MICHIGAN SENATE

Appropriations Requests for Legislatively Directed Spending Items

1. The sponsoring Senator's First Name
   Dayna

2. The sponsoring Senator's Last Name
   Polehanki

3. The cosponsoring Senators names. All cosponsors must be listed. If none, please type 'n/a.' A signed letter from the sponsor approving the co-sponsorship and a signed letter from the member wishing to co-sponsor are required. Attach letters at question #9 below.
   N/A

4. Name of the spending item's recipient:
   City of Inkster

5. Physical address of the recipient:
   26215 Trowbridge Inkster, MI 48141

6. If there is not a specific recipient, the intended location of the project or activity:
   N/A

7. Name of the Senator and the district number where the legislatively directed spending item is located:
   Dayna Polehanki, District 5

8. Purpose of the legislatively directed spending item. Please include how it provides a public benefit and why it is an appropriate use of taxpayer funding. Please also

demonstrate that the item does not violate Article IV, S 30 of the Michigan Constitution.

This funding request will support Phase II of the Inkster Cultural Center, transforming the completed core shell from Phase I into a fully finished community hub. Phase II will outfit the facility with flexible gathering space for public forums, youth programs, and weddings; curated gallery areas to preserve and exhibit local history and cultural artifacts; and a code-compliant commercial kitchen including fire-suppressed range, exhaust hood, and ample prep surfaces to support culinary classes, catered events, and small-business incubation. This investment will activate the Center as a revenue-generating venue, expand access to arts and heritage programming, and create a welcoming, multigenerational space that strengthens social ties and drives year-round economic activity in downtown Inkster.

9. Attach documents here if needed:

10. The amount of state funding requested for the legislatively directed spending item

    $500,000

11. Has the legislatively directed spending item previously received any of the following types of funding? (Check all that apply)

    ["State"]

12. Please select one of the following groups that describes the entity requesting the legislatively directed spending item

    Local unit of government

13. For a non-profit organization, has the organization been operating within Michigan for the preceding 36 months?

    N/A

14. For a non-profit organization, has the entity had a presence within Michigan for the preceding 12 months?

    N/A

15. For a non-profit organization, does the organization have a board of directors?
    N/A

16. For a non-profit organization, list all the active members on the organization's board of directors and any other officers. If this question is not applicable, please type 'n/a.'
    N/A

17. "I certify that neither the sponsoring Senator nor the sponsoring Senator's staff or immediate family has a direct or indirect pecuniary interest in the legislatively directed spending item."
    I certify

18. Anticipated start and end dates for the legislatively directed spending item
    The project can begin 6 months after receiving funds. Estimated time to completion is 120 days.

19. Certification of accuracy
    I certify

CITY OF INKSTER
COMMUNITY CENTER

2005 INKSTER ROAD, CITY OF INKSTER, MICHIGAN 48141

BIDS

SHEET INDEX	
SHEET NO.	DESCRIPTION
	GENERAL
CS-001	COVER SHEET
CS-002	GENERAL NOTES
[illegible]	LIFE SAFETY PLAN & CODE ANALYSIS
	ARCHITECTURAL
[illegible]	[illegible]
A-002	SPECIFICATIONS
A-003	SPECIFICATIONS
A-004	SPECIFICATIONS
A-005	SPECIFICATIONS
[illegible]	SPECIFICATIONS
[illegible]	SPECIFICATIONS
[illegible]	SPECIFICATIONS
[illegible]	SPECIFICATIONS
[illegible]	SPECIFICATIONS
[illegible]	SPECIFICATIONS
[illegible]	DEMOLITION PLAN
[illegible]	FLOOR PLAN
A-111	FLOOR PLAN PHASE 2 (FOR REFERENCE OF FUTURE WORK)
A-120	ROOF PLAN
A-200	EXTERIOR ELEVATIONS
A-510	REFLECTED CEILING PLAN
[illegible]	BUILDING SECTION
[illegible]	WALL SECTIONS
[illegible]	ENLARGED SECTIONS
[illegible]	DOOR, WINDOW & ROOM SCHEDULES
	ELECTRICAL
E-000	ELECTRICAL SPECIFICATIONS
ED-100	ELECTRICAL DEMOLITION FLOOR PLAN
[illegible]	ELECTRICAL LIGHTING FLOOR PLAN - PHASE 1
[illegible]	ELECTRICAL LIGHTING FIXTURE SCHEDULE - PHASE 1
[illegible]	ELECTRICAL POWER FLOOR PLAN - PHASE 1
[illegible]	ELECTRICAL ONE-LINE DIAGRAM & PANEL SCHEDULES - PHASE 1
	MECHANICAL
[illegible]	INDEX, SYMBOLS, & ABBREVIATIONS
M-002	STANDARD MATERIALS SCHEDULES
[illegible]	SPECIFICATIONS
[illegible]	SPECIFICATIONS
[illegible]	SPECIFICATIONS
M-100	MECHANICAL DEMOLITION PLAN
M-200	DOMESTIC NEW WORK PLAN
[illegible]	SANITARY AND VENT PLAN
[illegible]	DOMESTIC NEW WORK PLAN
[illegible]	SANITARY AND VENT PLAN
M-400	MECHANICAL PLAN
M-500	DETAILS
M-600	DIAGRAMS AND SECTIONS
M-700	SCHEDULES
[illegible]	TEMPERATURE CONTROLS

PROJECT DESCRIPTION

THIS PROJECT ENTAILS THE RENOVATION OF THE OLD CITY OF INKSTER PUBLIC LIBRARY INTO THE CITY OF INKSTER COMMUNITY CENTER. PHASE 1 WILL PROVIDE A [illegible] ENCLOSED AND CODE COMPLAINT SHELL AND PHASE 2 WILL BE THE COMPLETION OF THE INTERIOR REMODEL OF THE BUILDING.

LOCATION MAP
SCALE: NONE

Sidock Group
ARCHITECTS • ENGINEERS • CONSULTANTS

Client
CITY OF INKSTER
26215 TROWBRIDGE ST
INKSTER, MI 48141

Project
CITY OF INKSTER
CULTURAL
CENTER

2005 INKSTER RD
INKSTER, MI 48141

Seal

Date	Issued For
11-25-2024	OWNER REVIEW
12-04-2024	OWNER REVIEW
[illegible]	[illegible]

Drawn	[illegible]
Checked	[illegible]
Approved	[illegible]

Sheet Title
COVER SHEET

Project Number 24157

Sheet Number CS-001

ABBREVIATION LEGEND

ABBREV.	DEFINITION	ABBREV.	DEFINITION	ABBREV.	DEFINITION	ABBREV.	DEFINITION
A		F		M		SHT	SHEET
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	STEEL
		[illegible]	FOUNDATION	[illegible]	[illegible]		
		[illegible]	[illegible]	[illegible]	[illegible]	T	
B		[illegible]	[illegible]			TEMP	TEMPORARY
[illegible]	[illegible]	[illegible]	[illegible]	N		[illegible]	[illegible]
[illegible]	BLOCK			[illegible]	NUMBER	[illegible]	TOP OF STEEL
[illegible]	[illegible]	G				[illegible]	[illegible]
[illegible]	BOTTOM	[illegible]	[illegible]			U	
[illegible]	[illegible]	[illegible]	[illegible]	O		[illegible]	[illegible]
				[illegible]	ON CENTER		
C		H		[illegible]	[illegible]		
[illegible]	CENTER LINE	[illegible]	HIGH	[illegible]	OVERHEAD DOOR	V	
[illegible]	CEILING	[illegible]	HOLLOW CORE			[illegible]	[illegible]
[illegible]	CLEAR	[illegible]	[illegible]			[illegible]	VERTICAL
[illegible]	CONCRETE MASONRY UNIT	[illegible]	[illegible]	P			
[illegible]	[illegible]	[illegible]	HORIZONTAL	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	HEIGHT	[illegible]	[illegible]	W	
[illegible]	CONCRETE			[illegible]	PLATE	[illegible]	[illegible]
[illegible]	[illegible]	I		[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	PAINT		
D		[illegible]	[illegible]			X	
[illegible]	[illegible]	J		Q			
[illegible]	[illegible]						
[illegible]	[illegible]						
[illegible]	[illegible]						
[illegible]	DOOR OPENING					Y	
		K		R			
				[illegible]	[illegible]		
E				[illegible]	[illegible]		
[illegible]	[illegible]			[illegible]	[illegible]		
[illegible]	[illegible]			[illegible]	[illegible]	Z	
[illegible]	[illegible]	L					
[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	S			
		[illegible]	[illegible]	[illegible]	[illegible]		
		[illegible]	[illegible]	[illegible]	[illegible]		

SYMBOL LEGEND

GENERAL NOTES

1. [illegible]
2. TIME IS OF THE ESSENCE OF THE CONTRACT. ALL WORK SHALL PROCEED AS EXPEDITOUSLY AS POSSIBLE IN A WORKMANLIKE MANNER.
3. CONTRACTOR SHALL VISIT THE PREMISES AND SHALL BE THOROUGHLY ACQUAINTED WITH THE CONDITIONS TO BE ENCOUNTERED, AS NO EXTRA COSTS WILL BE ALLOWED TO COVER WORK WHICH THE CONTRACTOR HAS NOT INCLUDED IN HIS TENDER DUE TO HIS FAILURE TO THOROUGHLY EXAMINE THE PREMISES.
4. THE BIDDER SHALL PROMPTLY NOTIFY THE ARCHITECT OF ANY AMBIGUITY, INCONSISTENCY OR ERROR WHICH HE MAY DISCOVER UPON EXAMINATION OF THE BIDDING DOCUMENTS OR OF THE SITE.
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. FIELD CHECK ALL DIMENSIONS.
THE CONTRACTOR SHALL EXAMINE AND FIELD VERIFY ALL EXISTING AND GIVEN DIMENSIONS AND CONDITIONS PRIOR TO COMMENCEMENT OF THE WORK AND FABRICATION OF CONSTRUCTION MATERIALS. VARIANCES FROM THE DRAWINGS AND SPECIFICATIONS AND POTENTIAL INTERFERENCES SHALL BE REPORTED PROMPTLY TO THE ARCHITECT. THE CONTRACTOR SHALL INCORPORATE ACTUAL FIELD CONDITIONS AND DIMENSIONS IN THE WORK AND SHALL INDICATE CHANGES AND ADJUSTMENTS ON DRAWINGS SUBMITTED FOR APPROVAL. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO THE CONSTRUCTION DETAILS, MATERIAL QUANTITIES AND EXTENT OF THE CONSTRUCTION WORK SHOWN ON THE DRAWINGS. THE [illegible]
10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY ON THIS PROJECT INCLUDING ALL NECESSARY SIGNS, BARRIERS AND SUPERVISION.
11. CONTRACTORS SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, TOOLS, TRANSPORTATION, ETC. FOR A COMPLETE & PROPER COMPLETION OF THE PROJECT AS INDICATED ON THE DRAWINGS & AS SPECIFIED HEREIN AND/OR AS REQUIRED.
12. THE CONTRACTOR SHALL PROVIDE NECESSARY BARRIERS AND PROTECTION ENCLOSURES AS REQUIRED TO ALLOW THE OWNER'S NORMAL AND SAFE USE OF SITE PARKING AND BUILDING PREMISES.
13. DURING CONSTRUCTION, MAINTAIN EXISTING MEANS OF EGRESS AND PASSAGEWAYS CLEAR OF OBSTRUCTIONS. TAKE ALL PRECAUTIONS NECESSARY TO INSURE THE SAFETY OF THE GENERAL PUBLIC AND WORKERS.
14. [illegible]
15. COORDINATION AND SEQUENCE OF CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR. IT IS ASSUMED THAT ALL SUBCONTRACTORS HAVE REVIEWED AND COORDINATED THEIR WORK WITH OTHER WORK COINCIDENT OR ADJACENT TO THEIRS.
16. [illegible]
17. THE LOCATION OF ALL UTILITIES AND IMPROVEMENTS INDICATED HEREIN ARE APPROXIMATE ONLY AND WERE FROM SOURCES BELIEVED TO BE RELIABLE, BUT NO GUARANTEE IS EXPRESSED OR IMPLIED AS TO LOCATION, TYPE OR EXTENT OF UTILITIES OR IMPROVEMENTS WHETHER OR NOT SAME ARE INDICATED OR SHOWN, AND THIS CONTRACTOR SHALL MAKE HIS OWN INVESTIGATION AS TO THE EXTENT OF THESE OR OTHER UTILITIES, AND SHALL BE RESPONSIBLE FOR PROTECTION AND RESTORATION OF SAME IF DAMAGED AS A RESULT OF HIS OPERATIONS.
18. [illegible]
19. CONSULT WITH OWNER REGARDING STORAGE OF ON SITE MATERIALS AND ACCESS TO SITE AS NOT TO INTERFERE WITH NORMAL OPERATIONS.
20. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT.
21. [illegible]
22. WHERE EXISTING FINISHED SURFACES TO REMAIN ARE DAMAGED BY NEW CONSTRUCTION, THE CONTRACTOR SHALL POINT, TUCK, REPAIR OR OTHERWISE REPLACE DAMAGED SURFACES AS REQUIRED.
23. WHERE EXISTING EQUIPMENT TO REMAIN IS DAMAGED BY NEW CONSTRUCTION THE CONTRACTOR SHALL REPAIR OR REPLACE THE DAMAGED EQUIPMENT OR COMPENSATE THE OWNER TO HIS SATISFACTION.
24. [illegible]
25. WHERE INDICATED, VAPOR BARRIER IS TO BE CONTINUOUS. WRAP BARRIER AROUND FRAMING MEMBERS AT OPENINGS, TAPE EDGES AND SEAL TO OTHER MATERIALS. CONSULT BARRIER MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION AND DETAILS FOR A COMPLETE BARRIER.
26. [illegible]
27. [illegible]
28. [illegible]
29. CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE THAT WILL BE MADE GOOD AT CONTRACTORS OWN EXPENSE FOR ANY IMPERFECTIONS IN MATERIAL AND/OR WORKMANSHIP WHICH MAY DEVELOP WITHIN (1) ONE YEAR FROM FINAL ACCEPTANCE. FURTHER, THIS CONTRACTOR SHALL OBTAIN WRITTEN GUARANTEES FROM ALL MANUFACTURERS STATING ON WHAT OPERATING CONDITIONS & PERFORMANCE CAPACITIES EACH EQUIPMENT PIECE GUARANTEE IS BASED.
30. GENERAL CONTRACTOR SHALL REMOVE ALL DEBRIS FROM SITE AND LEGALLY DISPOSE OF.
31. ALL BROCHURES, OPERATING MANUALS, SHOP DRAWINGS, CATALOGS, ETC., SHALL BE TURNED OVER TO THE OWNER AT THE COMPLETION OF THE JOB. CONTRACTOR SHALL PROVIDE OWNER WITH COMPLETE SET OF "AS-BUILT" DRAWINGS AT COMPLETION OF JOB.
32. IT IS ASSUMED CONTRACTOR HAS REVIEWED AND COORDINATED ALL WORK COINCIDENT OR ADJACENT TO, OR INCORPORATING OTHER MATERIALS AND SYSTEMS.

Sidock Group
Novi, Michigan 48374
Ph (248)349-4500 • Fax (248)349-1429

Client
CITY OF INKSTER
26215 TROWBRIDGE ST
INKSTER, MI 48141

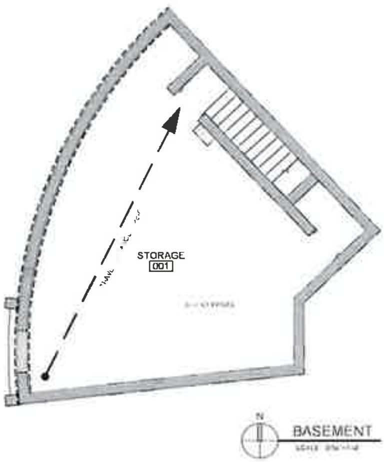
Project
CITY OF INKSTER
CULTURAL CENTER

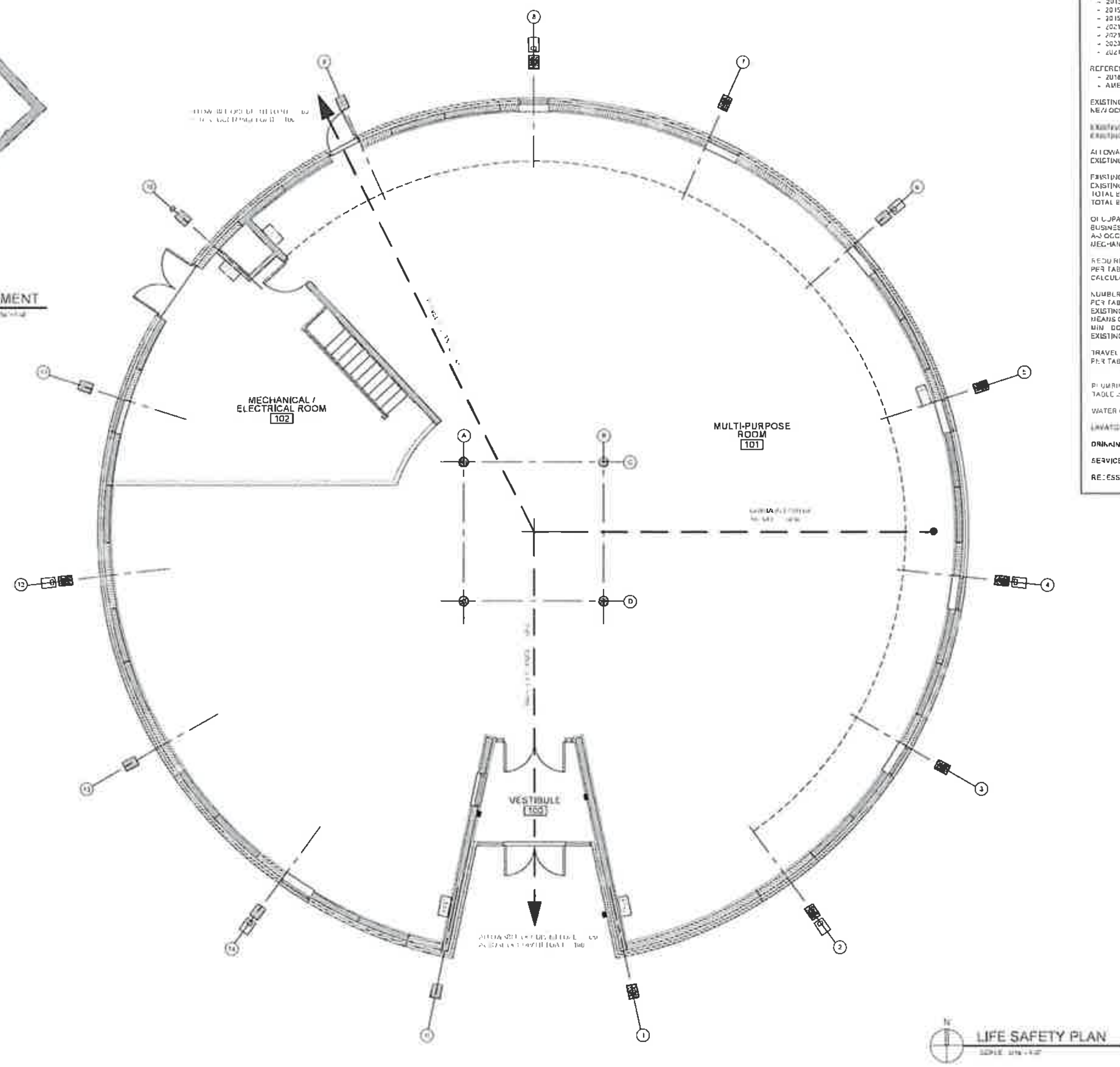
Date	Issued For
[illegible]	[illegible]
[illegible]	OWNER REVIEW

Sheet Title
GENERAL NOTES

Project Number 24157

Sheet Number CS-002





PROJECT DATA & CODE COMPLIANCE CALCULATIONS

[illegible]

- 2015 MICHIGAN BUILDING CODE
- 2015 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
- 2015 INTERNATIONAL ENERGY CONSERVATION CODE (MICHIGAN AMENDMENTS)
- 2015 MICHIGAN FUEL GAS CODE
- 2021 INTERNATIONAL MECHANICAL CODE (PART 9A MICHIGAN AMENDMENTS)
- 2021 ICC PLUMBING CODE (PART 7 PLUMBING MICHIGAN AMENDMENTS)
- 2023 MICHIGAN ELECTRICAL CODE (NEC 2023 + PART 8 RULES)
- 2021 INTERNATIONAL FIRE CODE

REFERENCED CODES
- 2018 NFPA 101 LIFE SAFETY CODE
- AMERICANS WITH DISABILITIES ACT

EXISTING OCCUPANCY CLASSIFICATION: ASSEMBLY (A-3) SECTION 105
NEW OCCUPANCY CLASSIFICATION: BUSINESS (B), ASSEMBLY (A-3) SECTION 305

EXISTING CONSTRUCTION TYPE [illegible]
EXISTING STORIES [illegible]

ALLOWABLE BUILDING HEIGHT PER TABLE 504.3/504.4	UNLIMITED
EXISTING BUILDING HEIGHT	10'-0" FT

EXISTING BUILDING AREA FIRST FLOOR	6 000 S.F.
EXISTING BUILDING AREA BASEMENT	500 S.F.
TOTAL BUILDING AREA	6 500 S.F.
TOTAL BUILDING RENOVATED AREA	6 500 S.F.

OCCUPANT LOAD USE SECTION 1004.1.1 & 1005.1

BUSINESS OCCUPANCY 1/100 (600 S.F.)	6 OCCUPANTS
A-3 OCCUPANCY 1/15 (2 500 S.F.)	168 OCCUPANTS
MECHANICAL ROOM/BASEMENT	6 OCCUPANTS

REQUIRED EXIT WIDTH

PER TABLE 1005.1 = .3 (INCHES)	0.3X4
CALCULATED LOAD REQUIRED WIDTH (INCHES)	1.2

NUMBER OF EXITS - SECTION 1006

PER TABLE 1006 REQUIRED - PER STORE	2
EXISTING ACTUAL PROVIDED	2

MEANS OF EGRESS EXIT DOOR SIZING - SECTION 1010.1.1
MIN. DOOR WIDTH CLEAR = 32"
EXISTING DOOR WIDTH CLEAR = 90"

TRAVEL DISTANCE
PER TABLE 1017.2 FOR B/ A-3 OCCUPANCY = 200 TRAVEL DISTANCE / 75 COMMON PATH OF TRAVEL

PLUMBING CODE COMPLIANCE (ENTIRE BUILDING/ 200 OCCUPANTS)
TABLE 2902.1

WATER CLOSETS	REQUIRED: MEN 2, WOMEN 2
LAVATORIES	REQUIRED: MEN 1, WOMEN 1
DRINKING FOUNTAINS	REQUIRED: 1
SERVICE SINKS	REQUIRED: 1

RECESSED TYPE ABC FIRE EXTINGUISHER CABINET (FEC)

Sidock Group
ARCHITECTS • ENGINEERS • CONSULTANTS
Corporate Headquarters
45650 Grand River Ave
Novi, Michigan 48374
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Novi • Wyandotte • Muskegon
Lansing • Gaylord • Sault Ste. Marie
Williamsport, PA • Tampa, FL

Client
CITY OF INKSTER
26215 TROWBRIDGE ST
INKSTER, MI 48141

Project
CITY OF INKSTER CULTURAL CENTER

Sheet Title
LIFE SAFETY PLAN & CODE ANALYSIS

Project Number 24157

Sheet Number LS-110

PROJECT MANUAL
Including Specifications for

GENERAL CONTRACT
(All Trades Work) for

RENOVATION OF THE CITY OF INKSTER CULTURAL CENTER
City of Inkster Cultural Center

ARCHITECT'S PROJECT NO. 24157

OWNER	CITY OF INKSTER 26215 Trowbridge Inkster, Michigan 48141
ARCHITECTS/ ENGINEERS	SIDOCK GROUP, INC 45650 Grand River Avenue Novi, Michigan 48374 Telephone (248) 349-4500 Email: rwilson@sidockgroup.com

ATTACHMENTS

Invitation to Bid	Sheet A-001
Instruction to Bidders	Sheet A-001
Form of Proposal	Individual PDF
<u>Phase 1 (specific items)</u> Drawings & Specifications	44 Pages (dated 1/20/2025) (24x36 size format) (see drawing index on sheet CS-001)

Address all communications regarding this project to the Architect/Engineer at email address above.

Dated: January 20, 2025

Sidock Group, Inc.

January 20, 2025

TO: Interested Bidding Contractors
Subject: **INVITATION TO BID**
General Contract for
Phase 1, City of Inkster Cultural Center

The City of Inkster will accept sealed proposals for a General Contract for All Trades Work for phase 1 located at 2005 Inkster Road, Inkster, Michigan 48141. Bids are to be received by the City of Inkster, at the Office of the City Clerk, until 2 P.M., local time, on Tuesday, March 4, 2025, at which time the Bids received will be publicly opened and read. Proposals received after that time will not be accepted.

A Mandatory Pre-Bid Conference will be held at [illegible] p.m., local time, on Tuesday, February [illegible], 2025, at the City of Inkster City Hall, located at 26215 Trowbridge St, Inkster, MI 48141. The conference will begin at the City Hall and end with a visit to the project site located at 2005 Inkster Road, Inkster, MI 48141.

Bid Documents and associated addenda will be available on the internet through the Michigan Intergovernmental Trade Network (MITN – www.MITN.info) where they can be viewed electronically. Distribution of the Bid Documents through any means of delivery should be coordinated by the Bidder at their own cost. The date that the bidding documents are transmitted from MITN will be considered the Bidder's date of receipt of the Bidding Documents. Partial sets of the Bidding Documents will not be available.

Each proposal must be accompanied by an acceptable bid security in the form of a certified check or standard form bid bond, made payable to the City of Inkster in an amount of not less than five percent (5%) of the base bid submitted. Failure of any accepted Bidder to enter into a contract for the work will cause forfeit of this bid security. After contracts for the work have been signed, all bid securities will be returned. 100% Performance Bond and Labor and Material Payment Bond will be required on the project. Costs of bonds, if so required, shall be included in the Base Proposal.

The Owner 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 the best interest to do so.

Bids shall remain firm for a period of ninety (90) days.
Owner: City of Inkster

By: Georgina L. Holliday
City Clerk

SIDOCK PROJECT NO.: 24157

INSTRUCTIONS TO BIDDERS

GENERAL

1.1 THE PROJECT

A. In accordance with these Instructions, the Bidder is requested to submit a Bid for Phase 1 and contract work indicated on the Drawings and the Specifications.

B. Each Bidder is referred to the Invitation to Bids for this Project, which includes instructions and requirements for Bidders in addition to those included in this Section.

