |
| S | SIGNAL (UNDERGROUND)* |
| SL | SLUDGE |
| SOD | SODA ASH |
| SPA | SPARE |
| ST | STORM SEWER |
| SM | STEAM |
| SUD | SULFUR DIOXIDE |
| SUL | SULFURIC ACID |
| TD | TANK DRAIN |
| T | TELEPHONE (UNDERGROUND)* |
| VSA | VACUUM SANITARY SEWER |
| W | CITY WATER |

## DRAWING INDEX


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| 8021001R12 | 4 | R-1.2 | ADMINISTRATION BUILDING, MECHANICAL ROOM, BASEMENT FLOOR PLAN |
| 8021001R13 | 5 | R-1.3 | ADMINISTRATION BUILDING, MAINTENANCE AREA, FIRST FLOOR PLAN |
| 8021001R14 | 6 | R-1.4 | ADMINISTRATION BUILDING, SHOP/STORAGE ROOM, FIRST FLOOR PLAN |
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| 802100M07 | 13 | M-0.7 | HVAC CONTROLS |
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| 802100M11 | 18 | M-1.1 | HVAC, ADMINISTRATION BUILDING, FIRST FLOOR PLAN, OFFICE AND LABORATORY AREA |
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| 802100M15 | 22 | M-1.5 | HVAC, ADMINISTRATION BUILDING, ROOF PLAN, MECHANICAL ROOM |
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| | | | **ELECTRICAL** |
| 8021001E01 | 27 | E-0.1 | LEGEND, STANDARDS |
| 8021001E02 | 28 | E-0.2 | REMOVALS, MCC SINGLE LINE, LIGHTING PANELS |
| 8021001E03 | 29 | E-0.3 | MCC SINGLE LINE, LIGHTING PANELS |
| 8021001E11 | 30 | E-1.1 | ADMINISTRATION BUILDING, FIRST FLOOR PLAN, SHOP/STORAGE ROOM AND MAINTENANCE BUILDING |
| 8021001E12 | 31 | E-1.2 | ADMINISTRATION BUILDING, FIRST FLOOR PLAN, MAINTENANCE AND LABORATORY AREA |
| 8021001E13 | 32 | E-1.3 | ADMINISTRATION BUILDING, BASEMENT, FIRST AND ROOF PLAN, MECHANICAL ROOM |
| 8021001E14 | 33 | E-1.4 | SETTLED SEWAGE PUMP STATION, BASEMENT FLOOR PLAN |


NOTES:
- ACCURACY OF EXISTING ELEVATIONS AND DIMENSIONS IS NOT GUARANTEED. FIELD VERIFY BEFORE CONSTRUCTION.
- ALL NOTES ON THE DRAWINGS BEAR THE SAME IMPORTANCE. SOME NOTES AND DIMENSIONS ARE BOLD TO AID IN READING THE DRAWINGS IN AREAS OF HIGH GRAPHIC DENSITY.

DRAWING INDEX ABBREVIATIONS

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
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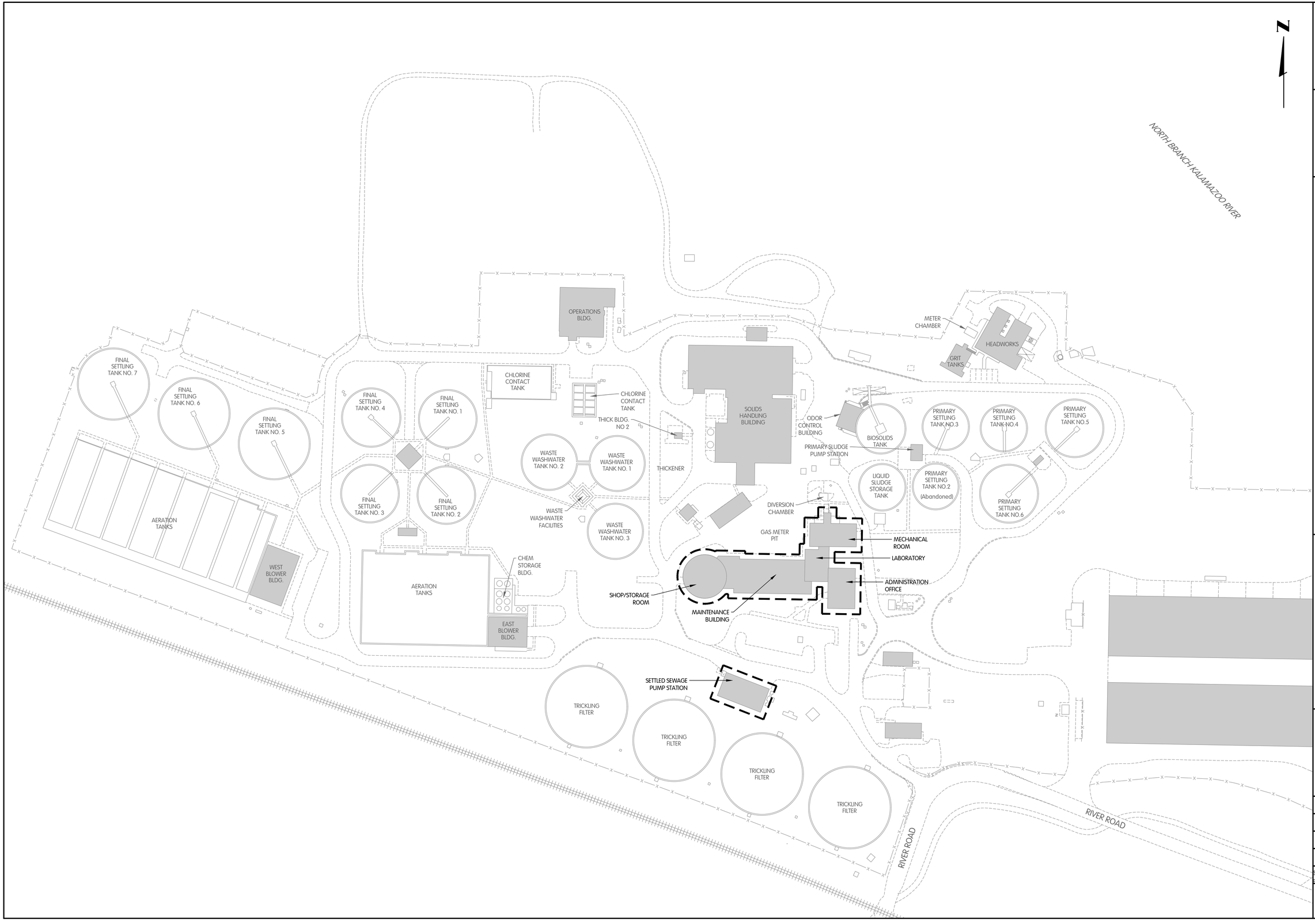

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SCALE AS NOTED
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| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| ASB | AJB | BPW |

STATUS: ISSUED FOR BID
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SHEET NO. G-0.1
1 OF 34


FTW-8021001G01-G-0.1 INDEX LEGENDS ABBRIVIATIONS GENERAL NOTES-ANSI-D
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EXISTING
SITE PLAN

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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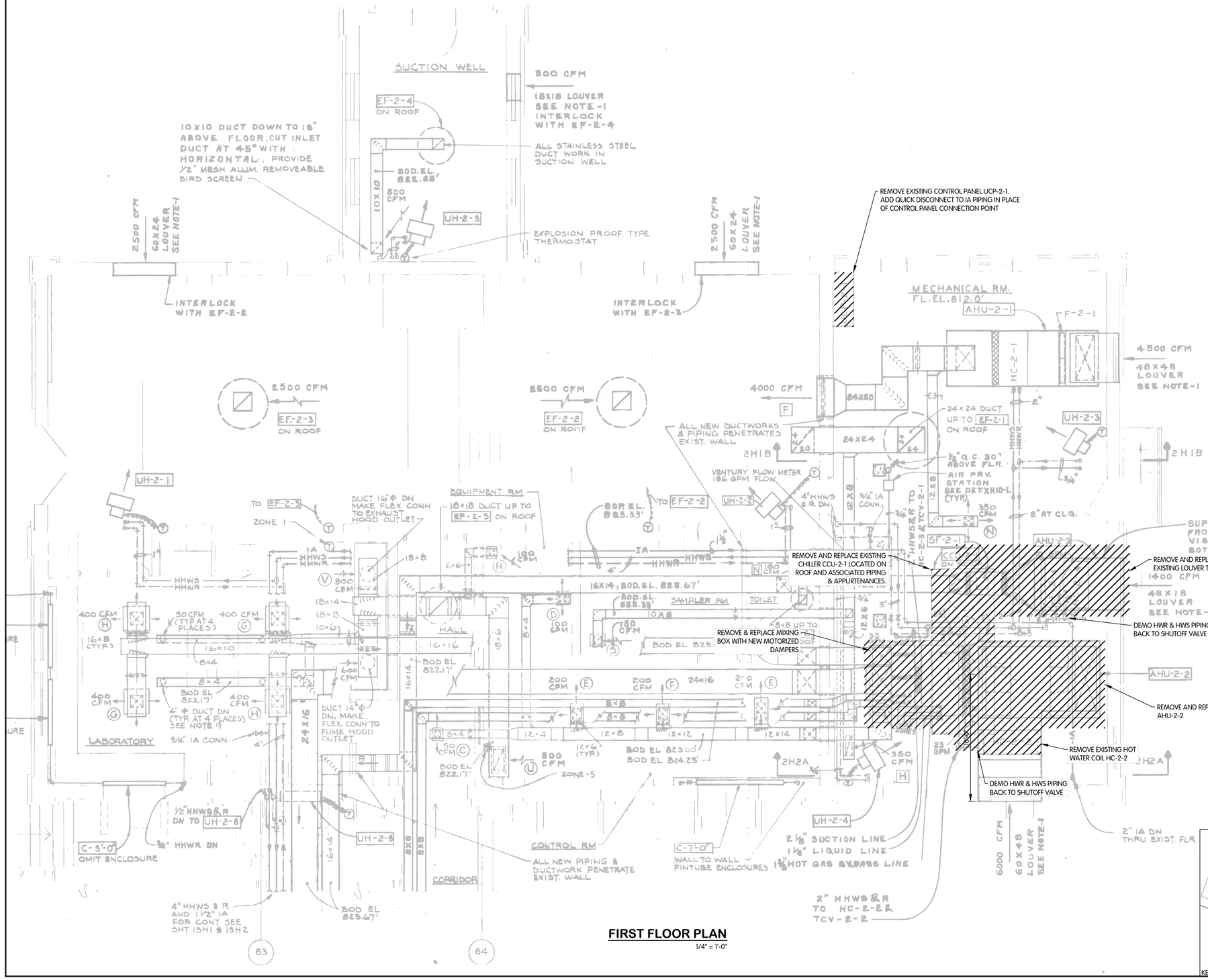
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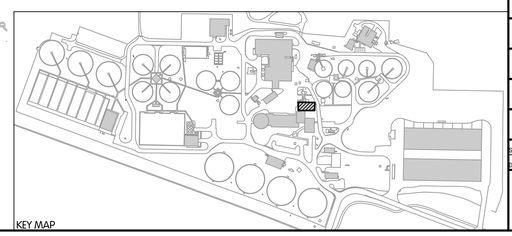
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G-1.1
2 OF 34

FTW-8021001I-G-1.1 SITE
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12/7/2023 11:04 AM




## FIRST FLOOR PLAN

1/4" = 1'-0"




N

REMOVALS
ADMINISTRATION BUILDING
MECHANICAL ROOM
FIRST FLOOR PLAN

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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JOB NO. 008-8021.001

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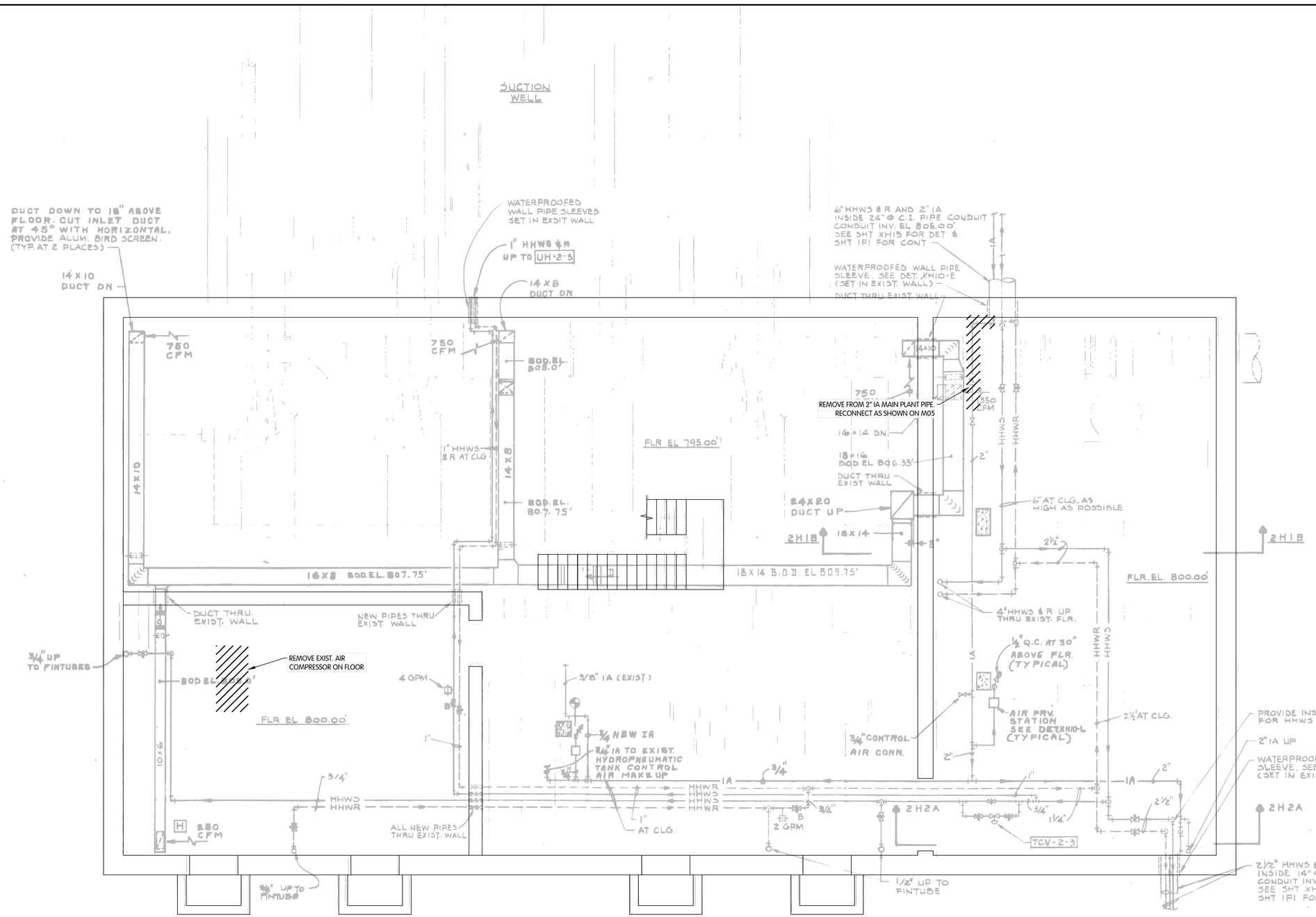
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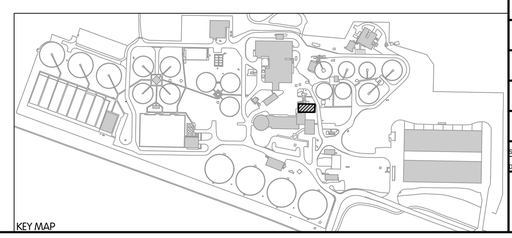
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3 OF 34

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**BASEMENT FLOOR PLAN**

1/4" = 1'-0"




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REMOVALS
ADMINISTRATION BUILDING
MECHANICAL ROOM
BASEMENT FLOOR PLAN

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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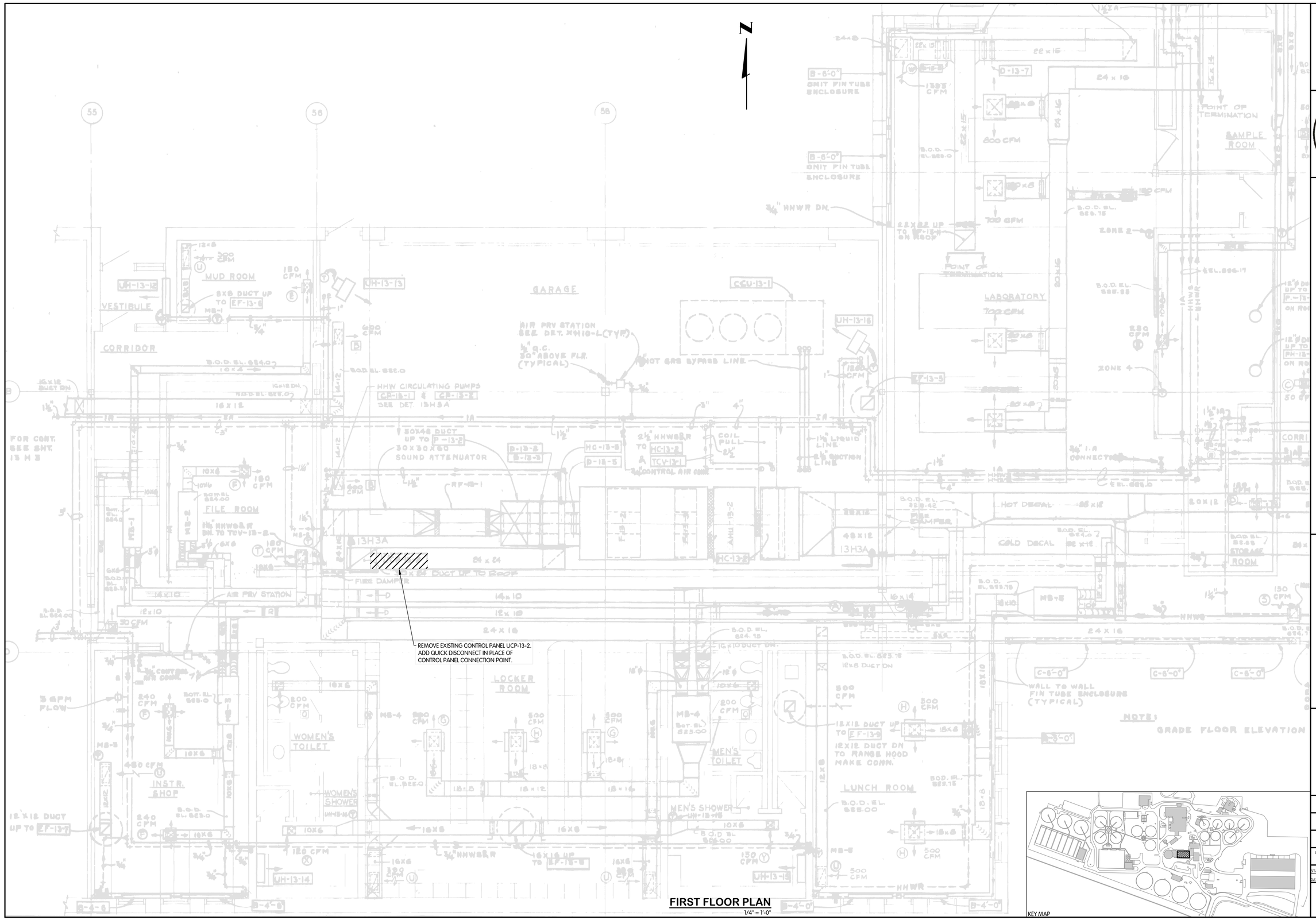
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4 OF 34

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## FIRST FLOOR PLAN

1/4" = 1'-0"

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REMOVALS
ADMINISTRATION BUILDING
MAINTENANCE AREA
FIRST FLOOR PLAN

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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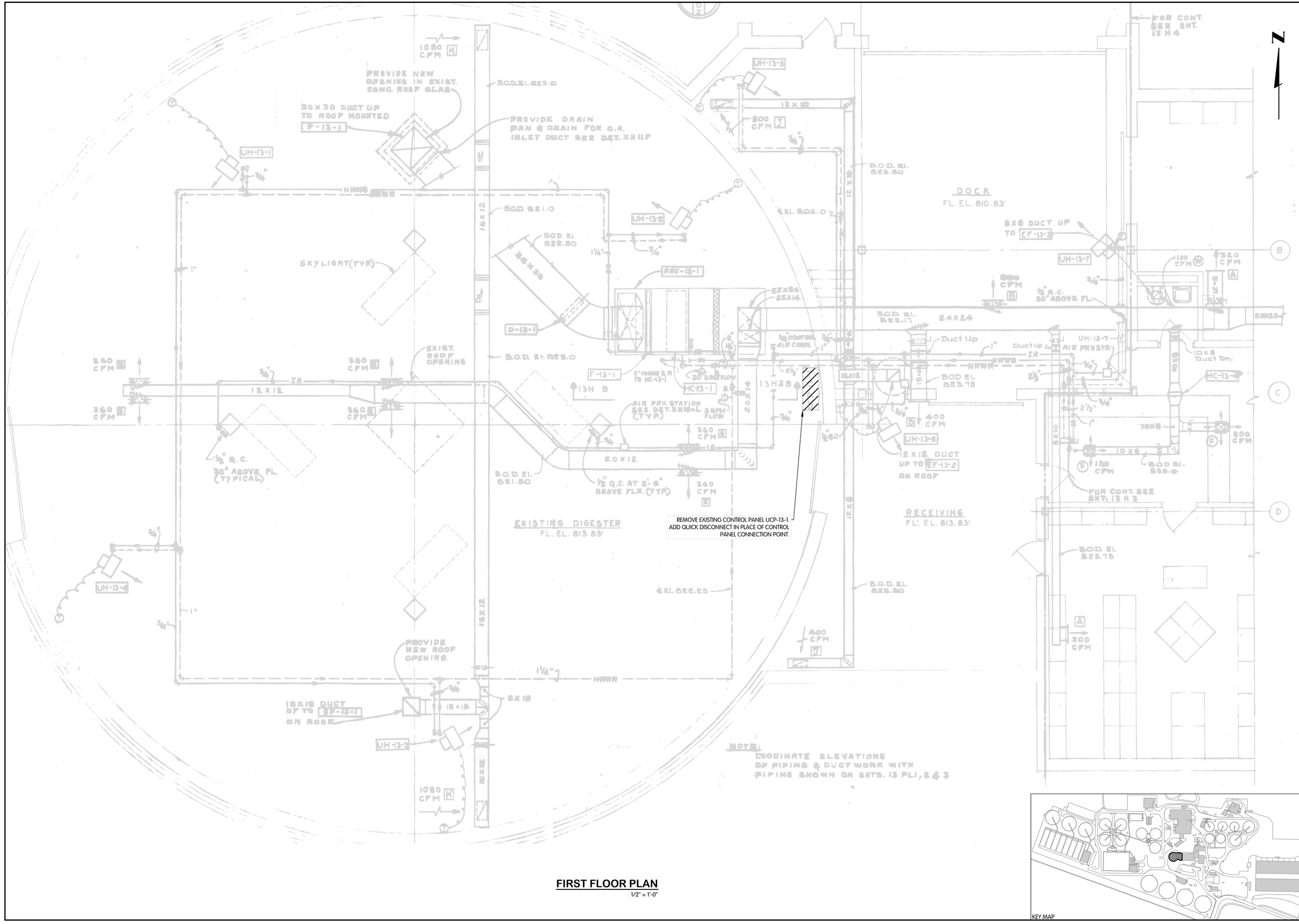
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R-1.3
5 OF 34




## FIRST FLOOR PLAN

1/2" = 1'-0"

REMOVALS
ADMINISTRATION BUILDING
SHOP/STORAGE ROOM
FIRST FLOOR PLAN

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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6 OF 34

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# HVAC SYMBOLS LEGEND

- METER ASSEMBLY
- RPZ BACKFLOW PREVENTER
- FLEXIBLE PIPE CONNECTOR
- FLEXIBLE PIPE
- CHECK VALVE
- GATE VALVE
- GLOBE VALVE (MANUAL) N.C.
- BALL VALVE (MANUAL)
- PLUG VALVE
- BUTTERFLY VALVE
- COMBINATION BALANCING VALVE
- COMBINATION PUMP DISCHARGE VALVE
- ANGLE GATE VALVE (MANUAL)
- AUTOMATIC CONTROL VALVE 2-WAY
- AUTOMATIC CONTROL VALVE 3-WAY
- PRESSURE REDUCING VALVE, SELF CONTAINED
- PRESSURE REDUCING VALVE, PILOT OPERATED
- SOLENOID OPERATED VALVE
- MOTORIZED BALL VALVE
- PRESSURE RELIEF VALVE
- DRAIN
- STRAINER
- STRAINER WITH BLOW OFF VALVE AND PLUG
- UNION CONNECTION
- FLANGED CONNECTION
- SPOOL PIECE, FLANGED
- HOSE CONNECTOR
- AIR VENT
- EXPANSION JOINT OR COMPENSATOR
- PIPE ANCHOR
- PIPE GUIDE
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER-FLUSH TOP
- ECCENTRIC REDUCER-FLUSH BOTTOM
- PIPE ELBOW, 90 TURNED DOWN
- PIPE ELBOW, 90 TURNED UP
- PIPE TEE, OUTLET TURNED DOWN
- PIPE TEE, OUTLET TURNED UP
- EXPANSION LOOP
- PRESSURE GAGE WITH SHUT-OFF COCK (BALL VALVE)
- PRESSURE SWITCH
- FLOW SWITCH
- THERMOMETER
- CENTRIFUGAL PUMP
- THERMOSTAT
- CONTROL SWITCH

- SUPPLY AIRFLOW
- RETURN OR EXHAUST AIRFLOW
- DIRECTION OF FLOW IN DUCTWORK
- 12x8 DUCT SIZE-FIRST FIGURE IS SIDE SHOWN
- DUCT SECTION, SUPPLY
- DUCT SECTION, RETURN
- DUCT SECTION, EXHAUST
- MOTORIZED DAMPER
- SMOKE DAMPER WITH ACCESS DOOR
- FIRE DAMPER WITH ACCESS DOOR
- MANUAL BALANCING DAMPER
- BACKDRAFT DAMPER
- CHANGE OF ELEVATION: RISE (R) OR DROP (D)
- ACCESS DOOR OR ACCESS PANEL
- MITERED ELBOW WITH TURNING VANES
- FLEXIBLE DUCT CONNECTION
- SPLITTER DAMPER-SEE PLAN FOR NECK SIZE
- AIR EXTRCATOR WITH VANES
- DUCT TRANSITION RECTANGULAR
- DUCT TRANSITION RECTANGULAR TO ROUND
- BRANCH TAKE-OFF FROM MAIN DUCT
- VANED ELBOW 90 (SHORT RADIUS) ROUND ELBOW 90 (SHORT RADIUS)
- DUCT ELBOW 90-TURNED UP-RECTANGULAR
- DUCT ELBOW 90-TURNED DOWN-RECTANGULAR
- SUPPLY REGISTER
- RETURN GRILLE
- EXHAUST GRILLE
- SUPPLY DIFFUSER-ROUND NECK
- VAV BOX, TERMINAL UNIT
- (#,SIZE) (CFM) TERMINAL AIR DEVICE NOMENCLATURE
- FLEXIBLE DUCTWORK
- MOTOR ACTUATED DAMPER
- OPPOSED BLADE DAMPER
- PARALLEL BLADE DAMPER
- SMOKE DETECTOR (P-PHOTOELECTRIC, I-IONIZATION)
- CENTRIFUGAL FAN
- PROPELLER FAN
- VANEAXIAL FAN
- UNIT HEATER

# HVAC ABBREVIATIONS

| | |
|---|---|
| AC | AIR CONDITIONING |
| ACU | AIR CONDITIONING UNIT |
| AD | ACCESS DOOR |
| AFF | ABOVE FINISHED FLOOR |
| AHU | AIR HANDLING UNIT |
| AMB | AMBIENT |
| AMP | AMPERAGE |
| APD | AIR PRESSURE DROP |
| B | BOILER |
| BD | BALANCING DAMPER |
| BDD | BACKDRAFT DAMPER |
| BFP | BACKFLOW PREVENTER |
| BHP | BRAKE HORSEPOWER |
| BOD | BOTTOM OF DUCT |
| BTU | BRITISH THERMAL UNIT |
| BTUH | BRITISH THERMAL UNIT PER HOUR |
| CW | CLOCKWISE |
| CCW | COUNTER CLOCKWISE |
| CFH | CUBIC FEET PER HOUR |
| CFM | CUBIC FEET PER MINUTE |
| CCU | COMPRESSOR CONDENSING UNIT |
| CUH | CABINET UNIT HEATER |
| CV | CONTROL VALVE |
| CWCP | CHILLED WATER CIRCULATION PUMP |
| CWR | CHILLED WATER RETURN |
| CWS | CHILLED WATER SUPPLY |
| DB | DRY BULB |
| DIA | DIAMETER |
| EA | EXHAUST AIR |
| EAT | ENTERING AIR TEMPERATURE |
| EF | EXHAUST FAN |
| EFF | EFFICIENCY |
| EG | EXHAUST GRILLE |
| ELEV | ELEVATION |
| ESP | EXTERNAL STATIC PRESSURE |
| EUH | ELECTRIC UNIT HEATER |
| EWH | ELECTRIC WALL HEATER |
| EWT | ENTERING WATER TEMPERATURE |
| FA | FREE AREA |
| FCU | FAN COIL UNIT |
| FD | FIRE DAMPER |
| FF | FINISHED FLOOR |
| FPM | FEET PER MINUTE |
| FRP | FIBERGLASS REINFORCED PLASTIC |
| FT | FEET |
| GAL | GALLONS |
| GPH | GALLONS PER HOUR |
| GPM | GALLONS PER MINUTE |
| GUH | GAS FIRED UNIT HEATER |
| H | HEATING |
| HP | HORSEPOWER |
| HR | HOUR |
| HVU | HEATING VENTILATING UNIT |
| HVAC | HEATING, VENTILATING, AND AIR CONDITIONING |
| HWP | HOT WATER PUMP |
| HWR | HOT WATER RETURN |
| HWS | HOT WATER SUPPLY |
| HWUH | HOT WATER UNIT HEATER |
| HZ | HERTZ |
| IA | INSTRUMENT AIR |
| IN | INCHES |
| IN. WG | INCHES WATER GAGE |
| KW | KILOWATTS |
| KWH | KILOWATTS PER HOUR |
| L | LOUVER |
| LAT | LEAVING AIR TEMPERATURE |
| LBS | POUNDS |
| LF | LINEAR FEET |
| LWT | LEAVING WATER TEMPERATURE |
| MAU | MAKE-UP AIR UNIT |
| MIN | MINUTE |
| MD | MOTORIZED DAMPER |
| MFG | MANUFACTURER |
| N/A | NOT APPLICABLE |
| NC | NORMALLY CLOSED |
| NG | NATURAL GAS |
| NO | NORMALLY OPEN |
| OA | OUTSIDE AIR |
| PD | PRESSURE DROP |
| PH | PHASE |
| PS | PRESSURE SWITCH |
| PSI | POUNDS PER SQUARE INCH |
| PSIA | POUNDS PER SQUARE INCH ABSOLUTE |
| PSIG | POUNDS PER SQUARE INCH GAGE |
| RA | RETURN AIR |
| RG | RETURN GRILLE |
| RH | RELATIVE HUMIDITY |
| RL | REFRIGERANT LIQUID |
| RPM | REVOLUTIONS PER MINUTE |
| RS | REFRIGERANT SUCTION |
| SA | SUPPLY AIR |
| SD | SUPPLY DIFFUSER, SUPPLY DETECTOR, SMOKE DAMPER |
| SF | SUPPLY FAN |
| SP | STATIC PRESSURE |
| SR | SUPPLY REGISTER |
| SV | SOLENOID VALVE |
| T | THERMOSTAT |
| TSP | TOTAL STATIC PRESSURE |
| TYP | TYPICAL |
| V | VENTILATING, VOLTS |
| VAV | VARIABLE AIR VOLUME |
| W | WATT |
| W/ | WITH |
| WB | WET BULB |
| WC | WATER COLUMN |
| WPD | WATER PRESSURE DROP |

# HVAC GENERAL NOTES

1. THE SYMBOLS AND ABBREVIATIONS LIST ON THIS SHEET IS A COMPREHENSIVE STANDARD GUIDE INTENDED FOR GENERAL USE ON ALL PROJECTS. THEREFORE, NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY.
2. ALL WORK SHALL BE CARRIED OUT AS PER THE LATEST REQUIREMENTS OF BUILDING, MECHANICAL, PLUMBING, AND ELECTRICAL CODES, NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), AMERICANS WITH DISABILITIES ACT (ADA), AND ALL OTHER GOVERNING AGENCIES HAVING JURISDICTION.
3. PROVIDE ALL MATERIAL, EQUIPMENT, AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE HVAC SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED BY CODE.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT DISCREPANCIES, IF ANY, TO THE ENGINEER FOR CLARIFICATION PRIOR TO STARTING ANY WORK.
5. EXACT LOCATION OF ALL EQUIPMENT AND ACCESSORIES SHALL BE VERIFIED IN THE FIELD. EQUIPMENT SIZES AND LOCATIONS ARE APPROXIMATE. ACTUAL DIMENSIONS TO BE DETERMINED BY EQUIPMENT FURNISHED.
6. INSTALL ALL HVAC EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
7. THE CONTRACTOR SHALL PERFORM ALL CUTTING, CORE DRILLING, CHIPPING, AND PATCHWORK AS REQUIRED.
8. ALL SURFACES DAMAGED IN THE COURSE OF THE WORK SHALL BE RESTORED TO THE ORIGINAL CONDITION AND IN ACCORDANCE TO DRAWINGS AND SPECIFICATIONS. LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH THE OTHER TRADES.
9. ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUITS, ETC., SHALL BE FIRE STOPPED WITH A PRODUCT SIMILAR TO 3M OR EQUAL.
10. ALL MATERIALS SHALL BE AS PER THE DRAWINGS AND SPECIFICATIONS AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO ITS INSTALLATION.
11. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES DURING INSTALLATION.
12. ALL INDICATED DUCT DIMENSIONS ARE CLEAR INSIDE DIMENSIONS. CONTRACTOR SHALL INCORPORATE THICKNESS OF DUCT INSULATION OR LINING AS APPLICABLE TO DETERMINE TOTAL OUTSIDE DIMENSIONS. FIRST DIMENSION IS IN PLANE OF DRAWING, SECOND IS PERPENDICULAR TO DRAWING.
13. PROVIDE FLEXIBLE DUCT CONNECTIONS AT THE POINT OF CONNECTION IN SUPPLY, RETURN, AND EXHAUST DUCTWORK SYSTEMS BETWEEN THE HVAC EQUIPMENT AND DUCTWORK.
14. PROVIDE ALL 90 DEGREE SQUARE ELBOWS WITH SINGLE THICKNESS TURNING VANES UNLESS OTHERWISE INDICATED. PROVIDE ACESS DOORS UPSTREAM OF ALL ELBOWS WITH TURNING VANES.
15. PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY, RETURN, AND EXHAUST SYSTEMS WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR BALANCING. INSTALL MINIMUM TWO DUCT WIDTHS FROM DUCT TAKE-OFF. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFF TO DIFFUSERS, REGISTERS, AND GRILLES, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, REGISTER, OR GRILLE ASSEMBLY. ALL BALANCING DAMPERS SHALL BE PROVIDED WITH LOCKING POSITION INDICATORS.
16. PROVIDE ACCESS DOORS IN DUCTWORK AT SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, AND BALANCING DAMPERS, AND OTHER ITEMS LOCATED IN THE DUCTWORK WHICH REQUIRE SERVICE AND/OR INSPECTION.
17. EQUIPMENT SIZES AND LOCATIONS ARE APPROXIMATE. ACTUAL DIMENSIONS TO BE DETERMINED BY EQUIPMENT FURNISHED.
18. CONCRETE HOUSEKEEPING PADS TO SUIT HVAC EQUIPMENT SHALL BE SIZED AND LOCATED BY THE HVAC CONTRACTOR. PADS SHALL BE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR. COORDINATE FINAL EQUIPMENT SIZE AND LOCATION OF HOUSEKEEPING PADS WITH THE GENERAL CONTRACTOR. MINIMUM CONCRETE PAD THICKNESS SHALL BE 6 INCHES. PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 6 INCHES ON EACH SIDE.
19. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
20. PROVIDE VIBRATION ISOLATION FOR ALL HVAC EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
21. INSTALL UNIONS AND/OR FLANGES BETWEEN HVAC EQUIPMENT AND PIPING TO PERMIT DISASSEMBLY FOR ALTERATION OR REPAIRS.
22. PROVIDE FLEXIBLE CONNECTIONS IN ALL PIPING SYSTEMS CONNECTED TO PUMPS OR HVAC EQUIPMENT AND OTHER EQUIPMENT WHICH REQUIRES VIBRATION ISOLATION EXCEPT AT COILS. FLEXIBLE CONNECTIONS SHALL BE INSTALLED AS CLOSE TO THE HVAC EQUIPMENT AS POSSIBLE OR AS INDICATED ON THE DRAWINGS.
23. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UP AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.
24. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
25. FOR LOUVER LOCATIONS, SEE ARCHITECTURAL DRAWINGS.
26. ALL AIR CONDITIONING AND CONDENSING TYPE HEATING EQUIPMENT CONDENSATE DRAIN PIPING FROM EQUIPMENT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET WITH "P" TRAP AND PIPED AND DISCHARGED TO THE NEAREST DRAIN SLOPED 1/8 INCH PER FOOT. SEE HVAC DETAILS FOR DEPTH OF CONDENSATE TRAP.
27. ALL PIPING AND DUCTS IN FINISHED ROOMS SHALL BE CONCEALED IN FURRED CHASES OR SUSPENDED CEILINGS. ACCESS DOORS SHALL BE INSTALLED FOR ANY CONCEALED DEVICE REQUIRING ADJUSTMENT.
28. FOR INTERLOCKING WIRING SCHEMATICS SEE ELECTRICAL DRAWINGS.
29. ALL CONTROL WIRING AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND DIVISION 16 OF THE SPECIFICATIONS.
30. THERMOSTATS AND OTHER CONTROL COMPONENTS SHALL BE MOUNTED 5'-0" A.F.F. UNLESS OTHERWISE NOTED.
31. ALL TESTS SHALL BE COMPLETED BEFORE ANY HVAC EQUIPMENT OR PIPING INSULATION IS APPLIED.

BATTLE CREEK BREAKFAST CAPITAL OF THE WORLD

MECHANICAL
LEGEND
STANDARDS

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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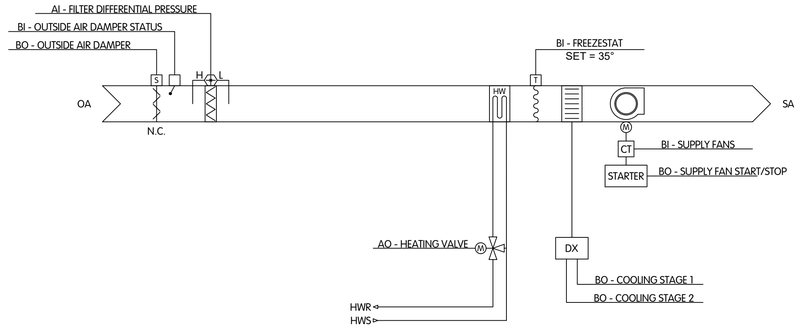
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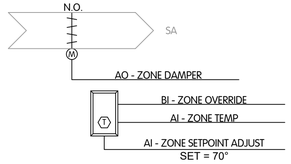
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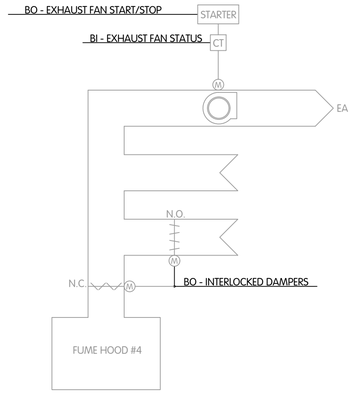

## AHU-2-2 AIRFLOW SCHEMATIC

AHU LOCATED IN MECHANICAL ROOM

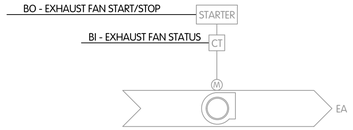
NTS




## ZONE DAMPERS (TYP. 5) SCHEMATIC




## EXHAUST FAN EF-13-11 AIR FLOW SCHEMATIC




## EXHAUST FAN EF-2-5 AIRFLOW SCHEMATIC

ADMINISTRATIVE AREA HVAC SEQUENCE OF OPERATION:

RUN CONDITIONS - SCHEDULED:
THE UNIT AHU-2-2 SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

- OCCUPIED MODE: THE UNIT SHALL MAINTAIN
- A 75'F (ADJ.) COOLING SETPOINT
- A 70'F (ADJ.) HEATING SETPOINT.

- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN
- A 85'F (ADJ.) COOLING SETPOINT.
- A 50'F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:
TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

EMERGENCY SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN EMERGENCY SHUTDOWN SIGNAL.

FREEZE PROTECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT STATUS.

SMOKE DETECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A SMOKE DETECTOR STATUS.

OUTSIDE AIR DAMPER:
THE OUTSIDE AIR DAMPER SHALL OPEN ANYTIME THE UNIT RUNS AND SHALL CLOSE ANYTIME THE UNIT STOPS. THE SUPPLY FAN SHALL START ONLY AFTER THE DAMPER STATUS HAS PROVEN THE DAMPER IS OPEN. THE OUTSIDE AIR DAMPER SHALL CLOSE 45EC (ADJ.) AFTER THE SUPPLY FAN STOPS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- OUTSIDE AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- OUTSIDE AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

ADMINISTRATIVE AREA AHU-2-2 HVAC SEQUENCE OF OPERATION (CONT):
SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

EXHAUST FANS EF-2-5, EF-13-11:
THE EXHAUST FAN SHALL RUN WHENEVER THE SUPPLY FAN RUNS, UNLESS SHUTDOWN ON SAFETIES. FUME HOOD #4 OPERATIONS: A SWITCH AT THE FUME HOOD WILL OPEN THE FUME HOOD DAMPER AND CLOSE THE EXHAUST INTAKE DAMPER WHEN THE SWITCH IS INDEXED TO THE OPEN POSITION.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- EXHAUST FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- EXHAUST FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

COOLING STAGES:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

RUN CONDITIONS - SCHEDULED:

THE COOLING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60'F (ADJ.).
- AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
- AND THE FAN STATUS IS ON.

HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65'F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN STATUS IS ON.

THE HEATING COIL VALVE SHALL OPEN TO 100% (ADJ.) WHENEVER THE FREEZESTAT IS ON.

FILTER DIFFERENTIAL PRESSURE MONITOR:
THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FILTER CHANGE REQUIRED: FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

AHU-2-2 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-2-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| FILTER DIFFERENTIAL PRESSURE | X | | | | | | | | X | | X |
| ZONE 1 SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE 2 SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE 3 SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE 4 SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE 5 SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE 1 TEMP | X | | | | | | | | X | | X |
| ZONE 2 TEMP | X | | | | | | | | X | | X |
| ZONE 3 TEMP | X | | | | | | | | X | | X |
| ZONE 4 TEMP | X | | | | | | | | X | | X |
| ZONE 5 TEMP | X | | | | | | | | X | | X |
| ZONE 1 DAMPER STATUS | X | | | | | | | | X | | X |
| ZONE 2 DAMPER STATUS | X | | | | | | | | X | | X |
| ZONE 3 DAMPER STATUS | X | | | | | | | | X | | X |
| ZONE 4 DAMPER STATUS | X | | | | | | | | X | | X |
| ZONE 5 DAMPER STATUS | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| ZONE 1 DAMPER | | X | | | | | | | X | | X |
| ZONE 2 DAMPER | | X | | | | | | | X | | X |
| ZONE 3 DAMPER | | X | | | | | | | X | | X |
| ZONE 4 DAMPER | | X | | | | | | | X | | X |
| ZONE 5 DAMPER | | X | | | | | | | X | | X |
| INTERLOCKED FUME HOOD DAMPERS | | X | | | | | | | X | | X |
| FREEZESTAT | | | X | | | | | | X | X | X |
| OUTSIDE AIR DAMPER STATUS | | | X | | | | | | X | | X |
| SMOKE DETECTOR | | | X | | | | | | X | X | X |
| SUPPLY FAN STATUS | | | X | | | | | | X | | X |
| EF-2-5 FAN STATUS | | | X | | | | | | X | | X |
| EF-13-11 FAN STATUS | | | X | | | | | | X | | X |
| ZONE 1 OVERRIDE | | | X | | | | | | X | | X |
| ZONE 2 OVERRIDE | | | X | | | | | | X | | X |
| ZONE 3 OVERRIDE | | | X | | | | | | X | | X |
| ZONE 4 OVERRIDE | | | X | | | | | | X | | X |
| ZONE 5 OVERRIDE | | | X | | | | | | X | | X |
| COOLING STAGE 1 | | | | X | | | | | X | | X |
| OUTSIDE AIR DAMPER | | | | X | | | | | X | | X |
| SUPPLY FAN START/STOP | | | | X | | | | | X | | X |
| EXHAUST FAN EF-2-5 START/STOP | | | | X | | | | | X | | X |
| EXHAUST FAN EF-13-11 START/STOP | | | | X | | | | | X | | X |
| COOLING SETPOINT | | | | | X | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| EMERGENCY SHUTDOWN | | | | | | X | | | X | X | X |
| SCHEDULE | | | | | | | | X | | | |
| COMPRESSOR RUNTIME EXCEEDED | | | | | | | | | | X | X |
| FILTER CHANGE REQUIRED | | | | | | | | | | X | |
| HIGH ZONE TEMP | | | | | | | | | | X | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| OUTSIDE AIR DAMPER FAILURE | | | | | | | | | | X | |
| OUTSIDE AIR DAMPER IN HAND | | | | | | | | | | X | |
| ZONE 1 DAMPER FAILURE | | | | | | | | | | X | |
| ZONE 2 DAMPER FAILURE | | | | | | | | | | X | |
| ZONE 3 DAMPER FAILURE | | | | | | | | | | X | |
| ZONE 4 DAMPER FAILURE | | | | | | | | | | X | |
| ZONE 5 DAMPER FAILURE | | | | | | | | | | X | |
| SUPPLY FAN FAILURE | | | | | | | | | | X | |
| SUPPLY FAN IN HAND | | | | | | | | | | X | |
| EF-2-5 FAN FAILURE | | | | | | | | | | X | |
| EF-2-5 FAN IN HAND | | | | | | | | | | X | |
| EF-13-11 FAN FAILURE | | | | | | | | | | X | |
| EF-13-11 FAN IN HAND | | | | | | | | | | X | |
| TOTALS | 16 | 7 | 11 | 5 | 2 | 1 | 0 | 1 | 37 | 20 | 43 |
| TOTAL HARDWARE (39) | | | | | TOTAL SOFTWARE (61) | | | | | | |

OCCUPANCY SCHEDULE:

| UNIT | OCCUPIED HOURS |
|---|---|
| AHU-2-2 | 6:00 AM - 3:00 PM MON-SUN |
| AHU-2-3 | 6:00 AM - 3:00 PM MON-SUN |
| AHU-13-1 | 6:00 AM - 3:00 PM MON-SUN |
| AHU-13-2 | 6:00 AM - 3:00 PM MON-SUN |
| UNIT HEATERS | 6:00 AM - 3:00 PM MON-SUN |

| SUMMER | | | | WINTER | | | | | | COMPRESSOR CONDENSING UNIT | | HOT DECK RESET POINTS | | | | UN-OCCUPIED SETPOINTS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIXED AIR TEMP | REHEAT | | COOLING | PREHEAT | | REHEAT | | COOLING | | ENERGIZED 'F | DE-ENERGIZED 'F | WINTER | | SUMMER | | HEATING 'F | COOLING 'F |
| 58' | COIL RHC# | CONTROL POINT 'F | COIL CC# | CONTROL POINT 'F | COIL PHC# | CONTROL POINT 'F | COIL RHC# | CONTROL POINT 'F | COIL CC# | CONTROL POINT 'F | | | OUTDOOR AIR 'F | HOT DECK RESET 'F | OUTDOOR AIR 'F | HOT DECK RESET 'F | | |
| | 13-2 | 80 | 13-1 | 80 | 13-3 | 45 | 13-2 | 120 | 13-1 | 58 | 75 | 70 | 5 | 120 | 60 | 85 | 50 | 85 |


FTW-802109\M02-M-0.2 HVAC CONTROLS
10/5/2023 1:05 PM - CLENDER
10/7/2023 11:05 AM


LABORATORY HVAC CONTROLS

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | BY |
|---|---|---|
| 5 | | |
| 4 | | |
| 3 | | |
| 2 | | |
| 1 | REVISIONS AFTER ISSUED FOR BID | |


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SCALE AS NOTED

THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| ASB | AJB | BDL |

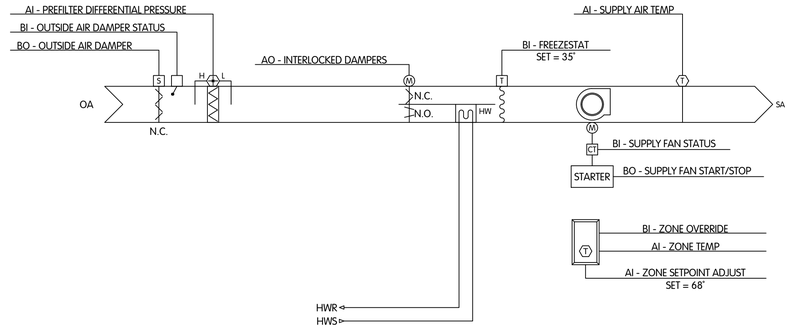
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DATE: OCTOBER 2023

SHEET NO.

M-0.2

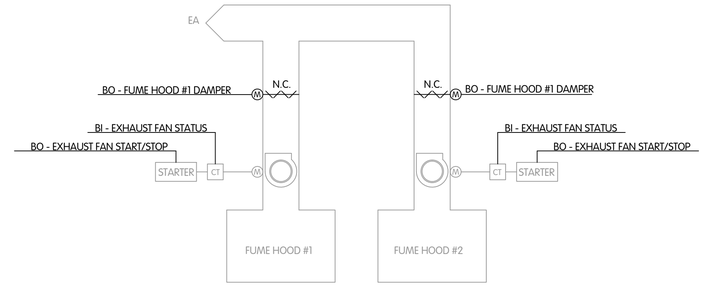
8 OF 34




## AHU-2-3 AIRFLOW SCHEMATIC

AHU LOCATED IN IN MECHANICAL ROOM

NTS




## FUME HOODS #1 & #2 AIRFLOW SCHEMATIC

NTS

AHU-2-3 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-2-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| FILTER DIFFERENTIAL PRESSURE | X | | | | | | | | X | | |
| SUPPLY AIR TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| FREEZESTAT | | | X | | | | | | X | X | X |
| OUTSIDE AIR DAMPER STATUS | | | X | | | | | | X | | X |
| SUPPLY FAN STATUS | | | X | | | | | | X | | X |
| FUME HOOD #1 EXHAUST FAN STATUS | | | X | | | | | | X | | X |
| FUME HOOD #2 EXHAUST FAN STATUS | | | X | | | | | | X | | X |
| OUTSIDE AIR DAMPER | | | | X | | | | | X | | X |
| FUME HOOD #1 DAMPER | | | | X | | | | | X | | X |
| FUME HOOD #2 DAMPER | | | | X | | | | | X | | X |
| SUPPLY FAN START/STOP | | | | X | | | | | X | | X |
| FUME HOOD #1 EXHAUST FAN START/STOP | | | | X | | | | | X | | X |
| FUME HOOD #2 EXHAUST FAN START/STOP | | | | X | | | | | X | | X |
| FILTER CHANGE REQUIRED | | | | | | | | | | X | X |
| HIGH SUPPLY AIR TEMP | | | | | | | | | | X | |
| LOW SUPPLY AIR TEMP | | | | | | | | | | X | |
| OUTSIDE AIR DAMPER FAILURE | | | | | | | | | | X | |
| SUPPLY FAN FAILURE | | | | | | | | | | X | |
| FUME HOOD #1 EXHAUST FAN FAILURE | | | | | | | | | | X | |
| FUME HOOD #2 EXHAUST FAN FAILURE | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 14 | 8 | 14 |
| TOTAL HARDWARE (14) | | | | | TOTAL SOFTWARE (22) | | | | | | |

ADMINISTRATIVE AREA AHU-2-3 HVAC SEQUENCE OF OPERATION:

RUN CONDITIONS - INTERLOCKED:
THE SUPPLY FAN FOR AHU-2-3 IS A TWO-SPEED FAN AND SHALL BE INTERLOCKED TO RUN WHENEVER THE FUME HOODS RUN UNLESS SHUTDOWN ON SAFETIES. WITH THE SUPPLY FAN ENERGIZED, THE OUTSIDE AIR DAMPER WILL OPEN. THE SUPPLY FAN SHALL START ONLY AFTER THE DAMPER STATUS HAS PROVEN THE DAMPER OPEN.

EMERGENCY SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN EMERGENCY SHUTDOWN SIGNAL.

FREEZE PROTECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT STATUS.

OUTSIDE AIR DAMPER:
THE OUTSIDE AIR DAMPER SHALL OPEN ANYTIME THE UNIT RUNS AND SHALL CLOSE ANYTIME THE UNIT STOPS. THE SUPPLY FAN SHALL START ONLY AFTER THE DAMPER STATUS HAS PROVEN THE DAMPER IS OPEN. THE OUTSIDE AIR DAMPER SHALL CLOSE 4 SEC (ADJ.) AFTER THE SUPPLY FAN STOPS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- OUTSIDE AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- OUTSIDE AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME, UNLESS SHUTDOWN ON SAFETIES.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

EXHAUST FANS:
THE EXHAUST FAN SHALL RUN WHENEVER THE SUPPLY FAN RUNS, UNLESS SHUTDOWN ON SAFETIES.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FUME HOOD #1 FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FUME HOOD #1 FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FUME HOOD #1 FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- FUME HOOD #2 FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FUME HOOD #2 FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FUME HOOD #2 FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SUPPLY AIR TEMPERATURE SETPOINT:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND SHALL MAINTAIN A FIXED SUPPLY AIR TEMPERATURE SETPOINT OF 70°F (ADJ.).

HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE SUPPLY AIR TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN STATUS IS ON.

THE HEATING COIL VALVE SHALL OPEN TO 100% (ADJ.) WHENEVER THE FREEZESTAT IS ON.

FINAL FILTER DIFFERENTIAL PRESSURE MONITOR:
THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FINAL FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FINAL FILTER CHANGE REQUIRED: FINAL FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SUPPLY AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

LABORATORY HVAC CONTROLS

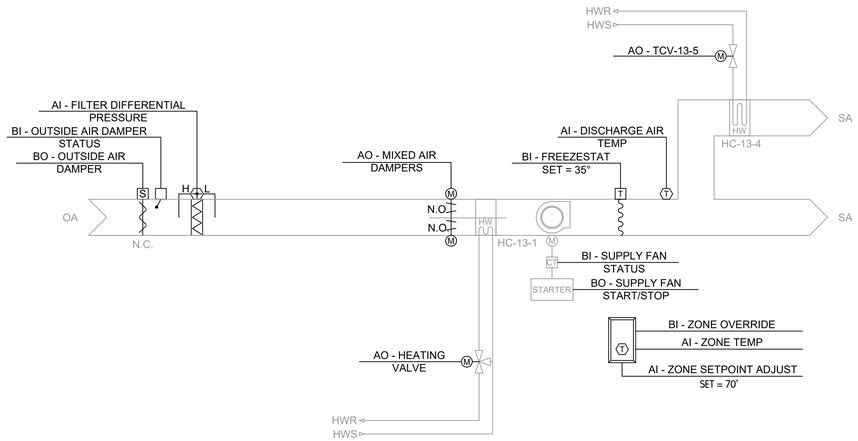
CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
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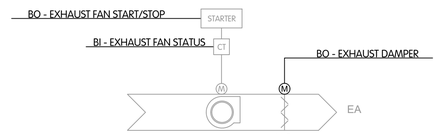
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SCALE AS NOTED
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DESIGNED ASB | DRAWN AJB | CHECKED BDL
STATUS: ISSUED FOR BID
DATE: OCTOBER 2023
SHEET NO. M-0.3
9 OF 34

FTW-802100M03-M-0.3 HVAC CONTROLS
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12/1/2023 11:05 AM

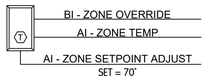



## AHU-13-1 AIRFLOW SCHEMATIC

AHU LOCATED IN
STORAGE AREA




## EXHAUST FAN EF-13-1,2,4,5 AIRFLOW SCHEMATIC




## RADIATION CONTROL TCV-13-5 SCHEMATIC

AHU-13-1 HVAC SEQUENCE OF OPERATION:

RUN CONDITIONS - CONTINUOUS:
THE UNIT SHALL RUN CONTINUOUSLY.

EMERGENCY SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN EMERGENCY SHUTDOWN SIGNAL.

FREEZE PROTECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT STATUS.

SMOKE DETECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A SMOKE DETECTOR STATUS.

OUTSIDE AIR DAMPER:
THE OUTSIDE AIR DAMPER SHALL OPEN ANYTIME THE UNIT RUNS AND SHALL CLOSE ANYTIME THE UNIT STOPS. THE SUPPLY FAN SHALL START ONLY AFTER THE DAMPER STATUS HAS PROVEN THE DAMPER IS OPEN. THE OUTSIDE AIR DAMPER SHALL CLOSE 4 SEC (ADJ.) AFTER THE SUPPLY FAN STOPS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- OUTSIDE AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- OUTSIDE AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME, UNLESS SHUTDOWN ON SAFETIES.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

EXHAUST FANS EF-13-1, EF-13-2, EF-13-4, EF-13-5:
THE EXHAUST FAN SHALL RUN WHENEVER THE SUPPLY FAN RUNS, UNLESS SHUTDOWN ON SAFETIES.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- EXHAUST FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- EXHAUST FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- EXHAUST FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SUPPLY AIR TEMPERATURE SETPOINT - FIXED:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND SHALL MAINTAIN A FIXED SUPPLY AIR TEMPERATURE SETPOINT OF 65°F (ADJ.).

HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE SUPPLY AIR TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN STATUS IS ON.

THE HEATING COIL VALVE SHALL OPEN TO 100% (ADJ.) WHENEVER THE FREEZESTAT IS ON.

AHU-13-1 HVAC SEQUENCE OF OPERATION (CONT.):

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME, UNLESS SHUTDOWN ON SAFETIES.

THE HEATING COIL VALVE SHALL OPEN TO 100% (ADJ.) WHENEVER THE FREEZESTAT IS ON.

FILTER DIFFERENTIAL PRESSURE MONITOR:
THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FILTER CHANGE REQUIRED: FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SUPPLY AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

TCV-13-5 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| REHEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| TOTAL HARDWARE (4) | | | | | TOTAL SOFTWARE (7) | | | | | | |

AHU-13-1 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| DISCHARGE AIR TEMP | X | | | | | | | | X | | X |
| FILTER DIFFERENTIAL PRESSURE | X | | | | | | | | X | | X |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| FREEZESTAT | | | X | | | | | | X | X | X |
| SMOKE DETECTOR | | | X | | | | | | X | X | X |
| OUTDOOR AIR DAMPER STATUS | | | X | | | | | | X | | X |
| EF-13-1 EXHAUST DAMPER STATUS | | | X | | | | | | X | | X |
| EF-13-2 EXHAUST DAMPER STATUS | | | X | | | | | | X | | X |
| EF-13-4 EXHAUST DAMPER STATUS | | | X | | | | | | X | | X |
| EF-13-5 EXHAUST DAMPER STATUS | | | X | | | | | | X | | X |
| SUPPLY FAN STATUS | | | X | | | | | | X | | X |
| EF-13-1 FAN STATUS | | | X | | | | | | X | | X |
| EF-13-2 FAN STATUS | | | X | | | | | | X | | X |
| EF-13-4 FAN STATUS | | | X | | | | | | X | | X |
| EF-13-5 FAN STATUS | | | X | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| OUTSIDE AIR DAMPER | | | | X | | | | | X | | X |
| SUPPLY FAN START/STOP | | | | X | | | | | X | | X |
| EF-13-1 START/STOP | | | | X | | | | | X | | X |
| EF-13-2 START/STOP | | | | X | | | | | X | | X |
| EF-13-4 START/STOP | | | | X | | | | | X | | X |
| EF-13-5 START/STOP | | | | X | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| EMERGENCY SHUTDOWN | | | | | | X | | | X | X | X |
| SCHEDULE | | | | | | | | X | | | |
| FILTER CHANGE REQUIRED | | | | | | | | | | X | X |
| HIGH DISCHARGE AIR TEMP | | | | | | | | | | X | |
| LOW DISCHARGE AIR TEMP | | | | | | | | | | X | |
| OUTSIDE AIR DAMPER FAILURE | | | | | | | | | | X | |
| OUTSIDE AIR DAMPER IN HAND | | | | | | | | | | X | |
| SUPPLY FAN FAILURE | | | | | | | | | | X | |
| SUPPLY FAN IN HAND | | | | | | | | | | X | |
| SUPPLY FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| TOTALS | 4 | 1 | 13 | 6 | 1 | 1 | 0 | 1 | 25 | 11 | 27 |
| TOTAL HARDWARE (24) | | | | | TOTAL SOFTWARE (39) | | | | | | |

FTW-8021001\04-M-0.4 HVAC CONTROLS
10/19/2023 2:47 PM - CLENDER
12/7/2023 11:05 AM

BATTLE CREEK BREAKFAST CAPITAL OF THE WORLD

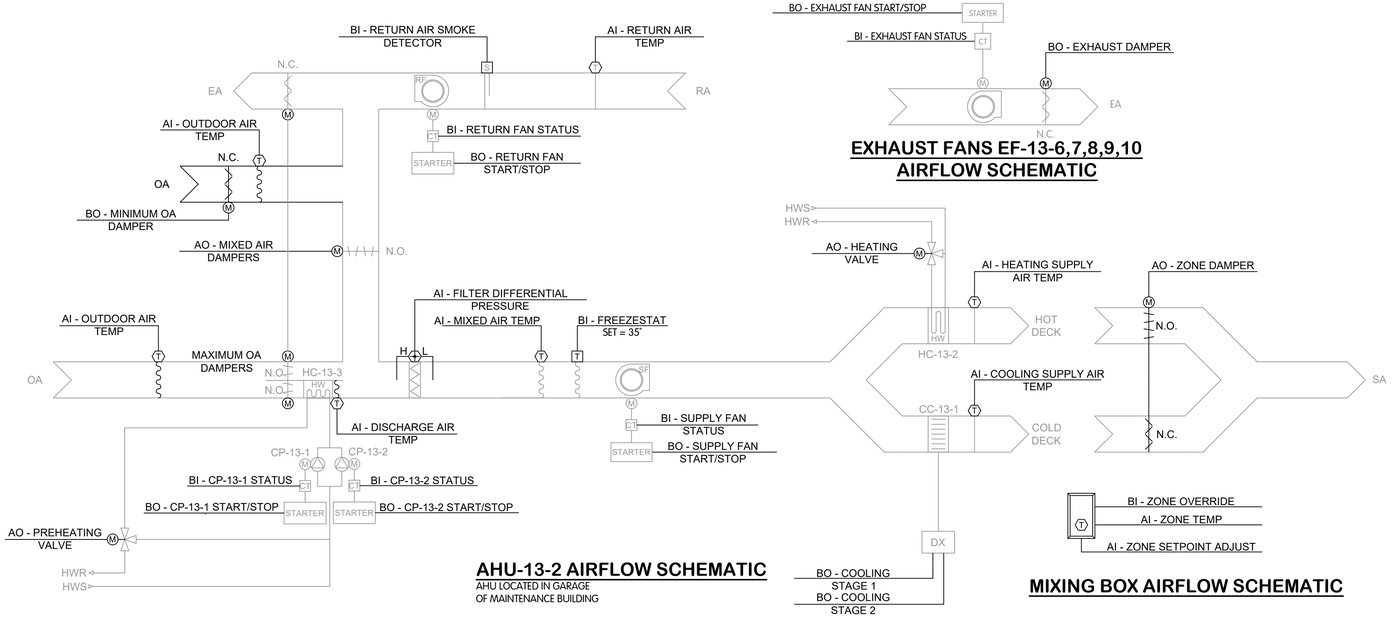
SHOP/STORAGE AREA
HVAC
CONTROLS

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
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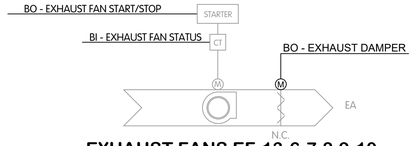
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JOB NO. 008-8021.001
SCALE AS NOTED
THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE
DESIGNED ASB | DRAWN AJB | CHECKED BDL
STATUS: ISSUED FOR BID
DATE: OCTOBER 2023
SHEET NO. M-0.4
10 OF 34




## AHU-13-2 AIRFLOW SCHEMATIC

AHU LOCATED IN GARAGE
OF MAINTENANCE BUILDING




## EXHAUST FANS EF-13-6,7,8,9,10 AIRFLOW SCHEMATIC

## MIXING BOX AIRFLOW SCHEMATIC

ADMINISTRATIVE AREA AHU-13-2 HVAC SEQUENCE OF OPERATION:
THE UNIT AHU-13-2 SHALL OPERATE CONTINUOUSLY.
EMERGENCY SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN EMERGENCY SHUTDOWN SIGNAL.

FREEZE PROTECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT STATUS.

RETURN AIR SMOKE DETECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A RETURN AIR SMOKE DETECTOR STATUS.

AHU OPTIMAL START:
THE UNIT SHALL START PRIOR TO SCHEDULED OCCUPANCY BASED ON THE TIME NECESSARY FOR THE ZONES TO REACH THEIR OCCUPIED SETPOINTS. THE START TIME SHALL AUTOMATICALLY ADJUST BASED ON CHANGES IN OUTSIDE AIR TEMPERATURE AND ZONE TEMPERATURES.

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

RETURN FAN:
THE RETURN FAN SHALL BE INTERLOCKED TO RUN WITH THE SUPPLY FAN.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- RETURN FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- RETURN FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- RETURN FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

EXHAUST FANS:

EXHAUST FANS EF-13-6, EF-13-7, EF-13-8, EF-13-9, & EF-13-10 SHALL BE INTERLOCKED TO RUN WITH THE SUPPLY FAN.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- EXHAUST FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- EXHAUST FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- EXHAUST FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

PREHEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE MIXED AIR TEMPERATURE AND MODULATE THE PREHEATING COIL VALVE TO MAINTAIN A SETPOINT 4°F (ADJ.) LESS THAN THE COOLING SUPPLY AIR TEMPERATURE SETPOINT.
THE PREHEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 55°F (ADJ.).
- AND THE SUPPLY FAN STATUS IS ON.

THE PREHEATING COIL VALVE SHALL OPEN FOR FREEZE PROTECTION WHENEVER:

- MIXED AIR TEMPERATURE DROPS FROM 40°F TO 35°F (ADJ.).
- OR THE FREEZESTAT (IF PRESENT) IS ON.

ADMINISTRATIVE AREA AHU-13-2 HVAC SEQUENCE OF OPERATION (CONT.):

COLD DECK - COOLING SUPPLY AIR TEMPERATURE SETPOINT - OPTIMIZED:
THE COOLING SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET USING A TRIM AND RESPOND ALGORITHM BASED ON ZONE COOLING REQUIREMENTS. IF THERE IS A DEMAND FOR COOLING, THEN THE SETPOINT SHALL BE RESET TO A LOWER VALUE (ADJ.). IF THE DEMAND FOR COOLING DECREASES, THEN THE SETPOINT SHALL RESET TO A HIGHER VALUE (ADJ.). ONCE THE ZONES ARE SATISFIED THEN THE SETPOINT SHALL GRADUALLY MODERATE OVER TIME TO REDUCE COOLING ENERGY USE.

THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET BASED ON ZONE COOLING REQUIREMENTS AS FOLLOWS:

- THE INITIAL SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 58°F (ADJ.).
- AS COOLING DEMAND INCREASES, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 53°F (ADJ.).
- AS COOLING DEMAND DECREASES, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 72°F (ADJ.).

COLD DECK - COOLING STAGES:
THE CONTROLLER SHALL MEASURE THE COOLING SUPPLY AIR TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE COOLING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.).
- AND THE SUPPLY FAN STATUS IS ON.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH COOLING SUPPLY AIR TEMP: IF THE COOLING SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) GREATER THAN SETPOINT.

HOT DECK - HEATING SUPPLY AIR TEMPERATURE SETPOINT - OPTIMIZED:
THE HEATING SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET USING A TRIM AND RESPOND ALGORITHM BASED ON ZONE HEATING REQUIREMENTS. IF THERE IS A DEMAND FOR HEATING, THEN THE SETPOINT SHALL BE RESET TO A HIGHER VALUE (ADJ.). IF THE DEMAND FOR HEATING DECREASES, THEN THE SETPOINT SHALL RESET TO A LOWER VALUE (ADJ.). ONCE THE ZONES ARE SATISFIED THEN THE SETPOINT SHALL GRADUALLY MODERATE OVER TIME TO REDUCE HEATING ENERGY USE.

THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET BASED ON ZONE HEATING REQUIREMENTS AS FOLLOWS:

- THE INITIAL SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 85°F (ADJ.).
- AS HEATING DEMAND INCREASES, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 120°F (ADJ.).
- AS HEATING DEMAND DECREASES, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 85°F (ADJ.).

HOT DECK - HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE HEATING SUPPLY AIR TEMPERATURE AND MODULATE THE HEATING COIL VALVE TO MAINTAIN ITS SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE SUPPLY FAN STATUS IS ON.

THE HEATING COIL VALVE SHALL OPEN WHENEVER:

- HEATING SUPPLY AIR TEMPERATURE DROPS FROM 40°F TO 35°F (ADJ.).
- OR THE FREEZESTAT (IF PRESENT) IS ON.

ADMINISTRATIVE AREA AHU-13-2 HVAC SEQUENCE OF OPERATION (CONT.):

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH HEATING SUPPLY AIR TEMP: IF THE HEATING SUPPLY AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW HEATING SUPPLY AIR TEMP: IF THE HEATING SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) LESS THAN SETPOINT.

HEATING COIL PUMPS:
THE RECIRCULATION PUMPS SHALL RUN WHENEVER:

- THE HEATING COIL VALVE IS ENABLED.
- OR THE FREEZESTAT IS ON.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HEATING COIL PUMP FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- HEATING COIL PUMP IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- HEATING COIL PUMP RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.

THE OUTSIDE AND EXHAUST AIR DAMPERS SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN WHEN THE UNIT IS OFF. IF OPTIMAL START UP IS AVAILABLE, THE MIXED AIR DAMPER SHALL OPERATE AS DESCRIBED IN THE OCCUPIED MODE EXCEPT THAT THE OUTSIDE AIR DAMPER SHALL MODULATE TO FULLY CLOSED.

OUTSIDE AIR VENTILATION:

A MIXED AIR SENSOR, THROUGH A RECEIVER CONTROLLER, WILL MODULATE THE MAXIMUM OUTSIDE AIR, EXHAUST AIR AND RETURN AIR DAMPERS TO MAINTAIN ITS SET POINT. AN OUTSIDE AIR SENSOR, THROUGH A RECEIVER CONTROLLER AND AN ELECTRIC RELAY, WILL CLOSE THE MAXIMUM OUTSIDE AIR, EXHAUST AIR DAMPERS AND OPEN THE RETURN AIR DAMPER IF THE OUTSIDE AIR TEMPERATURE RISES ABOVE ITS SET POINT.

PREFILTER DIFFERENTIAL PRESSURE MONITOR:
THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE PREFILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- PREFILTER CHANGE REQUIRED: PREFILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

MIXED AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE MIXED AIR TEMPERATURE AND USE AS REQUIRED FOR PREHEATING CONTROL.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.).
- LOW MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

RETURN AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE RETURN AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.).
- LOW RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

MIXING BOX (TYPICAL)

RUN CONDITIONS - CONTINUOUS:

THE UNIT SHALL RUN CONTINUOUSLY AND SHALL MAINTAIN:

- A 75°F (ADJ.) COOLING SETPOINT
- A 70°F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:

TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:

THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE DAMPER CONTROL:

THE COOLING AND HEATING DECK ZONE DAMPERS SHALL MODULATE IN SEQUENCE TO MAINTAIN ZONE TEMPERATURE COOLING AND HEATING SETPOINTS.

DISCHARGE AIR TEMPERATURE:

THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).

AHU-13-2/MIXING BOX OCCUPANCY SCHEDULE:

| UNIT | CFM | DEFAULT OCCUPANCY SCHEDULE |
|---|---|---|
| MB-1 | 200 | 6:00 AM - 3:00 PM MON-SUN |
| MB-2 | 180 | 6:00 AM - 3:00 PM MON-SUN |
| MB-3 | 480 | 6:00 AM - 3:00 PM MON-SUN |
| MB-4 | 1500 | 6:00 AM - 3:00 PM MON-SUN |
| MB-5 | 1100 | 6:00 AM - 3:00 PM MON-SUN |
| MB-6 | 390 | 6:00 AM - 3:00 PM MON-SUN |
| MB-7 | 280 | 6:00 AM - 3:00 PM MON-SUN |
| MB-8 | 590 | 6:00 AM - 3:00 PM MON-SUN |
| MB-9 | 1080 | 6:00 AM - 3:00 PM MON-SUN |
| MB-10 | 550 | 6:00 AM - 3:00 PM MON-SUN |
| MB-11 | 1350 | 6:00 AM - 3:00 PM MON-SUN |

| SUMMER | | | | | WINTER | | | | | | COMPRESSOR CONDENSING UNIT | | HOT DECK RESET POINTS | | | | UN-OCCUPIED SETPOINTS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIXED AIR TEMP | REHEAT | | COOLING | | PREHEAT | | REHEAT | | COOLING | | | | WINTER | | SUMMER | | | |
| | COIL RHC# | CONTROL POINT °F | COIL CC# | CONTROL POINT °F | COIL PHC# | CONTROL POINT °F | COIL RHC# | CONTROL POINT °F | COIL CC# | CONTROL POINT °F | ENERGIZED °F | DE-ENERGIZED °F | OUTDOOR AIR °F | HOT DECK RESET °F | OUTDOOR AIR °F | HOT DECK RESET °F | HEATING °F | COOLING °F |
| 58° | 13-2 | 80 | 13-1 | 80 | 13-3 | 45 | 13-2 | 120 | 13-1 | 58 | 75 | 70 | 5 | 120 | 60 | 85 | 50 | 85 |

FTW-802(001)M05-M-0.5 HVAC CONTROLS
10/5/2023 2:43 PM - CLENDER
12/7/2023 11:05 AM

OFFICE AND ADMINISTRATION AREA
HVAC
CONTROLS

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
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| 1 | | | |
| 2 | | | |
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| 4 | | | |
| 5 | | | |

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JOB NO. 008-8021.001
SCALE AS NOTED
THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| ASB | AJB | BDL |

STATUS: ISSUED FOR BID
DATE: OCTOBER 2023

SHEET NO.
M-0.5
11 OF 34

## AHU-13-2 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-2:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| COOLING SUPPLY AIR TEMP | X | | | | | | | | X | | X |
| HEATING SUPPLY AIR TEMP | X | | | | | | | | X | | X |
| MIXED AIR TEMP | X | | | | | | | | X | | X |
| FILTER DIFFERENTIAL PRESSURE | X | | | | | | | | X | | X |
| RETURN AIR TEMP | X | | | | | | | | X | | X |
| OUTDOOR AIR TEMP - MIN OA DUCT | X | | | | | | | | X | | X |
| OUTDOOR AIR TEMP - MAX OA DUCT | X | | | | | | | | X | | X |
| COOLING VALVE | | X | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| MIXING AIR DAMPERS | | X | | | | | | | X | | X |
| PREHEATING VALVE | | X | | | | | | | X | | X |
| FREEZESTAT | | | X | | | | | | X | X | X |
| RETURN AIR SMOKE DETECTOR | | | X | | | | | | X | X | X |
| CP-13-1 STATUS | | | X | | | | | | X | | X |
| CP-13-2 STATUS | | | X | | | | | | X | | X |
| RETURN FAN STATUS | | | X | | | | | | X | | X |
| SUPPLY FAN STATUS | | | X | | | | | | X | | X |
| EF-13-6 STATUS | | | X | | | | | | X | | X |
| EF-13-7 STATUS | | | X | | | | | | X | | X |
| EF-13-8 STATUS | | | X | | | | | | X | | X |
| EF-13-9 STATUS | | | X | | | | | | X | | X |
| EF-13-10 STATUS | | | X | | | | | | X | | X |
| CP-13-1 START/STOP | | | | X | | | | | X | | X |
| CP-13-2 START/STOP | | | | X | | | | | X | | X |
| MINIMUM OUTSIDE AIR DAMPER | | | | X | | | | | X | | X |
| RETURN FAN START/STOP | | | | X | | | | | X | | X |
| SUPPLY FAN START/STOP | | | | X | | | | | X | | X |
| EF-13-6 DAMPER | | | | X | | | | | | | |
| EF-13-7 DAMPER | | | | X | | | | | | | |
| EF-13-8 DAMPER | | | | X | | | | | | | |
| EF-13-9 DAMPER | | | | X | | | | | | | |
| EF-13-10 DAMPER | | | | X | | | | | | | |
| EF-13-6 START/STOP | | | | X | | | | | X | | X |
| EF-13-7 START/STOP | | | | X | | | | | X | | X |
| EF-13-8 START/STOP | | | | X | | | | | X | | X |
| EF-13-9 START/STOP | | | | X | | | | | X | | X |
| EF-13-10 START/STOP | | | | X | | | | | X | | X |
| COOLING SUPPLY AIR TEMP SETPOINT | | | | | X | | | | X | | X |
| ECONOMIZER MIXING AIR TEMP SETPOINT | | | | | X | | | | X | | X |
| HEATING SUPPLY AIR TEMP SETPOINT | | | | | X | | | | X | | X |
| PREHEATING MIXED AIR TEMP SETPOINT | | | | | X | | | | X | | X |
| EMERGENCY SHUTDOWN | | | | | | X | | | X | X | X |
| SCHEDULE | | | | | | | | X | | | |
| HIGH COOLING SUPPLY AIR TEMP | | | | | | | | | | X | |
| HIGH HEATING SUPPLY AIR TEMP | | | | | | | | | | X | |
| HIGH MIXED AIR TEMP | | | | | | | | | | X | |
| HIGH RETURN AIR TEMP | | | | | | | | | | X | |
| LOW HEATING SUPPLY AIR TEMP | | | | | | | | | | X | |
| LOW MIXED AIR TEMP | | | | | | | | | | X | |
| LOW RETURN AIR TEMP | | | | | | | | | | X | |
| PREFILTER CHANGE REQUIRED | | | | | | | | | | X | X |
| RETURN FAN FAILURE | | | | | | | | | | X | |
| RETURN FAN IN HAND | | | | | | | | | | X | |
| RETURN FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| SUPPLY FAN FAILURE | | | | | | | | | | X | |
| SUPPLY FAN IN HAND | | | | | | | | | | X | |
| SUPPLY FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| EF-13-6 FAN FAILURE | | | | | | | | | | X | |
| EF-13-7 FAN FAILURE | | | | | | | | | | X | |
| EF-13-8 FAN FAILURE | | | | | | | | | | X | |
| EF-13-9 FAN FAILURE | | | | | | | | | | X | |
| EF-13-10 FAN FAILURE | | | | | | | | | | X | |
| EF-13-6 FAN IN HAND | | | | | | | | | | X | |
| EF-13-7 FAN IN HAND | | | | | | | | | | X | |
| EF-13-8 FAN IN HAND | | | | | | | | | | X | |
| EF-13-9 FAN IN HAND | | | | | | | | | | X | |
| EF-13-10 FAN IN HAND | | | | | | | | | | X | |
| EF-13-6 FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| EF-13-7 FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| EF-13-8 FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| EF-13-9 FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| EF-13-10 FAN RUNTIME EXCEEDED | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-1 FAILURE | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-2 FAILURE | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-1 IN HAND | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-2 IN HAND | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-1 RUNTIME EXCEEDED | | | | | | | | | | X | |
| HEATING COIL PUMP CP-13-2 RUNTIME EXCEEDED | | | | | | | | | | X | |
| TOTALS | 8 | 4 | 11 | 15 | 4 | 1 | 0 | 1 | 42 | 38 | 41 |
| TOTAL HARDWARE (33) | | | | | TOTAL SOFTWARE (81) | | | | | | |

## OVERALL PROJECT POINTS LIST:

| | | | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONTROL PANEL | POINT NAME | QTY | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| UCP-2-1 | AHU-2-2 | EACH | 16 | 7 | 11 | 5 | 2 | 1 | 0 | 1 | 37 | 20 | 43 |
| | TYPICAL OF 1 | TOTAL (X1) | 16 | 7 | 11 | 5 | 2 | 1 | 0 | 1 | 37 | 20 | 43 |
| | AHU-2-3 | EACH | 2 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 14 | 8 | 14 |
| | TYPICAL OF 1 | TOTAL (X1) | 2 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 14 | 8 | 14 |
| | UH-2-1-UH-2-4, UH-2-6 | EACH | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |
| | TYPICAL OF 5 | TOTAL (X5) | 10 | 5 | 5 | 5 | 5 | 0 | 0 | 5 | 25 | 5 | 30 |
| | UH-2-5 | EACH | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |
| | TYPICAL OF 1 | TOTAL (X1) | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |
| | EF-2-2, EF-2-3 | EACH | 2 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 4 | 1 | 5 |
| | TYPICAL OF 2 | TOTAL (X2) | 4 | 2 | 6 | 2 | 2 | 0 | 0 | 0 | 8 | 2 | 10 |
| | TCV-2-3 | EACH | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| | TYPICAL OF 1 | TOTAL (X1) | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| UCP-13-1 | AHU-13-1 | EACH | 4 | 1 | 13 | 6 | 1 | 1 | 0 | 1 | 25 | 11 | 27 |
| | TYPICAL OF 1 | TOTAL (X1) | 4 | 1 | 13 | 6 | 1 | 1 | 0 | 1 | 25 | 11 | 27 |
| | UH-13-1-UH-13-18 | EACH | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |
| | TYPICAL OF 18 | TOTAL (X18) | 36 | 18 | 18 | 18 | 18 | 0 | 0 | 18 | 90 | 18 | 108 |
| | TCV-13-3 | EACH | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 |
| | TYPICAL OF 1 | TOTAL (X1) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 |
| | TCV-13-4 | EACH | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| | TYPICAL OF 1 | TOTAL (X1) | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| | TCV-13-5 | EACH | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| | TYPICAL OF 1 | TOTAL (X1) | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |
| UCP-13-2 | AHU-13-2 | EACH | 8 | 4 | 11 | 15 | 4 | 1 | 0 | 1 | 42 | 38 | 41 |
| | TYPICAL OF 1 | TOTAL (X1) | 8 | 4 | 11 | 15 | 4 | 1 | 0 | 1 | 42 | 38 | 41 |
| | MIXING BOXES | EACH | 3 | 1 | 0 | 0 | 4 | 0 | 0 | 1 | 6 | 4 | 7 |
| | TYPICAL OF 11 | TOTAL (X11) | 33 | 11 | 0 | 0 | 44 | 0 | 0 | 11 | 66 | 44 | 77 |
| | | PROJECT TOTALS | 121 | 54 | 73 | 58 | 81 | 3 | 0 | 43 | 324 | 150 | 373 |
| | | TOTAL HARDWARE (306) | | | | | TOTAL SOFTWARE (601) | | | | | | |

## MIXING BOX CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-2:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| DISCHARGE AIR TEMP | X | | | | | | | | X | | X |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| ZONE DAMPER | | X | | | | | | | | | |
| COLD DECK DAMPER POSITION | | | | | X | | | | X | | X |
| COOLING SETPOINT | | | | | X | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| HOT DECK DAMPER POSITION | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| HIGH DISCHARGE AIR TEMP | | | | | | | | | | X | |
| LOW DISCHARGE AIR TEMP | | | | | | | | | | X | |
| HIGH ZONE TEMP | | | | | | | | | | X | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 3 | 1 | 0 | 0 | 4 | 0 | 0 | 1 | 6 | 4 | 7 |
| TOTAL HARDWARE (4) | | | | | TOTAL SOFTWARE (15) | | | | | | |

HVAC CONTROLS

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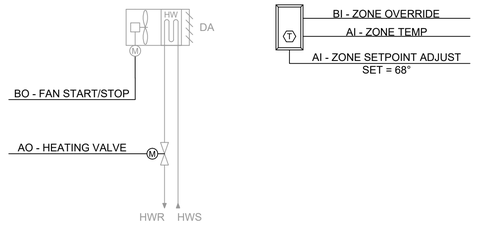
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## UH-13-1 - UH-13-18 (TYP. 18) AIRFLOW SCHEMATIC

UNIT HEATERS UH-13-1 - UH-13-18 (TYP. 18) CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| FAN START/STOP | | | | X | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |

UH-13-1-UH-13-18 HVAC SEQUENCE OF OPERATION (CONT.):
RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

- OCCUPIED MODE: THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 68'F (ADJ.).
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 50'F (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:
TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

FAN:
THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE DROPS BELOW HEATING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65'F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN IS ON.




## RADIATION CONTROL TCV-13-4 AIRFLOW SCHEMATIC

TCV-13-4 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |

TCV-13-4 SEQUENCE OF OPERATION:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

- OCCUPIED MODE: THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 68'F (ADJ.).
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 50'F (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:
TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

REHEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE REHEATING COIL VALVE TO MAINTAIN ITS SETPOINT.

THE REHEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65'F(ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW SETPOINT.
- AND SUFFICIENT AIRFLOW IS PROVIDED

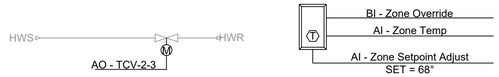



## RADIATION CONTROL TCV-13-3 AIRFLOW SCHEMATIC

TCV-13-3 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-13-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| HEATING VALVE | | X | | | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| TOTALS | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 |

TCV-13-3 SEQUENCE OF OPERATION:
THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 37'F (ADJ.).




## RADIATION CONTROL TCV-2-3 AIRFLOW SCHEMATIC

TCV-2-3 CONTROL PANEL POINTS LIST - CONTROL PANEL UCP-2-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 5 |

TCV-2-3 SEQUENCE OF OPERATION:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

- OCCUPIED MODE: THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 68'F (ADJ.).
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 50'F (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:
TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

REHEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE REHEATING COIL VALVE TO MAINTAIN ITS SETPOINT.

THE REHEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65'F(ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW SETPOINT.
- AND SUFFICIENT AIRFLOW IS PROVIDED

HVAC CONTROLS

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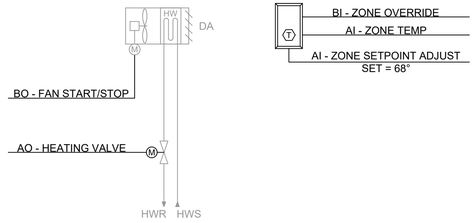
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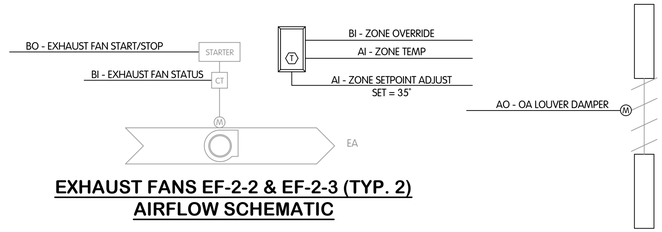
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## UH-2-5 AIRFLOW SCHEMATIC

EXPLOSION PROOF UNIT HEATER UH-2-5 CONTROL PANEL POINTS LIST
CONTROL PANEL UCP-2-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| FAN START/STOP | | | | X | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |



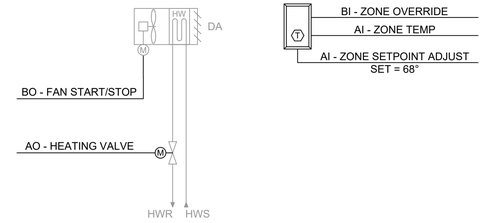

## EXHAUST FANS EF-2-2 & EF-2-3 (TYP. 2) AIRFLOW SCHEMATIC

EXHAUST FANS EF-2-2 & EF-2-3 (TYP. 2) CONTROL PANEL POINTS LIST
CONTROL PANEL UCP-2-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| INTERLOCKED LOUVER DAMPER | | X | | | | | | | | | |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| FAN STATUS | | | X | | | | | | | | |
| INTERLOCKED DAMPER STATUS | | | X | | | | | | | | |
| FAN START/STOP | | | | X | | | | | X | | X |
| TEMP SETPOINT | | | | | X | | | | X | | X |
| HIGH ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 4 | 1 | 5 |

EXHAUST FANS EF-2-2 & EF-2-3 SEQUENCE OF OPERATION:

A ROOM THERMOSTAT ON A RISE IN SPACE TEMPERATURE ABOVE ITS SET POINT WILL ENERGIZE THE EXHAUST FAN. WITH THE EXHAUST FAN ENERGIZED, THE EXHAUST DAMPER WILL OPEN.