1.2 CONTRACTS

A. The Owner will enter a single lump sum General Contract for All Trades Work.

1.3 SUBMISSION OF BIDS

A. Place for Receiving Bids

1. Sealed Bids for performing the Work pertaining to this project will be received by the City of Inkster.

2. All copies of the Form of Proposal and any other documents required to be submitted with the Bid, shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to:
City of Inkster
Office of the City Clerk
26215 Trowbridge Street
Inkster, MI 48141

3. The sealed Bid envelope shall be properly and clearly addressed and shall be identified with <u>the project name and the Bidder's name and address.</u>

4. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "<u>SEALED BID ENCLOSED, GENERAL CONTRACT – THE CITY OF INKSTER CULTURAL CENTER</u>" on the face of the envelope.

B. Date for Receiving Bids

1. Bids shall be mailed or otherwise delivered on time to reach the designated location (address on sealed envelope), on or before the time and date for receipt of Bids indicated in the Invitation to Bid unless extension is made by Addendum. Bids received after the time and date for receipt of Bids will remain unopened.

2. Bidder shall assume full responsibility for timely delivery at location designated for receipt of Bids.

3. Oral, telephone, telegraphic, or facsimile Bids are invalid and will not receive consideration.

1.4 DEFINITIONS

A. Bidding Documents include the Invitation to Bid, Instructions to Bidders, other sample Bidding and Contract Forms and the proposed Contract Documents including any Addenda issued prior to receipt of Bids.

B. The proposed Contract Documents consist of the Purchase Order, the Conditions of the Contract, the Drawings, the Specifications, all Addenda issued prior to execution of the Contract and all modifications thereto.

C. Addenda are written or graphic instruments issued by the Architect/Engineer prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications, or corrections.

D. A Bid is a complete and properly signed proposal to do the Work or designated portion thereof for the sums stipulated, supported by data called for by the Bidding Documents and proposed Contract Documents.

E. Base Bid is the sum stated in the Proposal for which the Bidder offers to perform the Work described as the base, to which work may be added or deducted for sums stated in Alternate Bids.

F. An Alternate Bid or Alternate is an amount stated in the Proposal to be added to or deducted from the amount of the Base Bid if the corresponding change in project scope or materials or methods of construction described in the Bidding Documents is accepted.

G. A Bidder is one who submits a Proposal or Bid for a prime contract with the Owner for the Work described in the proposed Contract Documents.

H. A Sub-Bidder is one who submits a Bid to a Bidder for materials or labor for a portion of the work.

1.5 BIDDERS REPRESENTATIONS

A. Each Bidder by making his Bid represents that:

1. He has read, understands, and makes his Bid in accordance with the Bidding Documents.

2. He has visited the site, has familiarized himself with the local conditions under which the Work is to be performed and has correlated his observations with the requirements of the proposed Contract Documents.

3. His Bid is based upon the materials, systems, and equipment required by the Bidding Documents without exception.

1.6 PRE-BID CONFERENCE

A. Each Bidder is required to attend a Mandatory Pre-Bid Conference to become familiar with site conditions, lay down areas, parking, and other facilities. Bidders may attend Pre-Bid Conference with any of his sub-bidders.

B. A Mandatory Pre-Bid Conference will be held at 2:00 p.m., local time, on Monday, February 4, 2024, at the Inkster City Hall, located at 26215 Trowbridge St, Inkster, MI 48141.

C. Each Bidder shall be held to have compared the premises and the site with the Drawings and Specifications, and to have satisfied himself as to the conditions of the premises, the existing obstructions, the actual elevations, and any other conditions affecting the completion of his work, all before the delivery of his proposal.

1.7 BIDDING DOCUMENTS

A. Copies

1. Bid Documents and associated addenda will be available on the internet through the Michigan Intergovernmental Trade Network (MITN – www.MITN.info) where they can be viewed electronically. Distribution of the Bid Documents through any means of delivery should be coordinated by the Bidder at their own cost. The date that the bidding documents are transmitted from MITN will be considered the Bidder's date of receipt of the Bidding Documents. Partial sets of the Bidding Documents will not be available.

2. Complete sets of contract documents shall be used in preparing Bids. Neither the Owner nor the Architect/Engineer assume any responsibility for errors, omissions or misinterpretations resulting from the use of incomplete sets of contract documents.

3. In issuing copies of the bidding documents, the Owner or Architect/Engineer do so only for the purpose of obtaining Bids on the work and do not confer a license or grant for any other use.

B. Documents Displayed

1. Bidding Documents may be examined at the following locations during normal business hours by prospective Bidders:

a. The offices of:
City of Inkster
Office of the City Clerk
26215 Trowbridge Street
Inkster, Michigan 48141

C. Interpretation or Correction of Bidding Documents

1. Bidders shall promptly notify the Architect of any ambiguity, inconsistency, or error which they may discover upon examination of the bidding documents or of the Site and local conditions of the Work.

2. Any interpretation, correction or change of the documents will be made by the Architect/Engineer by Addendum. Interpretations, corrections, or changes of the bidding documents made in any other manner will not be binding and bidders shall not rely upon such interpretations, corrections, and changes.

3. Bidders requiring clarification or interpretation of the bidding documents shall make an email request (written/mailed or telephonic requests will not be honored) to the Architect/Engineer, which must reach him by 4:00 pm on February 11, 2024. Email subject line must read "23059 – DPS Bid Question". Direct all questions to the Architect/Engineer at the following address:
Sidock Group, Inc.
Attn: Mr. Richard Wilson
rwilson@sidockgroup.com

D. Substitutions

1. The materials, products and equipment described in the Contract Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

2. No substitutions will be considered during the bidding period, unless an email request (no written or telephonic requests will be honored) for approval has been submitted by the Bidder and has been received by the Architect/Engineer at least five (7) business days prior to the date for receipt of Bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or work that incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitute is upon the proposer. The Architect/Engineer's decision of approval or disapproval of a proposed substitution shall be final.

3. If the Architect/Engineer approves any proposed substitution, such approvals will only be made by Addenda. <u>Bidders shall not rely upon approvals made in any other manner.</u>

4. No substitutions will be considered after the Contract Award.

E. Addenda

1. Requirements contained in the Bidding Documents shall apply to all Addenda, and the general character of the work called for in the Addenda shall be the same as specified in the documents for similar work, unless otherwise specified in the Addenda. Incidental work necessitated by Addenda shall be included in the Bids, even though not particularly mentioned.

2. Addenda shall become a part of the Documents and will be made a part of the Contract.

3. All Bidders known by the Architect/Engineer to have received a complete set of Bidding Documents will be notified of all Addenda.

4. Copies of Addenda will be made available for inspection wherever bidding documents are on file for that purpose.

5. No Addenda will be issued later than four (4) days prior to the date for receipt of Bids except an Addendum, if necessary, postponing the date for receipt of Bids or withdrawing the request for Bids.

6. Each Bidder shall ascertain prior to submitting his Bid that he has received all Addenda issued and shall acknowledge their receipt in his Proposal. No extra will be authorized because of the failure of the Bidder to include work called for in Addenda in his Bid.

1.8 BIDDING PROCEDURE

A. Form and Style of Bids

1. Bid forms will be furnished to each Bidder. <u>Each Bidder shall submit his bid in duplicate and retain one copy for his files.</u>

2. Bids must be filled out fully and correctly and submitted only on Bid Forms provided by the Architect/Engineer. <u>Bids in any other form will be rejected.</u>

3. All information required to be provided on the Bid form shall be typewritten or printed manually in ink with signature where noted.

4. Where so indicated by the Bid form, sums shall be expressed in both words and figures, and in case of discrepancy between the two, the written amount shall govern.

5. Completed Bid form shall be without interlineation, alteration, or erasure. Any interlineation, alteration or erasure occurs, it must be initialed signifying approval by the signer of the bid.

6. All requested Alternates shall be Bid. If an Alternate price called for does not involve a change in price, the Bidder shall so indicate with the words "No Change".

7. Where there are two or more major items of work for which separate quotations have been requested, Bidder may state his refusal to accept less than whatever combination of the items he stipulates.

8. The bidder shall make no additional stipulations on the Bid form or qualify his Bid in any other manner. Each copy of Bid form shall include the legal name of Bidder and a statement whether Bidder is a sole proprietor, a partnership, a corporation, or any other legal entity, and each copy shall be signed, in long hand, written in ink, by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying agent's authority to bind Bidder.

B. Bid Security

1. Bids shall be accompanied by a Bid Security in the form of a certified check, or cashier's check or Bid Bond made payable to the Owner in the amount of five percent (5%) of the Base Bid lump sum price.

2. Such Bid Security shall be submitted with the following understanding:

3. If a Bidder defaults in executing an Agreement or in furnishing and delivering the performance bond and labor and material payment bonds, if required within fifteen calendar days after receipt of award of contract, the Owner will sustain liquidated damages in the amount covered by the Bid Security and the Bid Security will become the property of the Owner and will be delivered to the Owner by the Architect/Engineer.

4. If the Bidder executes and delivers the Agreement and the performance bond and labor and material payment bonds, if required, within the above time, or if the Bid is not accepted within the time stipulated under "Withdrawal of Bid" in the Bid Form, the Bid Security will be returned to the Bidder by the Owner.

5. The Bid Security for all except the lowest three Bidders will be returned within ten (10) working days after the opening of bids, unless otherwise agreed upon with the Owner.

C. Modification or Withdrawal of Bid

1. A Bid may not be modified, withdrawn, or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and Bidder so agrees in submitting his bid.

2. Prior to the time and date designated for receipt of Bids, Bids submitted early may be modified or withdrawn only by notice to the party receiving Bids at the place and prior to the time designated for receipt of Bids.

a. Such notice shall be delivered to the Owner in writing over the signature of the Bidder or maybe by telegram. If by telegram, written confirmation of the signature of Bidder must be received on or before the date and time set for receipt of Bids and it shall be <u>so worded as not to reveal the amount of the original Bid.</u>

3. Withdrawn Bids may be resubmitted up to the time designated for the receipt of bids provided they are fully in conformance with these instructions to Bidders.

4. Bid Security, if any is required, shall be in an amount sufficient for the modified Bid resubmitted.

1.9 CONSIDERATION OF BIDS

A. Rejection of Bids

1. The Owner shall have the right to reject any or all Bids and in particular to reject a Bid not accompanied by any required Bid Security or data required by the Bidding Documents or a Bid in any way incomplete or irregular.

B. Acceptance of Bid (Award)

1. It is the intent of the Owner to award a Contract to the lowest responsible Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive any informality or irregularity in any Bid or Bids received and to accept the Bid or Bids which, in his sole discretion, is in his own best interest.

2. The Owner shall have the right to accept Alternates in any order or combination, and to determine the low Bidder on the basis of the sum of the Base Bid and the Alternates accepted.

C. Notice of Award

1. The Contract shall be deemed as having been awarded when formal notice of acceptance of this Proposal has been duly served upon the intended awardee by an officer or agent of the Owner duly authorized to give such notice. <u>The Contract Date shall be the date of the Notice of Award.</u>

D. Time of Starting and Completion

1. The Bidder, if awarded a Contract, will be required to agree to start active work on the Project within seven (7) days after receipt of Notice of Award to award a Contract and to complete the work described in the Contract Documents within the time stated in the Form of Proposal.

E. Work Week

1. The Bidder, if awarded a Contract, will be required to establish the work week and hours of work as required to properly man the project, maintain the progress schedule, and complete the work within the time stated in the contract. The Contractor shall provide and pay for any overtime necessary to complete his work within the agreed time, with no change in the Contract Sum or additional costs to the Owner.

1.10 POST BID INFORMATION

A. Financial Capability

1. Each Bidder submitting a proposal for this project is declaring that he has the financial resources, the technical and administrative experience, sufficient skilled workmen and supervisors, and sufficient equipment, in combination with his proposed Subcontractors, to complete his contract in full accordance with the Contract Documents.

1.11 POST NOTICE OF AWARD INFORMATION

A. Submittals

1. The Contractor shall, within seven (7) days after receipt of selection for the award of a Contract for the Work, submit the following information to the Architect/Engineer:

a. A designation of the Work to be performed by the Contractor with his own forces.

b. A list of names of the Subcontractors, sub-subcontractors or other persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

2. The Contractor will be required to establish to the satisfaction of the Architect/Engineer and the Owner the reliability and responsibility of the subcontractors, sub-subcontractors, suppliers and persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

3. After due investigation, the Architect/Engineer will notify the Contractor in writing if either the Owner or the Architect/Engineer, has reasonable objection to any proposed subcontractors, sub-subcontractors, suppliers and person or entity. If the Owner or Architect/Engineer has reasonable objection to any proposed subcontractor, sub-subcontractors, suppliers and person or entity, the Architect/Engineer will notify the Contractor of the objections and request acceptable substitutes. The Architect/Engineer and Owner reserve the right to approve or disapprove any subcontractor, sub-subcontractor, supplier, person or entity for the Work.

4. Subcontractors, sub-subcontractors, suppliers, persons, and entities proposed by the Contractor and to whom the Owner and the Architect-Engineer have made no reasonable objection and are approved must be used on the Work for which they were proposed and shall not be changed except by written consent of the Owner and the Architect-Engineer.

B. APPLICATIONS FOR PAYMENT SCHEDULE

1. Submit to the Owner at least twenty (20) days prior to the submission of the first request for payment, a schedule detailing projected monthly requests for payment for the duration of the project.

1.12 FORM OF CONTRACT BETWEEN OWNER AND CONTRACTOR

A. A contract for the Work will be a written City of Inkster Purchase Order where the basis of payment is a stipulated sum.

1.13 CONTRACT DOCUMENTS

A. All Proposals shall be based on the Contract Documents prepared by the Architect/Engineer consisting of the Drawings and Specifications.

Sidock Group
ARCHITECTS • ENGINEERS • CONSULTANTS

Client
CITY OF INKSTER
26215 TROWBRIDGE ST
INKSTER, MI 48141

Project
CITY OF INKSTER
CULTURAL
CENTER

2005 INKSTER RD
INKSTER, MI 48141

Seal

Drawn
Checked
Approved

Sheet Title
SPECIFICATIONS

Project Number: 24157

Sheet Number: A-001

SECTION 024100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Building demolition excluding removal of hazardous materials and toxic substances
B. Selective demolition of built site elements
C. Selective demolition of building elements for alteration purposes
D. Abandonment and removal of existing utilities and utility structures

1.02 RELATED REQUIREMENTS

A. Section 011000 - Summary: Limitations on Contractor's use of site and premises
B. Section 011000 - Summary: Sequencing and staging requirements
C. Section 011000 - Summary: Description of items to be removed by Owner
D. Section 011000 - Summary: Description of items to be salvaged or removed for re-use by Contractor
E. Section 015000 - Temporary Facilities and Controls: Site fences, security, protective barriers and waste removal
F. Section 015713 - Temporary Erosion and Sediment Control
G. Section 016000 - Product Requirements: Handling and storage of items removed for salvage and relocation
H. Section 017000 - Execution and Closeout Requirements: Project conditions, protection of bench marks, survey control points, and existing construction to remain, reinstallation of removed products, temporary bracing and shoring
I. Section 017419 - Construction Waste Management and Disposal: Limitations on disposal of removed materials, requirements for recycling
J. Section 070150.19 - Preparation for Re-Roofing: Removal of existing roofing, roof insulation, flashing, trim, and accessories
K. Section 311000 - Site Clearing: Vegetation and existing debris removal, earth stripping and stockpiling
L. Section 312200 - Grading: Rough and fine grading
M. Section 312323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations
N. Section 329119 - Landscape Grading: Topsoil placement and finish grading

1.03 DEFINITIONS

A. Demolition: Dismantle, raze, destroy or wreck any building or structure or any part thereof
B. Remove: Detach or dismantle items from existing construction and dispose of them off site unless items are indicated to be salvaged or reinstalled
C. Remove and Salvage: Detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and deliver salvaged items to Owner in ready for reuse condition
D. Remove and Reinstall: Detach or dismantle items from existing construction in a manner to prevent damage. Clean and prepare for reuse and reinstall where indicated
E. Existing to Remain: Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled

1.04 REFERENCE STANDARDS

A. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition
B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2022, with Errata (2021)

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures
B. Site Plan: Indicate:
   1. Vegetation to be protected
   2. Areas for temporary construction and field offices
   3. Areas for temporary and permanent placement of removed materials
C. Demolition Plan: Submit demolition plan as required by OSHA and local AHJs
   1. Indicate extent of demolition, removal sequencing, bracing and shoring, and location and construction of barricades and fences
   2. Summary of safety procedures
   3. Demolition firm qualifications
D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction

1.06 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required
   1. Minimum of years of documented experience

PART 2 PRODUCTS

2.01 MATERIALS

A. Fill Material: See Section 312323

PART 3 EXECUTION

3.01 DEMOLITION

A. Remove concrete slabs on grade as indicated on drawings
B. Break up concrete slabs on grade as indicated on drawings to permit natural moisture drainage; leave pieces not larger than 1 square yard (1 square meter)
C. Fill excavations, open pits, and holes in ground areas generated as result of removals using specified fill; compact fill as specified in Section 312200

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with requirements in Section 017000
B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public
   1. Obtain required permits
   2. Comply with applicable requirements of NFPA 241
   3. Use of explosives is not permitted
   4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures
   5. Provide, erect, and maintain temporary barriers and security devices
   6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public
   7. Conduct operations to minimize effects on and interference with adjacent structures and occupants
   8. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction
   9. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations
   10. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property
C. Do not begin removal until receipt of notification to proceed from Owner
D. Do not begin removal until built elements to be salvaged or relocated have been removed
E. Do not begin removal until vegetation to be relocated has been removed and vegetation to remain has been protected from damage
F. Protect existing structures and other elements to remain in place and not removed
   1. Provide bracing and shoring
   2. Prevent movement or settlement of adjacent structures
   3. Stop work immediately if adjacent structures appear to be in danger
G. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution
H. Hazardous Materials:
   1. If hazardous materials are discovered during removal operations, stop work and notify Engineer and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury
   2. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations
I. Perform demolition in a manner that maximizes salvage and recycling of materials
   1. Comply with requirements of Section 017419 - Construction Waste Management and Disposal
   2. Dismantle existing construction and separate materials
   3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse
J.

3.03 EXISTING UTILITIES

A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits
B. Protect existing utilities to remain from damage
C. Do not disrupt public utilities without permit from authority having jurisdiction
D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner
E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner
F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary
G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities
H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark, in same manner as other utilities to remain, utilities to be reconnected

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only
   1. Verify construction and utility arrangements are as indicated
   2. Report discrepancies to Engineer before disturbing existing installation
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition
B. Maintain weatherproof exterior building enclosure, except for interruptions required for replacement or modifications; prevent water and humidity damage
C. Remove existing work as indicated and required to accomplish new work
   1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction indicated
   2. Remove items indicated on drawings
D. Services including, but not limited to, HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications: Remove existing systems and equipment as indicated
   1. Maintain existing active systems to remain in operation; and maintain access to equipment and operational components
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service
   3. Verify that abandoned services serve only abandoned facilities before removal
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible; otherwise cap stub and tag with identification
E. Protect existing work to remain
   1. Prevent movement of structure. Provide shoring and bracing as required
   2. Perform cutting to accomplish removal work neatly and as specified for cutting new work
   3. Repair adjacent construction and finishes damaged during removal work
   4. Patch to match new work

3.05 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site
B. Remove materials not to be reused on site; comply with requirements of Section 017419 - Waste Management
C. Leave site in clean condition, ready for subsequent work
D. Clean up spillage and wind-blown debris from public and private lands

DIVISION 03 - CONCRETE

SECTION 033000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete formwork
B. Elevated concrete slabs
C. Floors and slabs on grade
D. Concrete foundation walls
E. Concrete reinforcement
F. Joint devices associated with concrete work
G. Miscellaneous concrete elements, including equipment pads, light pole bases, thrust blocks and manholes
H. Concrete curing

1.02 RELATED REQUIREMENTS

A. Section 079200 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs

1.03 REFERENCE STANDARDS

A. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015)
B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009)
C. ACI 301 - Specifications for Structural Concrete; 2016
D. ACI 302.1R - Guide to Concrete Floor and Slab Construction; 2015
E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009)
F. ACI 305R - Guide to Hot Weather Concreting; 2010
G. ACI 306R - Guide to Cold Weather Concreting; 2016
H. ACI 308R - Guide to External Curing of Concrete; 2016
I. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2014 (Errata 2017)
J. ACI 347R - Guide to Formwork for Concrete; 2014
K. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2016
L. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2017
M. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2012
N. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018, with Editorial Revision (2018)
O. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2018
P. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2017a
Q. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2015a
R. ASTM C150/C150M - Standard Specification for Portland Cement; 2018
S. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2016
T. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016)
U. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2011
V. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2017
W. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2015
X. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2015
Y. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2013
Z. ASTM E1155 - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers; 2014
AA. ASTM E1155M - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers (Metric); 2014
AB. ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2011 (Reapproved 2017)
AC. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017
AD. NSF 61 - Drinking Water System Components - Health Effects; 2017
AE. NSF 372 - Drinking Water System Components - Lead Content; 2016

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures
B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions
   1. For curing compounds, provide data on method of removal in the event of incompatibility with floor covering adhesives
C. Mix Design: Submit proposed concrete mix design
   1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures
D. Test Reports: Submit report for each test or series of tests specified
E. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work

1.05 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318
   1. Maintain one copy of each document on site
B. Follow recommendations of ACI 305R when concreting during hot weather
C. Follow recommendations of ACI 306R when concreting during cold weather

PART 2 PRODUCTS

2.01 FORMWORK

A. Formwork Design and Construction: Comply with guidelines of ACI 347R to provide formwork that will produce concrete complying with tolerances of ACI 117
B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances
   1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance
   2. Earth Cuts: Do not use earth cuts as forms for vertical surfaces. Natural rock formations that maintain a stable vertical edge may be used as side forms
   3. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings
   4. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface

2.02 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi)
   1. Type: Deformed billet-steel bars
   2. Finish: Unfinished, unless otherwise indicated
B. Steel Welded Wire Reinforcement (WWR): Galvanized, plain type, ASTM A1064/A1064M
   1. Form: Flat Sheets
   2. WWR Style: As indicated on drawings
C. Reinforcement Accessories:
   1. Tie Wire: Annealed, minimum 16 gage, 0.0508 inch
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type
   1. Acquire cement for entire project from same source
B. Fine and Coarse Aggregates: ASTM C33/C33M
   1. Acquire aggregates for entire project from same source
C. Fly Ash: ASTM C618, Class C or F
D. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete

2.04 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement
B. Air Entrainment Admixture: ASTM C260/C260M
C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G
D. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E

2.05 ACCESSORY MATERIALS

A. Underslab Vapor Retarder: Sheet material complying with ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. The use of single ply polyethylene is prohibited
   1. Installation: Comply with ASTM E1643
   2. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations
   3. Manufacturers:
      a. Fortifiber Building Systems Group; Moistop Ultra 10: www.fortifiber.com/#sle
      b. ISI Building Products; Viper VaporCheck II 15-mil (Class A): www.isibp.com/#sle
      c. W.R. Meadows, Inc; PERMINATOR Class A - 10 mils: www.wrmeadows.com/#sle
      d. Substitutions: See Section 016000 - Product Requirements
B. Non-Shrink Epoxy Grout: Moisture-insensitive, two-part, consisting of epoxy resin, non-metallic aggregate, and activator
   1. Manufacturers:
      a. Dayton Superior Corporation; Pro-Poxy 2000 NS: www.daytonsuperior.com/#sle
      b. Five Star Products, Inc; Five Star HP Epoxy Grout: www.fivestarproducts.com/#sle
      c. W. R. Meadows, Inc; REZI-WELD 3/2: www.wrmeadows.com/#sle
      d. Substitutions: See Section 016000 - Product Requirements

Sidock Group
ARCHITECTS • ENGINEERS • CONSULTANTS

Client
CITY OF INKSTER
26215 TROWBRIDGE ST
INKSTER, MI 48141

Project
CITY OF INKSTER CULTURAL CENTER

2005 INKSTER RD
INKSTER, MI 48141

Seal

Date	Issued For

Drawn
Checked
Approved

Sheet Title
SPECIFICATIONS

Project Number 24157

Sheet Number A-002

2.06 BONDING AND JOINTING PRODUCTS

A. Latex Bonding Agent: Non-redispersible acrylic latex, complying with ASTM C1059/C1059M, Type II.
   1. Manufacturers:
      a. SpecChem, LLC; Strong Bond Acrylic Bonder: www.specchemllc.com/#sle.
      b. W. R. Meadows, Inc; ACRY-LOK: www.wrmeadows.com/#sle.
      c. Substitutions: See Section 016000 - Product Requirements.
B. Epoxy Bonding System:
   1. Complying with ASTM C881/C881M and of Type required for specific application.
   2. Manufacturers:
      a. Dayton Superior Corporation; Sure Set Bonding Agent: www.daytonsuperior.com/#sle.
      b. W. R. Meadows, Inc; Rez-Weld Gel Paste, Rez-Weld Gel Paste Slow, Rez-Weld 1000: www.wrmeadows.com/#sle.
      c. Substitutions: See Section 016000 - Product Requirements.
C. Waterstops: Bentonite and butyl rubber, complying with NSF 61 and NSF 372.
   1. Configuration: As indicated on drawings.
   2. Size: As indicated on drawings.
D. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.
   1. Material: Closed-cell, non-absorbent, compressible polymer foam in sheet form.
   2. Manufacturers:
      a. Nomaco, Inc; Nomaflex Expansion Joint Filler with Void Cap Option: www.nomaco.com/#sle.
      b. W. R. Meadows, Inc; Deck-O-Foam Joint Filler with pre-scored top strip: www.wrmeadows.com/#sle.
      c. Substitutions: See Section 016000 - Product Requirements.
E. Slab Contraction Joint Devices: Preformed linear strip intended for pressing into wet concrete to provide straight route for shrinkage cracking.
   1. Manufacturers:
      a. W. R. Meadows, Inc; Speed-E-Joint: www.wrmeadows.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.
F. Slab Construction Joint Devices: Combination keyed joint form and screed, galvanized steel, with rectangular or round knockout holes for conduit or rebar to pass through joint form at 6 inches on center; ribbed steel stakes for setting.
   1. Height: To suit slab thickness.
   2. Manufacturers:
      a. BoMetals, Inc; _____: www.bometals.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.
G. Dowel Sleeves: Plastic sleeve for smooth, round, steel load transfer dowels.
   1. Manufacturers:
      a. BoMetals, Inc; _____: www.bometals.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

2.07 CURING MATERIALS

A. Curing Compound, Non-dissipating: Liquid, membrane-forming, clear, non-yellowing acrylic, complying with ASTM C309.
B. Curing and Sealing Compound, Low Gloss: Liquid, membrane-forming, clear, non-yellowing acrylic; complying with ASTM C1315 Type I Class A.