## UH-2-1 - UH-2-4, UH-2-6 (TYP. 5) AIRFLOW SCHEMATIC

UNIT HEATERS UH-2-1 - UH-2-4, UH-2-6 (TYP. 5) CONTROL PANEL POINTS LIST
CONTROL PANEL UCP-2-1:

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POINT NAME | AI | AO | BI | BO | AV | BV | LOOP | SCHED | TREND | ALARM | SHOW ON GRAPHIC |
| ZONE SETPOINT ADJUST | X | | | | | | | | | | X |
| ZONE TEMP | X | | | | | | | | X | | X |
| HEATING VALVE | | X | | | | | | | X | | X |
| ZONE OVERRIDE | | | X | | | | | | X | | X |
| FAN START/STOP | | | | X | | | | | X | | X |
| HEATING SETPOINT | | | | | X | | | | X | | X |
| SCHEDULE | | | | | | | | X | | | |
| LOW ZONE TEMP | | | | | | | | | | X | |
| TOTALS | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 5 | 1 | 6 |

UNIT HEATERS UH-2-1 - UH-2-6 SEQUENCE OF OPERATION:
RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

- OCCUPIED MODE: THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 68°F (ADJ.).
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 50°F (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

DEMAND LIMITING - ZONE SETPOINT OPTIMIZATION:
TO LOWER POWER CONSUMPTION, THE ZONE SETPOINTS SHALL AUTOMATICALLY RELAX WHEN THE FACILITY POWER CONSUMPTION EXCEEDS DEFINABLE THRESHOLDS. THE AMOUNT OF RELAXATION SHALL BE INDIVIDUALLY CONFIGURABLE FOR EACH ZONE. THE ZONE SETPOINTS SHALL AUTOMATICALLY RETURN TO THEIR PREVIOUS SETTINGS WHEN THE FACILITY POWER CONSUMPTION DROPS BELOW THE THRESHOLDS.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

FAN:
THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE DROPS BELOW HEATING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN IS ON.

HVAC CONTROLS

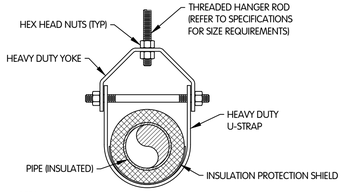
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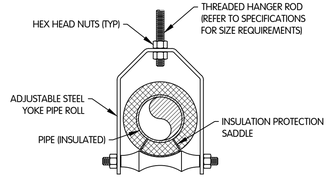



NOTES:

1. UTILIZE ADJUSTABLE CLEVIS HANGERS FOR HEATING OR CHILLED WATER PIPING 2-1/2 INCH DIAMETER AND SMALLER.
2. OVERSIZE CLEVIS HANGER AS REQUIRED TO ALLOW FOR INSULATING PIPING WITHIN HANGER.
3. PROVIDE PIPE INSULATION PROTECTION SHIELD BETWEEN INSULATION AND CLEVIS.

## ADJUSTABLE CLEVIS PIPE HANGER INSTALLATION DETAIL

NTS

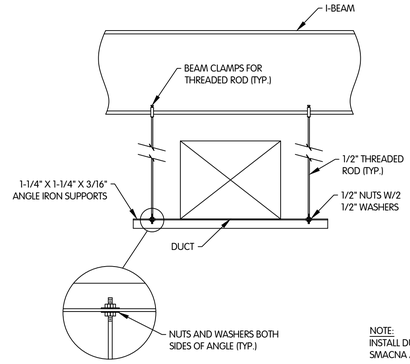


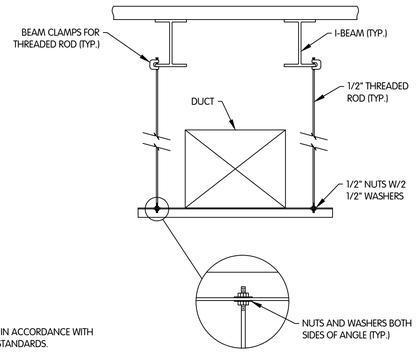

NOTES:

1. UTILIZE ROLL HANGER FOR ALL HEATING OR CHILLED WATER PIPING 3 INCH DIAMETER AND LARGER.
2. OVERSIZE ROLL HANGER AS REQUIRED TO ALLOW FOR INSULATING PIPING WITHIN HANGER.
3. PROVIDE PIPE INSULATION PROTECTION SHIELD BETWEEN INSULATION AND CLEVIS.

## ADJUSTABLE STEEL YOKE PIPE ROLL HANGER INSTALLATION DETAIL

NTS

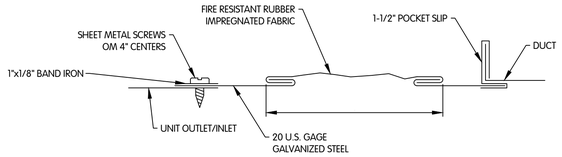



NOTE:
INSTALL DUCT HANGERS IN ACCORDANCE WITH SMACNA AND ASHRAE STANDARDS.

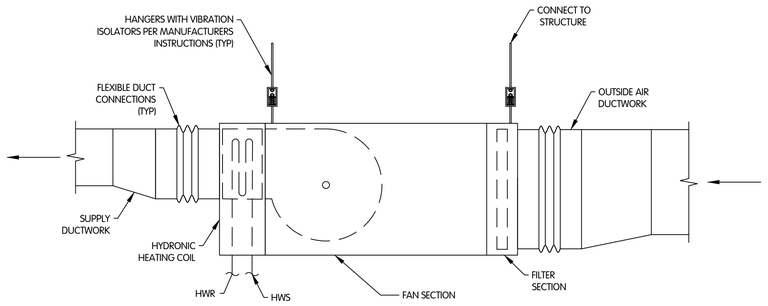
## DUCT HANGER DETAIL

NTS



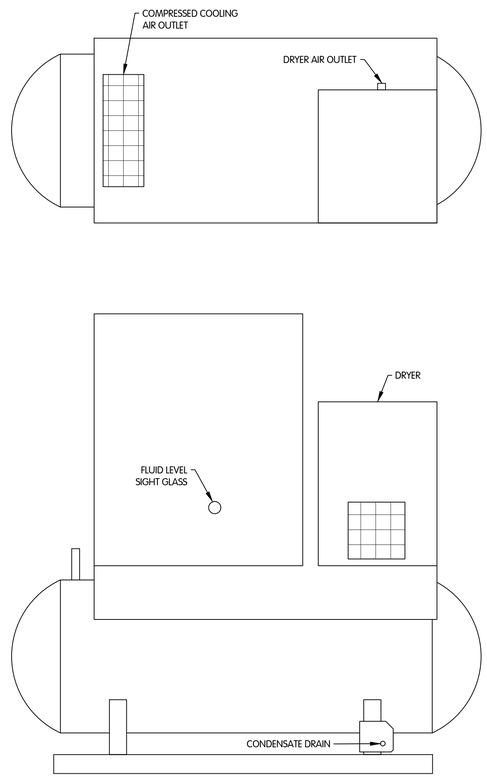

## TYPICAL FLEXIBLE CONNECTION DETAIL

NTS



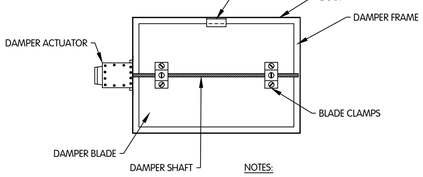

## INDOOR MAKE-UP AIR UNIT AHU-2-3 DETAIL

NTS




## AIR COMPRESSOR DETAIL

NTS

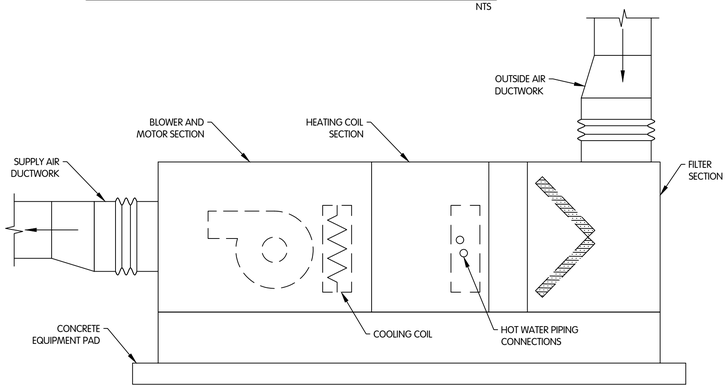



NOTES:

1. DAMPERS FOR ROUND DUCTS SHALL BE SIMILAR TO THE DAMPER SHOWN ABOVE.
2. ENSURE THAT FULL 90 DEGREE DAMPER BLADE MOVEMENT IS UNOBSTRUCTED.
3. FOR DUCT HEIGHTS MORE THAN 12 INCHES, PROVIDE OPPOSED BLADE DAMPERS.

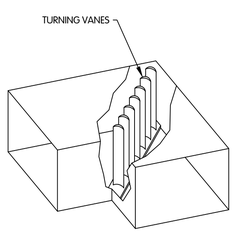
## MOTORIZED CONTROL DAMPER DETAIL

NTS



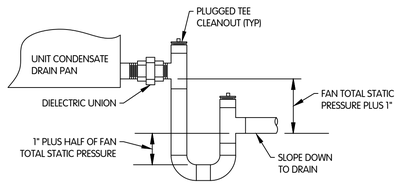

## INDOOR MAKE-UP AIR UNIT AHU-2-2 DETAIL

NTS




## TYPICAL DUCT ELBOW DETAIL

NTS




NOTES:

1. LOCATE TRAP AS CLOSE AS POSSIB;E TO CONDENSATE DRAIN PAN OUTLET WITH BOTTOM BELOW SUPPORT STRUCTURE.
2. DRAIN PIPING SHALL BE INSULATED.
3. SIZE OF TRAP PIPING TO BE LARGER OF EQUIPMENT OUTLET SIZE OR DIMENSION OF PLANS.
4. DRAIN PIPING SHALL PENETRATE THE ROOF LINE WITHIN THE CONFINEMENT OF THE HVAC EQUIPMENT CURB.

## CONDENSATE DRAIN TRAP DETAIL

NTS

HVAC DETAILS

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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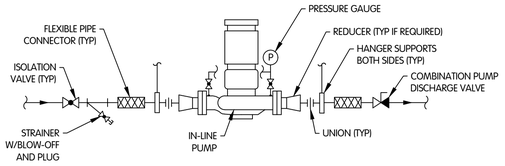
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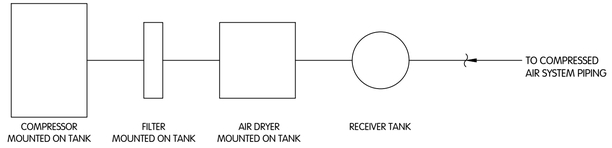
DATE: OCTOBER 2023

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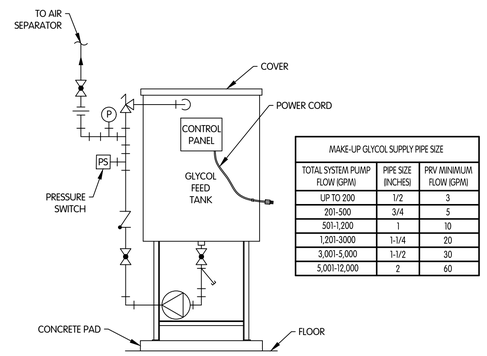
FTW-8020IH09-M-0.9 HVAC DETAILS
10/30/2023 2:45 PM - CLENDER
I2/1/2023 1:05 AM




## VERTICAL IN-LINE PUMP DETAIL
NTS




## COMPRESSED AIR CONNECTION TO SYSTEM PIPING DETAIL
NTS

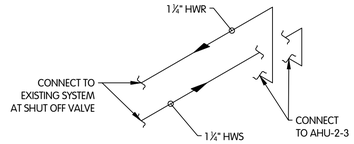



| MAKE-UP GLYCOL SUPPLY PIPE SIZE | | |
|---|---|---|
| TOTAL SYSTEM PUMP FLOW (GPM) | PIPE SIZE (INCHES) | PRV MINIMUM FLOW (GPM) |
| UP TO 200 | 1/2 | 3 |
| 201-500 | 3/4 | 5 |
| 501-1,200 | 1 | 10 |
| 1,201-3000 | 1-1/4 | 20 |
| 3,001-5,000 | 1-1/2 | 30 |
| 5,001-12,000 | 2 | 60 |

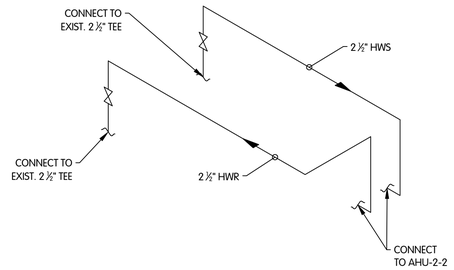
NOTES:

1. GLYCOL FEED TANK AND PIPING UPSTREAM OF THE PRESSURE GAUGE IS PROVIDED BY MANUFACTURER'S PACKAGED GYLCOL FEED SYSTEM.
2. PROVIDE A 120/1/60 ELECTRICAL RECEPTACLE NEAR UNIT TO ACCEPT POWER PLUG CONNECTION.

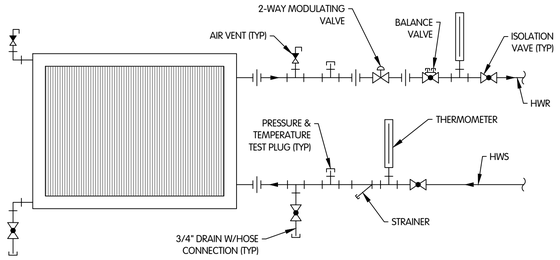
## GLYCOL FEED SYSTEM CONNECTION DETAIL
NTS



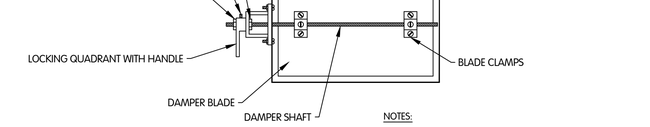

## AHU-2-3 HYDRONIC PIPING ISO
NTS




## AHU-2-2 HYDRONIC PIPING ISO
NTS



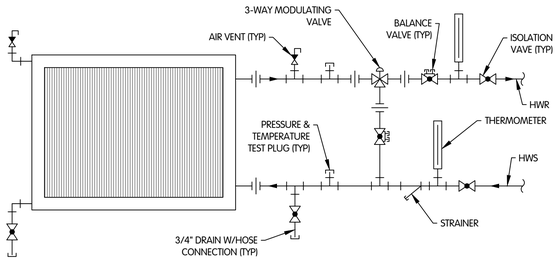

## UNIT COIL PIPING DETAIL (2-WAY VALVE)
NTS



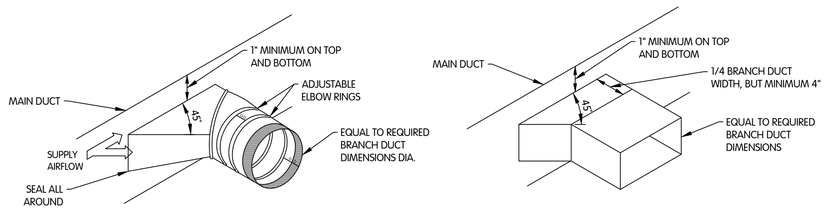

NOTES:

1. DAMPERS FOR ROUND DUCTS SHALL BE SIMILAR TO THE DAMPER SHOWN ABOVE.
2. ENSURE THAT FULL 90 DEGREE DAMPER BLADE MOVEMENT IS UNOBSTRUCTED.
3. FOR DUCT HEIGHTS MORE THAN 12 INCHES, PROVIDE OPPOSED BLADE DAMPERS.

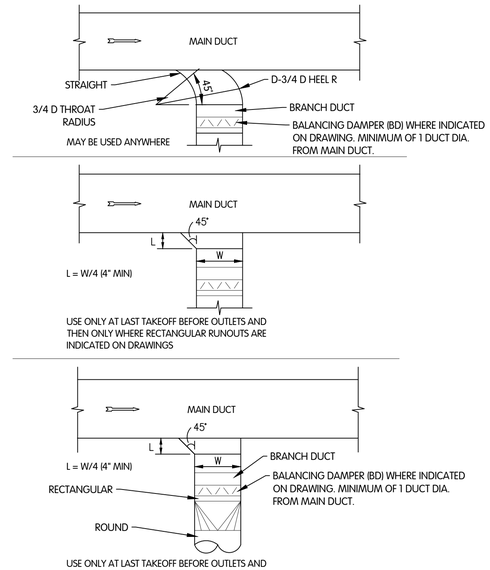
## MANUAL BALANCING DAMPER DETAIL
NTS




## UNIT COIL PIPING DETAIL (3-WAY VALVE)
NTS




## TYPICAL BRANCH TAKE-OFF FITTING DETAIL
NTS




## TYPICAL BRANCH CONNECTION DETAIL
NTS

HVAC DETAILS

CITY OF BATTLE CREEK, MICHIGAN
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FTW-802100\M00\H-0.10 HVAC DETAILS
10/30/2023 1:47 PM - CLENDER
12/1/2023 11:05 AM

## PUMP SCHEDULE

| TAG | LOCATION | TYPE | SERVICE | WATER DATA | | | ELECTRICAL | | | MAKE | MODEL | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | FLOW (GPM) | HEAD (FT) | PUMP EFFICIENCY (%) | FAN MOTOR (HP) | MOTOR (RPM) | V/PH/HZ | | | |
| HWP-1 | MECHANICAL ROOM | VERTICAL INLINE | HOT WATER | 288 | 89 | 73.9 | 15 | 3,600 | 480/3/60 | BELL & GOSSETT | AHU | 1,2 |
| HWP-2 | MECHANICAL ROOM | VERTICAL INLINE | HOT WATER | 288 | 89 | 73.9 | 15 | 3,600 | 480/3/60 | BELL & GOSSETT | AHU | 1,2 |

NOTES:

1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. INSTALL WITH FLEXIBLE PIPE CONNECTIONS.

| TAG | LOCATION | TYPE | SUPPLY AIRFLOW (CFM) | OUTSIDE AIRFLOW (CFM) | FAN SECTION | | | HEATING COIL DATA | | | | | | | FILTER | | ELECTRICAL | | | MAKE | MODEL | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | E.S.P. (IN. W.C.) | HP | FAN TYPE | TOTAL (MBH) | FLOW (GPM) | EAT ($^{o}$F) | LAT ($^{o}$F) | EWT ($^{o}$F) | LWT ($^{o}$F) | WPD (FT) | APD (IN) | TYPE | MERV | (V/PH/HZ) | MCA | MFS | | | |
| AHU-2-3 | RAW SEWAGE PUMP STATION | MODULAR | 1400 | 1400 | 0.25 | 1 | PLENUM | 101.4 | 12.0 | 0 | 62 | 180 | 162 | 6.2 | 0.08 | 2" PLEATED | 8 | 480/3/60 | 3.13 | 15.0 | TRANE | BCHE054 | 1,2,3,4,5,6 |

NOTES:

1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. MAXIMUM COIL FACE VELOCITY SHALL NOT EXCEED 550 FPM.
3. COPPER COILS WITH ALUMINUM FINS.
4. PROVIDE INTERNAL VIBRATION ISOLATION AT SUPPLY FANS.
5. PROVIDE ACCESS SECTION BETWEEN COIL SECTIONS.
6. FAB SHALL BE SELECTED SO THAT FAN SURGE DOES NOT OCCUR AS SPEED REDUCES TO MINIMUM AIRFLOW.

## SPLIT SYSTEM AIR HANDLING UNIT/CONDENSING UNIT SCHEDULE

| TAG | LOCATION | TYPE | SUPPLY AIRFLOW (CFM) | OUTSIDE AIRFLOW (CFM) | SUPPLY FAN | | | HEATING COIL DATA | | | | | | | | COOLING CAPACITY | | AHU | | | | | FILTER | | CU | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | E.S.P. (IN. W.C.) | HP | BLOWER | TOTAL (MBH) | FLOW (GPM) | EAT ($^{o}$F) | LAT ($^{o}$F) | EWT ($^{o}$F) | LWT ($^{o}$F) | WPD (FT) | APD (IN) | TOTAL (BTUH) | SENSIBLE (BTUH) | MAKE | MODEL | V/PH/HZ | MCA | MFS | TYPE | MERV | MAKE | MODEL | V/PH/HZ | MCA | MFS | |
| AHU-2-2/CCU-2-1 | RAW SEWAGE PUMP STATION | MODULAR | 6,000 | 6,000 | 0.55 | 5 | PLENUM | 550 | 54.6 | 0 | 88 | 180 | 158 | 7.0 | 0.14 | 293 | 185 | TRANE | UCCAG14 | 480/3/60 | 9.50 | 15.0 | 2" PLEATED | 8 | TRANE | TTA30044CAA | 480/3/60 | 48.0 | 60.0 | 1,2,3,4,5,6,7,8,9 |

NOTES:

1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. PROVIDE AIR HANDLING UNIT WITH SPRING VIBRATION ISOLATORS FOR HORIZONTAL INSTALLATION.
3. PROVIDE EVAPORATOR COIL WITH REMOVABLE COMPOSITE DRAIN PAN.
4. EVAPORATOR COIL ENTERING AIR DRY BULB/WET BULB TEMPERATURES: 80/67 DEGREES F.
5. CONDENSING UNIT ENTERING AIR DRY BULB TEMPERATURE: 95 DEGREES F.
6. PROVIDE PRE-CHARGED LINE SETS FOR INSTALLTION OF REFRIGERANT PIPING, REFRIGERNT R-410A.
7. PROVIDE 24 VOLT TWO STAGE HEATING, TWO STAGE COOLING THERMOSTAT WITH AUTOMATIC CHANGEOVER.
8. PROVIDE CONDENSING UNIT WITH LOW AMBIENT CONTROL FOR COOLING OPERATION TO OUTDOOR AMBIENT OF 0 DEGREES F.
9. HARD WIRED REMOTE CONTROLLER WITH MODE, FAN SPEED, AND TEMPERATURE SELECTION.

HVAC
SCHEDULES AND
HEATING COIL DATA

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

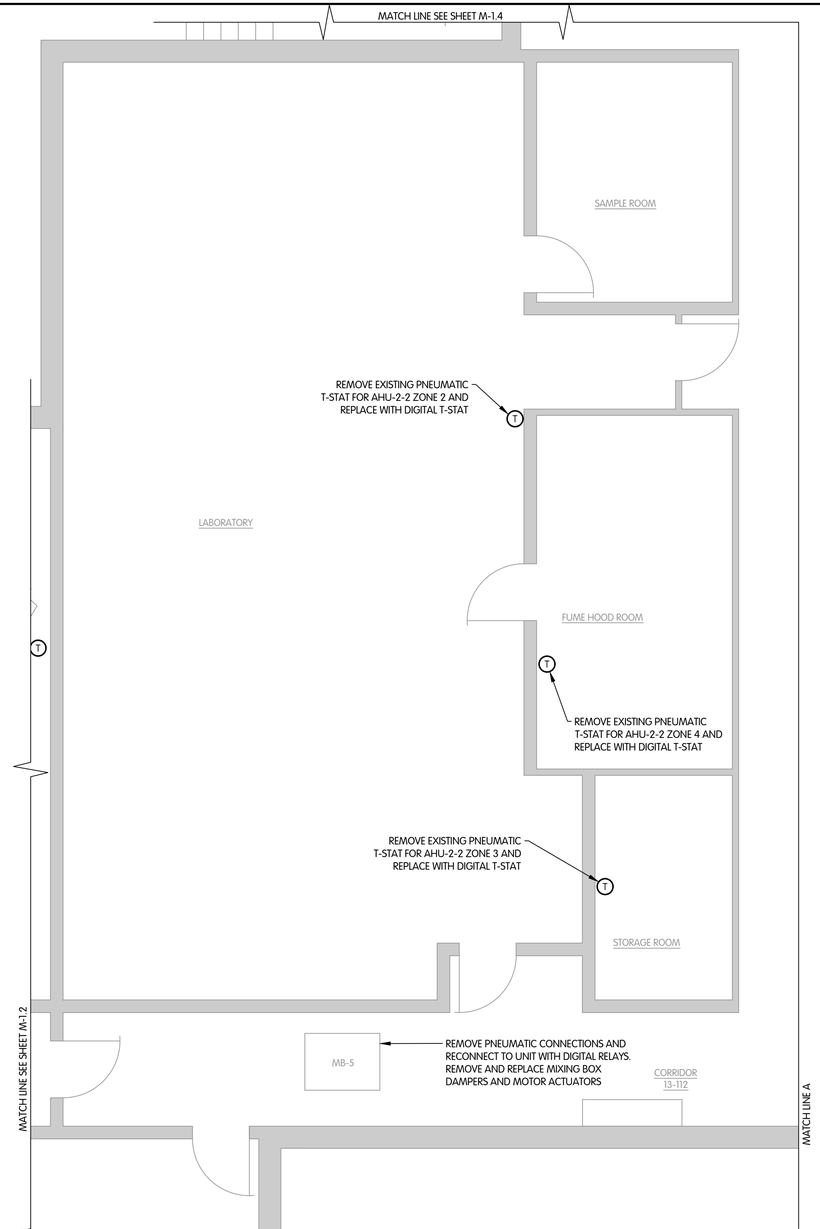
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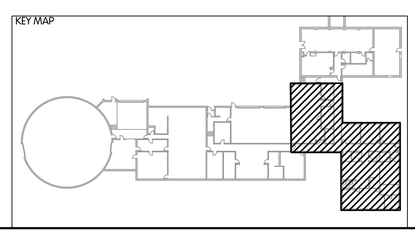
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12/1/2023 11:05 AM - ABLAISING

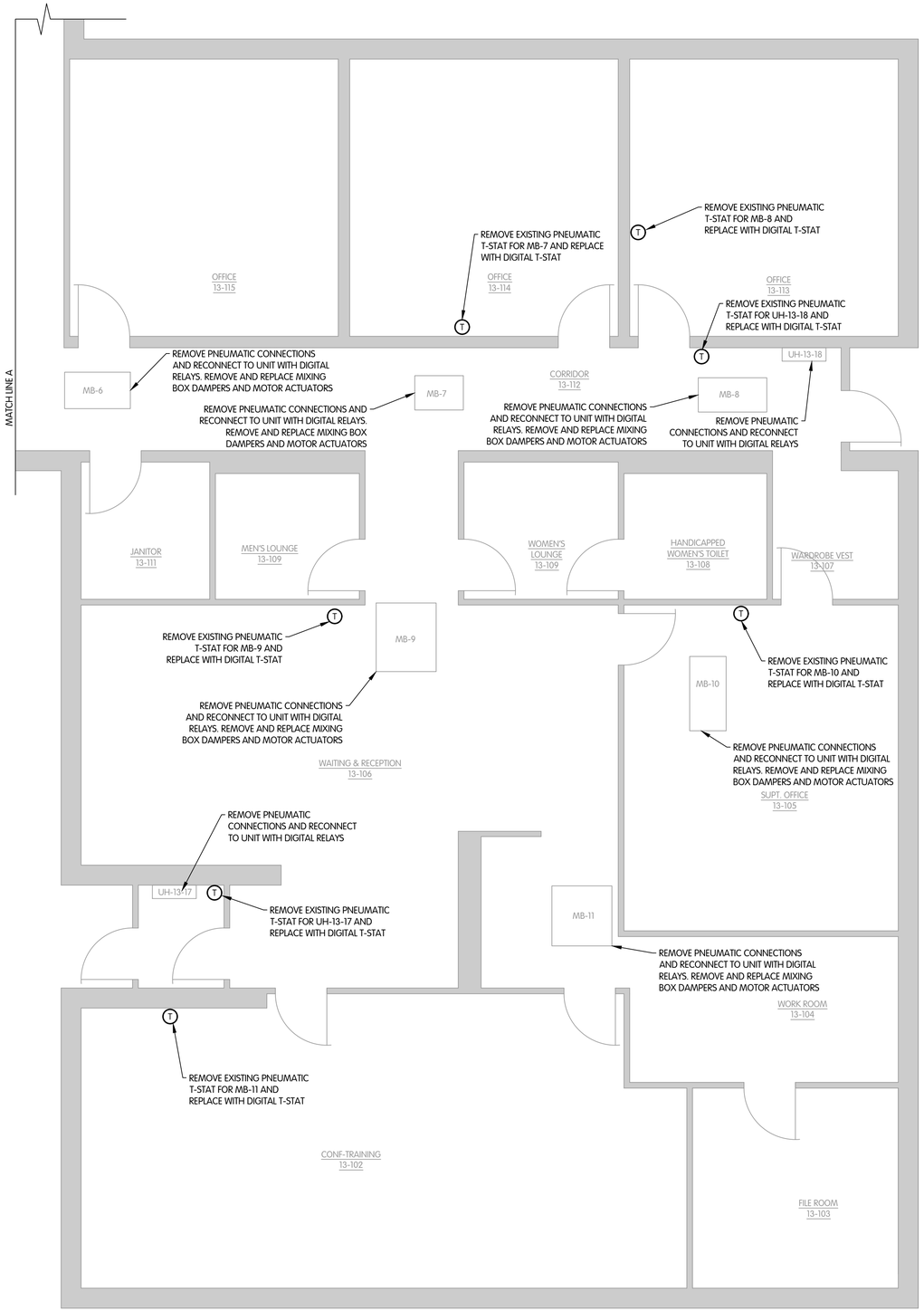



## FIRST FLOOR PLAN

1/4" = 1'-0"

KEY MAP






## FIRST FLOOR PLAN

1/4" = 1'-0"

# HVAC
# ADMINISTRATION BUILDING
# FIRST FLOOR PLAN
# OFFICE AND LABORATORY AREA

**CITY OF BATTLE CREEK, MICHIGAN**
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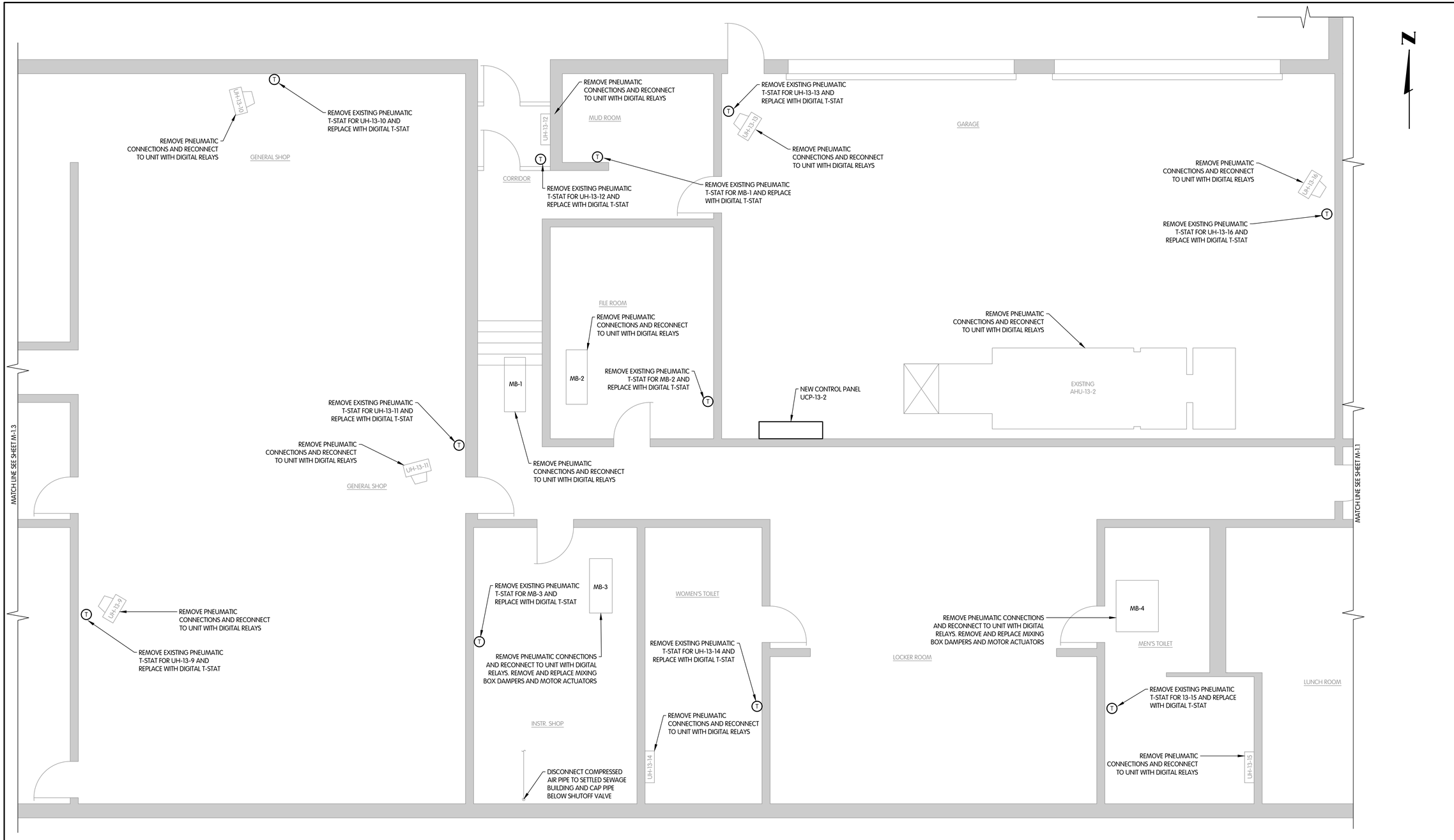
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M-1.1

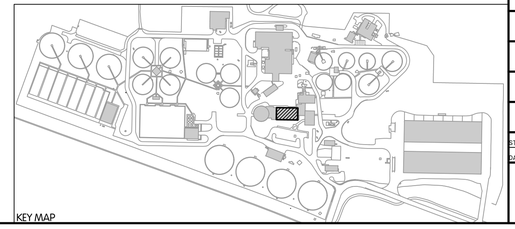
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FTW-8021001H1-M-1.1 OFFICE AREA
10/05/2023 1:14 PM - CLENDER
12/1/2023 11:05 AM




## FIRST FLOOR PLAN

1/4" = 1'-0"




# HVAC
# ADMINISTRATION BUILDING
# FIRST FLOOR PLAN
# MAINTENACE AREA

**CITY OF BATTLE CREEK, MICHIGAN**
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|---|---|---|
| ASB | AJB | BDL |

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M-1.2

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FTW-8020IN12-M1-2 MAINT EAST
10/30/2023 3:48 PM - CLEMDER
12/7/2023 11:05 AM

REMOVE EXISTING PNEUMATIC T-STAT FOR UH-13-1 AND REPLACE WITH DIGITAL T-STAT

UH-13-1

REMOVE PNEUMATIC CONNECTIONS AND RECONNECT TO UNIT WITH DIGITAL RELAYS

REMOVE EXISTING PNEUMATIC T-STAT FOR UH-13-2 AND REPLACE WITH DIGITAL T-STAT

REMOVE PNEUMATIC CONNECTIONS AND RECONNECT TO UNIT WITH DIGITAL RELAYS

UH-13-2

EXISTING AHU-13-1

REMOVE PNEUMATIC CONNECTIONS AND RECONNECT TO UNIT WITH DIGITAL RELAYS

UH-13-5

REMOVE PNEUMATIC CONNECTIONS AND RECONNECT TO UNIT WITH DIGITAL RELAYS

REMOVE EXISTING PNEUMATIC T-STAT FOR UH-13-5 AND REPLACE WITH DIGITAL T-STAT

NEW CONTROL PANEL UCP-13-1

REMOVE EXISTING PNEUMATIC T-STAT FOR UH-13-7 AND REPLACE WITH DIGITAL T-STAT

DOCK 13-138

REMOVE PNEUMATIC CONNECTIONS AND RECONNECT TO UNIT WITH DIGITAL RELAYS

UH-13-7

REMOVE EXISTING PNEUMATIC T-STAT FOR TCV-13-5 AND REPLACE WITH DIGITAL T-STAT

STORAGE AREA

REMOVE EXISTING PNEUMATIC T-STAT FOR UH-13-6 AND REPLACE WITH DIGITAL T-STAT

UH-13-6

REMOVE PNEUMATIC CONNECTIONS AND RECONNECT TO UNIT WITH DIGITAL RELAYS

ISSUE OFFICE

RECEIVING 13-139

UH-13-8

REMOVE PNEUMATIC CONNECTIONS AND RECONNECT TO UNIT WITH DIGITAL RELAYS

REMOVE EXISTING PNEUMATIC T-STAT FOR UH-13-8 AND REPLACE WITH DIGITAL T-STAT

SMALL PARTS STORAGE

MATCH LINE SEE SHEET M-1.2

REMOVE PNEUMATIC CONNECTIONS AND RECONNECT TO UNIT WITH DIGITAL RELAYS

UH-13-4

REMOVE EXISTING PNEUMATIC T-STAT FOR UH-13-4 AND REPLACE WITH DIGITAL T-STAT

REMOVE PNEUMATIC CONNECTIONS AND RECONNECT TO UNIT WITH DIGITAL RELAYS

UH-13-3

REMOVE EXISTING PNEUMATIC T-STAT FOR UH-13-3 AND REPLACE WITH DIGITAL T-STAT

## FIRST FLOOR PLAN

1/4" = 1'-0"

KEY MAP

# HVAC
# ADMINISTRATION BUILDING
# FIRST FLOOR PLAN
# DIGESTER AREA

**CITY OF BATTLE CREEK, MICHIGAN**
**WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS**

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
|---|---|---|---|
| 5 | | | |
| 4 | | | |
| 3 | | | |
| 2 | | | |
| 1 | | | |


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JOB NO. 008-8021.001

SCALE AS NOTED

THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| ASB | AJB | BDL |

STATUS: ISSUED FOR BID

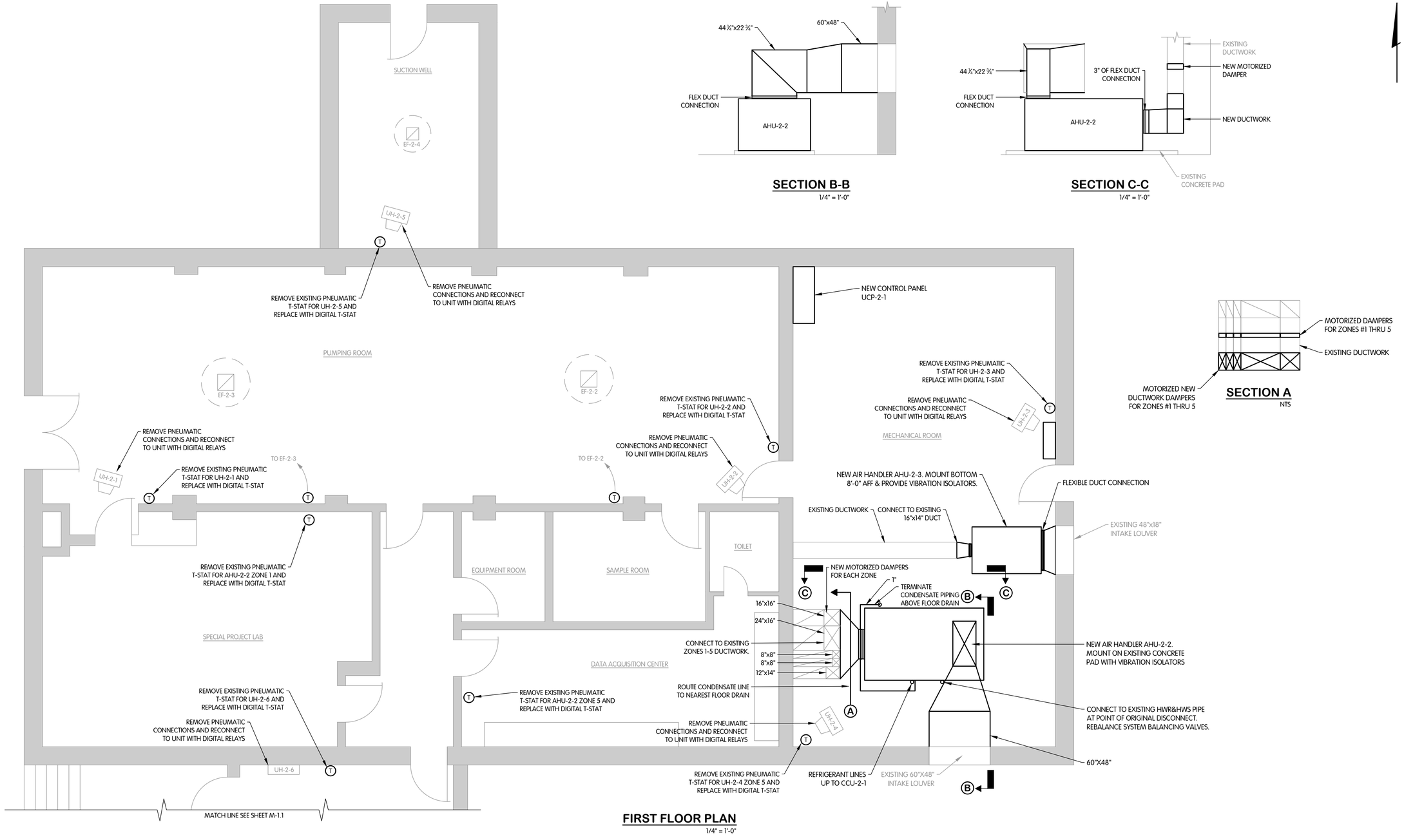
DATE: OCTOBER 2023

SHEET NO.

M-1.3

20 OF 34


FTW-402100PM13-M-1.3 DIGESTER
10/31/2023 2:46 PM - CLENDER
12/1/2023 11:06 AM




## FIRST FLOOR PLAN
1/4" = 1'-0"



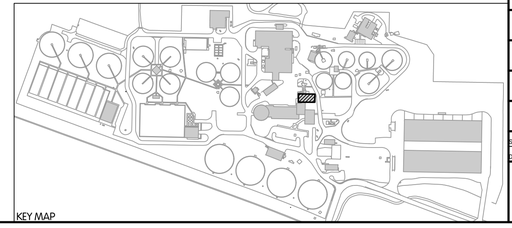

## SECTION B-B
1/4" = 1'-0"




## SECTION C-C
1/4" = 1'-0"




## SECTION A
NTS




HVAC
ADMINISTRATION BUILDING
FIRST FLOOR PLAN
RAW SEWAGE PUMP STATION

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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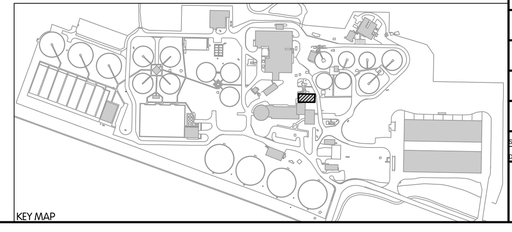

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| JOB NO. | 008-8021.001 |
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| | THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE |
| DESIGNED | ASB |
| DRAWN | AJB |
| CHECKED | BDL |
| STATUS: | ISSUED FOR BID |
| DATE: | OCTOBER 2023 |
| SHEET NO. | M-1.4 |
| | 21 OF 34 |


FTW-8021001MIL-M-1.4 HVAC MECH ROOM 1ST
12/1/2023 11:06 AM - CLENDER




## FIRST FLOOR PLAN

1/4" = 1'-0"




N

HVAC
ADMINISTRATION BUILDING
ROOF PLAN
RAW SEWAGE PUMP STATION

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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| DESIGNED | DRAWN | CHECKED |
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| ASB | AJB | BDL |

STATUS: ISSUED FOR BID

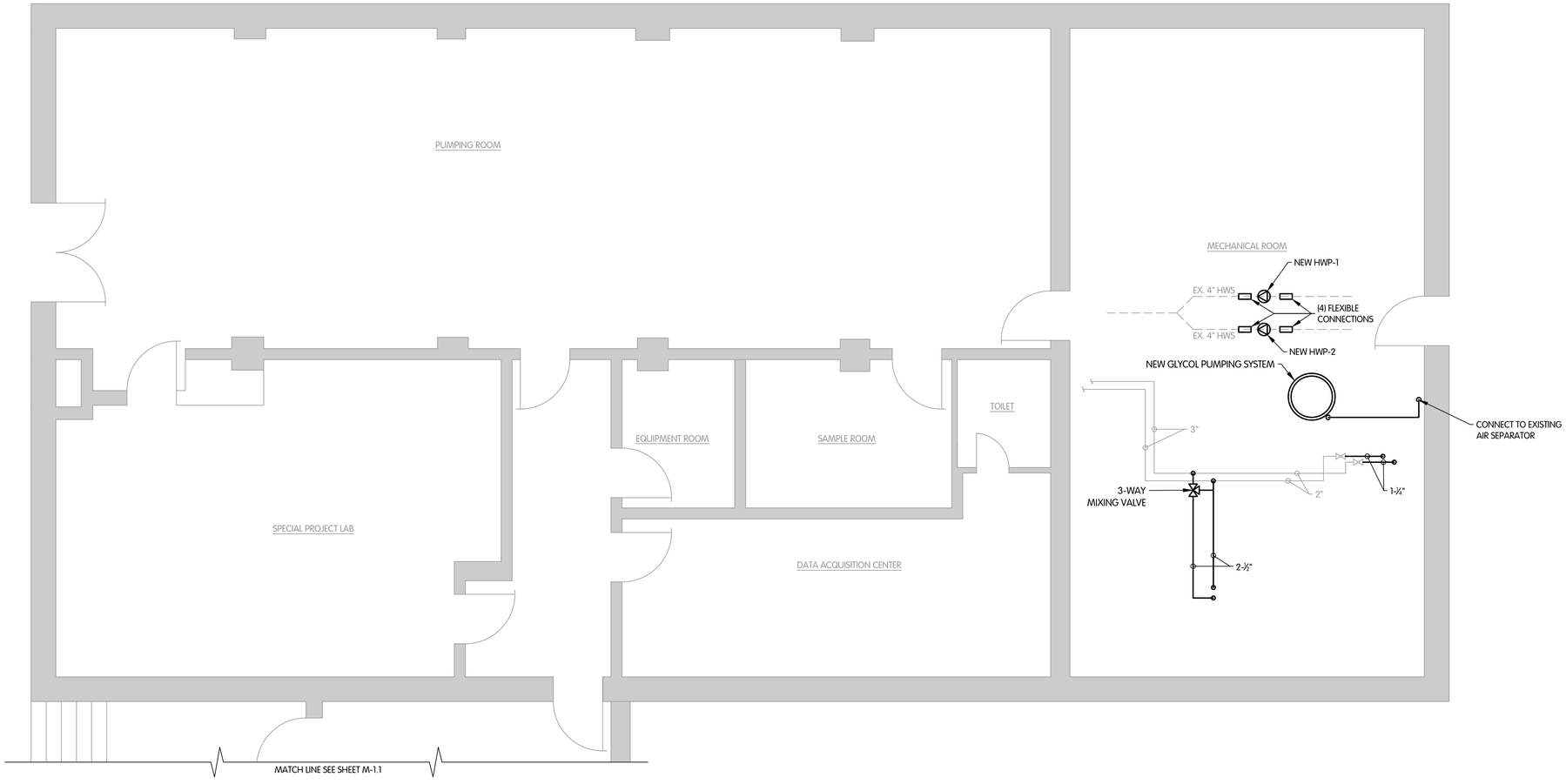
DATE: OCTOBER 2023

SHEET NO.

M-1.5

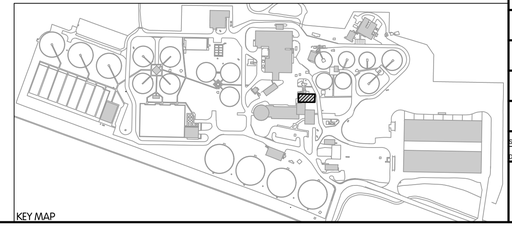
22 OF 34

FTW-402100MIS-M-L5 MECH ROOM ROOF
10/30/2023 1:05 PM - CLENDER
12/7/2023 11:06 AM




## FIRST FLOOR PLAN

1/4" = 1'-0"




# MECHANICAL
# ADMINISTRATION BUILDING
# FIRST FLOOR PLAN
# RAW SEWAGE PUMP STATION

**CITY OF BATTLE CREEK, MICHIGAN**
**WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS**

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
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| SCALE | AS NOTED |

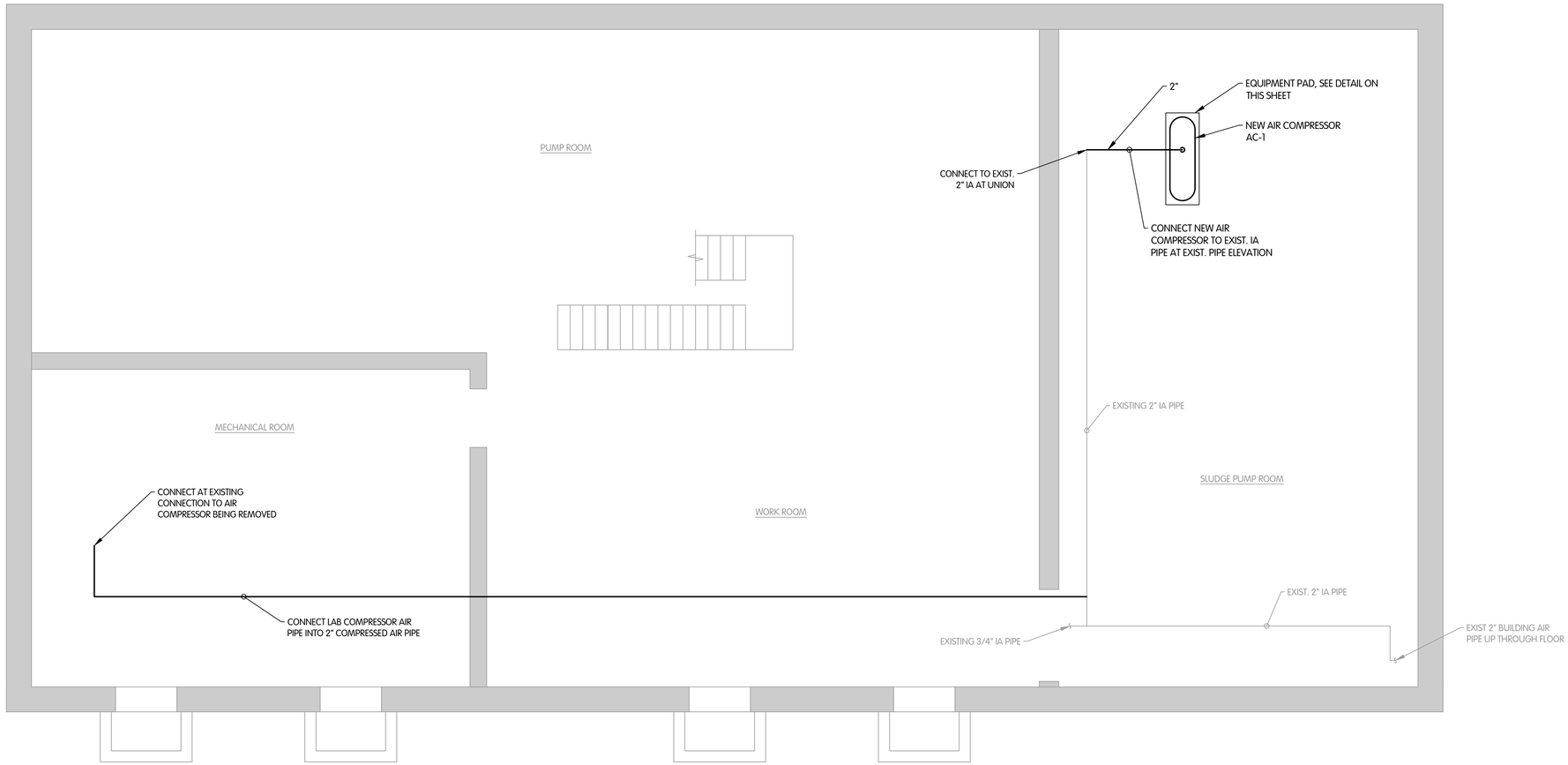
THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

| DESIGNED | DRAWN | CHECKED |
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| ASB | AJB | BDL |

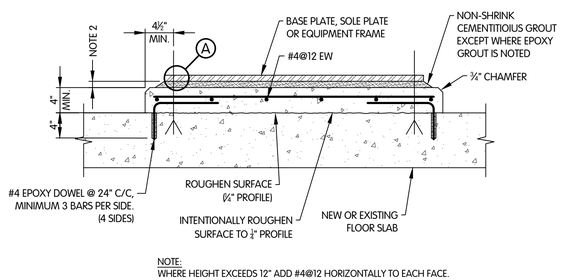
STATUS: ISSUED FOR BID
DATE: OCTOBER 2023

SHEET NO.
M-1.6
23 OF 34


FTW-402100PM16-M1.6 MECH ROOM 1ST
PLOTTED: 12/12/2023 10:06 AM - CLENDER
12/12/2023 10:06 AM

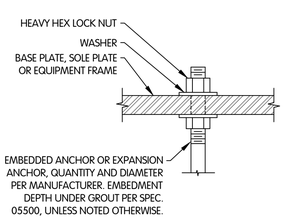



## FIRST FLOOR PLAN
1/4" = 1'-0"

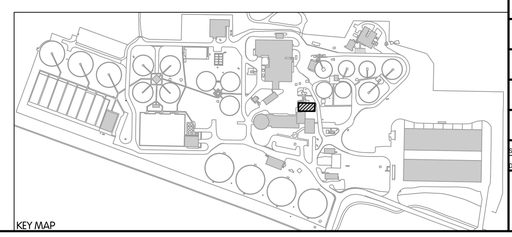



NOTE:
WHERE HEIGHT EXCEEDS 12" ADD #4@12 HORIZONTALLY TO EACH FACE.

## EQUIPMENT BASE PAD DETAIL




## DETAIL A
(TYPICAL) 3"=1'-0"


KEY MAP

N

MECHANICAL
ADMINISTRATION BUILDING
BASEMENT PLAN
MECHANICAL ROOM

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
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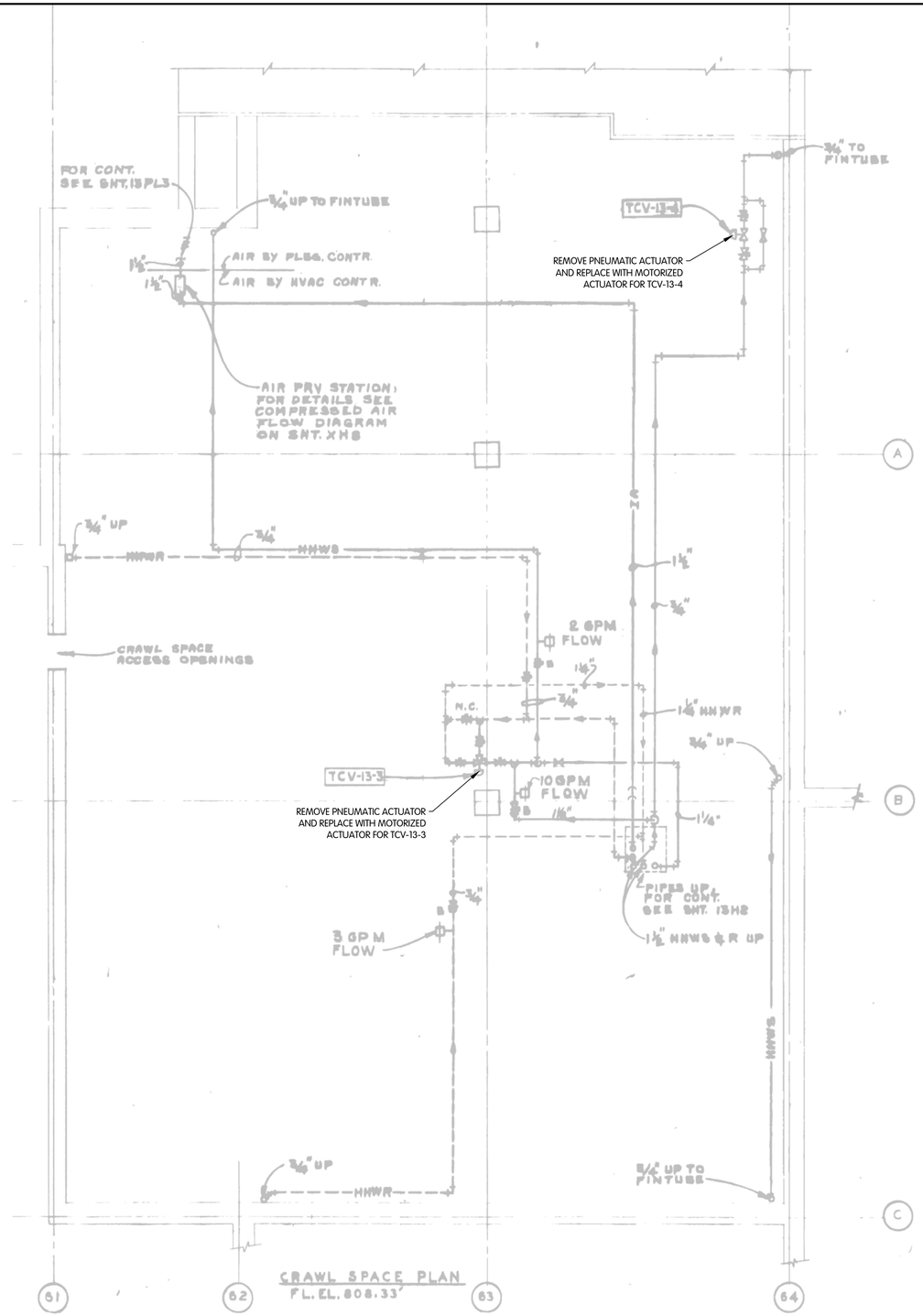
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| DESIGNED | DRAWN | CHECKED |
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| ASB | AJB | BDL |

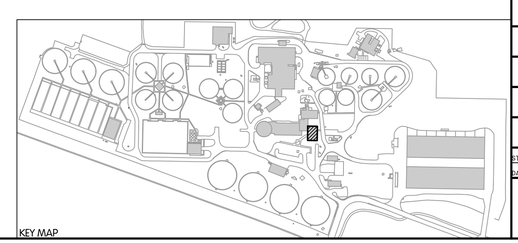
STATUS: ISSUED FOR BID
DATE: OCTOBER 2023
SHEET NO.
M-1.7
24 OF 34

FTW-8021001M17-24, M-1.7 MECH ROOM BSMT
(D) 609x914 (24"x36") Horiz. - CLEMZER
12/1/2023 11:00 AM




## CRAWL SPACE PLAN

1/4" = 1'-0"




N

MECHANICAL
ADMINISTRATION BUILDING
CRAWL SPACE
OFFICE AREA

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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| DESIGNED | DRAWN | CHECKED |
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| ASB | AJB | BDL |

STATUS: ISSUED FOR BID

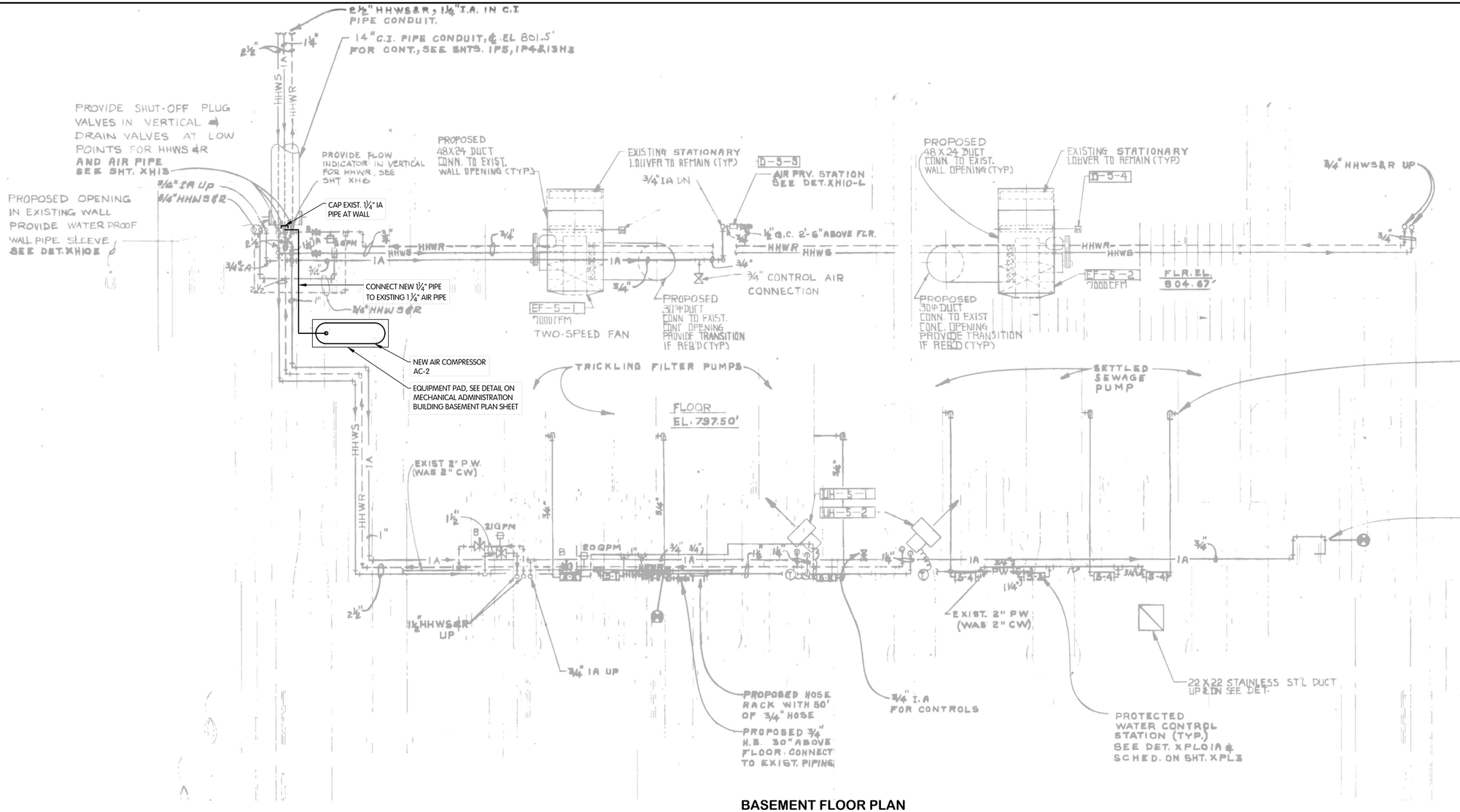
DATE: OCTOBER 2023

SHEET NO.

M-1.8

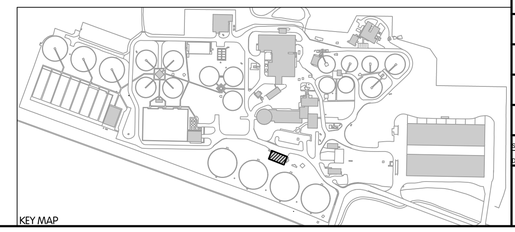
25 OF 34

FTW-8021001M18-PM-1.8 OFFICE CRAWL
10/20/2023 2:13 PM - CLENDER
12/1/2023 11:06 AM




**BASEMENT FLOOR PLAN**

1/4" = 1'-0"



KEY MAP

# MECHANICAL
# BASEMENT FLOOR PLAN
# SETTLED SEWAGE PUMP STATION

CITY OF BATTLE CREEK, MICHIGAN

WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
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| JOB NO. | 008-8021.001 |
| SCALE | AS NOTED |

THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| ASB | AJB | BDL |

STATUS: ISSUED FOR BID

DATE: OCTOBER 2023

SHEET NO.

M-1.9

26 OF 34

FTW-8021.001M19-M1.9 SETTLED PS
10/5/2023 1:47 PM - CLENGER
12/1/2023 11:06 AM

# SINGLE-LINE DIAGRAM LEGEND

30A
FRS-R -30
FUSED DISCONNECT SWITCH.
(SWITCH SIZE, FUSE TYPE AND FUSE SIZE AS SHOWN)

30A
UNFUSED DISCONNECT SWITCH
(SWITCH SIZE AS SHOWN)

40A
THERMAL-MAGNETIC CIRCUIT BREAKER OR MOTOR CIRCUIT PROTECTOR-MCP
(TRIP SIZE AS SHOWN)

CB
HIGH OR MEDIUM VOLTAGE
CIRCUIT BREAKER

12470
1000KVA
480Y/277V
LIGHTING OR POWER TRANSFORMER,THREE PHASE UNLESS NOTED OTHERWISE (CONNECTION, SIZE & RATING AS SHOWN)

FULL VOLTAGE NON-REVERSING MOTOR STARTER WITH OVERLOADS (FVNR)

R F
FULL VOLTAGE REVERSING MOTOR STARTER WITH OVERLOADS
(FVR)

S F
TWO SPEED MOTOR STARTER
WITH OVERLOADS

VACUUM CONTACTOR

5
THREE PHASE AC MOTOR
(HORSEPOWER AS SHOWN)

600/5 AS AM
CURRENT TRANSFORMER WITH AMMETER SWITCH, AND AMMETER
(RATIO AS SHOWN)

600/5
CURRENT TRANSFORMER WITH SHORTING BLOCK (RATIO AS SHOWN)

VS VM
POTENTIAL TRANSFORMER WITH VOLTMETER SWITCH, AND VOLTMETER

6KV
LIGHTNING ARRESTER
(VOLTAGE RATING AS SHOWN)

TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS)

GROUND CONNECTION

LINE OR LOAD REACTOR

K
KIRK KEY
(DASHED LINES TO INTERLOCKED DEVICES)

DRAWOUT FOR SWITCHGEAR OR MOTOR CONTROL CENTER

POWER FACTOR CORRECTION CAPACITOR - (PFCC) (SIZE PER MOTOR MANUFACTURER RECOMMENDATIONS.)

100E
HIGH OR MEDIUM VOLTAGE FUSED CUTOUT (SIZE AS SHOWN)

4/0
CABLE LIMITER (SIZE AS SHOWN)

G
450KW
800A
STAND-BY GENERATOR
(SIZE AS SHOWN)
WITH FIELD PROTECTION CIRCUIT BREAKER
(TRIP SIZE AS SHOWN)

VFD BP
VARIABLE FREQUENCY DRIVE WITH A BY-PASS OPTION (SHOWN WITH INTEGRAL EXTERNAL DISCONNECT HANDLE)

CP = CONTROL PANEL
SSRVS = SOLID STATE REDUCED VOLTAGE STARTER
(SHOWN WITH INTEGRAL EXTERNAL DISCONNECT HANDLE)

DPM
DIGITAL POWER METER

WHM
WATTHOUR METER

AUTOMATIC TRANSFER SWITCH (ATS)

MANUAL TRANSFER SWITCH (MTS)

# SCHEMATIC LEGEND

OPEN CONTACTS
WITH TIME-DELAY CLOSING

CLOSED CONTACTS
WITH TIME-DELAY OPENING

OPEN CONTACTS
WITH TIME-DELAY OPENING

CLOSED CONTACTS
WITH TIME-DELAY CLOSING

FLOW SWITCH
CLOSES ON INCREASE IN FLOW

FLOW SWITCH
OPENS ON INCREASE IN FLOW

LIQUID LEVEL SWITCH CLOSES ON RISING LEVEL

LIQUID LEVEL SWITCH OPENS ON RISING LEVEL

PRESSURE OR VACUUM SWITCH CLOSES ON RISING PRESSURE

PRESSURE OR VACUUM SWITCH OPENS ON RISING PRESSURE

TEMPERATURE SWITCH
CLOSES ON RISING TEMPERATURE

TEMPERATURE SWITCH
OPENS ON RISING TEMPERATURE

LIMIT SWITCH
NORMALLY OPEN

LIMIT SWITCH
NORMALLY OPEN - HELD CLOSED

LIMIT SWITCH NORMALLY
CLOSED

LIMIT SWITCH
NORMALLY CLOSED - HELD OPEN

FOOT SWITCH
OPENS BY FOOT PRESSURE

FOOT SWITCH
CLOSES BY FOOT PRESSURE

MUSHROOM HEAD, MAINTAINED ACTION (PUSH-PULL) PUSH BUTTON SWITCH
(SHOWN WITH ONLY 1 CIRCUIT)

ON OFF
XO
2 - POSITION, MAINTAINED ACTION
SELECTOR SWITCH

H O A
XOO
OOX
3 - POSITION, MAINTAINED ACTION
SELECTOR SWITCH
H - O - A: HAND-OFF-AUTOMATIC
L - O - R: LOCAL-OFF-REMOTE
PCS: PLANT CONTROL SYSTEM
PLC: PROGRAMMABLE LOGIC CONTROLLER

INDICATES ITEMS IN A SEPARATE COMMON ENCLOSURE

XY
CONTACTOR COIL
M - MOTOR STARTER CONTACTOR
MF - MOTOR STARTER FORWARD CONTACTOR
MR - MOTOR STARTER REVERSE CONTACTOR
ML - MOTOR STARTER LOW SPEED CONTACTOR
MH - MOTOR STARTER HIGH SPEED CONTACTOR
SC - MOTOR STARTER STARTING CONTACTOR
RC - MOTOR STARTER RUN CONTACTOR
BP - BYPASS CONTACTOR
CC - CAPACITOR CONTACTOR
LC - LIGHTING CONTACTOR
IC - ISOLATION CONTACTOR
C - GENERAL CONTACTOR

XR
CONTROL RELAY COIL
CR - INSTANTANEOUS CONTROL RELAY
TR - TIME DELAY RELAY

OL
MOTOR STARTER OVERLOAD RELAY N.C. CONTACT

SOLENOID COIL
SV - SOLENOID VALVE

ETM
ELAPSED TIME METER

NORMALLY OPEN MOMENTARY ACTION
PUSHBUTTON SWITCH
(SHOWN WITH ONLY 1 CIRCUIT)

NORMALLY CLOSED MOMENTARY ACTION
PUSHBUTTON SWITCH
(SHOWN WITH ONLY 1 CIRCUIT)

R
PUSH-TO-TEST PILOT LIGHT WITH COLORED LENS CAP
R - RED
G - GREEN
A - AMBER
W - WHITE
B - BLUE
CL - CLEAR

F
ZERO SPEED SWITCH
(NORMALLY OPEN)

F
ZERO SPEED SWITCH
(NORMALLY CLOSED)

# GENERAL ELECTRICAL ABBREVIATIONS

PVC - POLYVINYL CHLORIDE
RGS - RIGID GALVANIZED STEEL
PVC/RGS - PVC COATED RGS

# MOTOR STARTER ABBREVIATIONS

FVNR - FULL VOLTAGE, NON-REVERSING
FVR - FULL VOLTAGE REVERSING
TS1W - TWO SPEED, ONE WINDING
TS2W - TWO SPEED, TWO WINDING
TSR1W - TWO SPEED REVERSING, ONE WINDING
TSR2W - TWO SPEED REVERSING, TWO WINDING

# ELECTRICAL PLAN LEGEND

G — GROUND WIRE
DIRECT BURIAL CABLE
CONDUIT CONCEALED
CONDUIT EXPOSED
CONDUIT IN CONCRETE DUCT BANK
HOMERUN
CONDUIT TURNS UP
CONDUIT TURNS DOWN
CAPPED CONDUIT (FUTURE USE)
CONDUIT TEE
CADWELD CONNECTION
B — B = BUSWAY
C — C = CABLE TRAY
S — SINGLE POLE TOGGLE SWITCH
$S_2$ — DOUBLE POLE TOGGLE SWITCH
$S_3$ — THREE-WAY TOGGLE SWITCH
$S_4$ — FOUR-WAY TOGGLE SWITCH
$S_P$ — TOGGLE SWITCH WITH GREEN PILOT LIGHT
$S_K$ — KEY-OPERATED SWITCH
5 — SINGLE RECEPTACLE
3 — DUPLEX RECEPTACLE
5 — RECEPTACLE, (SINGLE) 120,30A.OR LARGER
6,8 — RECEPTACLE, (SINGLE) 240V,2POLE
4,6,8 — POWER RECEPTACLE 480V,3PH WITH DISCONNECT SWITCH (SIZE AS SHOWN)
TELEPHONE RECEPTACLE
COMPUTER RECEPTACLE
BOLLARD LIGHT FIXTURE
B 2 — CEILING MOUNTED FIXTURE
C 1 — WALL MOUNTED FIXTURE
D 1 — POLE MOUNTED FIXTURE
A 2 — FLUORESCENT FIXTURE
A 2 — FLUORESCENT TROFFER - GRID CEILING LAY IN
E 1 — EMERGENCY LIGHTING FIXTURE, (2-HEAD SHOWN)
EXIT FIXTURE (WITH DIRECTION ARROW WHERE INDICATED)
MCC — MOTOR CONTROL CENTER (MCC) OR SWITCHGEAR (SWG)
DISTRIBUTION PANEL 480V OR 480Y/277V
LIGHTING PANEL 120/208V OR 120/240V
UPS — UNINTERRUPTIBLE POWER SUPPLY
EPP — EMERGENCY POWER PACK
CP — CONTROL PANEL (SHOWN WITH EXTERNAL DISCONNECT HANDLE)
MAGNETIC MOTOR STARTER 480V, 3 PHASE
MAGNETIC MOTOR STARTER 120V, 1 PHASE
COMBINATION MAGNETIC MOTOR STARTER 480V, 3 PHASE
COMBINATION MAGNETIC MOTOR STARTER 120V, 1 PHASE
$S_M$ — MANUAL MOTOR STARTER 480V, 3 PHASE
$S_V$ — MANUAL MOTOR STARTER 120V, 1 PHASE
DISCONNECT SWITCH (SEE SINGLE LINE DIAGRAM FOR SIZE & TYPE)
½ — SINGLE PHASE AC MOTOR(HORSEPOWER AS SHOWN,DC INDICATES DC MOTOR)

2 — THREE PHASE AC MOTOR(HORSEPOWER AS SHOWN)
MOTOR OPERATED VALVE, 3 PHASE,WITH MAGNETIC STARTER AND CONTROLS
MOTOR OPERATED VALVE, 1 PHASE,WITH MAGNETIC STARTER AND CONTROLS
GROUND ROD WITH CADWELD CONNECTION
PP — PP= POWER POLE, LP = LIGHT POLE
AIR TERMINAL (LIGHTNING PROTECTION)
F — STROBE LIGHT (F=FIRE ALARM, G=GAS ALARM)
R/F — HEAT DETECTOR - RATE OF RISE/FIXED TEMPERATURE
P — SMOKE DETECTOR - (P = PHOTOELECTRIC, I = IONIZATION)
F — PULL STATION - FIRE ALARM
HORN, BELL, OR SIREN
HORN/STROBE COMBINATION
CA — CAPACITOR
CONTROL STATION
JB — BOX - JUNCTION, TERMINAL, PULL OR HAND HOLE
M — ELECTRIC MANHOLE
XF — TRANSFORMER (SEE SINGLE LINE FOR SIZE & TYPE)
LC — LIGHTING CONTACTOR
FT — FLOW TRANSMITTER
LT — LEVEL TRANSMITTER
PT — PRESSURE TRANSMITTER
TT — TEMPERATURE TRANSMITTER
AT — ANALYSIS TRANSMITTER (I.E. OXYGEN, TURBIDITY)
PI — INDICATOR - PRESSURE, FLOW, LEVEL, DENSITY, ANALYSIS
DT — DENSITY TRANSMITTER
ZS — LIMIT (POSITION) SWITCH
PS — PRESSURE SWITCH
TS — TEMPERATURE SWITCH (I.E. MOTOR THERMO PROTECTOR)
CS — CONVEYOR CABLE SWITCH
SS — SPEED SWITCH
FS — FLOW SWITCH
LS — LEVEL SWITCH
NS — MOISTURE SENSOR
OS — TORQUE SWITCH
VS — VIBRATION SWITCH
LC — LOAD CELL
LE — TRANSMITTER SENSING ELEMENT - LEVEL, FLOW, DENSITY, PRESSURE, ANALYSIS
S — SOLENOID
T — THERMOSTAT
H — HEATER IN MOTOR
PC — PHOTOELECTRIC CELL
G — GAS DETECTOR WITH CONTROL PANEL (GAS TYPE AS SHOWN)
T — THERMOCOUPLE
V — PNEUMATIC VALVE OPERATOR
I — CURRENT TO PRESSURE TRANSDUCER

# ELECTRICAL NOTES

1. STRUCTURAL MATERIALS ARE NOT SHOWN ON ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS.
2. ALL ELECTRICAL EQUIPMENT ELEVATIONS SHOWN ARE TO BOTTOM OF DEVICE OR PANEL, UNLESS OTHERWISE NOTED.
3. NUMBER SHOWN (I.E.11735), INDICATES A SPECIFICATION REFERENCE FOR ITEMS OTHER THAN DIVISION 16. THE ELECTRICAL ITEM UNDER THIS REFERENCE IS SUPPLIED BY ANOTHER PART OF THE CONTRACT. UNLESS OTHERWISE NOTED IN THAT SPECIFICATION, THE CONTRACTOR SHALL INSTALL AND WIRE THE ITEM PER THE DRAWINGS AND DIVISION 16 SPECIFICATIONS.
4. CONTROL WIRING SHALL CONFORM TO ALL REQUIREMENTS AS SHOWN ON THE P & ID DRAWINGS WHETHER SHOWN ON THE ELECTRICAL DRAWINGS OR NOT.
5. WHERE LINES ARE SHOWN CONNECTING ELECTRICAL EQUIPMENT, THEY ARE NOT INTENDED AS CONDUIT ROUTING. CONTRACTOR SHALL ROUTE ALL CONDUIT RUNS (SHOWN OR NOT) PER DIVISION 16 SPECIFICATIONS.
6. WP INDICATES WATERPROOF. LETTER ON OR NEXT TO LIGHT FIXTURE INDICATES TYPE, PER SECTION 16510. NUMBER WITH LIGHT FIXTURE OR RECEPTACLE INDICATES CIRCUIT NUMBER.
7. GFCI INDICATES A CIRCUIT BREAKER OR RECEPTACLE WITH A 6 MA GROUND FAULT CIRCUIT INTERRUPTER. GFEPD INDICATES A CIRCUIT BREAKER OR RECEPTACLE WITH A 30 MA GROUND FAULT EQUIPMENT PROTECTION DEVICE.
8. FOR BELOW GRADE CONDUIT PENETRATIONS THROUGH EXISTING EXTERIOR CONCRETE WALLS, PROVIDE TYPE A CONDUIT SLEEVE FOR PVC CONDUIT. FOR RGS OR PVC-COATED RGS CONDUIT, PROVIDE TYPE B CONDUIT SLEEVE THROUGH CONCRETE WALLS, AND TYPE C CONDUIT SLEEVE THROUGH EXISTING CONCRETE WALLS.
9. FOR ABOVE GRADE CONDUIT PENETRATIONS THROUGH EXTERIOR CONCRETE WALLS, PROVIDE TYPE C CONDUIT SLEEVE. FOR MASONRY WALLS PROVIDE TYPE F CONDUIT SLEEVE.
10. FOR CONDUIT PENETRATIONS THROUGH EXISTING CONCRETE FLOORS AND WALLS BETWEEN ADJACENT NON-CLASSIFIED (NON-HAZARDOUS) AREAS, PROVIDE TYPE C CONDUIT SLEEVES FOR ALL CONDUIT TYPES. FOR SIMILAR PENETRATIONS THROUGH CONCRETE FLOORS AND WALLS, PROVIDE TYPE D CONDUIT SLEEVES FOR ALL CONDUIT TYPES.
11. FOR CONDUIT PENETRATIONS THROUGH CONCRETE FLOORS AND WALLS SEPARATING CLASSIFIED (HAZARDOUS) AREAS FROM NON-CLASSIFIED (NON-HAZARDOUS) AREAS, PROVIDE TYPE G CONDUIT SLEEVES. FOR SIMILAR PENETRATIONS THROUGH MASONRY WALLS, PROVIDE TYPE H CONDUIT SLEEVE. FOLLOW MECHANICAL SEAL MANUFACTURER'S RECOMMENDATIONS TO MEET 3-HOUR FIRE RESISTANCE REQUIREMENTS.
12. LEGENDS ARE FOR REFERENCE ONLY AND DOES NOT MEAN THAT ALL ITEMS ARE USED.

ELECTRICAL
LEGEND
STANDARDS

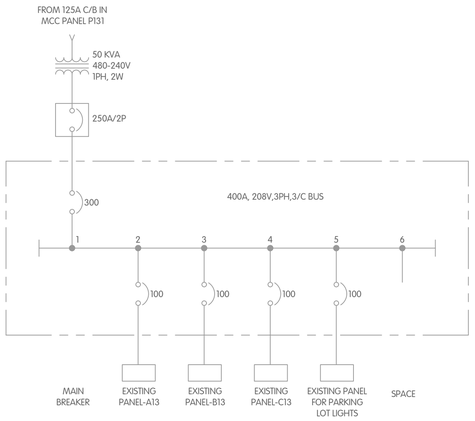
CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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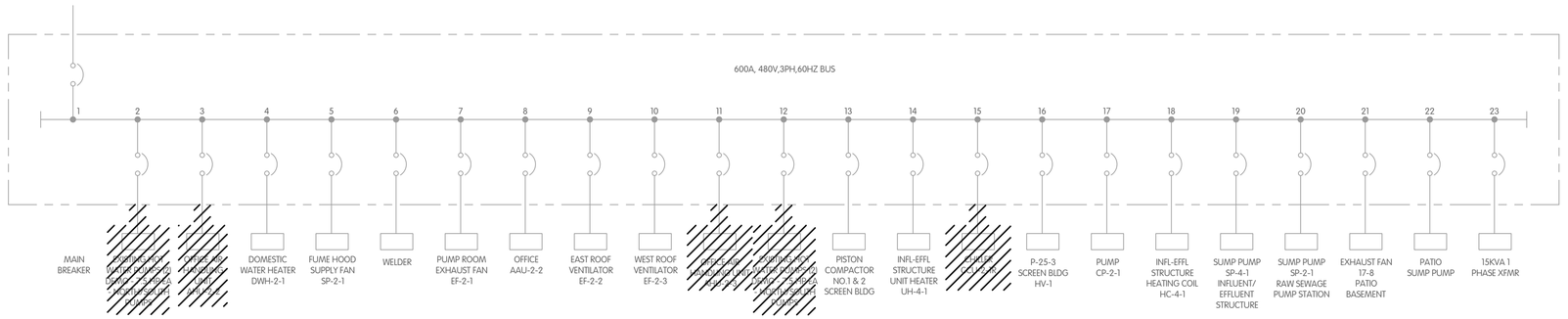
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E-0.1
27 OF 34

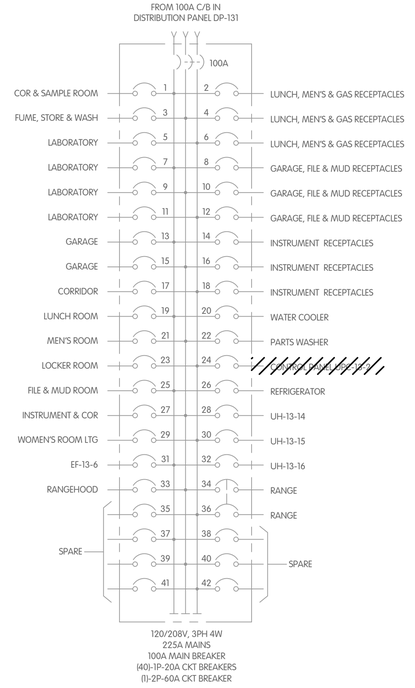
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12/7/2023 11:06 AM



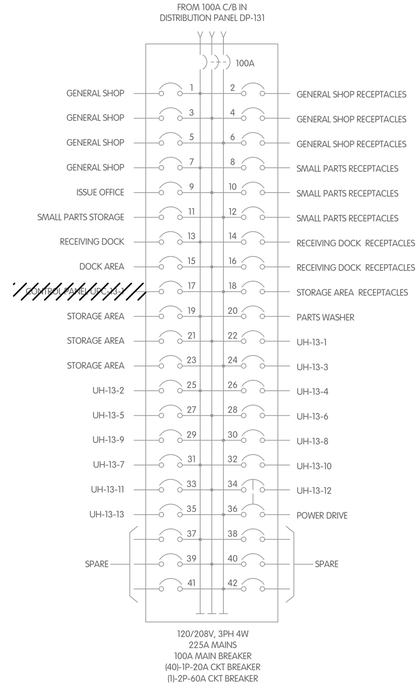

## EXISTING DISTRIBUTION PANEL DP-131




## MCC-P25




## EXISTING LIGHTING PANEL - B13




## EXISTING LIGHTING PANEL - C13

ELECTRICAL
REMOVALS
MCC SINGLE LINE
LIGHTING PANEL

**CITY OF BATTLE CREEK, MICHIGAN**
**WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS**

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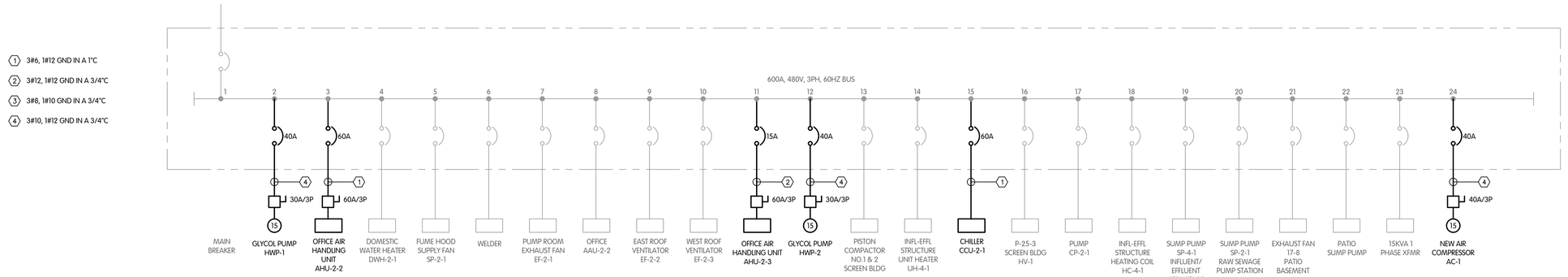
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DATE: OCTOBER 2023

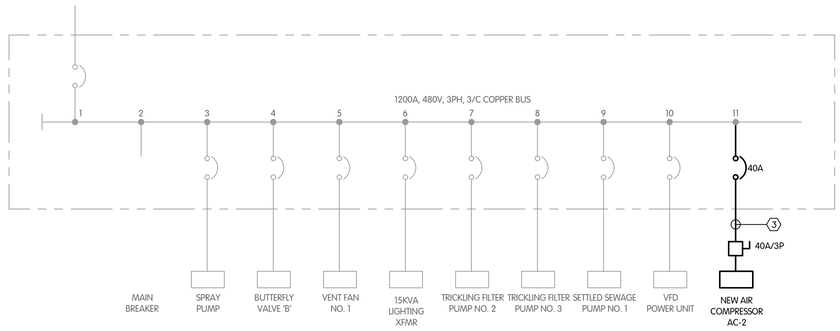
SHEET NO.
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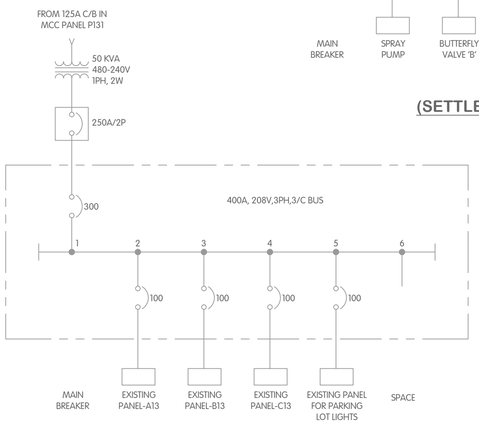
1 3#6, 1#12 GND IN A 1"C
2 3#12, 1#12 GND IN A 3/4"C
3 3#8, 1#10 GND IN A 3/4"C
4 3#10, 1#12 GND IN A 3/4"C



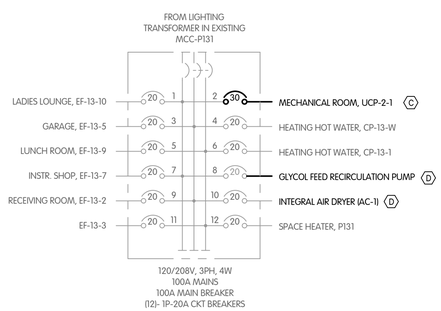

## EXISTING MCC-P25 (ADMINISTRATION BUILDING)



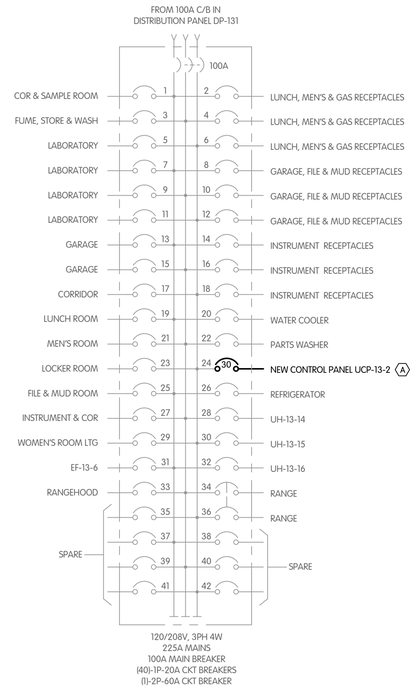

## EXISTING MCC-PS1 (SETTLED SEWAGE PUMP STATION)



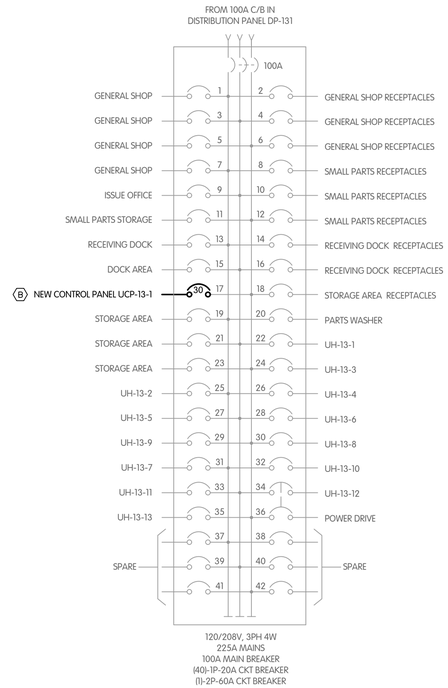

## EXISTING DISTRIBUTION PANEL DP-131



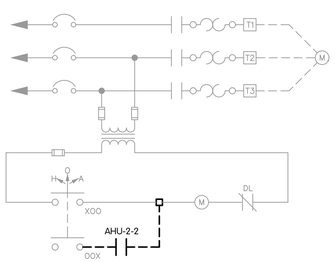

## EXISTING LIGHTING PANEL - F13



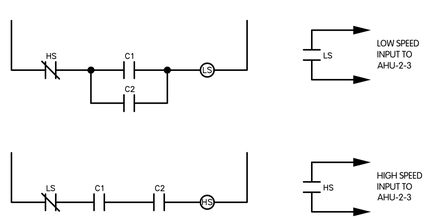

## EXISTING LIGHTING PANEL - B13



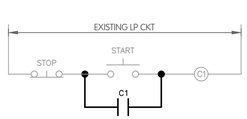

## EXISTING LIGHTING PANEL - C13



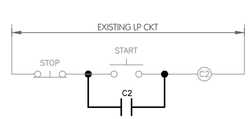

## EXISTING EXHAUST FAN EF-2-5/EF-13-11 SCHEMATIC




## FUME HOOD INTERLOCKS WITH AHU-2-3




## FUME HOOD #1




## FUME HOOD #2

### SHEET KEY NOTES:

A CONTRACTOR SHALL INSTALL NEW WIRE, 2#10, 1#12G FROM EXISTING PANEL- B13 TO THE NEW CONTROL PANEL UCP-13-2. THE EXISTING CONDUIT SHALL BE USED TO THE EXTENT POSSIBLE AND CONTRACTOR SHALL INSTALL ADDITIONAL 3/4" CONDUIT AS NEEDED.