2.08 CONCRETE MIX DESIGN

A. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.
B. Normal Weight Concrete:
   1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 4,000 pounds per square inch.
   2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
   3. Water-Cement Ratio: Maximum 40 percent by weight.
   4. Total Air Content: 4 percent, determined in accordance with ASTM C173/C173M.
   5. Maximum Slump: 3 inches.
   6. Maximum Aggregate Size: 5/8 inch.

2.09 MIXING

A. Transit Mixers: Comply with ASTM C94/C94M.
B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
B. Verify that forms are clean and free of rust before applying release agent.
C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
D. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
   1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.
   2. Use latex bonding agent only for non-load-bearing applications.
E. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.
F. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.
   1. Vapor Retarder Over Granular Fill: Install compactible granular fill before placing vapor retarder as indicated on drawings. Do not use sand.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.
C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.04 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.
B. Place concrete for floor slabs in accordance with ACI 302.1R.
C. Notify Architect not less than 24 hours prior to commencement of placement operations.
D. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
E. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.
F. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.
G. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.05 SLAB JOINTING

A. Locate joints as indicated on drawings.
B. Anchor joint fillers and devices to prevent movement during concrete placement.
C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
   1. Install wherever necessary to separate slab from other building members, including columns, walls, equipment foundations, footings, stairs, manholes, sumps, and drains.
D. Load Transfer Construction and Contraction Joints: Install load transfer devices as indicated; saw cut joint at surface as indicated for contraction joints.
E. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.
F. Construction Joints: Where not otherwise indicated, use metal combination screed and key form, with removable top section for joint sealant.

3.06 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. Minimum F(F) Floor Flatness and F(L) Floor Levelness Values:
   1. Exposed to View and Foot Traffic: F(F) of 20; F(L) of 15; on-grade only.
   2. Under Thick-Bed Tile: F(F) of 20; F(L) of 15; on-grade only.
   3. Under Carpeting: F(F) of 25; F(L) of 20; on-grade only.
   4. Under Thin Resilient Flooring and Thinset Tile: F(F) of 35; F(L) of 25; on-grade only.
   5. Warehouse Floors On Grade: F(F) of 40; F(L) of 25.
B. Measure F(F) Floor Flatness and F(L) Floor Levelness in accordance with ASTM E1155 (ASTM E1155M), within 48 hours after slab installation; report both composite overall values and local values for each measured section.
C. Correct the slab surface if composite overall value is less than specified and if local value is less than two-thirds of specified value or less than F(F) 13/F(L) 10.
D. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.07 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.
B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
   1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
   2. Grout Cleaned Finish: Wet areas to be cleaned and apply grout mixture by brush or spray; scrub immediately to remove excess grout. After drying, rub vigorously with clean burlap, and keep moist for 36 hours.
   3. Cork Floated Finish: Immediately after form removal, apply grout with trowel or firm rubber float, compress grout with low speed grinder, and apply final texture with cork float.
D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
   1. Surfaces to Receive Thick Floor Coverings: "Wood float" as described in ACI 302.1R; thick floor coverings include quarry tile, ceramic tile, and Portland cement terrazzo with full bed setting system.
   2. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R; thin floor coverings include carpeting, resilient flooring, seamless flooring, thin set quarry tile, and thin set ceramic tile.
   3. Other Surfaces to be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.
E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.

3.08 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
   1. Normal concrete: Not less than seven days.
C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.
D. Surfaces Not in Contact with Forms:
   1. Slabs and Floors To Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
   2. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water-fog spray or saturated burlap.
      a. Spraying: Spray water over floor slab areas and maintain wet.
      b. Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.
   3. Final Curing: Begin after initial curing but before surface is dry.
      a. Moisture-Retaining Sheet: Lap strips not less than 3 inches and seal with waterproof tape or adhesive; secure at edges.
      b. Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.09 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests.
B. Provide free access to concrete operations at project site and cooperate with appointed firm.
C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
D. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.
E. Compressive Strength Tests: ASTM C39/C39M; for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards or less of each class of concrete placed.
F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
G. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.10 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.
B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

3.11 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

Sidock Group
ARCHITECTS • ENGINEERS • CONSULTANTS

Client
CITY OF INKSTER
26215 TROWBRIDGE ST
INKSTER, MI 48141

Project
CITY OF INKSTER
CULTURAL
CENTER

Seal

Date	Issued For
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Checked
Approved

Sheet Title
SPECIFICATIONS

Project Number 24157

Sheet Number A-003

DIVISION 04 - MASONRY

SECTION 042000
UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete block
- B. Common brick
- C. Mortar and grout
- D. Reinforcement and anchorage
- E. Flashings
- F. Lintels
- G. Accessories

1.02 RELATED REQUIREMENTS

- A. Section 040511 - Masonry Mortaring and Grouting
- B. Section 072100 - Thermal Insulation: Insulation for cavity spaces.
- C. Section 072500 - Weather Barriers: Water-resistive barriers applied to exterior face of backing sheathing or unit masonry substrate.
- D. Section 076200 - Sheet Metal Flashing and Trim: Through-wall masonry flashings.
- E. Section 078400 - Firestopping: Firestopping at penetrations of fire-rated masonry and at top of fire-rated walls.
- F. Section 079200 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware, 2023
- B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement, 2022
- C. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire, 2019
- D. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement, 2022
- E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete, 2022
- F. ASTM C67/C67M - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile, 2023
- G. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units, 2023
- H. ASTM C91/C91M - Standard Specification for Masonry Cement, 2023
- I. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar, 2018
- J. ASTM C150/C150M - Standard Specification for Portland Cement, 2022
- K. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes, 2018
- L. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale), 2023
- M. ASTM C270 - Standard Specification for Mortar for Unit Masonry, 2019a, with Editorial Revision
- N. ASTM C404 - Standard Specification for Aggregates for Masonry Grout, 2024
- O. ASTM C476 - Standard Specification for Grout for Masonry, 2023
- P. BIA Technical Notes No. 7 - Water Penetration Resistance - Design and Detailing, 2017
- Q. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls, 2017
- R. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls, 2005
- S. BIA Technical Notes No. 46 - Maintenance of Brick Masonry, 2017
- T. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures, 2022, with Errata (2024)

1.04 SUBMITTALS

- A. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- B. Shop Drawings: Indicate pertinent dimensions, materials, anchorage, size and type of fasteners, and accessories for brickwork support system.
- C. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.
- D. Manufacturer's Certificate: Certify that water repellent admixture manufacturer has certified masonry unit manufacturer as an approved user of water repellent admixture in the manufacture of concrete block.

1.05 QUALITY ASSURANCE

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
  1. Size: Standard units with nominal face dimensions of 16 by 8 inches (400 by 200 mm) and nominal depth of 8 inches (200 mm).
  2. Special Shapes: Provide nonstandard blocks configured for corners.
     a. Provide bullnose units for outside corners.
  3. Load-Bearing Units: ASTM C90, normal weight.
     a. Hollow block, as indicated.

2.02 BRICK UNITS

- A. Manufacturers:
  1. See Sheet A-200
- B. Facing Brick: ASTM C216, Type FBS Smooth, Grade SW.
  1. Color and texture to match Architect's sample.
  2. Nominal size: As indicated on drawings.
  3. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect.
  4. Compressive strength: As indicated on drawings, measured in accordance with ASTM C67/C67M.

2.03 MORTAR AND GROUT MATERIALS

- A. Masonry Cement: ASTM C91/C91M, Type N.
- B. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
- C. Hydrated Lime: ASTM C207, Type S.
- D. Mortar Aggregate: ASTM C144.
- E. Grout Aggregate: ASTM C404.
- F. Water: Clean and potable.
- G. Accelerating Admixture: Nonchloride type for use in cold weather.

2.04 REINFORCEMENT AND ANCHORAGE

- A. Reinforcing Steel: ASTM A615/A615M, Grade 40 (40,000 psi) (280 MPa), deformed billet bars, galvanized.
- B. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.
- C. Multiple Wythe Joint Reinforcement: ASTM A951/A951M.
  1. Type: Truss.
  2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M Class 3.
  3. Size: 0.1483 inch (3.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods; width as required to provide not less than 5/8 inch (16 mm) of mortar coverage on each exposure.
- D. Adjustable Multiple Wythe Joint Reinforcement: ASTM A951/A951M.
  1. Type: Truss, with adjustable ties or tabs spaced at 16 in (406 mm) on center.
  2. Material: ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/A153M, Class B.
  3. Size: 0.1875 inch (4.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods and adjustable components of 0.1875 inch (4.8 mm) wire; width of components as required to provide not less than 5/8 inch (16 mm) of mortar coverage from each masonry face.
  4. Vertical adjustment: Not more than 1-1/4 inches (32 mm).
  5. Seismic Feature: Provide lip, hook, or clip on extended leg of wall ties to engage or enclose not less than one continuous horizontal joint reinforcement wire of 0.1483 inch (3.8 mm) diameter.
  6. Insulation Clips: Provide clips at tabs or ties designed to secure insulation against outer face of inner wythe of masonry.
- E. Strap Anchors: Bent steel shapes, 1-1/2 inch (38 mm) width, 0.105 inch (2.7 mm) thick, 24 inch (610 mm) length, with 1-1/2 inch (38 mm) long, 90 degree bend at each end to form a U or Z shape or with cross pins, hot dip galvanized to ASTM A153/A153M Class B.
- F. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch (16 mm) of mortar coverage from masonry face.
  1. Concrete frame: Dovetail anchors of bent steel strap, nominal 1 inch (25 mm) width x 0.024 in (0.61 mm) thick, with trapezoidal wire ties 0.1875 inch (4.75 mm) thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
- G. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
  1. Anchor plates: Not less than 0.075 inch (1.91 mm) thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
  2. Wire ties: Manufacturer's standard shape, 0.1875 inch (4.75 mm) thick.
  3. Vertical adjustment: Not less than 3-1/2 inches (89 mm).

2.05 FLASHINGS

- A. Metal Flashing Materials:
  1. Prefabricated Metal Flashing: Smooth fabricated 12 oz/sq ft (3.66 kg/sq m) copper flashing for surface mounted conditions.
     a. Manufacturers:
        1) Cheney Flashing Company: ____ www.cheneyflashing.com/#sle
        2) Hohmann & Barnard, Inc.: ____ www.h-b.com/#sle
        3) Substitutions: See Section 016000 - Product Requirements.
- B. Termination Bars: Stainless steel, compatible with membrane and adhesives.
  1. Manufacturers:
     a. 3GEN Masonry Products: _____ www.3genmp.com/#sle
     b. Hohmann & Barnard, Inc.: _______ www.h-b.com/#sle
     c. Mortar Net Solutions; Termination Bars: www.mortarnet.com/#sle
     d. Substitutions: See Section 016000 - Product Requirements.
- C. Drip Edge: Stainless steel, angled drip with hemmed edge, compatible with membrane and adhesives.
  1. Manufacturers:
     a. 3GEN Masonry Products: _____ www.3genmp.com/#sle
     b. Hohmann & Barnard, Inc.: _______ www.h-b.com/#sle
     c. Substitutions: See Section 016000 - Product Requirements.
- D. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

2.06 ACCESSORIES

- A. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
  1. Full-Height Airspace Maintenance and Drainage Material: Mesh panels fitted between masonry ties.
     a. Drainage Material Thickness: 3/8 inch (9.5 mm).
     b. Manufacturers:
        1) Advanced Building Products, Inc; Mortarvent-CW: www.advancedbuildingproducts.com/#sle
        2) Substitutions: See Section 016000 - Product Requirements.
- B. Weeps:
  1. Type: Polyester mesh.
  2. Manufacturers:
     a. Advanced Building Products, Inc.: _______ www.advancedbuildingproducts.com/#sle
     b. Hohmann & Barnard, Inc.: _______ www.h-b.com/#sle
     c. WIRE-BOND: _______ www.wirebond.com/#sle
     d. Substitutions: See Section 016000 - Product Requirements.
- C. Cavity Vents:
  1. Type: Preformed aluminum vents with sloping louvers.
  2. Color(s): As selected by Architect from manufacturer's full range.
  3. Manufacturers:
     a. Advanced Building Products, Inc.: _______ www.advancedbuildingproducts.com/#sle
     b. Substitutions: See Section 016000 - Product Requirements.
- D. Drainage Fabric: Polyester or polypropylene mesh bonded to a water and vapor-permeable fabric.
  1. Manufacturers:
     a. Advanced Building Products, Inc; Mortarvent: www.advancedbuildingproducts.com/#sle
- E. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.07 MORTAR AND GROUT MIXING

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
  1. Masonry below grade and in contact with earth: Type S.
  2. Exterior, loadbearing masonry: Type N.
  3. Exterior, non-loadbearing masonry: Type N.
  4. Interior, loadbearing masonry: Type N.
  5. Interior, non-loadbearing masonry: Type O.
- B. New Mortar for Old Brick: Proportion by volume only; no more than 20 percent of the total volume of Portland cement and lime combined to be Portland cement.
  1. Sand: Match original mortar as closely as possible in color, size, and texture, without use of other additives.
  2. Do not use modern additives unless permitted in writing by Architect.
  3. Repointing Mortar: Use proportions from 1 part lime to 2 parts sand with no Portland cement, up to 2 parts Portland cement to 3 parts lime to 8 parts sand.
  4. White Portland Cement: Use for repointing mortar where Portland cement is permitted.
  5. Use mortar within 30 minutes after final mixing; do not add more water after the initial mix is prepared.
- C. Grout: ASTM C476, consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches (50 mm) or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches (50 mm).
- D. Admixtures: Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.
- E. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

3.03 COLD AND HOT WEATHER REQUIREMENTS

- A. Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

3.04 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
  1. Bond: Running.
  2. Coursing: One unit and one mortar joint to equal 8 inches (200 mm).
  3. Mortar Joints: Concave.
- D. Brick Units:
  1. Bond: Running.
  2. Coursing: Three units and three mortar joints to equal 8 inches (200 mm).
  3. Mortar Joints: Concave.

3.05 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

3.06 WEEPS/CAVITY VENTS

- A. Install weeps in veneer and cavity walls at 24 inches (600 mm) on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.
- B. Install cavity vents in veneer and cavity walls at 32 inches (800 mm) on center horizontally below shelf angles and lintels and near top of walls.

3.07 CAVITY MORTAR CONTROL

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weeps/cavity vents.
- B. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weeps/cavity vents.

3.08 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches (400 mm) on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches (400 mm) each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch (16 mm) mortar cover on each side.
- E. Lap joint reinforcement ends minimum 6 inches (150 mm).
- F. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 32 inches (800 mm) horizontally and 24 inches (600 mm) vertically.
- G. Embed ties and anchors in mortar joint and extend into masonry unit a minimum of 1-1/2 inches (38 mm) with at least 5/8 inch (16 mm) mortar cover to the outside face of the anchor.

3.09 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A. Masonry Back-Up: Embed anchors to bond veneer at maximum 16 inches (400 mm) on center vertically and 36 inches (900 mm) on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches (200 mm) on center.

3.10 REINFORCEMENT AND ANCHORAGES - MULTIPLE WYTHE UNIT MASONRY

- A. Use individual metal ties installed in horizontal joints to bond wythes together. Provide ties spaced as indicated on drawings.
- B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch (13 mm) of dimensioned position.

3.11 MASONRY FLASHINGS

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
  1. Extend flashings full width at such interruptions and at least 6 inches (152 mm), minimum, into adjacent masonry or turn up flashing ends at least 1 inch (25.4 mm), minimum, to form watertight pan at nonmasonry construction.
- B. Terminate flashing up 8 inches (203 mm) minimum on vertical surface of backing.
- C. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. 7.
- D. Extend metal flashings through exterior face of masonry and terminate in an angled drip with hemmed edge. Install joint sealer below drip edge to prevent moisture migration under flashing.
- E. Extend plastic, laminated, EPDM, and metal flashings to within 1/2 inch (12 mm) of exterior face of concrete beam and adhere to top of stainless steel angled drip with hemmed edge.
- F. Lap end joints of flashings at least 6 inches (152 mm), minimum, and seal watertight with flashing sealant/adhesive.

3.12 LINTELS

- A. Install loose steel lintels over openings.
- B. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.
  1. Openings to 42 inches (1070 mm): Place two, No. 3 (M9) reinforcing bars 1 inch (25 mm) from bottom web.
  2. Openings from 42 inches (1070 mm) to 78 inches (1980 mm): Place two, No. 5 (M16) reinforcing bars 1 inch (25 mm) from bottom web.
  3. Openings over 78 inches (1980 mm): Reinforce openings as detailed.
  4. Do not splice reinforcing bars.
  5. Allow masonry lintels to attain specified strength before removing temporary supports.

3.13 GROUTED COMPONENTS

- A. Lap splices minimum 24 bar diameters.
- B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch (13 mm) of dimensioned position.
- C. Place and consolidate grout fill without displacing reinforcing.

3.14 CONTROL AND EXPANSION JOINTS

- A. Do not continue horizontal joint reinforcement through control or expansion joints.
- B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- C. Size control joints as indicated on drawings; if not indicated, 3/4 inch (19 mm) wide and deep.
- D. Form expansion joint as detailed on drawings.

3.15 BUILT-IN WORK

- A. As work progresses, install built-in metal door frames and glazed frames and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.
- C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
  1. Fill adjacent masonry cores with grout minimum 12 inches (300 mm) from framed openings.

3.16 TOLERANCES

- A. Install masonry within the site tolerances found in TMS 402/602.

3.17 CUTTING AND FITTING

- A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.

3.18 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 014000 - Quality Requirements.

3.19 CLEANING

- A. Remove excess mortar and mortar droppings.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution.
- D. Use non-metallic tools in cleaning operations.

3.20 PROTECTION

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

DIVISION 05 - METALS

SECTION 055000
METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Shop fabricated steel and aluminum items.
- B. Hidden access panels.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum, 2022
- B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel, 2019
- C. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless, 2022
- D. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates, 2018
- E. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength, 2021
- F. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing, 2021
- G. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes, 2021
- H. AWS D1.1/D1.1M - Structural Welding Code - Steel, 2020, with Errata (2023)
- I. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer, 2004

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

- A. Steel Sections: ASTM A36/A36M.
- B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.
- C. Plates: ASTM A283/A283M.
- D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.
- E. Bolts, Nuts, and Washers: ASTM A307, Grade A, plain.
- F. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

2.02 MATERIALS - ALUMINUM

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

2.03 FABRICATED ITEMS

- A. Ledge Angles, Shelf Angles, Channels, and Plates Not Attached to Structural Framing: For support of metal decking; prime paint finish.
- B. Lintels: As detailed; prime paint finish.

2.04 FINISHES - STEEL

- A. Prime paint steel items.
- B. Prime Painting: One coat.
- C. Stainless Steel Finish: No. 4 Bright Polished finish.

2.05 FINISHES - ALUMINUM

- A. Exterior Aluminum Surfaces: Class I color anodized.
- B. Interior Aluminum Surfaces: Class I natural anodized.
- C. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils (0.018 mm) thick.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Field weld components as indicated on drawings.
- D. Perform field welding in accordance with AWS D1.1/D1.1M.
- E. Obtain approval prior to site cutting or making adjustments not scheduled.
- F. Hidden Access Panels:
  1. Mount panel frame on mortar bed at indicated elevation, plumb and level.
  2. Infill panel cover with paver units following layout pattern without disruptions.
  3. Place panel cover in panel frame securely.

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Sheet Title
SPECIFICATIONS

Project Number 24157

Sheet Number A-004

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

SECTION 061000
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonstructural dimension lumber framing
B. Rough opening framing for doors, windows, and roof openings
C. Sheathing
D. Subflooring
E. Fire retardant treated wood materials
F. Communications and electrical room mounting boards
G. Concealed wood blocking, nailers, and supports
H. Miscellaneous wood nailers, furring, and grounds
I. Wall sheathing with factory applied water-resistive and air barrier sheet

1.02 RELATED REQUIREMENTS

A. Section 072600 - Vapor Retarders: Vapor retarder over sheathing
B. Section 072700 - Air Barriers: Air barrier over sheathing

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023
B. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing; 2003 (Reapproved 2017)
C. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing; 2019a
D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d
E. AWPA U1 - Use Category System: User Specification for Treated Wood; 2024
F. ICC-ES AC38 - Acceptance Criteria for Water-Resistive Barriers; 2016, with Editorial Revision (2021)
G. PS 1 - Structural Plywood; 2023
H. PS 20 - American Softwood Lumber Standard; 2021
I. SPIB (GR) - Standard Grading Rules; 2021

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.
B. Product Data: Provide technical data on insulated sheathing, wood preservative materials, and application instructions.

1.05 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. Species: Douglas Fir-Larch, unless otherwise indicated.
   2. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
   3. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
   4. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Grading Agency: Southern Pine Inspection Bureau, Inc; SPIB (GR).
B. Sizes: Nominal sizes as indicated on drawings, S4S.
C. Moisture Content: S-dry or MC19.
D. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
   1. Lumber: S4S, No. 2 or Standard Grade.
   2. Boards: Standard or No. 3.

2.03 CONSTRUCTION PANELS

A. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch (19 mm) thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

2.04 ACCESSORIES

A. Fasteners and Anchors:
   1. Metal and Finish: Hot-dipped galvanized steel, complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
   2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.
   3. Anchors: Toggle bolt type for anchorage to hollow masonry.
B. General Purpose Construction Adhesives: Comply with ASTM C557.
   1. Products:
      a. Franklin International, Inc; Titebond Contractor Grade Subfloor Adhesive: www.titebond.com/#sle.
C. Vapor Retarder: See Section 072600.
D. Air Barrier: See Section 072700.

2.05 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
   1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
B. Fire Retardant Treatment:
   1. Products:
      a. Hoover Treated Wood Products, Inc; ____: www.frtw.com/#sle.
      b. Koppers, Inc; ____: www.koppersperformancechemicals.com/#sle.
      c. UFP Industries; ProWood FR Lumber: www.ufpi.com/#sle.
      d. Viance, LLC; D-Blaze: www.treatedwood.com/#sle.
      e. Substitutions: See Section 016000 - Product Requirements.
   2. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
      a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
      b. Interior rough carpentry items are to be fire retardant treated.
      c. Treat rough carpentry items as indicated.
      d. Do not use treated wood in applications exposed to weather or where the wood may become wet.

PART 3 EXECUTION

3.01 PREPARATION

A. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.
B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
B. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
C. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
D. Provide the following specific nonstructural framing and blocking:
   1. Cabinets and shelf supports.
   2. Wall brackets.
   3. Handrails.
   4. Grab bars.
   5. Towel and bath accessories.
   6. Wall-mounted door stops.
   7. Chalkboards and marker boards.
   8. Wall paneling and trim.
   9. Joints of rigid wall coverings that occur between studs.

3.04 INSTALLATION OF CONSTRUCTION PANELS

A. Subflooring: Glue and nail to framing; staples are not permitted.
B. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches (610 mm) on center on all edges and into studs in field of board.
   1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
   2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
   3. Install adjacent boards without gaps.
   4. Size: 48 by 96 inches (1220 by 2440 mm), installed horizontally at ceiling height.

3.05 CLEANING

A. Waste Disposal: See Section 017419 - Construction Waste Management and Disposal.
   1. Comply with applicable regulations.
   2. Do not burn scrap on project site.
   3. Do not burn scraps that have been pressure treated.
   4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
C. Prevent sawdust and wood shavings from entering the storm drainage system.

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

SECTION 072100
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Board insulation and integral vapor retarder at cavity wall construction, perimeter foundation wall, underside of floor slabs, over roof deck, over roof sheathing, and exterior wall behind face brick and air space.
B. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.
C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

1.02 REFERENCE STANDARDS

A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2023.
B. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.
C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
D. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C; 2024.
E. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components; 2023.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

1.04 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Insulation Under Concrete Slabs: Extruded polystyrene (XPS) board.
B. Insulation at Perimeter of Foundation: Extruded polystyrene (XPS) board.
C. Insulation Inside Masonry Cavity Walls: Expanded polystyrene (EPS) board.
D. Insulation Over Metal Stud Framed Walls, Continuous: Extruded polystyrene (XPS) carbon black board.
E. Insulation in Metal Framed Walls: Batt insulation with integral vapor retarder.
F. Insulation Above Lay-In Acoustical Ceilings: Batt insulation with no vapor retarder.

2.02 FOAM BOARD INSULATION MATERIALS

A. Extruded Polystyrene (XPS) Continuous Insulation (CI) Board: Comply with ASTM C578, and manufactured using carbon black technology.
   1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
   2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
   3. Type and Thermal Resistance, R-value (RSI-value): Type IV, 5.6 (0.98), minimum, per 1 inch (25.4 mm) thickness at 75 degrees F (24 degrees C) mean temperature.
   4. Board Size: 48 inch by 96 inch (1220 mm by 2440 mm).
   5. Board Thickness: 1-3/4 inch (44.5 mm).
   6. Board Edges: Shiplap, at long edges.
   7. Products:
      a. DuPont de Nemours, Inc; Styrofoam Brand Ultra SL (Shiplap): building.dupont.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

2.03 MINERAL FIBER BLANKET INSULATION MATERIALS

A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.
   1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
   2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
   3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
   4. Facing: Aluminum foil, flame spread 25 rated; one side.
   5. Products:
      a. CertainTeed Corporation; _____: www.certainteed.com/#sle.
      b. Johns Manville; _____: www.jm.com/#sle.
      c. Substitutions: See Section 016000 - Product Requirements.

2.04 ACCESSORIES

A. Tape joints of rigid insulation in accordance with roofing and insulation manufacturers' instructions.
B. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

A. Adhere a 6 inches (152 mm) wide strip of polyethylene sheet over construction, control, and expansion joints with double beads of adhesive each side of joint.
B. Apply adhesive to back of boards:
   1. Three continuous beads per board length.
C. Install boards horizontally on foundation perimeter.
   1. Place boards to maximize adhesive contact.
   2. Install in running bond pattern.
   3. Butt edges and ends tightly to adjacent boards and to protrusions.
D. Extend boards over expansion joints, unbonded to foundation on one side of joint.
E. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BOARD INSTALLATION AT EXTERIOR WALLS

A. Install boards horizontally on walls.
B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.04 BOARD INSTALLATION AT CAVITY WALLS

A. Secure insulation fasteners to substrate at following frequency:
   1. Six (6) per insulation board.
B. Install boards to fit snugly between wall ties.
C. Install boards horizontally on walls.
D. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.05 BOARD INSTALLATION USING CLADDING AND CONTINUOUS INSULATION SUPPORTS

A. Install supports in accordance with manufacturer's installation instructions.
B. Install supports in compliance with system orientation, sizes, and locations as indicated on drawings and in accordance with approved shop drawings.
C. Install supports to fill in exterior wall spaces without gaps or voids in insulation.
D. Trim insulation neatly to fit spaces and provide a continuous thermal layer.