B CONTRACTOR SHALL INSTALL NEW WIRE, 2#10, 1#12G FROM EXISTING PANEL- C13 TO THE NEW CONTROL PANEL UCP-13-1. THE EXISTING CONDUIT SHALL BE USED TO THE EXTENT POSSIBLE AND CONTRACTOR SHALL INSTALL ADDITIONAL 3/4" CONDUIT AS NEEDED.

C CONTRACTOR SHALL INSTALL NEW CONDUIT AND WIRE FROM EXISTING PANEL- F13 TO THE NEW CONTROL PANEL UCP-2-1. USE 2#12, 1#12G IN A 3/4"C.

D CONTRACTOR SHALL USE AN EXISTING 20A SPARE BREAKER TO FEED 1/3 HP RECIRCULATION PUMP IN THE GLYCOL FEED SYSTEM AND THE INTEGRAL AIR DRYER FOR THE AIR COMPRESSOR AC-1. USE 2#12, 1#12G IN A 3/4"C.

FTW-8021001E03-E-0.3 LP SINGLE LINE
12/7/2023 10:54:44 - ABLASING
12/1/2023 10:06 AM

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ELECTRICAL
MCC SINGLE LINE

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

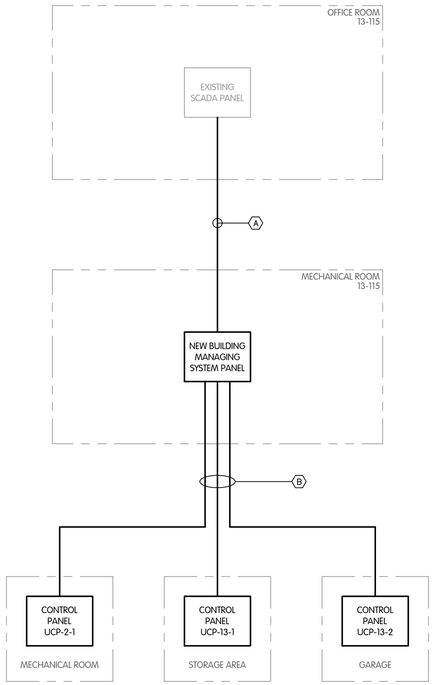
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SHEET NOTES:

(A) CONTRACTOR SHALL RUN ONE COMMON TROUBLE ALARM FROM THE NEW BUILDING MANAGEMENT SYSTEM PANEL TO THE EXISTING SCADA PANEL IN THE OFFICE ROOM AND SHALL USE WIRING AS RECOMMENDED BY THE VENDOR.

(B) CONTRACTOR SHALL INSTALL WIRING AND CONDUIT FROM EACH CONTROL PANEL TO THE BUILDING MANAGEMENT SYSTEM PANEL TO COMMUNICATE THE EQUIPMENT STATUS SIGNALS AND ALARM SIGNALS. COMMUNICATION PROTOCOL SHALL BE AS RECOMMENDED BY THE VENDOR. REFER TO THE STATUS SIGNALS LISTED IN THE TABLES ON THIS SHEET THAT CORRESPOND TO EACH CONTROL PANEL THAT ARE TO BE CARRIED TO THE BUILDING MANAGEMENT SYSTEM PANEL.

| CONTROL PANEL UCP-2-1 | |
|---|---|
| AHU-2-2 I/O | ZONE 1 DAMPER STATUS |
| | ZONE 2 DAMPER STATUS |
| | ZONE 3 DAMPER STATUS |
| | ZONE 4 DAMPER STATUS |
| | ZONE 5 DAMPER STATUS |
| | FREEZESTAT |
| | OUTSIDE AIR DAMPER STATUS |
| | SMOKE DETECTOR |
| | SUPPLY FAN STATUS |
| | EF-2-5 FAN STATUS |
| | EF-13-11 FAN STATUS |
| | EMERGENCY SHUTDOWN |
| | COMPRESSOR RUNTIME EXCEEDED |
| | FILTER CHANGE REQUIRED |
| | HIGH ZONE TEMP |
| | LOW ZONE TEMP |
| | OUTSIDE AIR DAMPER FAILURE |
| | ZONE 1 DAMPER FAILURE |
| | ZONE 2 DAMPER FAILURE |
| | ZONE 3 DAMPER FAILURE |
| | ZONE 4 DAMPER FAILURE |
| | ZONE 5 DAMPER FAILURE |
| | SUPPLY FAN FAILURE |
| | SUPPLY FAN IN HAND |
| | EF-2-5 FAN FAILURE |
| | EF-2-5 FAN IN HAND |
| | EF-13-11 FAN FAILURE |
| | EF-13-11 FAN IN HAND |
| AHU-2-3 I/O | FREEZESTAT |
| | OUTSIDE AIR DAMPER STATUS |
| | SUPPLY FAN STATUS |
| | FUME HOOD #1 EXHAUST FAN STATUS |
| | FUME HOOD #2 EXHAUST FAN STATUS |
| | FILTER CHANGE REQUIRED |
| | HIGH SUPPLY AIR TEMP |
| | LOW SUPPLY AIR TEMP |
| | OUTSIDE AIR DAMPER FAILURE |
| | SUPPLY FAN FAILURE |
| | FUME HOOD #1 EXHAUST FAN FAILURE |
| | FUME HOOD #2 EXHAUST FAN FAILURE |
| TCV-2-3 I/O | LOW ZONE TEMP |
| UH-2-5 I/O | LOW ZONE TEMP |
| UH-2-1 TO UH-2-4, UH-2-6 I/O | LOW ZONE TEMP |
| EF-2-2 & EF-2-3 | FAN STATUS |
| | INTERLOCKED DAMPER STATU |
| | HIGH ZONE TEMP |

| CONTROL PANEL UCP-13-1 | |
|---|---|
| AHU-13-1 I/O | FREEZESTAT |
| | SMOKE DETECTOR |
| | OUTDOOR AIR DAMPER STATUS |
| | EF-13-1 EXHAUST DAMPER STATUS |
| | EF-13-2 EXHAUST DAMPER STATUS |
| | EF-13-4 EXHAUST DAMPER STATUS |
| | EF-13-5 EXHAUST DAMPER STATUS |
| | SUPPLY FAN STATUS |
| | EF-13-1 FAN STATUS |
| | EF-13-2 FAN STATUS |
| | EF-13-4 FAN STATUS |
| | EF-13-5 FAN STATUS |
| | EMERGENCY SHUTDOWN |
| | FILTER CHANGE REQUIRED |
| | HIGH DISCHARGE AIR TEMP |
| | LOW DISCHARGE AIR TEMP |
| | OUTSIDE AIR DAMPER IN HAND |
| | SUPPLY FAN FAILURE |
| | SUPPLY FAN IN HAND |
| | SUPPLY FAN RUNTIME EXCEEDED |
| TCV-13-4 I/O | LOW ZONE TEMP |
| TCV-13-5 I/O | LOW ZONE TEMP |
| UH-13-1 THRU UH | LOW ZONE TEMP |

| CONTROL PANEL UCP-13-2 | |
|---|---|
| AHU-13-2 I/O | FREEZESTAT |
| | RETURN AIR SMOKE DETECTOR |
| | CP-13-1 STATUS |
| | CP-13-2 STATUS |
| | RETURN FAN STATUS |
| | SUPPLY FAN STATUS |
| | EF-13-6 STATUS |
| | EF-13-7 STATUS |
| | EF-13-8 STATUS |
| | EF-13-9 STATUS |
| | EF-13-10 STATUS |
| | EMERGENCY SHUTDOWN |
| | HIGH COOLING SUPPLY AIR TEMP |
| | HIGH HEATING SUPPLY AIR TEMP |
| | HIGH MIXED AIR TEMP |
| | HIGH RETURN AIR TEMP |
| | LOW HEATING SUPPLY AIR TEMP |
| | LOW MIXED AIR TEMP |
| | LOW RETURN AIR TEMP |
| | PREFILTER CHANGE REQUIRED |
| | RETURN FAN FAILURE |
| | RETURN FAN IN HAND |
| | RETURN FAN RUNTIME EXCEEDED |
| | SUPPLY FAN FAILURE |
| | SUPPLY FAN IN HAND |
| | SUPPLY FAN RUNTIME EXCEEDED |
| | EF-13-6 FAN FAILURE |
| | EF-13-7 FAN FAILURE |
| | EF-13-8 FAN FAILURE |
| | EF-13-9 FAN FAILURE |
| | EF-13-10 FAN FAILURE |
| | EF-13-6 FAN IN HAND |
| | EF-13-7 FAN IN HAND |
| | EF-13-8 FAN IN HAND |
| | EF-13-9 FAN IN HAND |
| | EF-13-10 FAN IN HAND |
| | EF-13-6 FAN RUNTIME EXCEEDED |
| | EF-13-7 FAN RUNTIME EXCEEDED |
| | EF-13-8 FAN RUNTIME EXCEEDED |
| | EF-13-9 FAN RUNTIME EXCEEDED |
| | EF-13-10 FAN RUNTIME EXCEEDED |
| | HEATING COIL PUMP CP-13-1 FAILURE |
| | HEATING COIL PUMP CP-13-2 FAILURE |
| | HEATING COIL PUMP CP-13-1 IN HAND |
| | HEATING COIL PUMP CP-13-2 IN HAND |
| | HEATING COIL PUMP CP-13-1 RUNTIME EXCEEDED |
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# ELECTRICAL
# SINGLE RISER DIAGRAM

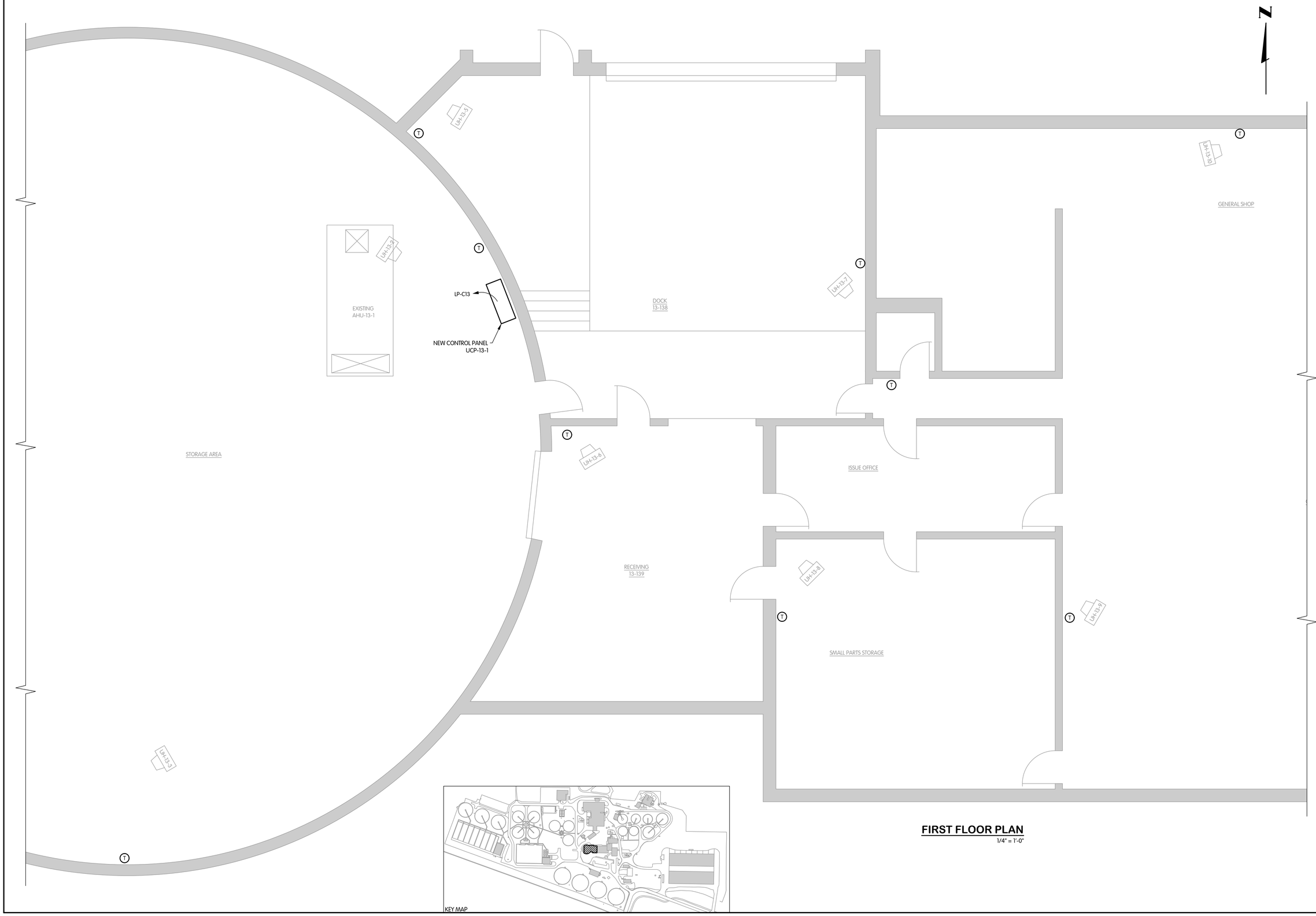
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30 OF 34

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10/27/2023 10:54:44 - ABLAISING
12/1/2023 1:06 AM




**FIRST FLOOR PLAN**
1/4" = 1'-0"

# ELECTRICAL
# ADMINISTRATION BUILDING
# FIRST FLOOR PLAN
# DIGESTER AND MAINTENANCE AREA

**CITY OF BATTLE CREEK, MICHIGAN**
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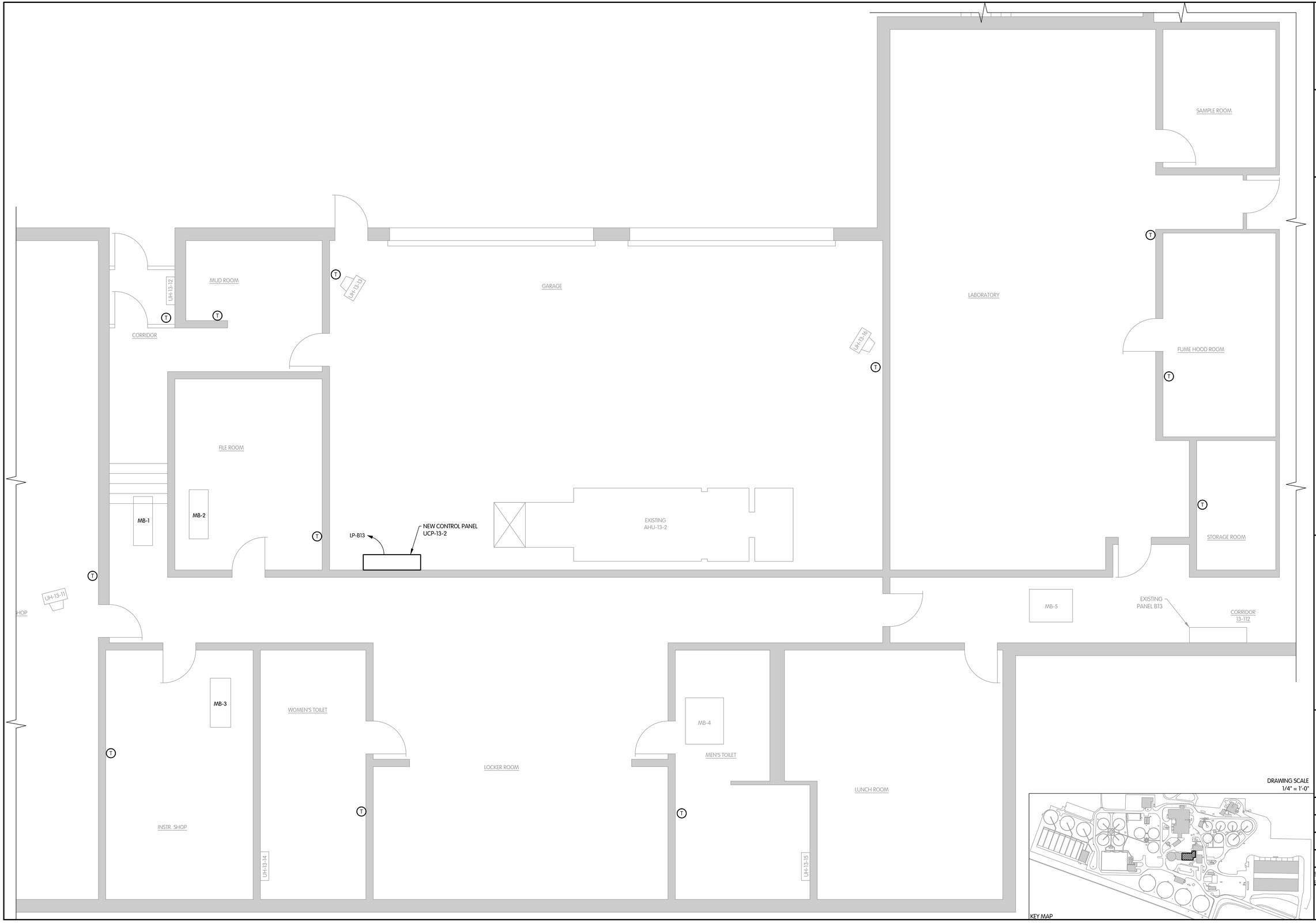
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| LER | AJB | BT |

STATUS: ISSUED FOR BID

DATE: OCTOBER 2023

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E-1.1
31 OF 34


FTW-8021001EII-E-1.1 DIGESTER
12/7/2023 10:56 AM
12/7/2023 10:56 AM - ABLAISING




DRAWING SCALE
1/4" = 1'-0"

KEY MAP

# ELECTRICAL
# ADMINISTRATION BUILDING
# FIRST FLOOR PLAN
# MAINTENANCE AND LABORATORY AREA

**CITY OF BATTLE CREEK, MICHIGAN**
**WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS**

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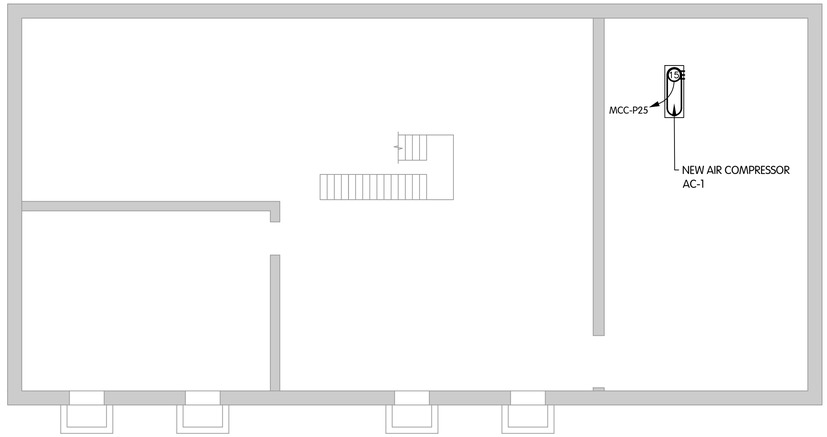
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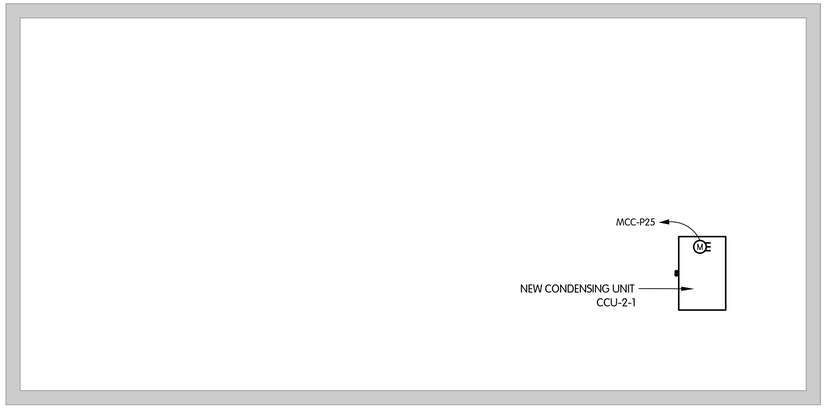
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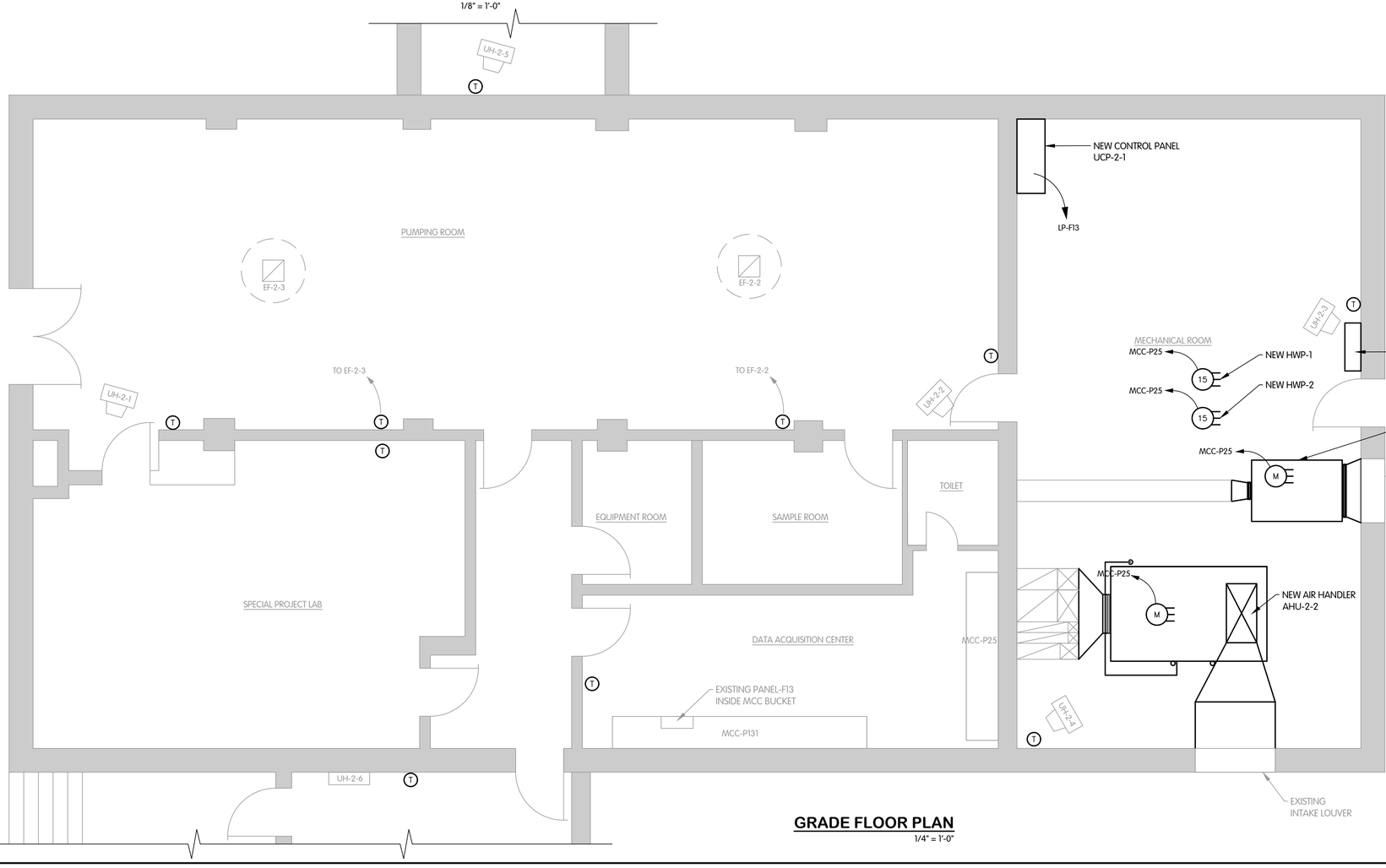
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12/7/2023 11:07 AM - ABLAISING



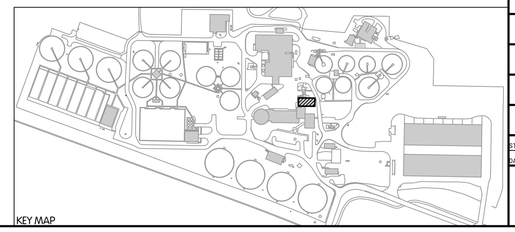

## BASEMENT PLAN
DRAWING SCALE
1/8" = 1'-0"




## ROOF PLAN
DRAWING SCALE
1/8" = 1'-0"




## GRADE FLOOR PLAN
1/4" = 1'-0"


KEY MAP

ELECTRICAL
ADMINISTRATION BUILDING
BASEMENT, FIRST AND ROOF PLAN
RAW SEWAGE PUMP STATION

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

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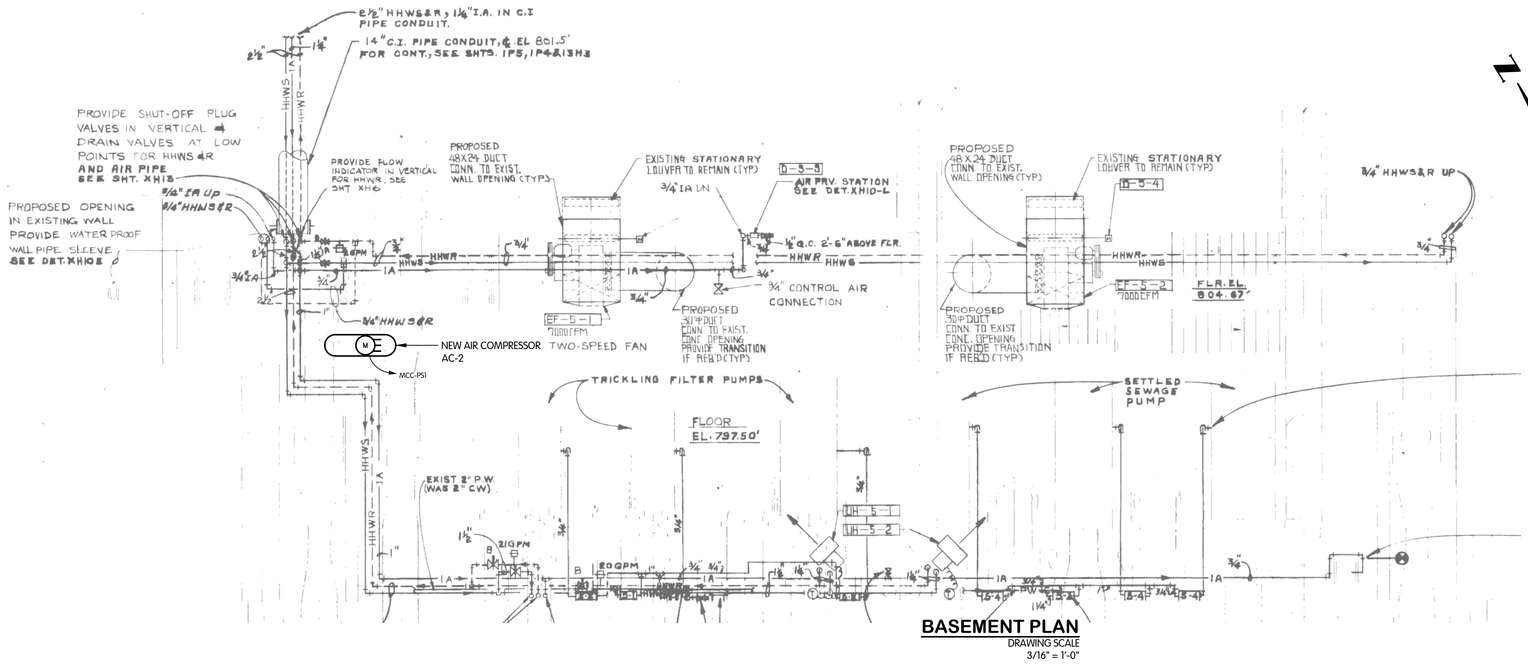
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JOB NO. 008-8021.001
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STATUS: ISSUED FOR BID
DATE: OCTOBER 2023
SHEET NO.
E-1.3
33 OF 34

FTW-8021001E1.5-E-1.3 MECH ROOM
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ELECTRICAL
SETTLED SEWAGE PUMP STATION
BASEMENT AND FIRST FLOOR PLAN

CITY OF BATTLE CREEK, MICHIGAN
WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS

| NO. | DATE | REVISIONS AFTER ISSUED FOR BID | BY |
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# CITY OF BATTLE CREEK, MICHIGAN
# NOTICE OF INVITATION FOR BIDS
# WWTP Administration Building HVAC Improvements
## IFB # 2024-042B

**IFB DUE DATE and TIME: February 8, 2024, at 2:00 pm local time BIDS MUST BE SUBMITTED ELECTRONICALLY.**

**BID SUBMITTAL:** Bids must be submitted electronically as ONE PDF. **DO NOT EMAIL BIDS.** Submittal at: http://battlecreekmi.gov/230/Bid-Proposal-Solicitations then follow the link for Bids and Proposals Solicitations, which will take you to the VendorRegistry page. You may also email purchasing@battlecreekmi.gov for links. Click on the notice for this project, then click submit bid. You must be a registered vendor (quick and no charge) in order to submit a bid. You may withdraw your bid at any time before the due date/time. To withdraw your electronic bid, click "submit bid" again and you will see the link to withdraw. All bids will be publicly opened and read aloud via Zoom, details listed in IFB in VendorRegistry. Upload your bid and bonds TOGETHER as ONE PDF (not multiple uploads).

**PROJECT DESCRIPTION:** The City of Battle Creek will accept sealed bids for the Waste Water Treatment Plant (WWTP) Administration Building HVAC Improvements project. This project consists of furnishing and performing all work necessary for the demolition of existing pneumatic HVAC equipment and controls, as scheduled shown on the Drawings and specifications.

<table>
<tr><td>PRE-BID CONFERENCE:<br><br>February 1, 2024 at 1:30 pm local time<br>Wastewater Treatment Plant<br>2000 River Rd.<br>Battle Creek, MI</td><td>PLANHOLDERS LIST:<br><br>https://vrapp.vendorregistry.com/Vendor/Selection/SubscriptionSelection?buyerSource=battle-creek-mi-vendor-registration<br><br>FUNDING: This project has NO federal or state funding. All project funding is provided by the City of Battle Creek.</td></tr>
<tr><td>TECHNICAL QUESTIONS OR SITE VISITATION:<br><br>Rodney Clifton<br>269-966-3513<br>rwclifton@battlecreekmi.gov<br><br>BID SUBMITTAL QUESTIONS:<br><br>Email: Purchasing@battlecreekmi.gov</td><td>PREVAILING WAGES: Required for this project. See attached wage rates at the end of this document. Contractor shall abide by all the requirements set forth in Section 208.09, PREVAILING WAGES ON CITY PROJECTS, of the City's Administrative Code.<br><br>IFB ISSUE DATE: January 10, 2024</td></tr>
<tr><td>BID VALID: Bids may be withdrawn up to the time and date of the bid opening. After the bid opening, bids may not be withdrawn for a period of ninety 90 days thereafter. The City of Battle Creek reserves the right to waive any irregularity or informality in bids, to reject any and/or all bids, in whole or in part, or to award any contract to other than the low bidder, should it be deemed in its best interest to do so.</td><td>ADDENDA: Each addendum will be on file in the Office of the Purchasing Agent. To the extent possible, copies will be mailed to each person registered as having received a set of bid documents. It shall be the bidder's responsibility to make inquiry as to addenda issued. All such addenda shall become a binding part of the contract.</td></tr>
<tr><td>BID BOND: Each bid must be accompanied by a standard form bid bond, made payable to the City of Battle Creek, in an amount of not less than five (5%) percent of the base bid submitted. Failure of any accepted bidder to enter into a contract for the work will cause forfeit of the bid security. We do not accept certified checks in lieu of bid bond.</td><td>PERFORMANCE/LABOR/MATERIALS BONDS: The accepted bidder will be required to furnish a satisfactory performance bond and labor/materials payment bond, each in an amount equal to 100% of the contract and insurance certificate upon forms acceptable to the City.</td></tr>
</table>

# NOTICE TO BIDDERS

1. **BID SUBMISSION:**
   A. Bids must be submitted in complete original form submitted through our secure online portal by registered vendors: please visit http://battlecreekmi.gov/230/Bid-Proposal-Solicitations and click on Bid & Proposal Solicitations or email purchasing@battlecreekmi.gov for links.
   B. Bids will be accepted via the method listed until the time and date specified herein, and immediately after will be publicly opened and read aloud electronically, and the link will be published with the solicitation, or you may email purchasing@battlecreekmi.gov for the online link if you want to attend. The prevailing clock shall be VendorRegistry.com.
   C. Late bids will not be accepted and the online system will automatically shut off at exactly the specified time.
   D. All bids submitted in response to this invitation shall become the property of the City and be a matter of public record available for review.

2. **PREPARATION OF BIDS:**
   A. If a unit price or extension already entered is to be altered, it shall be crossed out and initialed by the bidder.
   B. The bid shall be legally signed on the OFFER TO CONTRACT page and the complete address of the bidder given thereon.
   C. The City is exempt from Federal Excise and State Sales Taxes, and such taxes shall not be included in bid prices

3. **SIGNATURES:** All bids, notifications, claims and statements must be signed by an individual authorized to bind the bidder.
   (a.) CORPORATIONS: Signature of official shall be accompanied by a certified copy of the resolution of the Board of Directors authorizing the individual signing to bind the corporation.
   (b.) PARTNERSHIPS: Signature of one partner shall be accompanied by a certified copy of the power of attorney authorizing the individual signing to bind all partners. If all partners sign bid no authorization is needed.

4. **REJECTION OR WITHDRAWAL:** Submission of additional terms, conditions or agreements with the bid document is grounds for deeming a bid nonresponsive and may result in bid rejection. The City reserves the right to reject any or all bids and to waive any informalities and minor irregularities defects in bids. Bids may be withdrawn in person by a bidder, or authorized representative, provided their identity is made known and a receipt is signed for the bid, but only if the withdrawal is made prior to the time set for receipt of bids. Bids are an irrevocable offer and may not be withdrawn within 90 days after opening date and time.

5. **AWARD:** The bid will be awarded to that responsible, responsive bidder whose bid, conforming to this solicitation, will be most advantageous to the City, price and other factors considered. Unless otherwise specified in this IFB, the City reserves the right to accept a bid in whole or in part, and to award by item or by group, whichever is deemed to be in the best interest of the City. Any bidder who is in default to the City at the time of submittal of the bid shall have their bid rejected. The City reserves the right to clarify any contractual terms with the concurrence of the Contractor; however, any substantial non-conformity in the offer, as determined by the City, shall be deemed non-responsive and the offer rejected.

   In evaluating bids, the City of Battle Creek shall consider the qualifications of the bidders, and where applicable, operating costs, delivery time, maintenance requirements, performance data, and guarantees of materials and equipment. In addition, the City may conduct such investigations as the City deems necessary to assist in the evaluation of a bid and to establish the responsibility, qualifications and financial ability of the bidders to fulfill the contract.

6. **CONTRACT:** A response to an IFB is an offer to contract with the City based upon the terms, conditions, and specifications contained in the City's IFB. Bids do not become contracts unless and until they are executed by the City, eliminating a formal signing of a separate contract. For that reason, all of the terms and conditions of the contract are contained in the IFB, unless any of the terms and conditions are modified by an IFB addendum or amendment, a contract amendment, or by mutually agreed terms and conditions in the contract documents.

7. **BID RESULTS:** A bid tabulation will be posted on the City's website and will also be on file and available for review after contract award in the Purchasing Department.

8. **CHANGES AND ADDENDA TO BID DOCUMENTS:** Each change or addendum issued in relation to this bid document will be on file in the Office of the Purchasing Agent. In addition, to the extent possible, copies will be

mailed to each person registered as having received a set of bid documents. It shall be the bidder's responsibility to make inquiry as to changes or addenda issued. All such changes or addenda shall become part of the contract and all bidders shall be bound by such addenda. Information on all changes or addenda issued will be available at the office of the City Purchasing Agent.

9. **SPECIFICATIONS:** Unless otherwise stated by the bidder, the bid will be considered as being in accordance with the City's applicable standard specifications, and any special specifications outlined in the Bid document. References to a particular trade name, manufacturer's catalogue, or model number are made for descriptive purposes to guide the bidder in interpreting the requirements of the City, and should not be construed as excluding bids on other types of materials, equipment and supplies. However, the City does reserve the right to specify a sole brand, with no brand substitutions allowed. The bidder, if awarded a contract, will be required to furnish the particular item referred to in the specifications or description unless departure or substitution is clearly noted and described in the bid. The City reserves the right to determine if equipment/product being bid is an acceptable alternate. All goods shall be new unless otherwise so stated in the bid. Any unsolicited alternate bid, or any changes, insertions, or omissions to the terms and conditions, specifications, or any other requirements of this bid, may be considered non-responsive. The City reserves the right to disregard any conflicting terms and conditions submitted by the contractor and hold the contractor to the submitted bid price. Contractors are strongly encouraged to not submit anything with their bid that is not specifically requested in this solicitation.

10. **DELIVERY:** Bids shall include all charges for mobilization, delivery, packing, crating, containers, etc. Prices bid will be considered as being based on F.O.B. Delivered, freight included.

11. **INTERPRETATION OF BID AND/OR CONTRACT DOCUMENTS:** All inquiries shall be made within a reasonable time prior to the date and time fixed for the bid opening in order that a written response in the form of an addendum, if required, can be processed before the bids are opened. (Inquiries received that are not made in a timely fashion may or may not be considered).

12. **CURRENCY:** Prices calculated by the bidder shall be stated in U.S. dollars.

13. **PURCHASE ORDER:** The successful bidder may not commence work under this contract until authorized to do so by the Purchasing Agent as evidenced by a purchase order.

14. **CERTIFICATION:** By signature in the offer section of the Offer and Acceptance page, bidder certifies:
    A The submission of the offer did not involve collusion or other anti-competitive practices.
    B. The bidder has not given, offered to give, nor intends to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted offer.
    C. The bidder hereby certifies that the individual signing the bid is an authorized agent for the bidder and has the authority to bind the bidder to the contract.
    D. The bidder hereby certifies that the firm will abide by the COPELAND ANTI-KICKBACK ACT, Title 18, U.S.C. June 25, 1948, Section 874, Kickbacks from Public Employees.

15. **DEFINITIONS:**
    "CITY" - The City of Battle Creek.
    "CITY UNIT" - The department of the City that intends to use the resulting contract.
    "CONTRACTOR" - The bidder whose proposal is accepted by the City.

# SECTION I - SPECIAL INFORMATION FOR BIDDERS

1. General Contract Specification
All sections contained or referenced in this Invitation for Bid shall become a material part of the contract.

2. Order Of Precedence
The plans and specifications shall be considered to be one complete document and what is called for in one shall be considered as being called for in all. In the event that there is a conflict between the parts, the following order of precedence shall govern:

Addenda to bidding documents
The Contract Drawings
The Contract Special Provisions
The Contract Special Instructions
The Contract Special Conditions
The Contract Specifications

3. Registration Requirements for Contractors
All bidders, including General Contractors and Specialty Contractors, shall hold or obtain such Contractors or Business Licenses as required State and Local statues.

4. Currency
Prices calculated by the bidder shall be stated in U.S. dollars.

5. Unit Price
When the Bid for the work is to be submitted on a unit price basis, unit price Bids will be accepted on all items of work set forth in the Bid, except those designated to be paid for as a lump sum. The estimated of quantities of work to be done is tabulated in the Bid and although stated with as much accuracy as possible, are approximate only and is assumed solely for the basis of calculation upon which the award of Contract shall be made. Payment to the Contractor will be made on the measurement of the work actually performed by the Contractor as specified in the Contract Documents. Unit prices will prevail in event of discrepancy and in bid tabulations.

6. Liquidated Damages
Failure of the Contractor to complete the work within the time allowed will result in damages being sustained by the City. Such damages are, and will continue to be, impracticable and extremely difficult to determine. Unless otherwise provided in the Special Conditions, the Contractor will pay to the City for the liquidated damages and not as penalty **seven hundred fifty dollars ($750.00)** for each calendar day of delay in finishing the work in excess of the time specified for completion, plus any Contractor will pay the City for the liquidated damages herein before mentioned are in lieu of the actual damages arising from such breaches of this contract; which said sums the City shall have the right to deduct from any monies in its hands, otherwise due, or to become due, to said Contractor or to sue for and recover compensation or damages for nonperformance of this Contract at the time stipulated herein and provided for. The attention of bidders is directed to the provisions and the General Conditions of contract requiring the Contractor to pay for all excess cost of field engineering and inspection as therein defined.

7. Listing of Subcontractors
Failure to list subcontractors and major suppliers, where feasible, may be cause for rejection of the Bidder's Bid as non-responsive.

8. Non-collusion: By signing the Offer to Contract, the bidder, by its officers and authorized agents or representatives present at the time of filing this bid, being duly sworn on their oaths say, that neither they nor any of them have in any way, directly or indirectly entered into any arrangement or agreement with any other bidder or with any public officer of such City of Battle Creek, Michigan, whereby such affidavit or affiants or either of them has paid or is to pay to such other bidder or public officer any sum of money, or has given or is to give to such other bidder or public officer anything of value whatever, or such affidavit or affiants or either of them has not directly or indirectly, entered into any arrangement or agreement with any other bidder or bidders, which tends to or does lessen or destroy free competition in the letting of the contract sought for by the attached bids, that no inducement of any form or character other than that which appears on the face of the bid will be suggested, offered, paid or delivered to any person whomsoever to influence the acceptance of the bid or awarding of the contract, nor has this bidder any agreement or understanding of any kind whatsoever, with any person whomsoever to pay, deliver to, or share with any other person in any way or manner, any of the proceeds of the contract sought by this bid.

9. Contractor’s Insurance
   a. The Contractor shall at the time of execution of this contract, file with the City the Certificate of Insurance, which shall cover all of the insurance as required herein, including evidence of payment of premiums thereon, and the policy or policies or insurance covering said City and their officers, agents and employees. Each such policy and certificate shall be satisfactory to the City. Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from all operations under this Contract. The contractor shall maintain insurances in force at all times during the term of this agreement at the minimum amounts and types as indicated.

| **Coverage Afforded** | | **Limits of Liability** |
|---|---|---|
| Workers' Compensation: | | $ 100,000 or statutory limit |
| Commercial General Liability: | Bodily Injury | $1,000,000 each occurrence |
| (including XCU if appropriate) | Property Damage | $1,000,000 each occurrence |
| | or Combined Single Limit | $2,000,000 |
| Automobile Liability: | Bodily Injury | $ 300,000 each person |
| | Liability | $ 500,000 each occurrence |
| | Property Damage | $ 500,000 |
| | or Combined Single Limit | $ 500,000 |

The City of Battle Creek shall be listed as an **additional insured** on general liability coverage, and shall be provided with a Certificate of Insurance that reflects this additional insured status. A 30-day notice of cancellation or material change shall be provided to the City and so noted on the Certificate of Insurance. All certificates and notices shall be sent to City of Battle Creek, 10 N. Division, Suite 216, Battle Creek, MI 49014.

10. Vendor Evaluation: Experience with the City shall be taken into consideration when evaluating responsibility of the vendor.

11. Permits: Contractor shall secure all necessary permits to complete the work as described in this IFB. **These costs shall be included in the bid price.**

12. Bid Protest Procedure: Protests about the bid procedure must be in writing. This written protest must be received by the City of Battle Creek, located at 10 N. Division, Suite 216, Battle Creek, MI 49014. This written protest must be received by the City no later than ten (10) working days after notification to all bidders of the contract award decision. The City of Battle Creek must issue its written decision no more than ten (10) business days from the day the written protest was received.

    If a protester thinks that the City of Battle Creek has not followed these protest procedures, the protester has ten (10) business days from the alleged infraction to file a subsequent protest with the City of Battle Creek City Manager or federal granting agency if applicable.

13. FEDERAL TERMS AND CONDITIONS
    For federally funded projects, federal terms and conditions are hereby incorporated as a material part of this contract. In cases of conflict between terms in this agreement, the federal terms shall prevail.

14. OTHER FEDERAL COMPLIANCE: Contractor shall comply with Copeland Anti-kickback Act (18 U.S.C. 874); Sections 3702 and 3704 of the Contract Work Hours and Safety Standards Act (40 USC 40 USC 3701-3708); Section 306 of the Clean Air Act (42 USC 7602, Air Pollution Prevention and Control); Section 508 of the Clean Water Act (33 U.S.C. 1368); Executive Order 11738, and EPA regulations (40 CFR, Part 15); and the Energy Policy and Conservation Act (Pub. L. 94A 163, 89 Stat. 871).

15. RECORD ACCESS: Contract shall grant access, if requested, by the City, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor that are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions for federally funded projects.

16. RECORD RETENTION: Contractor shall retain all required records for three years after final payments and all other pending matters are closed.

17. CLEAN AIR ACT: Contractor shall comply with all applicable standards, orders, or requirements issued under Clean Air Act (42 U. S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), as amended. For federally funded contracts and subcontracts of amounts in excess of $100,000 the contractor or subcontractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.). Violations shall be reported to the Federal awarding agency and the Regional Agency (EPA).

18. ENERGY EFFICIENCY: Contractor shall maintain mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163).

19. Byrd Anti-Lobbying Amendment (31 U.S.C. 1352) Contractors who bid for an award of $100,000 or more for a federally funded project certify by signing the Offer to Contract that they have or will not use Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

20. Debarment and Suspension (E.O.s 12549 and 12689) No contract shall be made to parties listed on the General Services Administration's List of Parties Excluded from Federal Procurement or Nonprocurement Programs in accordance with E.O.s 12549 and 12689, "Debarment and Suspension." This list contains the names of parties debarred, suspended or otherwise excluded by agencies, and contractors declared ineligible under statutory or regulatory authority other than E.O. 12549. Contractors with awards that exceed the small purchase threshold shall provide the required certification regarding its exclusion status and that of its principal employees.

21. Contract Work Hours and Safety Standards Act: all federally funded contracts in excess of $100,000 that involve the employment of mechanics or laborers must comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor shall compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions that are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

22. Clean Air Act for federally funded contracts in excess of $150,000: Contractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). The City will report violations to the Regional Office of the Environmental Protection Agency (EPA).

23. Davis-Bacon Act: as amended (40 U.S.C. 3141-3148: Contractor shall comply with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors shall pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination as included in this Invitation for Bid. Contractors shall pay wages not less than once a week. Contractor shall not induce, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which they are otherwise entitled.

# TERMS AND CONDITIONS

1. **ACCIDENT PREVENTION:** The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all the damages to persons or property either on or off the site, which occur as a result of the contractor's fault or negligence in connection with the prosecution of the work. The safety provisions of applicable laws and OSHA standards shall be observed and the Contractor shall take or cause to be taken such additional safety and health measures as the city may determine to be reasonably necessary.

2. **CONFLICTS AND OMISSIONS:** The intent of the contract documents is to provide everything necessary for the proper execution of the work. In case of conflict, the work shall not proceed until a decision has been agreed upon by all parties concerned. The City's decision shall be final.

3. **WORKING CONDITIONS:** The contractor shall conduct all work in accordance with all regulations governing the City Unit wherein the work is to be performed and with minimum possible interference with the proper functioning of the activities of the City Unit. Materials, tools, etc., shall be confined so as not to unduly encumber the premises.

4. **PRIOR EXAMINATION:** Contractor shall be familiar with local conditions affecting the job prior to submitting the bid. Contractor shall take their own measurements and be responsible for the correctness of same. Contractor shall be held to have made such examinations and no allowances will be made in their behalf by reason of error or omission on their part. If any part of the Contractor's work depends for proper results upon existing work or the work of another contractor, the Contractor, before commencing work, shall notify the Director in writing of any defects that will affect the results.

5. **OTHER CONTRACTS:** The City may let other contracts in connection with the work and the Contractor shall properly connect and coordinate their work with the work of such other contractors. The City shall not be liable for any damages or increased costs occasioned by the failure of other contractors or sub-contractors to execute their work as may be anticipated by these documents.

6. **INSPECTION:** Contractor shall at all times permit and facilitate inspection of the work by the City.

7. **CHANGES:** Contractor shall make changes in the contracted work only as ordered in writing by the City. The actual work performed under this contract may be increased 50% or decreased 25% from the approximate quantities set forth in the Schedule included herein. Work will be performed only based on written authorization from the City. The City reserves the right to include other similar projects in this contract over and above those mentioned in said tabulations within these limitations. If extra work orders are given in accordance with the provisions of this contract, such work shall be considered a part hereof and subject to each and all of its terms and requirements.

8. **GUARANTEE:** Contractor guarantees to remedy any defects due to faulty materials or workmanship, which appear in the work within one year from the date of final acceptance by the City.

9. **PROTECTION:** Contractor shall properly protect all new and existing structures from damage. Contractor shall comply with all safety rules and regulations as published by the Michigan Dept. of Labor, Bureau of Safety and Regulations.

10. **CLEAN-UP:** Contractor shall at all times keep the premises free from accumulations of waste materials or rubbish caused by their employees or work and at the completion of the work they shall remove all their waste, tools, equipment, staging and surplus materials from the structure and grounds used by the contractor and leave work clean and ready for use.

11. **SAFETY RULES:** Contractor shall perform all work under this contract in conformance with the State of Michigan general safety rules and regulations for the construction industry, as set out or authorized by the Michigan Occupational Safety and Health Act, Public Act 154 of 1974, as amended.

12. **CANCELLATION:**
This agreement may be terminated for reasons of convenience or default.
    a) Termination for Convenience: The City of Battle Creek may terminate this Agreement, in whole or in part, at any time by written notice to the Contractor. The Contractor shall be paid its costs, including Contract closeout costs and profit on work performed up to the time of termination. The Contractor shall promptly

submit its termination claim to be paid the Contractor. If the Contractor has any property in its possession belonging to or paid for by the City of Battle Creek, the Contractor will account for same, and dispose of it in the manner the City of Battle Creek directs.

b) Termination For Cause or Breach: If the Contractor does not deliver the complete Project in accordance with this Agreement or if the Contractor fails to comply with any other provisions of the Agreement, The City of Battle Creek may terminate, revoke or rescind this Agreement for default. Termination, revocation or rescission shall be effected by serving notice on the Contractor setting forth the manner in which the Contractor is in default. The Contractor will only be paid the Contract price for the portions of the Project furnished, accepted, and found in compliance with the terms and conditions of this Agreement.

If it is later determined by the City of Battle Creek that the Contractor has an excusable reason for not performing, such as a strike, fire or flood, events which are not the fault of, or are beyond the control of the Contractor. The City of Battle Creek, after setting up a new delivery or performance schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

Termination, revocation or recession of this Agreement for default shall not affect or impair any rights or claims of the City of Battle Creek to damages for breach of any covenants of this Agreement by the Contractor. Further, should the Contractor fail to comply with the conditions of the Agreement or fail to complete the specified work or furnish the specified services as stipulated in the Agreement, the City of Battle Creek reserves the right to purchase on the open market, or to complete the required work at the expense of the Contractor and to pursue all other recoveries available to the City of Battle Creek under Michigan law.

13. **SUBCONTRACTORS:** Bidders shall submit with the Bid any and all subcontractors to be associated with their bid, including the type of work to be performed. All subcontractors shall be bound by all of the terms, conditions and requirements of the bid/contract; however, the prime contractor shall be responsible for the performance of the total work requirements. Contractor must provide copies of licenses for subcontractors. No subcontractor will be recognized as such, and all persons engaged in the work of construction will be considered as employees of the Contractor and he will be held responsible for their work, which shall be subject to the provisions of the contract.

- The Contractor shall notify the Owner in writing of the names of all subcontractors he proposes to employ on the contract and shall not employ any subcontractors until the Owner's approval has been obtained.

- The Contractor agrees to be fully and directly responsible to the Owner for all acts and omissions of their subcontractors and of any other person employed directly or indirectly by the Contractor or subcontractors, and this contract obligation shall be in addition to the liability imposed by law upon the Contractor.

- Nothing contained in this Contract Documents shall create any contractual relationship between any subcontractor and the Owner. It shall be further understood that the Owner will have no direct relations with any subcontractor. Any such necessary relations between Owner and subcontractor shall be handled by the Contractor.

- The Contractor agrees to bind every subcontractor (and every subcontractor of a subcontractor, etc.) by all terms of the Contract Documents as far as applicable to the subcontractors' work unless specifically noted to the contrary in a subcontract approved in writing as adequate by the Owner.

14. **EMPLOYEES AND SUPERINTENDENCE:** Contractor shall enforce good order among their employees and shall not employ on the work site any disorderly, intemperate or unfit person or anyone not skilled in the work assigned to them. Contractor, or a competent person having authority to act for them, shall be at the work site at all times.

15. **ASSIGNMENT OF CONTRACT**: The Contract may not be assigned in whole or in part except upon the written consent of the Owner. Any assignment agreement shall be subject to review and approval by the Owner.

16. **DEBARMENT & SUSPENSION:** Debarment and Suspension (E.O.s 12549 and 12689) - No contract shall be made to parties listed on the General Services Administration's List of Parties Excluded from Federal Procurement or Non-procurement Programs in accordance with E.O.s 12549 and 12689, "Debarment and Suspension," as set forth in 24 CFR part 24. This list contains the names of parties debarred, suspended, or otherwise excluded by

agencies, and contractors declared ineligible under statutory or regulatory authority other than E.O. 12549. Contractors with awards that exceed the small purchase threshold shall provide the required certification regarding its exclusion status and that of its principal employees.

**17. DISPUTES**

Except as otherwise provided in the Contract, any dispute concerning a questions of fact arising under the Contract that is not disposed of by agreement shall be decided by the City of Battle Creek's City Engineer who shall reduce his/her decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the City Engineer shall be final, unless determined by a court of competent jurisdiction to have been fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute there under, the Contractor shall proceed diligently with the performance of the Contract and in accordance with City Engineer’s decision.

This clause does not preclude consideration of law questions in connection with decision provided for in this clause, provided that nothing in this Contract shall be construed as making final the decision of any administrative official, representative or board on a question of law.

**18. SUPPLEMENTAL SCHEDULE OF UNIT PRICES FOR CONSTRUCTION CHANGES**

Where the Proposal Form requires a lump sum bid for a particular item (or items) and further requires bidder to submit a supplemental schedule of Unit Prices for possible construction changes in such item(s), the Owner may if it considers such Unit Prices reasonable include these prices in the Construction Contract. If the Owner considers such Unit Prices as unreasonable he may omit same from the Construction Contract.

Rejection at any time of such Unit Prices for Construction Changes as stated in the Proposal shall not otherwise affect the balance of the Proposal or Construction Contract.

# SECTION II – OFFER TO CONTRACT

DATE: _____

NAME OF BIDDER: _____

BUSINESS ADDRESS: _____

_____

To: The City of Battle Creek, Michigan

The undersigned, as Bidder, declares that the only person or parties interested in this bid as principals are those named herein; that this bid is made without collusion with any person, firm or corporation; that they have carefully examined the location of the proposed work, the proposed forms of Agreement and Bonds, and the Contract Drawings and Specifications for the above designated work, all other documents referred to or mentioned in the Contract Documents, the Contract Drawings and Specifications, including Addenda issued thereto; and Contractor proposes and agrees if this bid is accepted that they will contract with the City of Battle Creek, Michigan, in the form of the copy of the Agreement included in these Contract Documents, to provide all necessary machinery, tools, apparatus, and other means of construction, including utility and transportation services necessary to do all the work and furnish all materials and equipment specified or referred to in the Contract Documents, in the manner and time therein prescribed and according to the requirements of the City of Battle Creek, Michigan, as therein set forth and to furnish the Contractor's Bonds and Insurance, and to do all other things required of the Contractor by the Contract Documents, and that they will take in full payment therefore the sums set forth BELOW;

## PRICE PAGE

## Battle Creek WWTP – Admin HVAC Improvements

| ITEM | DESCRIPTION | ESTIMATED QUANTITY | UNITS | BID AMOUNT |
|---|---|---|---|---|
| 1 | Admin HVAC Improvements | 1 | LSUM | |

Grand Total of Work Items Based on ‘A’ Equipment Items $_____

Acknowledgement of addenda: _____; _____; _____; _____; _____; _____

## MAJOR EQUIPMENT ITEMS

In connection with the items of Major Equipment to be furnished and installed under the Agreement and Contract Documents, the Bidder expressly agrees to the following provisions:

**A.** The base bid lump sum or total base bid price stated hereinbefore includes the furnishing and installation of all items of Major Equipment of the manufacturers or suppliers listed in the following tabulation. The items listed with a letter "A" shall be the equipment included in the Contractor's base bid cost. Any other equipment shall require Owner's approval;

**B.** The City of Battle Creek may select items of any manufacturer or supplier as listed in the following tabulation, that the undersigned Bidder agrees to furnish and install such items as selected and for a contract price equal to the base bid lump sum or total base bid price stated above, adjusted by the difference between the sum of the installed prices for the items selected by the City of Battle Creek as stated in the following tabulation;

**C.** The installed price stated in the following tabulation on **all** sub-items includes the preparation and submission to the Engineer by the Bidder of detailed Drawings showing all modifications, if any, of the Drawings necessary to accommodate the Major Equipment;

**D.** The installed cost stated in the following tabulation on **all** sub-items includes a complete operating installation, including the furnishing and installation of any and all changes or additions in structures, piping, buildings, mechanical and electrical work, accessories and controls necessary to accommodate the Major Equipment; and

**E.** All items offered in the following tabulation, if any, fully comply with the Specifications.

***The City may weigh all factors in determining low bid, using the Tabulation of Major Equipment, and assessing base bids and alternate manufacturers and lead times to determine which combination of options is in the best interest of the City.***

**TABULATION OF MAJOR EQUIPMENT ITEMS**

| Section No. | Item No. | Description | Manufacturer or Supplier | Installed Price |
|---|---|---|---|---|
| 15120 | 1 | Glycol Feed System | (A) Neptune<br>(B) J.L Wingert Co<br>(C) Budzar Industries Inc.<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____<br>$ _____ |
| 15130 | 2 | Inline Pumps | (A) Bell & Gossett<br>(B) Armstrong<br>(C) Taco<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____<br>$ _____ |
| 15214 | 3 | Air Compressor | (A) Quincy<br>(B) Sullair<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____ |
| 15720 | 4 | Condensing Unit | (A) Trane Technologies<br>(B) Carrier Corporation<br>(C) York<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____<br>$ _____ |
| 15720 | 5 | Air Handling Units | (A) Trane Technologies<br>(B) Carrier Corporation<br>(C) Daikin/McQuay<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____<br>$ _____ |
| 15760 | 6 | Fan Coil Units | (A) Trane Technologies<br>(B) Carrier Corporation<br>( ) Owner Approved Alternate | $ _____<br>$ _____<br>$ _____ |
| 15905 | 7 | Instrumentation and Controls | (A) Johnson Controls<br>( ) Owner Approved Alternate | $ _____<br>$ _____ |

**BID CONDITIONS**

The undersigned has carefully checked the attached Bidding Schedule against the Contract Drawings and Specifications and other Contract Documents before preparing this Bid and accepts the said quantities to be substantially correct, both as to classification and amount, and as correctly listing the complete work to be done in accordance with the Contract Drawings, Specifications and other Contract Documents.

**BID SECURITY**

Accompanying this bid is a _____ in the amount of five percent (5%) or _____ Dollars ($_____). The total amount of bid security is based on the total base bid of this Bid.

**COMPLETION**

If awarded a contract under this Bid, the undersigned agrees to start work at the site March 18, 2024. The undersigned further agrees to complete the project by February 14, 2025.

**LIQUIDATED DAMAGES**

Liquidated damages of $750.00 per calendar day will be assessed for failure to meet any deadline, as noted in the Project Specifications.

**BIDDER'S SIGNATURE:** Complete the applicable paragraph below.

I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder, and that our firm is not debarred from doing business under the Federal Excluded Parties List System (epls.gov).

I, the Contractor or Contractor's legally authorized signer, further certify compliance with the City of Battle Creek Ordinance Chapter 214, Discrimination Prohibited. I further acknowledge and agree that the Contractor's violation of Chapter 214 shall be a material breach of this contract. In addition, Contractor acknowledges and agrees that it shall be liable for any costs or expenses incurred by the City in obtaining from other sources, the work and services to be rendered or performed or the goods or properties to be furnished or delivered to the City under the contract as a result of a material breach in the Contract for violations of Chapter 214.

(a) Corporation
The bidder is a corporation organized and existing under the State of _____, which operates under the legal name of _____, and the full names of its officers are as follows:
President: _____
Secretary: _____
Treasurer: _____
Manager: _____

(b) Co-Partnership
The bidder is a co-partnership consisting of individual partners whose full names are as follows:
_____ _____
_____ _____
_____ _____
_____ _____

(c) Individual
The bidder is an individual whose full name is _____ and, if operating under a trade name, said trade name is _____.
NAME: _____
ADDRESS: _____
CITY & STATE: _____

**THIS BID OFFERED BY**:

SIGNATURE: _____

NAME: _____

PHONE: _____

EMAIL: _____

ADDRESS: _____

_____

(SEAL)

Subscribed and sworn to before me this ____ day of _____, 20__.

_____
Notary Public

County of _____

Commission Expires: _____

# SECTION III - CONTRACTOR'S BID FORMS

THESE FORMS MUST BE RETURNED WITH THE BID

## TABLE OF CONTENTS

CONTRACTOR'S BID BOND

CORPORATION CERTIFICATE

SUBCONTRACTOR AND DBE FORM

STATEMENT OF EXPERIENCE OF BIDDERS

# CONTRACTOR'S BID BOND

We, _____, (hereinafter called the "Principal"), and _____(hereinafter called the "Principal"), and _____ hereinafter called the "Surety"), a corporation chartered and existing under the laws of the State of _____, with its principal offices in the City of _____ and authorized to do business in the State of Michigan, are held and firmly bound unto the City of Battle Creek (hereinafter called the "Owner"), in the full and just sum of _____ Dollars ($_____) good and lawful money of the United States of America, to be paid upon demand of the Owner, to which payment shall be made, the Principal and Surety bind themselves, their heirs, executors, administrators, and assigns, jointly and severally and firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted to the Owner, a Bid for furnishing all labor, materials, equipment and incidentals necessary to complete this contract.

WHEREAS, the Principal desires to file this bond in accordance with law, in lieu of a certified bidder's check otherwise required to accompany this Bid.

NOW, THEREFORE: The conditions of this obligation are such that if the Bid be accepted, the Principal shall, within ten (10) days after the date of receipt of a written notice of award of contract, execute a contract in accordance with the Bid and upon the terms, conditions and price(s) set forth therein, of the form and manner required by the Owner, and execute a sufficient and satisfactory contract performance bond payable to the Owner, and in an amount of One Hundred Percent (100%) of the total contract price in the form and with security satisfactory to said Owner, then this obligation to be void; otherwise to be and remain in full force and virtue in law; and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid Owner, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty but as liquidated damages.

The Principal and Surety duly sign and seal on this _____ day of _____, 20___.

_____
Principal

By:_____
(Seal)

_____
Surety

By:_____
(Seal)

Countersigned:_____

# CERTIFICATE TO BE EXECUTED

## IF

## CONTRACTOR IS A CORPORATION

I, _____, certify that I am the _____ of the Corporation named as Contractor hereinabove; that _____ who signed the foregoing Agreement on behalf of the Contractor was then the _____ of said Corporation; that said Agreement was duly signed for and in behalf of said Corporation by authority of its governing body and is within the scope of its corporate powers.

_____

(Corporate Seal)

# SUBCONTRACTOR AND DBE FORM – submit with bid

**I. YOUR FIRM'S BACKGROUND**:

Is your firm an MBE (at least 51% minority ownership)? _____YES _____NO

Is your firm a WBE (at least 51% woman ownership)? _____YES _____NO

Are you subcontracting any part of this project? _____YES _____NO

**II. SUBCONTRACTING INFORMATION:** If subcontracting any part of the project, the bidder/contractor expressly agrees that:

(1) If awarded a contract as a result of this bid, the major subcontractors used in the prosecution of the work will be those listed below, and
(2) The following list includes all subcontractors who will perform work representing approximately five percent (5%) or more of the Total Base Bid.
(3) The Bidder represents that the subcontractors listed below are financially responsible and are qualified to do the work required.

| SUBCONTRACTOR NAME | City/State | Trade or Commodity | MBE | WBE | Approximate dollar value |
|---|---|---|---|---|---|
| | | | Y / N | Y / N | |
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# STATEMENT OF EXPERIENCE OF BIDDER

The Bidder shall state below the work of similar magnitude or character that they have done, and shall give references that will enable the City of Battle Creek to judge their experience, skill and business standing and of their ability to conduct the work as completely and as rapidly as required under the terms of this contract.

| ***PROJECT AND LOCATION*** | ***REFERENCES (include name and email)*** |
|---|---|
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# SECTION IV - CONTRACTOR'S CONTRACT FORMS

THESE FORMS WILL BE REQUIRED FOR AWARD

CONTRACT FORM

PERFORMANCE BOND

LABOR AND MATERIAL BOND

# CONTRACT FORM
## CONTRACT NO. 2024-042B

THIS AGREEMENT, made and entered into this _____ day of _____, 2024, by and between _____ hereinafter called the "Contractor" and the City of Battle Creek, hereinafter called the "Owner."

In consideration for the mutual covenants hereinafter stated, the parties agree for themselves, their personal representatives, successors, assigns as follows:

**I. The Contractor promises and agrees**, for the Waste Water Treatment Plant (WWTP) Administration Building HVAC Improvements project, to furnish and perform all work necessary for the demolition of existing pneumatic HVAC equipment and controls, as scheduled, shown on the Drawings and specifications.

A. To furnish all materials, construction water, equipment, tools, dewatering devices, skill and labor of every description necessary or reasonable incidental to carrying forth and completing in good, firm, substantial and workmanlike manner, the work specified, in strict conformity with the true intent of the NOTICE TO BIDDERS, SPECIAL INSTRUCTIONS, GENERAL INSTRUCTIONS, INVITATION FOR BID, SPECIAL CONDITIONS, GENERAL CONDITIONS, AGREEMENT, BONDS, GENERAL SPECIFICATIONS, CONTRACTOR'S BID and Project Specifications, and other contract documents and addenda thereto, which are hereby made a part hereof as fully and to the same effect as though they had been set forth at length herein.

B. To commence work under this contract on or before a date to be specified by the owner in a written Notice to Proceed and complete the project by the date specified in the Invitation for Bid.

C. Requirements for a specific trade or contract will generally be described in that portion of the specifications or drawings related to that trade or contract. Such requirements may, however, be described in other sections of the Contract Documents. The Contractor will be held responsible for having carefully examined all drawings and read all requirements of the specifications and all Contract Documents to avoid omissions or duplications and to insure a complete job.

D. The Contractor must be fully informed about conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of their obligation to furnish all material and labor necessary to carry out the provisions of this contract.

E. Any claim by the Contractor of an inability to meet any requirement set forth in the Contract Documents, or that any requirement of these documents is impractical or unreasonable, will not be recognized, unless the claim was made at the time their Bid was submitted, and specific provision is made for such claim in the Agreement between Owner and Contractor (Bid and Agreement).

F. Warranty: Contractor shall remove and replace at no additional cost to the City any defects in workmanship or materials that may be apparent or may develop within a period of one (1) year from the date of final acceptance.

G. NON-DISCRIMINATION CLAUSE: The bidder agrees not to discriminate against any employee or applicant for employment, to be employed in the performance of such contract with respect to hire tenure, terms, conditions or privileges, of employment, or any matter directly or indirectly

related to employment because of his or her actual or perceived race, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability, family status, sexual orientation, or gender identity. Breach of this covenant may be regarded as a material breach of the contract as provided for in Act 220 and Act 453 of the Public Acts of 1976, as amended, entitled "Michigan Handicapper's Civil Rights Act" and/or the "Michigan Elliott Larson Civil Rights Act" and/or City of Battle Creek Chapter 214 "Discrimination Prohibited" Ordinance. The bidder further agrees to require similar provisions from any subcontractors, or suppliers. The bidder agrees to comply with the Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity," as amended by Executive Order 11375 of October 13, 1967, as supplemented in Department of Labor regulations (41 CFR, Chapter 60).

**II. The Owner promises and agrees:**

A. To pay the Contractor for said work when completed in accordance with the provisions of these contract documents, and for the contract sum of:

_____ dollars ($_____).

Payment for work is subject to additions provided therein and for the authorized work complete in place and accepted by the Owner or its authorized representatives.

III. It is further understood and agreed between the parties hereto as follows:

A. The said work is to be done in accordance with the laws of the State of Michigan to the entire satisfaction and approval of the Owner or its duly authorized representatives.

B. The decision of said Owner's authorized representative upon any questions connected with the execution of this Agreement or any failure or delay in the prosecution of the work by said Contractor shall be final and conclusive.

C. If, at any time after the execution of the Agreement and the Bond for its faithful performance, the Owner shall deem the surety or sureties then upon said bond to be unsatisfactory or, if, for any reason said bond shall cease to be adequate security for the performance of the work, the Contractor shall, at their expense, within fifteen (15) calendar days after receipt of written notice from the Owner to do so, furnish an additional bond or bonds in such form and amount and with such surety or sureties as shall be satisfactory to the Owner. In such event, no further payment to the Contractor shall be deemed to be due under this Agreement until such new or additional security for the faithful performance of the work shall be furnished in a manner and form satisfactory to the Owner.

D. VENUE: Any party bringing a legal action or proceeding against any other party arising out of or relating to this Agreement or the transactions it contemplates shall bring the legal action or proceeding:

(i) in the United States District Court for the Western District of Michigan; or

(ii) in any court of the State of Michigan sitting in Calhoun County, if there is no federal subject matter jurisdiction.

E. GOVERNING LAW: This agreement shall be enforced under the laws of the State of Michigan. Contractor must comply with all applicable federal, state, county, and City laws, ordinances, and regulations. Contractor shall ensure payment of all taxes, licenses, permits, and other expenses of any nature associated with the provision of services herein. Contractor shall maintain in current status all Federal, State and Local licenses and permits required for the operation of the business conducted by the Contractor.

IN WITNESS WHEREOF, the said parties have hereunto set their hands and affixed their seals, the day and year first above written.

In the Presence of:

_____

_____
Notary Public

CONTRACT FORM APPROVED BY:

_____
City Attorney

SIGNED, SEALED, AND
EXECUTED BY CONTRACTOR:

**I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder, and that our firm is not debarred from doing business under the Federal Excluded Parties List System (epls.gov):**

By:_____

Title:_____

SIGNED, SEALED, & EXECUTED
BY CITY OF BATTLE CREEK

_____
City Manager

# PERFORMANCE BOND

Let it be known that_____, as Principal, and_____ _____, as Surety, are held and firmly bound unto the City of Battle Creek in the sum of ____ _____dollars and _____/100 ($_____) for the payment of which sum of money to be made, we bind ourselves, heirs, executors, administrators, successors and assigns, jointly and severally, firmly as required by written contract.

WHEREAS, the Principal has entered into a certain written contract dated the_____ day of _____, 20_____ for the _____ complete, as described in the foregoing Bid and Agreement.

NOW THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that if the said Principal shall in all respects well and truly keep and perform the said contract, and shall pay all sums of money due or to become due, for any labor, materials, apparatus, fixtures or equipment furnished for the purpose of constructing the work provided in said contract, and shall defend, indemnify and save harmless said City of Battle Creek against any liens, encumbrances, damages, claims, demands, expenses, costs and charges of every kind except as otherwise provided in said specifications and other Contract Documents arising out of or in relation to the performance of said work and the provisions of said contract, and shall remove and replace any defects in workmanship or materials which may be apparent or may develop within a period of one (1) year from the date of final acceptance, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

And the said Surety, for value received, hereby stipulates and agreed that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Agreement or to the work or to the specifications.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20__.

**PRINCIPAL ATTEST:**

| | |
|---|---|
| Principal Business Name | Principal Secretary Signature & Seal |
| Address | Principal Secretary Printed Name |
| City, State, Zip | Witness of Principal |

**SURETY ATTEST:**

| | |
|---|---|
| Surety Business Name | BY:_____ Attorney-in-Fact Signature & Seal |
| Address | Attorney-in-Fact Printed Name |
| City, State, Zip | |

# LABOR AND MATERIALS BOND

Let it be known that, that we, the undersigned, _____, hereinafter called the "Principal," and _____, a corporation organized and existing under the laws of the State of _____, having its principal office at _____, hereinafter called the "Surety," are held and firmly bound unto the City of Battle Creek, hereinafter called the "Owner," for use of any and every person, co-partnership, association or corporation interested in sum of _____dollars and _____/100 ($_____), to be paid to the said obligees or its or their assigns, to which payment be made we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents. Sealed with our respective seals and dated this ____ day of _____, 20___.

WHEREAS, the above bounded _____, Principal, has entered into a contract with the City of Battle Creek.

Dated the _____ day of _____, 20___, for the _____.

NOW, THEREFORE, THE CONDITION OF THIS CONDITION IS SUCH, that if the above bounded Principal shall and will promptly pay or cause to be paid all sums of money which may be due any person, co-partnership, association or corporation for all material furnished and labor supplied or performed in the prosecution of the work, whether or not the said material or labor enter into and become component parts of the work or improvement contemplated, then this obligation to be void; otherwise to remain in full force and effect.

The Principal and Surety further jointly and severally agree with the obligee herein that every person, co-partnership, association or corporation who, whether as subcontractor or otherwise, has furnished material or supplied or performed labor in the prosecution of the work as above provided and who has not been paid therefore may sue in assumption on this bond in the name of the Owner for their use prosecute the same to final judgment for such sum or sums as may be justly due to them, and have execution thereon, provided, however, that the Owner shall not be liable for payment of any costs or expenses of any such suit.

IT IS FURTHER AGREED, that any alterations that may be made in the terms of the contract or in the work to be done or materials to be furnished or labor to be supplied or performed under it or the giving by the Owner or any extension of time for the performance of the contract or any other forbearance on the part of either the Owner or the Principal to the other, shall not in any way release the Principal and Surety or Sureties or either or any of them their heirs, executors, administrators, successors or assigns, from their liability hereunder, notice to the Surety or Sureties of any such alteration, extension or forbearance being hereby waived.

IN WITNESS WHEREOF, the said Principal and Surety have duly executed this bond under the seal and day and year first above written.

ATTEST:

_____
Principal

_____ BY:_____
(Seal)

_____
Surety

ATTEST BY:_____
Attorney-in-Fact

_____

(SEAL)

# SECTION V - SPECIAL CONDITIONS

1. Supplementary Definitions: The following additional definitions supplement the definitions are provided:

(a) "Owner" or "City of Battle Creek" or "City" shall mean the City of Battle Creek, MI, acting through the City Commission or any other board official, or officials to which or whom the power belonging to the Commission shall, by virtue of any act or acts thereafter passed are held to appertain.

(b) "Engineer" shall mean the City Engineer, or other persons designated by the City acting directly or through authorized agents.

(c) “Contract Drawings” The drawings applicable to the work to be performed under this contract and that are referred to in this documents as the plans or as the contract drawings.

Whenever any word or expression defined in this paragraph, or pronoun used in its stead, occurs in these Contract Documents, it shall have, and is mutually understood to have, the meanings hereinafter given unless the context clearly indicates otherwise.

(a) "Contract Documents" or "Contract Document" shall mean and include all those documents listed and included under the definition of "Contract Documents" in these General Conditions.

(b) "Contract" or "Construction Contract" means and includes all of the Contract Documents, referred to in the General Conditions, covering the performance of the work and the furnishing of all labor, equipment, materials and other property required for the doing of the work, and covering the doing of all other things required by said Contract Document.

(c) "Instructions to Bidders" shall mean and include both the Special Instructions to Bidders and the General Instructions to Bidders which are bound herewith.

(d) "Conditions", "Contract Conditions" or "Conditions of Contract" shall mean both the Special Conditions of Contract and the General Conditions of Contract which are bound herewith.

(e) "General Conditions" or "General Conditions of Contract" shall mean and include those "General Conditions" which are bound herewith.

(f) "Owner" or "City of Battle Creek" or "City" shall mean the City of Battle Creek, Michigan, acting through the City Commission or any other board, official or officials to which or to whom the power belonging to the Commission shall by virtue of any act or acts thereafter passed are held to appertain.

(g) "Specifications" or "Contract Specifications" shall mean and include all those "Contract Specifications" which are bound herewith, and which are listed, mentioned or referred to in the Special Conditions of Contract in the paragraph entitled "Contract Specifications", and include but are not limited to "Project Specifications" and "General Specifications".

(h) "Contract Drawings" or "Plans" shall mean and include all drawings which have been prepared by or in behalf of the Owner, as a basis for proposals, when duly made a part of this Contract by incorporation or reference; all drawings submitted in pursuance of the terms of this Contract by the successful bidder with their proposal and by the Contractor to the Owner if and when approved by the Engineer; and all drawings submitted by the Engineer to the Contractor during the progress of the work as provided for in the Contract.

(i) "Work" or "Project" shall mean and include the doing of all things required of the Contractor under the Contract Documents, including but not limited to the furnishing, construction and installation of all equipment, facilities and improvements therein mentioned, and the furnishing of all labor, materials, equipment, tools and other things necessary therefore, all as provided by the Contract Documents.

(j) "Contractor" or "Construction Contractor" shall mean the party to whom the Contract for the work described in the Contract Documents has been awarded and who executes the Agreement for the doing of the work covered by the Contract.

(k) "Subcontractor" shall mean a person, firm or corporation, other than the Contractor, supplying labor and materials, or labor only, at the site of the work.

(l) "Inspector" shall mean the engineering or technical inspector or inspectors duly authorized or appointed by the Engineer or by the Owner, limited to the particular duties entrusted to him or them.

(m) "Date of Award" of Contract shall mean the date formal notice of such award, signed by the Owner, has been delivered to the intended awardee, or mailed to him at the main business address shown in their Proposal by some officer or agent of the Owner duly authorized to give such notice.

(n) "Day" or "Days", unless herein otherwise expressly defined, shall mean working day or days.

(o) "Where "as shown", "as indicated", and "as detailed", or words of similar import are used, it shall be understood that reference to the Contract Documents which are a part of the Contract Documents is made unless stated otherwise. Where "as directed", "as permitted", "approved", or words of similar import are used, it shall be understood that the direction, requirements, permission, approval, or acceptance of the Engineer is intended unless stated otherwise. "Provide" shall be understood to mean "provide complete in place", that is, "furnish and install".

(p) Equipment supplier means the manufacturer who fabricates and/or assembly units to make up a complete equipment item. It does not mean a subcontractor who purchases an item of equipment from a manufacturer.

**2. Contract Documents Defined**

A Contract Document consists of and includes the following:

A. Volume
(a) Invitation For Bids
(b) Special Instructions to Bidders
(c) Proposal
(d) Special Conditions of Contract
(e) Agreement
(f) Contract Specifications including all documents, and papers included in or referred to in the foregoing.
(g) The Bonds and Insurance Certificates and Policies.

B. Volume II Contract Drawings

C. Addenda Any and all Addenda to the foregoing.

**3. Abbreviations Used**

Wherever abbreviations are used in this Contract Document, each such abbreviation shall have the following listed meaning:

(a) Units of Measure

| | |
|---|---|
| CY | Cubic Yard |
| Ft. | Feet |
| Lbs | Pounds |
| M | One Thousand |
| MFBM | One Thousand Feet Board Measure |
| C | Centigrade |
| F | Fahrenheit |
| HP | Horsepower |
| KVA | Kilovolt Ampere |

BTU British Thermal Unit

(b) Types and Units

PVC Polyvinyl Chloride
MJ Mechanical Joint
B & S Bell and Spigot
T & G Tongue and Groove
SS Single Strength
DS Double Strength
VC Vitrified Clay
RC Reinforced Concrete
MH Manhole
CB Catchbasin
ES Extra Strength

(c) Organizations and Publications

AASHTO American Association of State Highway and Transportations Officers
ACI American Concrete Institute
AGA American Gas Association
AIEE American Institute of Electrical Engineers
AISC American Institute of Steel Construction
AMCA Air Moving and Conditioning Association, Inc.
ASA American Standards Association, Inc.
ASCE American Society of Civil Engineers
ASHRAE American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME American Society of Mechanical Engineers
ASTM American Society for Testing and Materials
AWWA American Water Works Association
AWI Architectural Woodwork Institute
CS Commercial Standard - U.S. Department of Commerce
FSS Federal Supply Service
FM Factory Mutual Laboratories
IBR Institute of Boiler and Radiator Maintenance
MDOT MI Department of Transportation
MRDTI Metal Roof Deck Technical Inst.
MSS Manufacturers Standardization
Society of The Valve and Fitting Industry
NBBPVI National Board of Boiler and Pressure Vessel Inspectors
NBFU National Board of Fire Underwriters
NCPWB National Certified Pipe Welding Bureau
NEC National Electrical Code
NEMA National Electrical Manufacturers Association
NFPA National Fire Protection Assoc.
NLMA National Lumber Manufacturers Association
PCA Portland Cement Association
UL Underwriters Laboratory

UBC Uniform Building Code

# SECTION VI – PREVAILING WAGES

"General Decision Number: MI20240079 01/05/2024
Superseded General Decision Number: MI20230079
State: Michigan
Construction Type: Building
County: Calhoun County in Michigan.
BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

| | |
|---|---|
| If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022: | . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024. |
| If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022: | . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024. |

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts

| Modification Number | Publication Date |
|---|---|
| 0 | 01/05/2024 |

ASBE0047-002 07/01/2023

| | Rates | Fringes |
|---|---|---|
| ASBESTOS WORKER/HEAT & FROST INSULATOR | $ 36.62 | 19.78 |

BOIL0169-001 06/01/2023

| | Rates | Fringes |
|---|---|---|
| BOILERMAKER | $ 39.95 | 35.38 |

BRMI0009-031 08/01/2023

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 33.95 | 23.52 |
| TILE FINISHER | $ 26.35 | 17.90 |
| TILE SETTER | $ 24.30 | 23.77 |

CARP0525-003 06/01/2023

| | Rates | Fringes |
|---|---|---|
| CARPENTER, Includes Acoustical Ceiling Installation, Drywall Hanging, and Form Work | $ 28.29 | 21.42 |

CARP1102-001 06/01/2019

| | Rates | Fringes |
|---|---|---|
| MILLWRIGHT | $ 28.59 | 24.79 |

ELEC0445-011 05/31/2023

| | Rates | Fringes |
|---|---|---|
| ELECTRICIAN | $ 35.97 | 24.49 |

ENGI0324-002 06/01/2023

| | Rates | Fringes |
|---|---|---|
| OPERATOR: Power Equipment | | |
| GROUP 1 | $ 45.48 | 25.25 |
| GROUP 2 | $ 42.18 | 25.25 |
| GROUP 3 | $ 40.50 | 25.25 |
| GROUP 4 | $ 37.82 | 25.25 |
| GROUP 5 | $ 37.82 | 25.25 |
| GROUP 6 | $ 31.96 | 25.25 |
| GROUP 7 | $ 29.48 | 25.25 |

FOOTNOTES:
Crane operator with main boom and jib 300' or longer: $1.50 per hour above the group 1 rate.
Crane operator with main boom and jib 400' or longer: $3.00 per hour above the group 1 rate.

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane operator with main boom and jib 400', 300', or 220' or longer.
GROUP 2: Crane operator with main boom and jib 140' or longer, tower crane, gantry crane, whirley derrick
GROUP 3: Backhoe/Excavator/Trackhoe; Crane; Concrete Pump; Grader/Blade; Highlift; Hoist; Loader; Roller; Scraper; Stiff Leg Derrick; Trencher

GROUP 4: Bobcat/Skid Loader; Broom/Sweeper; Fork Truck (over 20' lift)
GROUP 5: Boom Truck (non-swinging)
GROUP 6: Fork Truck (20' lift and under for masonry work)
GROUP 7: Oiler

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IRON0025-005 06/01/2022

| | Rates | Fringes |
|---|---|---|
| IRONWORKER (REINFORCING) | $ 31.43 | 34.77 |
| IRONWORKER (STRUCTURAL) | $ 34.50 | 38.44 |

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LABO0355-022 06/01/2022

| | Rates | Fringes |
|---|---|---|
| LABORER | | |
| Common or General; Grade Checker; Mason Tender - Brick; Mason Tender - Cement/Concrete; Sandblaster | $ 26.70 | 12.95 |
| Pipelayer | $ 20.34 | 12.85 |

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PAIN0312-002 06/01/2023

| | Rates | Fringes |
|---|---|---|
| PAINTER: Brush and Roller | $ 23.74 | 13.35 |
| PAINTER: Drywall Finishing/Taping | $ 23.74 | 13.35 |
| PAINTER: Spray | $ 26.18 | 15.86 |

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PLAS0016-007 04/01/2014

| | Rates | Fringes |
|---|---|---|
| PLASTERER | $ 21.18 | 12.43 |

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PLUM0333-006 06/01/2023

| | Rates | Fringes |
|---|---|---|
| PIPEFITTER, Includes HVAC Pipe and Unit Installation | $ 43.29 | 24.94 |
| PLUMBER, Excludes HVAC Pipe and Unit Installation | $ 43.29 | 24.94 |

FOOTNOTE:
Paid Holidays: Memorial Day, Independence Day and Labor Day, if the employee works the work day preceding and following the holiday unless proven illness or injury prevents the employee from working.

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ROOF0070-002 06/01/2022

| | Rates | Fringes |
|---|---|---|
| ROOFER | $ 30.03 | 16.84 |

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SFMI0669-001 04/01/2023

| | Rates | Fringes |
|---|---|---|
| SPRINKLER FITTER (Fire Sprinklers) | $ 40.48 | 25.80 |

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SHEE0007-004 05/01/2023

| | Rates | Fringes |
|---|---|---|
| SHEET METAL WORKER (Including HVAC Duct Installation; Excluding HVAC System Installation) | $ 38.09 | 19.66 |

SUMI2011-004 02/01/2011

| | Rates | Fringes |
|---|---|---|
| CEMENT MASON/CONCRETE FINISHER | $ 25.23 | 1.80 |
| IRONWORKER, ORNAMENTAL | $ 18.48 | 7.93 |
| LABORER: Landscape & Irrigation | $ 10.38 ** | 0.50 |
| OPERATOR: Bulldozer | $ 19.68 | 6.64 |
| OPERATOR: Compactor | $ 17.68 | 6.70 |
| OPERATOR: Tractor | $ 19.10 | 8.48 |
| TRUCK DRIVER, Includes Dump and Tandem Truck | $ 17.26 | 11.42 |
| TRUCK DRIVER: Lowboy Truck | $ 14.50 ** | 0.44 |
| TRUCK DRIVER: Tractor Haul Truck | $ 13.57 ** | 1.18 |

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.20) or 13658 ($12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

# SECTION VII - SPECIFICATIONS

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IF ANY OF THE PAGES LISTED ABOVE ARE NOT INCLUDED IN THESE CONTRACT DOCUMENTS, PLEASE ADVISE.

END OF SECTION

**SECTION 01010**
**DEFINITION OF CONTRACT ITEMS**

## PART 1 GENERAL

### 1.01 FOREWORD

A. This Section describes the various Contract Items listed in the Bid.

### 1.02 WORK INCLUDED

A. Under each Item the Contractor shall furnish all labor, materials, tools, equipment, supplies, maintenance of equipment, heating, lighting and power, insurance and bonds, coordination, and all Work necessary in accordance with the Specification Divisions 1 through 16 to complete the Work in accordance with the obvious or expressed intent of the Contract Documents.

### 1.03 WORKMANSHIP AND MATERIALS

A. The quality of workmanship and materials entering into any and all of the Items and the Work included shall conform to pertinent sections, paragraphs, sentences, and clauses, both directly and indirectly applicable thereto, contained in the Contract Documents, whether or not direct reference to such occurs under each Item in this Section.

### 1.04 PAYMENT

A. The lump sum and unit prices stated in the Bid shall be payment in full for the completion of all Work specified and described or required to be included in the Contract, complete, and ready for use.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

Not used.

## PART 4 SPECIAL PROVISIONS

### 4.01 CONTRACT ITEMS

A. The contract items are defined on the following pages.

**ITEM 1**
**WWTP ADMINISTRATION BUILDING HVAC IMPROVEMENTS**

## 1.01 DESCRIPTION

A. Under this Item the Contractor shall furnish and perform all Work necessary for the demolition of existing pneumatic HVAC equipment and controls. Installation of the new HVAC equipment and controls, as scheduled, shown on the Drawings and specified, in conformance with the Specifications.

1. This item shall include but not be limited to the following removals: removal of the existing AHU-2-2 and AHU-2-3, removal of the existing chiller CCU-2-1, removal of the existing pneumatic control system, removal of the existing air compressors, removal of the existing heating water supply and return piping as shown on the drawing and or specified.

2. This item shall include but not be limited to the following improvements: installation of the new AHU-2-2 and AHU-2-3, glycol pumping equipment, DDC control system, air compressors AC-1 and AC-2, and electrical equipment as shown on the drawings and or specified.

## 1.02 WORK NOT INCLUDED

A. Any Work specifically included under other Bid Items.

## 1.03 DEFINITION OF ITEM

A. Item 1 - Includes all work as shown on the plans, specified, or directed by the Engineer and/or Owner.

## 1.04 MEASUREMENT

A. The lump sum stated in the Bid shall be full compensation for all Work required under Item 1.

## 1.05 PAYMENT

A. Payment for the Work included in Item 1 shall be made in proportion to the work performed.

B. The Contractor shall submit a schedule of values prior to commencement of the Work. Said schedule shall serve as the basis for partial progress payments.

END OF SECTION

**SECTION 01043**
**COORDINATION AND CONTROL OF THE WORK**

## PART 1 GENERAL

### 1.01 SCOPE

A. This section includes coordination and control of the Work.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Information for the Record:

a. Plan and procedures for any shutdowns.

b. Coordination drawings shall include, but not be limited to, all process piping including, but not limited to, bill of material, laying length, conduit runs, and plumbing lines.

### 1.03 LINES AND GRADES

A. All Work under this Contract shall be built in accordance with the lines shown on the Drawings or as altered or modified by authority of the Owner and Engineer.

### 1.04 EXISTING STRUCTURES SHOWN ON DRAWINGS

A. Where underground and surface structures are shown on the Drawings, the location, depth, and dimensions of such structures are believed to be reasonably correct but are not guaranteed.

B. Such structures are shown for the information of the Contractor, but information so given is not to be construed as a representation that such structures will in all cases be found or encountered just where shown, or that they represent all the structures which may be encountered.

### 1.05 COOPERATION OF CONTRACTOR

A. The Contractor shall conduct his operations so as to interfere as little as possible with those of the Owner, other contractors, utilities, or any public authority on or near the Work.

B. The Owner reserves the right to perform other Work by contract or otherwise, and to permit other public bodies, public utility companies, and others to do Work on or near the project during progress of the Work. If a conflict arises, the Owner will determine when and how the Work shall proceed.

C. Claims for delay or inconvenience due to operations of such other parties on Work specified, shown on the Drawings, as directed or which can be reasonably expected to be encountered by the nature and location of the Work will not be considered.

D. Operations entailing the use of construction equipment and lights outside the hours of 7:30 am and 7:30 pm or outside the hours allowed for construction by local ordinances or regulations are prohibited unless otherwise authorized by the Owner or Engineer.

**1.06 RESERVED**

**1.07 RESERVED**

**1.08 RESERVED**

**1.09 TEMPORARY PARKING FACILITIES**

A. Parking spaces for the Contractor's personnel shall be provided and maintained in usable condition by the Contractor at all times. Provisions shall be made so that sediment is not tracked onto paved roadways from the vehicles operated by the Contractor's personnel. The parking areas shall consist of temporary parking areas or new permanent parking areas shown on the Drawings. Temporary parking areas are to be located in the area designated by the Owner and Engineer. At the completion of the project, temporary parking areas shall be removed and the surface restored as specified, shown on the Drawings, as directed or to its original condition.

B. The Contractor's personnel shall not utilize existing permanent parking areas unless specifically noted otherwise on the Drawings.

**1.10 TEMPORARY WATER, HEATING, LIGHTING AND POWER**

A. Contractor shall coordinate connections to water and power, as well as use of sanitary facilities with the City of Battle Creek WWTP Site Superintendent Rodney Cliffton.

B. Use of water, power, and sanitary facilities shall be at no cost to the Contractor provided that the Contractor makes reasonable efforts to:

1. Limit power usage to power tools and lights during work hours and reduce usage if specifically requested by the Owner.

2. Limit water usage to those critical construction tasks.

3. Maintain sanitary facilities and locker/changing rooms in neat, clean, and orderly condition.

C. Should the Contractor fail to adequately adhere to the City's usage requirements described above access to these utilities will be removed and the Contractor will become responsible for providing power, water, and sanitary facilities for the work with no additional compensation.

## 1.11 DISPOSAL OF DEBRIS

A. All debris resulting from construction operations, i.e., packaging, waste materials, damaged equipment, etc., shall be trucked from the Site by the Contractor and disposed of at spoil sites.

B. The Contractor shall police the hauling of debris to ensure that all spillage from haul trucks is promptly and completely removed from public or private rights-of-way.

C. All debris shall be disposed of in accordance with federal, state, and local laws and regulations.

## 1.12 CONTROL OF NOISE

A. The Contractor shall eliminate noise to as great an extent as possible at all times. Air compressors shall be equipped with silencers and the exhaust of all gasoline motors and other power equipment shall be provided with mufflers. In the vicinity of hospitals, libraries, and schools, precautions shall be taken to avoid noise and other nuisance, and the Contractor shall require strict observances of all pertinent ordinances and regulations.

## 1.13 SMOKE PREVENTION

A. Strict compliance with all ordinances regulating the production and emission of smoke will be required, and the Contractor shall accept full responsibility for all damage that may occur to property as a result of negligence in providing required control.

## 1.14 DEBRIS AND DUST CONTROL

A. Contractor shall perform debris and dust control in accordance with Section 01568.

## 1.15 SANITARY REGULATIONS

A. The Contractor shall provide all necessary housing accommodations for the workers for changing clothes and for protection during inclement weather. Toilet accommodations shall also be maintained for the use of the employees on the Work. The accommodations shall be in approved locations, properly screened from public observance and shall be maintained in a strictly sanitary manner. The Contractor shall obey and enforce all other sanitary regulations and orders; shall take precautions against infectious diseases and the spread of same; and shall maintain at all times satisfactory sanitary conditions around all shanties, tool and supply houses, and on all other parts of the Work.

## 1.16 USE OF EXPLOSIVES

A. The use of explosives is prohibited.

## 1.17 EMERGENCY MAINTENANCE SUPERVISOR

A. The Contractor shall submit to the Engineer the names, addresses, and telephone numbers of two employees responsible for performing emergency maintenance and repairs when the Contractor is not working. These employees shall be designated in writing by the Contractor to act as his representative and shall have full authority to act on his behalf.

B. Contractor shall post at job Site, in a conspicuous location, the emergency numbers for the project.

C. Contractor shall be responsible for contacting the local fire, police, and emergency response personnel and organizations in advance of the Work. The Contractor shall be responsible for the coordination and compliance with emergency response plans, whether developed by the governing agency, laws, or the Contractor for the project.

D. At least one of the designated employees shall be available for a telephone call any time an emergency arises.

## 1.18 PUBLIC SERVICE STRUCTURES

A. Public service structures shall be understood to include all poles, tracks, pipes, wires, conduits, house-service connections, vaults, manholes, and other appurtenances, whether owned or controlled by the Owner or other public bodies or by privately-owned corporations, used to supply the public with transportation, heating, electric, telephone, gas, water, sewer, or other services.

B. At least a week in advance of breaking ground, the Contractor shall notify the registered underground protection service, all public bodies, and other owners of such facilities of the proposed location of his operations, advising them that their property may be affected and that such measures as they may deem necessary should be promptly taken to protect, adjust, remove, or build them.

C. In developed residential and commercial areas, the Contractor shall assume each building and dwelling has water and sewer services and that they shall be protected and repaired as needed as part of the pipeline installation. No additional payment will be made for Work associated with supporting or repairs of such services.

D. Three conditions which may be encountered will be dealt with as follows:

1. Structures which are adjacent to but not included within the limits of an excavation required for performance of the Work shall be protected, supported, and maintained in service by the Contractor at his expense.

2. Structures within the limits of the Work which can be satisfactorily supported and maintained in service and which do not require removal and rebuilding in the judgment of the Engineer shall be thus supported by the Contractor at his expense, including cost of repair of damage incident to his operations.

    a. Supports for water and gas mains, sewers, conduits, and similar structures shall be constructed of timber or other acceptable

materials; shall be supported from undisturbed foundations, and shall be sufficiently substantial to ensure against settlement when pipe trenches or other excavations are backfilled. In all cases where permits or inspection fees are required by utilities in connection with changes to or temporary support of their conduits, the Contractor shall secure such permits and pay all permit and inspection fees.

b. The Contractor shall assume full responsibility for maintaining all public service structures in service and shall support and protect or remove and rebuild them at his own expense. Such services shall not be interrupted without permission of the owner of the public service structure.

3. In case relocation of pipelines or other utility structures is required because of direct interference, as determined jointly by the Owner, Engineer, and Contractor, with the installation of the Work, the Contractor shall notify the Owners of the utility structure involved.

a. The Contractor will not be reimbursed for the cost of the relocation if the interference is shown on the Drawings, described in the Specifications, apparent on visual inspection, or specifically included in the Work to be performed by the Contractor.

b. The Contractor will not be paid for time lost because of such direct interference. Where it is the policy of any utility owner to perform such Work with his own forces, the Contractor shall cooperate to the fullest extent with such utility owner.

## 1.19 UNAUTHORIZED OR PROHIBITED WORK

A. Work done beyond the lines shown on the Drawings or ordered, Work done without required inspection, except as herein provided, or any extra work done without authority will be considered as unauthorized and will not be paid for under the provisions of the Contract. Work so done may be ordered removed at the Contractor's expense. Work done without lines and grades being given shall be considered as unauthorized and subject to rejection.

B. Disposing of excess or unsuitable materials, including but not limited to excavated material, demolition debris, clearing and grubbing debris, in wetlands or flood plains.

C. Locating stockpiles in environmentally sensitive areas.

D. Pumping of sediment-laden water from trenches or excavations directly into any surface waters, stream, wetlands, or sewers. Pumped water shall be properly filtered and desilted prior to discharge.

E. Open burning without a permit.

F. Discharging injurious silica dust concentrations into the atmosphere within 200 feet of any residential or commercial, or public or private places of human occupancy.

## 1.20 DRAINING OF TANKS AND PIPELINES

A. Unless otherwise indicated, tanks, pipelines, and other similar structures that are to be removed from service, to complete the Work will be initially drained by the Owner.

B. Draining will be by gravity or by a permanently installed pump, if available.

C. After the tank has been drained by the Owner to the lowest level possible with existing means for drainage, the Contractor shall remove and dispose of remaining liquid and accumulated solids, as required to complete the Work.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

Not used.

## PART 4 SPECIAL PROVISIONS

## 4.01 POTENTIALLY HAZARDOUS ENVIRONMENT

A. The environment in portions of the Site is rated as Class I Division 1 or 2 or some areas of the Site are designated as permitted Confined Spaces. As a minimum, whenever the Contractor is performing Work in these areas, the Contractor shall provide Factory Mutual- and UL-approved continuous monitoring of the atmosphere for the presence of hydrogen sulfides, of low oxygen concentration, and of explosive gases (both lighter and heavier than air). The Contractor shall evacuate all personnel from the areas whenever the detection system registers hydrogen sulfide levels of greater than 20 ppm, oxygen levels less than 19.5% or combustible gas levels of greater than 10% of the LEL. In addition, whenever the Contractor is using tools producing open flames or sparks, such as cutting torches, saws, and grinders, the Contractor shall provide for the forced air exhaust ducted from the immediate area of the Work.

## 4.02 REQUIRED SAFETY DOCUMENTATION TO BE SUBMITTED

A. On all projects that require the Contractor's or subcontractor's personnel to occupy permitted confined spaces and/or hazardous atmospheres on the Site, the Contractor shall submit to the Owner, a written proposed safety program. The safety program shall comply with all Federal, State, and local requirements. If the Owner has a safety plan that is more stringent than the Federal and State requirements, it will be made available to the Contractor for review. The submittal of the proposed safety program to the Owner shall be made well in advance of the start of construction at the Site. The submittal shall include a written Safety Management Plan including Confined Space Entry procedures. The Contractor shall be responsible to maintain documentation that anyone employed by the Contractor, subcontractors, or suppliers of any tier to the Contractor occupying such hazardous locations has received the appropriate confined space entry training and other

applicable training. The Contractor is also responsible to maintain completed confined space entry permits.

END OF SECTION

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**SECTION 01090**
**REFERENCE STANDARDS**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes reference standards.

### 1.02 DESIGNATION OF ASSOCIATIONS, INSTITUTIONS, SOCIETIES AND STANDARDS

A. Whenever in these Specifications reference is made to Associations, Institutions, Societies, or Standards, they will be designated as follows:

| | | |
|---|---|---|
| AA | - | Aluminum Association |
| AAMA | - | Architectural Aluminum Manufacturers Association |
| AASHTO | - | American Association of State Highway and Transportation Officials |
| ACI | - | American Concrete Institute |
| ADAAG | - | Americans with Disabilities Act Accessibility Guidelines |
| AFBMA | - | Anti-Friction Bearing Manufacturers Association |
| AFI | - | Air Filter Institute |
| AGA | - | American Gas Association |
| AGMA | - | American Gear Manufacturers Association |
| AIHA | - | American Industrial Hygiene Association |
| AISC | - | American Institute of Steel Construction |
| AISI | - | American Iron & Steel Institute |
| AITC | - | American Institute of Timber Construction |
| AMCA | - | Air Moving and Conditioning Association |
| ANSI | - | American National Standards Institute |
| API | - | American Petroleum Institute |
| ARI | - | Air Conditioning and Refrigeration Institute |
| ASA | - | American Standards Association |
| ASHRAE | - | American Society of Heating, Refrigerating, and Air Conditioning Engineers |
| ASME | - | American Society of Mechanical Engineers |
| ASTM | - | American Society for Testing Materials |
| AWPB | - | American Wood Preservers Bureau |
| AWS | - | American Welding Society |
| AWWA | - | American Water Works Association |
| BLS | - | Bureau of Labor Standards |
| CISPI | - | Cast Iron Soil Pipe Institute |
| FM | - | Factory Mutual |
| FS | - | Federal Specifications |
| IBR | - | Institute of Boiler and Radiator Manufacturers |
| IEEE | - | Institute of Electrical and Electronic Engineers |
| INETA | - | International Electrical Testing Association |

| | | |
|---|---|---|
| ISA | - | Instrument Society of America |
| JIC | - | Joint Industrial Council |
| MDOT | - | Michigan Department of Transportation |
| NBS | - | National Bureau of Standards |
| NEC | - | National Electrical Code |
| NEMA | - | National Electrical Manufacturers Association |
| NFPA | - | National Fire Protection Association |
| NICET | - | National Institute for Certification in Engineering Technologies |
| NSF | - | National Sanitation Foundation |
| NRTL | - | Nationally Recognized Testing Laboratory |
| OSHA | - | Occupational Safety and Health Act |
| SMACNA | - | Sheet Metal and Air Conditioning Contractors National Association, Inc. |
| SSPC | - | Steel Structures Painting Council |
| MBC | - | Michigan Building Code |
| IBC | - | International Building Code |
| UBC | - | Uniform Building Code |
| UL | - | Underwriters Laboratories, Inc. |
| USBM | - | United States Bureau of Mines |

B. Wherever specific standard numbers are indicated, i.e., ASTM C150, it shall be understood to mean the latest revision thereof.

**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

Not used.

**PART 4 SPECIAL PROVISIONS**

Not used.

END OF SECTION

**SECTION 01300**
**SUBMITTALS**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes requirements for submittals.

B. Contractor shall adhere to the submittal schedule as submitted under the provisions of the General Conditions. Contractor shall modify the schedule as required to allow sufficient time for submittal review based on current construction schedule.

C. Owner, Contractor and Engineer shall utilize the electronic project management system EPMS as specified in Section 01320 for the central repository of project related documents including but not limited to submittals, information for the record and Operation and maintenance manuals.

### 1.02 COORDINATION OF SUBMITTALS

A. The Contractor shall be responsible for the coordination of submittals and field verifications as required for the various parts of the Work.

B. All submittals to the Engineer, unless otherwise specified, shall be made only by the Contractor. Direct submittals from subcontractors or suppliers will not be accepted.

C. All submittals shall reference the Specification item that it covers, the Contractor's name, the Contract title and location, and the date of submission. Submittal shall also indicate whether the information is for the Engineer's review and approval, for record purposes, or for the fulfillment of the operation and maintenance requirements.

## PART 2 PRODUCTS

### 2.01 GENERAL

A. Two categories of information are normally required:

1. Shop Drawings for review.
2. Information for Record:
    a. Operation and maintenance manuals.

### 2.02 SHOP DRAWINGS FOR REVIEW

A. Shop Drawings:

1. The Contractor shall submit Shop Drawings in accordance with the General Conditions, as required by individual Sections, shown on the Drawings or as directed.
2. The Contractor shall indicate all variances from the requirements of the Contract Documents in accordance with the General Conditions.

3. The Contractor shall clearly indicate quantities and the exact intended use of the equipment or material contained in the submittal.

4. All Submittals shall be tailored to the project by high-lighting appropriate information and deleting or crossing out nonapplicable information or where applicable the Contractor shall provide a data sheet with all necessary information to correctly identify the applicable Sections of the manuals for the actual material or equipment furnished. All options furnished shall be indicated.

5. Color charts or samples shall be included for all submittals where a color selection by the Owner is required. Original Color Charts (not Color Copies) and samples shall be delivered to the Site, Engineer's RPR or Owner as required. The Engineer shall be copied on the transmittal letter for record purposes.

B. Samples shall be provided as required in the individual Sections. Samples shall be of the precise material proposed to be furnished. The number of samples and sample size shall be the industry standard unless otherwise stated in the individual Sections.

## 2.03 INFORMATION FOR RECORD

A. Material certificates shall be submitted for materials as indicated in the individual Sections. The certificate shall state that the products have been sampled and tested in accordance with the proper industrial and governmental standards and meet the requirements of the Specifications. Certificates shall be signed by an authorized agent of the manufacturer.

B. Licenses and Permits - The Contractor shall submit copies of all licenses and permits required by Local, State, and Federal laws.

C. Installation and calibration certificates shall be submitted for equipment as indicated in the individual Sections. These certificates shall indicate manufacturer's satisfaction with the installation, the accuracy of calibration and alignment, and the operation of the equipment. Such certificates must be signed by an authorized agent of the manufacturer.

D. Progress Schedules shall be submitted in accordance with Section 01310.

E. Schedule of Shop Drawings and Sample Submittals shall be submitted in accordance with the General Conditions.

F. Schedule of Values shall be submitted in accordance with the General Conditions.

G. Copy of programming for all PLC's and computers on the project.

## 2.04 OPERATION AND MAINTENANCE INFORMATION

A. Operation and maintenance manuals shall be submitted as information for the record.

B. Operation and maintenance manuals shall be submitted as electronic documents prior to the printing of the record copy.

1. Contractor shall provide one electronic copy of the manuals for preliminary review.

2. The final accepted manuals shall be provided as one electronic copy of the manual and one printed copy as specified below.

C. Electronic manuals shall be in Portable Document Format (PDF) as generated by Adobe Professional Version 7.0 or newer. The PDF file shall be fully indexed using the table of contents, searchable with thumbnails generated. PDF documents shall have bookmark created in the navigation frame for each major entry (Section, Chapter, Tab) in the table of contents. PDF images shall be at a readable resolution typically 300 dpi or higher. Optical Character Recognition (OCR) capture shall be performed on these images text can be searched, selected and copied from the PDF file.

1. The opening view of each PDF document shall be the bookmarks to the left and cover page or table of contents.

2. The PDF file name shall include the Name of Owner, Project title, Contract Number, and Specification Section. Commonly used abbreviations acceptable to the Owner may be used to minimize length of file name.

3. The Contractors Name shall be the electronic “Author” of the PDF document.

D. This information will be reviewed only if properly identified with Specification Section numbers and only after revised, where necessary, to conform to the Engineer’s notes on previous submittals that have been marked “Make Corrections Noted.” Manuals shall be tailored to suit the specific equipment provided.

E. Submittals shall include but not limited to the following:

1. Descriptive literature, bulletins, or other data covering equipment or system.

2. Complete list of equipment and appurtenances included with system, complete with manufacturer serial number and model number.

3. Utility requirements.

4. General arrangement drawing.

5. Sectional assembly.

6. Dimension print.

7. Materials of construction.

8. Certified performance curve.

9. Parts list with assembly drawings.

10. Recommended spare parts list with part and catalog number.

11. Lubrication recommendations and instructions.

12. Schematic wiring diagrams.

13. Schematic piping diagrams.

14. Description of associated instrumentation.

15. Drive dimensions and data.

16. Operating instructions.

17. Maintenance instructions including trouble-shooting guidelines, lubrication, and preventive maintenance instructions with task schedule.

18. Special tools and equipment required for operation and maintenance.

19. Description of equipment controls.

20. Pump seal data.

21. Assembly, installation, alignment, adjustment, and checking instructions.

22. Confirmation of all corrections noted on Shop Drawings marked “Make Corrections Noted.”

23. Manufacturer’s name, address, and telephone number along with manufacturers job number and Purchase Order number.

24. Manufacturer’s local sales representative, address, telephone number.

25. All installation instructions that were provided to Contractor for use to install equipment.

F. All manuals shall be tailored to the project by high-lighting appropriate information and deleting or crossing out nonapplicable information or the Contractor shall provide a data sheet with all necessary information to correctly identify the applicable Sections of the manuals for the actual equipment furnished. All options furnished shall be indicated.

G. Manuals shall be printed on 8-1/2 by 11-inch size with standard three-hole punching. Large manuals shall be submitted in three-ring binders. Small manuals shall be submitted in folders with metal fasteners. Index tabs shall be furnished for all manuals containing data for three or more items of equipment. All manuals shall have a title label on the cover stating the specification item number and item name. A table of contents shall be included in all manuals.

H. Drawings shall be reduced to 8-1/2 by 11 inch or 11 by 17 inch. Where reduction is not possible, larger drawings shall be folded separately and placed in envelopes which are bound into the manual.

I. Equipment installations shall not be considered substantially complete until all associated operation and maintenance manual submittals are accepted by the Engineer.

J. Field modifications to equipment during installation shall be included in the manual so that the manual reflects as-built conditions. Revisions to the manual may be submitted for incorporation into the manual where appropriate. However, the Engineer reserves the right to return all six manuals for revision to reflect as-built conditions.

## PART 3 EXECUTION

### 3.01 SUBMITTAL SCHEDULE

A. Contractor shall submit a schedule of submittals in accordance with the General Conditions

B. The schedule of submittals shall identify, by specification section, the following:

1. Indicate submittals required for each specification section. There may be more than one equipment or product specified in each Specification Section, thus there may be a need for multiple submittals from each Specification Section.
2. If submittals will be broken down by structure or area they shall be listed separately (i.e. structural reinforcement drawings by building, conduit layout by building).
3. Indicate whether a sample or color selection is required
4. Indicate manufacturer O&M Manuals and installation certificate is required.
5. Indicate whether a startup and start up report is required.
6. Indicate whether a manufacturer warrant is required.
7. Indicate whether training is required.
8. Indicate whether spare parts required.
9. Include the name of the subcontractor or vendor.

**3.02 IDENTIFICATION OF SUBMITTALS**

A. All submittals shall have a Submittal Identification & Approval cover sheet attached. A sample of the submittal cover sheet is attached for reference. The form will be provided by Engineer and coordinated with Contractor.

B. All submittals shall be given a consecutive number when they are entered into the Electronic Project Management System (EPMS), See Section 01320.

C. Resubmittals shall be entered into EPMS as resubmittals.

D. Submittals to satisfy the operation and maintenance information requirements shall be entered into the EPMS as a submittal. The description shall have the prefix “OM”.

**3.03 PRINTING AND DISTRIBUTION**

A. Contractor shall provide printed copies of approved submittals and deliver them to the Owner and Engineers RPR at the Site.

B. Contractor shall provide one printed copy of the approved operation and maintenance manual and the electronic copy on portable electronic media device to the Owner.

C. Contractor shall provide printed copies of submittals, project information or documents required to satisfy the building permit and inspections as may be required by the governing agency.

1. The Engineer will provide the stamped/sealed Contract Drawings for the initial filing of the building permit applications.

**PART 4 SPECIAL PROVISIONS**

Not used.

END OF SECTION

## Submittal Identification & Approval

**Date:** **Spec Section**

**Submittal No.** **Drawing Sheet No.**

**Description:**

**Manufacturer(s)**

**Contractor Comments/Deviations/Measu nts**

*Contractor*

**Contractor Na**

| | |
|---|---|
| ☐ | Approved |
| ☐ | Forwarded |
| ☐ | Checked |

By: _____ Date: _____

*Engineer*

SHOP DRAWING REVIEW
SUBJECT TO CONTRACT REQUIREMENTS

**Jones & Henry Engineers, Ltd.**

| | |
|---|---|
| ☐ | Approved |
| ☐ | Approved—Make Corrections Noted |
| ☐ | Amend & Resubmit |
| ☐ | Rejected—See Remarks |
| ☐ | Distribute for Information |

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS. NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

Approval in no way relieves the Contractor of any responsibility for capacities, performance, functions, compliance with Federal, State, and Local Codes; accuracy of dimensions and details; or continuity and completeness of the Project nor does approval constitute or imply any increase in Contract Price.

By: _____

**Review Comments**

Sample

# SECTION 01310
# CONSTRUCTION SCHEDULES AND DOCUMENTATION

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes the requirements for construction schedules and construction sequences.

B. This Section includes the requirements for the tracking and documentation of the progress and activities driving the completion of the Work as specified, shown on the Drawings and as directed.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Information for the Record:

a. Preliminary Construction Schedule.

b. Contractor's Construction Schedule and monthly updates.

c. Submittals Schedule.

B. Contractor shall submit three copies of the 24-inch by 36-inch construction schedule, unless approved otherwise by the Engineer.

### 1.03 QUALITY ASSURANCE

A. Scheduling conference shall be held prior to the commencement of the construction to discuss the following including, but not limited to:

1. Construction sequencing.

2. Contractor's coordination of subcontractors.

3. Coordination with the Owner's operations.

4. Coordination with other Contractor's or other Work.

5. Project milestones.

6. Owner's partial utilization.

## PART 2 PRODUCTS

### 2.01 PRELIMINARY CONSTRUCTION SCHEDULE

A. Preliminary construction schedule shall be completed in accordance with the General Conditions and prior to the scheduling conference.

B. The preliminary schedule shall outline the Contractor's sequencing of tasks, activities, milestones, and all critical path items within the contract time.

## 2.02 CONSTRUCTION SCHEDULE

A. The Contractor's submission of the construction schedule will not change the contract completion date, whether reviewed by the Owner and Engineer or not. The Contractor shall incorporate all approved change orders that have resulted in a contract time extension.

B. The Contractor shall require all subcontractors engaged in the Work to submit to the Contractor construction schedules, as specified herein, for incorporation into the Contractor's construction schedule.

C. The construction schedule shall include, but not limited to, the following dates:

1. Notice to Proceed.
2. Substantial Completion and Final Completion.
3. Commencement of on-site operations.
4. Milestones as specified, shown on the Drawings, and as directed.
5. Ordering, submittals, fabrication, delivery, startup, and training time of major equipment items.
6. Submittal schedule per the General Conditions.

D. The Contractor shall incorporate into the construction schedule all constraints and work restrictions specified or otherwise required by the Contractor's operations, including, but not limited to, the following:

1. Construction sequencing.
2. Contractor's coordination of subcontractors.
3. Coordination with the Owner's operations.
4. Coordination with other Contractor's or other work.
5. Project milestones.
6. Owner's partial utilization.

## 2.03 UPDATING CONSTRUCTION SCHEDULE

A. The Contractor shall keep the construction schedule current to the progress of the Work continually through closeout of the project. The construction schedule shall be submitted monthly for the Engineer's review.

## 2.04 WEEKLY CONSTRUCTION SCHEDULE

A. The Contractor shall submit a schedule of his work for each week. This schedule shall identify the foreman of each work crew and the location and type of work the crew will

be doing each day. It shall be delivered no later than 4:00 p.m. of the next to last regular workday of the preceding week to the Resident Project Representative's office.

## PART 3 EXECUTION

### 3.01 COORDINATION

A. All phases of the Work requiring interference with normal operations of the existing facilities shall be scheduled in accordance with agreements among the Contractor, Owner, and Engineer. The Contractor shall notify the Owner at least one week before such Work is to begin.

## PART 4 SPECIAL PROVISIONS

### 4.01 SCHEDULED NON-WORK DAYS

A. The Contractor shall restrict Work to 7:30 am to 7:30 pm and consider the following list of holidays as mandatory non-work days, all of which shall be incorporated into the construction schedule:

1. New Year's Day.
2. Martin Luther King Day.
3. President's Day.
4. Memorial Day.
5. Fourth of July.
6. Labor Day.
7. Veteran's Day.
8. Thanksgiving Day.
9. Day after Thanksgiving Day.
10. Christmas Eve Day.
11. Christmas Day.
12. New Year's Eve.

END OF SECTION

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**SECTION 01320**
**ELECTRONIC PROJECT MANAGEMENT SYSTEM (EPMS)**

## PART 1 GENERAL

### 1.01 SCOPE

A. This section describes the requirements for the Electronic Project Management System (EPMS) which will be required on this project.

B. The Contractor shall be responsible for including the cost to the EPMS; the pricing shall be $1620. The Contractor shall be responsible for paying the cost as a onetime payment to Eastern Engineering within 30 days of the Notice to Proceed and will be considered part of the project mobilization on the schedule of values.

C. Engineer will implement an internet/web site based Electronic Project Management System (EPMS) for the administration of the Contract on this project. Owner, Contractors and Engineer shall be responsible to interface with EPMS and collaborating via the EPMS on this project. The EPMS is intended to supplement the Contract Documents and the provisions of the Contract Documents shall not be superseded by the EPMS.

1. The EPMS is intended to provide a mode of communication which is electronic and to reduce the reliance upon printed documents. Printed documents transmitted will not be reviewed, and electronic documents emailed outside of the EPMS will not be reviewed. The Owner, Contractor and Engineer will collaborate on unique situations or circumstances in order to preserve the project electronic records.

D. The Owner, Contractor and Engineer shall be required to provide project related information/documents via EPMS. In general, the EPMS will receive information via uploaded documents as PDF documents, in their native format (when permitted or required), or other electronic formats designated or required for functionality. The EPMS shall be a central repository for information to all project team members. The EPMS will provide viewing, printing, up/downloading of various information/documents.

E. In general, the following is a partial list of information/documents which shall be tracked through the EPMS:

1. Drawings, Specifications and Addendums (included revisions as necessary).
2. Insurance.
3. General Project Communication, Emails, Letters, Correspondence and Collaboration or any other document any participant wishes to make part of the project records.
4. Request for Information (RFI).
5. Submittals (Shop Drawings, Operation and maintenance manuals, color selections etc.)
6. Work Change Directives, Change Request and Change Orders.

7. Schedule of Values, Pay Requests and Certified Payroll Reports.
8. Reports and Photos (daily, monthly, etc.).
9. Schedules (project, weekly and monthly).
10. Meeting Agendas and Minutes.
11. Permits and Special Inspections Reports.
12. Laboratory Services (testing and reporting).
13. Closeout procedures (deficiency list, warranty, substantial completion).
14. Record Drawings.

F. In an effort to protect proprietary information and prohibit unauthorized use or modifications, levels of access security will be assigned in order to provide safe and secure access to information with respects to involvement and responsibility on the project. The Owner, Contractor and Engineer shall establish these levels of access and rights which are appropriate for this project.

G. Owner, Contractor and Engineer shall utilize the mark-up tool integral within the EPMS or have a PDF review software that includes the ability to mark up and apply electronic stamps (such as Adobe Acrobat, or Bluebeam PDF Revu).

H. A high-speed internet connection is required.

I. The EPMS will provide notifications regarding new or updated documents through an existing Email account outside of the EPMS.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

### 3.01 CONTRACT REQUIREMENTS

A. All provisions of the Contract Documents are in full effect and enforcement. The submittal procedures specified in the Contract Documents are applicable with the understanding that they will be electronic documents and submitted via the EPMS.

### 3.02 PRINTING, REPRODUCTION AND DISTRIBUTION

A. The Engineer will not be responsible for printing reproduction or preparation of any hard copy documents, or the cost of doing so.

B. Contractor shall produce printed copies of all submittals as required in Section 01300 and in the Contract Documents.

### 3.03 TRAINING

A. One training session by the Engineer and Eastern Engineering, Inc. will be provided to the team members at the beginning of the EPMS implementation. Training will be coordinated with the Preconstruction meeting and held at the same location. There are

many tutorials, help features and technical support options located on the Eastern Engineering web site.

B. Engineer will provide project related support as needed within their ability to provide it. Technical support will be available to all project team members from Eastern Engineering, Inc.

**3.04 OPERATION**

A. Contractor and all Subcontractors shall maintain a Windows-based computer system including high speed internet access and ability to create/mark-up documents using Adobe Acrobat (pdf) and to scan documents.

B. Engineer will facilitate the implementation and overall operation of the EPMS with Eastern Engineering. Eastern Engineering will provide and maintain the EPMS server and will back up the information.

**3.05 ARCHIVE PROJECT CLOSE OUT**

A. All files on the EPMS web site will be archived at the end of the project. These archives will be made available to the Owner, Contractors and Engineer for download over the internet, at the end of the warranty period.

**3.06 ELECTRONIC SUBMITTAL FILE NAMING CONVENTION**

A. The Contractor shall utilize the following file name convention for PDF files submitted through eComm:

1. Spec Section - Number of Submittal from Section - Number of Times Submitted.

   a. Example: 02552-01-03.

2. The example represents the first submittal from Specification Section 02552 and the third time this Submittal has been submitted.

**PART 4 SPECIAL PROVISIONS**

Not used.

END OF SECTION

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# SECTION 01350
# COMMON PRODUCT REQUIREMENTS

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes general requirements for all materials, equipment and systems furnished or installed under this project.

B. Additional specific requirements included under a particular Section shall take precedence.

C. This Section includes, but is not limited to, the following procedural and administrative requirements:

1. Product Delivery Storage and Handling.
2. Warranties.
3. Quality Assurance and Control.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and related specification sections.

B. The specification sections and Drawings contain the specific submittal requirements.

### 1.03 QUALITY ASSURANCE

A. Where Contractor is required to provide design services or certification of the design, the specified product, equipment or system shall comply with the specified criteria.

1. Contractor shall submit a written request for clarification when specified criteria is incomplete or insufficient.

B. Manufacturer's name, make, model number and other designations provided in the contract documents are to establish the significant characteristics, including but not limited to, type, function, dimensions and physical properties, performance, and appearance for the purpose of evaluating comparable products. Contractor shall verify product, equipment or system proposed meets or exceeds the requirements as specified or shown on the Drawings.

### 1.04 PROJECT HANDLING

A. Schedule delivery to minimize the time goods are kept in storage.

B. Deliver goods to Site in manufacturer's original packaging.

C. Inspect the goods to determine if there is visible damage to the packaging.

1. The packaging shall be removed in a manner that will allow resealing for storage.

2. If packaging cannot be removed and reused, the goods shall be repackaged per the manufacturer's recommendations.

D. Goods that are susceptible to damage by the environmental or project conditions, including but not limited to, switchgear, motor control centers, panelboards, instrument control panels, fixtures shall be stored in a controlled environment per the manufacturer's recommendations. If no such area is available at the time such equipment is received, such space shall be provided by the Contractor at no expense to the Owner.

E. Where construction is in roads or streets, that portion of the right-of-way not required for public travel may be used for temporary storage purposes unless otherwise prohibited. Materials shall not be stored in areas where such storage creates a hazard. Any other additional space required for construction or storage of materials and equipment shall be obtained by the Contractor at his expense.

F. The Contractor shall confine his equipment, the storage of materials and equipment, and the operations of his workers to areas permitted by law, ordinances, permits, and the requirements of the Contract Documents, and shall not unreasonably encumber the premises with materials or equipment.

### 1.05 GUARANTEE

A. Manufacturer's warranty, extending beyond one-year after substantial completion for the specified product, equipment or system shall be provided to the Owner and endorsed by the manufacturer.

B. Requirements for warranties extending beyond one-year after substantial completion are described in individual Sections of these specifications.

C. Manufacturer's limitations and disclaimers shall not relieve the Contractor from warranty obligations under the Contract Documents.

## PART 2 PRODUCTS

### 2.01 SHOP PAINTING

A. Non-galvanized ferrous surface shall be painted.

B. Shop painting of ferrous surfaces shall be as follows:

1. Surfaces shall be thoroughly cleaned of dirt, grease, oil, rust, scale, or other foreign substances. All metal surfaces shall, as a minimum, be abrasive blasted in accordance with SSPC-SP6, Commercial Blast Cleaning. More stringent surface preparation shall be provided where required by Section 09900.

2. Surfaces shall receive a shop coat of a primer compatible with the finish coating to be used by the Contractor and specified in Section 09900.

## 2.02 GALVANIZING

A. Where galvanized metal is indicated, unless otherwise specified, galvanizing shall conform to ASTM A123 (Hot Dip Galvanized). Threaded parts and hardware shall be galvanized in conformance with ASTM A153.

## 2.03 REGULATORY REQUIREMENTS

A. Materials, equipment, coatings, and chemicals in contact with potable water or water being treated for potable water use shall comply with the applicable NSF Standards.

# PART 3 EXECUTION

## 3.01 INSTALLATION

A. Products shall be installed in accordance with the manufacturer's instructions and Contract Documents.

B. Required appurtenances including but not limited to, anchors, grout, and leveling shims, shall be provided.

# PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

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**SECTION 01650**
**STARTUP AND COMMISSIONING REQUIREMENTS**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes furnishing labor material and supervision to complete start up of equipment, instrumentation, piping, valves whether individually or as part of a system as specified, shown on the drawings. This section included, but is not limited to:

1. Starting equipment and systems.
2. Manufacturers' start-up services.
3. Operator training.
4. Testing, adjusting, and balancing - Section 15500 only.
5. Factory tests.
6. General commissioning
7. Cleaning.
8. Acceptance.

### 1.02 PROJECT CONDITIONS

A. Owner will execute a contract with a PLC programming consultant. The Owner PLC Consultant will be responsible for programming, testing, and troubleshooting of the application software for the PLCs.

1. Contractor shall incorporate the Owner PLC Consultant's Work into the Start-up Plan and Start-up schedule. Allow adequate time in the start-up schedule for I/O checks, PLC program installation, and PLC program testing.

### 1.03 SUBMITTALS

A. Start-up manager's qualifications and past project experience including contact names, current phone numbers, and addresses Project Owner's representatives. Submittal shall be made at the preconstruction conference.

B. Start-up Plan:

1. General:

a. Narrative description of the overall testing and start-up program.

b. A summary of the objectives and approach for start-up checks, preliminary field tests, and field system operation test.

c. Schedule for start-up and field testing for each instrument, piece of equipment, and system. Schedule shall establish system

interdependency and coordinates with startup procedures with the overall project schedule.

d. List of the instruments, equipment, and systems that will undergo start-up and testing with references to the appropriate PIDs, equipment tags/identification numbers, Specification number and standards for testing procedures.

e. Detailed procedure for startup of each unit process, including valves to be opened/closed, order of equipment startup, and other pertinent details.

f. List of who will be involved in the startup activities including manufacturer, contractor, and subcontractor.

g. Description of temporary facilities that will be provided.

h. Plan for obtaining water, electricity, fuel, chemicals or other products for start-up and testing including information on any required regulatory permits/approvals.

2. Start-up Checks Plan:

a. The start-up Checks Plan shall be subdivided into plans for each system and major component.

b. Identification of information for each component or piece of equipment to be inspected as part of the system.

c. Specific activities to be completed on each component, piece of equipment, or system as required to demonstrate proper installation and connection.

d. Listing of manufacturer's representative(s) to be on site during the check.

e. Record keeping forms.

3. Preliminary Field Test Plan:

a. The preliminary field test plan shall be subdivided into testing plans for each system.

b. Identification of each component or piece of equipment to be tested as part of the system.

c. Description of the purpose and goals of the test for each component, piece of equipment, or system, which should include all activities (including those required by vendors/suppliers) necessary to verify proper equipment and system functionality.

d. Schedule and duration for the test.

e. Plan for obtaining water required to conduct tests, where applicable.

f. Prerequisites for each test, including any temporary facilities or utility requirements.

g. Pass/fail criteria for the test.

h. Identification of any temporary facilities required during start-up.

i. Listing of manufacturer's representative(s) to be on site during the test.

j. Step-by-step detailed procedure of the test, and where applicable a description showing how local and remote control of equipment will be demonstrated.

k. Copies of the data recording forms that will be used during the test.

l. Blank sign-off forms for the test acknowledging the start-up manager's, Engineer's, Owner's, and equipment manufacturer's acceptance of the test where applicable.

C. Testing Reports

1. Prepare report summarizing test methods and results.

2. When equipment meets functional requirements specified, such equipment will be accepted for purposes of advancing to performance testing.

3. Performance testing shall be conducted as specified in individual specification sections. Notify Engineer and Owner at least 10 days prior to scheduled date of test.

4. Any repairs, corrections, or modifications required for the equipment or unit process systems to successfully complete startup and commissioning.

5. Loop diagrams and PLC Ladder logic accurately depicting the installed condition of instrumentation and controls.

D. Operator training schedule.

E. Testing, adjusting, and balancing reports; for Sections in Division 15.

## 1.04 STARTING AND COMMISSIONING EQUIPMENT AND SYSTEMS

A. General:

1. Contractor shall provide all labor, materials, instruments, incidentals, and equipment required for start-up and testing.

2. Temporary facilities required to carry out the specified testing, including temporary pipe, pumps, and other appurtenances, shall be furnished and installed, and removed when no longer required for start-up and testing.

3. Start-up and testing shall be conducted during normal working hours during the workweek of Monday through Friday, unless otherwise approved by the Owner. Where continuous long-term testing is required, testing may continue over the weekends and holidays with prior approval from the Owner.

B. Start-up Manager:

1. The Contractor shall maintain a start-up team led by a start-up manager. The individual to be designated as start-up manager shall be identified within 45 days of the Notice to Proceed and will be reviewed by Owner and Engineer.

Once accepted, the Contractor shall not change the start-up manager throughout the full period of performance of the Work without written permission of the Owner. Once engaged in the Project, the start-up manager shall attend regular construction progress meetings.

2. The start-up manager shall have a minimum of 5 years of experience starting up equipment and systems of similar type, size, capacity, and complexity to the equipment and systems included in this Project. The start-up manager shall have the necessary experience to fully understand all start-up requirements, to manage the Contractor's resources providing the start-up services, and to prepare all start-up documentation, as specified. The start-up manager's assigned duties and responsibilities are those specifically related to planning, supervising, and executing start-up activities and shall include, but shall not be limited to the following:

    a. Coordinating all testing and start-up activities.

    b. Preparing all start-up and field testing plans, documentation, and forms.

    c. Liaising between the Contractor, Engineer, Owner's PLC Consultant and Owner for all start-up and testing activities.

    d. Coordination with Owner PLC Consultant.

    e. Developing a comprehensive schedule for all start-up activities and providing regular schedule updates. The start-up and testing schedule shall be incorporated into the Progress Schedule.

    f. Scheduling and leading start-up, and testing planning meetings.

    g. Conducting coordination meetings during start-up and testing.

    h. Coordinating manufacturers' services and their certification of proper installation and/or operation of equipment as required by the Specifications.

    i. Reviewing, coordinating, and scheduling all proposed operator training sessions to assure that the training is compliant with the requirements of the Specifications.

C. Start-up Schedule and Start-up Plans:

1. Plans and schedules shall be developed to facilitate coordinated and efficient start-up and testing of the Project equipment and systems.

2. The start-up schedule shall provide an overall sequence and duration for all start-up and testing activities.

3. Submit start-up and testing plans and schedule no later than 60 calendar days prior to the commencement of start-up and testing. The schedule and plan shall include sections for start-up checks, preliminary field tests, and the field system operation test.

D. Start-up Scheduling Conference:

1. Prior to preparing the initial start-up schedule submittal, Contractor's start-up manager shall schedule and hold a start-up scheduling conference to review:

a. Start-up requirements in accordance with the Contract Documents.

b. Work to be completed prior to starting start-up.

c. Work progress and Progress Schedule relative to start-up and training.

d. Scheduling constraints for Owner's personnel, relative to days and times of start-up sessions.

e. Preferred days for start-up.

f. Other issues relative to starting up equipment and systems.

2. Attendance is mandatory for the following:

a. Contractor's start-up manager.

b. Contractor's site superintendent.

c. Manufacturers and other Suppliers invited by Contractor.

d. Engineer and Owner's PLC Consultant.

e. Owner's representative.

3. Contractor shall prepare minutes summarizing the discussions of conference, decisions made, and agreements and disagreements, and submit the minutes to each conference attendee.

## 1.05 MANUFACTURERS' START-UP SERVICES

A. Furnish competent factory-trained service representatives to supervise or inspect the installation; test, align, adjust and calibrate the equipment and systems as necessary; and instruct plant personnel in their operation and maintenance (Manufacturer's Start-Up Services).

B. Manufacturer's Start-Up Services are required for those items as indicated in the individual Specification Section.

C. Submit qualifications of manufacturer's service representative to Engineer 30 days in advance of arrival on Project. Manufacturer's service representative subject to approval of Engineer.

D. Notify Engineer a minimum of 72 hours prior to the arrival of the service representatives on the Project.

E. Owner shall have the right to audio/video tape all sessions regarding equipment and system operation and maintenance instructions.

F. Manufacturer's start-up services shall be provided as required until operation of the equipment is in accordance with Contract Documents at no additional cost to Owner.

## 1.06 OPERATOR TRAINING

A. Equipment preliminary field tests shall be completed prior to starting operator training.

B. A combination of classroom and field training at the Site shall be provided.

C. Furnish competent factory-trained service representatives to instruct plant personnel in the operation and maintenance of the equipment.

D. Whenever possible training sessions shall be performed as a PowerPoint presentation. Whenever possible hand-outs of the PowerPoint presentation shall be provided to the personnel at the training session. In addition, tables and flow charts shall be provided listing normal operational parameters.

E. The Owner reserves the right to videotape all training sessions.

F. The objectives of each training session shall be tailored to the personnel in attendance. Follow Section 01300 regarding Operator Training Lesson Plan content.

G. Operator training shall take place on separate days from start-up and commissioning exercises. The minimum number of training sessions for each personnel group (operations, maintenance and electrical/instrumentation) shall be three. The sessions must be scheduled to accommodate “shift work”. Scheduling training sessions on Mondays and Fridays must be avoided if possible.

H. Frequent reference shall be made to the Operation and Maintenance Instructions. Address all questions and comments proposed by the training session participants as they are raised to the maximum extent practicable. If questions or comments cannot be addressed during the training session, additional materials and/or training may be required, as determined by Owner and Engineer.

I. Contractor’s start-up manager shall prepare and submit proposed training schedule for review and acceptance by Engineer and Owner. Proposed training schedule shall show all training required in the Contract Documents, and shall demonstrate compliance with specified training requirements relative to number of hours of training, number of training sessions, and scheduling. Submit initial training schedule at least 60 days before scheduled start of first training session. Submit final training schedule, incorporating revisions in accordance with Owner and Engineer’s comments, no later than 30 days prior to starting the first training session.

J. Operator Training Scheduling Conference:

1. Prior to preparing initial training schedule submittal, Contractor’s start-up manager shall schedule and hold a training scheduling conference to review:

2. Training requirements in accordance with the Contract Documents.

3. Work to be completed prior to starting training.

4. Work progress and Progress Schedule relative to start-up and training.

5. Scheduling constraints for Owner’s personnel, relative to days and times of training sessions.

6. Preferred days for training.

7. Location where training will be performed and facilities available.

8. Required submittals relative to training.

9. Other issues relative to training of operations and maintenance personnel.

K. Attendance is mandatory for the following:

1. Contractor's start-up manager.

2. Contractor's site superintendent.

3. Manufacturers and other Suppliers invited by Contractor.

4. Engineer.

5. Owner's staff responsible for training coordination, and staff responsible for scheduling operations and maintenance personnel.

L. Contractor shall prepare minutes summarizing the discussions of conference, decisions made, and agreements and disagreements, and submit the minutes to each conference attendee.

### 1.07 TESTING, ADJUSTING, AND BALANCING

A. Employ independent firm to perform services specified in Section 15500.

B. Reports will be submitted by the independent firm to Engineer indicating observations and results of tests and indicating compliance or non-compliance with the requirements of the Contract Documents.

## PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

### 3.01 FACTORY TESTS

A. When specified in the specific equipment sections, the equipment will be test run at the point of manufacturer and the test results will be delivered to Engineer. Such equipment will not be shipped until Engineer has reviewed the test results and advised the Contractor, in writing, that the equipment is acceptable for shipment. Such acceptance, however, will not be considered as final acceptance, which will only be made on the basis of the test results of the equipment after installation.

### 3.02 STARTING EQUIPMENT AND SYSTEMS

A. Start-up Checks:

1. Prior to field testing of all equipment, the Contractor shall perform the following:

a. Inspect and clean equipment, devices, and connected piping so they are free of foreign material.

b. Lubricate equipment in accordance with manufacturer's instructions.

c. Turn rotating equipment by hand.

d. Open and close valves by hand and operate other devices to check for binding, interference, or improper functioning.

e. Test related electrical, instrumentation and control systems components in accordance with the requirements of their respective specification sections.

f. Calibrate all instruments associated with the equipment.

g. Check for proper rotation, adjustment, alignment, balancing, mechanical and electrical connections, and any other conditions that may damage or impair equipment from functioning properly.

h. Inspect and verify proper anchorage.

B. Preliminary Field Tests

1. All start-up checks shall be completed prior to preliminary field tests.

2. All items of mechanical equipment shall be given a preliminary field test by Contractor after installation for proper operation, efficiency, and capacity. The preliminary field test shall consist of the requirements listed herein, unless exceptions or additions are indicated in the specific equipment sections.

3. Prior to beginning the Preliminary Field Tests the equipment manufacturer's representative shall inspect the installation of the equipment. Said representative shall observe the entire test period. Upon successful completion of the test the equipment manufacturer's representative shall provide a written acceptance of the equipment installation and operation.

4. All moving parts of equipment and machinery shall be carefully tested for operation, and adjusted so all parts move freely and function to secure satisfactory operation. All equipment shall be tested continuously under actual or simulated operating conditions. All parts shall operate satisfactorily in all respects, under continuous full load and in accordance with the specified requirements, for the full duration of the test period. If any part of a unit shows evidence of unsatisfactory or improper operation during the test period, correction or repairs shall be made and the full test period, as specified, shall be completed after all parts operate satisfactorily.

5. Contractor's test operation of each piece of mechanical equipment shall continue for not less than 8 hours without interruption, unless indicated otherwise in the specific equipment specification section, or approved in Contractor's start-up plan.

6. Functional testing of power actuated valves and gates shall include at least 4 full open-close operations.

7. Tests of all process and pumping equipment, drive motors, including auxiliaries shall be made in accordance with the appropriate and approved test codes such as the American Society of Mechanical Engineers, Hydraulic Institute Standards, and IEEE.

8. Tests shall be conducted before the Work is substantially complete so each item of equipment is ready for integrated operation with other equipment and

systems. Testing, measuring, and calibrating procedures shall be submitted to ENGINEER for review and acceptance prior to start-up and testing of equipment.

9. The equipment shall be properly filled, by Contractor, with oil and grease, and Contractor shall furnish all power, personnel, water, chemicals, fuels, oil, grease, and auxiliaries necessary for conducting the testing of the equipment for proper operation, efficiency, and capacity.

10. The period of inspection, initial start-up operation, and field adjustment shall be as needed to achieve satisfactory installation and operation of the items furnished. Any period required for instruction of Owner's personnel shall be as specified in the Contract Documents.

11. When the specific equipment sections indicate that an installation check is required by the equipment manufacturer, the manufacturer's representative will make all necessary field adjustments and correct defects in materials or workmanship during this test period.

12. All equipment installed under this Contract, including that furnished by others, shall be placed into successful operation according to the written instructions of the equipment manufacturer and the instructions of the manufacturer's field representative.

C. Field System Operation Test:

1. Following completion of the preliminary field tests, when the entire system is ready for operation, Contractor shall conduct a field system operation test. Contractor shall coordinate with Owner’s staff during the testing period.

2. The test shall consist of the requirements noted herein, unless exceptions or additions are indicated in the specific equipment sections.

3. The test period shall be at least 30 days, and each system shall operate under actual or simulated operating conditions before the certificate of substantial completion of all construction Work is issued. Depending on weather conditions, Contractor may be required to create simulated conditions to test the automatic operation of the entire system.

4. All defects of material, workmanship, or equipment which appear during this test period shall be corrected by Contractor. After such corrections are made, the 30 day test shall be repeated before the certificate of substantial completion of all construction Work is issued, unless waived by Owner.

5. Contractor shall furnish all power, personnel, chemicals, fuels, oil, grease, and auxiliaries, necessary for conducting this operation test.

6. When necessary for certain items of equipment, the final adjustments and inspections will be made by factory trained service personnel (other than sales representatives), rather than by Contractor. The service personnel will also supervise the test operation. This requirement will be stated under the detailed specification for the particular piece or pieces of equipment. The manufacturer's service personnel will make adjustments and supervise testing by Contractor until such tests have been accepted by Engineer.

## 3.03 FACILITY PERFORMANCE DEMONSTRATION

A. When in the opinion of the Engineer and Owner, startup of all unit processes has been achieved, sequence each unit process to the point the facility is operational.

B. Demonstrate proper operation of required interfaces within and between individual unit processes.

C. After facility is operating, complete performance testing of equipment and systems not previously tested.

## 3.04 QUALITY CONTROL

A. Required Manufacturer Reports:

1. The manufacturer's representative shall prepare a daily report on each site visit for systems or equipment that require startup, inspection or adjustment.

2. The report shall list the purpose of visit, date of visit, Owner or Contractor present during visit and manufacturer representative's observations, recommendations and other notes.

B. The report shall be submitted within 5 days of the visit and in accordance with Section 01300.

## 3.05 CLEANING

A. Following completion of preliminary field tests and field system operation tests, and prior to acceptance, Contractor shall remove any accumulated grit and debris in the areas of work.

## 3.06 ACCEPTANCE

A. When no other field tests for acceptance are specified in the equipment sections, at the end of the field system operation testing, each system will be accepted if, in the opinion of Engineer and Owner, it has operated satisfactorily without excessive power use, wear, or need for lubrication, or requiring undue attention; and if all its rotating parts operate without excessive vibration or noise at any operating condition.

B. When other field tests for acceptance are specified in the equipment sections, acceptance shall be after all tests are satisfactorily conducted as specified in the appropriate equipment Specification Section.

C. When a field performance test for baseline performance is specified in the equipment sections, acceptance shall be after a completion of the baseline performance test that is conducted as specified in the baseline performance section.

D. Acceptance of Work in connection with the installation of equipment furnished by others will be subject to approval of the manufacturer's field representative.

E. Acceptance by Owner or approval of the manufacturer's field representative will not relieve Contractor of responsibility for defective Work.

**PART 4 SPECIAL PROVISIONS**

Not used.

END OF SECTION

**MANUFACTURER'S REPRESENTATIVE UNIT PROCESS STARTUP FORM**

Contractor: _____ Specification No.: _____

Manufacturers: _____ Date of Visit _____

Representatives on site _____

Required for startup (power, water, chemical, etc. _____

Startup Procedure Description (Describe procedure for sequential startup)

_____

_____

_____

_____

| | | | | | |
|---|---|---|---|---|---|
| 1. | Installation | | | | |
| | a. Per Manufacture Requirements | ☐ | Yes | ☐ | No |
| | b. Per Contract Specifications | ☐ | Yes | ☐ | No |
| 2. | Operation | ☐ | Yes | ☐ | No |
| | a. Equipment operated across all ranges | ☐ | Yes | ☐ | No |
| | b. Owner trained in proper operation | ☐ | Yes | ☐ | No |
| | c. Owner received test and installation data | ☐ | Yes | ☐ | No |
| | d. Owner received set point variables (as set at start up) | ☐ | Yes | ☐ | No |
| | e. Owner received spare parts | ☐ | Yes | ☐ | No |
| | f. Owner received copy of PLC programming | ☐ | Yes | ☐ | No |

If answer to 1 or 2 is "No", explain:

_____

_____

_____

_____

4. I hereby certify that the above information is true, and that the above instrument has been supplied, installed, tested, and calibrated in accordance with manufacturer's recommendations and Contract Documents unless otherwise noted.

   Acceptance of this Certification shall not be considered as final acceptance of any work, in part or full, performed as part of this Contract.

CONTRACTOR SIGNATURE _____ DATE _____

OWNER SIGNATURE _____ DATE _____

ENGINEER REPRESENTATIVE SIGNATURE _____ DATE _____

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**SECTION 01681**
**PROGRESS CLEANING**

## PART 1 GENERAL

### 1.01 SUMMARY

A. This Section includes the requirements for the cleaning the Work areas, staging areas and field offices throughout the progress of Work.

B. Provide labor, equipment, materials, and incidentals necessary to provide progress cleaning at the site.

### 1.02 PROGRESS CLEANING AREAS AND DURATION

A. Perform progress cleaning of the Work shown on the Drawings, staging areas, and in the field offices to provide a clean, sanitary and orderly site throughout the duration of the Contract.

B. Perform progress cleaning services specified in this Section from the date that the Contractor mobilizes to the Site until the date that the Certificate of Substantial Completion is issued to the Contractor.

## PART 2 PRODUCTS

### 2.01 FLOOR SCRUBBERS

A. Floor scrubbers shall be walk behind or ride-on floor type.

B. Floor scrubbers shall utilize potable water as scrubbing agent.

### 2.02 MATERIALS

A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.

B. Use only those cleaning materials and methods recommended by manufacturers for the surface or material to be cleaned.

C. Use cleaning materials only on surfaces or materials recommended by the cleaning material manufacturer.

## PART 3 EXECUTION

### 3.01 EXECUTION

A. Clean the areas within the Work daily, Monday through Friday, 8 hours per day. Personnel shall be dedicated to cleaning activities at regular intervals necessary to keep the project clean and orderly.

B. Cleaning activities shall include, as a minimum, vacuuming, mopping, damp dusting, collecting and transferring trash to the Contractor’s on-site refuse dumpsters, and

disinfecting surfaces to maintain clean and orderly site conditions. No cleaning activity shall cause the formation of dust.

C. Sanitize work surfaces with dilute household bleach daily to maintain a germ-free environment.

D. Dust work surfaces, tool containers, job boxes, etc. using damp clothes so that dust is absorbed into cloth and does not become airborne. This action shall be performed daily to maintain a dust-free environment.

E. Floor scrubbing shall be performed daily to maintain a sanitary and clean environment inside facilities.

F. Remove waste materials, debris and rubbish from the site daily and dispose of at an off-site disposal facility in accordance with all federal, state and local laws, rules, regulations, requirements, and ordinances.

G. Clean public streets and land of soil, sediments and dirt deposited by vehicles leaving the site.

H. Owner shall have the right to temporarily halt the work of the Contractor if the progress cleaning does not meet the standards of this Section. In such event, the Contractor shall be responsible for all delays arising therefrom.

**3.02 FINAL CLEANING**

A. Final cleaning shall occur after the Work and prior to final walk-through. Final cleaning shall be completed prior to the issuance of substantial completion, whether for partial utilization or completion of the entire Work.

1. Cleaning areas after equipment, tools, materials, field offices, storage containers, etc. are removed and completely demobilized from the Work area.

B. Final cleaning includes but is not limited to:

1. Carpets, tiles, laminates, steel, fiberglass, plastic, aluminum, concrete, terrazzo, unfinished stone, painted components, and insulated components.

2. Greases, oils, fingerprints, debris, stains, residues, dirt, dust, or foreign matter.

3. Final cleaning Work may require any one or combination of sweeping, vacuuming, dusting, mopping, polishing, scrubbing, disinfecting, and power washing hard, water-resistant surfaces.

4. Replace filters of operating equipment.

5. Remove temporary shipping and manufacturer labels, stains and foreign substances.

6. Clean debris from roofs, gutters, downspouts, and drainage systems

C. Remove cleaning equipment, tools, products, and waste materials from the site upon completion of cleaning.

D. Final cleaning shall meet the approval of the Owner.

END OF SECTION

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**SECTION 03305**
**CAST-IN-PLACE CONCRETE**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes cast-in-place concrete along with formwork, reinforcing, mix design, placement procedures, and finishes as indicated on the Drawings and as specified herein.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Concrete mix designs including substantiating data and test records.

b. Product literature for admixtures, curing compounds, and miscellaneous materials.

c. Locations of construction and control joints not shown on Drawings, and proposed changes in locations.

d. Material certifications.

e. Aggregate gradation and percentages of deleterious substances.

f. Batch plant certification.

g. Placing drawings shall indicate:

1) Construction joints, splice locations, and splice lengths.

2) Bending schedules.

3) Accessories.

2. Information for the Record:

a. Manufacturer's application instructions for miscellaneous materials.

b. Quality control test reports.

c. Slab profile report.

B. Copy of concrete delivery ticket shall be presented to Resident Project Representative for each batch. Delivery ticket shall indicate:

1. Name of ready-mixed company and plant designation.

2. Truck number.

3. Concrete class.

4. Quantity of concrete.

5. Date.

6. Time when batch was loaded.

7. Type and name of admixtures.

8. Actual batch weights of cement, fly ash, aggregates, and water.

9. Location of pour and time of unloading shall be added to the ticket at Site.

**1.03 QUALITY ASSURANCE**

A. Concrete work shall comply with provisions of the current editions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified.

1. ACI American Concrete Institute.

2. CRSI “Manual of Standard Practice”.

3. AWS “Code for Welding in Building Construction”.

B. Concrete Manufacturer Qualifications - Manufacturer of ready-mixed concrete products complying with ASTM C94 requirements for production facilities and equipment.

C. Concrete Testing Service - A qualified independent testing agency shall perform material evaluation tests and shall design concrete mixes.

D. Maintain adequate supervision and control of dewatering operation to ensure that stability of excavated and constructed slopes are not adversely affected by water, erosion is controlled, and flooding of excavation or damage to structures does not occur.

E. Batch Plant:

1. Batch Plant shall be central batch plant with automatic or semi-automatic control. Concrete may be mixed using either central-mixed, shrink-mixed, or truck-mixed methods. If concrete is shrink-mixed or truck-mixed, the truck and concrete producer shall conform to ASTM C94.

2. Batch plant shall be certified by the Department of Transportation, National Ready Mixed Concrete Association (NRMCA) or an independent certification using NRMCA “Check list for Certification of Ready Mixed Concrete Production Facilities” executed and certified by independent Professional Engineer registered in state of Site. Evidence of current certification shall be submitted.

F. Pre-Installation Conferences:

1. Before beginning concrete work, Contractor shall hold a meeting to review detailed requirements for preparing concrete mix designs and to determine proper procedures for concrete construction.

2. A representative of Contractor, testing laboratory, concrete producer, and Engineer shall be in attendance.

**1.04 DELIVERY AND HANDLING**

A. Concrete shall be delivered in accordance with ASTM C94, except concrete shall be completely discharged within one hour after introduction of mixing water to cement.

B. Concrete shall be delivered in agitating trucks or in mixing trucks operating at agitating speed.

**PART 2 PRODUCTS**

**2.01 MATERIALS - Materials used in concrete construction shall meet all the requirements of applicable ASTM and other industry standards.**

A. Portland cement - ASTM C150, Type I or II unless indicated otherwise.

B. Air-entraining Agent - ASTM C260, chloride ion free.

C. Chemical Admixtures (Water Reducing Agents, Superplasticizers, Accelerator) - ASTM C494, chloride ion free.

D. Pozzolan (Fly ASN) (Fly Ash) (GGBF Slag) - ASTM C618, Class F. ASTM C989 grade 100 or low and shall contain less than 12% alumina (C34).

E. Aggregates - ASTM C33.

F. Reinforcing Steel - ASTM A615, Grade 60, deformed.

G. Water - ASTM C94, clean and potable.

H. Membrane Curing Compound - Compound shall be membrane-forming, liquid applied, non-yellowing, VOC-compliant, water-based acrylic polymer resin conforming to ASTM C309, Type 1 and ASTM C1315, Type 1, Class A. The compound shall include sealing and dustproofing properties. Minimum solids content shall be 25%. Compound shall not permit a moisture loss in excess of 0.40 kilograms per square meter (0.082 pounds per square feet) in 72 hours. Sodium silicate based products are not acceptable. Compound shall be Dayton Superior “Cure & Seal 1315 J22WB”, SpecChem, LLC. “Cure & Seal WB 25”, L&M Construction Chemicals, Inc. “Lumiseal WB Plus” or equal. Curing compound in potable water treatment plant construction shall be non-toxic and free of taste and odor.

I. Sheet Curing Compound - ASTM C171.

J. Formwork - ACI 301 and ACI 347R.

K. Form Coating - Non-staining.

L. Anchor Bolts - ASTM A307.

M. Expansion Bolts - Hilti Kwik Bolt 3 or equal.

N. Anchor Bolt Sleeves - Sinco Products, Inc. or equal; high density polyethylene

O. Epoxy Adhesive for Embedding Dowels into Existing Structures – 100% solids, 100% reactive epoxy conforming to ASTM C881, Type IV, Grade 3, Class B and C. The minimum bond strength per ASTM C882 shall be 1800 psi at 7 days. The adhesive shall be formulated to withstand the maximum allowable published loads permanently without

creep or failure. The adhesive shall be Hilti “HIT-RE 500 V3” or equal. Power/Rawl “Power-Fast” epoxy with “Fast Set” formulation shall not be used.

P. Include spacers, chairs, bolsters, ties, and other devices that conform to CRSI specifications necessary for properly placing, supporting and fastening reinforcement in place. Metal accessories shall be plastic coated, galvanized or stainless steel where legs will be exposed in finished concrete surfaces. For slabs-on-grade, use supports with sand plates or horizontal runners for any areas where the base material will not support chair legs. For exposed-to-view concrete surfaces where legs of supports are in contact with forms, provide supports with legs that are protected by plastic (CRSI, Class 1) or stainless steel (CRSI, Class 2).

Q. Use one brand of cement throughout the entire project, unless otherwise approved by the Engineer.

R. Non-Shrink Grout

1. Grout shall be prepackaged, nonmetallic, noncorrosive, non-staining cementitious grout. Grout shall remain volume stable in both dry and wet conditions and provide a minimum of 95% effective bearing area.

2. Grout shall conform to ASTM C1107 Grade C when tested at fluid consistency of 25 seconds or more per ASTM C939 at temperature extremes of 45 degrees F and 90 degrees F and a working time of 30 minutes. Metallic grouts are prohibited.

3. Non-shrink property shall not be based on any gas generating additives such as aluminum oxide.

4. Minimum compressive strength: 1 day 3500 psi
   (2-inch cube cured at 70 degrees F) 7 day 5500 psi
   28 day 7500 psi

5. Non-shrink grout shall be Five Star “Fluid Grout 100”, Master Builders “Masterflow 928 Grout”, or equal.

## 2.02 CONCRETE MIX DESIGN

A. Mixture proportioning for concrete structures shall be in accordance with ACI 301, 318, and 211.1 but subject to the following requirements.

B. Two normal weight concrete mixes are generally required; Class A and Class B. Concrete mixes shall be as follows. Batch in accordance with ASTM C94 and the following:

| | **Class A** | **Class B** |
|---|---|---|
| Type of Portland Cement: | I | I |
| 28 Day Compressive Strength (psi): | 4500 | 3000 |
| Slump (inches) +/- 1 inch: | 2-4 | 2-4 |
| Air Content (%) +/- 1%: | 6.0 | (Not req’d) |
| Minimum Aggregate Size (inches): | 1 (size #57) | 1 (size #57) |
| Water Reducing Agent: | Yes | (Not req’d) |
| Minimum Cementitious Content (lbs) (Cement and Fly Ash): | 550 | 480 |

| | Class A | Class B |
|---|---|---|
| Minimum Portland Cement Content | 80% by weight of total Cementitious material. | |
| Maximum Fly Ash Content: | 20% by weight of total cementitious material | |
| Maximum GGBF Slag Content | 20% by weight of local cementitious material. | |
| Maximum Water/Cementitious Ratio: | 0.44 | 0.66 |

C. Contractor shall design and be responsible for the performance of all concrete mixes of specified quality, consistency, and workability to permit concrete to be worked readily into forms and around reinforcement without segregation or excessive bleeding. Hardened concrete shall develop all characteristics required by contract documents.

D. Concrete mixes shall be proportioned to maximize durability and water tightness and to minimize shrinkage. To this end, total water content shall be kept to the lowest possible amount consistent with placing and consolidation methods. Water reducing and high range water reducing admixtures shall be used as required to maintain workability. Specified water/cementitious ratio shall not be exceeded.

E. Concrete proportions shall be established on the basis of previous field experience, or laboratory trial batches in accordance with ACI 301, ACI 211.1 and ACI 318. Proposed mix design shall be accompanied by complete standard deviation analysis or trial mixture test data.

F. Concrete proportions shall be subject to Engineer's approval. Substantiating data and test records shall be submitted.

## PART 3 EXECUTION

### 3.01 COORDINATION

A. Reinforcement, sleeves, inserts, anchors, waterstops, and other embedded items shall be accurately placed, supported, and tied prior to concrete placement. Other trades and contractors required to furnish embedded items shall be given ample notice of concrete placement. Reinforcement and embedded items shall be subject to review of Resident Project Representative prior to placing concrete.

B. Contractor shall notify Resident Project Representative a minimum of 48 hours before placing concrete, excluding nonworking days.

C. Concrete shall be placed only between hours of 8:00 a.m. and 6:00 p.m., unless otherwise permitted. Concreting shall not be placed after 12:00 noon on the last working day of the week.

### 3.02 PREPARATION

A. Unless adequate protection is provided, concrete shall not be placed during rain, sleet, or snow, or when inclement weather is imminent.

B. Cold Weather - When the average temperature of surrounding air is expected to be below 40 degrees F during placing or within 24 hours thereafter, cold weather

concreting in accordance with ACI 306R “Standard Specification for Cold Weather Concreting” shall apply.

C. Concrete shall be protected from extremes in temperature as specified. During periods not defined as cold weather, but when freezing outdoor temperatures are foreseen or occur, concrete surfaces shall be protected against freezing for the first 24 hours, minimum, after placement.

D. Hot Weather- When the ambient temperature is 90 degrees F. or above, or when conditions of concrete temperature, air temperature, wind velocity, and relative humidity combine to cause flash set, excessively low slump, cold joints, plastic shrinkage cracking, or otherwise impair the quality of concrete, hot weather concreting procedures in accordance with “Hot Weather Concreting - ACI 305R,” shall apply.

E. When the evaporation rates of bleed water exceed 0.1 pounds per square feet per hour, steps shall be taken to prevent plastic shrinkage cracking. Evaporation rate shall be determined by method shown in “Hot Weather Concreting - ACI 305R.”

## 3.03 INSPECTION, STARTUP, AND TESTING

A. Notify Engineer 48 hours prior to placement of concrete.

B. Engineer’s approval is required for subgrade, formwork, and reinforcing prior to starting each placement.

C. Submit proposed concrete mix design to Engineer for review prior to commencement of any Work. Do not begin concrete production until the proposed mix design has been approved by the Engineer.

D. The following tests shall be performed by an independent testing laboratory acceptable to the Engineer during progress of the Work:

1. Compression Tests Cylinders - Strength test shall consist of three cylinders molded and cured. Cast three cylinders for each 50 cubic yards, or fraction thereof, for each class of concrete placed on any one day, but at least three for each day. Test one cylinder at seven days and two at 28 days in accordance with ASTM C39.

2. Slump Tests - ASTM C143. Slump shall be measured for first batch of each concrete class delivered in morning and afternoon, for each strength test, and whenever consistency of concrete appears to vary.

3. Air Entrainment - ASTM C173 or C231. Perform one test for every second ready-mix truck load.

4. Temperature ASTM C1064. Perform with each slump test.

E. If the measured slump or air content fall outside the specified limits, make an additional test immediately and on each successive batch until the specified requirements are met by two consecutive batches.

F. Materials and installed Work may require testing and retesting at any time during progress of Work. Tests, including retesting of rejected materials for installed work shall be done at Contractor’s expense.

G. Test Reports:

1. The testing laboratory shall submit test reports directly to the Contractor, the concrete supplier, and Engineer. Reports shall be identified by the project name and number, and the portion of the structure represented. Reports shall include the dates of casting and testing, air and concrete temperatures, specified strength and mix design, actual strength and mix design, slump, air content, and the name of individual making the test.

2. The testing laboratory shall notify the Engineer immediately by telephone when a low strength break occurs or specifications are not met.

## 3.04 FORMWORK

A. Formwork shall conform to ACI 347R.

B. Formwork shall be designed to safely support vertical and lateral loads, until such loads can be safely supported by concrete structure. Loads shall be carried to ground by formwork and in-place construction of adequate strength.

C. Formwork shall be designed for dead and live loads, weight of concrete, wind, construction loads including impact, and other loads which act or might act on formwork.

D. Formwork shall be designed for pressure of concrete giving due consideration to rate of concrete placement, methods of placement, method of consolidation, concrete mix design, temperature, and other factors pertinent to formwork design.

E. Forms shall have sufficient strength and rigidity to maintain specified tolerances.

F. Formwork shall be securely braced and anchored against deflection and displacement.

G. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood insets shall be used for forming keyways, reglets, recesses, and the like for easy removal.

H. Form ties shall be adjustable in length to permit tightening of the forms and so made that no metal remains nearer than 1-1/2 inch to the concrete surface after the ends are removed. Spreader devices shall leave holes no greater than 7/8 inch in diameter. Washers or buttons leaving shallow depressions in the surface will not be permitted. Twist type ties may be used only for unexposed concrete.

I. Provide holes in the form for insertion of vibrators to properly consolidate concrete.

J. Provide temporary openings for clean-outs and inspections where interior area of formwork is inaccessible before and during concrete placement. Securely brace temporary openings and set tightly to forms to prevent losing concrete mortar. Locate temporary openings in forms at inconspicuous locations.

K. Chamfer exposed corners and edges using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

L. The maximum allowable tolerance in either the horizontal or vertical planes shall be 1/4 inch in 10 feet.

M. Provisions for Other Trades - Provide openings in concrete formwork to accommodate Work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.

N. Oil temporary forms with non-staining form oil.

O. Cleaning and Tightening - Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before placing concrete. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

## 3.05 DOWELING TO EXISTING STRUCTURE

A. Dowels shall be embedded into existing concrete where shown on Drawings. Unsound concrete shall be reported to Engineer.

B. Adhesive dowels shall be placed in holes larger than the reinforcement diameter using a rotary percussion hammer and carbide bit. Hole diameters shall be as recommended by manufacturer for each specific reinforcing diameter.

1. Unless indicated otherwise, adhesive dowels shall be embedded as follows:

| Stud Diameter | Minimum Embedment |
|---|---|
| #3 | 3-1/4 inches |
| #4 | 4-3/8 inches |
| #5 | 5-3/4 inches |
| #6 | 6 inches |
| #7 | 7-1/4 inches |
| #8 | 8-7/8 inches |

C. Hole shall be cleaned of dust and residue by blowing the hole with dry and oil-free compressed air. Air nozzle shall be inserted to bottom of hole. The holes should also be brushed using a nylon brush to remove dust and other debris which may have been pressed into the walls of the hole.

D. Standing water and frost shall be removed immediately prior to injecting adhesive.

E. Adhesive shall be injected from bulk-loading caulking gun, disposable caulking tubes, or pneumatic dispenser. Adhesive shall be injected using extension on nozzle to reach bottom of hole. Adhesive shall be injected to pre-determined depth which will cause hole to be completely filled after bar is inserted.

F. Bar shall be inserted and slightly rotated to ensure adhesive completely surrounds bar.

G. Adhesive displaced from hole shall be removed immediately.

H. The manufacturer’s installation guidelines for the specific adhesive chosen shall be strictly followed.

## 3.06 REINFORCEMENT

A. Place reinforcing to ACI recommended tolerances.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved by the Engineer.

D. Unless shown otherwise in drawings, place reinforcement to maintain minimum coverages conforming to ACI standard practice for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

E. Welding of reinforcement shall conform to AWS D1.4.

F. Unless otherwise specified on Drawings, reinforcing steel splices shall be lapped conforming to ACI 318, Class B splices.

## 3.07 INSERTS

A. Metal inserts such as anchor bolts, sleeves, embedded metals, etc. shall be free of scale, loose rust, oil, grease and other coatings. Remove protective film from cast iron with flame.

B. Ensure that items are accurately positioned and rigidly supported against displacement before placing concrete.

C. The location of anchor and foundation bolts must not vary from the dimensions shown on the Contract Drawings by more than the following:

1. 1/8-inch center to center of any two bolts within an anchor bolt group, where such group is defined as the set of anchor bolts which receives a single fabricated steel shipping piece.

2. 1/4-inch center to center of adjacent bolt groups.

## 3.08 CONCRETE SCHEDULES

A. Unless indicated otherwise, concrete shall be furnished as follows:

Class A: For all structures not defined under Class B concrete.

Class B: For pipe saddle supports, Pipe pier supports, buried electrical duck banks, equipment pads, housekeeping pads and mudmats, unless noted otherwise. The above items shall not be exposed to weather and shall not be submerged in liquids; otherwise, they shall be of Class A concrete as specified above.

## 3.09 PLACING CONCRETE

A. General - Comply with ACI 304, “Guide for Measuring, Mixing, Transporting, and Placing Concrete,” and as specified.

B. Do not place concrete on frozen ground, mud, or debris. Dampen subgrade prior to placing concrete slabs on grade where vapor barrier is not required.

C. Inspection - Before placing concrete, inspect, and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Where necessary, notify other trades to permit installation of their work.

D. Convey concrete from the mixer to the place of final deposit by methods which will prevent the loss or separation of the materials:

1. When concrete placing is interrupted for more than 1/2 hour, place a construction joint.

E. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened sufficiently to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Avoid unplanned cold joints. Alternate equipment shall be immediately available for use in the event that primary placing equipment or system breaks down.

F. Use internal vibration to consolidate. Size at least one vibrator to work around closely spaced reinforcing. Provide a standby vibrator whenever working less than three vibrators in the pour. All equipment and procedures used to consolidate concrete shall comply with ACI 309R.

G. Concrete shall be thoroughly consolidated by vibrating, spading, rodding, or forking so that concrete is thoroughly worked around reinforcement and embedded items, and into corners, angles of forms, eliminating air and stone pockets.

H. Hot Weather Concreting – Follow recommendations of ACI 305R for preparation, placing, protection and curing during hot weather.

I. Cold Weather Concreting – Follow recommendations of ACI 306R for preparation, placing, protection and curing during cold weather.

J. Contractor shall keep good thermometer at Site for monitoring air or concrete surface temperature.

K. Where saw cutting and removal of existing concrete walls, slabs, etc. exposes the ends of reinforcing steel bars, the Contractor shall coat the exposed concrete surface with the specified epoxy coating.

1. Prior to application of the epoxy coating, the concrete surface to be coated shall be roughened and cleaned of all loose materials and dust.

2. Epoxy coating shall be water based rebar coating agent, moisture insensitive, 3-component, epoxy-modified cementitious product.

3. Application methods and thickness of coating shall be as recommended by the manufacturer.

L. Apply the specified bonding agent per the manufacturer's instructions at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

1. Prior to application of the bonding agent, the existing concrete surfaces to be coated shall be roughened and cleaned of all loose materials and dust, thus exposing the aggregate to provide a mechanical bond in addition to the chemical bond provided by the bonding agent.

2. Screed paved surfaces with a straightedge and strike off. Use bull floats or darbies to form a smooth surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces prior to beginning finishing operations.

## 3.10 DEFECTIVE CONCRETE

A. Defective concrete is defined as concrete in place which does not conform to specified design strength, required percent air, shapes, alignments and elevations, as shown on the Drawings and/or which presents faulty surface areas. Evaluation and acceptance of concrete shall conform to ACI 318, ACI 301, and ACI 350 as applicable.

B. All defective concrete shall be removed and replaced in a manner meeting with the Engineer's approval, or should surface imperfections only occur, may be patched at the discretion of, and in a manner satisfactory to the Engineer; however, permission to patch the Work shall not be considered as a waiver of the Engineer's right to require complete removal and replacement of such defective Work should the patching fail to satisfactorily restore the required quality and appearance of the Work. All such Work shall be performed at the Contractor's expense, without extension of time.

C. If for any reason, in the opinion of the Engineer, the testing of any section of the completed structure is necessary, a superimposed load shall be applied by the Contractor and the test conducted in accordance with the current Building Code at the Contractor's expense irrespective of the results of the tests. In cases where failure is declared, the Engineer shall have the authority to order the defective construction removed. All expense of removing such defective construction and substituting new construction, including expense of removing and replacing the Work of others, or protecting and repairing the Work of others, shall be borne by the Contractor.

## 3.11 CURING

A. General - Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather protect concrete from rapid moisture loss before and during finishing operations.

B. Begin curing after finishing concrete but not before free water has disappeared from concrete surface in accordance with ACI 308 "Standard Practice for Curing Concrete" subject to the requirements specified herein.

C. Cure concrete at least five days at concrete temperatures above 70 degrees F or at least seven days at concrete temperatures between 50 degrees F and 70 degrees F. Maintain

concrete temperature above 50 degrees F during the curing period. Tanks and other liquid retaining structures shall be cured for a minimum of 10 days.

D. For exposed surfaces, utilize one of the following methods:

1. Membrane Curing Compound - Apply in two coats at right angles to each other upon completion of the Work - each one in accordance with the manufacturer's instructions. Compounds must not be used on surfaces when surface treatments, such as tile, additional concrete, paint, liquid hardeners, and adhesive coatings are specified unless the compound is known not to interfere with adhesion.

2. Sheet Curing Materials - Place materials upon completion of the finishing work. Lap edges 6 inches and seal to create a moisture barrier that must remain intact for the duration of the curing period.

3. Sprinkling, Soaking, or Ponding - Maintain surfaces continuously wet for the duration of the curing period as described above.

E. If formed surface is exposed during the curing period, treat the surface as an exposed surface for the remaining duration of the curing period.

## 3.12 FINISHING SURFACES

A. Formed Surfaces - Finishing of formed surfaces shall be in accordance with the requirements of Section 5, ACI 301 subject to the following provisions specified herein:

1. Do not remove forms and shoring until the concrete has cured sufficiently to carry its own weight and remain in place without deformation. Remove forms with care to prevent spalling. Reshore concrete carrying superimposed load until the concrete has attained design strength.

2. Inspect honeycombed areas. Replace areas as directed by the Engineer.

3. On exposed vertical unpainted surfaces, building interior, and to 6 inches below grade on building exterior, remove fins and projections, fill holes, and produce smooth-rubbed finish per ACI 301 by wetting and rubbing surfaces with carborundum brick or other abrasive until uniform color and texture are produced.

4. Horizontal surfaces, such as at tops of walls, pedestals, horizontal offsets and similar unformed surfaces occurring adjacent to formed surfaces, shall be struck off smooth and finished with a texture matching the adjacent formed surfaces.

B. Slabs and Horizontal Surfaces - Finishing of unformed surfaces shall be done in accordance with the requirements of Section 5 of ACI 301 and Chapter 8 of ACI 302:

1. All slabs, whether receiving additional finishes or not, shall receive a float finish when concrete has stiffened sufficiently to permit the operation of a power drive float and all surface water has disappeared. Check and level slab surface to obtain a Class A finishing tolerance per ACI 117.

2. Interior slabs not receiving tile shall be given a hard trowel finish as follows:

   a. Follow initial finishing with a steel trowel worked flat to produce a fine, non-slip, sandy texture.

   b. Follow the first steel troweling with a second steel troweling to produce a dense, smooth surface after the surface has become hard enough to give a ringing sound from the trowel.

   c. Retool joints and edges as required.

3. Exterior slabs shall be given a non-slip broom finish with scored texture perpendicular to main traffic route. Retool joints and edges.

## 3.13 REMOVING FORMS

A. General - Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the Work, may be removed after curing at not less than 50 degrees F for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form-removal operations, and provided curing and protection operations are maintained.

B. Formwork supporting weight of concrete, such as beam soffits, joists, slabs, and other structural elements, may not be removed in less than 14 days or until concrete has attained at least 80% of design minimum compressive strength at 28 days. Determine potential compressive strength of in-place concrete by testing field-cured specimen's representative of concrete location or members. Construction loads shall not exceed 80% of design live load until 28 days after concrete placement.

C. Form-facing material may be removed four days after placement only if shores and other vertical supports have been arranged to permit removal of form-facing material without loosening or disturbing shores and supports.

## 3.14 REUSING FORMS

A. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-coating compound as specified for new formwork.

B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces except as acceptable to the Engineer.

## 3.15 CONCRETE REPAIRS AND REPLACEMENT

A. Remove and replace, at Contractor's expense, any concrete that was part of the Work and that is broken, damaged, or defective, or does not meet the requirements of this Section.

B. Protect concrete from damage. Exclude traffic from slabs-on-grade and roadway/walkway paving for at least 14 days after placement. When construction traffic

is permitted, maintain slabs and paving as clean as possible by removing surface stains and spillage of materials as they occur.

C. Patching Defective Areas - Repair and patch defective areas with cement mortar immediately after removing forms, when acceptable to the Engineer.

D. Mix dry-pack mortar, consisting of one-part portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing.

1. Cut out honeycombs, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts down to solid concrete but in no case to a depth less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with bonding agent. Place patching mortar before bonding agent has dried.

2. For surfaces exposed to view, blend white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

E. Repaired Formed Surfaces - Remove and replace concrete having defective surfaces if defects cannot be repaired to the satisfaction of the Engineer. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes and fill with dry-pack mortar or precast cement cone plugs secured in place with bonding agent.

1. Repair concealed formed surfaces containing defects that affect the concrete's durability. If defects cannot be repaired, remove and replace the concrete.

F. Repairing Unformed Surfaces - The Contractor shall test unformed surfaces such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having the required slope.

1. Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01-inch-wide or that penetrate to the reinforcement or completely through nonreinforced sections regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.

2. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.

3. Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.

4. Repair defective areas, except random cracks and single holes not exceeding 1 inch in diameter by cutting out and replacing with fresh concrete. Remove

defective areas with clean, square cuts and expose reinforcing steel with at least 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

G. Repair isolated random cracks and single holes 1 inch or less in diameter by dry-pack method. Groove top of cracks and cut out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Place dry-pack before bonding agent has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

### 3.16 EQUIPMENT PADS

A. Reinforced concrete pads shall be installed under all generators, pumps, motors, blowers, drives or other pieces of equipment with internal moving parts that may produce vibration. The pads shall be a minimum of 4 inches high. Refer to standard pad details given on the drawings.

## PART 4 SPECIAL PROVISIONS

None.

END OF SECTION

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**SECTION 07270**
**FIRESTOPING**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes:

1. Through-penetration firestopping in fire rated construction.
2. Construction-gap firestopping at connections of the same or different materials in fire rated construction.
3. Construction-gap firestopping occurring within fire rated wall, floor or floor-ceiling assemblies.
4. Construction-gap firestopping occurring at the top of fire rate walls.
5. Through-penetration smoke-stopping in smoke partitions.
6. Construction-gap smoke-stopping in smoke partitions.

B. Definitions

1. Assembly - Particular arrangement of materials specific to given type of construction described or detailed in referenced documents.
2. Barriers - Time rated fire walls, smoke barrier walls, time rated ceiling/floor assemblies and structural floors.
3. Firestopping - Methods and materials applied in penetrations and unprotected openings to limit spread of heat, fire, gasses, and smoke.
4. Penetration - Opening of foreign material passing through or into barrier or structural floor such that full thickness of rated materials is not obtained.
5. Construction Gaps - Gaps between adjacent sections of walls, exterior walls, at wall tops between top of wall and ceiling, and structural floors or roof decks; and gaps between adjacent sections of structural floors.
6. System - Specific products and applications, classified and numbered by UL to close specific barrier penetrations.
7. Sleeve - Metal fabrication or pipe section extending through thickness of barrier and used to permanently guard penetration. Sleeves are described as part of penetrating system in other sections and may or may not be required.

### 1.02 QUALITY ASSURANCE

A. UL Fire Resistant Directory.

B. ASTM E814-88 - Standard Test Method for Fire Tests of Through-Penetration Firestops.

C. Installer's Qualifications - Firm experienced in installation or application of systems similar in complexity to those required for this project, plus the following:

1. Acceptable to or licensed by manufacturer, State or local authority where applicable.

2. At least two years experience with systems.

3. Successfully completed at least five comparable scale projects using this system.

D. Local and State Regulatory Requirements - Submit forms or acceptance for proposed assemblies not conforming to specific UL Firestop System numbers, or UL classified devices.

E. Materials shall have been tested to provide fire rating at least equal to that of the construction.

**1.03 SUBMITTALS**

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Manufacturer's specifications and technical data including the following:

1) Detailed specification of construction and fabrication.

2) Manufacturer's installation instructions.

b. Dimensions, description of materials and finishes, general construction, specific modifications, component connections, anchorage methods, hardware, and installation procedures, plus the following specific requirements:

1) Details of each proposed assembly identifying intended products and applicable UL System number, or UL classified devices and location of each system.

2) Manufacturer or manufacturer's representative shall provide qualified engineering judgments and drawings relating to non-standard applications as needed.

2. Information for the Record:

a. Applicator's Qualifications Statement Including:

1) Statement of qualifications.

2) List past projects indicating required experience.

3. Operation and maintenance manual.

## 1.04 GUARANTEE

A. Submit copies of written guarantee agreeing to repair or replace joint sealers which fail in joint adhesion, co-adhesion, abrasion resistance, weather resistance, extrusion resistance, migration resistance, stain resistance, or general durability, or appear to deteriorate in any other manner not clearly specified by submitted manufacturer's data as an inherent quality of the material for the exposure indicated. The guarantee period shall be one year from date of substantial completion.