3.06 BOARD INSTALLATION UNDER CONCRETE SLABS

A. Place insulation under slabs on grade after base for slab has been compacted.
B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
C. Prevent insulation from being displaced or damaged while placing vapor retarder and placing slab.

3.07 BATT INSTALLATION

A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.08 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

SECTION 075323
EPDM THERMOSET SINGLE-PLY ROOFING - CARLISLE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Mechanically attached roof system with ethylene propylene diene monomer (EPDM) roofing membrane.
B. Adhered roof system with ethylene propylene diene monomer (EPDM) roofing membrane.
C. Ballasted roof system with ethylene propylene diene monomer (EPDM) roofing membrane.
D. Insulation, flat and tapered.

1.02 REFERENCE STANDARDS

A. ASTM C208 - Standard Specification for Cellulosic Fiber Insulating Board; 2022.
B. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2023.
C. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2023a.
D. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015, with Editorial Revision (2022).

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.
B. Product Data: Provide manufacturer's written information listed below.
   1. Product data indicating membrane materials, flashing materials, insulation, vapor retarder, surfacing, and fasteners.
C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, and panel layout.
D. Warranty:
   1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
   2. Submit installer's certification that installation complies with all warranty conditions for the waterproof membrane.

1.04 FIELD CONDITIONS

A. Do not apply roofing membrane during unsuitable weather. Refer to manufacturer's written instructions.
B. Do not apply roofing membrane when ambient temperature is below 40 degrees F (5 degrees C) or above ____ degrees F (____ degrees C).
C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.
E. Proceed with work so new roofing materials are not subject to construction traffic as work progresses.
F. Do not allow grease, oil, fats, or other contaminants to come into direct contact with membrane.

1.05 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.
B. Material Warranty: Provide membrane manufacturer's warranty agreeing to replace material that shows manufacturing defects within 10 years after installation.
C. System Warranty: Provide manufacturer's system warranty agreeing to repair or replace roofing that leaks or is damaged due to wind or other natural causes.
   1. Warranty Term: 20 years.
   2. For repair and replacement include costs of both material and labor in warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Carlisle SynTec Systems: www.carlisle-syntec.com/#sle.

2.02 ROOFING APPLICATIONS

A. EPDM Membrane Roofing: One ply membrane, fully adhered, over insulation.
B. Roofing Assembly Performance Requirements and Design Criteria.

2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

A. Membrane:
   1. Material: Ethylene propylene diene monomer (EPDM), ASTM D4637/D4637M, Type I (non-reinforced).
   2. Thickness: 60 mil, 0.060 inch (1.5 mm), minimum.
   3. Sheet Width: Factory fabricated into largest sheets possible.
   4. Color: White.
B. Seaming Materials: As recommended by membrane manufacturer.
C. Flexible Flashing Material: Same material as membrane.
D. Base Flashing: Provide waterproof, fully adhered base flashing system at all penetrations, plane transitions, and terminations.

2.04 INSULATION

A. Cellulose Fiber Board Insulation: Natural finish, ASTM C208 Type II.
B. Expanded Polystyrene (EPS) Board Insulation: Complies with ASTM C578 with drainage channels on one face.
   1. Tapered Board: Slope as indicated; minimum thickness 1/2 inch (13 mm); fabricate of fewest layers possible.
   2. Type and Compressive Resistance: Type XI, 5 psi (35 kPa), minimum.
C. Polyisocyanurate (ISO) Board Insulation: ASTM C1289, Type II, Class 1 - Faced with glass fiber reinforced cellulosic felt facers on both major surfaces of the core foam, Grade 1.
D. Extruded Polystyrene (XPS) Board Insulation: Complies with ASTM C578 with natural skin surface, drainage channels one face.

2.05 ACCESSORIES

A. Prefabricated Flashing Accessories:
   1. Corners and Seams: Same material as membrane, in manufacturer's standard thicknesses.
   2. Penetrations: Same material as membrane, with manufacturer's standard cut-outs, rigid inserts, clamping rings, and flanges.
   3. Sealant Pockets: Same material as membrane, with manufacturer's standard accessories, in manufacturer's standard configuration.
   4. Carlisle SynTec Systems; Sure-Seal Pressure-Sensitive Reinforced Universal Securement Strip (RUSS).
B. Membrane Adhesive: As recommended by membrane manufacturer.
C. Surface Conditioner for Adhesives: Compatible with membrane and adhesives.
D. Sealants: As recommended by membrane manufacturer.
E. Cleaner: Manufacturer's standard, clear, solvent-based cleaner.
F. Edgings and Terminations: Manufacturer's standard edge and termination accessories.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Perform work in accordance with manufacturer's instructions.
B. Do not apply roofing membrane during unsuitable weather.
C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.
D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

3.02 INSULATION APPLICATION

A. Lay subsequent layers of insulation with joints staggered minimum 6 inches (152 mm) from joints of preceding layer.
B. Lay boards with edges in moderate contact without forcing, and gap between boards no greater than 1/4 inch (6.4 mm). Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
C. Do not apply more insulation than can be completely waterproofed in the same day.

3.03 MEMBRANE APPLICATION

A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
B. Shingle joints on sloped substrate in direction of drainage.
C. Fully Adhered Application: Apply adhesive at manufacturer's recommended rate. Fully embed membrane in adhesive except in areas directly over or within 3 inches (76 mm) of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.
D. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches (76 mm). Seal permanently waterproof.
E. At intersections with vertical surfaces:
   1. Extend membrane over cant strips and up a minimum of 4 inches (102 mm) onto vertical surfaces.
   2. Fully adhere flexible flashing over membrane and up to nailing strips.
F. Coordinate installation of roof drains and sumps and related flashings. Locate field splices away from low areas and roof drains, and lap upslope sheet over downslope sheet.
G. Daily Seal: Install daily seal per manufacturer's instructions at the end of each workday. Prevent infiltration of water at incomplete flashings, terminations, and at unfinished membrane edges.

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Seal

Sheet Title
SPECIFICATIONS

Project Number 24157

Sheet Number A-005

SECTION 077123
MANUFACTURED GUTTERS AND DOWNSPOUTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pre finished aluminum gutters and downspouts

B. Precast concrete splash pads

1.02 RELATED REQUIREMENTS

A. Section 055000 - Metal Fabrications - Downspout boots

B. Section 076200 - Sheet Metal Flashing and Trim

C. Section 099113 - Exterior Painting Field painting of metal surfaces

1.03 REFERENCE STANDARDS

A. AAMA 611 - Specification for Anodized Architectural Aluminum, 2024

B. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022

C. ASTM A48/A48M - Standard Specification for Gray Iron Castings, 2022

D. ASTM B32 - Standard Specification for Solder Metal 2020

E. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate 2021a.

F. SMACNA (ASMM) - Architectural Sheet Metal Manual, 2012

1.04 ADMINISTRATIVE REQUIREMENTS

A. Comply with SMACNA (ASMM) for sizing components for rainfall intensity determined by a storm occurrence of 1 in 5 years.

B. Comply with applicable code for size and method of rain water discharge.

C. Maintain one copy of each document on site

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures

B. Product Data Provide data on prefabricated components

C. Shop Drawings. Indicate locations, configurations, jointing methods, fastening methods, locations, and installation details

D. Samples. Submit two samples, 6 inch (____ mm) long illustrating component design, finish color, and configuration.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope to drain

B. Prevent contact with materials that could cause discoloration, staining, or damage

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Gutters and Downspouts

1. Hickman Edge Systems, Wind Resistant Gutter www.hickmanedgesystems.com/#sle
2. Substitutions See Section 016000 - Product Requirements

B. Scupper and Collectors

1. ATAS International, Inc ____ www.atas.com/#sle

2.02 MATERIALS

A. Aluminum Sheet ASTM B209/B209M ___ alloy ___ temper, 0.032 inch (0.8 mm) thick.

1. Finish Class II anodized.
2. Color As scheduled

B. Solder ASTM B32, Sn50 (50/50) type

2.03 COMPONENTS

A. Gutters CDA rectangular style profile

B. Gutters CDA rectangular profile

C. Downspouts CDA rectangular profile.

D. Anchors and Supports Profiled to suit gutters and downspouts

1. Anchoring Devices In accordance with CDA requirements
2. Gutter Supports Brackets
3. Downspout Supports Brackets

E. Fasteners Galvanized steel, with soft neoprene washers

2.04 FABRICATION

A. Form gutters and downspouts of profiles and size indicated.

B. Fabricate with required connection pieces

C. Form sections square, true, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints

D. Hem exposed edges of metal

E. Fabricate gutter and downspout accessories, seal watertight

2.05 FINISHES

A. Class II Color Anodized Finish AAMA 611 AA-M12C22A41 integrally colored anodic coating not less than 0.4 mil, 0.0004 inch (0.010 mm) thick.

B. Modified silicone polyester coating. Baked enamel system, comply with AAMA 2603

C. Primer Coat Finish concealed side of metal sheets with primer compatible with finish system as recommended by finish system manufacturer

2.06 ACCESSORIES

A. Splash Pans. Same metal type as downspouts, formed to ___ by ___ inches (___ by ___ mm) size, rolled sides ___ inch (___ mm) high for riveted pan placement

B. Downspout Boots Smooth interior without boxed corners or choke points, include integral lug slots and on-body cleanout and cover with neoprene gaskets

1. Configuration Angular
2. Material Cast iron, ASTM A48/A48M, casting thickness 3/8 inch (9.5 mm) minimum
3. Finish Manufacturer's standard factory applied powder coat finish
4. Color To be selected by Engineer from manufacturer's standard range
5. Products
   a. Downspoutboots.com, a division of J. R. Hoe & Sons, ____ www.downspoutboots.com/#sle
   b. Substitutions See Section 016000 - Product Requirements

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that surfaces are ready to receive work

3.02 PREPARATION

A. Paint concealed sheet metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to a minimum dry film thickness of 15 mil, 0.015 inch (0.381 mm)

3.03 INSTALLATION

A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions

B. Sheet Metal Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts and accessories

C. Slope gutters 1/4 inch per foot (____ mm/m) ___ percent minimum

D. Solder metal joints for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water

E. Connect downspouts to downspout boots at 2 inches (____ mm) above grade. Grout connection watertight.

F. Set splash pans under downspouts. Secure in place with ________

SECTION 078400
FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping systems

B. Firestopping of joints and penetrations in fire-resistance-rated and smoke resistant assemblies, whether indicated on drawings or not, and other openings indicated

1.02 REFERENCE STANDARDS

A. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements, 2009 (Reapproved 2016)

B. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials, 2022

C. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems, 2023a

D. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems, 2015 (Reapproved 2019)

E. ASTM E2307 - Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus, 2023b

F. ASTM E2837 - Standard Test Method for Determining the Fire Resistance of Continuity Head of Wall Joint Systems Installed between Rated Wall Assemblies and Nonrated Horizontal Assemblies, 2023a

G. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi, 2015, with Editorial Revision (2021)

H. ITS (DIR) - Directory of Listed Products, Current Edition

I. FM (AG) - FM Approval Guide, Current Edition.

J. UL 1479 - Standard for Fire Tests of Penetration Firestops, Current Edition, Including All Revisions

K. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems, Current Edition, Including All Revisions

L. UL (DIR) - Online Certifications Directory, Current Edition.

M. UL (FRD) - Fire Resistance Directory, Current Edition

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Schedule of Firestopping. List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number

C. Product Data Provide data on product characteristics, performance ratings, and limitations.

1.04 QUALITY ASSURANCE

A. Fire Testing Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated

1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report

1.05 FIELD CONDITIONS

A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.

B. Provide ventilation in areas where solvent-cured materials are being installed

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Firestopping Manufacturers

1. 3M Fire Protection Products ____ www.3m.com/firestop/#sle
2. A/D Fire Protection Systems Inc ____ www.adfire.com/#sle
3. CEMCO, HOTROD Type-X Compressible Firestopping www.cemcosteel.com/#sle.
4. Fire Shield LLC, Barn-Ring www.fireshieldlv.com/#sle
5. HoldRite, a Brand of Reliance Worldwide Corporation, HydroFlame www.holdrite.com/#sle
6. Nelson FireStop Products ____ www.nelsonfirestop.com/#sle
7. Passive Fire Protection Partners, Firestop 3600EX www.firestop.com/#sle
8. RectorSeal, a CSW Industrials Company, Metacaulk 150+ General Purpose Firestop Sealant www.rectorseal.com/firestop-solutions/#sle
9. Tremco Commercial Sealants & Waterproofing, TREMstop Acrylic www.tremcosealants.com/#sle
10. Substitutions See Section 016000 - Product Requirements

B. Acoustical Smoke Protection Gasket Manufacturers

1. Substitutions See Section 016000 - Product Requirements

2.02 MATERIALS

A. Firestopping Materials. Any materials meeting requirements

B. Mold and Mildew Resistance. Provide firestopping materials with mold and mildew resistance rating of zero(0) in accordance with ASTM G21

C. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories. Provide type of materials as required for tested firestopping assembly

D. Fire Ratings Refer to drawings for required systems and ratings.

2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS

A. Perimeter Fire Containment Firestopping. Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly

1. Movement Provide systems that have been tested to show movement capability as indicated
2. Temperature Rise Provide systems that have been tested to show T Rating as indicated
3. Air Leakage Provide systems that have been tested to show L Rating as indicated
4. Where floor assembly is not required to have a fire rating, provide systems that have been tested to show L Rating as indicated

B. Head-of-Wall (HW) Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non Rated Horizontal Assemblies. Use system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of wall assembly

1. Movement Provide systems that have been tested to show movement capability as indicated

C. Floor-to-Floor (FF), Floor-to-Wall (FW), Head-of-Wall (HW), and Wall-to-Wall (WW) Joints, Except Perimeter, Where Both Are Fire-Rated. Use system that has been tested according to ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs

1. Movement Provide systems that have been tested to show movement capability as indicated
2. Air Leakage Provide systems that have been tested to show L Rating as indicated
3. Watertightness. Provide systems that have been tested to show W Rating as indicated
4. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing

D. Through Penetration Firestopping. Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly

1. Temperature Rise Provide systems that have been tested to show T Rating as indicated
2. Air Leakage Provide systems that have been tested to show L Rating as indicated
3. Watertightness. Provide systems that have been tested to show W Rating as indicated.
4. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing

E. Acoustically Rated Firestopping Provide system tested in accordance with ASTM E90 with STC rating of 50, minimum

2.04 FIRESTOPPING SYSTEMS

A. Firestopping Any material meeting requirements

1. Fire Ratings. Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify openings are ready to receive the work of this section

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material

B. Remove incompatible materials that could adversely affect bond

C. Install backing materials to prevent liquid material from leakage

3.03 INSTALLATION

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings

B. Do not cover installed firestopping until inspected by Owner's Independent Testing Agency

C. Do not cover installed firestopping until inspected by authorities having jurisdiction

D. Install labeling required by code

3.04 CLEANING

A. Clean adjacent surfaces of firestopping materials

3.05 PROTECTION

A. Protect adjacent surfaces from damage by material installation

SECTION 079200
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants

B. Self-leveling pourable joint sealants

C. Joint backings and accessories

1.02 REFERENCE STANDARDS

A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer, 2015 (Reapproved 2022)

B. ASTM C834 - Standard Specification for Latex Sealants, 2017 (Reapproved 2023)

C. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications, 2022

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants, 2018

E. ASTM C1193 - Standard Guide for Use of Joint Sealants, 2016 (Reapproved 2023)

F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants, 2022

G. ASTM D2240 - Standard Test Method for Rubber Property—Durometer Hardness, 2015 (Reapproved 2021)

H. SCAQMD 1168 - Adhesive and Sealant Applications, 1989, with Amendment (2022)

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data. Submit manufacturer's technical datasheets for each product to be used, include the following

1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability
2. List of backing materials approved for use with the specific product.
3. Backing material recommended by sealant manufacturer
4. Substrates that product is known to satisfactorily adhere to and with which it is compatible
5. Substrates the product should not be used on.
6. Substrates for which use of primer is required
7. Installation instructions, including precautions, limitations, and recommended backing materials and tools.

C. Product Data for Accessory Products. Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools

D. Color Cards for Selection. Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection

E. Samples for Verification. Where custom sealant color is specified, obtain directions from Architect and submit at least two physical samples for verification of color of each required sealant.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Spray-Applied Sealants

B. Nonsag Sealants.

1. Bostik Inc ____ www.bostik-us.com/#sle
2. Dow ____ www.dow.com/#sle
3. Master Builders Solutions ____ www.master-builders-solutions.com/en-us/#sle
4. Pecora Corporation, ____ www.pecora.com/#sle
5. QUIKRETE Companies, ____ www.quikrete.com/#sle
6. Sherwin-Williams Company, ____ www.sherwin-williams.com/#sle
7. Sika Corporation ____ www.usa.sika.com/#sle
8. Tremco Commercial Sealants & Waterproofing ____ www.tremcosealants.com/#sle
9. W. R. Meadows, Inc, ____ www.wrmeadows.com/#sle

C. Self-Leveling Sealants

1. Bostik Inc ____ www.bostik-us.com/#sle
2. Dayton Superior Corporation, ____ www.daytonsuperior.com/#sle
3. Dow ____ www.dow.com/#sle
4. Master Builders Solutions ____ www.master-builders-solutions.com/en-us/#sle
5. Pecora Corporation, ____ www.pecora.com/#sle
6. QUIKRETE Companies, ____ www.quikrete.com/#sle
7. Sherwin-Williams Company ____ www.sherwin-williams.com/#sle
8. Sika Corporation ____ www.usa.sika.com/#sle
9. Tremco Commercial Sealants & Waterproofing ____ www.tremcosealants.com/#sle
10. W. R. Meadows, Inc ____ www.wrmeadows.com/#sle
11. Substitutions See Section 016000 - Product Requirements

2.02 JOINT SEALANT APPLICATIONS

A. Scope

1. Exterior Joints.
   a. Do not seal exterior joints unless indicated on drawings as sealed
   b. Seal open joints except open joints indicated on drawings as not sealed
   c. Seal the following joints
      1) Wall expansion and control joints
      2) Joints between doors, windows, and other frames or adjacent construction
      3) Joints between different exposed materials
2. Interior Joints.
   a. Do not seal interior joints indicated on drawings as not sealed
   b. Seal the following joints
      1) Joints between door frames and window frames and adjacent construction
      2) In sound-rated wall and ceiling assemblies, seal joints between wall assemblies and ceiling assemblies, between wall assemblies and other construction, between ceiling assemblies and other construction
3. Do Not Seal
   a. Intentional weep holes in masonry
   b. Joints indicated to be covered with expansion joint cover assemblies
   c. Joints where sealant is specified to be furnished and installed by manufacturer of product to be sealed
   d. Joints where sealant installation is specified in other sections
   e. Joints between suspended ceilings and walls

B. Exterior Joints. Use nonsag nonstaining silicone sealant, unless otherwise indicated.

1. Lap Joints in Sheet Metal Fabrications Butyl rubber, noncuring
2. Lap Joints between Manufactured Metal Panels Butyl rubber, noncuring
3. Control and Expansion Joints in Concrete Paving Self-leveling polyurethane traffic-grade sealant

C. Interior Joints. Use nonsag polyurethane sealant, unless otherwise indicated

1. Wall and Ceiling Joints in Nonwet Areas Acrylic emulsion latex sealant
2. Wall and Ceiling Joints in Wet Areas Nonsag polyurethane sealant for continuous liquid immersion
3. Type ___ - Floor Joints in Wet Areas. Nonsag polyurethane non-traffic-grade sealant suitable for continuous liquid immersion
4. Wall, Ceiling, and Floor Joints Where Tamper-Resistance is Required. Non-sag tamper-resistant silyl-terminated polyurethane sealant
5. Joints between Tile in Wet Areas and Floors, Walls, and Ceilings. Mildew-resistant silicone sealant, white
6. In Sound-Rated Assemblies Acrylic emulsion latex sealant.
7. Narrow Control Joints in Interior Concrete Slabs Self-leveling epoxy sealant
8. Other Floor Joints Self-leveling polyurethane traffic-grade sealant

D. Interior Wet Areas Bathrooms, restrooms, kitchens, and food processing areas; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, other similar items, and ______

E. Sound-Rated Assemblies. Walls and ceilings identified as STC-rated, sound rated, or acoustical

F. Areas Where Tamper-Resistance is Required As indicated on drawings.

2.03 JOINT SEALANTS - GENERAL

A. Sealants and Primers Provide products having lower volatile organic compound (VOC) content than indicated in SCAQMD 1168

B. Colors As selected by architect from standard colors

2.04 NONSAG JOINT SEALANTS

A. Nonstaining Silicone Sealant. ASTM C920, Grade NS, Uses M and A, not expected to withstand continuous water immersion or traffic

1. Movement Capability Plus and minus 35 percent, minimum.
2. Nonstaining to Porous Stone. Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248
3. Dirt Pick-Up. Reduced dirt pick-up compared to other silicone sealants
4. Hardness Range 15 to 35, Shore A, when tested in accordance with ASTM C661
5. Color To be selected by Architect from manufacturer's standard range
6. Cure Type Single-component, neutral moisture curing
7. Service Temperature Range Minus 20 to 180 degrees F (Minus 29 to 82 degrees C)

B. Mildew-Resistant Silicone Sealant ASTM C920, Grade NS, Uses M and A, single component, mildew resistant, not expected to withstand continuous water immersion or traffic.

1. Color White
2. Products
   a. Adfast USA Inc, ADSEAL KB 4500 Series www.adfastcorp.com/#sle
   b. Pecora Corporation, Pecora 898 NST (Non-Staining Technology) www.pecora.com/#sle
   c. Sika Corporation, Sikasil GP www.usa.sika.com/#sle
   d. Substitutions See Section 016000 - Product Requirements

C. Tamper-Resistant, Silyl-Terminated Polyurethane (STPU) Sealant ASTM C920, Grade NS, Uses M and A, single component, not expected to withstand continuous water immersion or traffic.

1. Movement Capability Plus and minus 50 percent, minimum
2. Hardness Range 25 to 30, Shore A, when tested in accordance with ASTM C661
3. Color To be selected by Architect from manufacturer's standard range
4. Service Temperature Range Minus 40 to 180 degrees F (Minus 40 to 82 degrees C)
5. Products
   a. Pecora Corporation, DynaTrol I-XL Hybrid www.pecora.com/#sle
   b. Sika Corporation, SikaHyflex 150 LM www.usa.sika.com/#sle
   c. Substitutions See Section 016000 - Product Requirements

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D. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 35 percent, minimum.
2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
3. Color: To be selected by Architect from manufacturer's standard range.
4. Service Temperature Range: Minus 40 to 180 degrees F (Minus 40 to 82 degrees C).
5. Products:
   a. Master Builders Solutions; MasterSeal NP1: www.master-builders-solutions.com/en-us/#sle.
   b. Pecora Corporation; DynaTrol I: www.pecora.com/#sle.
   c. Sherwin-Williams Company; Stampede-1/-1X Polyurethane Sealant: www.sherwin-williams.com/#sle.
   d. Sika Corporation; Sikaflex-1a: www.usa.sika.com/#sle.
   e. Tremco Commercial Sealants & Waterproofing; Dymonic 100: www.tremcosealants.com/#sle.
   f. W. R. Meadows, Inc; POURTHANE NS: www.wrmeadows.com/#sle.
   g. Substitutions: See Section 016000 - Product Requirements.

E. Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; single or multicomponent; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface.
1. Movement Capability: Plus and minus 35 percent, minimum.
2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
3. Color: To be selected by Architect from manufacturer's standard range.
4. Service Temperature Range: Minus 40 to 180 degrees F (Minus 40 to 82 degrees C).
5. Products:
   a. Sika Corporation; Sikaflex-1a: www.usa.sika.com/#sle.
   b. Substitutions: See Section 016000 - Product Requirements.

F. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, nonstaining, nonbleeding, nonsagging; not intended for exterior use.
1. Color: To be selected by Architect from manufacturer's standard range.
2. Grade: ASTM C834, Grade 0 Degrees F (Minus 18 Degrees C).
3. Products:
   a. Franklin International, Inc; Titebond Acoustical Smoke & Sound Sealant: www.titebond.com/#sle.
   b. Hilti, Inc; CP 506 Smoke and Acoustical Sealant: www.us.hilti.com/#sle.
   c. RectorSeal, a CSW Industrials Company; Metacaulk Smoke and Acoustic 90 (SAS 90): www.rectorseal.com/firestop-solutions/#sle.
   d. Specified Technologies Inc; Smoke N' Sound Acoustical Sealant: www.stifirestop.com/#sle.
   e. Substitutions: See Section 016000 - Product Requirements.

G. Noncuring Butyl Sealant: Solvent-based, single component, nonsag, nonskinning, nonhardening, nonbleeding; nonvapor permeable; intended for fully concealed applications.
1. Products:
   a. Pecora Corporation; Pecora BA-98 Non-Skinning Butyl Sealant: www.pecora.com/#sle.
   b. Tremco Commercial Sealants & Waterproofing; Acoustical/Curtainwall Sealant: www.tremcosealants.com/#sle.
   c. Substitutions: See Section 016000 - Product Requirements.

2.04 SELF-LEVELING JOINT SEALANTS

A. Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion.
1. Movement Capability: Plus and minus 25 percent, minimum.
2. Hardness Range: 35 to 55, Shore A, when tested in accordance with ASTM C661.
3. Color: To be selected by Architect from manufacturer's standard range.
4. Service Temperature Range: Minus 40 to 180 degrees F (Minus 40 to 82 degrees C).
5. Products:
   a. Pecora Corporation; _____: www.pecora.com/#sle.
   b. Sherwin-Williams Company; Stampede 1SL Polyurethane Sealant: www.sherwin-williams.com/#sle.
   c. Sika Corporation; Sikaflex-1c SL: www.usa.sika.com/#sle.
   d. Substitutions: See Section 016000 - Product Requirements.

B. Self-Leveling Polyurethane Sealant for Continuous Water Immersion: Polyurethane; ASTM C920, Grade P, Uses M and A; single component; explicitly approved by manufacturer for traffic exposure and continuous water immersion.
1. Movement Capability: Plus and minus 25 percent, minimum.
2. Hardness Range: 35 to 55, Shore A, when tested in accordance with ASTM C661.
3. Color: Gray.
4. Service Temperature Range: Minus 40 to 180 degrees F (Minus 40 to 82 degrees C).
5. Products:
   a. Sika Corporation; Sikaflex-1c SL: www.usa.sika.com/#sle.
   b. W. R. Meadows, Inc; POURTHANE SL: www.wrmeadows.com/#sle.
   c. Substitutions: See Section 016000 - Product Requirements.