# PART 2 PRODUCTS

## 2.01 THROUGH-PENETRATION FIRESTOPPING OF FIRE-RATED CONSTRUCTION

A. Systems or devices listed in the UL Fire Resistance Directory under categories XHCR and XHEZ may be used, providing that it conforms to the construction type, penetrant type, annular space requirements and fire rating involved in each separate instance, and that the system by symmetrical for wall applications. Systems or devices shall be asbestos-free.

1. Additional Requirements: Withstand the passage of cold smoke either as an inherent property of the system, or by the use of a separate product included as a part of the UL system or device, and designed to perform this function.

2. Acceptable Manufacturers and Products:

   a. Those listed in the UL Fire Resistance directory for the UL System involved and as further defined in the Systems and Applications Schedule in Part 4 of this Section.

3. All firestopping products must be from a single manufacturer. All trades shall use products from the same manufacturer.

## 2.02 CONSTRUCTION-GAP FIRESTOPPING OF FIRE-RATED CONSTRUCTION

A. Firestopping at construction gaps between edges of floor slabs and exterior wall construction.

B. Firestopping at construction gaps between tops of partitions and underside of structural systems.

C. Firestopping at construction gaps between tops of partitions and underside of ceiling or ceiling assembly.

D. Firestopping of control joints in fire-rated masonry partitions.

E. Firestopping expansion joints.

F. Acceptable Manufacturers and Products - those listed in the UL Fire Resistance Directory for the UL System involved and as further defined in the Systems and Applications Schedule in Part 4 of this Section.

## 2.03 SMOKE-STOPPING AT SMOKE PARTITIONS

A. Through-Penetration Smoke-Stopping - Any system complying with the requirements for through-penetration firestopping in fire-rated construction, as specified in The Systems and Applications Schedule in Part 4 of this Section, is acceptable, provided that the system includes the specified smoke seal or will provide a smoke seal. The length of time of the fire resistance may be disregarded.

B. Construction-Gap Smoke-Stopping - Any system complying with the requirements for construction-gap firestopping in fire-rated construction, as specified in the Systems and Applications Schedule in Part 4 of this Section, is acceptable, provided that the system includes the specified smoke seal or will provide a smoke seal. The length of time of the fire resistance may be disregarded.

## 2.04 PERFORMANCE REQUIREMENTS

A. Design Requirements:

1. Fire-rated Construction - Maintain barrier and structural floor fire resistance ratings including resistance to cold smoke at all penetrations, connections with other surfaces or types of construction, at separations required to permit building movement and sound vibration absorption, and at other construction gaps.

2. Smoke Barrier Construction - Maintain barrier and structural floor resistance to cold smoke at all penetrations, connections with other surfaces and types of construction and at all separations required to permit building movement and sound or vibration absorption, and at other construction gaps.

## 2.05 ACCESSORIES

A. Fill, Void, or Cavity Materials - As classified under category XHHW in the UL Fire Resistance Directory.

B. Forming Materials - As classified under category XHKU in the UL Fire Resistance Directory.

# PART 3 EXECUTION

## 3.01 COORDINATION

A. Existing Conditions:

1. Verify existing conditions and substrates before starting Work. Correct unsatisfactory conditions before proceeding.

2. Proceed with installation only after penetrations of the substrate and supporting brackets have been installed.

B. Environmental Requirements:

1. Furnish adequate ventilation if using solvent.

2. Furnish forced air ventilation during installation if required by manufacturer.

3. Keep flammable materials away from sparks or flame.

4. Provide masking and drop cloths to prevent contamination of adjacent surfaces by firestopping materials.

5. Comply with manufacturing recommendations for temperature and humidity conditions before, during, and after installation of firestopping.

C. Verification of Conditions - Examine areas and conditions under which Work is to be performed and identify conditions detrimental to proper or timely completion.

1. Verify barrier penetrations are properly sized and in suitable condition for application of materials.

2. Do not proceed until unsatisfactory conditions have been corrected.

## 3.02 SURFACE PREPARATION

A. Clean surfaces to be in contact with penetration seal materials, of dirt, grease, oil, loose materials, rust, or other substances that may affect proper fitting, adhesion, or the required fire resistance.

## 3.03 INSTALLATION

A. Install penetration seal materials in accordance with printed instructions of the UL Fire Resistance Directory and in accordance with manufacturer's instruction.

B. Seal holes or voids made by penetrations to ensure and effective smoke barrier.

C. Where floor openings without penetrating items are more than four inches in width and subject to traffic or loading, install firestopping materials capable of supporting same loading as floor.

D. Protect materials from damage on surfaces subject to traffic.

E. Place firestopping in annular space around fire dampers before installation of damper's anchoring flanges.

F. Where large openings are created in walls or floors to permit installation of pipes, ducts, cable tray, bus duct, or other items, close unused portions of opening with firestopping material tested for the application as required by Fire Resistance Directory.

G. Install smoke stopping as specified for firestopping.

H. Where rated walls are constructed with horizontally continuous air space, double width masonry, or double stud frame construction, provide vertical, 12-inch wide fiber dams for full thickness and height of air cavity at maximum 15-foot intervals.

## 3.04 FIELD QUALITY CONTROL

A. Examine penetration sealed areas to ensure proper installation before concealing or enclosing areas.

B. Keep areas of Work accessible until inspection by applicable code authorities.

## PART 4 SPECIAL PROVISIONS

### 4.01 SYSTEMS AND APPLICATIONS SCHEDULE

| Penetrating Item | Concrete | | Gypsum | Wood Floor/ Ceiling |
|---|---|---|---|---|
| Plastic Pipe | 64 FS195/RC-1 PPD<br>182 FS195/RC-1 E5A, D150<br>245 FS195/RC-1 CS195 | 394 FS195, CP 25WB<br>488 FS195/RC-1, PPD Insulated<br>562 FS195, CP 25WB | 148 FS195/RC-1, PPD<br>570 CS195, FS195, CP 25WB | 160 FS195/RC-1, CS195, PPD<br>167 FS195/RC-1, PPD<br>446 FS195/RC-1, PPD<br>451 FS195/RC-1, PPD |
| Metal Pipe | 49 CP25N/S,S/L<br>63 7900 Kit<br>93 CS195, FS195, FS195, CP25<br>94 CP25N/S,S/L<br>95 FS195<br>137 CS195, CP25N/S,S/L<br>138 CS195, CP25N/S,S/L<br>160 FD150 | 170 FD150<br>202 Mold, Putty<br>233 CS195, CP25<br>234 CS195, CP25N/S,S/L, or Putty<br>319 CP25WB<br>321 CP25WB<br>337 CP25N/S, S/L<br>395 CP25<br>487 CP25WB<br>561 FS195, CP25 | 147 CP25<br>322 CP25WB<br>328 CP25N/S, S/L<br>569 FD150<br>570 CS195, FS195, CP25WB | 159 CS195, CP25, E5A<br>169 CP25N/S, S/L<br>453 CP25WB |
| Insulated Metal Pipe | 91 CP25N/S,S/L<br>152 CP25N/S,S/L<br>203 Mold, Putty | 233 SCS195, FS195<br>395 FS195, CP25 | 147 FS195, CP25<br>566 FS195, CP25WP<br>567 FS195, CP25WB<br>568 CP25WB | 454 FS195, CP25WB |
| Insulated Cable | 33 CP25N/S,S/L<br>65 7900 Kit<br>140 CP25N/S,S/L<br>171 FD150<br>172 FD150<br>204 Mold, Putty | 233 CS195, FS195, CP25<br>234 CS195, CP25N/S,S/L, or Mold, Putty<br>320 CP25WB<br>337 CP25N/S, S/L<br>447 FS195, Mold, Putty<br>448 FS195, FS195/RC-1, CS195, Mold, Putty<br>560 CP25WB | 149 CP25<br>328 CP25N/S<br>571 FS195, CP25WB<br>572 CS195, FS195, CP25WB<br>573 FS195, CP25WB/ Putty | 168 CP25N/S, S/L<br>452 FS195, CP25WB |
| Cable Tray | 66 7900 Kit<br>105 CS195, FS195, CP25 | 139 CS195, FS195, CP25<br>179 FD150,E5A | 557 CS195, FS195, CP25WB/ Putty | |
| Busway | 97 CP25N/S,S/L Cover Plate | 99 CS195,FS195 CP25 | | |
| Glass Pipe | 90 7900 Kit or FS195 | | 154 FS195, CP25<br>211 FS195, CP25<br>212 FS195, CP25 | |
| Blank | 61 CS195<br>62 7900 Kit<br>92 CS195<br>103 CS195<br>104 CP25N/S,S/L, Cover Plate | 136 CS195<br>280 CP25N/S, S/L, or Mold, Putty<br>319 CP25WB | | |

| Penetrating Item | Concrete | | Gypsum | Wood Floor/ Ceiling |
|---|---|---|---|---|
| Construction Gap | J900B FS195 (Floor), CP25N/S, S/L, Cover Plate<br>J900C CP25N/S, S/L(Floor),<br>U900J CP25N/S, S/L(Wall)<br>U900L CP25N/S, S/L(Wall) | | | |

UL Fire Resistance Directory

END OF SECTION

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**SECTION 09900**
**PAINTING**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes furnishing and application of protective coatings to all wood, concrete, and metal surfaces as specified or as shown on the Drawings.

B. Included in this Section is surface preparation, shop application inspection, and field touch up work as required to provide a complete protective coating system.

C. In general, the Work shall include the field painting of the following:

1. All exposed interior cast-in-place concrete (except floors) above ground floor.
2. All exposed concrete blocks and hollow core precast slabs.
3. All exposed plaster.
4. All exposed wood.
5. All exposed pipe insulation.
6. All exposed piping, including fittings, valves, couplings, flanges, and other in-line accessories.
7. All machinery, pumps, and equipment.
8. All metal surfaces except the following:
    a. Bronze surfaces.
    b. Stainless steel surfaces.
    c. Aluminum or galvanized steel not requiring color coding or otherwise specified to be coated.

D. Additional product requirements are specified in Section 01350.

E. A Coating Schedule appears in Part 4 of this Section.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:
    a. Coating manufacturer's product data and technical literature including:
        1) Catalog number.
        2) General classification.
        3) Coating material analysis.
        4) Detailed surface preparation guidelines.

5) Mixing, thinning, and application instructions for each material.

6) Induction time, pot life, viscosity, and drying and curing times for acceptable ranges of temperature and humidity.

b. Abrasive manufacturer's information including:

1) Name, address, and phone number of manufacturer and local supplier.

2) Bulk density.

3) Mohs ranking.

4) Sieve analysis.

5) Chemical analysis including impurities.

6) Free silica content.

7) Grain shape (roundness).

c. Submittals of coatings by a manufacturer not named in these specifications shall include performance criteria on abrasion, adhesion, exterior exposure, hardness, humidity exposure, salt spray (fog), impact, immersion, etc., as applicable, per the appropriate ASTM standards. If requested by the Engineer, the Contractor shall submit manufacturers complete formula for the coatings which are proposed to be furnished. The Engineer may also require the submission, at the Contractor's expense, of test reports from private laboratories showing results of comparable tests on the coatings proposed and the coatings specified.

d. Details of application equipment and procedures.

e. Samples of manufacturer's standard colors.

2. Information for the Record:

a. Certification that materials meet or exceed Specifications and that coating systems are suitable for intended use.

b. Certification that coating systems are compatible with substrate, specified surface preparation, prime coats, sealants and existing finishes.

c. Safety Data Sheets (SDS) for coating materials, thinners, diluents, abrasives, cleansers, and other materials.

d. Schedule of coating work showing each phase and step of Work.

## 1.03 QUALITY ASSURANCE

A. Standards - Surface preparation, coating, and patching work performed under this Section shall conform to the applicable provisions and recommendations of the following standards.

1. SSPC Steel Structures Painting Manual, Volume 1, "Good Painting Practice."

2. SSPC Steel Structures Painting Manual, Volume 2, “Systems and Specifications.”

3. SSPC Vis. 1 and 2, visual standards and written guidelines.

4. NACE Coatings and Linings Handbook.

5. Applicable NACE standards and recommended practices including RP0178 and RP0184.

B. Field Mock-ups - Where specified in the Coating Schedule, a field mock-up shall be done prior to performing the required Work.

1. Field mock-ups shall be a minimum of 4 square feet in area, in a location chosen by the Owner or his representative.

2. The mock-ups will serve as a standard of acceptance for applicable coating work under this Contract.

3. The coating manufacturer’s representative will be available to advise the Contractor.

4. Step-down mock-ups, showing the prepared substrate, primer, intermediate, and finish coats, as applicable, shall be used. Where the substrate is a ferrous metal, the portion remaining exposed shall be protected with a clear varnish.

## 1.04 DELIVERY, STORAGE, AND HANDLING

A. Delivery, storage, and handling shall be in accordance with Section 01350.

B. Include the following information on container labels or packing slips:

1. Manufacturer’s name.

2. Name or title of material.

3. Batch numbers.

4. Stock number and date of manufacture.

5. Shelf life or expiration date.

6. Contents by volume of pigment, binder, and vehicle.

7. Thinning instructions when recommended.

8. Application instructions.

9. Color name and number.

10. Safety Data Sheets (SDS).

C. Provide controlled storage for coating materials and abrasives. Store coating materials in environmentally controlled enclosure with minimum ambient temperature of 55 degrees F. Store abrasives in dry area.

D. Maintain inventory of coating materials, solvents, and cleaners.

## 1.05 SCHEDULING AND SEQUENCING

A. Notify Engineer two weeks in advance of surface preparation and coating application.

B. Work systematically in accordance with submitted schedule.

C. Sequence and coordinate abrasive blasting and coating application with Work of other sections. Do not interrupt plant process or interfere with Owner's operations.

D. Coordinate coating work with installation of sealants specified in Section 07900.

E. Furnish specified testing and inspection equipment to Owner a minimum of two weeks prior to beginning surface preparation and coating work.

## 1.06 MANUFACTURER'S RECOMMENDATIONS

A. Apply coatings in strict compliance with manufacturer's recommendations and instructions as to environmental conditions, surface preparation, mixing, application, and curing. Where Specifications are more stringent than manufacturer's recommendations, Specifications shall prevail.

B. Resolve conflicts between Specifications and manufacturer's recommendations and instructions by obtaining written agreement between Engineer and coating manufacturer prior to beginning Work.

## 1.07 DESCRIPTION

A. Shop Painting - Shop painting shall be performed to the extent and as required under Section 01350 and the various individual sections of the specifications. All metal surfaces shall be given a protective shop coat of primer compatible with the field coating. Shop primer color shall be beige where available. If a prime coat has not been applied in the shop, then a prime coat shall be applied in the field after proper surface preparation and prior to the application of the finish coats.

B. Compatibility - The Contractor shall ensure the primer or finish coating applied in the shop is compatible with the specified field coatings. If the coatings are incompatible, the shop coatings shall be removed by abrasive blasting and coatings applied in conformance with this Section.

# PART 2 PRODUCTS

## 2.01 MATERIALS

A. The products shall be as specified in the Coating Schedule. Materials selected for each coating system shall be the product of one manufacturer. The Contractor shall be responsible for the compatibility of all components of each coating system including primer, thinner, and solvents.

## 2.02 COATING SCHEDULE

A. The Coating Schedule included in Part 4 of this Section identifies the areas to be painted, the required materials, and number of coats required.

## PART 3 EXECUTION

### 3.01 ENVIRONMENTAL REQUIREMENTS

A. Environmental Conditions:

1. Perform Work of this Section under the following environmental conditions.

a. Abrasive blast only when surface contamination can be prevented. Abrasive blast only when surface temperature is more than 5 degrees F above dew point and relative humidity is less than 85%.

b. No coating shall be applied when the air temperature, as measured in the shade, is below 40 degrees F or above 90 degrees F. No coating shall be applied when the temperature of the surface to be painted is below 35 degrees F or as recommended by the paint manufacturer, whichever is greater. Coatings shall not be applied to wet or damp surfaces, when the relative humidity exceeds 85%, or when the surface to be painted is less than 5 degrees F above the dew point.

2. Coating work may proceed during inclement weather in environmentally controlled enclosures. Environment within enclosure shall comply with Specifications and manufacturer's recommendations. Provide adequate ventilation and illumination. Minimum illumination shall be 150-foot candles.

B. Interior Painting may be done only when the building has been thoroughly dried, by natural or artificial heat, and when the Work area is properly heated and ventilated, clean, and as nearly dust free as possible. Room temperature shall be maintained within the manufacturer's recommendations during application and until coatings are dry.

C. Dust - Coating shall not be applied in areas where dust is being generated.

### 3.02 PROTECTION

A. During the construction period, all electrical and mechanical equipment and other equipment and apparatus shall be protected from paint drippings by means of tarpaulins, burlap, wooden housings, or other protection.

B. Finished work of other trades, surfaces not being painted concurrently or not to be painted, and factory finished lockers, toilet partitions, etc., that will not require field painting shall be protected at all times from paint spots and damage to the finish.

C. Perform cleaning and coating operation in manner which prevents dust and contaminants from falling in newly applied coating.

D. Protect portions of Work which are partially or entirely completed and which are adjacent to surfaces being prepared by abrasive blasting.

E. Protect completed Work from solvents, contaminants, or other substances which may damage coating.

F. Prominently display "Wet Paint" signs in sufficient number to protect newly applied coating.

## 3.03 PREPARATION OF SURFACES

A. General - All surfaces, of whatever material, which are to be painted shall be thoroughly cleaned of dirt, grease, rust scale, or other injurious substance, and, at the time of application of the coating, shall be clean and dry.

B. Metal Surfaces:

1. Remove weld spatter and other projections. Grind sharp edges to a minimum radius of 1/8-inch. Grind rough welds smooth. Grinding shall be in accordance with SSPC Surface Preparation Commentary. Surfaces shall be smooth and contoured in compliance with SSPC-SP 12.

2. Surfaces which have not been shop coated shall be abrasive blasted prior to any prime coats. Abrasive blasting shall be done in accordance with the Coating Schedule.

3. Shop primed surfaces shall receive a field sweep blast prior to the application of subsequent coats.

4. Abrasions or defects on shop coated surfaces shall be spot primed.

5. Surfaces which are to receive a high heat coating shall be Near White Blast Cleaned (SSPC, SP-10) and painted within eight hours; or, if recommended by the manufacturer of the approved high heat coating, the surfaces may be thoroughly cleaned to bare metal and given wash coats or a cold phosphatizing treatment as recommended by the manufacturer and as approved by the Engineer.

C. Concrete and Masonry Surfaces:

1. New concrete and masonry surfaces shall be allowed to become completely cured for at least 30 days at a temperature of 75 degrees F and, immediately prior to treatment, shall be thoroughly cleaned of all dirt, grease, form release agents and stains. Curing compounds shall be removed.

2. Concrete surfaces shall be pressure washed with solution of trisodium phosphate (4 ounce per gallon) and detergent in hot water. Water temperature shall be approximately 180 degrees F. Immediately flush surface with clean potable water until pH of surface meets acceptance criteria of ASTM D4262.

3. If recommended by the coating manufacturer, on concrete surfaces less than six months old, one coat of zinc sulfate solution shall be uniformly applied and allowed to dry before application of the coating.

4. Concrete surfaces shall be abrasive blasted with coarse, hard, and angular abrasive after cleaning. Air stream shall be free of moisture and oil.

5. Acid etching is not permitted.

D. Wood Surfaces shall be sanded smooth and filled with an approved paste or liquid grain filler, and cracks and crevices shall be filled with a non-shrinking, elastic composition especially prepared for this purpose. Wood surfaces to be varnished shall be rubbed smooth with pumice and oil.

E. Clean up all debris from the surface preparation operation.

## 3.04 ABRASIVE BLASTING

A. Abrasives shall be expendable coal slag or aluminum oxide, free of silica, or a steel shot/grit mixture. Maintain abrasives free from dust, salts, and other impurities. Select the type and size of abrasive to yield a surface as specified in the Coatings Schedule.

B. Provide moisture and oil separators or traps of adequate size in compressed air system to provide dry and clean air supply. Drain traps automatically during blasting operation. Remove oil and moisture accumulated in air receiver by regular purging.

C. Remove weld splatter, slivers, laminations, and underlying mill scale which become visible after abrasive blasting, by grinding in accordance SSPC SP-3 and NACE RP0178. Follow grinding by final abrasive blast.

D. Surfaces which cannot be properly cleaned by abrasive blasting because of their location may be prepared by power tool cleaning in accordance with SSPC SP-11 (Power Tool Clean to Bare Metal) in lieu of abrasive blasting, subject to Engineer's approval.

E. After surface preparation but prior to priming inspect surface for corrosion. Remove corrosion products which become visible when viewed without magnification by re-blasting.

F. Remove dust and blasting residue by blowing with clean, dry air, and vacuum cleaning with clean tools.

## 3.05 MIXING AND THINNING

A. All mixing shall be performed by mechanical paint shakers or mixers in strict accordance with the manufacturer's printed instructions.

B. Do not use coating material which has livered, gelled, or otherwise deteriorated during storage. Thixotropic materials which obtain normal consistency when stirred are acceptable. Where a skin has formed in container, cut skin loose from sides of container and discard prior to mixing.

C. Each component of multi-component materials shall be mixed individually before use. The material shall be mixed in a manner which will insure the break-up of all lumps, complete dispersion of pigment, and a uniform composition. Materials shall be inspected after mixing for uniformity and to verify that no unmixed pigment remains at the bottom of the container.

D. The individual parts shall be mixed together in the proportions recommended by the manufacturer. The materials shall be mixed thoroughly before use and shall be agitated often enough during application to ensure a uniform composition.

E. Mixed coatings shall be strained after mixing unless the application equipment is provided with strainers. Strainers shall be of a type to remove skins and undesirable matter without removing pigment.

F. Thinner shall not be added unless required for proper application. Thinning shall be in strict accordance with the manufacturer's recommendations.

G. Mixed coatings shall have pot life stated on label and indicated in approved Shop Drawing. When pot life limit is reached, discard material, clean equipment, and mix and induct new material.

H. Store materials not in actual use in tightly covered containers. Maintain containers and equipment used in storage, mixing, and application in clean condition, free of foreign materials and residue.

## 3.06 COATING APPLICATION

A. Apply prime coat within eight hours of completion of surface preparation. If surface is degraded, contaminated, or wet by rain or moisture subsequent to surface preparation and prior to coating, restore surface in accordance with Specifications.

B. Prior to applying each coat, remove dust with industrial vacuum cleaner using new filters, clean tools, and clean hopper. Remove residue or foreign matter on coating before applying additional coats by pressure rinsing with 1800-2000 psi water, when required by Engineer's representative.

C. Apply coatings in accordance with applicable provisions of SSPC Paint Application Specification PA 1. Use equipment best suited for the coating material.

D. Cloudiness, spotting, laps, brush marks, roller marks, runs, sags, drips, ropiness, voids, discontinuities, pinholes, and other surface imperfections are unacceptable.

E. When spray application is approved by Engineer. Spare fittings, gun tips, gun parts, and other spray equipment shall be acceptable to Engineer.

F. Stripe coat edges, welds, corners, crevices, and other surfaces difficult to coat before applying full coat in accordance with SSPC-PA 1.

G. Coverage shall be in conformance with the manufacturer's instructions. The dry mil thickness of coatings shall be as specified in the Coating Schedule.

## 3.07 APPLICATION BY SPRAYING

A. Application of coatings by spraying may be permitted in locations and on surfaces approved by the Engineer. The Contractor must submit for approval a written request giving the proposed locations and the coating manufacturer's instructions for spray application. Applicator and equipment must conform to the following paragraphs:

1. Spraying shall conform to the manufacturer's recommendations.

2. Equipment:

a. The spray equipment used shall be suitable for the intended purpose, capable of properly atomizing the coating, and equipped with suitable pressure regulators and gages. The equipment shall be in good working order.

b. Spray equipment shall be kept sufficiently clean so that dirt, dried coating, and other foreign substances are not deposited with the coating.

c. All solvents used in cleaning the equipment shall be completely removed before use.

d. The equipment manufacturer's instructions for proper use shall be strictly followed.

3. Air Spray:

a. Air caps, nozzles, and needles shall be those recommended by the manufacturers of the coating system and spray equipment being used.

b. Moisture and oil separators or traps shall be used in the compressed air system to provide a dry and clean air supply. The traps or separators must be of adequate size and must be drained periodically during the coating application.

4. Airless Spray:

a. Fluid tips shall be of the proper orifice size and fan angle, and the fluid control gun of proper construction, as recommended by the manufacturer of the coating system and the spray equipment being used.

**3.08 CURING**

A. Each coat shall be in a proper state of cure or dryness prior to the placement of the succeeding coat. Coating shall be considered sufficiently dry for recoating when an additional coat can be applied without the development of any detrimental film irregularities such as lifting, wrinkling, or loss of adhesion of the undercoat. Where an overcoat will not properly adhere to an overly cured undercoat, it shall be applied within the time period recommended by the manufacturer.

B. The curing times for the coatings shall conform to the coating manufacturer's recommendations considering ambient temperature and relative humidity.

**3.09 FIELD QUALITY CONTROL**

A. Thickness - The Contractor shall furnish the Engineer a suitable thickness detector of a type recommended by the coating manufacturer. Dry film measurements shall be taken in accordance with SSPC-PA 2.

B. The color of the prime coat shall be beige when available. It shall be inspected before application of intermediate or finish coats.

C. Intermediate Coats shall be the approximate shade of final coat; however, each coat shall be of a slightly different tint. Each coat shall be inspected and approved before the next coat may be applied; otherwise, credit will not be given and the Work shall be recoated.

## 3.10 PATCHING AND REPAIRS

A. All defective coatings shall be removed or repaired as the Engineer may direct. Surfaces with defective shop primer shall be repaired per the manufacturer's recommendations of the system in the Coating Schedule.

B. Before final approval of the Work all damaged coating surfaces (field or factory applied) shall be cleaned and repainted or touched up as directed.

## 3.11 CLEANING

A. Remove coating and splatter inadvertently placed on items not scheduled to be coated. Remove splatter by washing or scraping, taking care not to scratch or otherwise damage finished surfaces.

B. Remove and dispose spent abrasives, discarded coating materials, rubbish containers, rags, and other debris at the end of each work day.

## 3.12 MARRED EXISTING FINISHES

A. Existing buildings, pipelines, plumbing, etc., marred during construction by the Contractor shall be repainted to match the existing coating. Repainting shall be carried far enough to match the newly painted area with the existing coating.

B. Surface preparation, primer, and finish coats shall be in accordance with the Coating Schedule.

# PART 4 SPECIAL PROVISIONS

## 4.01 PAINTING OF EXISTING EQUIPMENT AND STRUCTURES

A. Surface preparation shall be in accordance with the manufacturer's recommendations of the system in the Coatings Schedule.

B. The scope of the repainting work is described in the following table.

| | Previously Painted Interior Concrete | Interior Piping | Doors and Interior Equipment | Interior Str. Steel | Window Frames | Door Frame |
|---|---|---|---|---|---|---|
| Sludge Control Building (including Spent Carbon Thickener Control Room) | X | X | X | | X | |
| Industrial Screen Building | X | X | X | X | X | X |
| Sludge Filter Building | X | X | X | X | X | X |
| Incinerator Building | X | X | X | X | X | X |
| Maintenance Building | X | X | X | X | | X |
| Secondary Sludge PS #1 (including existing Blower Bldg., Control Bldg., and Pipe Gallery) | X | X | X | X | X | |
| Industrial Sludge PS #1 | X | X | X | | X | |
| Sludge Conditioning Building | | X | X | X | X | X |

1. Interior concrete includes all concrete walls, columns, beams, ceilings, curbs, and machinery bases. Floors and stair treads are not included.

## 4.02 COLORS

A. The colors used shall be selected by the Owner and the Engineer, from the manufacturer's standard colors.

B. All pipelines and associated equipment shall be color coded and banded as follows. Banding shall consist of 3-inch wide painted bands at 30-inch center to center.

| Pipeline | Color of Pipe | Color of Legend |
|---|---|---|
| Natural Gas | Vermillion | White |
| City Water | Dark Blue | White |
| Plant Water | Aqua | Black |
| Compressed Air | Green | White |
| Chlorine | Yellow | Black |
| Raw Sewage | Light Gray | White |
| Scum | Dark Gray | White |
| Primary Sludge | Brown | White |
| Thickened Sludge | Brown with 3-inch red band | White |
| Waste Sludge | Brown with 3-inch black band | White |
| Return Sludge | Brown with 3-inch orange band | White |
| Tank Drains | Black with 3-inch white band | White |
| Digested Sludge | Black | White |
| Iron Salt | Orange | White |
| Polymer | Light Blue | Black |
| Boiler Feed Water | White with 3-inch blue bands | Black |
| Digester Gas | Red with 3-inch white band | White |
| Hot Water Heat Piping | To match walls, ceilings, etc., with 3-inch brown bands | Black |

| Pipeline | Color of Pipe | Color of Legend |
|---|---|---|
| Raw | Olive Green | White |
| Settled or Clarified | Aqua | Black |
| Finished or Potable | Dark Blue | White |
| Alum | Orange | White |
| Carbon Slurry | Black | White |
| Caustic | Yellow with 3-inch Green Band | Black |
| Chlorine (Gas or Solution) | Yellow | Black |
| Chlorine Dioxide | Yellow with 3-inch Black Band | Black |
| Ferric Chloride | Orange with 3-inch Brown Band | White |
| Fluoride | Light Blue with 3-inch Red Band | Black |
| Lime Slurry | Light Green | White |
| Ozone | Yellow with 3-inch Orange Band | Black |
| Phosphate Compounds | Light Green with 3-inch Red Band | White |
| Polymers | Orange with 3-inch Green Band | White |
| Potassium Permanganate | Purple | White |
| Soda Ash | Light Green with 3-inch Orange Band | White |
| Sodium Chlorite | Yellow with 3-inch Brown Band | Black |
| Sulfuric Acid | Yellow with 3-inch Red Band | Black |

| Pipeline | Color of Pipe | Color of Legend |
|---|---|---|
| Sulfur Dioxide | Light Green with 3-inch Yellow Band | White |
| Backwash Waste | Light Brown | White |
| Sludge | Dark Brown | White |
| Sewer (Sanitary or Other) | Dark Grey | White |
| Compressed Air | Dark Green | White |
| Gas | Red | White |
| Carbon Dioxide | Light Green with 3-inch Black Band | White |

C. Electrical conduit, roof drains, sanitary drains, etc., shall be painted to match the color of adjacent wall or ceiling surface.

**4.03 STENCILS AND LABELS**

A. Lettering and flow direction arrows shall be stenciled on each pipeline describing the function of the pipeline near the equipment served, at both sides of walls and floors where pipe passes through, and at intervals of not more than 50-feet. Flow direction arrows shall be stenciled on each pipeline adjacent to valves and at each branch or tee. It is intended that all pipelines shall bear labels at the most visible point. If, in the opinion of the Engineer, the foregoing requirements will result in an excessive number of labels or arrows on a run of pipe, the number shall be reduced as directed.

B. Where the flow of a pipeline is in one direction only, an additional flow arrow shall be stenciled in front of each legend on the pipe.

C. For pipes smaller than 1-inch in outside diameter, a white plastic tag with black lettering shall be used. Secure to piping with self-locking nylon straps.

D. The legends and flow arrows shall be stenciled with approved stencil paint. Following the completion of other Work under this Item, all stencils used shall remain the property of the Owner.

E. Each chemical storage tank shall have stenciled on its side a legend describing the tank contents and the tank number as shown on the Drawings such as “Alum Tank No. 1”.

F. Preprinted pressure sensitive vinyl labels may be used in lieu of stencils. Labels shall be additionally secured to the pipe at each end by 2-inch roll tape with preprinted directional arrows. Tape color shall match the label. Label size shall be determined by pipe size as recommended by the manufacturer’s standard literature. Labels shall be Opti-Code as manufactured by Seton Name Plate Corporation, or equal.

**4.04 INSPECTION EQUIPMENT**

A. The Contractor shall furnish the following testing equipment:

1. SSPC Surface Preparation Specifications, SSPC Publication 91-08:
   a. Quantity: 1 copy.
2. SSPC Visual Standard for Abrasive Blast Cleaned Steel Surfaces, SSPC VIS 1-89:
   a. Quantity: 1 each.

3. Keane-Tator Surface Profile Comparator with sand, grit/slag, and shot disks:
    a. Quantity: 1 each.
4. NACE Visual Comparator for Surface Finishing of Welds Prior to Coating, NACE Standard RP0178:
    a. Quantity: 1 required.
5. Wet Film Thickness Gauge:
    a. Nordson Model 790-010; Range 0 to 20 mils.
    b. Quantity: 3 required.
6. Wet Film Thickness Gauge:
    a. Nordson Model 790-015; Range 4 to 60 mils.
    b. Quantity: 3 required.
7. Dry Film Thickness Gauges:
    a. Positector 6000 Series, Model F2; Range 0 to 60 mils.
    b. Quantity: 1 required.
8. Holiday/Pinhole Detector (Low Voltage):
    a. Elcometer Model No. 269; battery operated, low voltage; with probe, connecting wires and battery.
    b. Quantity: 1 required.
    c. If battery is rechargeable, furnish one spare battery for each detector supplied.
    d. If battery is not rechargeable, furnish six spare alkaline batteries.
9. US Weather Bureau Psychometric Tables:
    a. KTA-TATOR Model WB-235; standard tables from 23.0 to 30.0 inches barometric pressure.
    b. Quantity: 1 required.
10. Surface Temperature Thermometer:
    a. KTA-TATOR Model PTC/315F dial thermometer 0-150 degrees F.
    b. Quantity: 2 required.
11. Paint Thermometer:
    a. KTA-TATOR Model 6212 dial thermometer 25-125 degrees F.
    b. Quantity: 2 required.
12. Surface Profile Spring Micrometer:
    a. KTA-TATOR Model 354.
    b. Quantity: 1 required.

c. Tape Required:

1) 0.8 to 2.0 mils (50 per package) - 1 package.

2) 1.5 to 4.5 mils (50 per package) - 2 packages.

13. 10X Magnifier:

a. KTA-TATOR Model 405.

b. Quantity: 1 required.

## 4.05 COATING SCHEDULE

A. The following coating schedules is not guaranteed to be complete. The coating systems manufacturers are listed in no particular order, any of the four listed systems, or equal may be used.

| | | | | | |
|---|---|---|---|---|---|
| **Wastewater** | | | | | |
| | | **Carboline** | **Tnemec** | **AkzoNobel (International, Devoe, Glidden Professional)** | **Sherwin Williams** |
| A. | Ferrous metals, except galvanized or stainless steel, submerged or partially submerged in wastewater or non-submerged exposed to splash or spill, including all tank mechanisms and tank mechanism support structures; clips, beams, and walkway supports; pipes, valves, sluice gates, scum baffles, and weirs: | | | | |
| | Surface Preparation: | SSPC-SP 10 (NACE 2) Near White Blast Cleaning with a 1.5-2.0 mil Profile | SSPC-SP 10 (NACE 2) Near White Blast Cleaning with a 2.0 mil Profile | SSPC-SP 10 (NACE 2) Near White Blast Cleaning with a 1.5-2.0 mils Profile | SSPC-SP 10 (NACE 2) Near White Blast Cleaning with a 1.5-2.0 mil Profile |
| | Primer: | 1 coat, Carboguard 890 (4.0-6.0 mils DFT) | 1 coat, N140 Pota-Pox Plus (DFT 3.0-5.0 mils). | N/A | 1 coat, Macropoxy 240 (DFT 3.0-5.0 mils) |
| | Field Finish: | 2 coats, Bitumastic 300m (8.0-16.0 DFT per coat) | 2 coats, 46H-413 HB Tneme-Tar, (DFT 8.0-10.0 mils per coat). | N/A | 2 coats, Targuard Coal Tar Epoxy (DFT 8.0-16.0 mils per coat) |
| **Water** | | | | | |
| B. | Ferrous metals, except galvanized or stainless steel, submerged or partially submerged in or exposed to potable water or water being treated for potable use, including all tank mechanisms and tank mechanism support structures; clips, beams, and walkways; pipes, valves, sluice gates, and weirs: | | | | |
| | Surface Preparation: | SSPC-SP 10 (NACE 2) Near White Metal Blast Cleaning, surface profile 1.5-2.0 mils | SSPC-SP 10 (NACE 2) Near White Metal Blast Cleaning, surface profile 2.0 mils | SSPC-SP 10 (NACE 2) Near White Metal Blast Cleaning, surface profile 1.5-2.5 mils | SSPC-SP 10 (NACE 2) Near White Metal Blast Cleaning, surface profile 2.0-3.0 mils |
| | Primer (Zinc Rich): | N/A | 1 coat Series 91 H2O Hydrozinc , (DFT 3.0-5.0 mils) | 1 coat, Cathacoat 316 (DFT 2.5-3.5 mils) | 1 coat, Corothane I Galvapac at DFT 2.0-4.0 mils |
| | Field Finish: | N/A | 2 coats, N140 Pota-Pox Plus (DFT 4.0-6.0 mils per coat) | 2 coats, Bar-Rust 233 H (DFT 4.0-6.0 mils per coat) | 2 coats, Macropoxy 646 PW (DFT. 4.0-6.0 mils per coat) |
| | Primer (Non-Zinc Rich): | 1 coat, Carboguard 61 (DFT 4.0-6.0 mils) | 1 coat N140 Pota-Pox Plus (DFT 4.0-6.0 mils) | 1 coat Bar-Rus 2334 (DFT 4.0-6.0 mils) | 1 coat Macropoxy 646 PW (DF 4.0-6.0 mil per coat) |

| | | | | | |
|---|---|---|---|---|---|
| | Field Finish: | 2 coats, Carboguard 61 (DFT 4.0-6.0 mils per coat) | 2 coats, N140 Pota-Pox Plus (DFT 4.0-6.0 mils per coat) | 2 coats, Bar-Rust 233 H (DFT 4.0-6.0 mils per coat) | 2 coats, Macropoxy 646 PW (DFT. 4.0-6.0 mils per coat) |
| C. | Concrete walls, columns, beams, etc. in contact with potable water or water being treated for potable use: | | | | |
| | Surface Preparation: | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry |
| | Filler: | Fill bugholes with Carboguard 501/510 | 215 Surfacing Epoxy or 218 MortarClad | Fill bugholes with Devran 133/Cabo-Sil M-5 (DFT up to 80.0 mils) | Fill all bugholes with Steel Seam FT 910 or Dura-Plate 2300 or cementitious repair mortar from AW Cook |
| | Primer: | 1 coat, Carboguard 61 (DFT 4.0-6.0 mils) | 1 coat, N140 Pota-Pox Plus (DFT 4.0-6.0 mils). | 1 coat, Bar-Rust 233 H (DFT 4.0-6.0 mils) | 1 coat, Macropoxy 646 PW (DFT 3.0-5.0 mils). |
| | Final: | 2 coats, Carboguard 61 (DFT 4.0-6.0 mils per coat) | 1 coat, N140 Pota-Pox Plus (DFT 4.0-6.0 mils) | 1 coat, Bar-Rust 233 H (DFT 4.0-6.0 mils) | 2 coats Macropoxy 646 PW (DFT 4.0-6.0 mils per coat) |

## General Coating Schedule (Wastewater and Water)

| | | | | | |
|---|---|---|---|---|---|
| D. | Exterior nongalvanized, ferrous metal surfaces not submerged: | | | | |
| | 1. Subject to splash or spills or atmospheric: | | | | |
| | Surface Preparation: | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5- 2.0 mils | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils |
| | Primer: | 1 coat, Carbozinc 859 (3.0-5.0 mils DFT) | 1 coat, 90-97 Tneme-Zinc, (DFT 2.5-3.5 mils). | 1 coat, CathaCoat 313 (DFT 2.0-4.0 mils) | 1 coat, Corothane I Galvapac (DFT 2.0-4.0 mils) |
| | Intermediate: | 1 coat, Carboguard 60 (4.0-6.0 mils DFT) | 1 coat, 27 Typoxy, (DFT 2.5-4.0 mils). | 1 coat, Devran 224HS (DFT 4.0-8.0 mils) | 1 coat, Macropoxy 646 (DFT 3.0-5.0 mils). |

| | | | | | |
|---|---|---|---|---|---|
| | Final: | 1 coat, Carbothane 134HG (2.0-2.5 mils DFT) | 1 coat, 72/73 Endura-Shield (DFT 2.5-5.0 mils). | 1 coat, Devthane 359 (DFT 3.0-5.0 mils) | 1 coat, Hi-Solids Polyurethane (DFT 3.0-5.0 mils). |
| E. | Interior wall surfaces of masonry block construction and precast concrete walls and ceiling surfaces: | | | | |
| | 1. Concrete Masonry Block (CMU and AMU) | | | | |
| | Surface Preparation: | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete), and ASTM D4261 (Block). Masonry shall be moisture free. | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete), and ASTM D4261 (Block). Masonry shall be moisture free. | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete), and ASTM D4261 (Block). Masonry shall be moisture free. | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete), and ASTM D4261 (Block). Masonry shall be moisture free. |
| | Sealer/Surfacer: | 1 coat, Sanitile 100 (5.0-20.0 mils DFT) depending on porosity must be pin hole free prior to applying | 1 coat, 130 Envirofill (DFT 10.0-15.0 mils). | 1 coat, Tru-Glaze-WB 4015 (DFT 9.0-11.0 mils) | 1 coat, Cement Plex 875 Masonry Filler/Sealer (DFT 13-25 mils). |
| | Finish: | 2 coats, Carboguard 60 (DFT 4.0-6.0 mils per coat) | 2 coats, N69 H.B. Epoxoline II (DFT 4.0-6.0 mils per coat). | 2 coat, Devran 224HS (DFT 4.0-6.0 mils per coat) | 2 coats, Macropoxy 646 (DFT 4.0-6.0 mils per coat) |
| | 2. Pre-Cast Concrete | | | | |
| | Surface Preparation: | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry. | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry. | SSPC-SP 13 (NACE 6) D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry. | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry. |
| | Filler: | Fill bug holes with Carboguard 501/510 | Fill bug holes with 215 surfacing epoxy or 218 MortarClad | Fill bug holes with Devfil 145 (DFT 16.0-22.0 mils) | Fill all bugholes with Steel Seam FT 910 or Dura-Plate 2300 or cementitious repair mortar from AW Cook |
| | Finish: | 2 coats, Carboguard 60 (DFT 4.0-6.0 mils per coat) | 2 coats, N69 H.B. Epoxoline II (DFT 4.0-6.0 mils per coat). | 2 coats, Devran 224HS (DFT 4.0-6.0 mils per coat) | 2 coats, Macropoxy 646 (DFT 4.0-6.0 mils per coat) |

| | | | | | |
|---|---|---|---|---|---|
| F. | Interior concrete walls, columns, beams, and ceilings; concrete curbs; concrete bases for machinery and equipment; etc.: | | | | |
| | Surface Preparation: | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry. | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry. | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry. | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete). Abrade precast concrete, if recommended by coating manufacturer, per ASTM D4259. ASTM D4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, retest until dry. |
| | Filler: | Fill bugholes with Carboguard 501/510 | Fill bugholes with 215 Surfacing Epoxy or 218 MortarClad | Fill bug holes with Devfil 145 (16.0-22.0 mils DFT) | Fill all bugholes with Steel Seam FT 910 or Dura-Plate 2300 or cementitious repair mortar from AW Cook |
| | Primer: | 1 coat, Carboguard 60 (DFT 4.0-6.0 mils) | 1 coat, 27 Typoxy (DFT 2.5-4.0 mils). | 1 coat, Devran 224HS (DFT 4.0-8.0 mils) | 1 coat, Macropoxy 646 (DFT 3.0-5.0 mils). |
| | Final: | 2 coats, Carboguard 60 (DFT 4.0-6.0 mils) | 2 coats, N69 H.B. Epoxoline II (DFT 4.0-6.0 mils). | 2 coats, Devran 224 HS (DFT 4.0-6.0 mils per coat) | 2 coats Macropoxy 646 (DFT 4.0-6.0 mils). |
| G. | Interior, nongalvanized, ferrous metal surfaces of items such as pipe; machinery, equipment; doors and door frames; rolling doors; exposed ductwork; hoppers, chutes, pipe supports, trays, and hangers; walkway platforms; stairs; structural members; floor frames and covers; miscellaneous metal tanks shall be finished as follows: | | | | |
| | Surface Preparation: | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils. | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils. | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5 to 2.0 mils. | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils. |
| | Primer: | 1 coat, Carboguard 60 (DFT 4.0-6.0 mils) | 1 coat, 27 Typoxy (DFT 2.0-4.0 mils). | 1 coat, Devran 201H (DFT 2.0-3.0 mils) | 1 coat, Recoatable Epoxy Primer, Macropoxy 646 (DFT 3.0-5.0 mils). |
| | Finish: | 2 coats, Carboguard 60 (DFT 4.0-6.0 mils per coat) | 2 coats, N69 H.B. Epoxoline II, or equal (DFT 4.0-6.0 mils per coat). | 2 coats, Devran 224 HS (DFT 4.0-6.0 mils per coat) | 2 coats, Macropoxy 646, (DFT 4.0-6.0 mils per coat). |
| H. | Ferrous metal surfaces of all chemical pipe supporting trays throughout the project and ferrous metal surfaces of items in chemical rooms such as pipes, machinery, equipment, doors, ductwork, hoppers, walkways, and stairs, but not structural wall panels and roof joists, shall be finished as follows: | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | Surface Preparation: | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils. | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils. | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils. | SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5 -2.0 mils. |
| | Primer: | 1 coat, Carboguard 60 (4.0-6.0 mils DFT) | 1 coat, 27 Typoxy, or equal (DFT 2.0-4.0 mils). | 1 coat, Devran 201H (DFT 2.0-3.0 mils) | 1 coat, Recoatable Epoxy Primer, Macropoxy 646 (DFT 3.0-5.0 mils). |
| | Finish: | 2 coats, Carboguard 890 (4.0-6.0 mils DFT) | 2 coats, N69 H.B. Epoxoline II (DFT 4.0-6.0 mils per coat). | 2 coats, Devran 224 HS (DFT 4.0-6.0 mils per coat) | 2 coats, Macropoxy 646, (DFT 4.0-6.0 mils per coat). |
| I. | Galvanized ferrous, aluminum, copper, fiber reinforced plastic or other plastic piping and conduits located inside buildings requiring color coding: | | | | |
| | 1. Aluminum and Copper: | | | | |
| | Surface Preparation: | SSPC-SP 16 - Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals | SSPC-SP 16 - Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals | SSPC-SP 16 - Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals | SSPC-SP 16 - Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals |
| | Primer: | N/A | 1 coat, 27 Typoxy, or equal (DFT 2.0-4.0 mils). | 1 coat, Devran 201H (DFT 2.0-3.0 mills) | N/A |
| | Finish: | 2 coats, Carboguard 60 (DFT 4.0-6.0 mils per coat) | 1 coat, N69 H.B. Epoxoline II (DFT 4.0-6.0 mils per coat). | 1 coat, Devran 224 HS (DFT 4.0-6.0 mils) | 2 coats, Macropoxy 646 (DFT 4.0-6.0 mils per coat). |
| | 2. Galvanized Metal: | | | | |
| | Surface Preparation: | SSPC SP 16 "Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-ferrous Metals | SSPC SP 16 "Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-ferrous Metals | SSPC SP 16 "Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-ferrous Metals | SSPC SP 16 “Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-ferrous Metals |
| | Primer: | None | 1 coat, 27 Typoxy, or equal (DFT 2.0-4.0 mils). | 1 coat, Devran 201H (DFT 2.0-3.0 mills) | N/A |
| | Finish: | 2 coats, Carboguard 60 (DFT 4.0-6.0 mils per coat) | 1 coat, N69 H.B. Epoxoline II (DFT 4.0-6.0 mils per coat). | 1 coat, Devran 224HS (DFT 4.0-6.0 mils) | 2 coats, Macropoxy 646 (DFT 3.0-5.0 mils per coat). |
| | 3. FRP, PVC, CPVC, and Other Plastics: | | | | |
| | Surface Preparation: | Scuff sand to uniformly roughen surface | Scuff sand to uniformly roughen surface | Scuff sand to uniformly roughen surface | Scuff sand to uniformly roughen surface |
| | Primer: | None | 1 coat, 27 Typoxy, or equal (DFT 2.0-4.0 mils). | 1 coat, Devran 201H (DFT 2.0-3.0 mills) | None |

| | | | | | |
|---|---|---|---|---|---|
| | Finish: | 2 coats, Carboguard 60 (DFT 4.0-6.0 mils per coat) | 1 coat, N69 H.B. Epoxoline (DFT 4.0-6.0 mils per coat). | 1 coat, Devran 224 HS (DFT 4.0-6.0 mils) | 2 coats, Macropoxy 646 (DFT 3.0-5.0 mils per coat). |
| J. | Exterior piping requiring color coding and made of galvanized ferrous, aluminum, fiberglass reinforced plastic, or other plastic and all exterior fiberglass reinforced plastic piping and galvanized conduit: | | | | |
| | Surface Preparation: | SSPC SP 16 "Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-ferrous Metals | SSPC SP 16 "Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-ferrous Metals | SSPC SP 16 "Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-ferrous Metals | SSPC SP 16 “Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-ferrous Metals |
| | Surface Preparation: FRP and Other Plastics: | Scuff sand to roughen surface | Scuff sand to roughen surface | Scuff sand to roughen surface | Scuff sand to roughen surface |
| | Primer: | 1 coat, Carboguard 60 (4.0-6.0 mils DFT) | 1 coat, 27 Typoxy, or equal (DFT 2.0-3.0 mils). | 1 coat Devran 201H (DFT 2.0-3.0 mils) | 1 coat, Macropoxy 646 (DFT 2.0-3.0 mils). |
| | Finish: | 2 coats, Carbethane 134 HG (DFT 4.0-6.0 mils per coat) | 1 coat, 72/73 Endura-Shield (DFT 2.0-4.0 mils). | 1 coat, Devthane 359 (DFT 2.0-4.0 mils) | 1 coat Hi-Solids Polyurethane (3.0-5.0 mils DFT) |
| K. | Exterior wall surfaces of masonry block construction (Not previously Coated): | | | | |
| | Surface Preparation: | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete), and ASTM D4261 (Block). ASTM D4261 (Block). Masonry shall be moisture free. | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete), and ASTM D4261 (Block). ASTM D4261 (Block). Masonry shall be moisture free. | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete), and ASTM D4261 (Block). ASTM D4261 (Block). Masonry shall be moisture free. | SSPC-SP 13 (NACE 6) Remove surface contaminates per ASTM D4258 (Concrete), and ASTM D4261 (Block). Masonry shall be moisture free. |
| | Primer: | N/A | N/A | 1 coat Bloxfil 4000 (DFT 7.0-14.0 mils) | N/A |
| | Finish | 2 coats, Flexxide Elastomer (DFT 6.0-8.0 mils per coat) | 2 coats, 180/181 Tneme-Crete (DFT 4.0-8.0 mils per coat) | 2 coats Decra Flex 300 Elastomeric (2260 smooth) (DFT 6.0-8.0 mils per coat) | 2 coats Loxon XP (DFT 6.0-8.0 mils per coat). |
| L. | Interior and exterior wood surfaces such as soffits and trim: | | | | |
| | Surface Preparation: | Surface must be clean and dry. Sand rough areas and fill knots and voids | Surface must be clean and dry. Sand rough areas and fill knots and voids | Surface must be clean and dry. Sand rough areas and fill knots and voids | Surface must be clean and dry. Sand rough areas and fill knots and voids. |
| | Primer: | 1 coat, Sanitile 120 (DFT 2.0-3.0 mils) | 1 coat, 10-99W Tnemec Primer (DFT 2.0-3.0 mils) | Exterior: 1 coat, Hydrosealer 6001 (DFT 1.4-1.7 mils); Interior: 1 coat, Gripper 3210 (DFT 1.8-2.1 mils) | 1 coat PrepRite ProBlock Interior/Exterior Latex Primer Sealer (DFT 1.0-2.0 mils). |

| | | | | | |
|---|---|---|---|---|---|
| | Finish: | 2 coats, Carbocrylic 3359 (DFT 2.0-3.0 mils DFT per coat) | 2 coats, 1028/1029 Enduratone (DFT 2.0-3.0 mils per coat) | 2 coats, Lifemaster Oil Semi-Gloss 1506 Lifemaster Oil Semi-Gloss (DFT 2.0-3.0 mils per coat) | 2 coats Metalatex Semi-Gloss or Pro Industrial 0 VOC Acrylic (DFT 2.0-4.0 mils per coat) |
| M. | Plaster or drywall finished walls and ceilings: | | | | |
| | Surface Preparation: | Surface must be clean and dry, no contamination. | Surface must be clean and dry, no contamination. | Surface must be clean and dry, no contamination. | Surface must be clean and dry, no contamination. |
| | Primer: | 1 coat, Sanitile 120 (DFT 2.0-3.0 mils) | 1 coat, 51-1204 PVA Sealer (DFT 2.0-3.0 mils) | Plaster: 1 coat, Gripper 3210 (DFT 1.8-2.1 mils); Drywall: 1 coat, PVA Wall Primer 1030 (DFT 2.0-3.0 mils) | 1 coat, ProMar 200 Interior Latex Wall Primer (DFT 1.0-2.0 mils). |
| | Finish: | 2 coats, Carbocrylic 3359 (DFT 2.0-3.0 mils per coat) | 1 coat, 6 Tneme-Cryl (DFT 2.0-3.0 mils) | Ceilings: 2 coats, Ultra Hide 250 Interior Flat Paint 1200N (DFT 1.2-1.4 mils); Walls: 2 coats, Ultra Hide 250 Interior Eggshell Paint 1402N (DFT 2.0-3.0 mils) | 2 coats, ProMar 200 Interior Latex Eg-Shel (DFT 1.5-2.0 mils per coat). |
| N. | Exposed pipe insulation | | | | |
| | Surface Preparation: | Surface must be clean and dry, no contamination. | Surface must be clean and dry, no contamination. | Surface must be clean and dry, no contamination. | Surface must be clean and dry, no contamination. |
| | Finish: | 2 coats, Carbocrylic 3359 (DFT 2.0-3.0 mils per coat) | 2 coats, 6 Tneme-Cryl (DFT 2.0-3.0 mils) | 2 coats, Devflex 4020 PF (DFT 2.0-3.0 mils per coat) | 2 coats, Metalatex Semi-Gloss Acrylic or Pro Industrial 0 VOC Acrylic (DFT 2.0-4.0 mils per coat). |
| O. | Stained finish carpentry: | | | | |
| | Surface Preparation: | Surface must be clean and dry, no contamination. | Surface must be clean and dry, no contamination. | Surface must be clean and dry, no contamination | Surface must be clean and dry, no contamination. |
| | Primer: | | | Wood Pride Water-Based Wood Finishing Semi-Transparent Stain 1700V (300-400 sq ft/gal) | Minwax Water Based Wood Stain (300-400 sq ft/gal) |
| | Finish: | | | Wood Pride Water-Based Satin Varnish 1802 or Water-Based Gloss Varnish 1808 (400-500 sq ft/gal) | Minwax Water Based Polyacrylic Clear Satin Protective Finish (400-500 sq ft/gal) |

END OF SECTION

**SECTION 11050**
**COMMON EQUIPMENT REQUIREMENTS**

## PART 1 GENERAL

### 1.01 SCOPE

A. The Section includes the general requirements for all equipment installed under this Contract.

B. Equipment items shall meet the requirements specified herein, plus the specific requirements noted in the technical sections.

C. The specific requirements included under a particular section shall take precedence.

D. Additional product requirements are specified in Section 01350.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Specific equipment submittals are specified in the related sections.

b. Equipment shop drawings shall include outline and dimension drawings of the actual equipment being furnished.

c. With the shop drawings, the complete motor nameplate data shall be furnished as well as all information requested below which may not be on the motor nameplate:

1) Manufacturer.

2) Rated Horsepower.

3) Operating Speed Range*.

4) Operating Voltage(s).

5) Current Draws at Operating Voltage(s)*.

6) Operating Frequency (Hz).

7) Service Factor.

8) Type Enclosure.

9) Frame Size.

10) NEMA Design Designation.

11) Locked Rotor Code Letter.

12) Duty Rating.

13) Minimum Full Load Efficiency.

14) Nominal Efficiency*.

15) Power Factor*.

16) Maximum Size Capacitor Permitted to be Connected to Motor.

17) Insulation Class.

18) Location of motor terminal housing (F1 or F2).

19) Motor no load sound pressure level of dB(A) weighted at 3 feet from motor.

20) Motor Full Load Sound Pressure Level of dB(A) - weighted at 3 feet from motor.

21) Bearing Ratings.

22) Full Load Torque.

23) Break Down Torque.

24) Locked Rotor Torque.

* Provide data at following loads: Service factor (if greater than 1.0) times full load (i.e., 1.15 x full load), 100%, 75%, 50%, 25%, and no load.

d. Minimum full load efficiency shall be tested in accordance with IEEE Standards 112 Test Method B as described in Section 6.4 of IEEE Standard 112. Polyphase motors larger than 125 horsepower shall be listed in accordance with IEEE Standard 112 with stray-load loss determined by direct or indirect measurements.

2. Information for the Record:

a. Operation and maintenance manual.

## 1.03 QUALITY ASSURANCE

A. Manufacturer's name, make, model number and other designations provided in the contract documents are to establish the significant characteristics, including but not limited to, type, function, dimensions and physical properties, performance, and appearance for the purpose of evaluating comparable products. Contractor shall verify product, equipment or system proposed meets or exceeds the requirements as specified or shown on the drawings.

## 1.04 ELECTRICAL AND CONTROL COORDINATION

A. If the current requirement of any motor or piece of equipment is increased to such an extent that the wiring, conduit, and/or starter for that motor or equipment must be increased from that shown on the Electrical Drawings, the Contractor shall furnish and install the larger items. The increased wiring, conduit, and/or starter cost shall be included under the Contract and no additional compensation will be allowed.

B. All electrical, instrumentation, and control equipment and panels furnished under this Contract shall conform to appropriate Sections of Division 16 of these Specifications. Equipment and panels shall be NEMA 4X, unless otherwise shown on the Drawings or Specifications.

C. Certain equipment items shall be connected to the plant control system as shown on the Control (P&ID) Drawings. Those connections and any remote control connections shall be wired to clearly labeled terminal strips within the equipment control panel.

D. Analog signals for input to a programmable controller system or other device shall be 4-20 mADC and where required, current to current transducers or other device shall be furnished to produce an isolated signal to the programmable controller analog input module.

E. Digital input signal sources shall provide an isolated contact rated at 5-amp minimum, 115 VAC for AC programmable controller inputs or devices and 1 amp minimum 28 VDC for DC rated inputs or devices.

## 1.05 PRODUCT HANDLING

A. Unless otherwise specified in the individual sections, the Contractor shall deliver, handle, store, and maintain materials and equipment in accordance with the requirements of the manufacturer.

B. Materials, equipment, and articles to be incorporated into the Work shall be stored so as to facilitate inspection and inventory and in such manner as to ensure the preservation of their quality and fitness for the Work. Stocked materials shall be subject to test and shall meet the requirements of the Specifications at the time of substantial completion of the Work.

C. Where construction is in roads or streets, that portion of the right-of-way not required for public travel may be used for temporary storage purposes unless otherwise prohibited. Materials shall not be stored in areas where such storage creates a hazard. Any other additional space required for construction or storage of materials and equipment shall be obtained by the Contractor at his expense.

D. The Contractor shall confine his equipment, the storage of materials and equipment, and the operations of his workers to areas permitted by law, ordinances, permits, and the requirements of the Contract Documents, and shall not unreasonably encumber the premises with materials or equipment.

E. Switchgear, motor control centers, panelboards, instrument control panels, fixtures, and like equipment shall be received and stored in a dry, clean, dust-free, heated area. If no such area is available at the time such equipment is received, such space shall be provided by the Contractor at no expense to the Owner. If equipment is stored in an area conducive to the formation of condensation, heaters shall be provided to prevent condensation. Once the equipment is installed in its final position, suitable protection shall be provided to prevent damage by falling material, dust, paint, dirt, and moisture.

## PART 2 PRODUCTS

### 2.01 GENERAL

A. AC motor(s) shall conform to the latest applicable NEMA, IEEE, and ANSI standards.

B. Motor installation shall not exceed 88 dB(A) weighted maximum level at 3 feet from the motor throughout the entire speed range and load range.

C. Motor bearings shall be antifriction type, grease lubricated with a minimum L-10 rating of 17,500 hours for belted duty and 100,000 hours for direct coupled duty.

1. Thrust bearings in vertical motors shall be adequate for the loading encountered.

2. Belt-driven power systems with jackshafts, and couplings, to isolate the belt loadings from the motor bearings shall be regarded as direct coupled duty.

D. Motor conduit boxes shall be sized with capacity to meet the requirements of the National Electrical Code. Motors shall be furnished in an “F1” terminal housing assembly (facing connection box, motor shaft extension is to the right) unless otherwise shown on Drawings or specified.

E. Motor frames shall be cast iron construction with corrosion resistant hardware.

F. Each motor shall be continuous duty rated NEMA Design B with normal starting torque, unless otherwise shown or specified.

G. Output torque and speed characteristics of each motor shall be suitable to operate the connected load over the full range of operating speeds and load conditions without exceeding the nameplate current rating or temperature rise on a continuous duty basis.

H. Insulation shall be Class F or Class H.

I. Each polyphase squirrel-cage induction motor shall meet or exceed minimum and nominal efficiencies listed in NEMA MG-1, Table 12-10.

### 2.02 AC MOTORS UNDER 1 HP

A. Unless otherwise shown or specified, each fractional motor under 1/2 hp shall be designed for single phase, 115 and 230 volt, 60 Hz service.

B. Unless otherwise shown or specified, each fractional motor 1/2 through 3/4 hp shall be designed for 3 phase, 208, 230, and 460 volt, 60 Hz service.

### 2.03 INTEGRAL AC MOTORS

A. AC motor(s) 1 hp and larger shall have a 1.15 service factor at a 40 degrees C ambient temperature. Motor shall be capable of operating at the 1.15 service factor rating on a continuous basis per NEMA MG1-12.42 Item 1b.

B. Motor enclosure types shall be as specified in the equipment specifications and shall be of one of the following designations.

1. Open drip-proof protected (ODP).

2. Totally enclosed non-ventilated (TENV), or totally enclosed fan cooled (TEFC).

3. Explosion proof Class 1, Division 1, Group D.

4. Submersible water cooled.

C. Multi-speed motors shall have the energy efficient design designated for the high-speed winding operation.

## 2.04 SPECIAL APPLICATION MOTOR(S)

A. Special application motor(s) are defined as those used on such devices as appliances, tools, unit heaters, door operators, refrigeration units and sump pumps.

B. Manufacturer's standard motor may be approved by the Engineer where a redesign of the unit would be required to furnish energy efficient motors.

## 2.05 DEFINITE PURPOSE MOTORS

A. Equipment requiring a motor drive with unusual characteristics shall be equipped with a definite purpose motor to meet the necessary requirements.

1. Definite purpose motors are hermetic refrigeration compressors, jet pumps, shaft mounted fans and blowers, submersible deep well pumps, submersible mixers, elevator, crane, close coupled pumps, and torque motors.

2. If available, an energy efficient design motor shall be furnished on this application.

## 2.06 MOTORS ON VARIABLE FREQUENCY DRIVES

A. Motors for use with a Variable Frequency Drive (VFD) shall be TENV, TEFC, or submersible, water cooled.

1. Design to meet or exceed the efficiencies listed in NEMA MG-1, Table 12-10.

2. Motor shall be "Inverter Duty Rated", and so stamped on the nameplate.

3. Motor shall have an insulation system that meets or exceeds the requirements of NEMA MG-1, Part 31.40.4.2, and is rated at 1600 volts peak to ensure that the motor is rated for operation with non-sinusoidal waveforms at 1.0 service factor.

4. Bearings in motors greater than NEMA Frame size of 300 and controlled by variable frequency drives must be guaranteed against premature bearing failure caused by discharge current. All such motors shall be provided with a shaft grounding device.

B. AC motor used with a VFD shall have internal thermal protectors guaranteed by the motor manufacturer to protect the motors against overheating from stalled or slow turning due to lack of adequate cooling at low motor speeds.

1. Thermal protection devices shall be imbedded within the motor windings with normally closed contacts to be used in series with the coil of the motor's magnetic bypass starter and the stop circuit on the VFD.

2. Thermal protection devices shall all be provided and housed within the motor housing, unless otherwise specified.

C. Explosion proof motors shall use thermal protectors required by UL as covered by 2.08, and meet the requirements of 2.06 preceding, and shall be rated and labeled for "Inverter Duty".

D. Tachometer generators when required by the Specifications or the P&ID Drawings shall be DC generators of the enclosure required for the particular motor location.

## 2.07 DIRECT CURRENT MOTORS ON VARIABLE SPEED DRIVES (VSD)

A. Each motor shall be equipped with internal thermal protectors as covered in 2.06. Permanent magnet field DC motors are not acceptable.

B. Motors and tachometer generators shall be in totally enclosed non-ventilated or totally enclosed fan cooled enclosures except where required to be explosion proof motors.

## 2.08 V-BELT DRIVES

A. Belts for V-belt drives shall be provided with a minimum service factor of 2.0.

B. Drives shall be submitted with manufacturer's data supporting the horsepower rating of the V-Belt drives being used.

C. Assembled cog belts and other assembled belt drives are not acceptable.

D. V-Belts on multiple V-Belt drives shall be provided in matched sets.

E. The Contractor shall provide one spare belt or one spare matched set of drive belts, whichever is applicable, for all belt-driven equipment supplied under this Contract. The spare belts shall be the same size, type, and quality as supplied by the equipment manufacturer.

## 2.09 COUPLED DRIVES

A. Coupled drives shall have the service factor recommended by the coupling manufacturer.

B. Coupled drives shall be submitted with engineering data supporting the horsepower rating of each coupling.

## 2.10 SAFETY GUARDS

A. Installed equipment shall be equipped with all guards, shields, and devices to meet OSHA requirements.

B. Chain and belt guards shall be totally enclosed steel construction, 14-gauge minimum for guards up to 60-inch center distance and 12-gauge minimum for larger guards.

C. Guards shall include expanded metal inspection panels. Removable access panels shall be provided to perform routine maintenance.

## PART 3 EXECUTION

### 3.01 INSTALLATION

A. Equipment shall be installed in accordance with the manufacturer's instructions and Contract Documents. Required anchors, grout, and leveling shims shall be provided by the Contractor.

B. Alignment procedures and acceptable runout tolerances on couplings shall be submitted.

### 3.02 INITIAL LUBRICATION

A. Initial lubrication required for start-up, field test operation, and normal operation prior to substantial completion shall be furnished and applied in accordance with the manufacturer's recommendations.

B. Where lubricating points are not easily accessible, provide extensions as required for easy access with normal grease gun.

### 3.03 PACKING

A. Each shaft containing a packing gland shall be checked for condition by backing the packing gland off and examining for proper grade, amount, and type of packing as recommended by the manufacturer.

### 3.04 MAINTENANCE

A. The Contractor shall perform and log all preventive maintenance tasks as recommended by the manufacturer while the equipment is in storage and after installation until the equipment has been accepted by the Owner.

### 3.05 TROUBLESHOOTING

A. Should a problem occur before acceptance, the Contractor shall determine the cause and recommend corrective actions to the Engineer. The Contractor shall correct equipment and installation deficiencies.

## PART 4 SPECIAL PROVISIONS

A. The Contractor shall submit a complete preventative maintenance schedule for the following major equipment items:

- HWP-1 & HWP-2
- AHU-2-2
- AHU-2-3
- CCU-2-1
- AC-1
- AC-2

- GLYCOL PUMPING SYSTEM

END OF SECTION

**SECTION 15010**
**GENERAL MECHANICAL PROVISIONS**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes furnishing and installing mechanical accessories and requirements necessary for the completion of the Work whether or not specifically shown or specified.

B. Items include, but are not limited to:

1. Piping Hangers and Supports.

C. Additional requirements are specified in Sections 01350 and 11050.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Descriptive information on all mechanical items.

b. Drawings locating anchors, inserts, and supports for piping, including vendor data for each component.

2. Information for the Record:

a. Alignment procedures and acceptable runout tolerances for each piece of connected equipment.

b. Shaft and bore sizes and tolerances for couplings and instructions for coupling installation.

c. A report of coupling alignment readings for each coupling and driven machine combination, and sizes of all anchor bolt or equipment base shims.

## PART 2 PRODUCTS

### 2.01 PIPING HANGERS AND SUPPORTS

A. The manufacturer's names and catalog numbers shown in the following paragraphs have been used as a guide to type, style, and materials of construction only. Anvill, Unistrut, or equal.

B. Contractor shall furnish and install all pipe supports, hangers, harnessing, expansion joints, expansion loops, and inserts required to support the piping and valves. Supports shall be designed and spaced to secure pipe in place without sag or undue stress on any pipe, fitting, equipment, or valve. Piping that is close to the floor may be supported on concrete piers. Piping near walls may be supported by wall brackets. Piping at

equipment and valves, etc., shall be supported so that the equipment and valves can be removed without additional pipe supports. Piping shall not introduce any strains or distortion to connected equipment. Overhead lines shall be installed directly on supports, or suspended by hangers or hanger rods. Where piping is supported from the ceiling, inserts shall be poured in the concrete slab flush with the bottom of the slab. Adequate lateral support shall be provided to prevent noticeable lateral movement of the piping either during operation, or from a lateral load of 300 pounds applied at any point. All hanger design, anchoring, support, etc. shall be the responsibility of the Contractor. Design loads shall not exceed the manufacturer's recommended loads.

C. Types of Supports:

1. Beam clamps shall be used where piping is supported from steel structure of building. Clamps shall be selected on basis of load to be supported. Beam clamps shall be malleable iron with bolt, nut, and pocket threaded for rod connection as required to fit beams. C-clamp type shall only be hung from truss panel points unless otherwise approved by the Engineer.

2. In precast slab areas supports shall be hung from tabs. Tabs shall not be overloaded. Contractor shall not drill into precast slabs unless approved by the Engineer.

3. Cast-in inserts shall be used for suspending hangers from concrete. For heavier loads, insert shall be ceiling type, individual inserts; Anvill CB - Universal concrete inserts, Figure 282, or equal. For lighter loads, inserts shall be Unistrut P-3200 series, or equal. The preformed channel members shall be 1-5/8-inch by 1-3/8-inch with a 12-gauge (.105 inch) material thickness. Anchors shall be at 4-inch on center maximum, and extend into concrete a minimum of 2-3/4-inch. End caps and/or end cap anchors shall be provided to prevent concrete seepage into channels. All channels shall have a pre-galvanized finish, and all accessories shall be electro-galvanized. Insert shall not be overloaded.

4. Vertical piping shall be supported at base by hanger placed in horizontal line near riser, or by base fitting set on pedestal or foundation. Risers shall be laterally supported at intermediate points with riser clamps with two-point bearing as required to make rigid. Riser clamps shall be wrought steel, with extension lugs, bolt, and nuts; Anvill Figure 261, or equal. Offset pipe clamps, Anvill Figure 103, or equal, may also be used. Use only in unfinished areas where approved by the Engineer.

5. Unless otherwise noted, hangers shall be as follows:

   a. Uninsulated piping 2-inch and smaller, Anvill Figure 97, or equal malleable iron adjustable nut and steel band.

   b. Insulated piping, Anvill Figure 260, Elcen, or equal, clevis hangers. An insulation protection shield, Anvill Figure 167, or equal, shall be installed over the insulation in 180-degree segment, minimum 12-inch long. The shield shall be galvanized steel and shall vary in thickness from 18-gauge to 12-gauge, according to pipe size, as required to prevent crushing of the insulation. Anchors and guides shall be installed as required. Where roller supports are required due to expansion or contraction, Anvill

Figure 171 roller hangers, Anvill Figure 175 roller chairs, Anvill Figure 271 pipe roll stands, or equal shall be used.

6. Trapeze Hangers and Brackets:

   a. Where several pipes occur at the same elevation, trapeze type hangers or other equivalent types may be used.

   b. For heavier loads, trapeze hangers shall be structural steel channels suspended from threaded rods. Channels shall be galvanized and sized for specific loads. For 12-inch piping and larger, short pieces of angle (1/4-inch minimum thickness) shall be welded to the channel such that pipe circumference will be supported at 3 points approximately 30 degrees apart. Fabricated saddles supporting a 60-degree minimum segment of the pipe may also be used. Standard black carbon steel "U"-bolts, Anvill Figure 137, or equal, shall be used to secure piping up to 36-inch diameter to structural channels. For lighter loads, trapeze hangers shall be preformed channels. Channel members shall be 1-5/8-inch by 1-5/8-inch with a 12-gauge (.105) material thickness. They shall be Unistrut Series P-1000, or equal, with a pre-galvanized finish. All fittings, spring nuts, nuts, and bolts shall be electrogalvanized. Steel threaded rod hangers shall be galvanized.

   c. Brackets shall be Anvill Figure 195, or equal, as required for weight of pipe. Brackets for use with preformed Unistrut or equal channels shall be fabricated from 12-gauge material, compatible with the 1-5/8-inch square channel members. Unistrut or equal brackets shall be galvanized. All fabricated steel brackets used to support piping in or above tanks, channels, and flumes shall be hot dip galvanized after fabrication and all fasteners shall be galvanized.

   d. The following general rules shall be followed for attachments:

      1) Uninsulated steel piping, use Unistrut Series P-1109 through P-1126, or equal clamps.

      2) Insulated piping 2-inch and smaller, use Anvill Figure 167, 18-gauge galvanized steel shield over the insulation, in 180-degree segments minimum 12-inch long with Anvill Figure 271, or equal, clamps.

      3) Insulated piping 2-1/2-inch and larger, use a protection saddle, Anvill Figure 160 through 166, or equal, with Anvill Figure 271, or equal, roller supports.

7. In tunnels, pipe galleries, and where piping is racked on multiple hangers, supported with the use of prefabricated structural support channels, the piping attachments shall be as specified for Trapeze Hangers.

D. Anchorage shall be provided to resist thrust due to temperature changes, changes in diameter or direction, or dead ending. Anchors shall be located as required to force expansion and contraction movement to occur at expansion joints, loops or elbows, and as required to prevent excessive bending stresses and opening of mechanical couplings.

Anchors shall be suitable for the location of installation and shall be designed to withstand not less than five times the anchor load. Vertical pipes shall be anchored by means of clamps welded around pipes and secured to wall or floor construction. Anchorage for temperature changes shall be centered between elbows and mechanical joints used as expansion joints. Anchorage for bellow type expansion joints may be located adjacent to the joint.

1. Pipe guides shall be provided adjacent to bellows type expansion joints. Guides shall be placed on both sides of expansion joints except where anchors are adjacent to the joint. Unless otherwise indicated on the drawings, one guide shall be within four pipe diameters from the joining and a second guide within 14 pipe diameters from the first guide. Pipe supports shall allow adequate movement; pipe guides shall not be used for support. Guide and spider shall be of sufficient size to clear pipe insulation and long enough to prevent overtravel of spider and cylinder. Pipe guides shall be Anvill Figure 255, or equal, and shall be installed as recommended by the manufacturer.

2. Unless closer spacing is indicated on the drawings, the maximum spacing for pipe supports and expansion joints shall be:

| Type of Pipe | Pipe Support Max. Spacing, ft | Max Run Without Expansion Joint, Loop, or Bend, Ft | Expansion Joint Max. Spacing, ft | Type of Expansion Joints |
|---|---|---|---|---|
| Steel for hot water heating | | | | |
| 1-1/4-inch and smaller | 7 | 30 | 100 | Note 1 |
| 1-1/2- to 4-inch | 10 | 30 | 100 | Note 1 |
| Over 4-inch | 15 | 30 | 100 | Note 1 |
| Steel for other services | | | | |
| 1-1/4-inch and smaller | 7 | 30 | 100 | Note 1 |
| 1-1/2- to 4-inch | 10 | 30 | 100 | Note 1 |
| Over 4-inch | 15 | 80 | 80 | Mechanical Couplings |

Notes:

1. Expansion joint fittings as specified in the applicable miscellaneous piping section.
2. Hanger and bracket spacing may be increased where PVC pipe is provided continuous support.
3. At least two properly padded supports for each pipe section.
4. At least one support for each pipe section.

E. Pipe expansion joints shall be installed within 5-feet of all structural isolation or expansion joints. Expansion joints shall be as specified in the appropriate Section of this Contract, and submitted for approval.

F. Expansion Loops - Where fabricated expansion loops are shown on the drawings or deemed by the Contractor to control the system, expansion loops shall be designed by the Contractor and submitted for approval.

G. Use correct size hanger to allow for increased diameters of line caused by pipe covering. The Contractor will not be allowed to cut or reduce specified covering to allow application of hangers, unless otherwise specified.

H. Galvanic Protection - A dielectric material shall be placed between pipe and supports when dissimilar metals are used. A flexible elastomer material, Unistrut unicushion P-2600, or equal, may be used. A thermoplastic elastomer cushion, the Unistrut Cush-A-Clamp or equal, may also be used. In general, if galvanized supports are used, all accessories shall be galvanized. If carbon steel supports are used, all accessories shall be carbon steel.

I. Support mechanical coupling pipe at each joint.

J. Other means of pipe supports not be used unless approved by the Engineer.

K. Pipe supports shown on the Drawings shall be provided and do not relieve the Contractor of any of the requirements in this Section.

## PART 3 EXECUTION

## PART 4 SPECIAL PROVISIONS

### 4.01 SUPPORT MATERIAL SCHEDULE

A. Exterior Refrigerant Piping – All exterior supports shall be 304 stainless steel.

B. Mechanical Room Refrigerant Piping – Carbon Steel.

END OF SECTION

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**SECTION 15075**
**IDENTIFICATION FOR HVAC/PLUMBING PIPING AND EQUIPMENT**

## PART 1 GENERAL

### 1.01 SCOPE

A. Work Included:

1. Nameplates.
2. Tags.
3. Stencils.
4. Pipe markers.

### 1.02 REFERENCES

A. American Society of Mechanical Engineers:

1. ASME A13.1 – Scheme for the Identification of Piping Systems.

### 1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop drawings for review:
   a. Product Data: Submit manufacturers catalog literature for each product required.
   b. Shop Drawings: Submit list of wording, symbols, letter size, and color coding for mechanical identification and valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
   c. Samples: Submit two samples of each type of identification device.
2. Information for the record:
   a. Manufacturer's Installation Instructions: Indicate installation instructions, special procedures, and installation.

### 1.04 QUALITY ASSURANCE

A. Conform to ASME A13.1 for color scheme for identification of piping systems and accessories.

### 1.05 PROJECT REQUIREMENTS

A. Use plastic nameplates where in-service surface temperature will not exceed 150 degrees F.

B. Use metal nameplates where in-service surface temperature will exceed 150 degrees F.

## PART 2 PRODUCTS

### 2.01 NAMEPLATES

A. Manufacturers:

1. W.H. Brady Co., Signmark Division.
2. Seton Name Plate Co.
3. Or equal.

B. Plastic Nameplates:

1. Material: Laminated, three-layer plastic with engraved black letters on white background; satin finish with beveled edges.
2. Minimum Size: 4 inches by 1-1/2 inches.
3. Provide each plate with two mounting holes and 3/8-inch No. 3 round head stainless steel screws. Provide adhesive for mounting nameplates where screws are not practical.

### 2.02 TAGS

A. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2-inch diameter with smooth edges.

B. Plastic Tags: Laminated, three-layer plastic with engraved black letters on white background. Tag size minimum of 1-1/2 diameter.

C. Tag Chart: Typewritten letter size list of applied tags and location plastic laminated.

### 2.03 STENCILS

A. Stencils: With clean cut symbols and letters of following size:

1. Up to 2 inches Outside Diameter of Insulation or Pipe: 1/2-inch-high letters.
2. 2-1/2 to 6 inches Outside Diameter of Insulation or Pipe: 1-inch-high letters.
3. Over 6 inches Outside Diameter of Insulation or Pipe: 1-3/4-inch-high letters.
4. Ductwork and Equipment: 1-3/4-inch-high letters.

B. Stencil Paint: Semi-gloss enamel, colors conforming to ASME A13.1.

### 2.04 PIPE MARKERS

A. Color and Lettering: Conform to ASME A13.1.

B. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, performed to fit around pipe or pipe covering. Larger sizes may have maximum sheet size with spring fastener.

C. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.

## PART 3 EXECUTION

### 3.01 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

B. Prepare surfaces in accordance with Section 09900 for stencil painting.

### 3.02 INSTALLATION

A. Apply stencil painting in accordance with Section 09900.

B. Install identifying devices after completion of coverings and paintings.

C. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive.

D. Install labels with sufficient adhesive for permanent adhesion and seal with clear lacquer. For unfinished canvas covering, apply paint primer before applying labels.

E. Install tags using corrosion resistant chain. Number tags consecutively by location.

F. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.

G. For plumbing items, identify water heaters, pumps, tanks, and water treatment devices with plastic nameplates. Identify in-line pumps and other small devices with tags.

H. For HVAC items, identify all equipment with plastic nameplates. Identify in-line pumps and other small devices with tags.

I. Identify control panels, major control components, and thermostats on the outside of panels with plastic panels. Tag automatic controls, instruments, and relays. Key to control schematic.

J. Identify valves in main branch piping with tags.

K. Identify piping, concealed or exposed, with plastic pipe markers, plastic tape pipe markers, or stenciled painting. Use tags on piping 3/4-inch diameter and smaller. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and tee, at each side of penetration of structure or enclosure, and at each obstruction.

L. Identify ductwork with plastic nameplates or stenciled painting. Identify with air handling unit identification number and area served. Locate identification at air handling unit, at each side of penetration of structure or enclosure, and at each obstruction.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

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**SECTION 15081**
**HVAC INSULATION**

## PART 1 GENERAL

### 1.01 SCOPE

A. Work Included:

1. HVAC piping insulation, jackets, and accessories.
2. HVAC ductwork insulation, jackets, and accessories.

B. This Section includes furnishing all materials, equipment, labor, and supervision to install insulation work including insulation, cements, mastics, adhesives, attachment pins, studs, or clips, covering, lagging, jackets, hardware, flashing, and finishes.

C. Work shall be complete, in full conformance with the material manufacturer's requirements and recommendations, applicable national standards, the National Insulation Contractors Association, National Commercial, and the Industrial Insulation Standards.

D. All insulation as applied shall meet or exceed the requirements of this Section or the applicable version of ASHRAE/IES Standard 90.1.

### 1.02 REFERENCES

A. ASTM International:

1. ASTM A240 – Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
2. ASTM B209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
3. ASTM C177 – Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
4. ASTM C195 – Standard Specification for Mineral Fiber Thermal Insulating Cement.
5. ASTM C209 – Standard Test Methods for Cellulosic Fiber Insulating Board.
6. ASTM C240 – Standard Test Methods of Testing Cellular Glass Insulation Block.
7. ASTM C303 – Standard Test Method for Dimensions and Density of Preformed Block and Board-Type Thermal Insulation.
8. ASTM C335 – Standard Test Method for Steady-State Heat Transfer Properties of Pipe Insulation.
9. ASTM C450 – Standard Practice for Fabrication of Thermal Insulating Fitting Covers for NPS Piping, and Vessel Lagging.

10. ASTM C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
11. ASTM C534 – Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form.
12. ASTM C547 – Standard Specification for Mineral Fiber Pipe Insulation.
13. ASTM C552 – Standard Specification for Cellular Glass Thermal Insulation.
14. ASTM C585 – Standard Practice for Inner and Outer Diameters of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing (NPS System).
15. ASTM C1071 – Standard Specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material).
16. ASTM C1136 – Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation.
17. ASTM C1290 – Standard Specification for Flexible Fibrous Glass Blanket Insulation Used to Externally Insulate HVAC Ducts.
18. ASTM D1622 – Standard Test Method for Apparent Density of Rigid Cellular Plastics.
19. ASTM D1667 – Standard Specification for Flexible Cellular Materials – Poly (Vinyl Chloride) Foam (Closed-Cell).
20. ASTM D1785 – Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedule 40, 80, and 120.
21. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
22. ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials.

## 1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop drawings for review:
    a. Product Data: Submit manufacturers published literature indicating product description, thermal characteristics, list of materials and thickness for each service, and location. Include the method of fastening.
2. Information for the record:
    a. Manufacturer's Installation Instructions: Submit manufacturers published literature indicating proper installation procedures.
    b. Substantiation of vendor compliance with codes, standards, or test methods noted herein.

## 1.04 QUALITY ASSURANCE

A. Test pipe insulation for maximum flame spread index of 25 and maximum smoke developed index of not exceeding 50 in accordance with ASTM E84.

B. Pipe insulation manufactured in accordance with ASTM C585 for inner and outer diameters.

C. Factory fabricated fitting covers manufactured in accordance with ASTM C450.

D. Duct Insulation, Coverings, and Linings: Maximum 25/50 flame spread/smoke developed index, when tested in accordance with ASTM E84, using specimen procedures and mounting procedures of ASTM E2231.

E. Manufacturer: Company specializing in manufacturing products specified in this section with a minimum three years documented experience.

F. Applicator: Company specializing in performing Work in this section with minimum three years documented experience.

## 1.05 DELIVERY, STORAGE, AND HANDLING

A. In accordance with the requirements of Section 01350 concerning transporting, handling, storing, and protecting products.

B. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.

C. Protect insulation form weather and construction traffic, dirt, water, chemical, and damage, by storing in original wrapping.

## 1.06 ENVIRONMENTAL REQUIREMENTS

A. In accordance with the requirements of Section 01350 concerning environmental conditions affecting products on site.

B. Install insulation only when ambient temperature and humidity conditions are within range recommended by manufacturer.

C. Maintain temperature before, during, and after installation for minimum period of 24 hours.

# PART 2 PRODUCTS

## 2.01 GENERAL

A. Materials furnished under this specification shall be standard, catalogued products, new and commercially available, suitable for service requiring high performance and reliability with low maintenance, and free of all defects.

B. Materials include insulation materials, accessories (staples, bands, mesh, wire, clips, pins, tape, anchors, corner angles, and similar recommended accessories) and compounds (cements, adhesives, coatings, sealers, protective finishes, and similar items recommended for the applications indicated).

C. The Contractor, unless clearly otherwise stated, shall supply materials which meet the owner's requirements with respect to the design criteria, thermal conductivity, and standards.

D. The Contractor shall warrant that materials furnished and installed be free of defects for a period of one year from the time the system is completed.

E. If a defect occurs in materials, workmanship, or application within the stated time, the Contractor shall promptly repair or replace the defect. Damages caused by others shall be repaired at the expense of the damaging party.

F. Specified components of the insulation system, including facings, mastics, and adhesives should have a fire hazard rating not to exceed 25 for flame spread, and 50 smoke developed, as tested under ASTM E84.

G. All accessories and materials (i.e. coatings, adhesives, sealers, etc.) are to be shipped to the job site in marked, unopened containers as received from the manufacturer.

H. Provide and install insulation, cements, mastics, adhesives, covering, lagging, flashing, and finishes in full conformance with the material manufacturer's requirements and the recommendations, applicable national standards, the National Insulation Contractors Association, and the Industrial Insulations Standards.

## 2.02 PIPE INSULATION

A. Glass Fiber Insulation:

1. Manufacturers:
    a. Owens Corning Fiberglass, SSL II.
    b. Johns Manville Micro-Lok.
    c. Knauf Fiber Glass Pipe Insulation.
    d. Or equal.
2. Insulation: ASTM C547; rigid molded glass fiber, non-combustible.
    a. Thermal Conductivity (k-Value): ASTM C335, 0.24 at 75 degrees F.
    b. Operating Temperature Range: 0 to 850 degrees F.
    c. Maximum Moisture Absorption: 0.2 percent by volume.
3. Vapor Barrier Jacket: ASTM C1136, Type II, factory applied reinforced foil kraft with self-sealing adhesive with longitudinal laps and butt strips.
    a. Moisture Vapor Transmission: ASTM E96; 0.02 perm inches.
4. Jacket Temperature Limit: Minus 20 to 150 degrees F.

B. Flexible Cellular Foam Insulation:

1. Manufacturers:
    a. Armacel, LLC; Armaflex.
    b. Rubatex.

c. Or equal.

2. Insulation: ASTM C534 Grade 1; flexible, cellular elastomeric, Type I Molded or Type II Sheet.

a. Thermal Conductivity (k-Value): ASTM C177 or C518; maximum 0.28 at 75 degrees F.

b. Operating Temperature Range: Minus 297 to 220 degrees F.

c. Water Absorption: ASTM C209; 0.2 percent for molded or sheet by volume.

d. Moisture Vapor Transmission: ASTM E96; maximum 0.08 perm inches.

e. Connection: Water-proof vapor barrier adhesive.

f. Density: ASTM D1622 or D1667; 3.0 to 6.0 pounds per square foot.

## 2.03 PIPE INSULATION JACKETS

A. Aluminum Pipe Jacket:

1. Manufacturers:

a. ITW Pabco/Childers.

b. Or equal.

2. ASTM B209, aluminum alloy 3003 or 3015 with H-14 temper.

3. Thickness:

| Outer Insulation Diameter (Inch) | Minimum Aluminum Jacket Thickness (Inch) | |
|---|---|---|
| | Rigid Insulation | Non-Rigid Insulation |
| ≤ 8 | 0.016 | 0.016 |
| Over 8 thru 11 | 0.016 | 0.020 |
| Over 11 thru 24 | 0.016 | 0.024 |
| Over 24 thru 36 | 0.020 | 0.032 |
| > 36 | 0.024 | 0.040 |

4. Finish: Smooth.

5. Joining: Longitudinal slip joints and 2-inch laps.

6. Fittings: 0.016-inch-thick die shaped fitting covers with factory attached protective liner.

7. Metal Jacket Bands: 3/4-inch wide, 0.020-inch-thick stainless steel.

## 2.04 PIPE INSULATION ACCESSORIES

A. Vapor Retarder Lap Adhesive: Compatible with insulation.

B. Piping 1-1/2 Inches Diameter and Smaller: Galvanized steel insulation protection shield. MSS SP-69, Type 40. Length based on pipe size and insulation thickness.