C. Semi-Rigid Self-Leveling Epoxy Joint Filler: Epoxy or epoxy-polyurethane copolymer; intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
1. Composition: Multicomponent, 100 percent solids by weight.
2. Durometer Hardness: Minimum of 85 for Type A or 35 for Type D, after seven days when tested in accordance with ASTM D2240.
3. Color: Concrete gray.
4. Joint Width, Minimum: 1/8 inch (3 mm).
5. Joint Depth: Provide product suitable for joints from 1/8 inch (3 mm) to 2 inches (51 mm) in depth including space for backer rod.
6. Products:
   a. Adhesives Technology Corporation; CRACKBOND JF-90 HD: www.atcepoxy.com/#sle.
   b. Dayton Superior Corporation; _____: www.daytonsuperior.com/#sle.
   c. Euclid Chemical Company; EUCO 700: www.euclidchemical.com/#sle.
   d. Mapei; Mapeflex Joint Sealant EP 90/50: www.mapei.com/#sle.
   e. Substitutions: See Section 016000 - Product Requirements.

2.06 ACCESSORIES

A. Sealant Backing Materials, General: Materials placed in joint before applying sealants; assists sealant performance and service life by developing optimum sealant profile and preventing three-sided adhesion; type and size recommended by sealant manufacturer for compatibility with sealant, substrate, and application.
B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
C. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.
D. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.
B. Verify that backing materials are compatible with sealants.
C. Verify that backer rods are of the correct size.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.
B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.
E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in an inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
B. Provide joint sealant installations complying with ASTM C1193.
C. Install acoustical sealant application work in accordance with ASTM C919.
D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
E. Install bond breaker backing tape where backer rod cannot be used.
F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
I. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

DIVISION 08 - OPENINGS

SECTION 081113
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated hollow metal doors and frames.
B. Hollow metal frames for wood doors.
C. Fire-rated hollow metal doors and frames.
D. Thermally insulated hollow metal doors with frames.
E. Hollow metal borrowed lites glazing frames.
F. Accessories, including glazing, louvers, and matching panels.

1.02 RELATED REQUIREMENTS

A. Section 087100 - Door Hardware.
B. Section 088000 - Glazing: Glass for doors and borrowed lites.
C. Section 099123 - Interior Painting: Field painting.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2024.
C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2023.
D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2020.
E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2023, with Editorial Revision.
G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2023.
H. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.
I. ASTM C476 - Standard Specification for Grout for Masonry; 2023.
J. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
K. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.
L. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
M. ITS (DIR) - Directory of Listed Products; Current Edition.
N. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
O. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
P. NAAMM HMMA 840 - Guide Specifications for Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2024.
Q. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.
R. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2022.
S. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives; 2022.
T. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2022.
U. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2023.
V. UL (DIR) - Online Certifications Directory; Current Edition.
W. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
X. UL 1784 - Standard for Air Leakage Tests of Door Assemblies; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.
B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.
C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.
D. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Hollow Metal Doors and Frames:
1. Ceco Door, an Assa Abloy Group company; _____: www.assaabloydss.com/#sle.
2. Curries, an Assa Abloy Group company; _____: www.assaabloydss.com/#sle.
3. Mesker, dormakaba Group; FDJ Series Drywall Frames: www.meskeropeningsgroup.com/#sle.
4. Premier Steel Doors and Frames; F Series Commercial Frames: www.trustpremier.com/#sle.
5. Republic Doors, an Allegion brand; _____: www.republicdoor.com/#sle.
6. Steelcraft, an Allegion brand; _____: www.allegion.com/#sle.
7. Substitutions: See Section 016000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

A. Requirements for Hollow Metal Doors and Frames:
1. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
2. Accessibility: Comply with ICC A117.1 and ADA Standards.
3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
4. Door Edge Profile: Manufacturers standard for application indicated.
5. Typical Door Face Sheets: Flush.
6. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturer's standard.
7. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
8. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
   a. Based on SDI Standards: Provide at least A40/ZF120 (galvannealed) when necessary; coating not required for typical interior door applications, and at least A60/ZF180 (galvannealed) for corrosive locations.

B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

A. Door Finish: Factory primed and field finished.
B. Exterior Doors: Thermally insulated.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
   a. Level 2 - Heavy-duty.
   b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
   c. Model 1 - Full Flush.
   d. Door Face Metal Thickness: 18 gauge, 0.042 inch (1.0 mm), minimum.
2. Door Thickness: 1-3/4 inches (44.5 mm), nominal.

C. Interior Doors, Non-Fire-Rated:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
   a. Level 2 - Heavy-duty.
   b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
   c. Model 1 - Full Flush.
   d. Door Face Metal Thickness: 18 gauge, 0.042 inch (1.0 mm), minimum.
2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
3. Door Thickness: 1-3/4 inches (44.5 mm), nominal.

D. Fire-Rated Doors:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
   a. Level 2 - Heavy-duty.
   b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
   c. Model 1 - Full Flush.
   d. Door Face Metal Thickness: 18 gauge, 0.042 inch (1.0 mm), minimum.
2. Fire Rating: As indicated on Door Schedule, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
3. Provide units listed and labeled by UL (DIR) or ITS (DIR).
   a. Attach fire rating label to each fire rated unit.
4. Smoke and Draft Control Doors (Indicated with letter "S" on Drawings and/or Door Schedule): Self-closing or automatic closing doors in accordance with NFPA 80 and NFPA 105, with fire-resistance-rated wall construction rated the same or greater than the fire-rated doors, and the following:
   a. Maximum Air Leakage: 3.0 cfm/sq ft (0.02 cu m/s/sq m) of door opening at 0.10 inch w.g. (24.9 Pa) pressure, when tested in accordance with UL 1784 at both ambient and elevated temperatures.
   b. Gasketing: Provide gasketing or edge sealing as necessary to achieve leakage limit.
   c. Label: Include the "S" label on fire-rating label of door.
5. Door Core Material: Manufacturers standard core material/construction in compliance with requirements.
6. Door Thickness: 1-3/4 inches (44.5 mm), nominal.

2.04 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
B. Frame Finish: Factory primed and field finished.
C. Exterior Door Frames: Full profile/continuously welded type.
1. Frame Metal Thickness: 18 gauge, 0.042 inch (1.0 mm), minimum.
2. Frame Finish: Factory primed and field finished.
3. Weatherstripping: Separate, see Section 087100.

D. Interior Door Frames, Non-Fire-Rated: Full profile/continuously welded type.
1. Terminated Stops: Provide at interior doors; closed end stop terminated 6 inch (150 mm), maximum, above floor at 45 degree angle.
2. Frame Finish: Factory primed and field finished.

E. Door Frames, Fire-Rated: Full profile/continuously welded type.
1. Fire Rating: Same as door, labeled.
2. Terminated Stops: Provide at interior doors; closed end stop terminated 6 inch (150 mm), maximum, above floor at 45 degree angle.
3. Frame Metal Thickness: 18 gauge, 0.042 inch (1.0 mm), minimum.

F. Frames for Wood Doors: Comply with frame requirements in accordance with corresponding door.
G. Mullions for Pairs of Doors: Fixed, with profile similar to jambs.
H. Borrowed Lites Glazing Frames: Construction and face dimensions to match door frames, and as indicated on drawings.
I. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
J. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches (102 mm) high to fill opening without cutting masonry units.
K. Frames Wider than 48 inches (1219 mm): Reinforce with steel channel fitted tightly into frame head, flush with top.

2.05 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
B. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15 mil, 0.015 inch (0.4 mm) dry film thickness (DFT) per coat; provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
1. Fire Rated Frames: Comply with fire rating requirements indicated.

2.06 ACCESSORIES

A. Louvers: Roll formed steel with overlapping frame; finish same as door components; factory-installed.
1. In Fire-Rated Doors: UL (DIR) or ITS (DIR) listed fusible link louver, same rating as door.
2. Style: Standard straight slat blade.
3. Fasteners: Exposed or concealed fasteners.

B. Door Window Frames: Door window frames with glazing securely fastened within door opening.
1. Size: As indicated on drawings.
2. Frame Material: 18 gauge, 0.0478 inch (1.21 mm), galvanized steel.
3. Metal Finish: Gray polyester powder coating.
4. Glazing: 1/4 inch (6.4 mm) thick, tempered glass, in compliance with requirements of authorities having jurisdiction.

C. Glazing: As specified in Section 088000, factory installed.
D. Removable Stops: Formed sheet steel, shape as indicated on drawings, mitered or butted corners; prepared for countersink style tamper proof screws.
E. Astragals and Edges for Double Doors: Pairs of door astragals, and door edge sealing and protection devices.
1. UL listed products in compliance with requirements of authorities having jurisdiction.
2. Provide surface mounted astragal to cover or fill space for full door height between pair of doors or door and adjacent jamb.
3. Astragal Type: Split, two parts, and with automatic locking cutouts for other door hardware, and sealing gasket.
4. Edge Type: Beveled edge.
5. Material: Aluminum.
6. Metal Finish: Gray powder coating.
7. Provide non-corroding fasteners at exterior locations.

F. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches (102 mm) as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.
G. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
H. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.
C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
B. Install fire rated units in accordance with NFPA 80.
C. Coordinate frame anchor placement with wall construction.
D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
E. Install door hardware as specified in Section 087100.
F. Touch up damaged factory finishes.

3.04 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
B. Maximum Diagonal Distortion: 1/16 inch (1.6 mm) measured with straight edge, corner to corner.

3.05 ADJUSTING

A. Adjust for smooth and balanced door movement.

SECTION 081116
ALUMINUM DOORS AND FRAMES

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 088000 - Glazing: Glazing materials for aluminum doors and frames.

1.02 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2020.
B. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
E. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
F. ITS (DIR) - Directory of Listed Products; Current Edition.
G. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2022.
H. UL (DIR) - Online Certifications Directory; Current Edition.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.
B. Product Data: Manufacturer's descriptive literature for each type of door; include information on fabrication methods.
C. Shop Drawings: Include elevations of each opening type.

PART 2 PRODUCTS

2.01 DOORS AND FRAMES

A. Accessibility: Comply with ICC A117.1 and ADA Standards.
B. Flush Aluminum Doors with Fiberglass Reinforced Plastic (FRP) Face Sheets: Aluminum internal framing; no steel components.
1. Thickness: 1-3/4 inches (44 mm).
2. Aluminum Finish: Class I - Natural anodized.
3. Facing: Seamless, ultraviolet stabilized laminated FRP sheet.
   a. Sheet Thickness: 0.12 inch (3 mm), minimum.
   b. Texture - FRP: Pebble grain.
   c. Surface Burning Characteristics: Flame spread index (FSI) of 0 to 25, Class A, and smoke developed index (SDI) of 450 or less when tested in accordance with ASTM E84.
   d. Provide products that meet USDA requirements for incidental food contact.
   e. Color - FRP: Architect to select from manufacturer's colors.
4. Weatherstripping: Replaceable pile type, at jambs and head of exterior doors.

C. Aluminum Monumental Stile and Rail Doors: Extruded aluminum, alloy 6063-T6 temper, with 1/8 inch (3.2 mm) minimum wall thickness with mid rail, and having full width galvanized steel 3/8 inch (9.5 mm) tie rods.
1. Thickness: 1-3/4 inches (44 mm), nominal.
2. Top Rail Height: 6-1/2 inches (165 mm), nominal.
3. Mid-Rail Height: 6-1/2 inch (165 mm), nominal.
4. Finish: Class I - Natural anodized.
5. Texture: Smooth.
6. Insulated Panels: 1 inch (25.4 mm) thick insulated infill panel with face sheet material to match door stiles and rails.

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26215 TROWBRIDGE ST
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Project
CITY OF INKSTER
CULTURAL
CENTER

Seal

Sheet Title
SPECIFICATIONS

Project Number: 24157

Sheet Number: A-007

7 Glazing Sealed insulating units 1 inch (25 4 mm) thick made of clear 1/4 inch (6 mm) thick fully tempered glass
8 Glazing Clear 1/4 inch (6 mm) thick fully tempered glass
9 Glazing See Section 088000

D Aluminum Frames for Doors, Sidelights or Transoms Extruded aluminum non-thermally broken hollow or C-shaped sections no steel components
1 Frame Depth 4-1/4 inches (108 mm)
2 Frame Depth To fit wall thicknesses as indicated on drawings
3 Frames for Fire-Rated Doors Specified Elsewhere Tested in accordance with NFPA 252 listed and labeled by UL (DIR) ITS (DIR) or testing agency acceptable to authorities having jurisdiction
4 Finish Same as doors
5 Weatherstripping Replaceable pile type at jambs and head
6 Sidelight/Transom Glazing Sealed insulating glass units, 1 inch (25 mm) overall thickness with two panes of clear 1/4 inch (6 mm) thick fully tempered glass
7 Sidelight/Transom Glazing Clear single pane of 1/4 inch (6 mm) thick fully tempered glass
8 Sidelight/Transom Glazing See Section 088000

E Dimensions and Shapes As indicated on drawings dimensions indicated are nominal
1 Provide the following clearances
a Hinge and Lock Stiles 1/8 inch (3 2 mm)
b Between Meeting Stiles 1/4 inch (6 4 mm)
c At Top Rail and Bottom Rail 1/8 inch (3 2 mm)

2.02 COMPONENTS

A Flush Door Panels Without visible seams on face sheet
1 Framing and Hardware Backup Extruded aluminum tubing 1/8 inch (3 2 mm) minimum thickness
2 Perimeter Edges Extruded aluminum cap
3 Laminating Adhesive Manufacturer's standard low VOC materials

B Frames Extruded aluminum shapes not less than 0 062 inch (1 6 mm) thick, reinforced at hinge and strike locations
1 Corner Brackets Extruded aluminum, fastened with stainless steel screws
2 Trim Extruded aluminum, not less than 0 062 inch (1 6 mm) thick removable snap-in type without exposed fasteners

2.03 FINISHES

A Class I Natural Anodized Finish Clear anodic coating AAMA 611 AA-M12C22A41 minimum dry film thickness (DFT) of 0 7 mils 0 0007 inch (0 018 mm)

2.04 ACCESSORIES

A Fasteners Aluminum, non-magnetic stainless steel or other material warranted by manufacturer as non-corrosive and compatible with aluminum components
B Brackets and Reinforcements Manufacturer's high strength aluminum units where feasible otherwise non-magnetic stainless steel or steel hot-dip galvanized in compliance with ASTM A123/A123M
C Bituminous Coating Cold-applied asphaltic mastic compounded for 30-mil (0 76 mm) thickness per coat

PART 3 EXECUTION

3.01 INSTALLATION

A Install doors and frames in accordance with manufacturer's instructions and approved shop drawings
B Set frames plumb square level and aligned to receive doors Anchor frames to adjacent construction in strict accordance with manufacturer's recommendations and within specified tolerances
C Where aluminum surfaces contact metals other than stainless steel, zinc, or small areas of white bronze protect from direct contact by painting dissimilar metal with heavy coating of bituminous paint
D Hang doors and adjust hardware to achieve specified clearances and proper door operation
E Comply with glazing installation requirements See Section 088000

SECTION 083100
ACCESS DOORS AND PANELS

PART 1 GENERAL

1.01 SUBMITTALS

A See Section 013000 - Administrative Requirements for submittal procedures
B Product Data Provide sizes types finishes, hardware scheduled locations and details of adjoining work

PART 2 PRODUCTS

2.01 ACCESS DOORS AND PANELS ASSEMBLIES

2.02 WALL- AND CEILING-MOUNTED ACCESS UNITS

A Wall- and Ceiling-Mounted Units Factory fabricated door and frame fully assembled units with corner joints welded filled and ground flush square and without rack or warp coordinate requirements with type of installation assembly being used for each unit
1 Material Steel
2 Style Exposed frame with door surface flush with frame surface
a Gypsum Board Mounting Criteria Use drywall bead type frame
3 Door Style Single thickness with rolled or turned in edges
4 Frames 16-gauge 0 0598 inch (1 52 mm) minimum thickness
5 Heavy Duty Frames 14-gauge 0 0747 inch (1 90 mm) minimum thickness
6 Single Steel Sheet Door Panels 16-gauge 0 0625 inch (1 6 mm) minimum thickness
7 Steel Finish Primed
8 Primed and Factory Finish Polyester powder coat color as selected by Architect from manufacturer's standard colors
9 Hardware
a Hinges for Non-Fire-Rated Units Concealed constant force closure spring type
b Handle Fixed
c Latch/Lock Screw driver slot for quarter turn cam latch

PART 3 EXECUTION

3.01 INSTALLATION

A Install units in accordance with manufacturer's instructions
B Install frames plumb and level in openings and secure units rigidly in place
C Position units to provide convenient access to concealed equipment when necessary

SECTION 084313
ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire Profiles and Tubes 2021
B ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars Rods Wire Profiles and Tubes (Metric) 2021
C ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows Skylights Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen, 2019
D ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014 (Reapproved 2021)

1.02 SUBMITTALS

A See Section 013000 Administrative Requirements for submittal procedures
B Product Data Provide component dimensions, describe components within assembly anchorage and fasteners glass and infill, door hardware and internal drainage details

PART 2 PRODUCTS

2.01 ALUMINUM-FRAMED STOREFRONT

A Aluminum-Framed Storefront Factory fabricated factory finished aluminum framing members with infill, and related flashings anchorage and attachment devices
1 Glazing Position Centered (front to back)
2 Finish Superior performing organic coatings
a Factory finish all surfaces that will be exposed in completed assemblies
b Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges
c Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint
3 Finish Color As selected by Architect from manufacturer's standard line
4 Fabrication Joints and corners flush, hairline, and weatherproof, accurately fitted and secured prepared to receive anchors and hardware fasteners and attachments concealed from view reinforced as required for imposed loads
5 Construction Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces
6 System Internal Drainage Drain to the exterior by means of a weep drainage network any water entering joints condensation occurring in glazing channel, and migrating moisture occurring within system
7 Expansion/Contraction Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F (95 degrees C) over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements
8 Movement Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals
9 Perimeter Clearance Minimize space between framing members and adjacent construction while allowing expected movement

B Performance Requirements
1 Wind Loads Design and size components to withstand the specified load requirements without damage or permanent set when tested in accordance with ASTM E330/E330M using loads 1 5 times the design wind loads and 10 second duration of maximum load
a Member Deflection Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials
2 Air Leakage 0 06 cfm/sq ft (0 3 L/sec sq m) maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1 57 psf (75 Pa) pressure difference

2.02 COMPONENTS

A Aluminum Framing Members Tubular aluminum sections thermally broken with interior section insulated from exterior drainage holes and internal weep drainage system
1 Glazing Stops Flush

2.03 MATERIALS

A Extruded Aluminum ASTM B221 (ASTM B221M)
B Fasteners Stainless steel
C Glazing Gaskets Type to suit application to achieve weather, moisture, and air infiltration requirements

PART 3 EXECUTION

3.01 INSTALLATION

A Install wall system in accordance with manufacturer's instructions
B Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities
C Provide alignment attachments and shims to permanently fasten system to building structure
D Align assembly plumb and level free of warp or twist Maintain assembly dimensional tolerances, aligning with adjacent work
E Provide thermal isolation where components penetrate or disrupt building insulation
F Install sill flashings Turn up ends and edges, seal to adjacent work to form water tight dam
G Where fasteners penetrate sill flashings make watertight by seating and sealing fastener heads to sill flashing
H Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier
I Touch-up minor damage to factory applied finish, replace components that cannot be satisfactorily repaired

SECTION 085113
ALUMINUM WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

A Extruded aluminum windows with fixed sash, operating sash, and infill panels
B Factory glazing
C Operating hardware
D Insect screens

1.02 REFERENCE STANDARDS

A AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors and Skylights 2022 with Errata (2023)
B AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020
C ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars Rods Wire Profiles and Tubes 2021
D ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars Rods, Wire Profiles and Tubes (Metric) 2021

1.03 SUBMITTALS

A See Section 013000 - Administrative Requirements for submittal procedures
B Product Data Include component dimensions, information on glass and glazing, internal drainage details, and descriptions of hardware and accessories
C Shop Drawings Indicate opening dimensions elevations of different types framed opening tolerances, anchorage locations and installation requirements
D Grade Substantiation Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade
1 Evidence of AAMA Certification
2 Evidence of WDMA Certification
3 Evidence of CSA Certification
4 Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction

PART 2 PRODUCTS

2.01 MANUFACTURERS

A Aluminum Window Manufacturers
1 Boyd Aluminum, _____ www boydaluminum com/#sle
2 TRACO; _____ www traco com/#sle

2.02 BASIS OF DESIGN - AW PERFORMANCE CLASS WINDOWS

A Grade AAMA/WDMA/CSA 101/I S 2/A440 having Performance Class of AW and Performance Grade at least as high as specified design pressure
B Fixed Thermally-Broken
1 Basis of Design Kawneer, OptiQ AA 5440 Series 4-5/8" deep frame thermally broken www kawneer us

2.03 ALUMINUM WINDOWS

A Aluminum Windows Extruded aluminum frame and sash factory fabricated factory finished, with operating hardware, related flashings and anchorage and attachment devices
1 Frame Depth 4-5/8" inch (___ mm)
2 Fabrication Joints and corners flush hairline, and weatherproof accurately fitted and secured prepared to receive anchors fasteners and attachments concealed from view reinforced as required for operating hardware and imposed loads
3 Perimeter Clearance Minimize space between framing members and adjacent construction while allowing expected movement
4 Movement Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals
5 System Internal Drainage Drain to the exterior by means of a weep drainage network any water entering joints condensation occurring in glazing channel and migrating moisture occurring within system

2.04 MATERIALS

A Extruded Aluminum ASTM B221 (ASTM B221M), 6063 alloy, T6 temper

2.05 FINISHES

A Class I Color Anodized Finish AAMA 611 AA-M10C21A44 Black, integrally colored anodic coating not less than 0 7 mil (0 018 mm) thick
B Finish Color As selected by Architect from manufacturer's standard range

PART 3 EXECUTION

3.01 EXAMINATION

A Verify that wall openings and adjoining water-resistive barrier materials are ready to receive aluminum windows; see Section 072500

3.02 PRIME WINDOW INSTALLATION

A Install windows in accordance with manufacturer's instructions
B Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities
C Align window plumb and level free of warp or twist Maintain dimensional tolerances and alignment with adjacent work
D Install sill and sill end angles
E Provide thermal isolation where components penetrate or disrupt building insulation Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier
F Install operating hardware not pre-installed by manufacturer

SECTION 086200
UNIT SKYLIGHTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A Skylights with integral frame
B Operating mechanism

1.02 RELATED REQUIREMENTS

A Section 055000 Metal Fabrications Miscellaneous steel framing for rough opening
B Section 061000 Rough Carpentry Wood support curbs
C Section 076200 - Sheet Metal Flashing and Trim Skylight counterflashing

1.03 REFERENCE STANDARDS

A AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows Doors and Skylights 2022 with Errata (2023)
B AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document), 2015
C ASHRAE Std 90 1 I-P - Energy Standard for Buildings Except Low-Rise Residential Buildings, Most Recent Edition Adopted by Authority Having Jurisdiction Including All Applicable Amendments and Supplements
D ASTM B221 - Standard Specification for Aluminum and Aluminum Alloy Extruded Bars Rods, Wire Profiles and Tubes, 2021
E ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars Rods Wire Profiles and Tubes (Metric) 2021
F ASTM E2112 - Standard Practice for Installation of Exterior Windows, Doors and Skylights 2019
G ICC (IBC) - International Building Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements

1.04 SUBMITTALS

A See Section 013000 - Administrative Requirements for submittal procedures
B Product Data Include structural thermal and daylighting performance values
C Shop Drawings Indicate configurations, dimensions locations, fastening methods and installation details
D Grade Substantiation Prior to submitting shop drawings or starting fabrication submit one of the following showing compliance with specified grade
1 Evidence of AAMA Certification
2 Evidence of WDMA Certification
3 Evidence of CSA Certification
4 Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction
E Manufacturer's Installation Instructions Indicate special procedures
F Manufacturer's qualification statement
G Installer's qualification statement
H Specimen warranty

1.05 QUALITY ASSURANCE

A Manufacturer Qualifications Company specializing in manufacturing the products specified in this section with not less than three years documented experience
B Installer Qualifications Company specializing in performing work of the type specified and with at least three years documented experience

1.06 WARRANTY

A See Section 017800 - Closeout Submittals for additional warranty requirements
B Manufacturer Warranty Provide five-year manufacturer warranty including coverage for leakage due to defective skylight materials or construction Complete forms in Owner's name and register with manufacturer

PART 2 PRODUCTS

2.01 MANUFACTURERS

A Unit Skylights
1 Se
2 Substitutions See Section 016000 - Product Requirements

2.02 SKYLIGHTS

A Skylights Factory-assembled glazing in aluminum frame free of visual distortion and weathertight
1 Shape Circular dome
2 Glazing Single
3 Operation Operable for ventilation
4 Nominal Size As indicated on drawings

2.03 PERFORMANCE REQUIREMENTS

A Provide unit skylights that comply with the following
1 Grade AAMA/WDMA/CSA 101/I S 2/A440 requirements for specific skylight type
2 Allow for expansion and contraction within system components caused by a cycling surface temperature range of 170 degrees F (95 degrees C) without causing detrimental effects to system or components
3 Energy Code Compliance Comply with ICC (IBC) ASHRAE Std 90 1 I-P, or the authorities having jurisdiction as required for unit skylights

2.04 DESIGN CRITERIA

A Unit Skylight Design Design and size components to withstand dead loads and live loads caused by snow, hail, and positive and negative wind loads acting on skylight unit without damage or permanent set
1 Regulatory Requirements Comply with applicable code criteria for loads including seismic loads

2.05 COMPONENTS

A Single Glazing Low-e glass clear transparent
B Frames ASTM B221 ASTM B221M Extruded aluminum thermally broken reinforced and welded corner joints, integral curb frame mounting flange and counterflashing to receive roofing flashing system, with integral condensation collection gutter, glazing retainer, clear anodized finish

2.06 ACCESSORIES

A Counterflashings Same metal type and finish as skylight frame
B Protective Back Coating Zinc molybdate alkyd
C Sealant Elastomeric silicone or polyurethane compatible with material being sealed

PART 3 EXECUTION

3.01 EXAMINATION

A Verify existing conditions before starting work
B Verify that openings and substrate conditions are ready to receive work of this section
C Verify that curbs installed under other sections are complete

3.02 PREPARATION

A Apply protective back coating on aluminum surfaces of skylight units that will be in contact with cementitious materials or dissimilar metals