C. Piping 2 Inches Diameter and Larger: Wood insulation saddle, hard maple. Inserts length not less than 6 inches long, matching thickness and contour of adjoining insulation.

D. Closed Cell Elastomeric Insulation Pipe Hanger: Polyurethane insert with aluminum or stainless-steel jacket, single piece construction with self-adhesive closure. Thickness to match pipe insulation.

E. Insulating Cement: ASTM C195; hydraulic setting on mineral wool.

F. Adhesives: Compatible with insulation.

## 2.05 DUCTWORK INSULATION

A. Manufacturers:

1. Owens Corning.
2. Johns Manville.
3. Knauf Insulation, Inc.
4. Or equal.

B. Duct Liner:

1. Flexible:
    a. Thermal Conductivity (k-Value): 0.24 at 75 degrees F.
    b. ASTM C1071, Type I, flexible, glass fiber duct liner with coated air side.
    c. Density: 1.5 pound per cubic foot.
    d. Maximum Operating Temperature: 250 degrees F.
    e. Maximum Air Velocity: 6,000 feet per minute.
2. Rigid:
    a. Thermal Conductivity (k-Value): 0.23 at 75 degrees F.
    b. ASTM C1071, Type II, rigid, glass fiber duct liner with coated air side.
    c. Density: 3.0 pound per cubic foot.
    d. Maximum Operating Temperature: 250 degrees F.
    e. Maximum Air Velocity: 4,000 feet per minute.

C. Duct Wrap:

1. Rigid:
    a. Thermal Conductivity (k-Value): 0.23 at 75 degrees F.
    b. ASTM C612, Type IA or IB, rigid glass fiber, with factory applied reinforced aluminum foil facing meeting ASTM C1136, Type II.
    c. Density: 3.0 pound per cubic foot.
    d. Maximum Operating Temperature: 450 degrees F.

## 2.06 DUCTWORK INSULATION ACCESSORIES

A. Vapor Retarder Lap Adhesive: Compatible with insulation.

B. Linear Fasteners: Galvanized steel, aluminum, or stainless steel, self-adhesive, impact applied, or welded, with integral or press-on head.

C. Tie Wire: 0.048 stainless steel with twisted ends on maximum 12-inch centers.

D. Lagging Adhesive: Fire retardant type with maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

E. Impale Anchors: Galvanized steel, 12-gauge self-adhesive pad.

F. Adhesives: Compatible with insulation.

G. Membrane Adhesives: As recommended by membrane manufacturer.

# PART 3 EXECUTION

## 3.01 GENERAL

A. All insulation work shall be performed by skilled mechanics regularly engaged in the insulation trade.

B. The Contractor shall be responsible for coordination and cooperation with the Owner and other trades so that the installation is performed with minimum interference and conflict.

C. The final appearance of the insulation work shall be a neat, workmanlike and attractive insulation system.

D. Progressive testing of systems to be insulated shall have been completed, inspected, and approved by Owner's representative before insulation is applied.

E. Insulation shall not be applied until verification that piping and ductwork has been tested.

F. Insulation shall not be applied until all surfaces are clean, dry, free of dirt, dust, grease, frost, moisture, and other imperfections.

G. Suitable application temperature and conditions shall be provided by others.

H. Insulation shall be protected from moisture and weather during storage and installation. Applied insulation which has become wet shall be thoroughly dried before it is sealed or jacketed.

I. The Contractor shall not arc-weld brackets, clips, or other devices to ASME coded pressure vessels or piping. Insulation pins or studs shall be as specified and installed in accordance with acceptable standards.

J. Insulation, fabric, and jacketing shall be protected from mechanical damage during construction. Damage by the insulator shall be repaired without cost to the Owner.

K. Contractor is responsible for proper material storage at the Work site.

L. Work performed prior to receipt of approved documents or submittals, which later proves to be incorrect or inappropriate, shall be promptly replaced by the Contractor without cost to the purchaser.

M. Insulation shall not be installed until adequate access and clearances at control mechanisms, dampers, sleeves, columns, and walls have been provided.

N. All insulation at handholes, access doors, or other openings, and adjacent to flanges and valves shall be neatly finished where exposed to view.

O. Where insulated pipes or ducts pass through sleeves or openings, the full specified thickness of the insulation shall pass through the sleeve or opening.

P. Vapor barriers shall be continuous through sleeves, hangers, etc. If pierced, vapor barriers shall be covered and suitably resealed.

**3.02 INSTALLATION - PIPING**

A. Piping exposed to views in finished spaces, locate insulation and cover seams in least visible locations.

B. Continue insulation through penetrations of building assemblies or portions of assemblies having fire resistance rating of one hour or less. Provide intumescent firestopping with continuing insulation through assembly. Finish at supports, protrusions, and interruptions.

C. Piping Systems Conveying Fluids Below Ambient Temperature:

1. Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.

2. Furnish factory-applied or field-applied vapor retarder jackets. Secure factory-applied jackets with pressure sensitive adhesive self-sealing longitudinal laps and butt strips. Secure field-applied jackets with outward clinch expanding staples and seal staple penetrations with vapor retarder mastic.

3. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with PVC fitting covers.

D. Piping Systems Conveying Fluids Above Ambient Temperature:

1. Furnish factory-applied or field-applied standard jackets. Secure with outward clinch expanding staples or pressure sensitive adhesive system on standard factory-applied jacket and butt strips or both.

2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with PVC fitting covers.

3. For hot piping conveying fluids 140 degrees F or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation at such locations.

4. For hot piping conveying fluids over 140 degrees F, insulate flanges and unions at equipment.

E. Inserts and Shields:

1. Piping 1-1/2 inches Diameter and Smaller: Install galvanized steel shield between pipe hanger and insulation.

2. Piping 2 inches Diameter and Larger: Install insert between support shield and piping and under finish jacket.

a. Insert Configuration: Minimum 6 inches long, of thickness and contour matching adjoining insulation; may be factory fabricated.

b. Insert Material: Compression resistant insulating material suitable for planned temperature range and service.

3. Piping Supported by Roller Type Hangers: Install galvanized steel shield between roller inserts.

F. Insulation Terminating Points:

1. Coil Branch piping 1 inch and Smaller: Terminate hot water piping at union upstream of the coil control valve.

2. Condensate Piping: Insulate entire piping system and components to prevent condensation.

G. Pipe exposed in Mechanical Room or finished spaces less than 10 feet above finished floor, finish with PVC jacket and fitting covers.

H. Piping Exterior to Building: Provide vapor retarder jacket. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor retarder cement. Cover with aluminum or stainless-steel jacket with seams located at 3 or 9 o'clock position on side of horizontal piping with overlap facing down to shed water or on bottom side of horizontal piping.

**3.03 INSTALLATION-DUCTWORK**

A. Duct dimensions indicated on Drawings are finished inside dimensions.

B. Insulated ductwork conveying air below ambient temperature:

1. Provide insulation with vapor retarder jackets.

2. Finish with tape and vapor retarder jacket.

3. Continue insulation through the walls, sleeves, hangers, and other duct penetrations.

4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.

C. Insulated ductwork conveying air above ambient temperature:

1. Provide with or without standard vapor retarder jacket.

2. Insulate fittings and joints. Where service access is required, bevel and seal ends of insulation.

D. Ductwork exposed in Mechanical Rooms or finished spaces below ten feet above finished floor, finish with an aluminum jacket to protect insulation.

E. Duct Liner:

1. Adhere insulation with adhesive for 100 percent coverage.

2. Secure insulation with mechanical liner fasteners. Comply with SMACNA Standards for spacing.

3. Seal and smooth joints. Seal and coat transverse joints.

4. Seal liner surface penetrations with adhesive.

5. Cut insulation for tight overlapped corner joints. Support top pieces of liner at edges with side pieces.

## 3.04 OWNER'S ACCEPTANCE

A. All materials, accessories, and methods of installation and fabrication are subject to the Owner's inspection and approval during any phase of the Work.

## 3.05 PAINTING

A. All plumbing pipe, equipment, tank insulation shall be painted as required by Section 09900.

B. Pittcote 404 shall be installed by this Contractor with color selection by Owner.

## 3.06 PIPING INSULATION SCHEDULE

| Pipe Systems | Fluid Operating Temperature Range (Degrees F) | Pipe Size (Inch) | Type of Insulation | Thickness (Inch) | Jacket |
|---|---|---|---|---|---|
| Hot Water Supply and Return | 141 - 200 | 1-1/4 and Smaller | Fiberglass | 1.5 | None |
| | | 1-1/2 and Larger | Fiberglass | 2.0 | None |
| | 105 - 140 | 1-1/4 and Smaller | Fiberglass | 1.0 | None |
| | | 1-1/2 and Larger | Fiberglass | 1.5 | None |
| | | 1-1/2 and Larger | Fiberglass | 1.0 | None |
| Condensate Piping from Cooling Coils | All Temperatures | All Sizes | Cellular Elastomeric | 0.5 | None |
| Refrigerant Suction | All Temperatures | All Sizes | Cellular Elastomeric | 0.5 | None |
| Refrigerant Hot Gas | All Temperatures | All Sizes | Cellular Elastomeric | 0.5 | None |

## 3.07 DUCTWORK INSULATION SCHEDULE

| Ductwork System | Type Of Insulation | Thickness (Inch) | Jacket |
|---|---|---|---|
| Outside Air | Duct Wrap Rigid Fiberglass | 2.0 | None |

| Ductwork System | Type Of Insulation | Thickness (Inch) | Jacket |
|---|---|---|---|
| Supply and Return Ducts (Externally Insulated Exposed) | Duct Wrap Rigid Fiberglass | 1.0 | None |

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

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**SECTION 15120**
**HYDRONIC PIPING SPECIALTIES**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes furnishing all materials, equipment, labor, and supervision related to hydronic specialties necessary for the completion of the Work in accordance with the Contract Documents.

### 1.02 PERFORMANCE REQUIRMENTS

A. Flexible Connectors: Provide at or near pumps or motorized where piping configuration does not absorb vibration.

### 1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

   a. The Contractor shall indicate all variances from the requirements of the Contract Documents.

   b. Manufacturer's data indicating use, operating range, total range, accuracy, and location for manufactured components.

   c. Submit product description, model, dimensions, component sizes, rough-in requirements, service sizes, and finishes.

   d. Submit schedule indicating manufacturer, model number, size, location, rated capacity, load served, and features for each piping specialty.

   e. Include electrical characteristics and connection requirements.

2. Information for the Record:

   a. Operation and maintenance manual. Submit installation instructions, servicing requirements, assembly views, lubrication instructions, and replacement parts list.

### 1.04 ELECTRICAL EQUIPMENT REQUIREMENTS

A. All equipment shall be powered by electrically and wired as required in Division 16.

## 1.05 PROTECTION FROM DAMAGE

A. Delivery, Handling, and Storage:

1. Material delivery, handling, and storage shall meet the requirements of Section 01350.

2. All hydronic specialties shall be accepted on site in factory packaging. Provide temporary protective coating on cast iron and steel valves. Inspect for damage.

3. Protect systems from entry of foreign materials by temporary covers, caps, and closures, completing sections of the work, and isolating parts of completed system until installation.

B. After Installation:

1. Protect installed hydronic specialties from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

2. Suitable covers shall be placed to protect against any specialties damage after it is installed and during the final days of construction.

3. Before acceptance, all covers and protective material shall be removed and the specialties cleaned and ready for use.

## 1.06 EXTRA MATERIALS

A. Provide one extra 55-gallon drum of propylene glycol.

# PART 2 PRODUCTS

## 2.01 PRESSURE GAUGES

A. Manufacturers: H.O. Trerice Co., Model 450; Ametek U.S. Division; Ashcroft, Division of Dresser Industries, or equal.

B. Description: ASME B40.1 Grade 2A, liquid filled, with bourdon tube, rotary stainless steel geared movement, brass socket, front calibration adjustment, black scale on white background.

1. Fiberglass reinforced polypropylene case and threaded ring.

2. Window constructed of acrylic.

3. Bourdon tube constructed of phosphorous bronze.

4. 4-1/2” diameter aluminum dial face size with white background and black graduations and figures.

5. Mid-Scale Accuracy: - $\pm$ 1/2 percent accuracy full scale.

6. Scale in PSI, 0 to 60 psi specific range, 10 psi figure intervals, 0.5 psi minor divisions.

## 2.02 PRESSURE GAUGE TAPS

A. Connect pressure gauges with a pulsation dampeners upstream of a gauge cocks or needle valves.

B. Pulsation Dampener: Pressure snubbers, brass construction with 1/4-inch NPT connections, manufactured by Trerice, Series 872, or equal.

C. Gauge Cocks: Ball valve type with tee or lever handle, brass construction, for maximum 250 psig pressure, as manufactured by Trerice Series 865, or equal.

D. Needle Valves: Rising stem type with knurled dial or lever type handle, brass construction, as manufactured by Trerice Series 735, or equal.

## 2.03 THERMOMETERS

A. Dial Type Thermometers: 5-inch dial, bimetal type, with adjustable face, Trerice Model B856, Weiss Model 5VBM, Ashcroft 50AI60E, or equal, 20 to 240 degrees F range with thermometer supports.

B. Thermometer Supports:

1. Socket: Brass separable socket type for thermometer stems with or without extensions.

2. Flange: 3-inch outside diameter reversible flange, designed to fasten to sheet meatal air ducts, with brass perforated stem.

## 2.04 TEST PLUGS

A. Manufacturers: Sisco, Riverton, NJ; Autoflow; Griswold; Peterson; or equal.

B. 1/4-inch or 1/2-inch brass fitting and cap for receiving 1/8 inch outside diameter pressure or temperature probe with:

1. Neoprene core for temperatures up to 200 degrees F.

2. Nordel core for temperatures up to 350 degrees F.

3. Viton core for temperatures up to 400 degrees F.

C. Test kit shall consist of carrying case, internally padded, and fitted containing one 2-1/2-inch diameter pressure gage, two gage adapters with 1/8-inch probes, and one 1-/2-inch diameter dial thermometer.

## 2.05 FLEXIBLE CONNECTORS

A. Manufacturers: Mason Industries, Inc., Mercer Rubber Co., or equal.

B. Constructed of corrugated stainless steel inner hose with single layer of stainless-steel exterior braiding, minimum 9 inches in length, on all steel piping systems. Connectors shall be line size or as noted on the Drawings with ends as required based on the piping material or as noted on the Drawings.

## 2.06 AIR VENTS

A. Manufacturers: Bell & Gossett, Armstrong, Taco, or equal.

B. Manual Type: Short vertical sections 2-inch diameter pipe to form air chamber, with 1/8-inch brass needle valve at top of chamber.

C. Float Type:

1. Cast iron body and cover, float, bronze pitot valve mechanism suitable for system operating temperature and pressure; with isolating valve.

D. Washer Type: Brass with hydroscopic fiber discs, vent ports, adjustable cap for manual shut-off, and integral spring-loaded ball check valve.

## 2.07 STRAINERS

A. Manufacturers: Watts Series LF777 & 77F, Hoffman Specialty, Mueller, or equal.

B. Size 2-Inches and Under: Screwed brass, bronze, or iron body for 175 psig working pressure. Y pattern with 1/32-inch stainless steel perforated screen.

C. Size 2-1/2-Inches to 4 inches: Flanged iron body for 175 psig working pressure, Y pattern with 1/16-inch stainless steel perforated screen.

D. Size 5-Inches and Larger: Flanged iron body for 175 psig working pressure, basket pattern with 1/8-inch stainless steel perforated screen.

## 2.08 COMBINATION PUMP DISCHARGE VALVE

A. Manufacturers: Bell & Gossett, Armstrong, Taco, or equal.

B. Valves: Straight or angle pattern, flanged cast iron valve body with bolt on bonnet for 175 psig operating pressure, non-slam check valve with spring loaded bronze disc and seat, stainless steel stem, and calibrated adjustment permitting flow regulation.

## 2.09 MANUAL BALANCE VALVES

A. Manufacturers: Bell & Gossett Model CB, Armstrong, Taco, or equal.

B. Calibrated Balance Valve (1/2 Inch – 3 Inch): Valve body constructed of lead-free brass with ball valve constructed of Type 304 stainless steel. NPT threaded or ANSI 125 LB flanged end connections.

C. Calibrated Balance Valve (2-1/2 Inch – 4 Inch): Valve body constructed of cast iron rated for 175 psig working pressure with ball valve constructed of brass. NPT threaded or ANSI 125 LB flanged end connections.

D. Manual balance valves shall include the following:

1. Two pressure/temperature ports.

2. Drain valve port.

3. Calibrated nameplate with memory stop with position indicator from 0 to 100 percent.

4. Reduced port design providing velocity head recovery.

5. Temperature Range: -4 degrees F to 250 degrees F.

## 2.10 RELIEF VALVES

A. Manufacturers: Bell & Gossett, Armstrong, Taco, or equal.

B. Construction: Bronze body, Teflon seat, stainless steel stem and springs, automatic, direct pressure actuated capacities, ASME certified and labeled.

## 2.11 PRESSURE REDUCING VALVES

A. Manufacturers: Bell & Gossett Model B7, Armstrong, Taco, or equal.

B. Pressure reducing valves shall be diaphragm operated with brass body, low inlet pressure check valves and inlet strainer. The strainer must be easily removed without system shutdown. The valve seat, strainer, and stem must be removable and of non-corrosive material. 125 psig maximum working pressure. 12 psi set pressure.

## 2.12 GLYCOL FEED SYSTEM

A. Manufacturers: Neptune Model G-50-1, J.L Wingert Co., Budzar Industries, Inc., or equal.

B. Type: Automatic glycol feed package system consisting of a polyethylene tank with polyethylene lid/cover, carbon steel frame, NEMA 4X control panel, low level float switch, open motor bronze rotary pump with internal relief valve, pressure switch, relief valve, check valve, Schedule 80 PVC piping and vinyl braided hose.

C. Tank and Frame: Industrial grade 50 gallon polyethylene tank with a nominal wall thickness of 1/4-inch and a shoebox type lid. Tank frame constructed of carbon steel with bracing for piping and control panel. Tank frame shall include a 12-gage pump mount shelf and be coated with water-based enamel paint.

D. Pump: Close coupled bronze rotary gear pump with internal pressure relief valve. Open drip proof type pump motor wired to control panel.

1. Flow: 1.5 GPM.

2. Head: 100 PSI.

3. Motor (HP): 1/3.

4. Electrical (V/PH/HZ): 120/1/60.

E. Pressure Switch: Pressure switch prewired to the control panel to turn pump on and off based on rising and falling pressure settings.

1. Cut-In Pressure: 10-45 psi.

2. Cut-Out Pressure: 20-60 psi.

3. Adjustable Pressure Differential: 10-30 psi.

F. Control Panel: Polycarbonate NEMA 4X control panel of ample size for equipment needed and servicing of electrical components. All exterior components rated NEMA 4X and installed per manufacturers instructions. Wiring and wiring diagram shall be color coded for easy trouble shooting. All internal wiring shall be 16 gauge minimum. Controls are, but not limited to, main power switch and indicator light, pump hand/off/auto switch and indicator light, and red low level indicator light.

G. Pressure Relief Valve: Pressure relief valve constructed of bronze with a nitrile diaphragm.

H. Check Valve: Back flow check valve of soft seat design. Bronze construction with stainless steel spring and raised radius valve seat for positive seal installed on pump discharge piping.

I. Low Level Switch: Polypropylene low level float type switch interlocked with pump feed and low-level indicator. Low level stops all pump operations when level falls below the factory set point.

J. Accessories: Unit shall be provided with pre-piped PVC ball type shut-off valves on both the pump suction and discharge piping, cast iron Y-strainer on pump suction, and a 0-100 psi pressure gauge on pump discharge. Provide flexible connections on both the suction and discharge piping of the pump.

### 2.13 GLYCOL SOLUTION

A. Manufacturers: Dow Chemical Company, or equal.

B. Corrosion inhibited, propylene glycol and water solution mixed 50 percent glycol and 50 percent water, suitable for operating temperatures from -40 degrees F to 250 degrees F.

C. FDA approved.

D. Accessories shall include testing kit for determining glycol concentration.

## PART 3 EXECUTION

### 3.01 INSTALLATION – THERMOMETERS AND GAUGES

A. Install thermometers and gauges in accordance with manufacturer’s instructions.

B. Install one pressure gauge for each pump, locate taps before strainers and on suction and discharge of pump; pipe to gauge.

C. Install gauge taps in piping.

D. Install pressure gauges with pulsation dampers/pressure snubbers. Provide needle or ball valve to isolate each gauge. Extend nipples to allow clearance from insulation.

E. Install thermometers in piping systems in sockets in short couplings. Enlarge pipes smaller than 2-1/2 inches for installation of thermometer socket. Allow clearance from insulation.

F. Install thermometer sockets adjacent to controls system thermostat, transmitter, or sensor sockets.

G. Provide instruments with scale ranges selected according to service with largest appropriate scale.

H. Install gauges and thermometers in locations where they are easily read from normal operating level. Install vertical to 45 degrees of vertical.

I. Adjust gages and thermometers to final angle, clean windows and lenses, and calibrate to zero.

## 3.02 INSTALLATION – HYDRONIC PIPING SPECIALTIES

A. Install specialties in accordance with manufacturer's instructions.

B. Locate test plugs as indicated on the Drawings.

C. Install manual air vents at system high points and as indicated.

D. Provide valved drain and hose connection on strainer blow down connection.

E. Provide combination pump discharge valve on discharge side of centrifugal pumps where indicated.

F. Support pump fittings with floor-mounted pipe and flange supports.

G. Provide radiator valves on water inlet to terminal heating units such as radiation, unit heaters, and fan coil units.

H. Provide relief valves on pressure tanks, low pressure side of reducing valves, heat exchangers, and expansion tanks.

I. Select system relief valve capacity so that it is greater than make-up pressure reducing valve capacity. Set equipment relief valve capacity to exceed rating of connected equipment.

J. Pipe relief valve outlet to nearest floor drain.

K. Where one line vents several relief valves, make cross-sectional area equal to sum of individual vent areas.

L. Clean and flush glycol system before adding glycol solution.

M. Feed glycol solution to system through make-up line pressure regulator, venting system high points. Set to fill at 12 psig. Pressure system cold at 5 psig.

N. Perform tests determining strength of glycol and water solution and submit written test results.

## 3.03 TEMPORARY STRAINERS

A. Where strainers are not identified on the Drawings, the Contractor shall furnish a temporary cone strainer as shown on the Drawings. The strainer is to have 100 mesh lining. The installation shall include a spool piece as necessary for ease of removal. The strainer shall be installed and removed as noted herein.

B. If pressure gauges are not available as a part of the installation, then the Contractor is to provide and install the minimum number of temporary gauges necessary to monitor each part of the fluid process in order to identify the pressure drop across each filter.

Locations are to be approved by the Engineer. The system(s) are to be shut down, the strainer gaskets cleaned, and restarted until the system can operate for 4 to 8 hours as determined by the Engineer without having to stop and clean the strainer gasket. The Contractor may then remove the temporary strainer and install a new permanent gasket as specified.

## 3.04 ACCEPTANCE

A. The working temperature and pressure conditions shall be imposed on piping systems for a sufficient length of time to ensure that flanges and bolts or studs have reached a point of constant temperature and have attained such changes in dimensions as will take place, after which all flanged joints and fittings on all equipment shall be retightened by the Contractor.

B. Where system operating temperature is above 200 degrees F, joints shall be retightened after 200 hours of service at operating conditions.

## 3.05 FIELD QUALITY CONTROL

A. Test for strength of glycol and water solution and submit written test results.

## 3.06 CLEANING

A. Clean and flush glycol system before adding glycol solution.

B. Upon completion of installation, steam, condensate, hot water, and condenser water systems constructed of ferrous materials shall be thoroughly cleaned by circulating 10% caustic solution through systems for four hours after which systems shall be flushed out with clean water and repeated a second time.

C. Systems shall be washed out, as prescribed, a third time after operation for three weeks and repeated as many more times as may be necessary to remove all oil, dirt, and grease from systems.

D. Upon completion of installation of water-based systems constructed of copper and brass materials, the systems shall be thoroughly cleaned by circulating a non-corrosive chemical such as Mitco BL-5 furnished by Mitco Water Treatment of Grand Rapids, MI, 616-241-4684, or equal, partially drained and recharged, circulated for six hours, flushed until clear as required by the Vendor.

E. The system shall be refilled immediately with water and a corrosion inhibitor as prescribed by Mitco, or equal.

## 3.07 PROTECTION OF INSTALLED CONSTRUCTION

A. Do not install hydronic pressure gages until after systems are pressure tested.

## 3.08 MOUNTING AND ATTACHMENT

A. The Contractor shall provide all devices and materials such as expansion bolts, foundation bolts, screws, channels, angles, and other attaching means required to

fasten all equipment and materials to be installed on or in concrete bases or structures which are existing or provided under other sections of the Contract. Foundation bolts shall be set by using manufacturer's templates.

### 3.09 NUTS AND BOLTS

A. All nuts and bolts used under this Section shall be (Type 304 stainless steel or higher grade) as specified or shown on the Drawings.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

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# SECTION 15130
# HYDRONIC PUMPS

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes furnishing all materials, equipment, labor, and supervision related to HVAC centrifugal pumps and appurtenances necessary for the completion of the Work in accordance with the Contract Documents.

### 1.02 PERFORMANCE REQUIREMENTS

A. Provide pumps to operate at system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent or midpoint of published maximum efficiency curve.

B. Motors shall be UL approved and constructed to NEMA standards.

### 1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. The Contractor shall indicate all variances from the requirements of the Contract Documents.

b. Include certified pump curves showing performance characteristics with pump and system operating point plotted, weights, furnished specialties, and accessories.

c. Include NPSH curve when applicable.

d. Include electrical characteristics and connection requirements, wiring diagrams, manufacturer model number, materials of construction, dimensions, service sizes, and finishes.

2. Information for the Record:

a. Operation and maintenance manual. Submit installation instructions, servicing requirements, assembly views, lubrication instructions, and replacement parts list.

### 1.04 ELECTRICAL EQUIPMENT REQUIREMENTS

A. All equipment shall be powered by electrically and wired as required in Division 16.

## 1.05 PROTECTION FROM DAMAGE

A. Delivery, Handling, and Storage:

1. Material delivery, handling, and storage shall meet the requirements of Section 01350.

2. All pumps and appurtenances shall be accepted on site in factory packaging. Inspect for damage.

3. Protect systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts to be completed.

B. After Installation:

1. Protect installed pumps from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

2. Suitable covers shall be placed to protect against any specialties damage after it is installed and during the final days of construction.

3. Before acceptance, all covers and protective material shall be removed and the specialties cleaned and ready for use.

# PART 2 PRODUCTS

## 2.01 VERTICAL IN-LINE PUMPS

A. Manufacturers: Bell & Gossett, Series e-80, Armstrong, Taco, or equal.

B. Type: Vertical, single-stage, close-coupled, radially or horizontally split casing, for in-line mounting, for 175 psig maximum working pressure.

C. Casing: Cast iron, with suction and discharge gage port, drain plug, flanged suction and discharge, provisions for internal flushing of seal.

D. Impeller: Bronze, fully enclosed, keyed directly to motor shaft or extension.

E. Shaft: Carbon steel with stainless steel impeller cap screw or nut and bronze sleeve.

F. Shaft Sleeve: Aluminum bronze.

G. Seal: Carbon rotating against a stationary ceramic seat, 225 degrees F maximum continuous operating temperature.

H. Electrical Characteristics:

1. Motors: 1750 rpm unless indicated otherwise.

2. Wiring Terminations: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Enclose terminal lugs in terminal box sized to NFPA 70.

# PART 3 EXECUTION

## 3.01 PREPARATON

A. Verify that electric power is available and of the correct characteristics.

## 3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Provide pumps to operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.

C. Install long radius reducing elbows or reducers between pump and piping. Support piping adjacent to pump so no weight is carried on pump casings.

D. Install pumps on vibration isolators.

E. Install flexible connectors at or near pumps where piping configuration does not absorb vibration.

F. Provide line sized shut-off valve and strainer on pump suction, and line sized shut-off valve and combination pump discharge valve on pump discharge.

G. Decrease from line size with long radius reducing elbows or reducers. Support piping adjacent to pump so no weight is carried on pump casings. Provide supports under elbows on pump suction and discharge line sizes 4 inches and larger.

H. Provide air cock and drain connection on horizontal pump casings.

I. Provide drains for seals.

J. Provide access space around pumps for service. Provide no less than minimum as instructed by manufacturer.

K. Lubricate pumps before start-up.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

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**SECTION 15180**
**HYDRONIC PIPING**

## PART 1 GENERAL

### 1.01 SUMMARY

A. Section Includes:

1. Heating water and glycol piping, above ground.
2. Equipment drains and overflows.
3. Unions and flanges.
4. Pipe hangers and supports.
5. Valves.
6. Bedding and cover materials.

### 1.02 REFERENCES

A. American Society of Mechanical Engineers:

1. ASME B16.3 – Malleable Iron Threaded Fittings.
2. ASME B16.4 – Gray Iron Threaded Fittings.
3. ASME B16.18 – Cast Copper Alloy Solder Joint Pressure Fittings.
4. ASME B16.22 – Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.
5. ASME B31.9 – Building Services Piping.
6. ASME Section IX – Boiler and Pressure Vessel Code – Welding and Brazing Qualifications.

B. ASTM International:

1. ASTM A53 – Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
2. ASTM A234 - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service.
3. ASTM B32 - Standard Specification for Solder Metal.
4. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
5. ASTM F708 – Standard Practice for Design and Installation of Rigid Pipe Hangers.

C. American Welding Society:

1. AWS A5.8 - Specification for Filler Metals for Brazing and Braze Welding.
2. AWS D1.1 - Structural Welding Code - Steel.

D. Manufacturers Standardization Society of the Valve and Fittings Industry:

1. MSS SP 58 - Pipe Hangers and Supports - Materials, Design and Manufacturer.
2. MSS SP 67 - Butterfly Valves.
3. MSS SP 69 - Pipe Hangers and Supports - Selection and Application.
4. MSS SP 70 - Cast Iron Gate Valves, Flanged and Threaded Ends.
5. MSS SP 71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.
6. MSS SP 78 - Cast Iron Plug Valves, Flanged and Threaded Ends.
7. MSS SP 80 - Bronze Gate, Globe, Angle and Check Valves.
8. MSS SP 85 - Cast Iron Globe & Angle Valves, Flanged and Threaded.
9. MSS SP 89 - Pipe Hangers and Supports - Fabrication and Installation Practices.
10. MSS SP 110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.

**1.03 SYSTEM DESCRIPTION**

A. Where more than one piping system material is specified, provide compatible system components and joints. Use non-conducting dielectric connections whenever jointing dissimilar metals in open systems.

B. Provide flanges, union, and couplings at locations requiring servicing. Use unions, flanges, and couplings downstream of valves and at equipment or apparatus connections. Do not use direct welded or threaded connections to valves, equipment, or other apparatus.

C. Provide pipe hangers and supports in accordance with ASME B31.9, MSS SP 58, MSS SP 69, and MSS SP 89.

D. Use ball or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers.

E. Use globe, ball or butterfly valves for throttling, bypass, or manual flow control services.

F. Use plug valves for throttling service. Use non-lubricated plug valves only when shut-off or isolating valves are also provided.

G. Use butterfly valves in heating water systems interchangeably with gate and globe valves.

H. Use lug end butterfly valves to isolate equipment.

I. Use ¾-inch ball valves with cap for drains at main shut-off valves, low points of piping, bases of vertical risers, and at equipment. Pipe to nearest floor drain.

J. Flexible Connectors: Use on both the suction and discharge piping at pumps or motor driven equipment where piping configuration does not absorb vibration.

## 1.04 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Indicate schematic layout of heating piping system, including equipment, critical dimensions, and sizes.

b. Product Data: Submit manufacturers published literature data on pipe materials, fittings, and accessories.

2. Product Data:

a. Piping: Submit data on pipe materials, fittings, and accessories. Submit manufacturers catalog information.

b. Valves: Submit manufacturers catalog information with valve data and ratings for each service.

c. Hangers and Supports: Submit manufacturers catalog information including load capacity.

3. Test Reports: Indicate results of heating piping system pressure test.

4. Manufacturer's Installation Instructions: Submit hanging and support methods, joining procedures and isolation.

5. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

6. Welders' Certificate: Include welders' certification of compliance with ASME Section IX.

B. Information for the record:

1. Manufacturer's Installation Instructions: Submit manufacturers published literature indicating proper installation procedures.

2. Substantiation of vendor compliance with codes, standards, or test methods noted herein.

## 1.05 QUALITY ASSURANCE

A. Perform Work in accordance with ASME B31.9 code for installation of piping systems and ASME Section IX for welding materials and procedures.

B. Perform Work in accordance with applicable authority and AWS D1.1 for welding hanger and support attachments to building structure.

## 1.06 DELIVERY, STORAGE, AND HANDLING

A. In accordance with the requirements of Section 01350 concerning transporting, handling, storing, and protecting products.

B. Accept valves on site in shipping containers with labeling in place. Inspect for damage.

C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

D. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the Work, and isolating parts of completed system.

### 1.07 ENVIRONMENTAL REQUIREMENTS

A. Do not install underground piping when bedding is wet or frozen.

### 1.08 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

### 1.09 COORDINATION

A. Coordinate trenching, excavating, bedding, backfilling of buried piping systems with requirements of Section 02200.

## PART 2 PRODUCTS

### 2.01 HEATING WATER AND GLYCOL PIPING, ABOVE GROUND

A. Steel Pipe: ASTM A53, Schedule 40, 0.375-inch wall for sizes 12 inch and larger, black.

1. Fittings: ASME B16.3, malleable iron or ASTM A234, forged steel welding type.
2. Joints: Threaded for pipe 2 inch and smaller; welded for pipe 2-1/2 inches and larger.

### 2.02 EQUIPMENT DRAINS AND OVERFLOWS

A. Steel Pipe: ASTM A53 Schedule 40, galvanized.

1. Fittings: ASME B16.3, malleable iron or ASME B16.4, cast iron.
2. Joints: Threaded for pipe 2 inch and smaller; flanged for pipe 2-1/2 inches and larger.

B. Copper Tubing: ASTM B88, Type DWV, K, L, or M drawn.

1. Fittings: ASME B16.18, cast brass, or ASME B16.22 solder wrought copper.
2. Joints: Solder, lead free, ASTM B32, 95-5 tin-antimony, or tin and silver, with melting range 430 to 535 degrees F.

### 2.03 UNIONS AND FLANGES

A. Unions for Pipe 2 inches and Smaller:

1. Ferrous Piping: Class 150, malleable iron, threaded.
2. Copper Piping: Class 150, bronze unions with soldered or brazed joints.

3. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

B. Flanges for Pipe 2-1/2 inches and Larger:

1. Ferrous Piping: Class 150, forged steel, slip-on flanges.

2. Copper Piping: Class 150, slip-on bronze flanges.

3. Gaskets: 1/16-inch-thick preformed neoprene gaskets.

## 2.04 BALL VALVES

A. Manufacturers: Nibco, Crane, Conbraco, or equal.

B. 2 inches and Smaller: MSS SP 110, Class 150, bronze, two-piece body, chrome plated bronze or type 316 stainless steel ball, full port, 5eflon seats, blow-out proof stem, solder or threaded ends, lever handle.

## 2.05 BUTTERFLY VALVES

A. Manufacturers: Nibco, Crane, Hammond, Milwaukee, or equal.

B. 2-1/2 inches and Larger: MSS SP 67, Class 150.

1. Body: Cast or ductile iron, wafer or lug ends, stainless steel stem, extended neck.

2. Disc: Nickel-plated ductile iron or stainless steel.

3. Seat: Resilient replaceable EPDM, or neoprene Viton.

4. Handle and Operator: 10 position lever handle. Furnish gear operators for valves 8 inches and larger, and chain-wheel operators for valves mounted over 8 feet above floor.

## 2.06 CHECK VALVES

A. Horizontal Swing Check Valves:

1. Manufacturers: Crane, Powell, Jenkins, or equal.

2. 2 inches and Smaller: MSS SP 80, Class 150, bronze body and cap, bronze seat, Buna-N disc, solder or threaded ends.

3. 2-1/2 inches and Larger: MSS SP 71, Class 125, cast iron body, bolted cap, bronze or cast-iron disc, renewable disc seal and seat, flanged ends.

B. Spring Loaded Check Valves:

1. Manufacturers: Crane, Powell, Jenkins, or equal.

2. 2 inches and Smaller: MSS SP 80, Class 250, bronze body, in-line spring lift check, silent closing, Buna-N disc, integral seat, solder or threaded ends.

3. 2-1/2 inches and Larger: MSS SP 71, Class 125, wafer style, cast iron body, bronze seat, center guided bronze disc, stainless steel spring and screws, flanged ends.

## 2.07 PIPE HANGERS AND SUPPORTS

A. Furnish materials in accordance with applicable standards.

B. Conform to ASME 31.9, ASTM F708, MSS SP 58, MSS SP 69, and MSS SP 89.

C. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron or carbon steel, adjustable swivel, split ring.

D. Hangers for Hot Pipe Sizes 2 to 4 inches: Carbon steel, adjustable, clevis.

E. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.

F. Multiple or Trapeze Hangers for Hot Pipe Sizes 6 inches and Larger: Steel channels with welded spacers and hanger rods, cast iron roll.

G. Wall Support for Pipe Sizes 3 inches and Smaller: Cast iron hooks.

H. Wall Support for Pipe Sizes 4 inches and Larger: Welded steel bracket and wrought steel clamp.

I. Vertical Support: Steel riser clamp.

J. Floor Support for Hot Pipe 4 inches and Smaller: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

K. Copper Pipe Support: Carbon steel rings, adjustable, copper plated.

L. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.

M. Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

# PART 3 EXECUTION

## 3.01 EXAMINATION

A. Verify excavations are to required grade, dry, and not over-excavated.

## 3.02 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare piping connections to equipment with flanges or unions.

D. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

E. After completion, fill, clean, and treat systems.

## 3.03 INSTALLATION – INSERTS

A. Provide inserts for placement in concrete forms.

B. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.

C. Provide hooked rod to concrete reinforcement section for inserts carrying pipe 4 inches and larger.

D. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.

E. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut flush with top of slab.

## 3.04 INSTALLATION – PIPE HANGERS AND SUPPORTS

A. Manufacturers: Clevis, Anvil, Empire, or equal.

B. Install in accordance with ASME B31.9, ASTM F708, and MSS SP 89.

C. Support horizontal piping as scheduled.

D. Install hangers to provide minimum 1/2-inch space between finished covering and adjacent work.

E. Place hangers within 12 inches of each horizontal elbow.

F. Use hangers with 1-1/2-inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.

G. Support vertical piping at every floor. Support riser piping independently of connected horizontal piping.

H. Where installing several pipes in parallel and at same elevation, provide multiple pipe hangers or trapeze hangers.

I. Provide copper plated hangers and supports for copper piping sheet lead packing between hanger or support and piping.

J. Prime coat exposed steel hangers and supports. Refer to Section 09900. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

K. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.

L. Install pipe hangers and supports in accordance with applicable standard.

## 3.05 INSTALLATION - ABOVE GROUND PIPING SYSTEMS

A. Install heating water piping in accordance with ASME B31.1 and ASME B31.9.

B. Install Work in accordance with applicable standards.

C. Route piping parallel to building structure and maintain gradient.

D. Install piping to conserve building space, and not interfere with use of space.

E. Group piping whenever practical at common elevations.

F. Sleeve pipe passing through partitions, walls and floors.

G. Install firestopping at fire rated construction perimeters and openings containing penetrating sleeves and piping. Refer to Section 07270.

H. Install pipe identification in accordance with Section 15075.

I. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

J. Provide access where valves and fittings are not exposed.

K. Slope hydronic piping and arrange systems to drain at low points. Use eccentric reducers to maintain top of pipe aligned.

L. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welds.

M. Prepare unfinished pipe, fittings, supports, and accessories, ready for finish painting. Refer to Section 09900.

N. Install valves with stems upright or horizontal, not inverted.

O. Insulate piping; refer to Section 15081.

**3.06 FIELD QUALITY CONTROL**

A. Test heating water and glycol piping system in accordance with ASME B31.9 and ASME B31.1.

**PART 4 SPECIAL PROVISIONS**

Not used.

END OF SECTION

**SECTION 15185**
**CHEMICAL WATER TREATMENT EQUIPMENT**

## PART 1 GENERAL

### 1.01 SCOPE

A. This section includes furnishing all materials, equipment, labor, and supervision related to the following:

1. System cleaner.
2. Closed system treatment (water).
3. Chemical feeder equipment including associated feeders, pumps, tanks, controls, meters and valves.
4. Test equipment.

B. The completion of the Work in accordance with the Contract Documents.

C. All Work performed under this Section shall comply and be in accordance with all approved trade practices and manufacturer's recommendations.

D. Additional equipment and installation requirements in Division 15 as included shall be provided by this Contract.

E. Provide and install all equipment specified within this Section.

F. Additional product requirements are specified in Section 01350.

### 1.02 REFERENCES

A. National Electrical Manufacturers Association:

1. NEMA 250 – Enclosures for Electrical Equipment (1000 Volts Maximum).

### 1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:
    a. Indicate system schematic, equipment locations, and controls schematics, electrical characteristics, and connection requirements.
2. Product Data:
    a. Submit chemical treatment materials, chemicals, and equipment including electrical characteristics and connection requirements.
3. Manufacturer's Installation Instructions: Submit placement of equipment in systems, piping configuration, and connection requirements.

4. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

5. Manufacturers Field Reports: Indicate start-up of treatment systems when completed and operating properly. Indicate analysis of system water after cleaning and after treatment.

B. Information for the Record:

1. Operation and Maintenance Data: Submit data on procedures, and treatment programs. Include step by step instructions on test procedures including target concentrations.

### 1.04 QUALITY ASSURANCE

A. Perform Work in accordance with State or Municipality of standard for addition of non-potable chemicals to building systems and for discharge to public sewers.

### 1.05 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience, and with service facilities within 100 miles of Project with water analysis laboratories and full-time service personnel.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience approved by manufacturer.

### 1.06 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

### 1.07 MAINTENANCE SERVICE AND MATERIALS

A. Furnish monthly technical service visits, for one year starting at Date of Substantial Completion, to perform field inspections and make water analysis on site. Detail findings in writing on proper practices, chemical treating requirements and corrective actions needed. Submit two copies of field service report after each visit.

B. Furnish laboratory and technical assistance services during this maintenance period.

C. Furnish on-site inspections of equipment during scheduled or emergency shutdown to properly evaluate success of water treatment program and make recommendations in writing based upon these inspections.

D. Furnish chemicals for treatment and testing during warranty period.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. System Cleaner:

1. Product Description: Liquid alkaline compound with emulsifying agents and detergents to remove grease and petroleum products; sodium tri-Poly phosphate and sodium molybdate.

2. Biocide; chlorine release agents including sodium hypochlorite or calcium hypochlorite, or microbiocides including quaternary ammonia compounds, tributyl tin oxide, methylene bis (thiocyanate), or isothiazolones.

B. Closed System Treatment (Water):

1. Sequestering agent to reduce deposits and adjust pH; polyphosphate.

2. Corrosion inhibitors; Chemworld 2338.

3. Conductivity enhancers; phosphates or phosphonates.

**2.02 TEST EQUIPMENT**

A. Furnish white enamel test cabinet with local and fluorescent light, capable of accommodating 4 – 10 ml zeroing titration burettes and associated reagents.

B. Furnish following test kits:

1. Alkalinity titration test kit.

2. Chloride titration test kit.

3. Sulphite titration test kit.

4. Total hardness titration test kit.

5. Low phosphate test kit.

6. Conductivity bridge, range 0 – 10,000 micro-ohms.

7. Creosol red pH slide, complete with reagent.

8. Portable electronic conductivity meter.

9. High nitrite test kit.

**PART 3 EXECUTION**

**3.01 PREPARATION**

A. Operate, fill, start and vent systems prior to cleaning. Use water meter to record capacity in each system. Place terminal control valves in open position during cleaning.

**3.02 CLEANING**

A. Concentration:

1. As recommended by manufacturer.

2. One pound per 100 gallons of water contained in the system.

3. One pound per 100 gallons of water for hot systems and one pound per 50 gallons of water for cold systems.

4. Fill steam boilers only with cleaner and water.

B. Hot Water Heating Systems:

1. Apply heat while circulating, slowly raising temperature to 160 degrees F and maintain for 12 hours minimum.

2. Remove heat and circulate to 100 degrees F or less; drain systems as quickly as possible and refill with clean water.

3. Circulate for 6 hours at design temperatures, then drain.

4. Refill with clean water and repeat until system cleaner is removed.

C. Use neutralizer agents on recommendation of system cleaner supplier and acceptance of Engineer.

D. Flush glycol filled systems with clean water for one hour minimum. Drain completely and refill.

E. Remove, clean, and replace strainer screens.

F. Inspect, remove sludge, and flush low points with clean water after cleaning process is completed. Include disassembly of components as required.

## 3.03 CLOSED SYSTEM TREATMENT

A. Provide one bypass feeder on each system. Install isolating and drain valves and interconnecting piping. Install around balancing valve downstream of circulating pumps as indicated on the drawings.

B. Introduce closed system treatment through bypass feeder when required or indicated by test.

C. Install ¾-inch water coupon rack around circulating pumps with space for 4 test specimens.

## 3.04 DEMONSTRATION

A. Furnish one four-hour training course for operating personnel, instruction to include installation, care, maintenance, testing, and operation of water treatment systems. Arrange course at start up of systems.

B. The Contractor shall provide for the cost and make arrangements for the services of a water treatment consultant/sales representative who, with the Contractor, will provide the function listed below. The Engineer will be involved in the representative selection by the submittal process.

1. Provide a sampling and chemical addition procedure that prohibits deposit within the system, prevents corrosion, controls foaming, and controls suspended solid matter within the range specified herein, for each system.

2. Provide operator operational checklist for daily or as necessary repetitive tasks which will identify all test and chemical adjustments made.

3. Train Owner's authorized representative in the proper techniques for testing and chemical additions in a safe and economical manner.

4. Provide training materials and instructional brochures.

5. Provide the necessary beakers, flasks, stir rods, filter paper, litmus paper, racks, and storage cabinet, cylinders, chemicals, and burettes as necessary to make the necessary tests for each system.

6. Determine blowdown quantities, duration, and repetition as necessary for each system and make reporting of same part of the operator checklist(s).

7. Be on-site a minimum of once monthly to perform any or part of the functions identified in this Section with the Owner's representative.

8. Provide a written report of each visit with a triplicate copy to the Engineer. This report to include copies of each daily (or as necessary) checklist made between dates of the monthly visits.

9. Provide for one year's worth of chemicals required for each of the steam and/or water systems.

C. Water quality requirements for closed type heating systems:

| | **Hot Water** | |
|---|---|---|
| | **140 to 250 F**** | **250 to 350 F** |
| Total Hardness | 10 | 5 |
| Alkalinity | | 300 to 700 |
| pH | 17.5 to 10.0 | 8.0 to 10.0 |
| Silica | 150 | 125 |
| Dissolved Solids | | |
| Suspended Solids | | |
| Dissolved Oxygen | 0.015 | 0.015 |
| Sodium Sulfite | | |
| Phosphate | | |
| Oil | 1.0 | 1.0 |
| Iron | 1.0 | 1.0 |
| Organic | 0 | 0 |

* All values in mg/L or ppm except pH.
** Also for chilled water and condenser water.

**PART 4 SPECIAL PROVISIONS**

Not used.

END OF SECTION

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**SECTION 15214**
**COMPRESSED AIR SYSTEMS**

## PART 1 GENERAL

### 1.01 SCOPE

A. Section Includes:

1. Compressed air piping.
2. Unions and flanges.
3. Valves.
4. Strainers.
5. Pipe hangers and supports.
6. Flexible connectors.
7. Relief valves.
8. Air compressor.
9. Compressed air after cooler.
10. Air receiver.
11. Compressed air filters.

### 1.02 REFERENCES

A. American Society of Mechanical Engineers:

1. ASME B16.3 - Malleable Iron Threaded Fittings.
2. ASME B31.1 - Power Piping.
3. ASME B31.9 - Building Services Piping.
4. ASME Section VIII - Boiler and Pressure Vessel Code - Pressure Vessels.
5. ASME Section IX - Boiler and Pressure Vessel Code - Welding and Brazing Qualifications.

B. ASTM International:

1. ASTM A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
2. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
3. ASTM A234 - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service.
4. ASTM A312 - Standard Specification for Seamless and Welded Austenitic Stainless-Steel Pipes.

5. ASTM A395 - Standard Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures.

6. ASTM A536 - Standard Specification for Ductile Iron Castings.

7. ASTM B32 - Standard Specification for Solder Metal.

8. ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings.

9. ASTM D2683 - Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing.

10. ASTM F1476 - Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications.

C. American Welding Society:

1. AWS A5.8 - Specification for Filler Metals for Brazing and Braze Welding.

2. AWS D1.1 - Structural Welding Code - Steel.

D. Manufacturers Standardization Society of the Valve and Fittings Industry:

1. MSS SP 58 - Pipe Hangers and Supports - Materials, Design and Manufacturer.

2. MSS SP 67 - Butterfly Valves.

3. MSS SP 69 - Pipe Hangers and Supports - Selection and Application.

4. MSS SP 70 - Cast Iron Gate Valves, Flanged and Threaded Ends.

5. MSS SP 71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.

6. MSS SP 89 - Pipe Hangers and Supports - Fabrication and Installation Practices.

7. MSS SP 110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.

E. National Electrical Manufacturers Association:

1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

F. NSF International:

1. NSF 61 - Drinking Water System Components - Health Effects.

## 1.03 SUBMITTALS

A. Shop Drawings: Indicate piping system schematic with electrical and connection requirements general assembly of components, mounting and installation details, and general layout of control and alarm panels.

B. Product Data:

1. Piping: Submit data on pipe materials, fittings, and accessories.

2. Valves: Submit manufacturers catalog information with valve data and ratings for each service.

3. Hangers and Supports: Submit manufacturers catalog information including load capacity.

4. System Components: Submit manufacturers catalog information including capacity, component sizes, rough-in requirements, and service sizes. When applicable, include electrical characteristics and connection requirements.

5. Compressors: Submit type, capacity, and performance characteristics. Include electrical characteristics and connection requirements.

C. Product Data: Submit manufacturers catalog literature with capacity, weight, and electrical characteristics and connection requirements.

D. Manufacturer's Installation Instructions: Submit hoisting and setting requirements, starting procedures.

E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

### 1.04 MAINTENANCE MATERIALS

A. Furnish two-quart containers of compressor oil.

## PART 2 PRODUCTS

### 2.01 COMPRESSED AIR PIPING

A. Steel Pipe: ASTM A53, Schedule 40 black.

1. Fittings: ASME B16.3, malleable iron, or ASTM A234, forged steel welding type.

2. Joints: Threaded for pipe 2 inch and smaller.

### 2.02 UNIONS AND FLANGES

A. Unions for Pipe 2 inches and Smaller:

1. Ferrous Piping: Class 150, malleable iron, threaded.

2. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

### 2.03 BALL VALVES

A. Manufacturers:

1. Nibco, Watts, or equivalent.

B. Ball valves, 2 inches and Smaller: MSS SP 110, Class 150, bronze, two-piece body, type 316 stainless steel ball, full port, teflon seats, blow-out proof stem, threaded ends, lever handle.

## 2.04 CHECK VALVES

A. Horizontal Swing Check Valves:

1. Manufacturers:

a. Nibco, or equivalent.

2. Check valves, 2 inches and smaller: MSS SP 80, Class 150, bronze body and cap, bronze seat, Buna-N disc, threaded ends.

## 2.05 STRAINERS

A. Manufacturers:

1. Titus Air Systems, Compressed Air Systems, or equivalent.

B. Strainers, 2 inch and smaller: Y pattern, ASTM A126 cast iron body, threaded ends, Class 250, 20 mesh stainless steel perforated screen.

## 2.06 PIPE HANGERS AND SUPPORTS

A. Conform to ASME B31.9 MSS SP 58 and MSS SP 69.

B. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron or Carbon steel, adjustable swivel, split ring.

C. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.

D. Vertical Support: Steel riser clamp.

E. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

## 2.07 FLEXIBLE CONNECTORS

A. Manufacturers:

1. Compressed Air Systems, or equivalent.

B. 2 inches and Smaller: Corrugated bronze stainless steel hose with single layer of bronze stainless steel exterior braiding, Schedule 40 black steel ends; maximum working pressure 170 psig, threaded or soldered connections.

## 2.08 RELIEF VALVES

A. Manufacturers:

1. Watts, or equivalent.

B. Relief Valves: Bronze body, Teflon seat, stainless steel stem and springs, automatic, direct pressure actuated capacities ASME certified and labeled.

## 2.09 AIR COMPRESSOR

A. Manufacturers:

1. Quincy Model QGS 15, Sullair, or equal.

B. Air Compressor: tank mounted compressor unit consisting of air-cooled compressor, air receiver, after cooler, and operating controls.

C. Rotary Compressors:

1. Unit: Rotary screw compressor with positive displacement oil pump lubrication system, suction inlet screen, discharge service valves, on cast iron or welded steel base for motor and compressor with provision for V-belt adjustment.

2. Automatic Capacity Reduction Equipment: Suction valve unloading device with lifting mechanism. Furnish unloaded compressor start.

3. Motor: Constant speed 1800 rpm with electronic overheating protection in each phase with full voltage starting.

D. Capacity:

1. Continuous Delivery: 54.9 cfm of compressed air.

2. Intake Conditions: 551 cfm of free air, 75 degrees F.

3. Discharge Conditions: 125 psi at 840 ft altitude.

E. Electrical Characteristics:

1. 15 hp.

2. 480 volts, three phase, 60 Hz.

F. Controls:

1. Pressure Switch: Line voltage contactor to break at 100 psi with minimum differential of 20 psi.

G. Wiring Terminations: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Enclose terminal lugs in terminal box.

H. Disconnect Switch: Factory mount on equipment.

## 2.10 REFRIGERATED COMPRESSED AIR DRYER

A. Manufacturers:

1. Quincy, or equal.

B. Refrigerated Air Dryer: Self-contained mechanical refrigeration type complete with heat exchanger, refrigeration compressor, automatic controls, moisture removal trap, internal wiring and piping, and full refrigerant charge.

C. Air Connections: Inlet and outlet connections at same level, factory insulated.

D. Heat Exchangers: Air to air and refrigerant to air coils. Furnish heat exchangers with automatic control system to bypass refrigeration system on low or no-load condition.

E. Moisture Separator: Centrifugal type located at discharge of heat exchanger.

F. Refrigeration Unit: Hermetically sealed type to operate continuously to maintain specified 39 degrees F dew point. House unit in steel cabinet with access door and panel for maintenance and inspection.

G. Accessories: Air inlet temperature gage, air inlet pressure gage, on/off switch, high temperature light, power on light, refrigerant gage.

H. Capacity:

1. Discharge Air: 39 degrees F atmospheric dew point.

2. Rated Air Flow: 64 cfm.

3. Inlet Air Pressure: 125 psig.

I. Electrical Characteristics:

1. 120 volts, single phase, 60 Hz.

2. Full load: 0.4 kW.

J. Wiring Terminations: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Enclose terminal lugs in terminal box.

K. Disconnect Switch: Factory mount on equipment.

## 2.11 AIR RECEIVER

A. Manufacturers:

1. Quincy, or equal.

B. Air Receiver: Horizontal, built to ASME Section VIII regulations for working pressure of 125 psi. Flange or screw inlet and outlet connections.

C. Fittings: Adjustable pressure regulator, safety valve, pressure gage, drain valve, and automatic float actuated condensate trap.

D. Size:

1. Capacity: 120 gallons.

## 2.12 AIR PRESSURE REDUCING VALVE

A. Air Pressure Reducing Valve: Consisting of automatic reducing valve and bypass, and low-pressure side relief valve and gage. Furnish oil separator.

B. Valve Capacity: Reduce pressure from 200 psi to 30 psi, adjustable upward from reduced pressure.

## 2.13 PRESSURE REGULATORS

A. Pressure Regulators: Diaphragm Pilot operated, bronze body, direct acting, spring loaded, manual pressure setting adjustment, rated for 250 psig inlet pressure.

B. Pressure Regulators: Aluminum alloy or plastic body, diaphragm operated, direct acting, spring loaded, manual pressure setting adjustment, and rated for 250 psig inlet pressure.

### 2.14 COMPRESSED AIR FILTERS

A. Manufacturers:

1. Quincy, or equivalent.

B. Mechanical Separation Filter: 2 stage. Furnish with deflector plates, resin impregnated ribbon type filters with 40-micron thick edge filtration and drain valve.

C. Coalescing Filters: Furnish with activated carbon capable of removing water and oil aerosols, with color-change dye indicating when carbon is saturated and warning light indicating when maximum pressure drop has been exceeded.

## PART 3 EXECUTION

### 3.01 EXAMINATION

A. Verify excavations are to required grade, dry, and not over-excavated.

B. Verify connection size, location, and invert are as indicated on Drawings.

### 3.02 PREPARATION

A. Ream pipe and tube ends. Remove burrs.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare piping connections to equipment with flanges or unions.

D. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

### 3.03 INSTALLATION - INSERTS

A. Provide inserts for placement in concrete forms.

B. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.

C. Provide hooked rod to concrete reinforcement section for inserts carrying pipe 4 inches and larger.

D. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.

E. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut [above] [flush with top of] [recessed into and grouted flush with] slab.

## 3.04 INSTALLATION - HANGERS AND SUPPORTS

A. Install hangers and supports in accordance with ASME B31.1, ASME B31.9, and MSS SP 89.

B. Support horizontal piping as scheduled.

C. Install hangers to provide minimum 1/2-inch space between finished covering and adjacent work.

D. Place hangers within 12 inches of each horizontal elbow.

E. Use hangers with 1-1/2-inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.

F. Support riser piping independently of connected horizontal piping.

G. Where piping is installed in parallel and at same elevation, provide multiple pipe or trapeze hangers.

H. Provide sheet lead packing between hanger or support and piping.

I. Prime coat exposed steel hangers and supports. Refer to Section 09900. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

J. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.

## 3.05 INSTALLATION - ABOVE GROUND PIPING - COMPRESSED AIR SYSTEMS

A. Install drip connections with valves at low points of piping system.

B. Install take-off to outlets from top of main, with shut off valve after take-off. Slope take-off piping to outlets.

C. Install compressed air couplings, female quick connectors, and pressure gages where outlets are indicated as indicated on Drawings.

D. Install tees instead of elbows at changes in direction of piping. Fit open end of each tee with plug.

E. Cut pipe and tubing accurately and install without springing or forcing.

F. Slope piping in direction of flow.

G. Install pipe sleeves where pipes and tubing pass through walls, floors, roofs, and partitions.

H. Install firestopping at fire rated construction perimeters and openings containing penetrating sleeves and piping.

I. Install pipe identification in accordance with Section 15075.

J. Except where indicated, install manual shut off valves with stem vertical and accessible for operation and maintenance.

K. Install strainers on inlet side of pressure reducing valves. Install pressure reducing valves with bypasses and isolation valves to allow maintenance without interruption of service.

L. Install strainers on inlet side of pressure regulators.

## 3.06 INSTALLATION - EQUIPMENT

A. Install air compressor on concrete housekeeping pad, minimum 3-1/2 inches high and 6 inches larger than compressor base on each side. Refer to Section 03305.

B. Install air compressor unit on vibration isolators. Level and bolt in place.

C. Install air valve and drain connection on horizontal casing.

D. Install line size shut-off valve and check valve on compressor discharge.

E. Install replaceable cartridge type filter silencer for each compressor.

F. Install shut-off valve on water inlet to after cooler. Pipe drain to floor drain.

G. Install condensate drain piping to nearest floor drain.

H. Install bypass with valves around air dryer. Use factory insulated inlet and outlet connections.

I. Provide bypass with valves, around receivers.

## 3.07 FIELD QUALITY CONTROL

A. Compressed Air Piping Leak Test: Prior to initial operation, clean and test compressed air piping in accordance with ASME B31.1, ASME B31.9.

B. Verify for atmospheric pressure in piping systems, other than system under test.

C. Test system with dry compressed air or dry nitrogen with test pressure in piping system at 50 psi.

## 3.08 CLEANING

A. Blow systems clear of free moisture and foreign matter.

## 3.09 SCHEDULES

A. Air Compressors:

| Make | Model | Location | Power (HP) | Pressure (psig) | Capacity (CFM) | Air Receiver (gal) | Length (in.) | Width (in.) | Height (in.) |
|---|---|---|---|---|---|---|---|---|---|
| Quincy | QGS-15 | Admin Building | 15 | 125 | 54.9 | 120 | 76 | 26 | 58 |
| Quincy | QGS-15 | Settled Sewage Building | 15 | 125 | 54.9 | 120 | 76 | 26 | 58 |

# PART 4 SPECIAL PROVISIONS

None.

END OF SECTION.

**SECTION 15720**
**INDOOR CENTRAL-STATION AIR-HANDLING UNITS**

## PART 1 GENERAL

### 1.01 SCOPE

A. Section includes modular factory fabricated air-handling units, condensing units, and accessories.

B. This Section shall include but not limited to all appurtenances required for complete installation.

C. All Work performed under this Section shall comply and be in accordance with all approved trade practices and manufacturer's recommendations.

D. Additional equipment and installation requirements in Division 15 as included shall be provided by this Contract.

E. Additional product requirements are specified in Section 01350.

### 1.02 REFERENCES

A. American Bearing Manufacturers Association:

1. ABMA 9 – Load Ratings and Fatigue Life for Ball Bearings.
2. ABMA 11 – Load Ratings and Fatigue Life for Roller Bearings.

B. Air Movement and Control Association International, Inc.:

1. AMCA 99 – Standards Handbook.
2. AMCA 210 – Laboratory Methods of Testing Fans for Aerodynamic Performance Rating.
3. AMCA 300 – Reverberant Room Method for Sound Testing of Fans.
4. AMCA 301 – Methods for Calculating Fan Sound Ratings from Laboratory Test Data.
5. AMCA 500 – Test Methods for Louvers, Dampers, and Shutters.

C. Air-Conditioning and Refrigeration Institute:

1. AHRI 410 – Forced-Circulation Air-Cooling and Air-Heating Coils.
2. AHRI 430 – Central-Station Air-Handling Units.
3. AHRI 610 – Central System Humidifiers for Residential Applications.
4. ARI Guideline D – Application and Installation of Central Station Air-Handling Units.

D. National Electrical Manufacturers Association:

1. NEMA MG 1 – Motors and Generators.

E. Sheet Metal and Air Conditioning Contractors:

1. SMACNA – HVAC Duct Construction Standard – Metal and Flexible.

F. Underwriters Laboratories Inc.:

1. UL 900 – Air Filter Units.

2. UL – Fire Resistance Directory.

## 1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Indicate assembly, unit dimensions, weight loading, required clearances, construction details, field connection details, and electrical characteristics and connection requirements.

2. Product Data, Submit the following:

a. Published Literature: Indicate capacities, ratings, gages and finishes of materials, and electrical characteristics and connection requirements.

b. Filters: Data for filter media, filter performance data, filter assembly, and filter frames.

c. Fans: Performance and fan curves with specified operating point plotted, power, RPM.

d. Sound Power Level Data: Fan outlet and casing radiation at rated capacity.

e. Dampers: Include leakage, pressure drop, and sample calibration curves. Indicate materials, construction, dimensions, and installation details.

f. Electrical Requirements: Power supply wiring including wiring diagrams for interlock and control wiring. Indicate factory installed and field installed wiring.

3. Information for the Record:

a. Operation and maintenance manual. Submit instructions for lubrication, filter replacement, motor and drive replacement, spare parts lists, and wiring diagrams.

## 1.04 QUALITY ASSURANCE

A. Outside Air Damper Leakage: Test in accordance with AMCA 500.

## 1.05 DELIVERY, STORAGE, AND HANDLING

A. Delivery, Handling, and Storage:

1. Material delivery, handling, and storage shall meet the requirements of Section 01350.

2. Accept units and components on site in factory protective containers, with factory shipping skids and lifting lugs. Inspect for damage.

3. Protect units from weather and construction traffic by storing in dry, roofed location.

## 1.06 EXTRA MATERIALS

A. Furnish two spare sets of fan belts for each unit.

B. Furnish three spare sets of filters for each unit.

# PART 2 PRODUCTS

## 2.01 AIR HANDLING UNITS

A. Manufacturers:

1. Trane Technologies.

2. Carrier Corporation.

3. Daikan/McQuay.

4. Or equal.

B. Configuration: Fan section plus accessories, including:

1. Cooling coil section.

2. Heating coil.

3. Filter section.

4. Combination filter section.

5. Face and bypass damper section.

6. Multi-zone damper section.

C. Performance Base: Sea level pressure or altitude.

D. Fabrication: Conform to AMCA 99 and AHRI 430.

## 2.02 CASING

A. Channel base and drain pan of welded steel. Assemble sections with gaskets and bolts.

B. Outside Casing:

1. Galvanized Steel: 0.0635 inch.

C. Inside Casing:

1. Galvanized Steel: Solid, 0.0276 inch thick.

D. Floor Plate:

1. Galvanized Steel: 1.382 inch thick.

E. Insulation: Neoprene coated, glass fiber, applied to internal surfaces with adhesive and weld pins with exposed edges of insulation coated with adhesive.

1. 'K' factor at 75 degrees F: Maximum 0.077 Btuh inch/ sq ft/ degrees F.

F. Finish: Baked enamel Finish: Manufacturers standard paint on exterior.

G. Inspection Doors: galvanized steel for flush mounting, with gasket, latch, and handle assemblies and 12 x 12-inch inspection window of 1/4 inch thick Plexiglas. Furnish welded channel frame to set door out from casing to permit external insulation.

H. Lights: Located in accessible sections suitable for damp locations with wire guards, factory wired to switch and pilot light and duplex outlet mounted on casing exterior. In humidifier sections, furnish lights suitable for wet locations.

I. Drain Pans: Double thickness galvanized steel with welded corners. Cross break and pitch to drain connection. Furnish drain pans under cooling coil section.

J. Bottom Inlet Units: Furnish steel or aluminum walking grate on structural supports.

K. Strength: Furnish structure to brace casings for suction pressure of 2.5-inch wg, with maximum deflection of 1 in 200.

## 2.03 FANS

A. Type: plenum type fan.

B. Performance Ratings: Conform to AMCA 210 and label with AMCA Certified Rating Seal.

C. Bearings: Self-aligning, grease lubricated, ball or roller bearings with lubrication fittings extended to exterior of casing with [plastic] [aluminum] [copper] tube and grease fitting rigidly attached to casing.

D. Mounting: Locate fan and motor internally on welded steel base coated with corrosion resistant paint. Factory mount motor on slide rails. Furnish access to motor, drive, and bearings through removable casing panels or hinged access doors. Mount base on vibration isolators.

E. Fan Modulation: Variable frequency drive (VFD). Refer to Division 16.

F. Flexible Connection: Separate unit from connecting ductwork.

## 2.04 MOTORS

A. Refer to Division 16 for motor requirements.

## 2.05 BEARINGS AND DRIVES

A. Bearings: Pillow block type, self-aligning, grease-lubricated ball bearings, with ABMA 11, L-10 life at 250,000 hours.

B. Shafts: Solid, hot rolled steel, ground and polished, with key-way, and protectively coated with lubricating oil.

C. V-Belt Drive: Cast iron or steel sheaves, dynamically balanced, bored to fit shafts, and keyed. Variable and adjustable pitch sheaves for motors 15 hp and under selected so required rpm is obtained with sheaves set at mid-position; fixed sheave for 20 hp and over, matched belts, and drive rated as recommended by manufacturer or minimum 1.5 times nameplate rating of motor.

D. Belt Guard: Fabricate to SMACNA Standard; 0.106 inch thick, ¾-inch diamond mesh wire screen welded to steel angle frame or equivalent, prime coated. Secure to fan or fan supports without short circuiting vibration isolation, with provision for adjustment of belt tension, lubrication, and use of tachometer with guard in place.

## 2.06 COILS

A. Casing with access to both sides of coils. Enclose coils with headers and return bends fully contained within casing. Slide coils into casing through removable end panel.

B. Drain Pans: 24-inch downstream of coil and down spouts for cooling coil banks more than one coil high.

C. Eliminators: Three break of galvanized steel, mounted over drain pan.

D. Air Coils: Certify capacities, pressure drops, and selection procedures in accordance with AHRI 410.

E. Fabrication:

1. Tubes: 5/8-inch OD seamless copper expanded into fins, brazed joints.
2. Fins: Aluminum.
3. Casing: Die formed channel frame of galvanized steel.

F. Water Heating Coils:

1. Headers: Cast iron, seamless copper tube, or prime coated steel pipe with brazed joints.
2. Configuration: Drainable, with threaded plugs for drain and vent; serpentine type with return bends on smaller sizes and return headers on larger sizes.

G. Refrigerant Coils:

1. Headers: Seamless copper tubes with silver brazed joints.
2. Liquid Distributors: Brass or copper venturi distributor with seamless copper distributor tubes.
3. Configuration: Down feed with bottom suction.

## 2.07 FILTERS

A. Filter Box: Section with filter guides, access doors from both sides, for side loading with gaskets and blank-off plates.

B. Angle: 2-inch disposable panel filters.

## 2.08 CONDENSING UNIT

A. Manufacturers: Trane Model TTA, Carrier, York, or equal.

B. General: Factory assembled and tested air-cooled condensing units, consisting of casing, compressors, condensers, coils, condenser fans and motors, and unit controls.

C. Unit Casings: Exposed casing surfaces constructed of galvanized steel with manufacturer's weather resistant baked enamel finish. Designed for outdoor installation and complete with weather protection for components and controls, and complete with removable single sided maintenance access panels with lifting handles for required access to compressors, controls, condenser fans, motors, and drives.

D. Compressor: Single refrigeration circuit with single direct drive hermetic scroll compressor resiliently mounted, with positive lubrication, suction gas-cooled motors, crankcase heaters, and internal temperature and current sensitive motor overload protection.

E. Condenser Coil: Constructed of aluminum flat tube with microchannels, factory leak and pressure tested.

F. Condenser Fans and Drives: Direct drive propeller fans statically and dynamically balanced. Wired to operate with compressor. Permanently lubricated ball bearing type motors with built-in thermal overload protection.

G. Controls: Furnish operating and safety controls including high- and low-pressure cutouts. Control transformer. Furnish magnetic contactors for compressor and condenser fan motors.

H. Condensing Unit Accessories:

1. Controls to provide low ambient cooling to 0 degrees F.
2. Time delay relay.
3. Anti-short cycle timer.
4. Disconnect switch.
5. Vibration Isolators: Spring type.
6. Hot gas bypass kit.
7. Suction and discharge pressure gauges.

I. Refrigeration specialties: Furnish the following for each circuit:

1. Charge of compressor oil.
2. Holding charge of refrigerant.
3. Replaceable core type filter drier.

4. Liquid line sight glass and moisture indicator.
5. Shut-off valves on suction and liquid piping.
6. Liquid line solenoid valve.
7. Charging valve.
8. Oil level sight glass.
9. Hot gas muffler.
10. Pressure relief device.
11. Refrigerant: Furnish charge of refrigerant R-410a.

**2.09 CONTROLS**

A. Controls: Refer to Section 15905.

**2.10 ELECTRICAL CHARACTERISTICS AND COMPONENTS**

A. Disconnect Switch: Factory mount on equipment.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

A. Install in accordance with AHRI 430.

B. Install flexible connections between unit and inlet and discharge ductwork. Install metal bands of connectors parallel with minimum 1 inch flex between ductwork and fan while running. Refer to Section 15820.

C. Install assembled units with vibration isolators. Install isolated fans with resilient mountings and flexible electrical leads. Install restraining snubbers as required. Adjust snubbers to prevent tension in flexible connectors when fan is operating.

D. Install floor mounted units on concrete housekeeping pads at least 4 inches high and 6 inches wider than unit.

E. Provide fixed sheaves required for final air balance.

F. Insulate coil headers located outside airflow as specified for piping. Refer to Section 15081.

G. Install condensate piping with trap and route from drain pan to nearest floor drain.

**3.02 INSTALLATION - REFRIGERANT COILS**

A. Install sight glass in liquid line within 12 inches of coil.

**3.03 INSTALLATION HOT WATER HEATING COIL**

A. Make connections to coils with unions or flanges.

B. Connect water supply to leaving airside of coil (counter flow arrangement).

C. Locate water supply at bottom of supply header and return water connection at top.

D. Install water coils to allow draining and install drain connection at low points.

E. Install the following piping accessories on hot water piping connections. Refer to Section 15120 and Section 15180.

F. Install valves and piping specialties in accordance with details as indicated on Drawings.

G. Install automatic air vents at high points complete with shutoff valve. Refer to Section 15180.

### 3.04 MANUFACTURER'S FIELD SERVICES

A. Furnish services of factory trained representative for minimum of one days to leak test, refrigerant pressure test, evacuate, dehydrate, charge, start-up, calibrate controls, and instruct Owner on operation and maintenance.

### 3.05 CLEANING

A. Vacuum clean coils and inside of unit cabinet.

B. Install new throwaway filters in units at Substantial Completion.

### 3.06 DEMONSTRATION

A. Demonstrate unit operation and maintenance.

B. Furnish services of manufacturer's technical representative for one 8-hour day to instruct Owner's personnel in operation and maintenance of units. Schedule training with Owner, provide at least 7 days' notice to Engineer of training date.

### 3.07 PROTECTION OF FINISHED WORK

A. Do not operate units until ductwork is clean, filters are in place, bearings lubricated, and fan has been test run under observation.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 15760**
**TERMINAL HEATING AND COOLING UNITS**

## PART 1 GENERAL

### 1.01 SCOPE

A. Section Includes:

1. Fan coil units.

### 1.02 REFERENCES

A. Air-Conditioning and Refrigeration Institute:

1. AHRI 410 – Forced-Circulation Air-Conditioning and Air-Heating Coils.

B. Sheet Metal and Air Conditioning Contractors:

1. SMACNA – HVAC Duct Construction Standard – Metal and Flexible.

### 1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. The Contractor shall indicate all variances from the requirements of the Contract Documents.

b. Descriptive information of all mechanical and electrical items used in providing a complete job.

c. Indicate cross sections of cabinets, grilles, bracing and reinforcing, and typical elevations. Indicate schedules of equipment and enclosures typically indicating length and number of pieces of element and enclosure, corner pieces, end caps, cap strips, access doors, pilaster covers.

d. Provide and submit manufacturer's product data including coil and frame configurations, materials of construction, dimensions, materials, rows, connections, and rough-in dimensions, mechanical and electrical service locations, capacities, and accessories or optional items.

e. Schematic wiring diagrams and electrical load requirements.

f. Shop Drawings shall include data for all equipment, piping, and valves, controls, accessories, and electrical apparatus to be supplied with equipment.

2. Information for the Record:

a. Operation and maintenance manual. Submit installation instructions, servicing requirements, assembly views, lubrication instructions, and replacement parts list.

**1.04 ELECTRICAL AND CONTROL COORDINATION**

A. All equipment shall be powered electrically and wired as required in Division 16.

**1.05 PROTECTION FROM DAMAGE**

A. Delivery, Handling, and Storage:

1. Material delivery, handling, and storage shall meet the requirements of Section 01350.

2. All equipment and appurtenances shall be accepted on site in factory packaging. Inspect for damage.

B. After Installation:

1. Protect installed equipment from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

2. Suitable covers shall be placed to protect against any equipment damage after it is installed and during the final days of construction.

3. Before acceptance, all covers and protective material shall be removed and the equipment cleaned and ready for use.

**1.06 PROTECTION FROM DAMAGE**

A. Delivery, Handling, and Storage:

1. Accept heaters and controls on site in factory packaging. Inspect for damage.

**1.07 DELIVERY, STORAGE, AND HANDLING**

A. Accept units on site in factory packing. Inspect for damage. Store under roof.

B. Protect coil fins from crushing and bending by leaving in shipping cases until installation, and by strong indoors. Protect coils from entry of dirt and debris with pipe caps or plugs.

**1.08 DELIVERY, STORAGE, AND HANDLING**

A. Conform to applicable code for internal wiring of factory-wired equipment.

B. Heating units shall be UL listed and comply with the requirements of the National Electrical Code.

C. Fans shall be AMCA certified.

D. Contractor shall check electrical, architectural, and piping drawings for possible interferences and shall coordinate installation with other contractors.

E. Equipment shall be as indicated in the Specifications and on the Drawings.

F. Water coils shall be ARI certified.

G. Where noted, all coils shall be coated externally with a thermal setting, two coat, corrosive resistance to sulfides coating such as Liberty Plastics & Metals, Libcote-7, Heresite P-403 or equal. Coil to be completely degreased and free of paint and soft solder. Unit to be coated by a dip and baking operation and repeated for a 2-mil minimum thickness. Coating to reduce heat transfer rate by less than 5% with a thermal conductivity of 7000 Btuh/mil-SF. Application when finished must meet requirements of the USDA and FDA.

## PART 2 PRODUCTS

### 2.01 FAN COIL UNITS

A. Manufacturers: Trane, Carrier, or equal.

B. Coils: Evenly spaced aluminum fins mechanically bonded to copper tubes, designed for 200 psi and 220 degrees F.

C. Cabinet: 0.0598-inch-thick steel with exposed corners and edges rounded, easily removed panels, glass fiber insulation.

D. Finish: Factory applied baked enamel of color as selected on visible surfaces on visible surfaces of enclosure or cabinet.

E. Fans: Centrifugal forward-curved double-width wheels, statically and dynamically balanced, direct driven.

F. Motor: Tap wound multiple speed permanent split capacitor with sleeve bearings, resiliently mounted.

G. Control: Multiple speed switch, factory wired, located in cabinet.

H. Filter: Easily removed 1-inch-thick glass fiber throw-away type, located to filter air before coil.

I. Capacity: As scheduled, based on 65 degrees F entering temperature, 180 degrees F average water temperature.

### 2.02 CONTROLS

A. Controls: Refer to Section 15905.

### 2.03 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Disconnect Switch: Factory mount on equipment.

## PART 3 EXECUTION

### 3.01 EXAMINATION

A. For recessed units, verify recess dimensions are correct size.

B. Verify wall construction is ready for installation.

C. Verify ductwork is ready for installation.

D. Verify concealed blocking and supports are in place and connections are correctly located.

E. Verify that space is ready to receive Work and opening dimensions are as instructed by the unit manufacturer.

F. Verify required utilities are available, in proper location, and ready for use.

**3.02 INSTALLATION**

A. Install in accordance with manufacturer's instructions.

B. Install air coils in ducts and casings in accordance with SMACNA HVAC Duct Construction Standards, Metal and Flexible. Refer to Section 15810.

C. Protect coils to prevent damage to fins and flanges. Comb out bent fins.

D. Install coils level.

E. Make connections to coils with unions and flanges.

F. On water coils, install shut-off valve on supply piping and lockshield balancing valve on return piping. Locate water supply at bottom of supply header and return water connection at top. Install float operated automatic air vents at high points complete with stop valve. Install water coils to be drainable and install drain connection at low points. Refer to Section 15180.

G. On water and glycol heating coils, connect water supply piping to leaving airside of coil (counter flow arrangement). Refer to Section 15180.

H. Insulate headers located outside airflow, insulate as specified for piping. Refer to Section 15081.

I. Install equipment exposed to finished areas after walls and ceilings are finished and painted. Avoid damage.

J. Protection: Install finished cabinet units with protective covers during remainder of construction.

K. Fan-Coil Units: install at locations as indicated on Drawings. Coordinate to assure correct recess size for recessed units.

**3.03 CLEANING**

A. After construction is completed, including painting, clean exposed surfaces of units. Vacuum clean coils and inside of cabinets.

B. Touch-up marred or scratched surfaces of factory-finished cabinets, using finish materials furnished by manufacturer.

C. Install new filters.

D. Details of material and equipment installation shall conform to manufacturer's latest printed instructions, where not covered by the Drawings and Specifications.

E. Terminal heating and cooling units shall be installed complete as shown on the Drawings and as specified.

F. Hang unit heaters from building structure, with pipe hangers anchored to building, not from piping. Mount as high as possible to maintain greatest headroom unless otherwise indicated.

G. Provide hydronic units with shut-off valves on supply and lockshield balancing valve on return piping. If not easily accessible, extend vent to exterior surface of cabinet for easy servicing. For cabinet unit heaters, fan soil units, and unit heaters, provide float-operated, automatic air vents with stop valve.

H. Install electric heating equipment including devices furnished by manufacturer but not factory mounted. Furnish copy of manufacturer's wiring diagram submittal. Verify that electrical wiring installation is in accordance with manufacturer's submittals and installation requirements of Division 16 Sections.

I. Connect hot water supply and return or steam supply and condensate return piping to coils and test for leaks.

## 3.04 TESTING AND ADJUSTING

A. When the terminal and heating cooling unit systems are complete and ready to be turned over and before final acceptance, Contractor shall run systems for the purpose of testing and adjusting. Air shall circulate freely and there shall be no evidence of leaks or air binding.

B. All equipment shall run at full capacity without undesirable singing, undue vibration, or objectionable noise. All equipment shall deliver specified capacities and Contractor shall deliver to Engineer complete data sheets covering results of tests.

## 3.05 PROTECTION

A. Protect units with protective covers during balance of construction.

## 3.06 CLEANING

A. After construction is completed including painting, clean exposed surfaces of units. Vacuum clean coils and inside of cabinets.

B. Touch up marred or scratched surfaces of factory-finished cabinets using finish materials furnished by manufacturer.

C. Install new filters.

## 3.07 MOUNTING AND ATTACHMENT

A. The Contractor shall provide all devices and materials such as expansion bolts, foundation bolts, screws, channels, angles, and other attaching means required to fasten all equipment and materials to be installed on or in concrete bases or structures

which are existing or provided under other sections of the Contract. Foundation bolts shall be set by using manufacturer's templates.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 15810**
**DUCTWORK**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes furnishing and installing all materials, equipment, labor, and supervision related to HVAC ductwork systems necessary for the completion of the Work in accordance with the Contract Drawings.

B. All Work performed under this Section shall comply and be in accordance with all approved trade practices and manufacturer's recommendations.

C. Additional product requirements are specified in Section 01350.

### 1.02 DESIGN OF SYSTEM

A. The Contractor shall design the duct to meet the required operating pressure by means of duct material thickness, spacing of joints, and reinforcing and joint construction.

### 1.03 PERFORMANCE REQUIRMENTS

A. Variation of duct configuration or sizes other than those of equivalent or lower loss coefficient is not permitted except by written permission. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts.

### 1.04 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. The Contractor shall indicate all variances from the requirements of the Contract Documents.

b. Submit duct fabrication drawings showing general arrangement, dimensions, and sectional assembly, drawn to scale not smaller than 1/4-inch equals 1 foot, on drawing sheets same size as Contract Documents, indicating:

1) Fabrication, assembly, and installation details, including plans, elevations, sections, details of components, and attachments to other work.

2) Duct layout, indicating pressure classifications and sizes in plan view. For exhaust duct systems, indicate classification of materials handled as defined in this section.

3) Materials of construction.

4) Fittings.

5) Reinforcing details.

6) Seam and joint construction details.

7) Penetrations through fire rated and other walls.

8) Terminal unit, coil, and humidifier installations.

9) Hangers and supports, including methods for building attachment, vibration isolation, and duct attachment.

c. Product Data:

1) Descriptive literature, bulletins, or other data describing each item of equipment.

2) Complete list of accessories and appurtenances included with each item complete with manufacturer's name and model number.

d. Certified leak test as required by SMACNA HVAC Duct Leakage Test Manual.

2. Information for the Record:

a. Certified design capacity data for each section of duct.

b. Project Record Documents: Record actual locations of ducts and duct fittings. Record changes in fitting location and type. Show additional fittings used.

3. Operation and maintenance manual.

**1.05 QUALITY ASSURANCE**

A. Perform Work in accordance with the latest edition as published by SMACNA – HVAC Duct Construction Standards – Metal and Flexible and SMACNA – Thermoplastic Duct (PVC) Construction Manual.

B. Construct ductwork to NFPA 90A standards.

## PART 2 PRODUCTS

**2.01 DUCTWORK GENERAL**

A. Sheet Metal – Rectangular:

1. Ductwork, unless otherwise noted, shall be galvanized sheet metal, stainless steel, or aluminum and shall be built as required by HVAC Duct Construction Standards, Metal and Flexible, latest edition as published by SMACNA and diagrammatically shown on the Drawings.

2. Ductwork 18-inch width and over shall be cross-broken, or ribbed and stiffened, so that it will not "breathe," rattle, vibrate, or sag.

3. Curved elbows shall have a throat radius equal to the duct width. Provide splitter or turning vane(s) in all elbows.

4. Square elbows shall have double-thickness turning vanes, unless single-thickness vanes are clearly identified on the Drawings.

5. Transitions in ductwork shall be made with a slope not exceeding 1 to 5, preferably 1 to 7.

6. Supply duct splits shall be provided with splitter damper and adjustable locking quadrant. Splitter blade shall be 1.5 times the smaller split width.

7. Supply duct takeoffs shall include an adjustable air-turning device equal to Carnes No. 1250 Variturn Model 2, 3, or 4 or equal.

## 2.02 DUCT MATERIALS

A. Galvanized Steel Ducts: ASTM A924 and ASTM A653 galvanized steel sheet, lock-forming quality, having G60 zinc coating in conformance with ASTM A90.

B. Fasteners: Rivets, bolts, or sheet metal screws.

C. Hanger Rod: ASTM A36; steel, galvanized or compatible with duct material; threaded both ends, threaded one end, or continuously threaded.

## 2.03 DUCTWORK FABRICATION

A. Fabricate and support rectangular ducts in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible as indicated on Drawings. Provide duct material, gauges, reinforcing, and sealing for operating pressures indicated.

B. Fabricate and support round ducts with longitudinal seams in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible (Round Duct Construction Standards), and as indicated on the Drawings. Provide duct material, gauges, reinforcing, and sealing for operating pressures indicated.

C. Construct T's. bends, and elbows with minimum radius 1-1/2 times centerline duct width. Where not possible and where rectangular elbows are used, provide turning vanes. Where acoustical lining is indicated, furnish turning vanes of perforated metal with glass fiber insulation.

D. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

E. Fabricate continuously welded round or oval duct fittings two gauges heavier than duct gauges indicated in SMACNA Standard. Minimum 4-inch cemented slip joint brazed or electric welded. Prime coat weld joints.

F. Provide standard 45-degree lateral wye takeoffs. When space does not allow 45-degree lateral wye takeoff, use 90-degree conical tee connections.

G. Seal joints between duct sections and duct seams with welds, gaskets, mastic adhesives, mastic plus embedded fabric systems, or tape.

1. Sealants, Mastics, and Tapes: Conform to UL 181A. Provide products bearing appropriate UL 181A markings.

2. Do not provide sealing products not bearing UL approval markings.

**2.04 AUXILIARY EQUIPMENT**

A. Duct reinforcing and hangers shall be of the same material as the duct system.

B. Duct splitter dampers - Young Regulator Co., Barber Coleman, Carnes, Hart and Cooley, or equal.

C. Spiral duct - Young Regulator Co., United Sheet Metal Division, or equal.

D. Turning devices - Carnes, Barber Coleman, Hart and Cooley, or equal.

E. Turning devices and splitter damper hardware for fibrous glass duct - Duro Dyne Midwest, or equal.

F. Mastics and Sealers - Foster Products, HB Fuller Co., United McGill, or equal.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

A. Verify sizes of equipment connections before fabricating transitions.

**3.02 INSTALLATION OF DUCT SYSTEMS**

A. Manufacture, install, seal, and insulate all ductwork as shown on the Drawings and as required in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible.

B. Install glass fiber ducts in accordance with SMACNA Fibrous Glass Duct Construction Standards. Obtain manufacturer's inspection and acceptance of fabrication and installation at beginning of installation.

C. During construction, install temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.

D. Use crimp joints with or without bead or beaded sleeve couplings for joining round duct sizes 8 inch and smaller.

E. Use double nuts and lock washers on threaded rod supports.

F. For outdoor ductwork, protect ductwork, ductwork supports, linings and coverings from weather.

G. Exhaust Outlet Locations:

1. Minimum Distance from Property Lines: 3 feet.

2. Minimum Distance from Building Openings: 3 feet.

3. Minimum Distance from Outside Air Intakes: 10 feet.

H. Low pressure ductwork and fittings shall be made tight for minimum air leakage. Large or noisy leaks will not be accepted. Duct tape shall not be used to seal joints, to make transitions, or for any other reason except on the outside of wrapped insulation. Duct tape shall not be used on sheet metal.

I. All ductwork shall have all joints, seams, and laps sealed to Class “C” duct sealing requirements with mastic equal to Hardcast DT-5300 to ensure a completely airtight duct system.

J. All duct systems shall be at least 95% efficient in volumetric transfer. The Contractor shall demonstrate efficiency by testing.

K. Hangers for ductwork shall be in accordance with the SMACNA Standards, Plate Nos. 18 and 19, hanger for ducts and upper attachments. Hanger strap material and angles shall be galvanized. With bar joist and roof construction, use welded studs or C-clamp with retaining clip attached to the bar joist. In all cases, the maximum hanger spacing shall not be exceeded and the hangers shall be readily removable as required by SMACNA.

L. Ducts may be hung from the building construction by strap hangers fastened to the duct in not less than two places and rigidly braced against swaying. Do not fasten any hanger to metal roof decking. Strap material shall be aluminum, stainless steel, or galvanized in order to be compatible with the service requirements.

M. Where ducts pass through walls or floors, sheet metal closures shall be provided to close openings around ducts except where noted by specific detail. All passages shall be airtight to restrict air, moisture, and dust migration.

N. All ductwork exposed to weather shall have all joints, laps, edges, etc., sealed and coated with duct sealer equal to Hardcast DT-5300 and applied with FTO-20 adhesive or approved equivalent.