3.03 INSTALLATION

A Install unit skylights in accordance with manufacturer's instructions and ASTM E2112
B Install aluminum curb assembly fastening securely to roof decking flash curb assembly into roofing system
C Install skylight units and mount securely to curb assembly, install counterflashing as required
D Apply sealant to achieve watertight assembly

3.04 CLEANING

A Upon completion of installation thoroughly clean skylight aluminum surfaces in accordance with AAMA 609 & 610
B Remove protective material from prefinished aluminum surfaces
C Wash down exposed surfaces, wipe surfaces clean
D Remove excess sealant

SECTION 087100
DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A Hardware for wood aluminum hollow metal and FRP doors
B Hardware for fire-rated doors
C Electrically operated and controlled hardware
D Thresholds
E Weatherstripping and gasketing

1.02 RELATED REQUIREMENTS

A Section 281000 - Access Control Electronic access control devices

1.03 REFERENCE STANDARDS

Sidock Group
ARCHITECTS • ENGINEERS • CONSULTANTS
Corporate Headquarters
[illegible] Grand River Ave
Novi Michigan 48374
Ph (248) 349-4500 Fax (248) 349-1-[illegible]
Novi Wyandotte Muskegon
Lansing Gaylord Sault [illegible] Marie
[illegible] PA Tampa FL

Client
CITY OF INKSTER
26215 TROWBRIDGE ST
INKSTER, MI 48141

Project
CITY OF INKSTER
CULTURAL
CENTER

Seal

Drawn
Checked

Sheet Title
SPECIFICATIONS

Project Number 24157

Sheet Number A-008

A. BHMA (CPD) - Certified Products Directory, Current Edition
B. BHMA A156.1 - Standard for Butts and Hinges 2021
C. BHMA A156.2 - Bored and Preassembled Locks and Latches 2022
D. BHMA A156.3 - Exit Devices 2020
E. BHMA A156.4 - Door Closers and Pivots 2024
F. BHMA A156.6 - Standard for Architectural Door Trim 2021
G. BHMA A156.7 - Template Hinge Dimensions 2016
H. BHMA A156.13 - Mortise Locks & Latches Series 1000 2022
I. BHMA A156.14 - Sliding and Folding Door Hardware 2024
J. BHMA A156.16 - Standard for Auxiliary Hardware 2023
K. BHMA A156.18 - Standard for Materials and Finishes 2020
L. BHMA A156.20 - Standard for Strap and Tee Hinges, and Hasps 2021
M. BHMA A156.21 - Thresholds 2019
N. BHMA A156.22 - Standard for Gasketing 2021
O. BHMA A156.26 - Standard for Continuous Hinges 2021
P. BHMA A156.28 - Standard for Recommended Practices for Mechanical Keying Systems 2023
Q. BHMA A156.31 - Electric Strikes and Frame Mounted Actuators 2024
R. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames 2016
S. BHMA A156.115W - Hardware Preparation in Wood Doors with Wood or Steel Frames 2006
T. DHI (H&S) - Sequence and Format for the Hardware Schedule 2014
U. DHI (KSN) - Keying Systems and Nomenclature 2019
V. ITS (DIR) - Directory of Listed Products, Current Edition
W. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction Including All Applicable Amendments and Supplements
X. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022
Y. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives 2022
Z. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies 2022
AA. UL (DIR) - Online Certifications Directory, Current Edition
BB. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies, Current Edition, Including All Revisions

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.
B. Preinstallation Meeting: Convene a preinstallation meeting one week prior to commencing work of this section; attendance is required by affected installers and the following:
 1. Architect
 2. Installer's Architectural Hardware Consultant (AHC)
 3. Hardware Installer
 4. Owner's Security Consultant
C. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.
D. Keying Requirements Meeting:
 1. Schedule meeting at project site prior to Contractor occupancy
 2. Attendance Required
 3. Agenda:
  a. Establish keying requirements.
  b. Verify locksets and locking hardware are functionally correct for project requirements.
  c. Verify that keying and programming complies with project requirements.
  d. Establish keying submittal schedule and update requirements.
 4. Incorporate "Keying Requirements Meeting" decisions into keying submittal upon review of door hardware keying system including, but not limited to, the following:
  a. Access control requirements.
  b. Key control system requirements.
  c. Schematic diagram of preliminary key system.
  d. Flow of traffic and extent of security required.
 5. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.
 6. Deliver established keying requirements to manufacturers.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.
B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.
C. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
 1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
 2. Comply with DHI (H&S) using door numbers and hardware set numbers as indicated in construction documents.
 3. List groups and suffixes in proper sequence.
 4. Provide complete description for each door listed.
D. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
 1. Submit manufacturer's parts lists and templates.
E. Keying Schedule:
 1. Submit three (3) copies of Keying Schedule in compliance with requirements established during Keying Requirements Meeting unless otherwise indicated.

PART 2 PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.
B. Provide individual items of single type, of same model, and by same manufacturer.
C. Provide door hardware products that comply with the following requirements:
 1. Applicable provisions of federal, state, and local codes.
 2. Fire-Rated Doors: NFPA 80, listed and labeled by qualified testing agency for fire protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.
 3. Hardware on Fire-Rated Doors: Listed and classified by UL (DIR), ITS (DIR), testing firm acceptable to authorities having jurisdiction, or ____ as suitable for application indicated.
 4. Listed and certified compliant with specified standards by BHMA (CPD).
 5. Straps and Tee Hinges: BHMA A156.20.
 6. Hardware Preparation for Steel Doors and Steel Frames: BHMA A156.115.
 7. Hardware Preparation for Wood Doors with Wood or Steel Frames: BHMA A156.115W.
 8. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified.
D. Electrically Operated and/or Controlled Hardware: Provide necessary power supplies, power transfer hinges, relays, and interfaces as required for proper operation; provide wiring between hardware and control components and to building power connection in compliance with NFPA 70.
 1. See Section 281000 for additional access control system requirements.

2.02 HINGES

A. Manufacturers:
 1. McKinney, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. Hager Companies: www.hagerco.com/#sle.
 3. Substitutions: See Section 016000 - Product Requirements.
B. Hinges: Comply with BHMA A156.1, Grade 1.
 1. Butt Hinges: Comply with BHMA A156.1 and BHMA A156.7 for templated hinges.
  a. Provide hinge width required to clear surrounding trim.
 2. Continuous Hinges: Comply with BHMA A156.26.
 3. Provide hinges on every swinging door.
 4. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
 5. Provide ball-bearing hinges at each door with closer.
 6. Provide power transfer hinges where electrified hardware is mounted in door leaf.
 7. Provide following quantity of butt hinges for each door:
  a. Doors up to 60 inches (1.5 m) High: Two hinges.
  b. Doors From 60 inches (1.5 m) High up to 90 inches (2.3 m) High: Three hinges.

2.03 TRACK AND HANGERS

A. Manufacturers:
 1. Accuride International Inc: 116RC Heavy-Duty Linear Track System: www.accuride.com/#sle.
 2. Hager Companies: www.hagerco.com/#sle.
 3. Substitutions: See Section 016000 - Product Requirements.
B. Sliding and Bifolding Door Hardware: Comply with BHMA A156.14.
 1. Provide track, hanger fasteners, guides, and pulls; size track and hangers in accordance with manufacturer's recommendations for weight of doors.
 2. Provide one pull for each pair of panels hinged together.

2.04 EXIT DEVICES

A. Manufacturers:
 1. Corbin Russwin, Sargent, or Yale, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. Detex Corporation: www.detex.com/#sle.
 3. dormakaba: 8000 Series: www.dormakaba.com/#sle.
 4. Substitutions: See Section 016000 - Product Requirements.
B. Exit Devices: Comply with BHMA A156.3, Grade 1.
 1. Lever design to match lockset trim.
 2. Provide cylinder with cylinder dogging or locking trim.
 3. Provide exit devices properly sized for door width and height.
 4. Provide strike as recommended by manufacturer for application indicated.
 5. Provide UL (DIR) listed exit device assemblies for fire-rated doors and panic device assemblies for non fire-rated doors.

2.05 ELECTRIC STRIKES

A. Manufacturers:
 1. Adams Rite, HES, or Securitron, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. Pamex, Inc. Electric Strikes: www.pamexinc.com/#sle.
B. Electric Strikes: Comply with BHMA A156.31, Grade 1.
 1. Provide UL (DIR) listed burglary-resistant electric strike, style to suit locks.
 2. Provide non-handed 24 VDC electric strike suitable for door frame material and scheduled lock configuration.
 3. Provide field selectable Fail Safe/Fail Secure modes.
 4. Provide transformer and rectifier as necessary for complete installation.
 5. Connect electric strikes into fire alarm where non-rated doors are scheduled to release with fire or sprinkler alarm condition.

2.06 LOCK CYLINDERS

A. Manufacturers:
 1. Best, dormakaba Group: www.bestaccess.com/#sle.
 2. Substitutions: See Section 016000 - Product Requirements.
B. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
 1. Provide cylinders from same manufacturer as locking device.
 2. Provide cams and/or tailpieces as required for locking devices.
 3. Where specific Door Sections, when provisions for lock cylinder are being referenced to this Section, provide specified lock cylinder and keyed to building keying system, unless otherwise indicated.

2.07 CYLINDRICAL LOCKS

A. Manufacturers:
 1. Corbin Russwin, Sargent, or Yale, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. Best, dormakaba Group: www.bestaccess.com/#sle.
 3. Schlage, an Allegion brand: www.allegion.com/us/#sle.
 4. Substitutions: See Section 016000 - Product Requirements.
B. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
 1. Bored Hole: 2-1/8 inch (54 mm) diameter.
 2. Latchbolt Throw: 1/2 inch (12.7 mm), minimum.
 3. Backset: 2-3/4 inch (70 mm) unless otherwise indicated.
 4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
  a. Finish: To match lock or latch.
 5. Provide a lock for each door, unless otherwise indicated that lock is not required.
 6. Provide an office lockset for swinging door where hardware set is not indicated.
 7. Trim: Provide lever handle or pull trim on outside of each lock, unless otherwise indicated.

2.08 MORTISE LOCKS

A. Manufacturers:
 1. Corbin Russwin, Sargent, or Yale, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. Best, dormakaba Group: www.bestaccess.com/#sle.
 3. Schlage, an Allegion brand: www.allegion.com/us/#sle.
 4. Substitutions: See Section 016000 - Product Requirements.
B. Mortise Locks: Comply with BHMA A156.13, Grade 1, Security, 1000 Series.
 1. Latchbolt Throw: 3/4 inch (19 mm), minimum.
 2. Deadbolt Throw: 1 inch (25.4 mm), minimum.
 3. Backset: 2-3/4 inch (70 mm) unless otherwise indicated.
 4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
  a. Finish: To match lock or latch.

2.09 DOOR PULLS AND PUSH PLATES

A. Manufacturers:
 1. Rockwood, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. Hager Companies: www.hagerco.com/#sle.
 3. Substitutions: See Section 016000 - Product Requirements.
B. Door Pulls and Push Plates: Comply with BHMA A156.6.
 1. Pull Type: Straight, unless otherwise indicated.
 2. Push Plate Type: Flat, with square corners, unless otherwise indicated.
  a. Edges: Beveled, unless otherwise indicated.
 3. Material: Aluminum, unless otherwise indicated.
 4. Provide door pulls and push plates on doors without a lockset, latchset, exit device, or auxiliary lock unless otherwise indicated.
 5. On solid doors, provide matching door pull and push plate on opposite faces.
 6. On glazed storefront doors, provide matching door pull/push plates on both faces unless otherwise indicated.

2.10 CLOSERS

A. Manufacturers, Surface Mounted:
 1. Corbin Russwin, Norton, Rixson, Sargent, or Yale, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. DORMA USA, Inc. 7400 Series, 8600 Series, 8900 Series, and TS93: www.dorma.com/#sle.
 3. Substitutions: See Section 016000 - Product Requirements.
B. Closers: Comply with BHMA A156.4, Grade 1.
 1. Type: Surface mounted to door.
 2. Provide door closer on each exterior door.
 3. Provide door closer on each fire-rated and smoke-rated door.
 4. At corridor entry doors, mount closer on room side of door.
 5. At outswinging exterior doors, mount closer on interior side of door.

2.11 KICK PLATES

A. Manufacturers:
 1. Hiawatha, Inc, an Activar Construction Products Group company: www.activarcpg.com/hiawatha/#sle.
 2. Ives, an Allegion brand: www.allegion.com/us/#sle.
B. Kick Plates: Provide along bottom edge of push side of every door with closer, except aluminum storefront and glass entry doors, unless otherwise indicated.
 1. Size: 8 inch (203 mm) high by 2 inch (51 mm) less door width (LDW) on push side of door.

2.12 DOOR HOLDERS

A. Manufacturers:
 1. McKinney or Rockwood, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. Hager Companies: www.hagerco.com/#sle.
B. Door Holders: Comply with BHMA A156.16, Grade 1.
 1. Type: Lever, or kick down stop, with rubber bumper at bottom end.
 2. Material: Aluminum.

2.13 FLOOR STOPS

A. Manufacturers:
 1. Rockwood, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. Hager Companies: www.hagerco.com/#sle.
 3. Substitutions: See Section 016000 - Product Requirements.
B. Floor Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
 1. Type: Manual hold-open, with pencil floor stop.
 2. Material: Aluminum housing with rubber insert.

2.14 WALL STOPS

A. Manufacturers:
 1. Rockwood, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. Hager Companies: www.hagerco.com/#sle.
 3. Substitutions: See Section 016000 - Product Requirements.
B. Wall Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
 1. Type: Bumper, concave, wall stop.
 2. Material: Aluminum housing with rubber insert.

2.15 THRESHOLDS

A. Manufacturers:
 1. Dunbarton Corporation: www.dunbarton.com/#sle.
 2. Pemko, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 3. Substitutions: See Section 016000 - Product Requirements.
B. Thresholds: Comply with BHMA A156.21.
 1. Provide threshold at interior doors for transition between two different floor types, and over building expansion joints, unless otherwise indicated.
 2. Provide threshold at each exterior door, unless otherwise indicated.
 3. Type: Flat surface.
 4. Material: Aluminum.
 5. Threshold Surface: Fluted horizontal grooves across full width.
 6. Field cut threshold to profile of frame and width of door sill for tight fit.
 7. Provide non-corroding fasteners at exterior locations.

2.16 WEATHERSTRIPPING AND GASKETING

A. Manufacturers:
 1. Pemko, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. Substitutions: See Section 016000 - Product Requirements.
B. Weatherstripping and Gasketing: Comply with BHMA A156.22.
 1. Head and Jamb Type: Adjustable.
 2. Door Sweep Type: Encased in retainer.
 3. Material: Aluminum, with brush weatherstripping.
 4. Provide gasketing for smoke and draft control doors (indicated as "S" on Drawings) that complies with local codes, requirements of assemblies tested in accordance with UL 1784.
 5. Provide frame applied intumescent gasketing on wood doors that are labeled as smoke and draft control doors (indicated as "S" on Drawings) unless otherwise indicated.
 6. Provide weatherstripping on each exterior door at head, jambs, and meeting stiles of door pairs, unless otherwise indicated.
 7. Provide door bottom sweep on each exterior door, unless otherwise indicated.
 8. Provide sound-rated gasketing and automatic door bottom on doors indicated as "Sound Rated", "Acoustical", or with "Sound Transmission Class (STC) rating"; fabricate as continuous gasketing, do not cut or notch gasketing material.

2.17 SILENCERS

A. Manufacturers:
 1. Ives, an Allegion brand: www.allegion.com/us/#sle.
 2. Rockwood, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 3. Substitutions: See Section 016000 - Product Requirements.
B. Silencers: Provide at equal locations on door frame to mute sound of door's impact upon closing.
 1. Single Door: Provide three on strike jamb of frame.
 2. Pair of Doors: Provide two on head of frame, one for each door at latch side.
 3. Material: Rubber, gray color.

2.18 KEY CONTROL SYSTEMS

A. Manufacturers:
 1. Sargent, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 2. Best, dormakaba Group: www.bestaccess.com/#sle.
 3. Substitutions: See Section 016000 - Product Requirements.
B. Key Control Systems: Comply with guidelines of BHMA A156.28.
 1. Provide keying information in compliance with DHI (KSN) standards.
 2. Keying: Grand master keyed.
 3. Include construction keying and control keying with removable core cylinders.
 4. Supply keys in following quantities:
  a. 1 each Grand Master keys.
  b. 6 each Construction Master keys.
  c. 15 each Construction keys.
  d. 2 each Construction Control keys.
  e. 2 each Control keys if core system.
 5. Key Management System: For each keyed lock on project, provide one set of consecutively numbered duplicate key tags with hanging hole and snap catch.
 6. Security Key Tags: For each keyed lock on project, provide one set of matching key tags for permanent attachment to one key of each set.
 7. Provide key collection envelopes, receipt cards, and index cards in quantity suitable to manage number of keys.
 8. Deliver keys with identifying tags to Owner by security shipment direct from hardware supplier.
 9. Permanent Keys and Cores: Stamped with applicable key marking for identification. Do not include actual key cuts within visual key control marks or codes. Stamp permanent keys "Do Not Duplicate."
 10. Owner or Owner's agent install permanent cores and return construction cores to hardware supplier. Construction cores and keys to remain property of hardware supplier.

2.19 KEY CABINET

A. Manufacturers:
 1. Knox Company: www.knoxbox.com/#sle.
 2. Substitutions: See Section 016000 - Product Requirements.
B. Key Cabinet: Sheet steel construction, piano hinged door with key lock; BHMA A156.28.
 1. Mounting: Wall-mounted.
 2. Capacity: Actual quantity of keys, plus 25 percent additional capacity.
 3. Size key hooks to hold 6 keys each.
 4. Finish: Baked enamel, manufacturer's standard color.
 5. Key cabinet lock to building keying system.

2.20 FINISHES

A. Finishes: Provide door hardware of same finish, unless otherwise indicated.
 1. Primary Finish: 625; bright chromium plated over nickel, with brass or bronze base material (former US equivalent US26); BHMA A156.18.
 2. Secondary Finish: 626; satin chromium plated over nickel, with brass or bronze base material (former US equivalent US26D); BHMA A156.18.
  a. Use secondary finish in kitchens, bathrooms, and other spaces containing chrome or stainless steel finished appliances, fittings, and equipment; provide primary finish on one side of door and secondary finish on other side if necessary.
 3. Exceptions:
  a. Where base material metal is specified to be different, provide finish that is an equivalent appearance in accordance with BHMA A156.18.
  b. Hinges for Fire-Rated Doors: Steel base material with painted finish, in compliance with NFPA 80.
  c. Door Closer Covers and Arms: Color as selected by Architect from manufacturer's standard colors unless otherwise indicated.
  d. Aluminum Surface Trim and Gasket Housings: Anodized to match door panel finish, not other hardware, unless otherwise indicated.
  e. Hardware for Aluminum Entrance Doors: Finished to match door panel finish, except all hand contact surfaces provide stainless steel with satin finish, unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.
B. Install hardware on fire-rated doors and frames in accordance with applicable codes and NFPA 80.
C. Install hardware for smoke and draft control doors in accordance with NFPA 105.
D. Use templates provided by hardware item manufacturer.
E. Do not install surface mounted items until application of finishes to substrate are fully completed.
F. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list, unless noted otherwise in Door Hardware Schedule or on drawings.
G. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

3.03 ADJUSTING

A. Adjust work under provisions of Section 017000 - Execution and Closeout Requirements.
B. Adjust hardware for smooth operation.
C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.04 CLEANING

A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.
B. Clean adjacent surfaces soiled by hardware installation.
C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

SECTION 088000
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.
B. Glazing units.

1.02 REFERENCE STANDARDS

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Project
CITY OF INKSTER
CULTURAL
CENTER

Seal

Sheet Title
SPECIFICATIONS

Project Number 24157
Sheet Number A-009

A 16 CFR 1201 - Safety Standard for Architectural Glazing Materials, Current Edition
B ANSI Z97 1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test, 2015 (Reaffirmed 2020)
C ASTM C1036 - Standard Specification for Flat Glass 2021
D ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018
E ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass, 2019
F ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass 2021a
G ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings 2016
H ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation 2019
I NFRC 100 - Procedure for Determining Fenestration Product U-factors 2023
J NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence 2023
K NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems 2023

PART 2 PRODUCTS

2.01 MANUFACTURERS

A Glass Fabricators
B Float Glass Manufacturers
1 Vitro Architectural Glass (formerly PPG Glass) www vitroglazings com/#sle
2 Substitutions See Section 016000 - Product Requirements
C Laminated Glass Manufacturers
1 Viracon Architectural Glass segment of Apogee Enterprises Inc, _____ www viracon com/#sle
2 Substitutions See Section 016000 - Product Requirements

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass
1 Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions and maximum lateral deflection of supported glass
2 Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load
3 Glass thicknesses listed are minimum
B Weather-Resistive Barrier Seals Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder and/or air barrier
1 In conjunction with weather barrier related materials described in other sections, as follows
C Thermal and Optical Performance Provide exterior glazing products with performance properties as indicated Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods
1 Center of Glass U-Value Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6 3 computer program
2 Center of Glass Solar Heat Gain Coefficient (SHGC) Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6 3 computer program
3 Solar Optical Properties Comply with NFRC 300 test method

2.03 GLASS MATERIALS

A Float Glass Provide float glass based glazing unless otherwise indicated
1 Annealed Type ASTM C1036 Type I Transparent Flat, Class 1 - Clear, Quality - Q3
2 Kind FT - Fully Tempered Type Complies with ASTM C1048
B Laminated Glass Float glass laminated in accordance with ASTM C1172
1 Laminated Safety Glass Complies with ANSI Z97 1 Class B or 16 CFR 1201 Category I impact test requirements

2.04 INSULATING GLASS UNITS

A Manufacturers
1 Vitro Architectural Glass (formerly PPG Glass), _____ www vitroglazings com/#sle
2 Substitutions See Section 016000 - Product Requirements
B Insulating Glass Units Types as indicated
1 Durability Certified by an independent testing agency to comply with ASTM E2190
2 Coated Glass Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass coated vision glass, Kind CV, coated overhead glass, Kind CO, or coated spandrel glass Kind CS
3 Metal-Edge Spacers Aluminum, bent and soldered corners
4 Spacer Color Black
5 Edge Seal
a Color Black
6 Purge interpane space with dry air, hermetically sealed
C Type IG-1 - Insulating Glass Units Vision glass double glazed
1 Applications Exterior glazing unless otherwise indicated
2 Space between lites filled with air
3 Outboard Lite Annealed float glass 1/4 inch (6 4 mm) thick minimum
a Tint Gray
b Coating Self-cleaning type on #1 surface
c Coating Low-E (passive type) on #2 surface
4 Inboard Lite Annealed float glass 1/4 inch (6 4 mm) thick minimum
a Tint Clear
5 Total Thickness 1 inch (25 4 mm)
6 Thermal Transmittance (U-Value) Summer - Center of Glass 0 27 nominal
7 Visible Light Transmittance (VLT) 21% percent, nominal
8 Solar Heat Gain Coefficient (SHGC) 0 23 nominal
9 Visible Light Reflectance Outside 12 percent, nominal
D Type IG-5 - Insulating Glass Units Safety glazing
1 Applications
a Glazed lites in exterior doors
b Glazed sidelights and panels next to doors
c Other locations required by applicable federal, state, and local codes and regulations
2 Space between lites filled with air
3 Glass Type Same as Type IG-1 except use fully tempered float glass for both outboard and inboard lites
4 Tint Gray
5 Total Thickness 1 inch (25 4 mm)
6 Metal edge spacer
7 Thermal Transmittance (U-Value) Summer - Center of Glass _____ nominal

2.05 BASIS OF DESIGN - INSULATING GLASS UNITS

A Basis of Design - Insulating Glass Units Vision glazing with low-e coating
1 Applications Exterior insulating glass glazing unless otherwise indicated
2 Space between lites filled with air
3 Total Thickness 1 inch (25 4 mm)
4 Thermal Transmittance (U-Value), Summer - Center of Glass _____, nominal
5 Coated Glass Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass coated vision glass Kind CV coated overhead glass Kind CO or coated spandrel glass Kind CS
6 Spacer Color Black
7 Edge Seal
8 Color Black
9 Purge interpane space with dry air, hermetically sealed

SECTION 089100
LOUVERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A Louvers, frames, and accessories

1.02 RELATED REQUIREMENTS

A Section 072500 - Weather Barriers Sealing frames to water-resistive barrier installed on adjacent construction
B Section 076200 - Sheet Metal Flashing and Trim
C Section 079200 - Joint Sealants Sealing joints between frames and adjacent construction
D Section 089200 - Louvered Equipment Enclosures
E Section 230943 - Pneumatic Control System for HVAC Actuators for operable louvers
F Section 233300 - Air Duct Accessories Fire/smoke dampers associated with exterior wall louvers
G Section 284600 - Fire Detection and Alarm Smoke control connection

1.03 REFERENCE STANDARDS

A AAMA 611 - Specification for Anodized Architectural Aluminum, 2024
B AMCA 500-L - Laboratory Methods of Testing Louvers for Rating, 2023
C AMCA 511 - Certified Ratings Program Product Rating Manual for Air Control Devices, 2021 with Editorial Revision (2022)
D ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate, 2021a

1.04 SUBMITTALS

A See Section 013000 - Administrative Requirements for submittal procedures
B Product Data Provide data describing design characteristics, maximum recommended air velocity, design free area, materials and finishes
C Shop Drawings Indicate louver layout plan and elevations, opening and clearance dimensions, and tolerances, head, jamb and sill details, blade configuration, screens, blank-off areas required, and frames
D Samples Submit two samples 2 by 2 inches (50 by 50 mm) in size illustrating finish and color of exterior and interior surfaces
E Test Reports Independent agency reports showing compliance with specified performance criteria
F Manufacturer's Certificate Certify that products meet or exceed specified requirements
G Maintenance Data Include lubrication schedules, adjustment requirements

1.05 QUALITY ASSURANCE

A Manufacturer Qualifications Company specializing in manufacturing products of the type specified in this section, with minimum three years of documented experience
B Installer Qualifications Company specializing in performing work of type specified and with at least three years of documented experience

1.06 WARRANTY

A See Section 017800 - Closeout Submittals for additional warranty requirements
B Provide five year manufacturer's warranty against distortion, metal degradation, and connection failures of louver components
1 Finish Include twenty year coverage against degradation of exterior finish

PART 2 PRODUCTS

2.01 MANUFACTURERS

A Louvers
1 Airolite Company LLC _____ www airolite com/#sle
2 Substitutions See Section 016000 - Product Requirements