O. All ductwork exposed to weather and not insulated shall have all joints, laps, edges, etc., sealed and coated with duct sealer equal to Hardcast DT-5300 and applied with FTO-20 adhesive or approved equivalent.

## 3.03 CLEANING

A. Clean duct system and force air at high velocity through duct to remove accumulated dust. To obtain sufficient air flow, clean one half of system completely before proceeding to other half. Protect equipment with potential to be harmed by excessive dirt with temporary filters, or bypass during cleaning.

## 3.04 TESTING

A. Subject completed duct system to pressure and leakage test in accordance with SMACNA HVAC Air Duct Leakage Test Manual. Test shall be completed after duct cleaning, but before duct insulation is applied or ductwork is concealed.

### 3.05 DUCTWORK PRESSURE CLASS

A. Design pressure required is 2-inch WC for all ductwork systems.

## PART 4 SPECIAL PROVISION

Not used.

END OF SECTION

**SECTION 15820**
**DUCT ACCESSORIES**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes furnishing all materials, equipment, labor, and supervision related to duct accessories necessary for the completion of the Work in accordance with the Contract Documents. Sleeves for penetrations for new Work shall be provided by this Section and installed by others.

B. This Section shall include but not limited to all appurtenances required for complete installation.

C. All Work performed under this Section shall comply and be in accordance with all approved trade practices and manufacturer's recommendations.

D. Additional equipment and installation requirements in Division 15 as included shall be provided by this Contract.

E. Additional product requirements are specified in Section 01350.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. The Contractor shall indicate all variances from the requirements of the Contract Documents.

b. Product Data: Provide manufacturer's data on duct accessories to include catalog information. Submit information that illustrates pressure drops for all sizes of dampers required at all anticipated air flow rates in accordance with AMCA Standard 500.

c. Product Data: For dampers, submit the following:

1) Catalog product information.

2) Include UL ratings, leakage, pressure drop, and maximum pressure data.

3) Indicate materials, construction, dimensions, and installation details.

4) Damper pressure drop ratings based on tests and procedures performed in accordance with AMCA 500.

2. Information for the Record:

a. Manufacturer's Installation Instructions: Submit for dampers.

b. Operation and maintenance manual. Submit installation instructions, servicing requirements, assembly views, lubrication instructions, and replacement parts list.

### 1.03 QUALITY ASSURANCE

A. Dampers tested, rated and labeled in accordance with the latest UL requirements.

B. Damper pressure drop ratings based on tests and procedures performed in accordance with AMCA 500.

### 1.04 DELIVERY, STORAGE. AND HANDLING

A. Protect dampers from damage to operating linkages and blades.

B. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer and material.

C. Storage: Store materials in a dry area indoor, protected from damage.

D. Handling: Handle and lift dampers in accordance with manufacturer's instructions. Protect material and finishes during handling and installation to prevent damage.

### 1.05 ELECTRICAL AND CONTROL COORDINATION

A. Products Requiring Electrical Connection: Listed and classified by Underwriter's Laboratories, Inc., as suitable for the purpose specified and indicated.

## PART 2 PRODUCTS

### 2.01 VOLUME CONTROL DAMPERS

A. Galvanized Steel:

1. Manufacturers: Ruskin Model CD-35, Arrow Type 1770, or equal.

2. Fabricate in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible, and as indicated.

3. Construction: Fabricate from galvanized steel, minimum 16-gauge frames and blades. Blades shall overlap when closed. Linkage shall be concealed in frame and out of airstream. Molded synthetic blade bearings. Steel parts factory-coated with enamel.

4. Dampers 12 inches and over in height shall be opposed blade type.

## PART 3 EXECUTION

### 3.01 EXAMINATION

A. Verify ducts and equipment installation are ready for accessories.

B. Check location of air outlets and inlets and make necessary adjustments in position to conform to architectural features, symmetry, and lighting arrangement.

## 3.02 INSTALLATION

A. Install in accordance with NFPA 90-A, and follow SMACNA HVAC Duct Construction Standards – Metal and Flexible. Refer to Section 15810 for duct construction and pressure class.

B. Details of ductwork accessories installation shall conform to manufacturer's latest printed instructions, where not covered by the Drawings and Specifications.

C. Check location of ductwork accessories and make necessary adjustments in position to conform with architectural features and symmetry.

D. Provide flexible connections immediately adjacent to equipment in ducts associated with fans and motorized HVAC equipment, and supported by vibration isolators. For fans developing static pressures of 5.0 inches w.c. and over, cover connections with leaded vinyl sheet, held in place with metal strips.

E. Provide balancing dampers at points on supply, return, and exhaust systems where branches are taken from larger ducts as required for balancing. Install minimum two duct widths from duct take-off.

F. Use splitter dampers only where indicated.

G. Provide balancing dampers on high velocity systems where indicated.

H. Provide balancing dampers on duct take-off to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly.

I. The Drawings show approximate location for ductwork accessories. Carefully check electrical and architectural drawings for proper placement of air outlets and inlets and be responsible for exact location and size of openings required.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

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**SECTION 15905**
**HVAC INSTRUMENTATION AND CONTROL**

## PART 1 GENERAL

### 1.01 SCOPE

A. Section Includes:

1. Thermostats.
2. Freeze-stats.
3. Smoke detectors.
4. Pilot lights and devices.
5. Control panels.
6. Control air dampers.
7. Electric damper actuators.
8. Control valves.

B. This Section includes furnishing all materials, equipment, labor, and supervision to HVAC instrumentation and controls necessary for the completion of the Work in accordance with the Contract Documents.

C. This Section shall include but not limited to all appurtenances required for complete installation.

D. All Work performed under this Section shall comply and be in accordance with all approved trade practices and manufacturer's recommendations.

E. Additional equipment and installation requirements in Division 15 as included shall be provided by this Contract.

F. Additional product requirements are specified in Section 01350.

### 1.02 REFERENCES

A. Air Movement and Control Association International, Inc.:

1. AMCA 500 – Test Methods for Louvers, Dampers, and Shutters.

B. American Society of Heating, Refrigerating and Air-Conditioning Engineers:

1. ASHRAE 62 – Ventilation for Acceptable Indoor Air Quality.
2. ASHRAE 135 (2016; INT 1 2016) BACnet—A Data Communication Protocol for Building Automation and Control Networks

C. BACnet International

1. BTL Guide – BACnet Testing Laboratory Implementation Guidelines.

D. Institute of Electrical and Electronics Engineers

1. IEEE 802.3 Standard Information Technology – Telecommunications and Information Exchange Between Systems – Specific Requirements Part 3: CSMA/CD Access Method and Physical Layer Specifications.

E. National Electrical Manufacturers Association:

1. NEMA 250 – Enclosures for Electrical Equipment (100 Volts Maximum).

F. National Fire Protection Association:

1. NFPA 72 – National Fire Alarm Code.

2. NFPA 90A – Standard for the Installation of Air Conditioning and Ventilating Systems.

G. Telecommunications Industry Association:

1. TIA-485 – Electrical Characteristics of Generators and Receivers for Use in Balanced Digital Multipoint Systems.

H. U.S. Federal Communications Commission:

1. FCC Part 15 Radio Frequency Devices

I. Underwriters Laboratories:

1. UL 916 – Standard for Energy Management Equipment

## 1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. The Contractor shall indicate all variances from the requirements of the Contract Documents.

b. Submit manufacturer's catalog information for all control components and devices, indicate operating data, system drawings, wiring diagrams, and written detailed operational description of sequences.

2. Product Data:

a. Submit description and engineering data for each control system component. Include sizing as required.

3. Information for the Record:

a. Submit manufacturer's installation instructions, servicing requirements, and replacement parts list for each control component.

b. Project Record Documents: Record actual locations of control components, including panels, thermostats, and sensors.

c. Operation and Maintenance Manual: Submit inspection period, cleaning methods, recommended cleaning materials, and calibration tolerances.

## 1.04 QUALITY ASSURANCE

A. Control Air Damper Performance: Test in accordance with AMCA 500.

B. Perform Work in accordance with applicable standard.

## 1.05 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience approved by manufacturer.

## 1.06 PROTECTION FROM DAMAGE

A. Delivery, Handling, and Storage:

1. Material delivery, handling, and storage shall meet the requirements of Section 01350.

2. Accept controls on site in original factory packaging. Inspect for damage.

# PART 2 PRODUCTS

## 2.01 MATERIALS

A. Use new products the manufacturer is currently manufacturing and selling for use in new installations. Do not use this installation as a product test site unless explicitly approved in writing by Owner. Spare parts shall be available for at least five years after completion of this contract.

## 2.02 COMMUNICATION

A. Control products, communication media, connectors, repeaters, hubs, and routers shall comprise a BACnet internetwork. Controller and operator interface communication shall conform to ANSI/ASHRAE Standard 135, BACnet.

B. All IP based controllers shall be capable of providing IPv4 and IPv6 protocol standards as defined by the Internet Data Communications Standard.

C. The BMS contractor shall furnish and install all communication media, connectors, repeaters and network switches/routers, and network devices necessary to provide a complete and workable control network for both high speed Ethernet communications network/LAN and serial networks. The control network shall adhere to the owner’s testing, labeling, administration, and documentation requirements established and presented for the site. The dedicated control's network shall be capable of connecting to a separate owner/customer LAN.

D. Each controller shall have a communication port for temporary connection to a laptop computer or other operator interface. Connection shall support memory downloads and other commissioning and troubleshooting operations.

E. Internetwork operator interface and value passing shall be transparent to internetwork architecture.

1. An operator interface connected to a controller shall allow the operator to interface with each internetwork controller as if directly connected. Controller information such as data, status, and control algorithms shall be viewable and editable from each internetwork controller.

2. Inputs, outputs, and control variables used to integrate control strategies across multiple controllers shall be readable by each controller on the internetwork. Program and test all cross-controller links required to execute specified sequences of operation. An authorized operator shall be able to edit cross-controller links by typing a standard object address or by using a point-and-click interface.

F. Building Control Panels, and Controllers with real-time clocks shall use the BACnet Time Synchronization service. System shall automatically synchronize system clocks daily from an operator-designated device via the internetwork. The system shall automatically adjust for daylight saving and standard time as applicable.

G. System shall be expandable to at least twice the required BACnet objects. No additional licensing/software fees shall be required to add controllers, associated devices, and wiring.

H. System shall support Web services data exchange with any other system that complies with XML (extensible markup language) and SOAP (simple object access protocol) standards. Web services support shall as a minimum be provided at the workstation or web server level and shall enable data to be read from or written to the system.

1. System shall support Web services read data requests by retrieving requested trend data or point values (I/O hardware points, analog value software points, or binary value software points) from any system controller or from the trend history database.

2. System shall support Web services write data request to each analog and binary object that can be edited through the system operator interface by downloading a numeric value to the specified object.

3. For read or write requests, the system shall require user name and password authentication and shall support TLS (Transport Layer Security) or equivalent data encryption.

4. System shall support discovery through a Web services connection or shall provide a tool available through the Operator Interface that will reveal the path/identifier needed to allow a third party Web services device to read data from or write data to any object in the system which supports this service.

## 2.03 OPERATOR INTERFACE

A. Operator Interface. The web server shall reside on high-speed network with building controllers. Web pages generated by this server shall be compatible with the latest versions of Microsoft Internet Explorer or Edge, Google Chrome, Mozilla Firefox, and Apple Safari browsers. Any of these supported browsers connected to the server shall

be able to access all system information. Mobile devices shall be recognized by the web server and shall supply the appropriate system content as needed. The Operator Interface (web server with client devices) shall conform to the BACnet Operator Workstation (B-OWS) or BACnet Advanced Workstation (B-AWS) device profile as specified in ASHRAE/ANSI 135 BACnet Annex L. This includes the ability to configure and/or reconfigure the system from the client device (change programs, graphics, labels, etc.).

B. Communication. Web server and controllers shall communicate using BACnet protocol, including BACnet/SC. Web server and control network backbone shall communicate using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol and BACnet/IP addressing as specified in ANSI/ASHRAE 135, BACnet Annex J. Communication between the web server and client (workstation) shall be HTTP or HTTPS protocol utilizing HTML5 language. Use of Adobe Flash in any part of the communication infrastructure is not acceptable.

C. Hardware.

1. Web server and/or workstation. Industry-standard hardware shall meet or exceed DDC system manufacturer's recommended specifications and shall meet response times specified elsewhere in this document. The web server may also be configured in client/server fashion to accommodate a "workstation" definition. In "workstation" configuration, the workstation will also perform as a server supplying additional clients as needed. The following hardware requirements apply:

a. System storage shall have sufficient memory to accommodate:

1) All required system software.

2) A DDC database to accommodate, as a minimum, twice the size of the delivered system database.

3) One year of archival trend data based on the points specified to be trended at their specified trend intervals.

b. Provide additional hardware (communication ports, video drivers, network interface cards, cabling, etc.) to facilitate all control functions and software requirements specified for the DDC system.

c. Minimum hardware configuration shall include the following:

1) Quad Core Processor

2) 4-24 GB RAM (size dependent on size of system)

3) 500 GB hard disk providing data at 3.0 Gb/sec (size dependent on historical data storage requirements)

4) 16x DVD+/-RW drive

5) Qwerty Keyboard

6) Optical Mouse

7) 24-inch LED Color monitor with 75Hz refresh rate and 1080P resolution to provide a minimum screen resolution of 1920 x 1080 pixels.

8) Serial (USB) and network communication ports, with cables as required for proper DDC system operation.

D. System Software.

1. Operating System. Web server shall have an industry-standard professional-grade operating system. Operating system shall meet or exceed the BMS manufacturer's minimum requirements for their software. Acceptable systems include Microsoft Windows 8.1 or 10, Windows Server 2012 R2 or 2016 or 2019 or 2020, Red Hat Enterprise Linux 8.3, or Ubuntu Desktop 18.04 or 20.04 LTS.

2. Security. The web server application shall support Transport Layer Security (TLS) 1.3 capable of encryption of up to 256-bit elliptical curve for transmitting private information over the Internet using HTTPS. Additionally, the web server shall have SHA-2 certificate support capability.

3. Database. System shall support any JDBC (Java DataBase Connectivity) compliant engine. This includes: MS SQL, My SQL, Apache Derby, PostgreSQL and Oracle.

4. The BMS system shall allow an unlimited number of concurrent users.

5. The BMS manufacturer shall provide all software and tools necessary to provide the following capabilities:

   a. Create and/or edit any programming used in controllers

   b. Create and/or edit any graphics used in the system

   c. Software shall not be subscription based and be given to owner at time of turnover. If software is subscription based, manufacturer shall include 10 years of subscription service.

   d. The owner shall have the ability to install software on a minimum of five (5) additional owner furnished computers without additional licenses or fees.

6. System Graphics. The operator interface software shall be graphically based and shall include at least one graphic per piece of equipment or occupied zone, graphics for each chilled water and hot water system, and graphics that summarize conditions on each floor of each building included in this contract. Indicate thermal comfort on floor plan summary graphics using dynamic colors to represent zone temperature relative to zone setpoint.

   a. Minimum graphics resolution shall be 1920 x 1080 for display of detailed system graphics.

   b. Floor Plan Graphics. Floor plan graphics shall be capable of allowing the floor plan graphic to dynamically size relative to the end user's monitor resolution.

c. Functionality. Graphics shall allow operator to monitor system status, to view a summary of the most important data for each controlled zone or piece of equipment, to use point-and-click navigation between zones or equipment, and to edit setpoints and other specified parameters.

d. Animation. Graphics shall be able to animate by displaying different image files for changed object status.

e. Alarm Indication. Indicate areas or equipment in an alarm condition using color or other visual indicator.

f. Format. Graphics shall be saved in an industry-standard format such as BMP, JPEG, PNG, GIF, or SVG. Web-based system graphics shall be viewable on browsers compatible with World Wide Web Consortium browser standards. Web graphic format shall require no plug-in or shall only require widely available no-cost plug-ins.

7. Custom Graphics. Custom graphic files shall be created with the use of a graphics generation package furnished with the system. The graphics generation package shall be a graphically based system used to create and modify graphics that are saved in the same formats as are used for system graphics.

8. Graphics Library. Furnish a complete library of standard HVAC equipment graphics such as chillers, boilers, air handlers, terminals, fan coils, and unit ventilators. This library also shall include standard symbols for other equipment including fans, pumps, coils, valves, piping, dampers, and ductwork. The library shall be furnished in a file format compatible with the graphics generation package program.

E. System Applications. System shall provide the following functionality to authorized operators as an integral part of the operator interface or as stand-alone software programs. If furnished as part of the interface, the tool shall be available from each workstation or web browser interface. If furnished as a stand-alone program, software shall be installable on a standard PC type personal computer with no limit on the number of copies that can be installed under the system license.

1. Automatic System Database Configuration. Each workstation or web server shall store on its hard disk a copy of the current system database, including controller firmware and software. Stored database shall be automatically updated with each system configuration or controller firmware or software change.

2. Manual Controller Memory Download. Operators shall be able to download memory from the system database to each controller.

3. System Configuration. The workstation software shall provide a method of configuring the system. This shall allow for future system changes or additions by users under proper password.

4. On-Line Help. Provide a context-sensitive, on-line help system to assist the operator in operating and editing the system. Online help shall be available for all applications and shall provide the relevant data for that particular screen. Additional help information shall be available through the use of hypertext.

5. Security. Each operator shall be required to log on to the system with username and password in order to view, edit, add, or delete data.

    a. Operator Access. The username and password combination shall define accessible viewing, editing, adding, and deleting privileges for that operator. Users with system administrator rights shall be able to create new users and edit the privileges of all existing users. System administrators shall also be able to vary and deny each operator's privileges based on the geographic location, such as the ability to edit operating parameters in Building A, to view but not edit parameters in Building B, and to not even see equipment in Building C.

    b. Password Policy Rules. System administrator shall invoke policies for minimum password strength, including number of characters, special characters and numbers, upper and lower case, etc.

    c. Automatic Log Out. Automatically log out each operator if no keyboard or mouse activity is detected. This auto logoff time period shall be user adjustable.

    d. Encrypted Security Data. Store system security data including operator passwords in an encrypted format. System shall not display operator passwords.

6. System Diagnostics. The system shall automatically monitor the operation of all building management panels and controllers. The failure of any device shall be annunciated to the operator.

7. Alarm Processing. System input and status objects shall be configurable to alarm on departing from and on returning to normal state. Operator shall be able to enable or disable each alarm and to configure alarm limits, alarm limit differentials, alarm states, and alarm reactions for each system object. Configure and enable alarm points as required by sequences of operation. Alarms shall be BACnet alarm objects and shall use BACnet alarm services. BMS system shall be capable of assigning alarm sources to categories such as HVAC Critical, or HVAC General. The BMS shall include at a minimum HVAC and FDD categories. BMS system shall allow user to create custom alarm categories.

8. Alarm Messages. Alarm messages shall use the English language descriptor for the object in alarm in such a way that the operator will be able to recognize the source, location, and nature of the alarm without relying on acronyms or mnemonics.

9. Alarm Reactions. Operator shall be able to configure (by object) what, if any actions are to be taken during an alarm. As a minimum, the workstation or web server shall be able to log, print, start programs, display messages, send e-mail, send SMS text, and audibly annunciate.

10. Alarm and Event log. Operators shall be able to view all system alarms and changes of state from any location in the system. Events shall be listed chronologically. An operator with the proper security level may acknowledge

and delete alarms, and archive closed alarms to the workstation or web server hard disk.

11. Trend Logs. The operator shall be able to configure trend sample or change of value (COV) interval, start time, and stop time for each system data object and shall be able to retrieve data for use in spreadsheets and standard database programs. Controller shall sample and store trend data and shall be able to archive data to the hard disk. Configure trends as specified by the sequences of operation. Trends shall be BACnet trend objects.

12. Object and Property Status and Control. Provide a method for the operator to view, and edit if applicable, the status of any object or property in the system. The status shall be available by menu, on graphics, or through custom programs.

13. Reports and Logs. Operator shall be able to select, to modify, to create, and to print reports and logs. Operator shall be able to store report data in a format accessible by standard spreadsheet and word processing programs.

14. Audit and Security Detail. All users accessing the system shall have their actions recorded. Information recorded shall include:

    a. Login/logout time and date

    b. System modifications - with before and after values

    c. Ability to report user activity based on individual and/or date and time.

15. Standard Reports. Furnish the following standard system reports:

    a. Objects. System objects and current values filtered by object type, by status (in alarm, locked, normal), by equipment, by geographic location, or by combination of filter criteria.

    b. Alarm Summary. Current alarms and closed alarms. System shall retain closed alarms for an adjustable period.

    c. Logs. System shall log the following to a database or text file and shall retain data for an adjustable period:

        1) Alarm History.

        2) Trend Data. Operator shall be able to select trends to be logged.

16. Custom Reports. Operator shall be able to create custom reports that retrieve data, including archived trend data, from the system, that analyze data using common algebraic calculations, and that present results in tabular or graphical format. Reports shall be launched from the operator interface. Operator shall be able to schedule reports to automatically run and be emailed to recipients on a recurring basis from the BMS system.

F. Workstation Application Editors. Each PC or browser workstation shall support editing of all system applications. The applications shall be downloaded and executed at one or more of the controller panels.

1. Controller. Provide a full-screen editor for each type of application that shall allow the operator to view and change the configuration, name, control parameters, and set points for all controllers.

2. Scheduling. An editor for the scheduling application shall be provided at each workstation. Provide a method of selecting the desired schedule and schedule type. Exception schedules and holidays shall be shown clearly on the calendar. The start and stop times for each object shall be adjustable from this interface.

3. Custom Application Programming. Provide the tools to create, edit, debug, and download custom programs. System shall be fully operable while custom programs are edited, compiled, and downloaded. Programming language shall have the following features:

a. Language. Language shall be graphically based or English oriented. If graphically based, language shall use function blocks arranged in a logic diagram that clearly shows control logic flow. Function blocks shall directly provide functions listed below, and operators shall be able to create custom or compound function blocks. If English language oriented, language shall be based on the syntax of BASIC, FORTRAN, C, or PASCAL, and shall allow for free-form programming that is not column-oriented or “fill-in-the-blanks.”

b. Programming Environment. Tool shall provide a full-screen, cursor-and-mouse-driven programming environment that incorporates word processing features such as cut and paste. Operators shall be able to insert, add, modify, and delete custom programming code, and to copy blocks of code to a file library for reuse in other control programs.

c. Independent Program Modules. Operator shall be able to develop independently executing program modules that can disable, enable and exchange data with other program modules.

d. Debugging and Simulation. Operator shall be able to step through the program observing intermediate values and results. Operator shall be able to adjust input variables to simulate actual operating conditions. Operator shall be able to adjust each step’s time increment to observe operation of delays, integrators, and other time-sensitive control logic. Debugger shall provide error messages for syntax and for execution errors.

e. Conditional Statements. Operator shall be able to program conditional logic using compound Boolean (AND, OR, and NOT) and relational (EQUAL, LESS THAN, GREATER THAN, NOT EQUAL) comparisons.

f. Mathematical Functions. Language shall support floating-point addition, subtraction, multiplication, division, and square root operations, as well

as absolute value calculation and programmatic selection of minimum and maximum values from a list of values.

g. Variables. Operator shall be able to use variable values in program conditional statements and mathematical functions.

1) Time Variables. Operator shall be able to use predefined variables to represent time of day, day of the week, month of the year, and date. Other predefined variables or simple control logic shall provide elapsed time in seconds, minutes, hours, and days. Operator shall be able to start, stop, and reset elapsed time variables using the program language.

2) System Variables. Operator shall be able to use predefined variables to represent status and results of Controller Software and shall be able to enable, disable, and change setpoints of Controller Software as described in Controller Software section.

## 2.04 CONTROLLER SOFTWARE

A. All controller software applications shall reside and operate in the system controllers.

B. All application software in controllers furnished by BMS manufacturer shall be editable through operator workstation, web browser interface, or workstation.

C. Each controller furnished by BMS manufacturer shall have all of its local on board software applications backed up and saved to the BMS web server. In the event of a controller failure, the BMS server shall download backed up software applications to replacement controller. Controllers furnished by others and integrated into the BMS are not required to be backed up to BMS server.

D. Furnish the following applications for building and energy management:

1. System Security.

2. Scheduling. Provide the capability to execute control functions according to a user created or edited schedule. Each schedule shall provide the following schedule options as a minimum:

a. Weekly Schedule. Provide separate schedules for each day of the week. Each schedule shall be able to include up to 5 occupied periods (5 start-stop pairs or 10 events).

b. Exception Schedules. Provide the ability for the operator to designate any day of the year as an exception schedule. Exception schedules may be defined up to a year in advance. Once an exception schedule has executed, the system shall discard and replace the exception schedule with the standard schedule for that day of the week.

c. Holiday Schedules. Provide the capability for the operator to define up to 24 special or holiday schedules. These schedules will be repeated each year. The operator shall be able to define the length of each holiday period.

3. System Coordination. Operator shall be able to group related equipment based on function and location and to use these groups for scheduling and other applications.

4. Binary Alarms. Each binary object shall have the capability to be configured to alarm based on the operator-specified state. Provide the capability to automatically and manually disable alarming.

5. Analog Alarms. Each analog object shall have both high and low alarm limits. The operator shall be able to enable or disable these alarms.

6. Alarm Reporting. The operator shall be able to determine the action to be taken in the event of an alarm. An alarm shall be able to start programs, print, be logged in the event log, generate custom messages, and display on graphics.

7. Remote Communication. System shall automatically contact operator workstation or server on receipt of critical alarms. If no network connection is available, system shall use a modem connection.

8. Demand Limiting.

    a. The demand-limiting program shall monitor building power consumption from a building power meter (provided by others) which generates pulse signals or a BACnet communications interface. An acceptable alternative is for the system to monitor a watt transducer or current transformer attached to the building feeder lines.

    b. When power consumption exceeds adjustable levels, system shall automatically adjust setpoints, de-energize low-priority equipment, and take other programmatic actions to reduce demand as specified in in sequences of operation. When demand drops below adjustable levels, system shall restore loads as specified.

9. Maintenance Management. The system shall be capable of generating maintenance alarms when equipment exceeds adjustable runtime, equipment starts, or performance limits. Configure and enable maintenance alarms as specified in sequences of operation.

10. Sequencing. Application software shall sequence chillers, boilers, and pumps as specified in sequences of operation.

11. PID Control. System shall provide direct- and reverse-acting PID (proportional-integral-derivative) algorithms. Each algorithm shall have anti-windup and selectable controlled variable, setpoint, and PID gains. Each algorithm shall calculate a time-varying analog value that can be used to position an output or to stage a series of outputs. The calculation interval, PID gains, and other tuning parameters shall be adjustable by a user with the correct security level.

12. Staggered Start. System shall stagger controlled equipment restart after power outage. Operator shall be able to adjust equipment restart order and time delay between equipment restarts.

13. Energy Calculations.

    a. The system shall accumulate and convert instantaneous power (kW) or flow rates (gpm) to energy usage data.

    b. The system shall calculate a sliding-window average (rolling average). Operator shall be able to adjust window interval to 15 minutes, 30 minutes, or 60 minutes.

14. Anti-Short Cycling. All binary output objects shall be protected from short cycling by means of adjustable minimum on-time and off-time settings.

15. On and Off Control with Differential. Provide an algorithm that allows a binary output to be cycled based on a controlled variable and a setpoint. The algorithm shall be direct-acting or reverse-acting.

16. Runtime Totalization. Provide software to totalize runtime for each binary input and output. Operator shall be able to enable runtime alarm based on exceeded adjustable runtime limit. Configure and enable runtime totalization and alarms as required by sequences of operation.

## 2.05 CONTROLLERS

A. General. Provide an adequate number of Building Controllers (BC), Advanced Application Controllers (AAC), Application Specific Controllers (ASC), Smart Actuators (SA), and Smart Sensors (SS) as required to achieve performance specified by system performance. Every device in the system which executes control logic and directly controls HVAC equipment must conform to a standard BACnet Device profile as specified in ANSI/ASHRAE 135, BACnet Annex L. Unless otherwise specified, hardwired actuators and sensors may be used in lieu of communicating actuators, communicating sensors, BACnet Smart Actuators and BACnet Smart Sensors.

B. BACnet.

1. Building Controllers (BCs). Each BC shall conform to BACnet Building Controller (B-BC) device profile as specified in ANSI/ASHRAE 135, BACnet Annex L and shall be listed as a certified B-BC in the BACnet Testing Laboratories (BTL) Product Listing.

2. Advanced Application Controllers (AACs). Each AAC shall conform to BACnet Advanced Application Controller (B-AAC) device profile as specified in ANSI/ASHRAE 135, BACnet Annex L and shall be listed as a certified B-AAC in the BACnet Testing Laboratories (BTL) Product Listing.

3. Application Specific Controllers (ASCs). Each ASC shall conform to BACnet Application Specific Controller (B-ASC) device profile as specified in ANSI/ASHRAE 135, BACnet Annex L and shall be listed as a certified B-ASC in the BACnet Testing Laboratories (BTL) Product Listing.

4. Smart Actuators (SAs). An actuator which is controlled by a network connection rather than a binary or analog signal (0-10v, 4-20mA, relay, etc.). Each SA shall conform to BACnet Smart Actuator (B-SA) device profile as specified in

ANSI/ASHRAE 135, BACnet Annex L and shall be listed as a certified B-SA in the BACnet Testing Laboratories (BTL) Product Listing.

5. Smart Sensors (SSs). A sensor which provides information to the BAS via network connection rather than a binary or analog signal (0-10000 ohm, 4-20mA, dry contact, etc.). Each SS shall conform to BACnet Smart Sensor (B-SS) device profile as specified in ANSI/ASHRAE 135, BACnet Annex L and shall be listed as a certified B-SS in the BACnet Testing Laboratories (BTL) Product Listing.

6. BACnet Communication.

   a. Each controller residing on the ethernet data link shall capable of providing BACnet/SC capability as described in the above Communication Section.

   b. Each BC shall reside on or be connected to a BACnet network using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol and BACnet/IP or BACnet/SC.

   c. BACnet routing shall be performed by BCs or other BACnet device routers as necessary to connect BCs to networks of AACs and ASCs.

   d. Each AAC shall reside on a BACnet network using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol using BACnet/IP or BACnet/SC, or it shall reside on a BACnet network using the ARCNET or MS/TP Data Link/Physical layer protocol.

   e. Each ASC shall reside on a BACnet network using the ARCNET or MS/TP Data Link/Physical layer protocol.

   f. Each SA shall reside on a BACnet network using the ARCNET or MS/TP Data Link/Physical layer protocol.

   g. Each SS shall reside on a BACnet network using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol with BACnet/IP addressing, or it shall reside on a BACnet network using ARCNET or MS/TP Data Link/Physical layer protocol.

C. Security.

1. Provide BACnet firewall capability, as defined in the BACnet standard, for controllers that are IP capable.

D. Communication.

1. Service Port. Each controller shall provide a service communication port for connection to a Portable Operator’s Terminal.

2. Signal Management. BC and ASC operating systems shall manage input and output communication signals to allow distributed controllers to share real and virtual object information and to allow for central monitoring and alarms.

3. Data Sharing. Each BC and AAC shall share data as required with each networked BC and AAC.

4. Stand-Alone Operation. Each piece of equipment shall be controlled by a single controller to provide stand-alone control in the event of communication failure. All I/O points specified for a piece of equipment shall be integral to its controller. Provide stable and reliable stand-alone control using default values or other method for values normally read over the network such as outdoor air conditions, supply air or water temperature coming from source equipment, etc.

E. Environment. Controller hardware shall be suitable for anticipated ambient conditions.

1. Controllers used outdoors or in wet ambient conditions shall be mounted in waterproof enclosures and shall be rated for operation at -20°F to 140°F.

2. Controllers used in conditioned space shall be mounted in dust-protective enclosures and shall be rated for operation at 32°F to 120°F.

F. Serviceability. Provide diagnostic LEDs for power, communication, and processor. All wiring connections shall be made to a field-removable modular terminal strip or to a termination card connected by a ribbon cable. Each BC and AAC shall continually check its processor and memory circuit status and shall generate an alarm on abnormal operation. System shall continuously check controller network and generate alarm for each controller that fails to respond.

G. Real-time Clock. Controller shall have a real-time clock to keep track of time in the event of a power failure for up to three (3) days.

H. Memory.

1. Controller memory shall support operating system, database, and programming requirements.

2. Each controller shall use volatile memory with battery backed up memory or nonvolatile memory and shall retain BIOS and application programming in the event of power loss. System shall automatically download dynamic control parameters following power loss.

I. Immunity to Power and Noise. Controllers shall be able to operate at 90% to 110% of nominal voltage rating and shall perform an orderly shutdown below 80% nominal voltage.

J. Transformer. Power supply shall be fused or current limiting and shall be rated at a minimum of 125% of controller power consumption.

## 2.06 INPUT AND OUTPUT INTERFACE

A. General. Hard-wire input and output points to BCs, AACs, or ASCs.

B. Protection. All input points and output points shall be protected such that shorting of the point to itself, to another point, or to ground shall cause no damage to the controller. All input and output points shall be protected from voltage up to 24 V of any duration, such that contact with this voltage will cause no controller damage.

C. Binary Inputs. Binary inputs shall allow the monitoring of ON/OFF signals from remote devices. Binary inputs shall sense dry contact closure without application of power external to the controller.

D. Pulse Accumulation Inputs. Pulse accumulation inputs shall conform to binary input requirements and shall also accumulate up to 10 pulses per second.

E. Analog Inputs. Analog inputs shall monitor low-voltage (0–10 Vdc), current (4–20 mA), or resistance (thermistor or RTD) signals. Analog inputs shall be compatible with and field configurable to commonly available sensing devices.

F. Binary Outputs. Binary outputs shall provide for ON/OFF operation or a pulsed low-voltage signal for pulse width modulation control. Binary outputs on Building Controllers shall have three-position (on-off-auto) override switches and status lights. Outputs shall be selectable for normally open or normally closed operation.

G. Analog Outputs. Analog outputs shall provide a modulating signal for the control of end devices. Outputs shall provide either a 0–10 Vdc or a 4–20 mA signal as required to properly control output devices. Each Building Controller analog output shall have a two-position (auto-manual) switch, a manually adjustable potentiometer, and status lights. Analog outputs shall not drift more than 0.4% of range annually.

H. Tri-State Outputs. Control three-point floating electronic actuators without feedback with tri-state outputs (two coordinated binary outputs). Tri-State outputs may be used to provide analog output control in zone control and terminal unit control applications such as VAV terminal units, duct-mounted heating coils, and zone dampers.

I. Universal Inputs and Outputs. Inputs and outputs that can be designated as either binary or analog in software shall conform to the provisions of this section that are appropriate for their designated use.

## 2.07 POWER SUPPLIES AND LINE FILTERING

A. Power Supplies. Control transformers shall be UL listed. Furnish Class 2 current-limiting type or furnish over-current protection in primary and secondary circuits for Class 2 service in accordance with NEC requirements. Limit connected loads to 80% of rated capacity.

1. DC power supply output shall match output current and voltage requirements. Unit shall be full-wave rectifier type with output ripple of 5.0 mV maximum peak-to-peak. Regulation shall be 1.0% line and load combined, with 100-microsecond response time for 50% load changes. Unit shall have built-in over-voltage and over-current protection and shall be able to withstand 150% current overload for at least three seconds without trip-out or failure.

a. Unit shall operate between 32°F and 120°F. EM/RF shall meet FCC Class B and VDE 0871 for Class B and MILSTD 810C for shock and vibration.

b. Line voltage units shall be UL recognized and CSA listed.

B. Power Line Filtering.

1. Provide internal or external transient voltage and surge suppression for workstations and controllers. Surge protection shall have:

a. Dielectric strength of 1000 V minimum

b. Response time of 10 nanoseconds or less

c. Transverse mode noise attenuation of 65 dB or greater

d. Common mode noise attenuation of 150 dB or greater at 40–100 Hz

## 2.08 LOCAL CONTROL PANELS

A. All indoor control cabinets shall be fully enclosed NEMA 1 construction with (hinged door) key-lock latch and removable subpanels. A single key shall be common to all field panels and subpanels.

B. Interconnections between internal and face-mounted devices shall be prewired with color-coded stranded conductors neatly installed in plastic troughs and/or tie-wrapped. Terminals for field connections shall be UL listed for 600 volt service, individually identified per control/interlock drawings, with adequate clearance for field wiring. Control terminations for field connection shall be individually identified per control drawings.

C. Provide ON/OFF power switch with overcurrent protection for control power sources to each local panel.

## 2.09 WIRING AND RACEWAYS

A. General. Provide copper wiring, plenum cable, and raceways as specified in applicable sections of Division 16.

B. Insulated wire shall use copper conductors and shall be UL listed for 200°F minimum service.

## 2.10 SUPERVISORY CONTROL REQUIREMENTS

A. Alarm Generation Hardware

B. DDC Hardware used for alarm generation must meet the following requirements:

1. Device must support the AE-N-I-B BIBB

2. The Recipient_List Property must be Writeable for all Notification Class Objects used for alarm generation.

3. For all Objects implementing Intrinsic Alarming, the following Properties must be Writeable:

a. Time_Delay

b. High_Limit

c. Low_Limit

d. Deadband

e. Event_Enable.

C. It is preferred, but not required, that devices support the DM-OCD-B BIBB on all Notification Class Objects. It is also preferred, but not required that devices supporting the DM-OCD-B BIBB accept any valid value as an initial value for properties of Notification Class Objects.

## 2.11 CONTROL VALVES

A. Manufacturers: Johnson Controls, Honeywell, or equal.

B. Ball Valves:

1. Threaded ends for 2-way valves 3 inches and smaller. Threaded ends for 3-way valves 2 inches and smaller.

2. Forged brass body, chrome plated brass ball and blowout proof stem and EPDM O-rings with minimum 600 psig rating.

3. Fluid Temperature Range: minus 20 to 250 degrees F.

4. Sizing: 3 psig maximum pressure drop at design flow rate.

5. Flow Characteristics: Furnish 2-way valves with equal percentage characteristics. Furnish 3-way valves with equal percentage characteristic through control port and linear characteristic through bypass port.

6. Size 2-way valve actuators to close valves against pump shut off head.

## 2.12 ELECTRIC VALVE ACTUATORS

A. Manufacturers: Johnson Controls, Honeywell, or equal.

B. Fully factory assembled. Size to operate with sufficient reserve power to provide smooth modulating action or two-position action under every condition.

C. Motor: Permanent split-capacitor or shaded-pole type. Gear trains completely oil immersed and sealed. Furnish spring-return motors with integral spiral-spring mechanism in housings designed for easy removal for service or adjustment of limit switches, auxiliary switches, or feedback potentiometer.

D. Actuator: Direct-coupled type non-hydraulic designed for minimum 100,000 full-stroke cycles at rated torque. Furnish actuator with rating of not less than twice thrust needed for actual operation of valve.

1. Coupling: V-bolt and V-shaped, toothed cradle.

2. Overload Protection: Electronic overload or digital rotation-sensing circuitry.

3. Fail-Safe Operation: Mechanical, spring-return mechanism. Furnish external, manual gear release on non-spring-return actuators.

4. Furnish spring-return actuators with manual override. Complete manual override to take no more than 10 turns.

5. Power Requirements:

   a. Two-Position Spring Return: 24-volt AC or DC, maximum 10 vA.

   b. Modulating: 24-volt AC, maximum 15 vA.

6. Proportional Signal: 2-to-10-volt dc or 4 to 20 mA, and 2-to-10-volt dc position feedback signal.

7. Temperature Rating: minus 22 to 140 degrees F.

8. Run Time: 200 seconds open, 40 seconds closed.

E. Size for torque required for valve close-off at maximum pump differential pressure, regardless of water loop system pressures.

## 2.13 DIRECT DIGITAL CONTROL SYSTEM COMPONENTS

A. Manufacturers: Johnson Controls, or equal.

B. Temperature Sensors:

1. Type: Resistance temperature detector (RTD) or thermistor.

2. Accuracy:

   a. Plus or minus 1 degree F for standard applications. Where high accuracy is required, furnish accuracy of plus or minus 0.2 degrees F.

   b. Sensing Accuracy: Plus or minus 0.5 degree F.

   c. Display Accuracy and Resolution: Minimum of plus or minus 1 degree F.

3. Built-in communications port.

4. Space Sensors: Digital with LCD display, day-night override button, and set point slide adjustment override options. Set point slide adjustment capable of being software limited by automation system to limit amount of room adjustment.

5. Outside Air Sensors: Watertight inlet fitting, furnish with shield from direct sunlight.

6. Duct Temperature Sensors:

   a. Rigid or averaging type as indicated in sequence of operations. Averaging sensor minimum length: 5 feet in length.

   b. Duct Cross Sections Greater Than 10 square feet: Furnish serpentine averaging element to sense stratified air temperatures.

7. Piping Temperature Sensors: Furnish with separable brass well.

C. Air Flow Switches:

1. Paddle or differential pressure type, as indicated in sequences of operation.

2. UL Listed, SPDT snap-acting with pilot duty rating (125 VA minimum).

3. Appropriate scale range and differential adjustment.

4. Adjustable sensitivity.

5. NEMA 250 Type 1 enclosure.

D. Water Flow Switches:

1. Paddle type with stainless steel or bronze paddle.
2. UL Listed, SPDT snap-acting with pilot duty rating (125 VA minimum).
3. Appropriate scale range and differential adjustment.
4. Adjustable sensitivity.
5. NEMA 250 Type 1 enclosure.
6. Furnish vapor proof type for chilled water applications.

E. Carbon Monoxide Detectors: Single or multi-channel, dual-level detectors, using solid-state sensors with 3-year minimum life, maximum 15-minute sensor replacement, suitable over a temperature range of 23 to 130 degrees F, calibrated for 50 and 100 ppm, with maximum 120 second response time to 100 ppm carbon monoxide.

F. Carbon Dioxide Sensor and Transmitter: Single detectors, using solid-state infrared sensors, suitable over a temperature range of 23 to 130 degrees F, calibrated for 0 to 2 percent, with continuous or averaged reading, 4 to 20 mA output, and wall mounted.

G. Oxygen Sensor and Transmitter: Single detectors, using solid-state zircon cell sensing, suitable over temperature range of minus 32 to 1100 degrees F, calibrated for 0 to 5 percent, with continuous or averaged reading, 4 to 20 mA output, wall mounted.

## PART 3 EXECUTION

### 3.01 EXAMINATION

A. Verify air handling units and ductwork installation is complete and air filters are in place before installing sensors in air streams.

B. Verify location of thermostats and other exposed control sensors with Drawings before installation.

C. Verify building systems to be controlled are ready to operate.

D. The project plans shall be thoroughly examined for control device and equipment locations. Any discrepancies, conflicts, or omissions shall be reported to the architect/engineer for resolution before rough-in work is started.

E. The contractor shall inspect the site to verify that equipment may be installed as shown. Any discrepancies, conflicts, or omissions shall be reported to the engineer for resolution before rough-in work is started.

F. The contractor shall examine the drawings and specifications for other parts of the work. If head room or space conditions appear inadequate—or if any discrepancies occur between the plans and the contractor's work and the plans and the work of others—the contractor shall report these discrepancies to the engineer and shall obtain written instructions for any changes necessary to accommodate the contractor's work with the work of others. Any changes in the work covered by this specification made

necessary by the failure or neglect of the contractor to report such discrepancies shall be made by—and at the expense of—this contractor.

## 3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install thermostats, space temperature sensors, and other exposed control sensors after locations are coordinated with other Work.

C. Install thermostats, space temperature sensors, and other exposed control sensors 48 inches above floor.

D. Install freeze protection thermostats using flanges and element holders.

E. Install outdoor air thermostats and outdoor sensors indoors, with sensing elements outdoors with sun shield.

F. Install thermostats in aspirating boxes in public areas and building entrances.

G. Install control panels adjacent to associated equipment on vibration free walls or freestanding supports. Use one cabinet for more than one system in same equipment room. Use one cabinet for each system. Install engraved plastic nameplates for instruments and controls inside cabinet and engraved plastic nameplates on cabinet face. Label with appropriate equipment or system designation.

H. Install "hand/off/auto" selector switches to override automatic interlock controls when switch is in "hand" position.

I. Install conduit and electrical wiring in accordance with Division 16.

J. Install Work in accordance with applicable standards.

## 3.03 PROTECTION

A. The contractor shall protect all work and material from damage by his/her work or employees and shall be liable for all damage thus caused.

B. The contractor shall be responsible for his/her work and equipment until finally inspected, tested, and accepted. The contractor shall protect any material that is not immediately installed. The contractor shall close all open ends of work with temporary covers or plugs during storage and construction to prevent entry of foreign objects.

## 3.04 COORDINATION

A. Site

1. Where the mechanical work will be installed in close proximity to, or will interfere with, work of other trades, the contractor shall assist in working out space conditions to make a satisfactory adjustment. If the contractor installs his/her work before coordinating with other trades, so as to cause any interference with work of other trades, the contractor shall make the necessary changes in his/her work to correct the condition without extra charge.

2. Coordinate and schedule work with other work in the same area and with work dependent upon other work to facilitate mutual progress.

B. Test and Balance.

1. The contractor shall furnish a single set of all tools necessary to interface to the control system for test and balance purposes.

2. The contractor shall provide training in the use of these tools. This training will be planned for a minimum of 4 hours.

3. In addition, the contractor shall provide a qualified technician to assist in the test and balance process, until the first 20 terminal units are balanced.

4. The tools used during the test and balance process will be returned at the completion of the testing and balancing.

C. Life Safety.

1. Duct smoke detectors required for air handler shutdown are provided under Division 16. Interlock smoke detectors to air handlers for shutdown as specified in sequences of operation.

2. Smoke dampers and actuators required for duct smoke isolation are provided under Division 15. Interlock smoke dampers to air handlers as specified in sequences of operation.

3. Fire and smoke dampers and actuators required for fire-rated walls are provided under Division 15. Fire and smoke damper control is provided under Division 16.

D. Coordination with controls specified in other sections or divisions. Other sections and/or divisions of this specification include controls and control devices that are to be part of or interfaced to the control system specified in this section. These controls shall be integrated into the system and coordinated by the contractor as follows:

1. All communication media and equipment shall be provided as specified.

2. Each supplier of a controls product is responsible for the configuration, programming, start up, and testing of that product to meet the sequences of operation described on the drawings.

3. The contractor shall coordinate and resolve any incompatibility issues that arise between control products provided under this section and those provided under other sections or divisions of this specification.

4. The contractor is responsible for providing all controls described in the contract documents regardless of where within the contract documents these controls are described.

5. The contractor is responsible for the interface of control products provided by multiple suppliers regardless of where this interface is described within the contract documents.

## 3.05 GENERAL WORKMANSHIP

A. Install equipment, piping, and wiring/raceway parallel to building lines (i.e. horizontal, vertical, and parallel to walls) wherever possible.

B. Provide sufficient slack and flexible connections to allow for vibration of piping and equipment.

C. Install equipment in readily accessible locations as defined by Chapter 1 Article 100 Part A of the National Electrical Code (NEC).

D. Verify integrity of all wiring to ensure continuity and freedom from shorts and grounds.

E. All equipment, installation, and wiring shall comply with industry specifications and standards for performance, reliability, and compatibility and be executed in strict adherence to local codes and standard practices.

## 3.06 FIELD QUALITY CONTROL

A. All work, materials, and equipment shall comply with rules and regulations of applicable local, state, and federal codes.

B. After completion of installation, test and adjust control equipment. Submit data showing set points and final adjustments of controls.

C. Contractor shall continually monitor the field installation for code compliance and quality of workmanship.

D. Contractor shall have work inspection by local and/or state authorities having jurisdiction over the work.

## 3.07 WIRING

A. All control and interlock wiring shall comply with national and local electrical codes, and Division 16 of this specification, Where the requirements of this section differ from Division 16, the requirements of this section shall take precedence.

B. All NEC Class 1 (line voltage) wiring shall be UL listed in an approved raceway according to NEC and Division 16 requirements.

C. All low-voltage wiring shall meet NEC Class 2 requirements. Low-voltage power circuits shall be subfused when required to meet Class 2 current limit.

D. Where NEC Class 2 (current-limited) wires are in concealed and accessible locations, including ceiling return air plenums, approved cables not in raceway may be used provided that cables are UL listed for the intended application.

E. All wiring in mechanical, electrical, or service rooms – or where subject to mechanical damage – shall be installed in raceway at levels below 10ft.

F. Do not install Class 2 wiring in raceways containing Class 1 wiring. Boxes and panels containing high-voltage wiring and equipment may not be used for low-voltage wiring except for the purpose of interfacing the two (e.g. relays and transformers).

G. Do not install wiring in raceway containing tubing.

H. Where Class 2 wiring is run exposed, wiring is to be run parallel along a surface or perpendicular to it and neatly tied at 10 ft intervals.

I. Where plenum cables are used without raceway, they shall be supported from or anchored to structural members. Cables shall not be supported by or anchored to ductwork, electrical raceways, piping, or ceiling suspension systems.

J. All wire-to-device connections shall be made at a terminal block or terminal strip. All wire-to-wire connections shall be at a terminal block.

K. All wiring within enclosures shall be neatly bundled and anchored to permit access and prevent restriction to devices and terminals.

L. Maximum allowable voltage for control wiring shall be 120 V. If only higher voltages are available, the contractor shall provide step-down transformers.

M. All wiring shall be installed as continuous lengths, with no splices permitted between termination points.

N. Install plenum wiring in sleeves where it passes through walls and floors. Maintain fire rating at all penetrations.

O. Size of raceway and size and type of wire type shall be the responsibility of the contractor in keeping with the manufacturer's recommendations and NEC requirements, except as noted elsewhere.

P. Include one pull string in each raceway 1 in. or larger.

Q. Use color-coded conductors throughout with conductors of different colors.

R. Control and status relays are to be located in designated enclosures only. These enclosures include packaged equipment control panel enclosures unless they also contain Class 1 starters.

S. Conceal all raceways except within mechanical, electrical, or service rooms. Install raceway to maintain a minimum clearance of 6 in. from high-temperature equipment (e.g. steam pipes or flues).

T. Secure raceways with raceway clamps fastened to the structure and spaced according to code requirements. Raceways and pull boxes may not be hung on flexible duct strap or tie rods. Raceways may not be run on or attached to ductwork.

U. Adhere to this specification's Division 16 requirements where raceway crosses building expansion joints.

V. Install insulated bushings on all raceway ends and openings to enclosures. Seal top end of vertical raceways.

W. The contractor shall terminate all control and/or interlock wiring and shall maintain updated (as-built) wiring diagrams with terminations identified at the job site.

X. Flexible metal raceways and liquid-tight flexible metal raceways shall not exceed 3 ft in length and shall be supported at each end. Flexible metal raceway less than ½ in. electrical trade size shall not be used. In areas exposed to moisture, including chiller and boiler rooms, liquid-tight, flexible metal raceways shall be used.

Y. Raceway must be rigidly installed, adequately supported, properly reamed at both ends, and left clean and free of obstructions. Raceway sections shall be joined with couplings (according to code). Terminations must be made with fittings at boxes, and ends not terminating in boxes shall have bushings installed.

## 3.08 COMMUNICATION WIRING

A. The contractor shall adhere to the items listed in the "Wiring" article in Part 3 of the specification.

B. All cabling shall be installed in a neat and workmanlike manner. Follow manufacturer's installation recommendations for all communication cabling

C. Do not install communication wiring in raceways and enclosures containing Class 1 or other Class 2 wiring.

D. Maximum pulling, tension, and bend radius for the cable installation, as specified by the cable manufacturer, shall not be exceeded during installation.

E. Contractor shall verify the integrity of the entire network following cable installation. Use appropriate test measures for each particular cable.

F. When a cable enters or exits a building, a lightning arrestor must be installed between the lines and ground. The lighting arrestor shall be installed according to manufacturer's instructions.

G. All runs of communication wiring shall be unspliced length when that length is commercially available.

H. All communication wiring shall be labeled to indicate origination and destination data.

I. Grounding of coaxial cable shall be in accordance with NEC regulations article on "Communications Circuits, Cable, and Protector Grounding."

J. BACnet IP, Arcnet, or MS/TP communications wiring shall be installed in accordance with ASHRAE/ANSI Standard 135. This includes but is not limited to:

1. IP

    a. The network shall use Cat5e or greater cabling for connections.

    b. Custom made patch cables must use either the T568A or T568 wiring standard and must use the same standard on both ends of the cable.

2. Arcnet

    a. The network shall use shielded, twisted-pair cable with characteristic impedance between 100 nominal. Distributed capacitance between conductors shall be less than 12.5 pF per foot.

    b. The maximum length of an Arcnet segment is 2000 ft with AWG 22 cable.

    c. The maximum number of nodes per segment shall be 32, as specified in the EIA 485 standard. Additional nodes may be accommodated by the use of repeaters.

d. An Arcnet network shall have no T connections.

3. MS/TP

a. The network shall use shielded, twisted-pair cable with characteristic impedance between 100 and 120 ohms. Distributed capacitance between conductors shall be less than 30 pF per foot.

b. The maximum length of an MS/TP segment is 4000 ft with AWG 18 cable. The use of greater distances and/or different wire gauges shall comply with the electrical specifications of EIA-485.

c. The maximum number of nodes per segment shall be 32, as specified in the EIA 485 standard. Additional nodes may be accommodated by the use of repeaters.

d. An MS/TP EIA-485 network shall have no T connections.

## 3.09 INSTALLATION OF SENSORS

A. Install sensors in accordance with the manufacturer's recommendations.

B. Mount sensors rigidly and adequately for environment within which the sensor operates.

C. Room temperature sensors shall be installed on concealed junction boxes properly supported by wall framing.

D. All wires attached to sensors shall be sealed in their raceways or in the wall to stop air transmitted from other areas from affecting sensor readings.

E. Sensors used in mixing plenums and hot and cold decks shall be of the averaging type. Averaging sensors shall be installed in a serpentine manner vertically across the duct. Each bend shall be supported with a capillary clip.

F. Low-limit sensors used in mixing plenums shall be installed in a serpentine manner horizontally across duct. Each bend shall be supported with a capillary clip. Provide 10 ft of sensing element for each 1 ft2 of coil area.

G. Do not install temperature sensors within the vapor plume of a humidifier. If installing a sensor downstream of a humidifier, install it at least 10 ft downstream.

H. All pipe-mounted temperature sensors shall be installed in wells. Install liquid temperature sensors with heat-conducting fluid in thermal wells.

I. Install outdoor air temperature sensors on north wall, complete with sun shield at designated location.

J. Differential Air Static Pressure.

1. Supply Duct Static Pressure. Pipe the high-pressure tap to the duct using a pitot tube. Pipe the low-pressure port to a tee in the high-pressure tap tubing of the corresponding building static pressure sensor (if applicable) or to the location of the duct high-pressure tap and leave open to the plenum.

2. Return Duct Static Pressure. Pipe high-pressure tap to duct using a pitot tube. Pipe the low-pressure port to a tee in the low-pressure tap tubing of the corresponding building static pressure sensor.

3. Building Static Pressure. Pipe the low-pressure port of the pressure sensor to the static pressure port located on the outside of the building through a high-volume accumulator. Pipe the high-pressure port to a location behind a thermostat cover.

4. The piping to the pressure ports on all pressure transducers shall contain a capped test port located adjacent to the transducer.

5. All pressure transducers, other than those controlling VAV boxes, shall be located in field device panels, not on the equipment monitored or on ductwork. Mount transducers in a location accessible for service without use of ladders or special equipment.

6. All air and water differential pressure sensors shall have gauge tees mounted adjacent to the taps. Water gauges shall also have shut-off valves installed before the tee.

K. Smoke detectors, freezestats, high-pressure cut-offs, and other safety switches shall be hard-wired to de-energize equipment as described in the sequence of operation. Switches shall require manual reset. Provide contacts that allow DDC software to monitor safety switch status.

L. Install humidity sensors for duct mounted humidifiers at least 10 ft downstream of the humidifier. Do not install filters between the humidifier and the sensor.

## 3.10 ACTUATORS

A. General. Mount and link control damper actuators according to manufacturer's instructions.

1. To compress seals when spring-return actuators are used on normally closed dampers, power actuator to approximately 5° open position, manually close the damper, and then tighten the linkage.

2. Check operation of damper/actuator combination to confirm that actuator modulates damper smoothly throughout stroke to both open and closed positions.

3. Provide all mounting hardware and linkages for actuator installation.

B. Electric/Electronic

1. Dampers: Actuators shall be direct mounted on damper shaft or jackshaft unless shown as a linkage installation. For low-leakage dampers with seals, the actuator shall be mounted with a minimum 5° travel available for tightening the damper seal. Actuators shall be mounted following manufacturer's recommendations.

2. Valves: Actuators shall be connected to valves with adapters approved by the actuator manufacturer. Actuators and adapters shall be mounted following the actuator manufacturer's recommendations.

## 3.11 WARNING LABELS

A. Permanent warning labels shall be affixed to all equipment that can be automatically started by the control system.

1. Labels shall use white lettering, 12-point type or larger, on a red background.

2. Warning labels shall read as follows.

a. C A U T I O N: This equipment is operating under automatic control and may start or stop at any time without warning. Switch disconnect to "Off" position before servicing.

B. Permanent warning labels shall be affixed to all motor starters and control panels that are connected to multiple power sources utilizing separate disconnects.

1. Labels shall use white lettering, 12-point type or larger, on a red background.

2. Warning labels shall read as follows.

a. C A U T I O N: This equipment is fed from more than one power source with separate disconnects. Disconnect all power sources before servicing.

## 3.12 IDENTIFICATION OF HARDWARE AND WIRING

A. All wiring and cabling, including that within factory-fabricated panels shall be labeled at each end within 2 in. of termination with control system address or termination number.

B. All pneumatic tubing shall be labeled at each end within 2 in. of termination with a descriptive identifier.

C. Permanently label or code each point of field terminal strips to show the instrument or item served.

D. Identify control panels with minimum ½ in. letters on laminated plastic nameplates.

E. Identify all other control components with permanent labels. All plug-in components shall be labeled such that label removal of the component does not remove the label.

F. Identify room sensors related to terminal boxes or valves with nameplates.

G. Manufacturers' nameplates and UL or CSA labels shall be visible and legible after equipment is installed.

H. Identifiers shall match record documents.

## 3.13 CONTROLLERS

A. Provide a separate controller for each AHU or other HVAC system. A DDC controller may control more than one system provided that all points associated with the system are

assigned to the same DDC controller. Points used for control loop reset, such as outside air or space temperature, are exempt from this requirement.

B. Building Controllers and Custom Application Controllers shall be selected to provide the required I/O point capacity required to monitor all of the hardware points listed in sequences of operation.

## 3.14 PROGRAMMING

A. Provide sufficient internal memory for the specified sequences of operation and trend logging.

B. Point Naming. Coordinate with owner for point naming conventions. Name points as shown on the equipment points list provided with each sequence of operation or as directed by owner. If character limitations or space restrictions make it advisable to shorten the name, abbreviations as coordinated with owner may be used. Where multiple points with the same name reside in the same controller, each point name may be customized with its associated Program Object number. For example, “Zone Temp 1” for Zone 1, “Zone Temp 2” for Zone 2.

C. Software Programming.

1. Provide programming for the system and adhere to the sequences of operation provided. All other system programming necessary for the operation of the system, but not specified in this document, also shall be provided by the contractor. Embed into the control program sufficient comment statements to clearly describe each section of the program. The comment statements shall reflect the language used in the sequences of operation. Use the appropriate technique based on the following programming types:

a. Text-based:

1) Must provide actions for all possible situations.

2) Must be modular and structured.

3) Must be commented.

b. Graphic-based:

1) Must provide actions for all possible situations.

2) Must be documented.

c. Parameter-based:

1) Must provide actions for all possible situations.

2) Must be documented.

D. Operator Interface.

1. Standard Graphics. Provide graphics for all mechanical systems and floor plans of the building. This includes each chilled water system, hot water system, chiller, boiler, air handler, and all terminal equipment. Point information on the graphic displays shall dynamically update. Show on each graphic all input and

output points for the system. Also show relevant calculated points such as setpoints. As a minimum, show on each equipment graphic the input and output points and relevant calculated points as indicated on the applicable Points List or sequence of operation.

2. The contractor shall provide all the labor necessary to install, initialize, start up, and troubleshoot all operator interface software and its functions as described in this section. This includes any operating system software, the operator interface database, and any third-party software installation and integration required for successful operation of the operator interface.

## 3.15 CONTROL SYSTEM CHECKOUT AND TESTING

A. Startup Testing. All testing listed in this article shall be performed by the contractor and shall make up part of the necessary verification of an operating control system. This testing shall be completed before the owner's representative is notified of the system demonstration.

1. The contractor shall furnish all labor and test apparatus required to calibrate and prepare for service of all instruments, controls, and accessory equipment furnished under this specification.

2. Verify that all control wiring is properly connected and free of all shorts and ground faults. Verify that terminations are tight.

3. Enable the control systems and verify calibration of all input devices individually. Perform calibration procedures according to manufacturers' recommendations.

4. Verify that all binary output devices (relays, solenoid valves, two-position actuators and control valves, magnetic starters, etc.) operate properly and that the normal positions are correct.

5. Verify that all analog output devices (I/Ps, actuators, etc.) are functional, that start and span are correct, and that direction and normal positions are correct. The contractor shall check all control valves and automatic dampers to ensure proper action and closure. The contractor shall make any necessary adjustments to valve stem and damper blade travel.

6. Verify that the system operation adheres to the sequences of operation. Simulate and observe all modes of operation by overriding and varying inputs and schedules. Tune all DDC loops.

7. Alarms and Interlocks:

a. Check each alarm separately by including an appropriate signal at a value that will trip the alarm.

b. Interlocks shall be tripped using field contacts to check the logic, as well as to ensure that the fail-safe condition for all actuators is in the proper direction.

c. Interlock actions shall be tested by simulating alarm conditions to check the initiating value of the variable and interlock action.

## 3.16 CONTROL SYSTEM DEMONSTRATION AND ACCEPTANCE

A. Demonstration.

1. Prior to acceptance, the control system shall undergo a series of performance tests to verify operation and compliance with this specification. These tests shall occur after the Contractor has completed the installation, started up the system, and performed his/her own tests.

2. The tests described in this section are to be performed in addition to the tests that the contractor performs as a necessary part of the installation, start-up, and debugging process and as specified in the "Control System Checkout and Testing" article in Part 3 of this specification. The engineer will be present to observe and review these tests. The engineer shall be notified at least 10 days in advance of the start of the testing procedures.

3. The demonstration process shall follow that approved in Part 1, "Submittals." The approved checklists and forms shall be completed for all systems as part of the demonstration.

4. The contractor shall provide at least two persons equipped with two-way communication and shall demonstrate actual field operation of each control and sensing point for all modes of operation including day, night, occupied, unoccupied, fire/smoke alarm, seasonal changeover, and power failure modes. The purpose is to demonstrate the calibration, response, and action of every point and system. Any test equipment required to prove the proper operation shall be provided by and operated by the contractor.

5. As each control input and output is checked, a log shall be completed showing the date, technician's initials, and any corrective action taken or needed.

6. Demonstrate compliance with Part 1, "System Performance."

7. Demonstrate compliance with sequences of operation through all modes of operation.

8. Demonstrate complete operation of operator interface.

9. Additionally, the following items shall be demonstrated:

   a. DDC loop response. The contractor shall supply trend data output in a graphical form showing the step response of each DDC loop. The test shall show the loop's response to a change in set point, which represents a change of actuator position of at least 25% of its full range. The sampling rate of the trend shall be from 10 seconds to 3 minutes, depending on the speed of the loop. The trend data shall show for each sample the set point, actuator position, and controlled variable values. Any loop that yields unreasonably under-damped or over-damped control shall require further tuning by the Contractor.

   b. Demand limiting. The contractor shall supply a trend data output showing the action of the demand limiting algorithm. The data shall document the action on a minute-by-minute basis over at least a 30-

minute period. Included in the trend shall be building kW, demand limiting set point, and the status of sheddable equipment outputs.

c. Optimum start/stop. The contractor shall supply a trend data output showing the capability of the algorithm. The change-of-value or change-of-state trends shall include the output status of all optimally started and stopped equipment, as well as temperature sensor inputs of affected areas.

d. Interface to the building fire alarm system.

e. Operational logs for each system that indicate all set points, operating points, valve positions, mode, and equipment status shall be submitted to the architect/engineer. These logs shall cover three 48-hour periods and have a sample frequency of not more than 10 minutes. The logs shall be provided in both printed and disk formats.

10. Any tests that fail to demonstrate the operation of the system shall be repeated at a later date. The contractor shall be responsible for any necessary repairs or revisions to the hardware or software to successfully complete all tests.

B. Acceptance.

1. All tests described in this specification shall have been performed to the satisfaction of both the engineer and owner prior to the acceptance of the control system as meeting the requirements of completion. Any tests that cannot be performed due to circumstances beyond the control of the contractor may be exempt from the completion requirements if stated as such in writing by the engineer. Such tests shall then be performed as part of the warranty.

2. The system shall not be accepted until all forms and checklists completed as part of the demonstration are submitted and approved as required in Part 1, “Submittals.”

## 3.17 CLEANING

A. The contractor shall clean up all debris resulting from his/her activities daily. The contractor shall remove all cartons, containers, crates, etc., under his/her control as soon as their contents have been removed. Waste shall be collected and placed in a designated location.

B. At the completion of work in any area, the contractor shall clean all work, equipment, etc., keeping it free from dust, dirt, and debris, etc.

C. At the completion of work, all equipment furnished under this section shall be checked for paint damage, and any factory-finished paint that has been damaged shall be repaired to match the adjacent areas. Any cabinet or enclosure that has been deformed shall be replaced with new material and repainted to match the adjacent areas.

## 3.18 TRAINING

A. Provide training for a designated staff of Owner's representatives. Training shall be provided via self-paced training, web-based or computer-based training, classroom training, or a combination of training methods.

B. Training shall enable students to accomplish the following objectives.

1. Day-to-day Operators:

a. Proficiently operate the system

b. Understand control system architecture and configuration.

c. Understand DDC system components.

d. Understand system operation, including DDC system control and optimizing routines (algorithms)

e. Operate the workstation and peripherals.

f. Log on and off the system.

g. Access graphics, point reports, and logs

h. Adjust and change system set points, time schedules, and holiday schedules.

i. Recognize malfunctions of the system by observation of the printed copy and graphical visual signals

j. Understand system drawings and Operation and Maintenance manual.

k. Understand the job layout and location of control components.

l. Access data from DDC controllers and ASCs

m. Operate portable operator's terminals.

2. Advanced Operators:

a. Make and change graphics on the workstation.

b. Create, delete, and modify alarms, including annunciation and routing of these.

c. Create, delete, and modify point trend logs and graph or print these both on an ad-hoc basis and at user-definable time intervals.

d. Create, delete, and modify reports.

e. Add, remove, and modify system's physical points.

f. Create, modify, and delete programming.

g. Add panels when required.

h. Add operator interface stations.

i. Create, delete, and modify system displays, both graphical and others

j. Perform DDC system field checkout procedures.

k. Perform DDC controller unit operation and maintenance procedures.

l. Perform workstation and peripheral operation and maintenance procedures.

m. Perform DDC system diagnostic procedures.

n. Configure hardware including PC boards, switches, communication, and I/O points.

o. Maintain, calibrate, troubleshoot, diagnose, and repair hardware.

p. Adjust, calibrate, and replace system components.

3. System Managers/Administrators:

a. Maintain software and prepare backups.

b. Interface with job-specific, third-party operator software

c. Add new users and understand password security procedures.

C. Organize the training into sessions or modules for the three levels of operators listed above. (Day-to-Day Operators, Advanced Operators, System Managers and Administrators). Students will receive one or more of the training packages, depending on knowledge level required.

D. Provide course outline and materials according to the "Submittals" article in Part 1 of this specification. Provide one copy of training material per student.

E. The instructor(s) shall be factory-trained and experienced in presenting this material.

F. Classroom training shall be done using a network of working controllers representative of installed hardware.

## 3.19 CONTROL VALVE INSTALLATION

A. Valve submittals shall be coordinated for type, quantity, size, and piping configuration to ensure compatibility with pipe design.

B. Slip-stem control valves shall be installed so that the stem position is not more than 60 degrees from the vertical up position. Ball type control valves shall be installed with the stem in the horizontal position.

C. Valves shall be installed in accordance with the manufacturer's recommendations.

D. Control valves shall be installed so that they are accessible and serviceable and so that actuators may be serviced and removed without interference from structure or other pipes and/or equipment.

E. Isolation valves shall be installed so that the control valve body may be serviced without draining the supply/return side piping system. Unions shall be installed at all connections to screw-type control valves.

F. Provide tags for all control valves indicating service and number. Tags shall be brass, 1.5 inch in diameter, with ¼ inch high letters. Securely fasten with chain and hook. Match identification numbers as shown on approved controls shop drawings.

## 3.20 CONTROL DAMPER INSTALLATION

A. Damper submittals shall be coordinated for type, quantity, and size to ensure compatibility with sheet metal design.

B. Duct openings shall be free of any obstruction or irregularities that might interfere with blade or linkage rotation or actuator mounting. Duct openings shall measure ¼ in. larger than damper dimensions and shall be square, straight, and level.

C. Individual damper sections, as well as entire multiple section assemblies, must be completely square and free from racking, twisting, or bending. Measure diagonally from upper corners to opposite lower corners of each damper section. Both dimensions must be within 1/8 in. of each other.

D. Follow the manufacturer's instructions for field installation of control dampers. Unless specifically designed for vertical blade application, dampers must be mounted with blade axis horizontal.

E. Install extended shaft or jackshaft according to manufacturer's instructions. (Typically, a sticker on the damper face shows recommended extended shaft location. Attach shaft on labeled side of damper to that blade.)

F. Damper blades, axles, and linkage must operate without binding. Before system operation, cycle damper after installation to ensure proper operation. On multiple section assemblies, all sections must open and close simultaneously.

G. Provide a visible and accessible indication of damper position on the drive shaft end.

H. Support ductwork in area of damper when required to prevent sagging due to damper weight.

I. After installation of low-leakage dampers with seals, caulk between frame and duct or opening to prevent leakage around perimeter of damper.

## 3.21 START-UP AND CHECKOUT PROCEDURES

A. Start up, check out, and test all hardware and software and verify communication between all components.

B. Verify that all control wiring is properly connected and free of all shorts and ground faults. Verify that terminations are tight.

C. Verify that all analog and binary input/output points read properly.

D. Verify alarms and interlocks.

E. Verify operation of the integrated system.

## 3.22 DEMONSTRATION AND TRAINING

A. Demonstrate complete operation of systems, including sequence of operation prior to Date of Substantial Completion.

B. Demonstrate complete and operating system to Owner.

### 3.23 MANUFACTURER'S START-UP SERVICES

A. Provide for a minimum of one 8-hour day.

END OF SECTION

**SECTION 15950**
**TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes furnishing all materials, equipment, labor, and supervision to test, adjust, and balance all heating, ventilating, air conditioning, and foul air conveyance systems necessary for the completion of the Work in accordance with the Contract Documents.

B. Work Included:

1. Testing, adjusting, and balancing of air systems.
2. Testing, adjusting, and balancing of hydronic systems.
3. Measurement of final operating condition of HVAC systems.

### 1.02 REFERENCES

A. Associated Air Balance Council:

1. AABC MN-1 – National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems.

B. American Society of Heating, Refrigerating, and Air-Conditioning Engineers:

1. ASHRAE 111 – Practices for Measurement Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning and Refrigeration Systems.

C. Natural Environmental Balancing Bureau:

1. NEBB - Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems.

D. Testing, Adjusting and Balancing Bureau:

1. TABB – International Standards for Environmental Systems Balance.

### 1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300.

B. Test reports shall indicate data on forms prepared by one of the following:

1. AABC MN-1.
2. ASHRAE 111.
3. NEBB.
4. TABB.

C. Field reports shall indicate deficiencies preventing proper testing, adjusting, and balancing of systems and equipment tom achieve specified performance.

D. Submit draft copies of report for review prior to final acceptance of Project.

E. Furnish final reports in soft cover, letter size, binder manuals, complete with table of contents page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets and indicating thermostat locations.

1. Include diagrams of systems and equipment including balancing devices and dampers with pressure drops at each location.

2. Include both initial and final pressure drops and flows.

3. Indicate data on standard forms as listed above.

4. Completeness and accuracy of reports shall be certified by a principle of the balancing agency, who is not affiliated with any firm involved in the construction Project.

5. Submit data sheets on each item of testing equipment utilized. Include name of device, manufacturer's name, model number, latest date of calibration, and correction factors.

6. Record actual locations of flow measuring stations, balancing valves and their rough settings.

## 1.04 QUALITY ASSURNACE

A. All Work performed under this Section shall comply and be in accordance with the following:

1. All approved trade practices and manufacturer's recommendations.

2. AABC, ASHRAE 111, and NEBB.

## 1.05 QUALIFICATIONS

A. General:

1. Engage the services of an independent agency specializing in the testing, adjusting, and balancing of systems specified in this Section, hereinafter called the Balancing Subcontractor. The agency shall be acceptable to Owner and Engineer.

2. The agency selected shall be a fully certified member of the Associated Air Balance Council (AABC) and perform work under supervision of the following:

a. AABC Certified Test and Balance Engineer.

b. NEBB Certified Testing, Balancing, and Adjusting Supervisor or TABB Certified Supervisor.

c. Registered Professional Engineer experienced in performance of this Work and licensed at the place where the Project is located.

3. All testing, adjusting, and balancing of HVAC systems shall be performed in complete accordance with the AABC "Standards and Instrumentations Form No. 81226, Volume I" as published by the AABC, including all current revisions thereto and/or ANSI/ASHRAE 110.

B. Workmanship:

1. All Work shall be done by technicians skilled in the particular field involved under the direct supervision of a Registered Professional Engineer and with the best modern practices and equipment.

2. All instruments used for measurement shall be accurate and calibration for each instrument shall be available for examination. The Engineer may request instrument recalibration, or the use of other instruments, where accuracy of readings is questionable.

3. The Balancing Subcontractor shall consult all drawings, construction details, job site, and confer and cooperate with others to avoid interference.

4. The Balancing Subcontractor shall check all control interlocks and cooperate with the control Subcontractor in adjusting and calibration of control equipment.

5. Any ceiling tile that is damaged by the Balancing Subcontractor shall be replaced with new tile identical to that damaged.

### 1.06 RESPONSIBILITY FOR PROPER BALANCING AND TESTING

A. The final testing, adjusting, and balancing and the test and balance data shall be witnessed by the Engineer's Project Representative if required by the Owner.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

### 3.01 EVALUATION OF SYSTEM AND EXAMINATION

A. The Balancing Subcontractor shall furnish all materials and equipment necessary to properly measure the air capacity of the system, the electrical voltage and current, fan speeds, static pressures, air velocity, water pressure drops, refrigeration pressures, and all other readings normally necessary to evaluate the performance of a system, adjust the quantities to those called for, and test the system.

B. Verify that all systems are complete and operable before commencing Work. Verify the following conditions:

1. Systems are started and operating in a safe and normal condition.

2. Temperature control systems are installed complete and operable.

3. Proper thermal overload protection is in place for the electrical equipment.

4. Final filters are clean and in place. If required, install temporary media in addition to final filters.

5. Duct systems are clean of debris.
6. Fans are rotating correctly.
7. Volume control dampers are in place and operating.Air coil fins are cleaned and combed.
8. Access doors are closed and duct end caps are in place.
9. Air outlets and inlets are installed and connected.
10. Duct system leakage is minimized.
11. Hydronic systems are flushed, filled, and vented.
12. Pumps are rotating correctly.
13. Proper strainer baskets are clean and in place or in normal position.
14. Service and balancing valves are open.

**3.02 BALANCE REQUIREMENTS**

A. Balance equipment and systems per the information provided in the HVAC schedules, plan views, air flow schematics, or sequence of operations as shown on the Drawings.

**3.03 CONTROL SEQUENCE**

A. All control sequencing electrical interlocking shall be tested and verified. This Work shall be accomplished with a representative of the heating, ventilating, and air conditioning Contractor and temperature control Contractor present and assisting.

**3.04 COMPONENT IDENTIFICATION**

A. The Contractor is responsible for the identification of the equipment.

**3.05 TESTING ACCESSES**

A. The Contractor shall provide and/or arrange for all labor and material such as valves, tap holes, and plugs in the location required to perform the Work.

**3.06 INSTALLATION TOLERANCES**

A. Air Handling Systems: Adjust to within plus or minus 10 percent of design.

B. Air Outlets and Inlets:

1. Adjust total to within plus 10 percent and minus 5 percent of design of space.
2. Adjust outlets and inlets in space to within plus or minus 10 percent of design.

C. Hydronic Systems: Adjust to within plus or minus 10 percent of design.

**3.07 ADJUSTING**

A. Verify recorded data represents actual measured or observed conditions.

B. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.

C. After adjustment, take measurements to verify balance has not been disrupted. If disrupted, verify correcting adjustments have been made.

D. Report defects and deficiencies noted during performance of services, preventing system balance.

E. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

## 3.08 AIR SYSTEM PROCEDURE

A. Adjust air handling and distribution systems to obtain required or design supply, return, outside, and exhaust air quantities.

B. Make air flow rate measurements in main ducts by Pitot tube traverse of entire cross-sectional area of duct.

C. Measure air quantities at air inlets and outlets.

D. Adjust distribution system to obtain uniform space temperatures free from minimal objectionable drafts and noise.

E. Use volume control devices to regulate air quantities only to extent adjustments do not create objectionable air motion or sound levels. Effect volume control by using volume dampers located in ducts.

F. Vary total system air quantities by adjustment of fan speeds. Provide sheave drive changes to vary fan speed. Vary branch air quantities by damper regulation.

G. Provide system schematic with required and actual air quantities recorded at each outlet or inlet.

H. Measure static pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across fan. Make allowances for 50 percent loading of filters.

I. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers to check leakage.

J. Measure temperature conditions across outside air, return air, and exhaust dampers for design conditions.

K. At modulating damper locations, take measurements and balance at extreme conditions. Balance variable volume systems at maximum airflow rate, full cooling, and at minimum airflow rate, full heating.

L. Measure building static pressure and adjust supply, return, and exhaust systems to obtain required relationship between each to maintain approximately 0.05 inches differential static pressure between spaces.

M. Check multi-zone units for motorized damper leakage. Adjust air quantities with mixing box dampers set first for cooling, then heating, then modulating.

N. For variable air volume system powered units set volume controller to airflow setting indicated. Confirm connections properly made and confirm proper operation for automatic variable-air-volume temperature control.

O. On fan powered VAV boxes, adjust airflow switches for proper operation.

P. The Balancing Subcontractor shall perform building pressure tests with outside temperature and wind velocity noted at points of typical location inside building on both lee and windward side of building. Tests to be made with all supply and exhaust systems in normal operation and with supply systems at minimum outside air at approximately nominal wind velocity outside.

## 3.09 WATER SYSTEM PROCEDURE

A. Adjust water systems, after air balancing, to obtain design quantities.

B. Use calibrated Venturi tubes, orifices, or other metered fittings and pressure gauges to determine flow rates for system balance. Where flow-metering devices are not installed, base flow balance on temperature difference across various heat transfer elements in system.

C. Confirm air bleeds indicate system is full of hydronic fluid.

D. Adjust systems to obtain specified pressure drops and flows through heat transfer elements prior to thermal testing. Perform balancing by measurement of temperature differential in conjunction with air balancing.

E. Perform system balance with automatic control valves fully open, triple duty/multi-purpose valves fully open, and pump VFDs at 100 percent speed.

F. Confirm pump rotation and differential pressure at full flow.

G. Perform adjustment of water distribution systems by the following measures:

1. Reduce total system flow rate first by reducing speed of VFD.

2. Use balancing cocks, valves, and fittings.

H. Do not service or shut-off valves for balancing unless designed for balancing and shut-off functions. Where available pump capacity is less than total flow requirements or individual system parts, stimulate full flow in one part by temporary restriction of flow to other parts.

## 3.10 SCHEDULES

A. Equipment Requiring Testing, Adjusting, and Balancing:

1. HVAC Pumps.

2. Air Cooled Refrigerant Condensing Units.

3. Fan Coil Units.

4. Air Handling Units.

5. Air Filters.

B. Report Forms:

1. Title Page:

a. Name of Testing, adjusting, and Balancing.

b. Address of Testing, Adjusting, and Balancing Agency.

c. Telephone and facsimile numbers of Testing, Adjusting, and Balancing Agency.

d. Project name.

e. Project location.

f. Project Architect.

g. Project Engineer.

h. Project Contractor.

i. Project altitude.

j. Report date.

2. Summary Comments:

a. Design versus final performance.

b. Notable characteristics of system.

c. Description of systems operation sequence.

d. Summary of outdoor and exhaust flows to indicate building pressurization.

e. Nomenclature used throughout report.

f. Test conditions.

3. Instrument List:

a. Instrument.

b. Manufacturer.

c. Model number.

d. Serial number.

e. Range.

f. Calibration.

4. Electric Motors:

a. Manufacturer.

b. Model/Frame.

c. HP/BHP and kW.

d. Phase, voltage, amperage; nameplate, actual, no load.

e. RPM.

f. Service factor.

g. Starter size, rating, heater elements.

h. Sheave Make/Size/Bore.

5. V-Belt Drive:

a. Identification/location.

b. Required driven RPM.

c. Driven sheave, diameter and RPM.

d. Belt, size and quantity.

e. Motor sheave diameter and RPM.

f. Center to center distance, maximum, minimum, and actual.

6. Pump Data:

a. Identification/number.

b. Manufacturer.

c. Size/model.

d. Impeller.

e. Service.

f. Design flow rate, pressure drop, BHP and kW.

g. Actual flow rate, pressure drop, BHP and kW.

h. Discharge pressure.

i. Suction Pressure.

j. Total operating head pressure.

k. Shut off, discharge and suction pressures.

l. Shut off, total head pressure.

7. Air Cooled Condensing Units:

a. Identification number.

b. Location.

c. Manufacturer.

d. Model number.

e. Serial number.

f. Entering DB air temperature, design and actual.

g. Leaving DB air temperature, design and actual.

h. Number of compressors.

8. Cooling Coil Data:

a. Identification/number.
b. Location.
c. Service.
d. Manufacturer.
e. Air flow, design and actual.
f. Entering air DB temperature, design and actual.
g. Entering air WB temperature, design and actual.
h. Leaving air DB temperature, design and actual.
i. Leaving air WB temperature, design and actual.
j. Water flow, design and actual.
k. Water pressure drop, design and actual.
l. Entering water temperature, design and actual.
m. Leaving water temperature, design and actual.
n. Saturated suction temperature, design and actual.
o. Air pressure drop, design and actual.

9. Heating Coil Data:
   a. Identification/number.
   b. Location.
   c. Service.
   d. Manufacturer.
   e. Air flow, design and actual.
   f. Water flow, design and actual.
   g. Water pressure drop, design and actual.
   h. Entering water temperature, design and actual.
   i. Leaving water temperature, design and actual.
   j. Entering air temperature, design and actual.
   k. Leaving air temperature, design and actual.
   l. Air pressure drop, design and actual.
10. Refrigerant Compressors:
   a. Suction pressure of each compressor.
   b. Discharge pressure of each compressor.
11. Refrigerant Packaged Condensing Units:
   a. Suction pressure of each compressor.

b. Liquid line pressure of each compressor.

12. Unit Ventilator and Fan Coil Data:
    a. Identification/number.
    b. Location.
    c. Manufacturer.
    d. Model number.
    e. Size.
    f. Air flow, design and actual.
    g. Water flow, design and actual.
    h. Water pressure drop, design and actual.
    i. Entering water temperature, design and actual.
    j. Leaving water temperature, design and actual.
    k. Entering air temperature, design and actual.
    l. Leaving air temperature, design and actual.
13. Air Moving Equipment:
    a. Identification/number.
    b. Location.
    c. Manufacturer.
    d. Model number.
    e. Serial number.
    f. Arrangement/Class/Discharge.
    g. Air flow, specified and actual.
    h. Return air flow, specified actual.
    i. Outside air flow, specified and actual.
    j. Total static pressure (total external), specified and actual.
    k. Inlet pressure.
    l. Discharge pressure.
    m. Sheave Make/Size/Bore.
    n. Number of Belts/Make/Size.
    o. Fan RPM.
14. Return Air/Outside Air Data:
    a. Identification/location.
    b. Design air flow.

c. Actual air flow.

d. Design return air flow.

e. Actual return air flow.

f. Design outside air flow.

g. Actual outside air flow.

h. Return air temperature.

i. Outside air temperature.

j. Required mixed air temperature.

k. Actual mixed air temperature.

l. Design outside/return air ratio.

m. Actual outside/return air ratio.

15. Fan Data:

a. Identification/number.

b. Location.

c. Manufacturer.

d. Model number.

e. Serial number.

f. Air flow, specified and actual.

g. Total static pressure (total external), specified and actual.

h. Inlet pressure.

i. Discharge pressure.

j. Sheave Make/Size/Bore.

k. Number of Belts/Make/Size.

l. Fan RPM.

16. Duct Traverse:

a. System zone/branch.

b. Duct size.

c. Area.

d. Design velocity.

e. Design air flow.

f. Test velocity.

g. Test air flow.

h. Duct static pressure.

i. Air temperature.

j. Air correction factor.

17. Duct Leak Test:

a. Description of ductwork under test.

b. Duct design operating pressure.

c. Duct design test static pressure.

d. Duct capacity, air flow.

e. Maximum allowable leakage duct capacity times leak factor.

f. Test apparatus:

1) Blower.

2) Orifice, tube size.

3) Orifice size.

4) Calibrated.

g. Test static pressure.

h. Test orifice differential pressure.

i. Leakage.

18. Air Distribution Test Sheet:

a. Air terminal number.

b. Room number/location.

c. Terminal type.

d. Terminal size.

e. Area factor.

f. Design velocity.

g. Design air flow.

h. Test (final) velocity.

i. Test (final) air flow.

j. Percent of design air flow.

**PART 4 SPECIAL PROVISIONS**

Not used.

END OF SECTION

**SECTION 16010**
**GENERAL ELECTRICAL PROVISIONS**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes general administrative and procedural requirements in accordance with the Drawings and as specified herein.

B. The Contractor shall furnish and install all wire, conduit, disconnects, and related items, for HVAC equipment 120 volts or greater under Division 16. Controls, control wiring, and control conduit for HVAC equipment less than 120 volts shall be furnished and installed under Division 15.

C. The responsibility for the following equipment items and Work shall be as listed below:

1. Motors, unless indicated otherwise, shall be furnished and installed under other sections, but shall be wired as indicated on the Drawings under Division 16.

2. Controls for motors on mechanical equipment unless indicated otherwise, will be furnished under other sections, but shall be installed and wired under Division 16.

3. Unless otherwise indicated, all electrical and control equipment not furnished under Division 16 shall be installed and wired under Division 16.

4. Electrical and control equipment furnished under Division 16 but which is to be installed under other sections, shall be wired under Division 16 as indicated on the Drawings and Specifications.

### 1.02 SUBMITTALS

A. Specific submittals will be identified in individual sections of Division 16.

### 1.03 QUALITY ASSURANCE

A. Work shall comply with the latest edition of NEC as prepared by NFPA, NESC.

B. Contractor shall comply with applicable local electrical code requirements, where provisions of local codes are modified or supplemented with NEC, the more stringent interpretation shall prevail.

C. Equipment and materials shall be new and, if of the same type as other performing parts of the same system, shall be the products of the same manufacturer.

D. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum of five years.

E. Equipment, materials and installation shall comply with applicable requirements of NEMA, IEEE, and ANSI.

F. All electrical equipment shall be listed and labeled by UL.

G. Electrical enclosure requirements shall conform with area classifications, whether designated on the Drawings or not.

H. Contractor shall provide Owner with all certificates of final inspection from the agency of proper authority prior to receiving final payment.

### 1.04 ELECTRICAL CONTROL AND COORDINATION

A. Installation of electrical equipment shall be scheduled, sequenced, and positioned to efficiently coordinate the best flow of Work for electrical systems and all other non-electrical construction activities.

### 1.05 PRODUCT HANDLING

A. Equipment shall be handled and stored in accordance with manufacturer's instructions. A copy of these instructions shall be included with the equipment at the time of shipping.

B. Equipment damaged in shipment or storage shall not be installed and shall be replaced by the Contractor.

### 1.06 GUARANTEE

A. Provide complete warranty information for each item. Include the following information:

1. Date of beginning warranty period.
2. Duration of warranty.
3. Warranty options.
4. Name, address, phone numbers, and procedures for filing warranty claims.

B. The Contractor shall warrant the completed system wiring and equipment to be free from inherent mechanical and electrical defects for a period of one year from the date of substantial completion.

## PART 2 PRODUCTS

### 2.01 NEMA RATINGS

A. Equipment and panels shall be NEMA 4X stainless steel unless designated otherwise on the Drawings, or in the electrical or equipment specifications.

## PART 3 EXECUTION

### 3.01 COORDINATION

A. Coordinate electrical system, equipment, and materials installations with other building components and building trades.

B. If the current requirement of any motor or piece of equipment is increased to such an extent that the wiring, conduit, or starter for that motor or equipment must be

increased from that shown on the Electrical Drawings, the Contractor shall furnish and install the larger items under the section the equipment is specified. The increased wiring, conduit, and starter cost shall be included in the motor or equipment cost under the section the equipment is specified and no additional compensation will be allowed.

C. Certain equipment furnished under the equipment sections shall be connected to the plant control system as shown on the P&ID drawings. Mechanical and electrical components for these connections shall be furnished, under the equipment sections, as required to provide control functions compatible with the plant control system. These connections and any remote-control connections shall be furnished and wired to clearly labeled terminal strips within the equipment control panel.

D. If the electrical control requirements change from that specified or shown on the Electrical or P&ID drawings due to the requirements of the actual equipment furnished, the Contractor shall perform all necessary modifications under the equipment section and no additional compensation will be allowed. The final installation shall meet the operational intent of that specified and shown on the drawings.

## 3.02 INSTALLATION

A. Verify dimensions by field measurements.

B. Coordinate building and wall penetrations with other construction activities.

C. Coordinate structural support devices and sleeves to be set in cast-in-place concrete and with other structural components as they are constructed.