2.02 LOUVERS

A Louvers Factory fabricated and assembled, complete with frame, mullions, and accessories AMCA Certified in accordance with AMCA 511
1 Wind Load Resistance Design to resist positive and negative wind load of 25 psf (of 1 2 kPa) without damage or permanent deformation
2 Intake Louvers Design to allow maximum of 0 01 oz/sq ft (3 1 g/sq m) water penetration at calculated intake design velocity based on design air flow and actual free area, when tested in accordance with AMCA 500-L
3 Drainable Blades Continuous rain stop at front or rear of blade aligned with vertical gutter recessed into both jambs of frame
4 Screens Provide insect screens at intake louvers and bird screens at exhaust louvers

2.03 MATERIALS

A Formed Aluminum Formed sheet, ASTM B209/B209M ____ alloy, ____ temper

2.04 FINISHES

A Class II Color Anodized Finish AAMA 611 AA M12C22A32 integrally colored anodic coating not less than 0 4 mils (0 01 mm) thick
B Color As indicated on drawings

2.05 ACCESSORIES

A Screens Frame of same material as louver, with reinforced corners, removable, screw attached, installed on inside face of louver frame
B Bird Screen Interwoven wire mesh of steel, 14 gauge, 0 0641 inch (1 63 mm) diameter wire 1/2 inch (13 mm) open weave, diagonal design
C Insect Screen 18 x 16 size aluminum mesh
D Fasteners and Anchors Galvanized steel
E Flashings Of same material as louver frame, formed to required shape, single length in one piece per location
F Head and Sill Flashings See Section 076200
G Sealant for Setting Sills and Sill Flashing Non-curing butyl type

PART 3 EXECUTION

3.01 EXAMINATION

A Verify that prepared openings and flashings are ready to receive this work and opening dimensions are as indicated on shop drawings
B Verify that field measurements are as indicated

3.02 INSTALLATION

A Install louver assembly in accordance with manufacturer's instructions
B Coordinate with installation of flashings by others
C Install louvers level and plumb
D Set sill members and sill flashing in continuous bead of sealant
E Align louver assembly to ensure moisture shed from flashings and diversion of moisture to exterior
F Secure louver frames in openings with concealed fasteners
G Coordinate with installation of mechanical ductwork
H Coordinate with installation of louver actuators

3.03 ADJUSTING

A Adjust operable louvers for freedom of movement of control mechanism Lubricate operating joints

3.04 CLEANING

A Strip protective finish coverings
B Clean surfaces and components

3.05 SCHEDULES

DIVISION 09 - FINISHES

SECTION 092116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A Performance criteria for gypsum board assemblies
B Metal stud wall framing
C Metal channel ceiling framing
D Resilient sound isolation clips
E Acoustic insulation
F Gypsum sheathing
G Cementitious backing board
H Gypsum wallboard
I Joint treatment and accessories
J Acoustic (sound-dampening) wall and ceiling board

1.02 RELATED REQUIREMENTS

A Section 072500 - Weather Barriers Water-resistive barrier over sheathing

1.03 REFERENCE STANDARDS

A AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing 2020
B AISI S240 - North American Standard for Cold-Formed Steel Structural Framing 2015 with Errata (2020)
C ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2023
D ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units 2023
E ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process 2023
F ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members 2015
G ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories 2020
H ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017 (Reapproved 2022)
I ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2023
J ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020
K ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2023
L ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base 2019
M ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing 2017
N ASTM C1280 - Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing 2018 (Reapproved 2023)
O ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units 2022, with Editorial Revision (2023)
P ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017
Q ASTM C1629/C1629M - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels 2023
R ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021
S ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023d
T ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2023
U ASTM E413 - Classification for Rating Sound Insulation 2022
V ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi 2015 with Editorial Revision (2021)
W GA-216 - Application and Finishing of Gypsum Panel Products 2021

1.04 SUBMITTALS

A See Section 013000 - Administrative Requirements for submittal procedures
B Product Data
1 Provide data on metal framing, gypsum board, accessories, and joint finishing system
2 Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements
C Steel Framing Industry Association (SFIA) Certification
1 Submit documentation that metal studs and connectors used on project meet or exceed requirements of International Building Code
2 Submit current documentation of contractor and fabricator accreditation Keep copies of each on-site during and after installation, and present upon request

1.05 QUALITY ASSURANCE

A Designer Qualifications Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located
B SFIA Code Compliance Certification Program www CFSteel org/#sle Use metal studs and connectors certified for compliance with International Building Code
C Professional Contractor and Truss Fabricator Qualifications SFIA-accredited contractor and fabricator www CFSteel org/#sle

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A Provide completed assemblies complying with ASTM C840 and GA-216
B Interior Partitions, Indicated as Acoustic Provide completed assemblies with the following characteristics
1 Acoustic Attenuation STC of 45-49 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90
C Grid Suspension Systems Provide grid suspension systems in accordance with ASTM C840 and GA-216 complying with the following
1 ICC-ES Evaluation Report No __________

2.02 METAL FRAMING MATERIALS

A Steel Sheet ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S220 or equivalent
B Manufacturers - Metal Framing, Connectors, and Accessories
1 ClarkDietrich ____ www clarkdietrich com/#sle
2 Jaimes Industries ____ www jamesind com/#sle
3 Steel Construction Systems, _______ www steelconsystems com/#sle
4 Substitutions See Section 016000 - Product Requirements
C Nonstructural Framing System Components AISI S220 galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf (L/120 at 240 Pa)
1 Studs C-shaped with knurled or embossed faces
2 Runners U shaped, sized to match studs
3 Ceiling Channels C-shaped
4 Furring Members Hat-shaped sections, minimum depth of 1 1/2 inches (22 mm)
a Products
1) Clark Dietrich www clarkdietrich com
2) Substitutions See Section 016000 - Product Requirements
5 Resilient Furring Channels Single or double leg configuration; 1/2 inch (13 mm) channel depth
a Products
1) ClarkDietrich; RC Deluxe Resilient Channel www clarkdietrich com/#sle
6 Resilient Sound Isolation Clips Steel resilient clips with molded rubber isolators, attaches to framing, improves noise isolation performance of wall and floor-ceiling assemblies
a Products
1) ClarkDietrich; Sound Clip (CDSC) www clarkdietrich com/#sle
2) Substitutions See Section 016000 - Product Requirements
D Partition Head To Structure Connections Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and screwed to secondary deflection channel set inside but unattached to top track
E Non structural Framing Accessories
1 Ceiling Hangers Type and size as specified in ASTM C754 for spacing required
2 Framing Connectors ASTM A653/A653M G90 galvanized steel clips, secures cold rolled channel to wall studs for lateral bracing
a Products
1) ClarkDietrich, FastBridge Clip (FB33) www clarkdietrich com/#sle
2) Substitutions See Section 016000 - Product Requirements
F Grid Suspension Systems Steel grid system of main tees and support bars connected to structure using hanging wire
1 Products
a CertainTeed Corporation ____ www certainteed com/ceilings-and-walls/#sle
b USG Corporation, Drywall Suspension System www usg com/#sle
c Substitutions See Section 016000 - Product Requirements

2.03 BOARD MATERIALS

A Manufacturers - Gypsum-Based Board
1 American Gypsum Company ____ www americangypsum com/#sle
2 CertainTeed Corporation ____ www certainteed com/#sle
3 Georgia-Pacific Gypsum, ____ www gpgypsum com/#sle
4 Gold Bond Building Products, LLC provided by National Gypsum Company ____ www goldbondbuilding com/#sle
5 USG Corporation ____ www usg com/#sle
6 Substitutions See Section 016000 - Product Requirements
B Gypsum Wallboard Paper-faced gypsum panels as defined in ASTM C1396/C1396M, sizes to minimize joints in place, ends square cut
1 Application Use for vertical surfaces and ceilings unless otherwise indicated
2 Thickness
a Vertical Surfaces 5/8 inch (16 mm)
b Ceilings 5/8 inch (16 mm)
C Abuse Resistant Wallboard
1 Application High-traffic areas indicated
2 Surface Abrasion Level 1, minimum, when tested in accordance with ASTM C1629/C1629M
3 Mold Resistance Score of 10, when tested in accordance with ASTM D3273
4 Type Fire-resistance-rated Type X, UL or WH listed
5 Thickness 5/8 inch (16 mm)
6 Edges Tapered
CI Backing Board For Wet Areas One of the following products
1 Application Surfaces behind tile in wet areas, including tub and shower surrounds and shower ceilings
2 Application Horizontal surfaces behind tile in wet areas including countertops and plumbing fixtures
3 Mold Resistance Score of 10, when tested in accordance with ASTM D3273
4 ANSI Cement-Based Board Non-gypsum-based, aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118 9 or ASTM C1325
a Thickness 5/8 inch (16 mm)
b Products
1) USG Corporation Fiberock Brand Aqua-Tough AR Interior Panels XRX-G 5/8 in (15 9 mm) www usg com/#sle

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SPECIFICATIONS

Project Number 24157

Sheet Number A-010

E Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
  1. Application: Ceilings, unless otherwise indicated.
  2. Thickness: 5/8 inch (___ mm).
  3. Edges: Tapered.
  4. Products:
     a. CertainTeed Corporation; Interior Ceiling Drywall: www.certainteed.com/#sle.
     b. Gold Bond Building Products, LLC provided by National Gypsum Company; Gold Bond High Strength LITE Gypsum Board: www.goldbondbuilding.com/#sle.
     c. USG Corporation; Sheetrock Brand UltraLight Panels 1/2 in. (12.7 mm): www.usg.com/#sle.
     d. Substitutions: See Section 016000 - Product Requirements.

F Acoustical Sound Dampening Wall and Ceiling Board: Two layers of heavy paper-faced, high-density gypsum board separated by a viscoelastic polymer layer and capable of achieving STC rating of 50 or more in typical stud wall assemblies as calculated in accordance with ASTM E413 and when tested in accordance with ASTM E90.
  1. Thickness: 5/8 inch (16 mm).
  2. Long Edges: Tapered.
  3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.

G Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.
  1. Application: Exterior sheathing, unless otherwise indicated.
  2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
  3. Fungal Resistance: No fungal growth when tested in accordance with ASTM G21.
  4. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
  5. Regular Board Thickness: 5/8 inch (16 mm).
  6. Edges: Square.

2.04 GYPSUM BOARD ACCESSORIES

A Acoustic Insulation: ASTM C665, preformed mineral fiber, friction fit type, unfaced. Thickness: 2 inches (50.8 mm).

B Fire and Sound Attenuating Insulation: Sprayed cellulose fire rated material for cavities in wall assemblies.
  1. Surface Burning Characteristics: Provide assemblies with Class I rating, when tested in accordance with ASTM E84.
  2. Sound Transmission Class (STC): 56, calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

C Sound Isolation Tape: Elastomeric foam tape for sound decoupling.
  1. Surface Burning Characteristics: Provide assemblies with flame spread index of 75 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
  2. Tape Thickness: 1/4 inch (6 mm).

D Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.

E Water-Resistive Barrier: See Section 072500.

F Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.
  1. Corner Beads: Low profile, for 90 degree outside corners.

G Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.

PART 3 EXECUTION

3.01 EXAMINATION

A Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

A Metal Framing: Install in accordance with ASTM C1007/AISI S220 and manufacturer's instructions.

B Suspended Ceilings and Soffits: Space framing and furring members as indicated.

C Studs: Space studs at 16 inches on center (at 406 mm on center).
  1. Extend partition framing to structure where indicated and to ceiling in other locations.
  2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
  3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.

D Standard Wall Furring: Install at concrete and masonry walls scheduled to receive gypsum board, not more than 4 inches (100 mm) from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches (600 mm) on center.

E Acoustic Furring: Install resilient channels at maximum 24 inches (600 mm) on center. Locate joints over framing members.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

A Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B Sound Isolation Tape: Apply to vertical studs and top and bottom track/runners in accordance with manufacturer's instructions.

C Acoustic Sealant: Install in accordance with manufacturer's instructions.

3.04 BOARD INSTALLATION

A Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.
  1. Paper-Faced Sheathing: Immediately after installation, protect from weather by application of water-resistive barrier.

C Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

3.05 JOINT TREATMENT

A Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
  1. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.

B Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
  1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).

SECTION 099113
EXTERIOR PAINTING

PART 2 PRODUCTS

1.01 PAINTS AND FINISHES - GENERAL

A Paints and Finishes: Ready mixed, unless required to be a field-catalyzed paint.
  1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  2. Supply each paint material in quantity required to complete entire project's work from a single production run.
  3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

PART 3 EXECUTION

2.01 PREPARATION

A Clean surfaces thoroughly and correct defects prior to application.

B Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

D Seal surfaces that might cause bleed through or staining of topcoat.

E Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

2.02 APPLICATION

A Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C Apply each coat to uniform appearance.

D Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

E Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

SECTION 099123
INTERIOR PAINTING

PART 2 PRODUCTS

1.01 PAINTS AND FINISHES - GENERAL

A Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
  1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  2. Supply each paint material in quantity required to complete entire project's work from a single production run.
  3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

PART 3 EXECUTION

2.01 PREPARATION

A Clean surfaces thoroughly and correct defects prior to application.

B Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D Seal surfaces that might cause bleed through or staining of topcoat.

2.02 APPLICATION

A Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C Apply each coat to uniform appearance in thicknesses specified by manufacturer.

D Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

E Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

DIVISION 10 - SPECIALTIES
SECTION 101419
DIMENSIONAL LETTER SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A Dimensional letter signage.

1.02 REFERENCE STANDARDS

A 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.

B ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

C ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.03 SUBMITTALS

A See Section 013000 - Administrative Requirements, for submittal procedures.

B Product Data: Manufacturer's product literature for each type of dimensional letter sign, indicating style, font, colors, locations, and overall dimensions of each sign.

C Shop Drawings:
  1. Include dimensions, locations, elevations, materials, text and graphic layout, and attachment details.

D Selection Samples: Where materials, colors, and finishes are not specified, submit two sets of selection charts or chips.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A Dimensional Letter Signs:
  1. Ark Ramos Signage System: www.arkramos.com.
  2. Substitutions: See Section 016000 - Product Requirements.

2.02 REGULATORY REQUIREMENTS

A Accessibility Requirements: Comply with ADA Standards and ICC A117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most restrictive requirements.

2.03 DIMENSIONAL LETTERS

A Application: Building identification.
  1. Use individual metal letters.
  2. Mounting Location: Exterior as indicated on drawings.

B Metal Letters:
  1. Material: Aluminum casting.
  2. Thickness: Manufacturer's standard for letter size.
  3. Letter Height: As indicated on drawings.
  4. Text and Typeface:
     a. Character Font: Helvetica, Arial, or other sans serif font.
     b. Character Case: Upper case only.
  5. Finish: As selected by Architect from manufacturer's full range.
  6. Color: As selected.
  7. Mounting: Concealed screws.

2.04 ACCESSORIES

A Concealed Screws: Noncorroding metal; stainless steel, galvanized steel, chrome plated, or other.

PART 3 EXECUTION

3.01 EXAMINATION

A Verify that substrate surfaces are ready to receive work.

B Notify Architect if conditions are not suitable for installation of signs; do not proceed until conditions are satisfactory.

3.02 INSTALLATION

A Install in accordance with manufacturer's instructions.

B Install with horizontal edges level.

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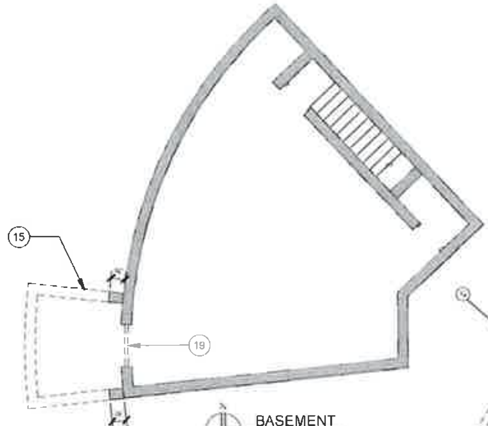
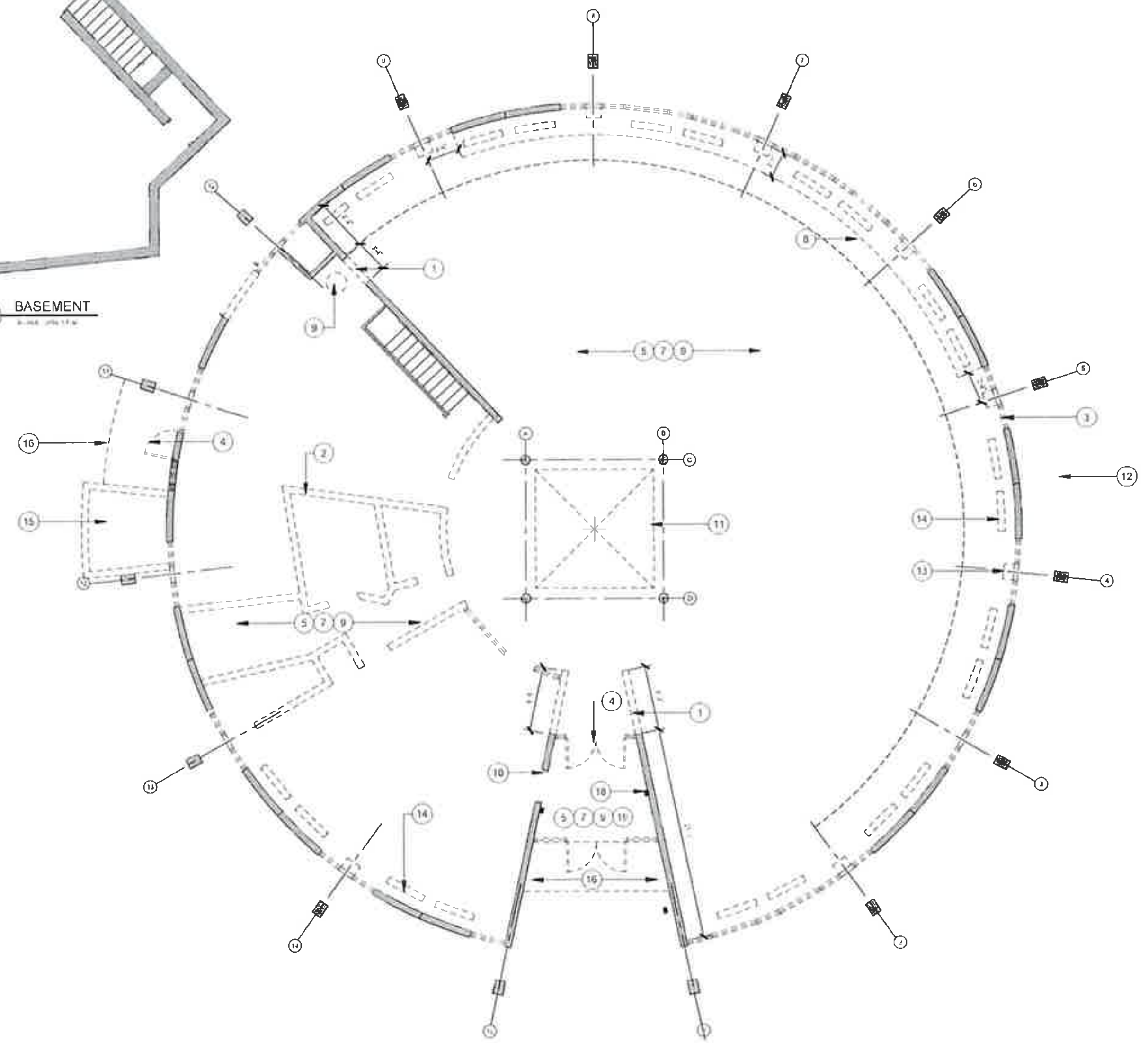
Sheet Title
SPECIFICATIONS

Project Number 24157

A-011



BASEMENT



DEMOLITION FLOOR PLAN

GENERAL DEMOLITION NOTES

A. COORDINATE ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DEMOLITION DRAWINGS ACCORDINGLY.

B. THESE DEMOLITION NOTES AND PLANS DO NOT FULLY REPRESENT ALL DEMOLITION WORK REQUIRED TO INSTALL NEW WORK IN ACCORDANCE WITH CONTRACT DOCUMENTS BUT ARE INTENDED TO SERVE AS GENERAL DEMOLITION GUIDELINES. REFER TO ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS OF INCIDENTAL DEMOLITION WORK NOT INDICATED ON THIS PLAN.

C. THE CONTRACTOR IS RESPONSIBLE FOR ALL ITEMS TO BE SALVAGED AND RELOCATED, INCLUDING SAFE STORAGE OF SAME. UPON DEMOLITION, THE OWNER SHALL RETAIN THOSE ITEMS DEEMED SALVAGEABLE. ITEMS NOT RETAINED SHALL BECOME THE PROPERTY OF THE CONTRACTOR WHO SHALL LEGALLY DISPOSE OF SAME.

D. WHERE ITEMS ARE REMOVED, PATCH SURFACES TO MATCH ADJACENT SURFACES OR NEW FINISHES WHERE SCHEDULED. PATCHING OF NEW OR EXISTING FINISHES SHALL EXTEND TO NEAREST NATURAL BREAK OR TERMINATION FOR A CLEAN UNBLEMISHED APPEARANCE AT THE END OF CONSTRUCTION.

E. DISCONNECT AND REMOVE ALL ITEMS AS INDICATED OR AS OTHERWISE REQUIRED TO CLEAR AREA FOR NEW WORK.

F. CONTRACTOR IS RESPONSIBLE FOR SAFETY ON THIS PROJECT (PROVIDE BARRICADES, WARNING SIGNS, ETC.).

G. PROVIDE ALL DUST CURTAINS AND TEMPORARY PARTITIONS AS REQUIRED TO PROTECT EXISTING BUILDING DURING CONSTRUCTION.

H. DEMOLITION SHALL INCLUDE BUT NOT BE LIMITED TO THIS SHEET. SEE ADDITIONAL SHEETS FOR FURTHER INFORMATION.

I. MECHANICAL DUCT WORK TO BE REMOVED. FILL OR REPAIR EXISTING MECHANICAL WALL OPENINGS AS REQUIRED. REFER TO MECHANICAL DRAWINGS FOR PLACEMENT OF NEW OR REUSED OPENINGS.

J. PLUMBING TO BE REMOVED TO CONCEALED AREA AND CAPPED. REFER TO ARCHITECTURAL & PLUMBING DRAWINGS FOR PLACEMENT OF NEW FIXTURES & DRAINS.

K. ALL ELECTRICAL FIXTURES, WIRING, CONDUIT AND HOUSINGS TO BE REMOVED BACK TO ELECTRICAL PANEL. REFER TO ARCHITECTURAL & ELECTRICAL DRAWINGS FOR PLACEMENT OF NEW FIXTURES, RECEPTACLES, SWITCHES, ETC.

L. EXISTING EPDM ROOF MEMBRANE TO BE REMOVED AND REPLACED. ASSESS CONDITION OF EXISTING INSULATION AND REMOVE AS REQUIRED.