D. Coordinate connection of electrical systems with existing overhead and underground systems or utility services. Comply with government regulations, utility company requirements and local codes.

E. Install electrical equipment to facilitate servicing, maintenance, ease of disconnection, and minimal interference with other installations.

F. Electrical penetrations, shown on the Drawings or not, through an exterior surface shall be sealed and made water-tight. For metal panels, use a sealant around the penetration on both sides of the wall.

G. Electrical penetrations, shown on the Drawings or not, through the fire resistance rated walls or floors shall be fire stopped as required by NEC using the approved method as recommended by the manufacturer. Fire stops (e.g. caulk) shall have a 3-hour fire resistance rating, and shall be made by the 3M Company, or equal.

H. Electrical penetrations, shown on the Drawings or not, to hazardous areas shall be gas-tight and fire-stopped using “Link-Seal” FD or FS seals as manufactured by Thunderline Corporation, or equal.

I. Multiwire (shared neutral) branch circuits operating at 120 VAC are not acceptable.

## 3.03 CUTTING AND PATCHING

A. Perform cutting and patching of electrical equipment and materials required to:

1. Uncover Work for the installation of ill-timed Work.

2. Remove or replace defective or damaged Work.

3. Remove or replace Work not conforming to the contract or requiring specified testing.

## 3.04 DEMOLITION AND CLEANING

A. Electrical equipment, conduit, wire and appurtenances that are removed shall remain the property of the Owner and shall be stored at a site selected by the Owner. The Owner reserves the right to require the Contractor to dispose of certain unwanted portions of removed equipment and materials. The Owner shall have the right to reject any or all materials removed during construction, and the Contractor shall haul away and dispose of these materials in a suitable manner at no additional cost to the Owner.

B. Abandoned conduit and wiring, unless specified or marked as “spare”, shall be removed. Before any removal, consult with the Owner if materials are to be disposed of or reused. In situations where a portion of the conduit run back to its source remains in service, the abandoned conduit shall be removed back to the point where the conduit will remain in services. Resulting conduit stubs shall be plugged.

C. When all Work is completed, tested, and accepted by the Engineer/Owner, the Contractor shall clean all light fixtures, equipment, and exposed surfaces affected by the Work.

D. Contractor shall at all times keep the Work area in an orderly and clean condition by periodic removal of excess and unused materials.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

# SECTION 16030
# ELECTRICAL IDENTIFICATION

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes the provision of identification of electrical equipment and materials in accordance with the Drawings and as specified herein.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Product data for each type of identification product specified.

b. Manufacturer's name(s) and catalog numbers.

c. Nameplate schedule.

### 1.03 QUALITY ASSURANCE

A. Applicable Standards:

1. Comply with requirements of ANSI Standard, "Scheme for the Identification of Piping Systems" and "Wiring and Equipment Identification" with regard to type and size of lettering for raceway and cable labels.

## PART 2 PRODUCTS

### 2.01 NAMEPLATES AND LEGENDS

A. New equipment shall be identified by means of a laminated phenolic nameplate. Modified equipment shall be identified in the same manner as was the original equipment. Equipment whose designation has been changed shall be relabeled as specified or directed.

B. Nameplates shall have white background with black engraved lettering identifying function or equipment designation.

C. Main nameplate on MCC, switchgear, control panel, and other panels shall be 2-inches high by 6-inches wide with 1-inch high letters. Individual nameplates shall be 1-inch high by 3-inches wide with 1/4-inch high letters.

D. Legends shall be completely worded without abbreviations except as approved by the Engineer.

E. Blank nameplates shall be included on all unused components.

F. Nameplates on electrical panels which are fed from a remote source shall include, in addition to their function, where the power originates from (e.g., scum pump panel - fed from MCC-1, MCC-1 fed from main SWG).

## 2.02 CONDUCTOR IDENTIFICATION

A. Wires and cables, except at lighting and 120 volts convenience outlets, shall be identified by means of tags describing circuit.

B. Tags shall be on all connections, splices, and terminations, and shall also be applied where entering and leaving common wireways.

C. Wire tags shall be equal to Thomas & Betts white, self-adhesive wrap or Panduit heat shrink type labels. Tags shall be vinyl, polyester or Polyolefin, resistant to excessive heat, water, cold, dirt, and grease.

D. The tag type-on-area shall be sufficiently sized to contain five numerals on each line. Wire numbers shall be typed on with Thomas & Betts E-Z Coder Printer, Panduit Dura-Mark Printer or equal.

E. Insulated conductors No. 8 AWG and larger shall be color coded at each end with a 2-inch wrap of suitable color tape as follows, if integral color is not utilized:

| System | Phase Conductors A, B, and C | Neutral Conductors |
|---|---|---|
| 120 volts, single-phase, 2-wire | Black | White |
| 120/240 volts, single-phase, 3-wire | Black and Red | White |
| 208 volts, 3-phase, 3-wire | Black, Red, Blue | -- |
| 208Y/120 volts, 3-phase, 4-wire | Black, Red, Blue | White |
| 480 volts, 3-phase, 3-wire | Brown, Orange, Yellow | -- |
| 480Y/277 volts, 3-phase, 4-wire | Brown, Orange, Yellow | White |
| 2400 volts, 3-phase, 3-wire | Black, Red, Blue** | -- |
| 2400 volts, 3-phase, 4-wire | Black, Red, blue ** | White** |
| 4160 volts, 3-phase, 3-wire | Black, Red, Blue** | -- |
| 4160 volts, 3-phase, 4-wire | Black, Red, Blue** | White** |
| 4800 volts, 3-phase, 3-wire | Black, Red, Blue** | -- |
| 4800 volts, 3-phase, 4-wire | Black, Red, Blue** | White** |
| Grounding | Green | |

** Apply tape near termination on cable.

Tape shall be Scotch #35 in color required above as manufactured by 3M or equal.

F. Direct current conductors shall be identified by the following methods:

1. Provide self-sticking markers on each direct current conductor.
2. Marker colors shall be black letters on “alert orange” background.
3. Each marker shall designate circuit conductor polarity and voltage (e.g. 28 VDC).
4. Direct current control conductors shall be color-coded dark blue.

G. On a 4-wire delta-connected system where the midpoint of one phase winding is grounded to supply lighting and similar loads, the conductor or busbar having the higher phase voltage to ground shall be durably and permanently marked by an outer finish that is orange in color or by other effective means. Such identification shall be placed at

each point on the system where a connection is made if the grounded conductor is also present.

## PART 3 EXECUTION

### 3.01 COORDINATION

A. Submit nameplate schedule for review and approval by the Engineer prior to fabrication of nameplates.

### 3.02 INSTALLATION

A. Contractor shall furnish and install equipment nameplates, typed panel rosters, wire and cable tags, stenciling, and other identification with text, lettering type, etc., as specified in this Section.

B. Nameplates shall be fastened by means of 3/16-inch diameter roundhead, stainless steel, self-tapping screws. UL 508 4X enclosure nameplates shall be secured with silicon adhesive.

C. Pull, terminal, and junction boxes shall be identified by stenciling the names of the feeders and system wires and cables passing through them.

D. MCCs and power panels of NEMA 3R double-door construction shall have stenciled panel designation at the top and branch designations appropriately spaced in the outer doors. NEMA 4X lighting and power panels shall have designations appropriately placed on them.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

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**SECTION 16050**
**ELECTRICAL TESTING**

## PART 1 GENERAL

### 1.01 SCOPE

A. Contractor shall furnish all labor, tools, equipment, and materials necessary to perform electrical testing in accordance with the Drawings and as specified herein.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and Section 16010 and shall include:

1. Information for the Record:

a. Certified reports of field tests and observations.

### 1.03 QUALITY ASSURANCE

A. Testing shall be performed or supervised by the Contractor. Contractor shall be responsible for test records.

B. Contractor shall visually check equipment, wire, phase matching and rotation in preparation for testing.

C. Manufacturer's recommended instructions for testing shall be used when applicable.

D. Testing shall be in compliance with accepted engineering practices, NEC and IEEE Standards.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

### 3.01 COORDINATION

A. Before conducting field tests, the Contractor shall submit to the Engineer a written outline of the methods of testing and equipment to be used.

### 3.02 FIELD TESTING

A. Required testing shall be completed and written report submitted to the Engineer for acceptance before the Contractor proceeds with subsequent Work.

B. Written reports shall be required on tests. Careful records shall be kept of each test and results shall be submitted to the Engineer.

C. Final payment will not be released until all required written test reports are submitted and distributed for information.

D. Contractor shall be responsible for the procurement and installation of compatible components and equipment, and shall perform all Work necessary for the proper operation and guarantee of the equipment.

E. Contractor shall make such tests as may be necessary to demonstrate that the Work and equipment, as installed, comply with the Contract Documents. When required by the Engineer, such tests shall be performed in the Engineer's presence.

F. Any system or equipment failing to meet the Contract requirements, or to function properly, shall be rectified at the Contractor's expense by readjusting or by removing and replacing the faulty Work or equipment, and the tests rerun until the requirements are met.

G. Engineer reserves the right to require the Contractor's equipment be checked by an independent instrument tester.

## 3.03 CONDUIT TESTING

A. After conduit and accessories have been installed and all concreting operations completed, all conduit runs shall be satisfactorily cleared of all obstructions and foreign matter. Any defects that might damage cable upon installation shall be corrected.

B. Conduits shall be tested, in the presence of the Engineer if requested, by pulling through each conduit a flexible cylindrical mandrel having an outside diameter 1/4 inch less than the inside diameter of the conduit, followed by a stiff wire brush of the same diameter as the conduit. Where conduits installed under this Contract are connected to conduits installed by others, the entire runs between boxes, manholes, or other termination points shall be tested.

C. Contractor shall keep a record, by number, of all conduits tested clear, and shall submit written copies of such record to the Engineer.

D. Defects or stoppages in conduit runs installed by the Contractor shall be corrected. Defects or stoppages in conduit runs installed by others shall be reported to the Engineer, who shall determine the corrective measure to be taken.

## 3.04 GROUNDS

A. Contractor shall test the ground resistance of the systems.

B. Dry season resistance of each system shall not exceed 5 ohms. If such resistance cannot be obtained with the system as shown, provide additional grounding as directed by the Engineer.

C. Where multiple ground rods are required, they shall be 20 feet apart. The Contractor, in the presence of the Engineer if requested, shall test all made grounds for continuity and resistance. Ground resistance of more than 5 ohms shall be reduced to 5 ohms or less by the use of additional, and properly separated, ground rods, or deep driving of ground rods.

D. In addition, where necessary, Ground Enhancement Material (GEM) shall be used to provide low resistance and high conductivity. GEM shall be installed per manufacturer's recommendations.

## 3.05 LOW-VOLTAGE CIRCUIT BREAKERS

A. Each low-voltage circuit breaker shall be manually opened and closed five times before being energized.

B. Acceptance of each ground fault device will be only on an in-person trip and reset cycle demonstration for the Engineer or his representative - if the Engineer requests to be present. The Engineer shall be notified at least one week before scheduling this test.

## 3.06 LOW VOLTAGE SYSTEM (INSULATION RATED AT 600 VOLTS)

A. Contractor shall perform insulation resistance testing of 480-volt power feeder circuits with a 500-volt megger.

B. Written test reports of the results shall be submitted to the Engineer prior to final inspection. Equipment which may be damaged during this test shall be disconnected before the test and reconnected upon completion.

C. Upon the completion of each electrical system rated 600 volts or less, but before wiring connections are made to equipment, the Contractor shall test each circuit and each piece of equipment for:

1. Continuity.

2. Grounds.

3. Insulation resistance, phase-to-phase and phase-to-ground, of 480 volts conductors and equipment with a 500-volt megohmmeter.

D. Discontinuities or grounds discovered in low voltage systems shall be corrected before the insulation resistance is measured.

E. Insulation resistance readings, lower than required by good practices or Code, shall be promptly repaired or replaced. Retesting shall be completed until acceptable readings are acquired.

F. Installed control cables and conductor terminations for instrumentation and controls shall be tested for properly grounded cable shields. Control cable shields shall be isolated from ground except at the grounding point. The Contractor shall remove all improper grounds at no additional cost to the Owner. This test shall be witnessed by the Engineer if requested.

G. Following satisfactory completion of circuit and equipment insulation resistance tests, connection of the wiring to equipment, but before it is energized; the tests specified above shall again be carried out.

H. Defective or improperly installed electrical equipment or wiring provided or installed and connected by the Contractor shall be repaired, replaced, or properly installed by the Contractor until it satisfactorily passes the field tests.

I. Irregularities or faulty equipment shall be immediately reported to the Engineer.

**3.07 RESERVED**

**3.08 RESERVED**

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

# SECTION 16060
# HANGERS AND SUPPORTS

## PART 1 GENERAL

### 1.01 SCOPE

A. Contractor shall furnish all labor, tools, equipment, and materials necessary to provide supporting devices in accordance with the Drawings and as specified herein.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include.

1. Shop Drawings for Review:

   a. Manufacturer's technical product sheets on each component to be furnished.

   b. Submit a list of materials needed for construction, giving manufacturers' names and catalog numbers.

2. Information for the Record:

   a. Manufacturer's qualifications.

   b. Certified copies of factory test procedures and results.

   c. Manufacturer's recommended method of installation for the products to be furnished.

### 1.03 QUALITY ASSURANCE

A. Applicable Standards:

1. Manufacturer's Standardization Society (MSS):

   a. Comply with applicable MSS standard requirements pertaining to fabrication and installation practices for pipe hangers and supports.

2. National Electrical Code (NEC):

   a. Comply with related sections of NEC requirements for equipment, conduit, and raceways.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Mounting brackets, bolts, nuts, and washers for items of electrical equipment shall be provided with either an approved zinc plating process, be galvanized, be nonferrous, or be of a non-corrosive metal.

B. Carbon steel hangers, supports, fastenings, and other devices shall have an approved plating process. Manufactured channel sections shall be P-1000 Unistrut with hot dip galvanizing after fabrication, or equal.

C. "Shot-in-place" anchors and fastenings shall not be used. Perforated metal strap or wire is not acceptable for hangers or supports.

D. Unless shown or specified otherwise, fasteners and anchors shall be as follows:

| Base Metal | Fastener Metal and Coating |
|---|---|
| Stainless Steel | Stainless Steel |
| Aluminum | Stainless Steel |
| Galvanized Steel | Galvanized or zinc plated carbon steel |
| Field painted or uncoated carbon steel | Unfinished or zinc plated carbon steel |

E. Where a connection involves dissimilar base metals, fastener shall be as required for most corrosion resistant base metal in connection, or dielectric material shall be installed.

F. Anchor bolts and fasteners in submerged applications shall be stainless steel.

G. Non-metallic strut shall be made of pultruded fiberglass with an isophthalic polyester fire-retardant (FR-P) resin.

1. The composite material shall have an ultraviolet light inhibiting chemical additive and meet ASTM E84 for flame spread. It shall have a complete Nexus Veil Coverage (outer surfacing fabric) to provide maximum chemical and UV protection.

2. Non-metallic strut shall be as manufactured by Enduro Composite Systems, or equal.

H. Hanger rod (all-thread) shall be 3/8-inch minimum diameter round steel rod.

## PART 3 EXECUTION

### 3.01 COORDINATION

A. Sequence and coordinate location of hangers and supports to facilitate equipment installation and future access for maintenance.

### 3.02 INSTALLATION

A. Contractor shall provide all devices and materials such as expansion bolts, foundation bolts, screws, channels, angles, and other attaching means required to fasten lighting stands, panelboards, transformers, conduits, and other electrical equipment and materials to be installed on, or in, concrete bases or structures which are existing, or provided under other sections of the Contract. Foundation bolts shall be set by using manufacturer's templates.

B. Surface mounted equipment shall be installed in such a manner as to permit free circulation of air on all sides. A minimum space of 1/4 inch shall be maintained between the back of equipment and the mounting surface.

C. Wherever wall, columns, or like structural members are not available for mounting motor starters, push-button stations, and like equipment, hot dip galvanized structural steel sections shall be provided for such mounting, or as shown on the Drawings, shop prime coated, and epoxy finished per Section 09900.

D. Where galvanized or cadmium plated surfaces or materials are cut, drilled, reamed, or damaged during the course of installation, the exposed metal shall be brush-on coated with 95%- zinc-enriched paint.

E. Cut ends of non-metallic strut, such as manufactured by Enduro or equal, shall be brush-on coated with the manufacturer's recommended coating to prevent fibers from fraying.

## PART 4 SPECIAL PROVISIONS

### 4.01 SUPPORT MATERIAL SCHEDULE

A. Exterior – All exterior supports shall be 304 stainless steel.

B. In Chamber or Exposed to Wastewater – All supports shall be 304 stainless steel.

C. Headworks Screen Room, Grit Areas, Container Area, Primary Sludge Pump Station – All supports shall be 304 stainless steel.

D. Headworks Electrical/Blower Room and Boiler Room, Secondary Effluent Pump Station (not included in one of the description above) – carbon steel.

E. Disinfection Building and Iron Salts Building – FRP or 304 stainless steel.

END OF SECTION

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**SECTION 16120**
**CONDUCTORS AND CABLES (600 VOLTS AND LESS)**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes 600-volt, single or multi-conductor power or control cable.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Manufacturer's technical product sheets on each component to be furnished.

b. A list of materials needed for construction giving manufacturer's names and catalog numbers.

2. Information for the Record:

a. Manufacturer's recommended method of installation for the products to be furnished.

### 1.03 QUALITY ASSURANCE

A. Comply with ICEA, UL, NFPA and NEMA publications for "Non-shielded Power Cables rated 2000 Volts or Less."

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Wires shall be identified by surface markings indicating manufacturer's name, conductor size, conductor material, voltage rating, UL Symbol, type designations, and optional ratings.

B. Conductors shall be oil and gasoline resistant.

C. Single conductors for 600-volt power, lighting, and receptacle circuits shall be Type THHN/THWN dual-rated or XHHW-2 and as follows:

1. Conductors shall be stranded, soft-drawn, or annealed copper.

2. Single conductors for general use for power, lighting, and receptacles shall be a minimum size of No. 12 AWG stranded, unless otherwise noted on the Drawings.

3. Minimum wire size for controls shall be No. 14 AWG unless noted otherwise.

4. Single conductors, for power distribution, No. 4 AWG and larger, shall be Type XHHW-2.

5. Single conductors, for power distribution, smaller than No. 4 AWG for use in conduits and ducts shall be Type THHN/THWN dual-rated.

6. Single conductors, for power distribution where exposed to sunlight, shall be listed and marked as sunlight-resistant as manufactured by Okonite, "Okoguard-Okolon" Type RHH or RHW-2 or USE-2, VH-1, or equal.

D. Interlocked Armored Cable (IAC):

1. Cable shall be suitable for aerial installation, direct burial, metal racks, open trays, troughs, or continuous rigid cable supports.

2. Cable shall include 3 stranded copper conductors, XLP insulation, bare ground copper conductor, aluminum armor, and PVC jacket.

3. Cable jacket shall be UL listed as sunlight resistant. IAC cable shall be capable of operating continuously at a maximum conductor temperature of 90 degrees Celsius in wet or dry locations. Cable shall be as manufactured by The Okonite Company, Pirelli Cables North America, Southwire Company, or equal.

E. Flexible power cords shall be 3 or 4 conductor including ground, No. 12 AWG minimum wire size, rubber insulated, hard service cord, meeting UL requirements for flexible cord. Flexible power cords shall be rated for 600 VAC and have oil resistant thermoset insulation for use in wet locations (Type SOOW). Ampacity shall be in accordance with NEC Table 400.5(A) and any pertinent derating factors.

F. Flexible control cords shall be 2, 3 or 4 conductor, No. 18 AWG minimum wire size, rubber insulated, hard service cord, meeting UL requirements for flexible cord. Flexible control cords shall be rated for 600 VAC and have oil resistant thermoset insulation for use in wet locations (Type SOOW).

G. All wire and cable insulation and all cable outer coverings shall be listed and approved for the conditions under which the wire or cable is to be used.

## 2.02 COMPONENTS AND ACCESSORIES

A. Splicing materials shall be as follows:

1. Plastic tape shall be 3M Scotch Electrical Tape No. 33+ or 88, or equal.

2. Neoprene tape shall be Okonite Company "Okoprene", or equal.

3. Insulating putty shall be 3M "Scotchfill Electrical Putty", or equal.

4. Tapes and other splicing materials shall be used only as recommended by the manufacturer, and only if their condition is such as to meet the manufacturer's standards.

5. Heat-shrinkable tubing shall be Raychem or equal.

B. Connectors:

1. Wire connectors for No. 6 AWG and smaller wires shall have sharp internal threading which prevents pulling off, but are removable. Connectors shall be Type Y, Type R, Type G, or Type B, as manufactured by 3M Company or equal.

2. Indentor butt connectors shall be Burndy “Hylinks”, or equal.

3. Indentor pigtail connectors shall be Thomas & Betts “Sta-Kon” connectors, or equal, applied to the twisted conductors, and covered with a nylon cap of the same manufacturer.

4. Indentor or compression connectors shall be Thomas & Betts “Sta-Kon” connectors, or equal. The insulation of conductors No. 2 AWG and larger shall be penciled to the diameter of the conductor. Wires connected to screw terminal block points shall have fork tongue lug terminals.

5. Splices to uncut main runs shall be made with Burndy “Crimpits”, or equal, for cables No. 4/0 to No. 10 AWG, and Burndy “Hytaps”, or equal, for cables larger than No. 4/0 AWG.

6. Cable fittings for armored cable shall be Crouse-Hinds, or equal, and shall be compatible with the cable used as recommended by cable manufacturer.

7. Bus Bar Taps - Bus bars shall be tapped using one of the following connectors.

a. Two-hole, crimp-type lugs, 600V - 35 kV, sized as required to match bus bar width and conductor in use. Connector metal shall match bus metal. Connector shall be UL listed as manufactured by Thomas & Betts Catalog No. 542XX, or equal.

b. Heavy duty compression, 600V - 35 kV, sized as required to match conductor in use. Connector metal shall match bus metal. Connector shall be UL listed as manufactured by Thomas & Betts Catalog No. 251-31446-XX, or equal.

C. Power Blocks:

1. All power blocks whether in terminal boxes, motor control, and other locations, shall be equal to Allen-Bradley Bulletin 1492 UL-listed, 600V AC/DC, 3-pole suitable for copper conductors, and rated for 75 degrees C, minimum.

2. Power blocks shall have sufficient current carrying capacity as required, and shall not be adjacent to control wiring terminal blocks.

D. Wire Pulling Lubricants - Pulling lubricants shall be American Polywater Corp. Type J, Ideal Yellow 77 Plus, Thomas & Betts Polymer Base, or equal. Follow manufacturer’s recommendations for compatibility with wire insulation, cable jacket, and conduit materials.

## 2.03 IDENTIFICATION

A. All wires and cables, except at lighting and 120 VAC convenience receptacles, shall be identified by means of tags with wire names. Tags shall be on all connections, splices,

and terminations, and shall also be applied where entering and leaving common wireway and at a minimum of 30 foot centers within the wireway. Wire tags shall be as specified in Section 16030.

### 2.04 FACTORY TESTS

A. Wire shall be tested in accordance with:

1. UL Standard for type THHN/THWN wire and the optional Gasoline and Oil Resistant II listings.
2. UL Standard for Type XHHW-2.
3. UL and ICEA requirements for Type MC Cable.

## PART 3 EXECUTION

### 3.01 COORDINATION

A. Inspect raceways for compliance with specifications and Drawings. Do not proceed with installation until defective conditions have been corrected.

B. Conduit layouts shall provide for cable separation between various systems and between various signals within given systems. The combining of conductors of various systems within one conduit system shall not be permitted.

### 3.02 INSTALLATION

A. Wiring, above ground, 120 volts and higher, shall be in conduit, wireways, or cable trays.

B. Extreme care shall be used to prevent any injury or damage to the wiring. The Contractor shall observe the installation instructions and precautions issued by the manufacturer of the wire and cable.

C. Cables shall be pulled through conduits in such a manner as not to overstress, stretch, score, cut, twist, or damage the protective covering or insulation of the conductor. If mechanical means are employed for pulling the cables or wires, a dynamometer shall be used.

D. The ends of low-voltage cables installed in damp or wet locations shall be carefully sealed until permanently connected or spliced. The Contractor shall be responsible for maintaining a dry condition while the cables are being pulled.

E. Keep rocks and rough materials away from direct buried cables.

F. Direct buried cable shall be backfilled with 6 inches of sand over the top of cable to prevent stone bruises and cuts to cable.

G. If single conductor cable is used, space cables evenly at least 6 inches between cable centers. Sand shall be used to fill around cables. Be certain there are no cable crossovers.

H. Cables emerging from the ground shall be installed in conduit from at least 18-inch below grade up to the termination point.

I. Spare conductors or cables shall be individually and uniquely numbered. They shall have sufficient length to reach the farthest termination point within the enclosure. They shall be coiled and stored in a neat and workmanlike manner. The coil shall be tagged to indicate the location of the other end of the spare conductors.

J. All 120 volt “home runs” in excess of 100 feet shall be No. 10 AWG minimum. All 120-volt branch circuits supplying heating, air conditioning, or lighting loads of 1500 watts or more shall be No. 10 AWG minimum.

K. Conductors in vertical runs shall be adequately supported with approved conductor supports, as outlined in the NEC.

L. Conductors No. 12 AWG and smaller shall not be in the same conduit with wires No. 6 AWG and larger.

M. Conductor Combination and Separation:

1. The combining of conductors of various systems within one raceway system shall not be permitted. Raceway layouts shall provide for the cable separation requirements between parallel raceways of various systems, and between various signals within given systems throughout Division 16 as required. Each of the following shall be maintained in a separate raceway system apart from the others.

    a. Lighting and 120 VAC utility.

    b. Power Distribution, 600 VAC or less.

    c. Power Distribution, greater than 600 VAC.

    d. Communications Systems (Telephone, Intercom, Ethernet).

    e. Fire Alarm Systems.

    f. Security Systems

    g. Analog cables for Instrumentation and Control.

    h. PLC Communications Systems (Data Highway, Modbus, etc.).

    i. Intrinsically Safe Systems.

    j. Elevator Controls.

    k. Motor Branch Circuits.

    l. Class 3 Motor and Equipment Controls.

2. Where Motor Branch Circuit conductors are less than No. 4 AWG, they may be combined with related Class 3 motor and equipment control conductors.

3. Fiber Optic Cables may share raceways of other systems except where prohibited by the NEC.

## 3.03 SPLICES AND TERMINATIONS

A. Wire and cable lengths shall be continuous and without splices between the points of connection, except as otherwise specified or indicated on the Drawings.

B. Splices and terminations where specified or indicated on the Drawings shall be made in strict accordance with the conductor manufacturer's recommendations.

C. Splices and connections shall have a conductivity and insulation resistance at least equal to that of the cable.

D. Terminated conductors shall be bundled and identified to match approved Contractor submitted drawings.

E. Owner and Engineer may inspect any and all joints before they are taped. If they are taped without being inspected, the tape may be ordered removed from any joint or joints, and the Contractor shall correct any defect found. After inspection and correction of any fault found, the Contractor shall properly re-tape the joints with new tape.

F. Splices:

1. Dry Locations - No. 6 AWG and Smaller, Single Conductor:

   a. Using either an insulated spring or an indentor butt connector shall be followed by wrapping with two half-lapped layers of approved plastic tape extending a minimum distance of 1 inch from the connector.

2. Dry Locations - No. 4 AWG and Larger, Single Conductor:

   a. No. 4 AWG conductor and larger shall be spliced using indentor or compression connectors, penciled to the diameter of the connector, and wrapped with two half-lapped layers of approved plastic tape extending a distance from the connector of twice the outside diameter of the larger conductor, or 1 inch, whichever is greater.

   b. Splices to uncut main runs shall be made with "Crimpits", or equal, for Cable Nos. 4/0 AWG to 10 AWG, and "Hytaps", or equal, for cables larger than No. 4/0 AWG, and wrapped with two half-lapped layers of approved plastic tape.

   c. Electrical insulating putty shall be used as filler before applying tape, where necessary, to provide a smooth taping surface.

3. Wet Locations:

   a. Single-conductor, with nonmetallic covering, shall be spliced using either indentor (compression) or insulated butt connectors followed by wrapping with four half-lapped layers of approved plastic tape extending a distance from the connector of twice the outside diameter of the larger conductor or 1 inch, whichever is greater.

   b. The insulation of Conductors No. 2 AWG and larger shall be penciled to the diameter of the conductor and wrapped with four half-lapped layers of approved plastic tape extending a distance from the connector of

twice the outside diameter of the larger conductor or 1 inch, whichever is greater.

c. Electrical insulating putty shall be used as filler before applying tape, where necessary, to provide a smooth taping surface.

G. Terminations - When connecting conductors at terminals, the following methods shall be used, unless otherwise specified:

1. Indentor or compression terminals shall be applied to the conductor. Terminals shall be held in place at terminal posts or studs with approved locknuts or lock washers.

2. The shields of shielded, multi-conductor control and metering cables, unless otherwise specified by equipment manufacturers, shall be terminated at one end of the cable only.

3. Shield shall be stripped back, intact, applying a compression grounding terminal to the twisted shield, and securely fastening the terminal to the appropriate point on the equipment or device.

4. Shield at the non-terminated end of shielded cables shall be stripped back at least 2 inches beyond the stripped inner conductor's cutoff, and the cable taped with two half-lapped layers of plastic tape where the shield emerges from the outer sheath.

5. Where dead-ending low-voltage wires and cables, the ends shall be insulated and sealed in a manner similar to a standard splice for the particular location and type of wire or cable.

6. All power system terminations shall be phased-out.

H. Where specified, bus bar tapping shall be in strict accordance with bus bar and connectors' manufacturer's recommendations.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

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**SECTION 16121**
**CONTROL AND SIGNAL CONDUCTORS AND CABLES**

## PART 1 GENERAL

### 1.01 SCOPE

A. The Section includes the installation of all wire, cable, and terminators for a complete instrumentation and control package.

B. Work shall include but not be limited to the following major items:

1. Communications cable between programmable controller components, processors, graphic interface units, and printers.
2. Communications cable between PLC I/O Panels and programmable controller processors.
3. Programmable controller power supplies to processors and I/O chassis.
4. Analog signal wiring between controls, instruments, equipment, field devices, PLC I/O panels, annunciators, or other instrumentation and control components required to complete the Work.
5. Signal wiring, data highway, fiber optic, conduit materials, and installation not provided under Division 16.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and Section 16010 and shall include:

1. Shop Drawings for Review:
    a. A list of materials needed for construction giving manufacturer's names and catalog numbers.
    b. Manufacturer's technical product sheets on each component to be furnished.
2. Information for the Record:
    a. Manufacturer's qualifications.
    b. Certified copies of factory test procedures and results.
    c. Manufacturer's recommended method of installation for the products to be furnished.
    d. Provide warranty for review; executed copies shall be submitted when completed with copies included in the operation and maintenance manuals.

## 1.03 QUALITY ASSURANCE

A. The installation of equipment and materials shall conform to the recommendations and instructions of the respective manufacturers of equipment and materials.

B. Fiber-optic cable terminations shall be by certified cable installers. The Contractor shall provide a documented listing of fiber optic cable installation experience.

# PART 2 PRODUCTS

## 2.01 CONTROL CONDUCTORS

A. Control conductors shall, unless noted otherwise on the Drawings, be supplied as single conductor, No. 14 AWG, 19 stranded, 600 volts, 90-degree C of Type THHN/THWN dual rated.

B. Wire shall be supplied in three different integral color codes as follows: brown, orange, and red.

C. Intrinsically safe wiring shall be color coded light blue.

D. Direct current control conductors shall be color coded dark blue.

E. Control wire circuits from external sources shall be color-coded yellow.

## 2.02 TRANSMITTER CABLE

A. Indoor Use:

1. Cable shall be 2-conductor, No. 16 AWG stranded tinned copper with minimum No. 18 AWG stranded tinned copper drain wire.
2. Cable shall have a 100% aluminum foil shield with PVC jacket, rated for 60 degrees C and 600 volts.
3. Cable shall have maximum capacitance of 23 pF (picofarads) per foot between conductors.
4. Cable shall have nominal outside diameter of 0.313 inches.
5. Cable shall be Belden 8719, or equal.

B. Indoor, Outdoor, Transition between Indoor/Outdoor and where subject to damp or wet conditions:

1. Cable shall be 2-conductor, No. 16 AWG stranded, tinned copper with a drain wire. Insulation shall be PVC with a nylon overcoat.
2. Cable shall have a 100% aluminum foil shield with PVC jacket, rated for 90 degrees C and 600 volts. Jacket shall be sunlight resistant.
3. Cable shall be suitable for direct burial and outdoor applications.
4. Nominal outside diameter shall be 0.294 inches.
5. Cable shall be Belden 1118A, or equal.

C. Inside Control Panels and Connected to Analog I/O Modules:

1. Cable shall be 2-conductor, No. 22 AWG stranded tinned copper with polyethylene insulation, and No. 22 AWG stranded tinned copper drain wire. Color code: Black, Clear.

2. Cable shall have a 100% aluminum-polyester foil shield with PVC jacket, rated for 60 degree-C and 300 volts.

3. Cable shall have maximum capacitance of 24 pF per foot between conductors.

4. Cable shall have nominal outside diameter of 0.175 inches.

5. Cable shall be Belden 8761.

D. Transmitter cable shall be identified by the initials “PR”.

**2.03 RESERVED**

**2.04 RESERVED**

**2.05 RESERVED**

**2.06 RESERVED**

**2.07 RESERVED**

**2.08 ACCESSORIES**

A. Control Wiring Terminal Blocks:

1. Terminal blocks, whether in terminal boxes, motor control components, instrumentation, plant communication system, and other locations, shall be Allen-Bradley Bulletin 1492-W4, or equal, suitable for DIN Rail mounting.

2. Separate terminal strips shall be provided for analog and discrete signal wires, with the discrete terminal strip located on the left side of the enclosure.

3. Terminals shall be provided for cable shields.

4. Terminal blocks shall be identified in accordance with Section 16030.

**2.09 SOURCE QUALITY CONTROL**

A. Wire/cable shall meet IEEE flame test; UL 1581, “Vertical Tray Flame Test”; and ANSI/NFPA Standard 262-1985 (UL-910) “Horizontal Flame and Smoke Test” requirements.

## PART 3 EXECUTION

### 3.01 COORDINATION

A. Examine raceways and other elements receiving cables for compliance with requirements for installation tolerances and other conditions affecting performance of transmission media.

### 3.02 INSTALLATION

A. Control wiring shall be identified and tagged per Section 16030.

B. Each wire number shall be “solid”, preprinted, and not pieced from single or double digit tags.

C. Wire shall be installed with different color conductor in common conduit, for maximum convenience, with individual conductor identification, which shall be in addition to fiber tag identification as specified herein.

D. The Contractor shall observe the installation instructions and precautions issued by the manufacturer of the wire/cable.

E. Communication cable shall be installed in 1-inch rigid galvanized steel or PVC coated RGS conduit with one cable per conduit.

F. Analog signal cable shall be installed in galvanized rigid steel or PVC coated RGS conduit.

G. No mixing of signal conductors and AC voltage conductors shall be permitted within a single conduit.

H. Instrument cable, communication, and analog signal conduits shall be separated a minimum of 12 inches from any AC voltage source or conductor.

I. Instrument cable shields shall be grounded to a common ground terminal in the control panel unless device manufacturer recommends otherwise. Shields shall not be grounded at the field device or at any intermediate point.

J. Each programmable controller component shall be grounded to earth ground as well as the cable shield between them. Grounding field wiring shall be in accordance with the manufacturer’s recommendations. In no case, shall the cable shield be grounded at both ends.

K. Each instrument cable wire shall be identified and terminated at marked terminal strips.

L. Analog instrument cables inside panels shall be justified right as described in Section 16903 and shall terminate at separate terminal strips.

M. Each instrument cable shall be installed in continuous lengths between terminations. No splicing shall be permitted.

N. 20% spare twisted pairs shall be provided in each conduit run between panels where cables serve more than one device.

O. Conductors carrying high voltage and/or high current shall be installed in separate ducts from low power conductors and PLC component cables.

P. All cable (power, instrument, communication) in panels shall have the same physical properties as in the field, to minimize the possibilities of transients.

**3.03 SPLICES AND TERMINATIONS**

A. Spacing between adjacent terminal strips shall not be less than five inches as measured from the individual terminal block edges.

B. Wire and cable lengths shall be continuous and without splices between the points of connection, except as otherwise specified or indicated on the Drawings.

C. Splices and terminations where specified or indicated on the Drawings shall be made in strict accordance with the conductor manufacturer's recommendations.

D. Splices and connections shall have a conductivity and insulation resistance at least equal to that of the cable.

E. Terminated conductors shall be bundled and identified to match approved Contractor submitted drawings.

**PART 4 SPECIAL PROVISIONS**

**4.01 SPARE PARTS**

A. Extra terminal block points shall be provided in the quantity of 30% over the quantity used.

END OF SECTION

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**SECTION 16130**
**CONDUIT, SURFACE METAL RACEWAYS, AND ACCESSORIES**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes all labor, tools, equipment, and materials necessary to provide conduits and surface metal raceways in accordance with the Drawings and as specified herein.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and Section 16010 and shall include:

1. Shop Drawings for Review:

   a. Wiring schematics with wire termination points identified.

   b. A list of materials needed for construction, manufacturer's name and catalog numbers.

   c. Provide conduit layout drawings. All conduit layouts shall show conduits and conduit types with anticipated number, size, and type of power, control or instrumentation conductors/cables, spares and grounds for each and every section of Division 16 requiring separate conduits. Location of floor and wall penetrations and separation between parallel conduits shall be dimensioned.

2. Information for the Record:

   a. Manufacturer's qualifications.

   b. Manufacturer's technical product sheets on each component to be furnished.

   c. Certified copies of field test procedures and results.

   d. Manufacturer's recommended method of installation for the products to be furnished.

   e. Operation and maintenance manuals for equipment provided, including accessories, and maintenance instructions.

   f. Manufacturer's recommended spare parts list for the system components and accessories.

   g. Provide warranty for review; executed copies shall be submitted when completed with copies included in the operation and maintenance manuals.

   h. Conduit layouts shall consist of "as-installed" drawings showing the exact location and routing of all conduits and conduit duct banks that

are installed in or under paved areas, concrete slabs, direct buried, or otherwise concealed.

i. Conduit layouts shall show conduits with number, size, and type of power, control or instrumentation conductors/cables, spares, and grounds for each and every section of Division 16 requiring separate conduits.

j. Copies of certificates issued by the manufacturer of PVC coated rigid galvanized steel conduit to installers who have successfully completed the manufacturer's installation training program.

**1.03 QUALITY ASSURANCE**

A. Applicable Standards:

1. NEMA.
2. UL.
3. ASTM.
4. NEC.
5. NFPA.

**1.04 PRODUCT HANDLING**

A. Care shall be taken when handling materials. Deformed conduit and surface metal raceway materials shall not be installed. Conduits and surface metal raceways damaged during construction shall be replaced.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

A. Metallic Conduit:

1. Metallic conduit, including couplings, nipples, elbows, and bends shall conform to the Standard for Rigid Metallic Conduit of the UL accessories such as locknuts and connectors shall be zinc-coated for use with hot-dipped galvanized conduit.
2. Rigid galvanized steel conduit shall conform to UL-6 Specification, ANSI C80.1, and FS WW-C581E.

B. PVC Coated Conduit:

1. A plastic coating shall completely encapsulate metallic conduit to provide total protection against corrosion.
2. Conduit shall be galvanized inside and outside, including the threads.
3. Threads shall be coated with urethane over the galvanized threads. A minimum thickness of 40 mil PVC exterior coating shall be permanently fused to the galvanized rigid steel conduit.

4. A urethane or polyurethane interior coating shall be applied at a nominal 2 mil thickness to the interior of the conduit and over the galvanized threads.

5. The PVC coating on all form 8 fittings shall form a gasket-like flange covering the top of the fitting around the opening. All fittings shall have a minimum of 40 mils PVC coating even around the edge of covers.

6. GUA type boxes shall be supplied with WOD type covers. (Feraloy iron instead of aluminum to prevent corrosive reaction between dissimilar metals.)

7. Conduit fittings (couplings, elbows, etc.) shall be of the same material as the conduits and fittings to which they are attached.

8. PVC coated conduit shall be UL listed and conform to the same standards as metallic conduit.

9. PVC coated conduit shall be "OCAL BLUE" as manufactured by OCAL, Inc., "Permacote," "KorKap" or "Plasti-Bond" as manufactured by Robroy Industries, or equal.

10. Conduit shall be supported by corrosion resistant straps and clamps.

C. PVC Conduit:

1. Conduit shall be a minimum of Schedule 40 for use only when encased in concrete.

2. Concrete encasement for conduits shall be Class B as specified in Section 03300.

3. Schedule 80 shall be used for direct-burial and exposed applications where shown on the Drawings.

4. PVC conduit systems shall conform to FS WC 1094A, ASTM 512, NEMA TC2 and TC3, and to UL 651 and 514 b. All components shall be "Sunlight resistant" and so marked.

D. Flexible Steel Conduit:

1. Flexible steel conduit shall be liquid tight Appleton Electric Company "Sealtite" or equal.

2. Flexible steel conduit fittings shall be Thomas & Betts, Appleton, O-Z/Gedney, or equal.

E. Flexible Metal Conduit - Flexible metal conduit (Greenfield) shall be used only where indicated on Drawings and approved by the Engineer.

F. EMT Conduit:

1. EMT (Thin wall) shall be used only where indicated on Drawings and approved by the Engineer.

2. EMT steel conduit shall be of standard and uniform circular cross-section and weight, and shall be hot-dipped galvanized.

3. Conduit shall bear UL label and manufacturer's name or trademark.

4. Couplings and fittings shall all be in compliance with the NEC.

G. Surface Metal Raceways:

1. Surface mounted metal raceways shall only be provided where shown on the drawings or approved by the Engineer.

2. Surface mounted metal raceways shall be UL 5 listed and approved.

3. Surface mounted metal raceways and associated couplings and fittings shall be made by the same manufacturer.

4. Surface mounted metal raceways and associated couplings and fittings shall be made of steel and provided with a finish that can be painted over.

5. Surface mounted metal raceways may be used in combination with multioutlet assemblies made by the same manufacturer.

6. Surface mounted metal raceways shall be distinguishable from other types of raceways.

7. Surface mounted metal raceways and their elbows, couplings, and similar fittings shall be designed so that the sections can be electrically and mechanically coupled together and installed without subjecting the wires or cables to abrasion.

8. Surface mounted metal raceways shall be as manufactured by Wiremold, or equal.

H. Explosion-Proof Flexible Conduit:

1. Explosion-proof flexible conduit shall be rated for use in Class I Division 1 Group D or Class II Division 1 Groups E, F and G.

2. Explosion-proof flexible conduit shall be provided with two removable male nipples or with one removable male nipple and one removable male union.

I. Bituminous Coating - All rigid galvanized conduit buried underground shall be coated on the outside with a standard petroleum self-priming asphaltic coating. This material shall meet the requirements of FS TT-V-51F, Varnish: Asphalt. It shall be free of lead and chromate hazards. This material shall be lead and alkali resistant. PVC coated rigid galvanized conduit shall be exempt from bituminous coating requirement.

## 2.02 CONDUIT FITTINGS - GENERAL

A. Fittings shall be vapor proof, weatherproof, and explosion-proof where so shown on the Drawings and required by NEC.

B. Fittings for use with EMT and Greenfield shall be compatible with the type of conduit, and shall be of the same manufacturer.

## 2.03 CONDUIT FITTINGS - METALLIC

A. Bushings 1-1/4 inches and larger shall be Type B insulated bushings as manufactured by O-Z/Gedney, Thomas & Betts, or equal.

B. Ground bushings shall be Type BL bushings as manufactured by O-Z/Gedney, Thomas & Betts, or equal.

C. Conduit fittings for use with metallic conduit shall be standard threaded type of cast ferrous construction to suit the location and purpose. Fittings shall be Crouse-Hinds, Appleton Electric, or equal.

D. Covers shall be domed sheet metal, except in corrosive areas, where they shall be cast. All covers shall have gaskets.

E. Exposed fittings, junction boxes, outlet boxes, terminal boxes, etc., shall be cast ferrous material threaded-hub type.

**2.04 CONDUIT FITTINGS - PVC COATED**

A. Fittings for use with PVC coated conduit shall be compatible with the type of the PVC coated conduit, and shall be of the same manufacturer.

**2.05 CONDUIT FITTINGS - PLASTIC**

A. Fittings for use with plastic conduit shall be compatible with the type of plastic conduit or duct used, and shall be of the same manufacturer.

B. Adhesives for use with plastic conduit shall be compatible with the type of plastic conduit or duct used and shall be approved by the conduit or duct manufacturer.

**PART 3 EXECUTION**

**3.01 COORDINATION**

A. Coordinate with other Work including metal and concrete deck work to interface installation of conduits, surface metal raceways, and support components.

B. Level and square conduits and surface metal raceways and install at proper elevations and heights.

C. Complete the installation of conduits and surface metal raceways before installing any cables or wires.

**3.02 OPENINGS AND SLEEVES**

A. Electrical penetrations through an exterior surface shall be sealed and made water-tight with a modular mechanical seal of rubber links as manufactured by Link-Seal, O-Z/Gedney, or equal.

B. Electrical penetrations through fire resistance rated walls or floors shall be fire stopped as required by the NEC using the approved method as recommended by the manufacturer. Fire stops (e.g. caulk) shall have a 3-hour, fire-resistance rating, and shall be made by the 3M Company, or equal.

C. Electrical penetrations to hazardous areas shall be gas-tight and fire-stopped using “Link-Seal” FD or FS seals as manufactured by Thunderline Corporation, or equal.

## 3.03 RESERVED

## 3.04 MOUNTING AND ATTACHMENT

A. Contractor shall provide all devices and materials such as expansion bolts, foundation bolts, screws, channels, angles, and other attaching means required to fasten conduits to concrete bases or structures which are existing, or provided under other sections of the Contract.

## 3.05 CONDUIT AND FITTINGS - GENERAL

A. Minimum size of conduit shall be 3/4 inch, except that concealed homeruns, underground, and embedded conduits shall not be less than 1 inch.

B. Conduits shall be located for protection from mechanical damage.

C. Conduits shall be sized in accordance with the NEC and based on 40% fill based on over two wires, or as shown on Drawings, whichever conduit size is larger.

D. Conduit stub-ups between underground or slab construction and exposed or concealed wall construction shall be elbows of rigid metallic conduit, and shall have an ample coating of asphaltic paint prior to the placement of concrete unless otherwise noted.

E. Conduits with free ends not containing conductors shall be threaded and provided with plumber's caps or with couplings and plugs where flush terminations are required.

F. Flexible connections to all equipment subject to movement or vibration shall be made by means of liquid tight flexible steel conduit equal in length to approximately ten times the diameter of the conduit, but not exceeding 3 feet in length. Explosion-proof flexible couplings shall be used in place of liquid tight flexible steel conduit in Class I, Division 1 and Class II, Division 1 hazardous areas.

G. Conduit runs subject to motion in excess of the capacities of the fittings specified above shall be provided with other approved means of compensating for the motion. Unless otherwise specified or required, expansion fittings shall be installed at the midpoint of their extension.

H. Conduits to pumps or other equipment shall, unless otherwise shown on the Drawings, be routed through or below concrete floor slabs.

I. Runs on floor slabs are not permitted unless specifically shown as such on the Contract Drawings.

J. Conduits shall be concealed in all locations where walls are faced with glazed tile or ceilings are suspended and where called for on the Drawings. Wherever conduit is concealed in masonry of any type, it shall be the responsibility of the Contractor to maintain a clear passageway throughout the entire conduit system, and to clean the conduit system before installing the conductors.

K. Conduit runs in poured concrete structures containing expansion joints, approved expansion/deflection joints shall be provided in the conduit. All such expansion joints shall be made watertight. Similar expansion/deflection joints shall be installed wherever

conduit crosses structural expansion joints, or is attached to two separate structures, or wherever the conduit run is more than 100 feet in straight length.

L. Where conduit bushings are constructed wholly of insulating material, a locknut shall be installed both inside and outside the enclosure to which the conduit is attached. Ungrounded conductors of No. 4 AWG or larger shall be protected with insulated throat bushings or hubs where entering or leaving an enclosure in conduit systems.

M. Pulling distances shall be limited to a maximum of 200 feet so as not to exceed the wire manufacturer's maximum pulling tensions, and suitable pull boxes, etc., shall be provided whether shown on the Drawings or not.

N. Unused openings in conduit bodies and cast enclosures shall be plugged using Appleton Cat. No. PL6, or equal.

O. The sum of the conduit bend angles between pull points shall not exceed 270 degrees. Bends in conduit containing medium voltage cables shall have a minimum radius of 36 inches.

P. In hazardous areas, all fittings, material, and equipment shall be rigid metallic steel or PVC coated rigid metallic steel.

Q. Conduits between hazardous and non-hazardous areas shall include seal-off fittings as required by the NEC and local codes, and the complete installation shall be in accordance with the requirements of such codes.

R. Seal-off fittings shall be exposed. Sealing compound shall be "Chico" by Crouse-Hinds, or equal. All components and installation in hazardous areas shall conform to the requirements of NEC and all local codes.

S. Conduits through which moisture may contact live energized parts shall be sealed or plugged at either or both ends per NEC 300.5(G) and 230.8. Spare or unused conduits shall also be sealed. Provide drains and breathers so moisture will not accumulate inside conduit.

T. Conduits subject to motion at right angles to the direction of the run and all conduits in concrete shall be equipped with O-Z/Gedney Type DX, Thomas & Betts, or equal expansion and deflection fittings.

U. Inside surfaces of all conduits shall be free from any imperfection likely to damage conductors or cables during installation.

V. During construction, open ends of conduits shall be capped or plugged to keep out debris. These caps or plugs shall remain in place until wires or cables are pulled through the conduit.

W. Spare conduits and those provided by the contractor for use by others shall have a pull string installed. Coil up at least 24 inches of extra string at each end.

## 3.06 CONDUIT AND FITTINGS - METALLIC

A. Exposed conduit shall be rigid metallic conduit unless otherwise noted.

B. Rigid metallic conduit shall be installed in true alignment and sloped for drainage wherever necessary; underground conduits shall be drained to manholes or pull boxes.

C. Rigid metallic conduit shall be reamed free from burrs and carefully cleaned before installation.

D. When required, conduit unions shall be provided. Running threads will not be permitted.

E. Conduit fastened directly to structures shall be held with one-hole, malleable iron clamps and clampbacks, or otherwise suitably spaced from concrete or masonry surfaces. Concealed rigid metallic conduit shall be installed in as direct a line as possible and shall be rigidly supported by approved methods and materials.

F. Exposed rigid metallic conduit shall be installed parallel with or at right angles to the lines of the structure, except as otherwise shown, and supported in an approved manner.

G. Conduits entering a NEMA 3R, 4, 4X, or 12 enclosures shall be installed using watertight fittings of die cast zinc material. Fittings shall be Appleton HUB-XXD, or equal.

H. Expansion fittings shall be installed in all rigid metallic conduit runs which cross expansion joints, and shall be Type AX as manufactured by O-Z/Gedney or Thomas & Betts.

## 3.07 CONDUIT AND FITTINGS - PVC COATED RIGID GALVANIZED STEEL

A. PVC coated rigid galvanized steel (RGS) conduit shall be installed per the manufacturer's instructions. Only tools approved by the manufacturer of the conduit shall be used.

B. Installers of PVC coated RGS conduit must be certified by the conduit manufacturer to install this type of conduit. Proof of certification shall be furnished to the Engineer.

C. PVC coated RGS conduit shall be used wherever shown on the Drawings by the notation "PVC/RGS", and in all areas where highly corrosive or highly humid atmospheres can exist, whether shown on the Drawings or not. Such areas include, but are not limited to, chemical feed and storage areas, solids storage facilities, wet wells, near the surfaces of standing or running water such as in aeration tanks, digestion tanks, open channels, and clarifiers or settling tanks.

D. PVC coated galvanized rigid steel conduit shall only be used with threaded fittings. Threadless fittings shall not be used.

E. The installation of PVC coated RGS conduit shall conform to the requirements for metallic conduit.

F. Before assembly, field-cut threads shall be coated with an electrically conductive compound approved by the conduit manufacturer.

## 3.08 RESERVED

## 3.09 SURFACE METAL RACEWAYS

A. Surface mounted metal raceways shall only be used in dry locations where exposed or under raised floors of information technology rooms per Section NEC 645.5(D)(2).

B. Surface mounted metal raceways shall not be used in Class I hazardous areas, where subject to severe physical damage, where the voltage between the wires is greater than 300 volts, where subject to corrosive vapors, in hoistways, and concealed locations not mentioned in A. above.

C. The number and size of conductors within surface metal raceways shall not exceed what the raceway was designed for. See the manufacturer's installation instructions to determine capacity.

D. Cables shall be permitted to be installed in surface metal raceways only where such use is permitted by the respective cable article in the NEC.

E. Surface metal raceways shall be securely fastened to the surface on which they are mounted in accordance with the manufacturer's instructions.

F. Surface metal raceways shall be grounded and bonded in accordance with NEC Articles 250 and 386.

G. Splices shall not be made within surface metal raceways.

### 3.10 EXPLOSION-PROOF CONDUIT FITTINGS

A. The cross-sectional area of the conductors permitted in a seal shall not exceed 25% of the cross-sectional area of a rigid metal conduit of the same trade size unless it is specifically listed for a higher percentage of fill.

B. Motors and other devices subject to vibration and movement located in Class I, Division 1 and Class II, Division 1 areas shall be connected using explosion-proof flexible couplings. Explosion-proof flexible couplings may also be used in place of rigid conduit in difficult bend situations.

### 3.11 BELOW-GRADE GALVANIZED CONDUIT

A. All rigid galvanized conduit buried underground shall be coated on the outside with a self-priming, standard petroleum asphaltic coating. This coating shall have a thickness when dry of at least 1 mil.

B. The asphaltic coating may be dipped, brushed or sprayed on the exterior surface of the conduit.

C. Before application, surface should be free of grease, oil, dirt, fingerprints, drawing compounds, any other contaminant, and surface passivation treatments to ensure optimum adhesion and coating performance properties.

## PART 4 SPECIAL PROVISIONS

### 4.01 CONDUIT LOCATION SCHEDULE

A. Exterior above grade – RGS.

B. Interior (unclassified) – RGS.

C. Chemical areas –PVC/RGS.

D. Screen room – explosion proof.

END OF SECTION

**SECTION 16132**
**ACCESSORIES**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes all labor, tools, equipment, and materials necessary to provide electrical boxes and fittings in accordance with the Drawings and as specified herein.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and Section 16010 and shall include:

1. Shop Drawings for Review:

a. A list of materials needed for construction, giving quantities, manufacturer's name and catalog numbers.

b. Manufacturer's technical product sheets on each component to be furnished.

2. Information for the Record:

a. Manufacturer's qualifications.

b. Certified copies of factory test procedures and results.

c. Manufacturer's recommended method of installation for the products to be furnished.

d. Operation and maintenance manuals for equipment provided, including accessories, and maintenance instructions.

e. Manufacturer's recommended spare parts list for the system components and accessories.

f. Provide warranty for review; executed copies shall be submitted when completed with copies included in the operation and maintenance manuals.

### 1.03 QUALITY ASSURANCE

A. Applicable Standards:

1. UL.

2. NEMA.

3. FS.

4. NEC.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Except as otherwise specified in non-corrosive areas, metallic outlet, device, terminal, junction, pullboxes and conduit fittings shall be appropriate to the related conduit specification.

1. Cast ferrous metal boxes shall be used with rigid galvanized conduit. Threaded openings shall have a minimum of 5 threads and neoprene-gasketed, cast covers held in place with stainless steel screws.

2. Boxes whose weight in cast ferrous metal would exceed 75 pounds shall be made of sheet steel with 5-thread bosses and neoprene-gasketed covers held in place with stainless steel screws. Similarly, sheet aluminum boxes shall be provided in the larger sizes.

3. Boxes larger than 6-inch shall be equipped with cap screws and hinged covers.

B. In areas designated as NEMA 4X, outlet, device, terminal, junction and pullboxes shall be NEMA 4X of stainless steel or FRP. Sheet metal boxes where permitted above, shall be NEMA 4X watertight boxes made of 12-gauge stainless steel.

C. Terminal and junction boxes used for control, signal, or communication wiring shall be NEMA 4X stainless or FRP, except where located in a dry area or electric room, where they shall be NEMA 12. Terminal boxes shall have white-painted backplates, barriered terminal blocks of sufficient quantity for all field taps and for all spare deadends.

D. Cast boxes used indoors in non-corrosive locations not subject to flooding or hosing shall:

1. Be dust-tight equal to O-Z/Gedney Electrical Manufacturing Company Type YU flush boxes and Type YS surface boxes.

2. Include mounting lugs, with threaded openings having a minimum of 3 threads and neoprene-gasketed covers held in place with stainless steel screws.

E. Sheet-metal boxes where permitted, including junction boxes and pullboxes at motor control centers, shall be hot-dip galvanized NEMA 12 with neoprene-gasketed covers held in place with stainless steel screws.

F. In hazardous areas, NEMA 7 pull boxes and junction boxes shall meet all requirements of Class I, Division 1, Group D unless noted otherwise.

1. Enclosures shall have hinged covers and captive cover screws, multiple threaded for fast removal, and an O-ring added to make the enclosure watertight.

2. Enclosures shall be as manufactured by Killark Electric Manufacturing Company, or equal.

G. Checkered covers shall be provided for boxes in floors or sidewalks.

H. Interior junction boxes and gutters shall conform to NEC thickness and dimensional requirements, minimum.

I. Cut edges or knockouts on all FRP boxes shall be sealed with a catalyzed resin compatible with the original resin and as recommended by the manufacturer. The sealing of the edges shall prevent premature fraying at the field cut edges.

**2.02 RESERVED**

**PART 3 EXECUTION**

**3.01 COORDINATION**

A. Layout and installation of electrical cabinets, boxes, and fittings shall be coordinated with other installations.

**3.02 INSTALLATION**

A. Install electrical boxes and fittings as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC and NECA "Standard of Installation", and in accordance with recognized industry practices to fulfill project requirements.

B. Install items where indicated and where required to suit code requirements and installation conditions.

1. Cap unused knockout hole where blanks have been removed and plug unused conduit hubs so as to maintain the NEMA rating of the box.

2. Install boxes in locations which ensure ready accessibility to enclosed electrical wiring and avoid installing boxes back to back in walls where there would be less than 6 inches (150 mm) separation. Fasten boxes firmly and rigidly to substrates or structural surfaces to which attached, or solidly embed electrical boxes in concrete or masonry.

3. Do not install aluminum products in concrete.

C. Outlet and device boxes for flush mounted installation shall be a minimum of 4 inch square or octagonal and positioned accurately to allow for surface finish thickness.

D. Junction boxes, pullboxes, and enclosures with hinged doors which are surface mounted shall utilize spacers to maintain 1/4-inch clearance from the wall.

E. Floor boxes shall be installed level and flush with finished flooring material.

F. Avoid using round boxes where conduit must enter box through side of box, which would result in difficult and secure connections when fastened with locknut or bushing on rounded surfaces.

G. Provide electrical connections for installed boxes.

**3.03 GROUNDING**

A. Upon completion of installation work, properly ground electrical boxes and demonstrate compliance with requirements.

## 3.04 CLEANING AND FINISH REPAIR

A. Upon completion of installation, inspect components, remove burrs, dirt, and construction debris, and repair damaged finish including chips, scratches, abrasions, and weld marks.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 16430**
**DISCONNECT SWITCHES**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section defines the requirements necessary to furnish and install circuit and motor disconnect switches in accordance with the Drawings and as specified herein.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Manufacturer's technical product sheets on each component to be furnished.

b. Furnish manufacturer's name(s) and catalog numbers.

2. Information for the Record:

a. Manufacturer’s recommended method of installation for the products to be furnished.

b. Operation and maintenance manuals.

c. Manufacturer's recommended spare parts list for the components and accessories.

d. Provide warranty for review; executed copies shall be submitted when completed with copies included in the operation and maintenance manuals.

### 1.03 ELECTRICAL AND CONTROL COORDINATION

A. Layout and installation of disconnect switches and accessories shall be coordinated with other trades and with motor horsepower ratings.

### 1.04 PRODUCT HANDLING

A. Deliver disconnect switches properly packaged in factory fabricated type containers or wrappings, which properly protect devices from damage.

B. Store disconnect switches in original packaging and protect from weather and construction traffic. Wherever possible, store indoors. Where necessary to store outdoors, store above grade and enclose with watertight wrapping.

C. Handle disconnect switches carefully to prevent physical damage. Do not install damaged disconnect switches, remove from Site and replace damaged devices with new.

## PART 2 PRODUCTS

### 2.01 FUSED SAFETY SWITCHES

A. Provide individual fused switches as specified, shown on the Drawings, or as directed.

B. Fused switches shall have a minimal short-circuit rating of 100,000 amps, RMS symmetrical.

C. Where shown on the drawings, provide fused switches that lock in the ON position. Field modifying to provide this feature shall not be permitted. Where the service disconnect is locked in the ON position, branch circuit overcurrent devices shall be located in a readily accessible location and shall be of a lower amp rating than the LOCKED-ON service overcurrent device per the NEC.

D. Disconnect switches located outdoors, in process areas, damp locations, wet locations, and indoors below grade shall be NEMA 4X stainless steel unless noted otherwise on the Drawings. Disconnect switches located indoors in dry, non-process areas above grade shall be NEMA 12 unless noted otherwise on the Drawings. Provide switches that can be locked in the OFF position. Enclosures shall be mechanically interlocked to prevent the opening of the cover with the switch in the ON position.

E. Fused switches shall be quick-make, quick-break, motor-rated, load-break, heavy duty (HD) type having external marking clearly indicating ON and OFF positions.

F. Disconnect switches for motors driving process equipment shall have two normally open auxiliary contacts. One shall be wired to disable the motor controller when the switch is open. The other shall be wired to signal the Plant Control System (PCS) that the equipment is "In Service." Disconnect switches for motors driving utility equipment shall have one normally open auxiliary contact. It shall be wired to disable the motor controller when the switch is open.

G. Switches shall be UL listed and horsepower rated for 250 VAC or DC or 600 VAC as required. Lugs shall be UL listed for copper cable. All fused switches shall include equipment grounding bar.

H. Where required by the NEC, fused safety switches shall be rated for use as service entrance equipment.

I. Disconnect switches shall be Square D, Crouse-Hinds, Cutler-Hammer, or equal.

### 2.02 NONFUSED SAFETY SWITCHES

A. Provide non- fused switches with the same provisions as for fused switches but without fuse clips.

B. Disconnect switches for motors driving process equipment shall have two normally open auxiliary contacts. One shall be wired to disable the motor controller when the switch is open. The other shall be wired to signal the Plant Control System (PCS) that the equipment is "In Service." Disconnect switches for motors driving utility equipment shall have one normally open auxiliary contact. It shall be wired to disable the motor controller when the switch is open.

C. For applications in which all of the conditions listed in the following (1 thru 4) are met, the safety disconnect switch shall be a Crouse-Hinds NSSC manual motor starting switch, or equal, with a high-impact, fiberglass-reinforced polyester, corrosion-resistant, dust-tight, watertight, weatherproof enclosure rated NEMA 3, 4X, and 12 containing a two or three pole switch, as required by the application. Each switch shall have provisions to be pad locked in the off position. Each switch shall be UL listed and horsepower rated for 250 VDC or VAC, or 600 VAC as required. Lugs shall be UL listed for copper cable. Each switch shall include an equipment grounding plate for 3/4-inch and 1-inch conduit.

1. Auxiliary contacts are not required for interlocking or remote monitoring.
2. The driven equipment is not process related; e.g., overhead door operator, electric hoist, HVAC equipment, etc.
3. The motor is three-phase rated 10 hp or less at 460 VAC, 7-1/2 hp or less at 230 VAC, or single-phase rated at 2 hp or less at 230 VAC, or 1 hp or less at 115 VAC.
4. Motor overload protection is not required, or is provided separately by a separate device in the motor circuit.

## PART 3 EXECUTION

### 3.01 INSTALLATION

A. Install disconnect switches for use with motor driven equipment, motors, and controllers, within sight of the motor position where indicated.

B. Provide suitable means for mounting disconnect switches.

### 3.02 TESTING

A. Subsequent to completion of installation of electrical disconnect switches, energize circuitry and demonstrate capability and compliance with requirements. Where possible, correct malfunctioning units at Site, then retest to demonstrate compliance; otherwise, remove and replace with new units and retest.

## PART 4 SPECIAL PROVISIONS

### 4.01 FUSES

A. Provide and install fuses for all fused disconnect switches along with a minimum of 3 spare fuses of each size supplied.

END OF SECTION

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**SECTION 16431**
**CIRCUIT BREAKERS**

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section defines the requirements necessary to furnish and install circuit breakers in accordance with the Drawings and as specified herein.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Manufacturer's technical product sheets on each component to be furnished showing dimensions and ratings for voltage, amperage and maximum interruption.

b. Furnish manufacturer's name and catalog numbers.

2. Information for the Record:

a. Manufacturer's recommended method of installation for the products to be furnished.

b. Operation and maintenance manuals.

c. Manufacturer's recommended spare parts list for the components and accessories.

d. Manufacturer shall provide time/current characteristic trip curves (Ip and I2t let-through curves for true current limiting circuit breakers only) for each type of circuit breaker.

### 1.03 QUALITY ASSURANCE

A. Equipment and materials shall be new and, if of the same type as other performing parts of the same system, shall be the products of the same manufacturer.

B. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum of five years.

C. Equipment shall meet applicable standards of NEC, NRTL, OSHA, UL, and NEMA.

## PART 2 PRODUCTS

### 2.01 RESERVED

### 2.02 BRANCH CIRCUIT BREAKERS IN LIGHTING AND POWER PANELBOARDS

A. Breakers shall be UL listed with amperage ratings and number of poles as indicated on the Drawings.

B. Plug-in type circuit breakers that are backfed and used as main circuit breakers in “Main Lugs Only” panelboards shall be secured in place by an additional fastener that requires other than a pull to release the device from the bus bar assembly.

C. Circuit breakers shall have an overcenter toggle mechanism which will provide quick-make, quick-break contact action. Circuit breakers shall have thermal and magnetic trip elements in each pole. Two and three pole circuit breakers shall have an internal common trip crossbar to provide simultaneous tripping.

D. There shall be visible trip indication. The breaker handle shall be trip free and reside in a TRIPPED position between ON and OFF.

E. In addition to standard ON/OFF markings, circuit breaker handle accessories shall provide provisions for locking handle in the ON or OFF position by rivet or bolt. Handle accessories shall be by the same manufacturer as the circuit breaker. Clip on locking means will not be permitted.

F. The exposed faceplates of all branch circuit breakers shall be flush with one another.

G. All circuit breakers for 120 volts, 277 volts, and fluorescent and HID lighting circuits shall be approved for switching duty, and shall be marked SWD.

H. Branch circuit breakers for 120/208/240/277-volt circuits shall have a minimum of 10,000-amp interrupting capacity. Breakers shall be operable in any position, and shall be removable from the front of the panelboard without disturbing adjacent units.

I. Ground Fault Circuit Interrupters (GFCI) shall be provided where listed in the panel schedules. GFCI shall be Class A, 4-6 mA.

J. Ground Fault Equipment Protection Devices (GFEPD) shall be provided where listed in the panel schedules. GFEPDs shall have a trip setting of 30 mA.

K. Arc Fault Circuit Interrupters (AFCI) shall be provided where listed in the panel schedules. AFCIs shall meet or exceed the requirements of UL Standard 1699. AFCIs shall trip if they detect a line to neutral arcing fault of 75 amps or greater. They shall also trip for line to ground faults of 5 Amps or greater.

L. GFCI, AFCI, and GFEPD branch circuit breakers shall have a “push-to-trip” device for maintenance and testing purposes.

M. Lugs shall be UL listed to accept solid or stranded copper conductors. Lugs shall be suitable for 75 degrees C rated wire, unless noted otherwise.

## 2.03 CIRCUIT BREAKERS FOR 480V OR 480Y/277V PANELBOARDS

A. In addition to the above specifications, 480-volt circuit breakers shall meet the following criteria.

1. Circuit breakers shall be factory sealed and shall have a date code on the face of the circuit breaker. Poles shall be labeled with respective phase designations.

2. Standard construction circuit breakers shall be UL listed for reverse connection without restrictive line or load markings. Circuit breakers shall be suitable for mounting and operating in any position.

3. Circuit breakers shall not require any additional external mounting hardware. Circuit breakers shall be held in mounted position by a self-contained bracket secured to the mounting pan by fasteners.

4. Each individual circuit breaker shall be capable of being mounted independently. Circuit breakers of different frame sizes shall be capable of being mounted across from each other.

5. Circuit breakers shall have 25,000-amp minimum interrupting capacity. Amp ratings shall be as shown on the Drawings.

6. Circuit breakers shall have a permanent trip unit with thermal and magnetic trip elements in each pole.

7. Two and three pole circuit breakers shall have an internal common trip crossbar to provide simultaneous tripping.

8. Circuit breaker frame sizes above 100 amp shall have a single magnetic trip adjustment located on the front of the breaker which allows the user to simultaneously select the desired trip level of all poles.

9. Circuit breakers in distribution equipment shall be factory installed.

10. Single and two-pole circuit breakers installed in 480 volt panelboards shall be constructed in such a manner that they plug into the proper phase busbar(s) as shown on the drawings.

## 2.04 RESERVED

## 2.05 RESERVED

## 2.06 RESERVED

## 2.07 LABELS

A. Provide products that are listed and labeled. The terms “listed” and “labeled” shall be defined as they are in the NEC, Article 100.

## 2.08 IDENTIFICATION

A. Identify components in accordance with Section 16030.

## 2.09 MANUFACTURER

A. Circuit breakers shall be as manufactured by Square D, Cutler-Hammer, or equal.

# PART 3 EXECUTION

## 3.01 COORDINATION

A. Locate independently mounted circuit breakers and install in accordance with manufacturer's written installation instructions.

B. Install wiring between circuit breakers and control/identification devices as specified in Section 16120.

## 3.02 INSTALLATION

A. Check connectors, terminals, bus joints, and mountings for tightness. Tighten field-connected connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL standards.

B. Provide equipment grounding connections for individually mounted units as indicated and as required by the NEC.

C. Tighten connectors to comply with tightening torques specified in UL standards to assure permanent and effective grounding.

D. Upon completion of installation, inspect devices. Remove paint splatters and other spots, dirt, and debris. Touch up scratches and mars of finish to match original finish.

E. Install labels inside enclosure identifying the type of circuit breaker installed, its overcurrent rating, its interrupt rating and the UL class. Where applicable, trip setting and time delay information shall be provided on permanent labels.

## 3.03 INSPECTION, START-UP, AND TRAINING

A. On circuit breakers with adjustable trip settings, the contractor shall coordinate with the circuit breaker manufacturer, or their authorized agent, verification that the ratings and settings are appropriate for proper coordination with other system protection devices. All settings shall be identified and adjusted before circuit breaker is energized.

B. Where discrepancies are found, Contractor or the manufacturer's representative shall recommend final protective device ratings for approval by the Owner and Engineer.

C. Inspect for defects and physical damage, NRTL labeling, and nameplate compliance with current single line diagram.

D. Exercise and perform operational tests of all mechanical components and other operable devices in accordance with manufacturer's instruction manual.

E. Check tightness of electrical connections with calibrated torque wrench. Refer to manufacturer's instructions for proper torque values.

## 3.04 PROTECTION

A. Panelboards and installed circuit breaker equipment shall be covered and protected from physical damage and construction dirt and debris until ready to be placed into service.

## PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

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**SECTION 16903**
**CONTROL PANELS**

## PART 1 GENERAL

### 1.01 SCOPE

A. Work under this Section includes the fabrication and installation of all control panels and other enclosures required to provide a complete instrumentation and control package. Panel wiring is also included herein.

B. All control panels furnished or installed under this contract shall meet the requirements of this Section. Panels include, but are not limited to, those designated control panels, interim panels, enclosures, remote I/O panels, or other required enclosures necessary to complete the Work.

### 1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Submittals shall show door arrangement and device layout, wireways, subpanel layout, padlock and vault type locking handle, dimensions, legends, terminal blocks and terminations, etc.

b. Panel schematic wiring diagrams shall be provided to show all panel wiring systematically numbered. All devices shall be identified by device symbol designation; all lines and points shall be numbered. Each line shall be identified by function.

c. Furnish manufacturer's name, catalog numbers, and product specifications for each component and panel to be furnished.

2. Information for the Record:

a. Operation and maintenance manuals.

b. Upon completion of the installation and acceptance by the Owner and Engineer, all electrical (schematic) diagrams, interconnection diagrams, panel layouts, and related support materials shall be corrected and amended to reflect the installed system.

### 1.03 QUALITY ASSURANCE

A. All control panel enclosures shall be UL listed and designed in accordance with applicable NEMA, ANSI, and UL 508 Standards.

B. All wiring and terminations shall be designed, manufactured, and tested in accordance with the latest applicable standards of the NEC as well as state and local codes.

C. Control panels shall conform to third party safety certification. The assembled control panel shall bear a serialized UL label listed for “Industrial Control Panels” UL 508A. The enclosure, and all components mounted thereto shall conform to UL descriptions and procedures.

## PART 2 PRODUCTS

### 2.01 ENCLOSURES

A. All enclosures shall be Hoffman Enclosures, Inc., Bulletin A4, A12, A19, or A30 as specified or equal.

B. All equipment and controls shall be mounted in metal enclosures designed and manufactured in accordance with the applicable standards of NEMA, ANSI, and UL 508A Standards. Panels shall be floor-mounted, free standing or wall mounted (as determined by manufacturer’s mounting provisions for the size and type of panel).

C. Enclosures in a Control Room shall be NEMA 12 rated. Enclosures not located in a Control Room shall be NEMA 4X rated, nonventilated stainless steel unless noted otherwise.

D. Enclosures shall have a rolled lip around all sides of the opening so that a drip hood is not required.

E. Single door enclosures shall be hinged left with removable hinge pins. All NEMA 12 rated panel doors shall incorporate a vault type handle with 3-point latching mechanism for securing the door in closed position and door locks shall be keyed alike. NEMA 4X rated panel doors shall be furnished with padlock hasp and padlocks, all keyed alike. NEMA 4X rated panel doors shall be held closed with hardware certified compatible with the epoxy resin coating or stainless steel. Only smooth rubber gasket material shall be used for providing the door seal.

F. Double door enclosures shall have a removable center mullion and overlapping doors with three-point latching mechanisms with oil tight keyed locking handles, all keyed alike.

G. Removable “eye” bolts shall be provided to facilitate slinging and handling of enclosures. “Eye” bolts shall be mounted directly to and be part of the enclosure structural members so as to distribute the stresses and weight while slinging.

H. Panels shall have print pockets attached inside the door, as space permits.

I. Cover boxes, enclosures; etc. regardless of size with front mounted devices shall have a hinged door unless noted otherwise.

J. Panel layout and equipment spacing shall be sufficient to allow for device removal and maintenance without disassembly of adjacent devices. Additionally, ample panel gutter space (sides, top, and bottom) shall be provided for training wires and cables.

K. The Contractor shall properly size each enclosure, allowing 20% back panel spare space. Each enclosure shall be sized as specified herein or shown on the Drawings, or to suit the physical dimensions required for components and heat requirements of the components mounted within, whichever is the largest.

L. Control panel doors shall not exceed 36 inches in width.

M. Control panel depth shall not be less than 8 inches.

N. Floor mounted type enclosures shall be provided with floor stands. The legs of floor-mounted enclosures shall be at least 12 inches high.

## 2.02 RESERVED

## 2.03 POWER, INSTRUMENTATION AND CONTROL WIRING

A. Panel interior control wiring shall be a minimum of No. 16 AWG-MTW, 2/64 PVC insulation, and 90 degrees C rated for AC connections. Nylon jacketed and/or TFFN wire will not be accepted. Thermoplastic wire cover shall be colored:

| | |
|---|---|
| RED | for AC wires |
| DARK BLUE | for DC wires |
| CANARY YELLOW | all foreign wiring inside the panel not being de-energized by the panel feed circuit breaker |
| GREEN | all ground wire connections |
| BLACK | for power source |
| WHITE | for power neutral |
| LIGHT BLUE | intrinsically safe system |

B. Signal conductors shall be as specified in Section 16121.

C. Power wiring shall be 600 volts and as specified in Section 16120. Conductors shall be stranded copper. No wire smaller than No. 12 AWG shall be used for power wiring.

D. All wire in control enclosures shall be identified at each terminal with wire identification tags as specified in Section 16030.

## 2.04 ENCLOSURE ACCESSORIES

A. Terminal blocks shall be Allen Bradley 1492 - W4 or equal. The Contractor shall allow 20% extra terminal connections in addition to those terminals required for the termination of spare control conductors and instrument cables.

B. Outdoor NEMA 4X rated enclosures shall have condensation protection and temperature control to maintain equipment manufacturer's specified operating temperatures. Condensation protection and temperature control shall be typical for all such enclosures and shall be sized accordingly and thermostatically controlled. Condensation protection and temperature control shall be Hoffman Enclosures Inc. - Bulletin D85, or equal.

C. Plastic wireway shall be used to train wires in all control panels and enclosures. Wireway fill shall not exceed 20% and shall be run in continuous lengths with snap-on type covers.

D. Each panel shall have a panel grounding bus bonded to the panel enclosure and a braided grounding strap connecting the panel door(s) to the panel enclosure frame.

E. Nameplates and legends shall be per Section 16030.

## 2.05 FABRICATION

A. Equipment, controls, and devices specified elsewhere and shown on the Drawings shall be mounted in enclosures manufactured in accordance with applicable NEMA, ANSI, and UL 508A Standards. All devices shall be mounted in accordance with the component manufacturer's recommendation. Devices shall be adequately supported and organized so that operation and maintenance access is unrestricted.

B. All necessary inner panels and supporting members shall be provided by the Contractor.

C. To minimize future maintenance problems, all panel enclosures shall be provided by one manufacturer to the extent that it is possible.

D. All panel wiring shall terminate at terminal blocks unless noted otherwise. Wire numbers shall be marked on an integral marker strip in numerical sequence for each individual block.

E. Instrumentation designs shall be such that analog signals that do not leave the enclosure shall be wired direct, without splices or terminals, from instrument to instrument unless accomplished in accordance with other provisions of these specifications.

F. Signal wiring shall be segregated and shielded from control and power wiring, grouped functionally, and arranged neatly to facilitate tracing of circuits.

G. No combination of analog, digital input, or control output wiring should be intermixed within the same bundle or duct. All analog wires shall be justified right while discrete 120 VAC wires shall be justified left.

H. Plastic wiring wraps shall be used to bundle wires, except within wiring ducts. The bundles shall be securely fastened to the steel structure at suitable intervals, not exceeding 12 inches.

I. Required device holes shall be provided by the panel manufacturer and punched prior to coating. No extra holes or field cut holes shall be permitted unless approved by Owner or Engineer.

J. Door or cover mounted panel devices shall not be located less than 30 inches above the finished floor. Door and cover mounted devices (i.e., pushbuttons, pilot lights, selector switches, meters, etc.) mounted in NEMA 12 and 4X enclosures shall, in addition to standard gaskets, be sealed with silicone grease compound as manufactured by Dow-Corning (No. 732) or equal.

K. Panels containing 480 volt power wiring contained within shall have a defeatable (disconnect switch) mounted on the panel front exterior to prevent opening the panel while the switch is in the ON position.

L. Panels containing 120 volt power (except canary yellow foreign wiring powered elsewhere) shall have provided inside the enclosure a properly sized fused isolation switch or circuit breaker.

M. Floor mounted and free standing enclosures shall be equipped with an interior, 15 amp, specification grade duplex receptacle and interior fluorescent lighting. A switch shall be provided to control the lighting unless noted otherwise in these specifications. The

receptacle and light shall be powered from a circuit separate from the control voltage circuit.

N. Panel shall have sufficient structural reinforcement to ensure a flat plane surface, to limit vibration, and to provide rigidity during shipment, installation, and operation, without distortion or damage to the panel or damage to any instrument mounted thereon. Minimum thickness of panels shall be:

1. Single door wall mounted up to 48-inch high by 36-inch wide by 16-inch deep shall be a minimum of 14-gauge steel.

2. Floor-mounted, wall-mounted and free standing panels larger than the above shall be a minimum of 12-gauge steel with angle reinforcement.

O. Joined edges, corners, and seams shall be of a continuous bead weld (filler or dubbing shall not be permitted), and ground to a finish so as not to be detectable after painting. Spot welds shall be used only to connect flat metal surfaces to structural support bracing to provide rigidity. Panels with any warping due to welding procedures or any other cause shall be rejected.

P. Panels shall be bonderized or cold phosphated before painting. NEMA 12 rated panel shall be primed and factory finished with two coats of ANSI color baked enamel. The color is to be selected by the Owner. NEMA 4X rated panels shall be primed and coated with a powdered resin, heat-cured, 100% solid thermosetting epoxy, unless the enclosure is stainless steel. Interior surfaces shall be high-gloss white, and the exterior surfaces shall be a high-gloss color to be selected by the Owner.

Q. The inner-mounting panel shall be a minimum of 12 gauge for single door enclosures and 10 gauge for double door enclosures. The panel shall be mounted with stainless steel fasteners and coated the same as panel interior.

R. Equipment mounted within free standing and floor-mounted control enclosures shall not be located such that it will be less than 18 inches above the mounting surface (floor, housekeeping pad, platform, etc.) after installation in the field.

S. Outdoor enclosures shall have their operator controls, (such as, but not limited to: pushbuttons and selector switches), mounted on a steel inner swing-out panel unless noted otherwise on the drawings. The swing-out panel mounted controls shall be accessible only after opening the lockable outer door.

T. Indicators and control operators mounted through the exterior of control enclosures shall be at least 30 inches above the walking surface (floor, housekeeping pad, platform, etc.) after installation in the field. The only exception to this rule will be alarm horns, speakers and similar audible devices.

## PART 3 EXECUTION

### 3.01 COORDINATION

A. Panel location and clearances shall be in compliance with the NEC.

## 3.02 INSTALLATION

A. Each conduit penetration of the panel shall be made in accordance with the manufacturer's recommendations. Each panel penetration shall comply with requirements to maintain NEMA ratings specified. No remaining holes or knockouts will be permitted except for power wiring entrances, signal wiring entrances, and mounting hole for any future panel mounted device(s). Holes shall be covered with a plastic plate. Conduit entrances shall be from the bottom of the enclosure first; then if bottom is not practical, the sides of the enclosure will be used. All panel mounted equipment will be protected from metal shavings, moisture, and debris while working in enclosures.

B. Install wiring between panel mounted devices and field devices as specified in Section 16120.

C. Check connectors, terminals, bus joints, and mountings for tightness. Tighten field-connected connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Standards 486A and UL 486B.

D. Provide equipment grounding connections for individually mounted units as indicated and as required by the NEC. Tighten connectors to comply with tightening torques specified in UL Standard 486A to assure permanent and effective grounding.

E. Upon completion of installation, inspect devices, and remove paint splatters, other spots, dirt, and debris. Touch up scratches and mars of finish to match original finish.

F. The bottom of wall-mounted control enclosures shall be at least 18 inches above the floor or platform. Use galvanized or aluminum unistrut when attaching control enclosures to vertical surfaces. Consideration shall be given to compatibility of unistrut and control panel metal surfaces in contact with one another.

G. The mounting of each panel shall allow for a minimum of 30-inch wide by 42-inch deep work area and door opening clearance of 90 degrees in front of panel to accommodate suitable room to open panel door and to provide the necessary work area.

H. Each floor mounted or freestanding panel shall be installed on a 4-inch thick housekeeping pad, continuous under the panel and extending 1-inch out from all sides. Pads shall have a 1/2-inch chamfer on all sides, except against walls.

## 3.03 IDENTIFICATION

A. Identify panel and components in accordance with Section 16030.

B. Individual nameplates shall be labeled to match the single line and schematic drawings.

# PART 4 SPECIAL PROVISIONS

## 4.01 GENERAL ENCLOSURE SCHEDULE

A. The following schedule is intended to aid the Contractor in identifying panels, location, and approximate size. It is intended to supplement the Drawings and Specifications and is not guaranteed to be complete. All enclosures shown on the drawings, specified or as

necessary to complete the Work shall be furnished and installed by the Contractor whether or not listed in the schedule.

| Panel Name | Location | NEMA Rating | Approx. Size (H x W x D) |
|---|---|---|---|
| UCP-2-1 | Mechanical Room | NEMA 12 | 42”x36”x12” |
| UCP-13-1 | Storage Area | NEMA 12 | 42”x36”x12” |
| UCP-13-2 | Garage | NEMA 12 | 42”x36”x12” |

**4.02 RESERVED**

**4.03 RESERVED**

END OF SECTION

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# STANDARD CONTRACT PROTECTIONS

The City values our contractors and seeks to maintain good relationships with them. The City also has an obligation to protect the taxpayer money that we spend, and to that end we have protections in place for our contracts, which vary depending on type of contract. **Commission approval is required by a surety before they will issue bonds for a contract.** Once the bonds and insurance certificates are obtained, the City Attorney reviews the contract and then the City Manager signs it.

**Prevailing wages:** Required for construction projects over $50,000 (and sometimes on state or federal for lesser amounts). This is the hourly wage, usual benefits and overtime, paid to the majority of workers, laborers, and mechanics within a particular area. This is usually the union wage. Prevailing wages are established by regulatory agencies for each trade and occupation employed in the performance of public work, as well as by State Departments of Labor (DOL) or their equivalents, are specific to Calhoun County. Purchasing pulls the current wages from the DOL at the time of publication of the Invitation for Bid; those wages do not change after that point and become part of the contract. Prevailing wage compliance is monitored by our Department of Public Works, and they collect the certified payrolls.

**Performance bond**: Required for construction contracts over $50,000. In the amount of 100% of the contract value, a performance bond is a surety bond that guarantees satisfactory completion of a project. Very rare to ever call on a bond. A performance bond can also be used for non-construction; we require a performance bond for residential waste and land application of sludge, which are both high dollar and high risk should the contract fail.

**Payment/Labor/Materials bond**: Required for construction contracts over $50,000. In the amount of 100% of the contract value, a PLM bond protects subs. A contractor cannot put a lien on a public building, so our subcontractors who provide both goods and services require protection in the event that the general contractor can't or won't pay their subs. Rare for our subs to call on any of our general contractors' bonds.

**General liability insurance**: Required for all contracts. Certificates of insurance for general commercial liability, workers' compensation, auto liability, and property damage are obtained prior to contract award. The City is always named as "additional insured" with respect to general liability, meaning the policy provides coverage to the City for work done under that contract. The Purchasing Office tracks all contracts and associated insurance, and we ensure that policies are kept current.

**Liquidated damages**: Used in most construction contracts. A clause as a material part of the contract, which is an amount to be withheld from payment for each calendar day that the contractor fails to complete the work within the time allowed. Liquidated damages are held in lieu of actual damages, which can be difficult to calculate, and may not be used as penalty. This amount is pre-determined by the engineer, usually anywhere from $500 - $2000 per calendar day, and is published in the Invitation for Bid along with the project completion date that must be met. Contractors know the liquidated damages amount and the completion date before they submit their bids. Delays outside the control of a contractor will not result in liquidated damages being withheld. A reason *not* to have a liquidated damages clause would be times of unusually long lead times or times when contractors are very busy because it could discourage bids.

**Cancellation Clauses:** All contracts contain clauses that allow the City to cancel a contract due to breach, poor performance, or convenience (i.e., no reason needed). Term contracts, those that can go on for many years, are typically executed for 1-2 years at a time, with renewals that are always mutual and optional. Very rare to cancel a contract. Most often, we simply don't renew a term contract if there were unresolved performance issues throughout the year, if we want to change the scope of work substantially, or if we no longer require those goods/services.

**Bid bond/bid surety:** for construction bids over $50,000, contractors must submit with their bid a bid bond in the amount of 5% of their bid, which ensures they sign the contract after Commission approval. If the low bidder refuses to sign the contract, then the City could seek recourse on the bid bond and move to the next lowest responsive, responsible bidder. **A bid bond has no value or purpose after the contract is signed**. In the very rare case that a bidder has made an obvious and honest error, we would allow them to withdraw their bid. The City has not called on a bid bond during current Purchasing Agent's time (since 2001), so it's extremely rare.

CITY OF Battle Creek MICHIGAN

# Resolution NO. 383

A Resolution seeking to set a Closed Session on a labor matter for March 19, 2024.

**BATTLE CREEK, MICHIGAN -** 3/19/2024

**Resolved by the Commission of the City of Battle Creek:**

That a Closed Session of the City Commission will be held on Tuesday, March 19, 2024, in Room 302A, City Hall, Battle Creek Michigan, pursuant to MCL 15.268(c) for strategy and negotiation sessions connected with the negotiation of a collective bargaining agreement as requested by the City; and that, Ted Dearing, Assistant City Manager, is hereby appointed as the designated secretary to record and prepare appropriate Minutes of this Closed Session.

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Battle Creek City Commission
3/19/2024

## Action Summary

**Staff Member:** Rebecca L. Fleury, City Manager

**Department:** City Manager

**SUMMARY**

A Resolution seeking to set a Closed Session on a labor matter for March 19, 2024.

**BUDGETARY CONSIDERATIONS**

None

**HISTORY, BACKGROUND and DISCUSSION**

As permitted under the Michigan Open Meetings Act, a public body, upon a majority vote, may meet in closed session for strategy and negotiation sessions connected with the negotiation of a collective bargaining agreement if either negotiating party requests a closed hearing, and the City has requested that closed session; and that, Ted Dearing, Assistant City Manager, is hereby appointed as the designated secretary to record and prepare appropriate Minutes of this Closed Session.

**DISCUSSION OF THE ISSUE**

**POSITIONS**

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ATTACHMENTS:

| File Name | Description |
| --- | --- |
| No Attachments Available | |