DEMOLITION PLAN KEYNOTES:

(1) [illegible]
(2) [illegible]
(3) REMOVE ALL EXTERIOR WINDOWS
(4) [illegible]
(5) [illegible]
(6) REMOVE ALL INTERIOR WALLS, DOORS, FRAMES, FINISHED FLOOR, CEILING
(7) CUT & CAP EXISTING WATER, SANITARY LINES BELOW FLOOR (REFER TO PLUMBING DRAWINGS)
(8) SAWCUT CONCRETE SLAB (ASSUMED 4"-5") FOR NEW SANITARY LINE AND/OR NEW FLOOR. REFER TO MECH. AND STRUCT. DRAWINGS. NEW FLOOR IS INDICATED ON THE FLOOR PLAN
(9) REMOVE EXISTING HVAC AND ELECTRICAL AS INDICATED ON ELEC. & MECH. DRAWINGS
(10) REMOVE FRAME
(11) REMOVE SKYLIGHT IN ITS ENTIRETY
(12) [illegible]
(13) [illegible]
(14) CUT & CAP RADIANT HEAT PIPING- TYP. (REFER TO MECH DRAWINGS)
(15) REMOVE THE CONCRETE SHAFT AS INDICATED AND THE TOP STEEL GRILLE (REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS)
(16) REMOVE CONCRETE WALK
(17) NOT USED
(18) REMOVE CEILING
(19) REMOVE LOUVER AND ASSOCIATED DUCTWORK (REFER TO MECH. DRAWINGS)

LEGEND:

(symbol)	[illegible]
(symbol)	[illegible]
(symbol)	EXISTING WALL TO REMAIN

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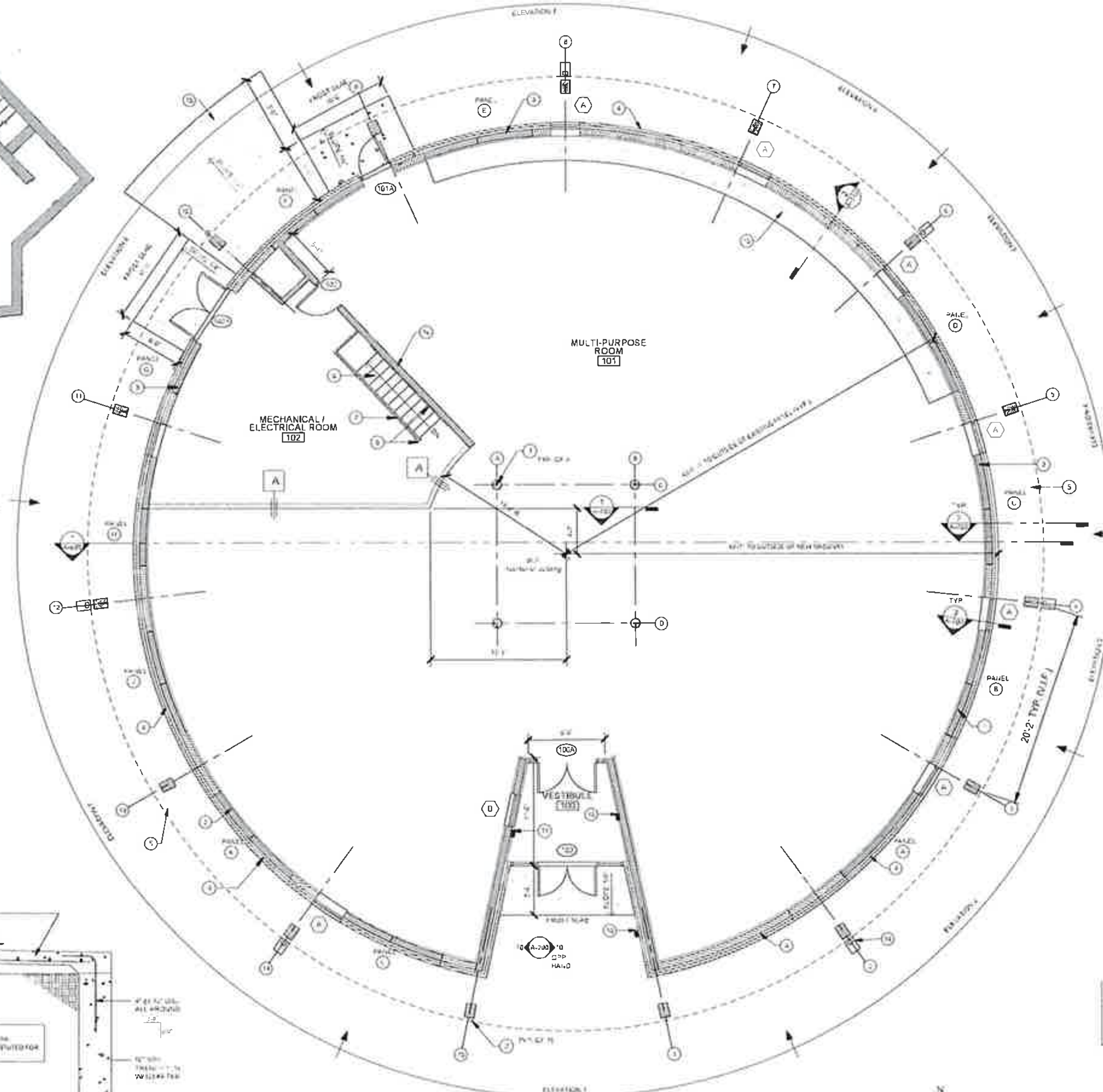
[illegible]	[illegible]
12-04-2024	OWNER REVIEW
[illegible]	[illegible]

Sheet Title
DEMOLITION PLAN

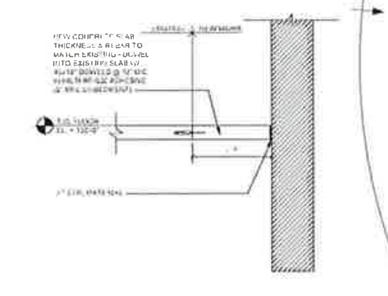
Project Number 24157

Sheet Number AD-110

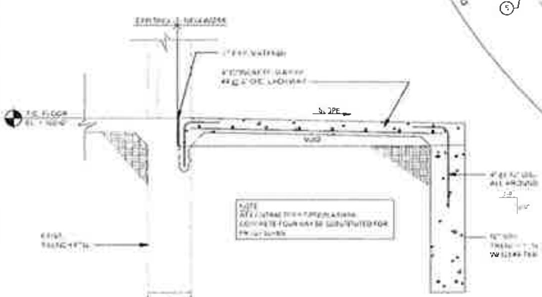
BASEMENT



FLOOR PLAN



NEW CONCRETE SLAB DETAIL



TYP. FROST SLAB DETAIL

LEGEND

- ELEVATION SYMBOL
- DOOR TAG (SEE DOOR TYPES & SCHEDULE SHEETS A-600 & A-601)
- EXISTING WALL/COLUMN
- NEW WALL
- DOOR

GENERAL NOTES

A. DIMENSION STRINGS ORIGINATE FROM THE WORK POINT IN THE CENTER OF THE BUILDING TO THE OUTSIDE EXTERIOR WALL FACE AND TO THE FACE OF STUD AT INTERIOR WALLS

B. SEE A-200 FOR EXTERIOR DOOR/WINDOW LOCATIONS

FLOOR PLAN NOTES

4. ... STUD FRAMING (TYP.)
5. LINE OF ROOF ABOVE
6. EXISTING STAIR TO REMAIN
7. NEW 42" H. GUARDRAIL (1 1/2" DIA. TYP.
9. NEW WINDOW SEE SHEET A-500
10. FUTURE ADA DOOR ACCESS SWITCH
11. FUTURE INTERCOM (BY OTHERS)
12. WATERPROOFING AT EXPOSED CONCRETE AND CMU WALL
13. INFILL OPENING WITH CMU (VERIFY WALL IN FIELD)
14. 4" PRE-FINISHED GUTTER AND SPLASH BLOCK (TYP. OF 7)
15. 6" CONCRETE SLAB (COORDINATE WITH MECH.
16. PROVIDE FIRE SAFING INSULATION & SEALANT @ TOP OF ENTIRE WALL

WALL TYPES

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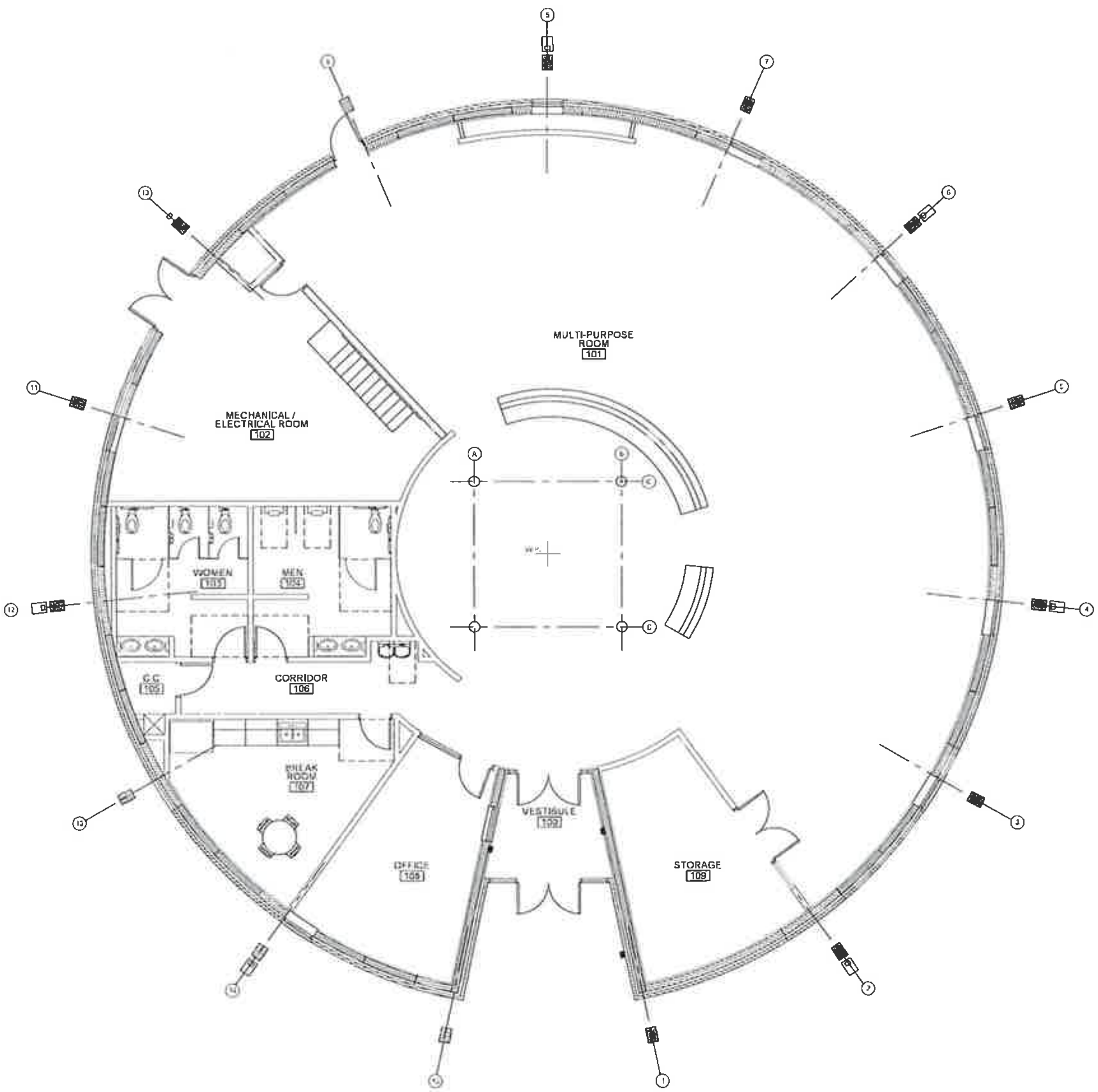
Sheet Title
FLOOR PLAN

Project Number 24157

Sheet Number A-110



FLOOR PLAN

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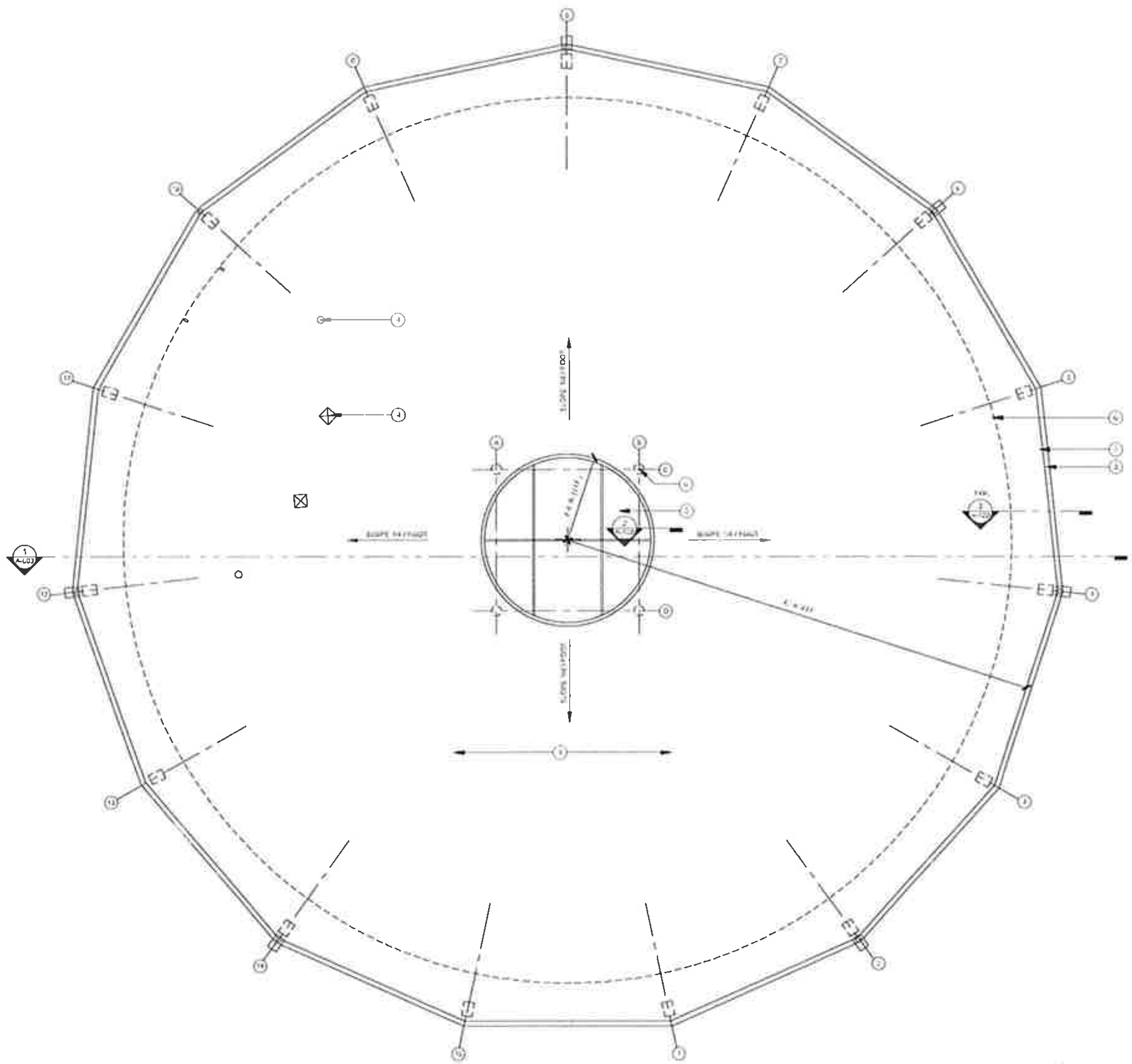
Sheet Title
FLOOR PLAN
PHASE 2

Project Number 24157

Sheet Number A-111



ROOF PLAN

LEGEND:

- ELEVATION SYMBOL
- BUILDING SECTION SYMBOL
- PLAN DETAIL SYMBOL
- KEYNOTE

GENERAL NOTES

A. DIMENSION STRINGS ORIGINATE FROM THE WORK POINT IN THE CENTER

B. SEE A/502 FOR WALL SECTIONS

C. REFER TO STRUCTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION/ ROOF PENETRATIONS. CONTRACTOR TO COORDINATE FINAL LOCATION WITH ALL TRADES.

ROOF PLAN NOTES

1. WHITE SINGLE-PLY ROOFING MEMBRANE ON 5" RIGID INSULATION (R-25) ON WATERPROOFING ON 1/2" OSB BOARD ON EXISTING CONCRETE ROOF DECK. ALL NEW WORK (FLASHING PENETRATIONS, ETC.) TO BE DONE BY APPROVED CONTRACTOR TO MAINTAIN WARRANTY

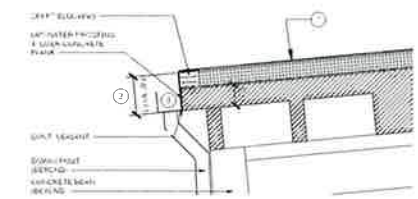
2. METAL FASCIA AND FLASHING @ PERIMETER OF ROOF, OVERLAP BLOCKING 4" MIN. (TYP.)

3. 6" PRE-FINISHED METAL GUTTER @ PERIMETER SEE SHEET —110 FOR DOWNSPOUT LOCATIONS.

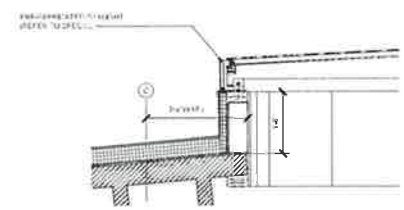
4. VENTS AND EXHAUST (REFER TO MECH.)

5. PRE-FINISHED SKYLIGHT ACURLITE ROUND STRUCTURAL SKYLIGHT OR APPROVED EQUAL, WHITE

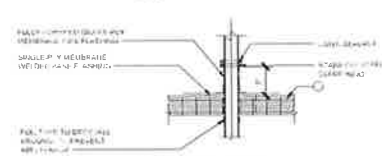
6. LINE OF WALL AND COLUMNS BELOW



FASCIA & GUTTER DETAIL



SKYLIGHT CURB DETAIL



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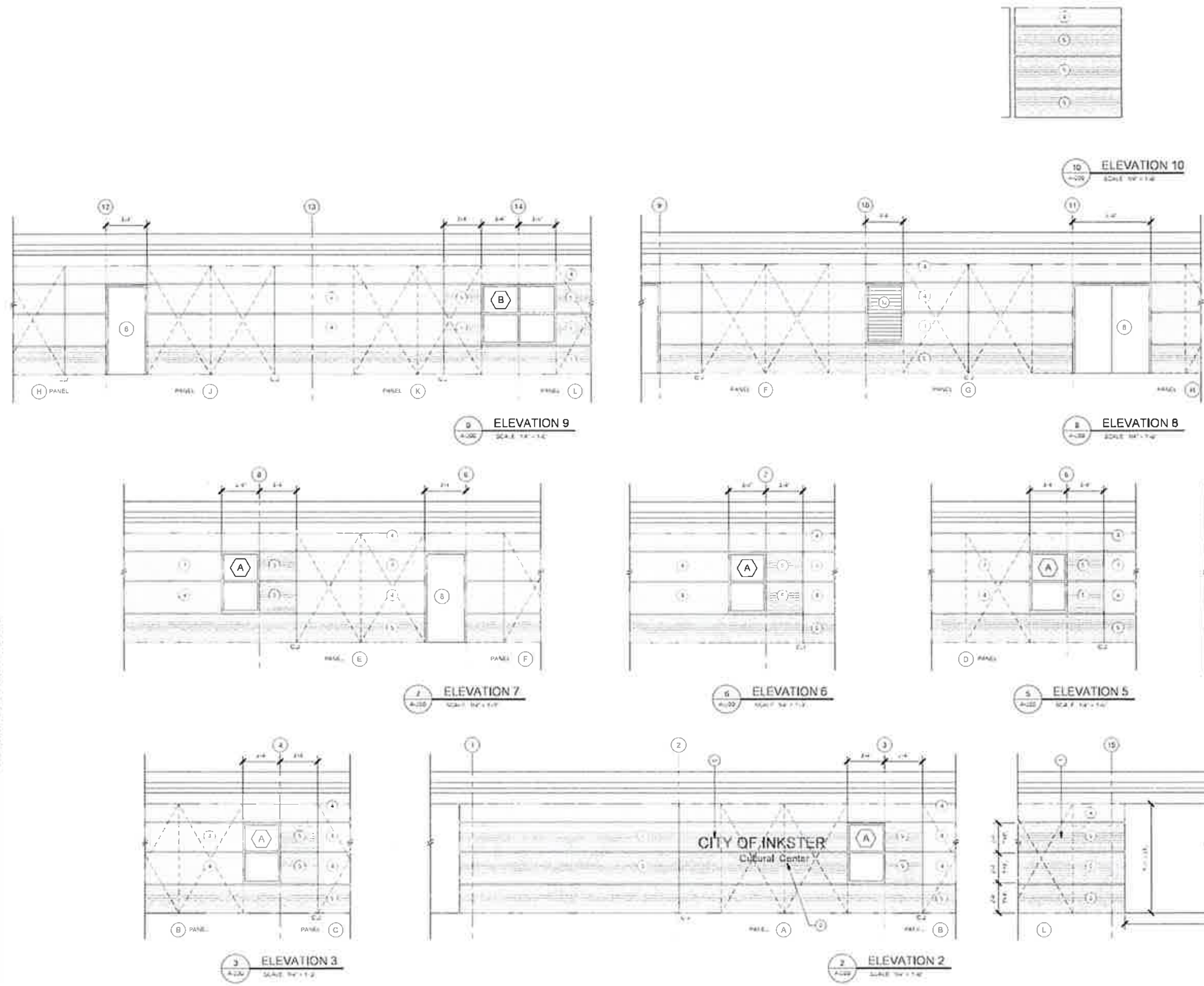
Sheet Title
ROOF PLAN

Project Number 24157

Sheet Number A-120



GENERAL NOTES

1. ALL BRICK VENEER TO BE BELDEN BRICK CONTACT: MARK LARIVIERE JR. 586 - 94 5400
2. EXISTING ARCHITECTURAL PRECAST PANELS TO REMAIN, REPAIR/PATCH AND CLEAN SURFACE PRIOR TO NEW WORK
3. INSPECT ALL EXTERIOR BUILDING JOINTS, REMOVE AND REPLACE ALL SEALANT AS REQUIRED
4. ALL EXPOSED PRECAST BELOW FINISH FLOOR IS TO RECEIVE WATERPROOFING
5. ELEVATIONS ARE SHOWN IN A LINEAR FORMAT FOR EASE OF DIMENSIONS AND MATERIALS

EXTERIOR ELEVATION KEYNOTES

1. EXISTING PRECAST PANEL BEYOND NEW WALL CONSTRUCTION AS A GUIDE FOR WINDOW/ DOOR PLACEMENT AND WILL BE NUMBERED ON THE FLOOR PLAN
2. PRE-FINISHED METAL FASCIA/ FLASHING ON PRECAST ROOF PLANKS (SEE SHEET A-700)
3. 6" PRE-FINISHED METAL GUTTER & PANEL
4. NEW BRICK VENEER 1 BELDEN BRICK ... MODULAR - RUNNING BOND SMOOTH
5. NEW BRICK VENEER 2 BELDEN BRICK BLACK DIAMOND MODULAR - RUNNING BOND VELOUR
6. NEW ARCHITECTURAL STONE 3 BELDEN BRICK SMOKY GRAY MODULAR - RUNNING BOND VELOUR
7. ALUMINUM WINDOW (SEE WINDOW SCHEDULE A-602)
8. HOLLOW METAL DOOR AND FRAME (SEE DOOR SCHEDULE A-602)
9. 12" PRE-FINISHED ALUMINUM LETTERS
10. 8" H. PRE-FINISHED ALUMINUM LETTERS
11. SINGLE PLY ROOFING SYSTEM (SEE SHEET A-700)
12. PRE-FINISHED LOUVER (SEE MECH.)
13. EXISTING PRECAST STRUCTURE

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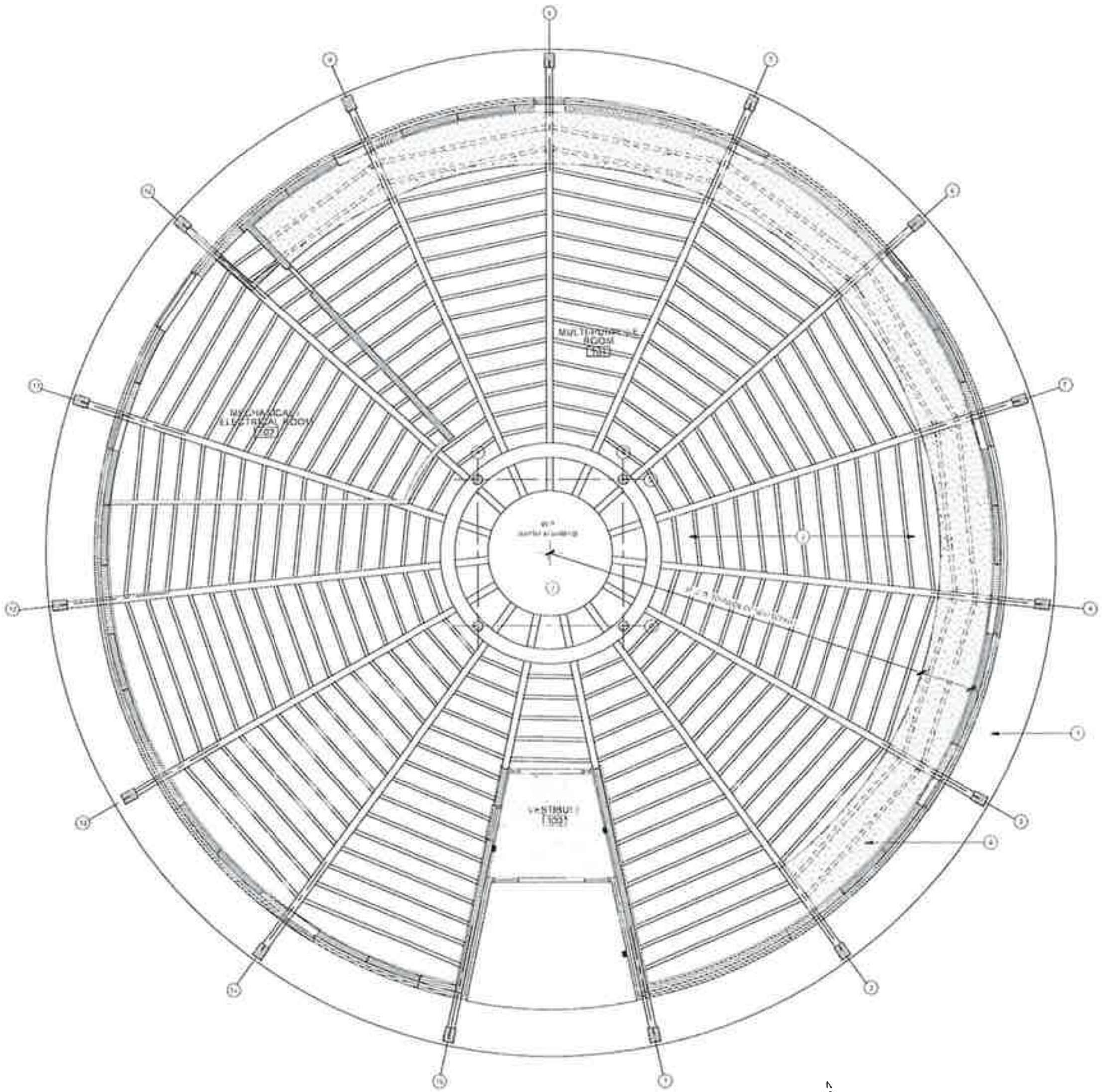
NOT FOR CONSTRUCTION

Sheet Title
EXTERIOR
ELEVATIONS

Project Number: 24157

Sheet Number: A-200



REFLECTED CEILING PLAN - BASE BID

REFLECTED CEILING PLAN LEGEND

GYP BD

GENERAL NOTES:

- SEE AREA, ELEC., & MECH PLANS FOR LIGHTING, DUCTWORK AND ANY OTHER ASSOCIATED INFORMATION

REFLECTED CEILING PLAN NOTES

1. EXISTING CONCRETE SOFFIT
2. SKYLIGHT ABOVE
3. PAINT (PT-1) ALL EXISTING EXPOSED PRE-CAST CONCRETE PLANKS AND CONCRETE BEAMS
4. NEW GYP. BD. SOFFIT. SEE A-100 FOR ADDITIONAL NOTES & DIMENSIONS.

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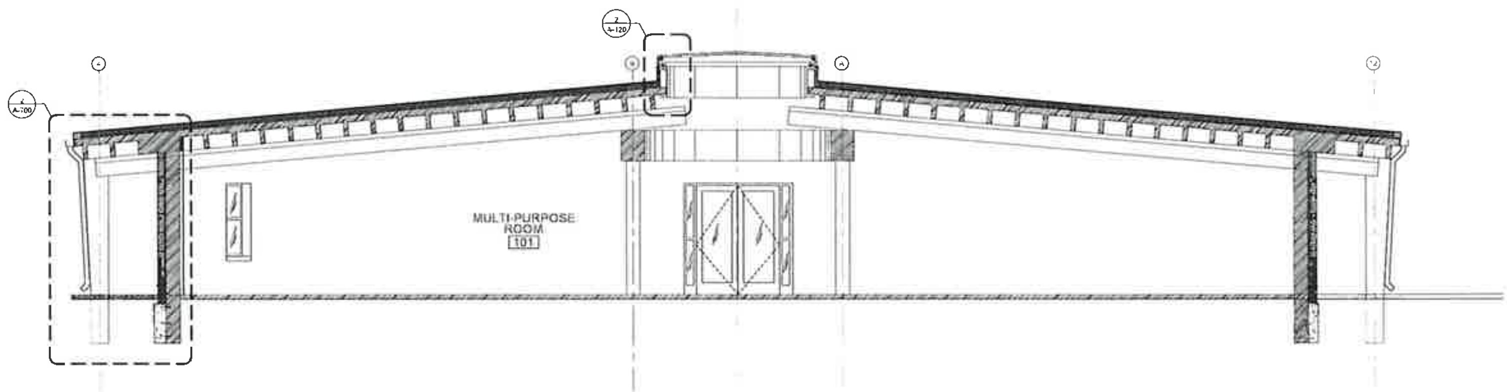
Sheet Title
REFLECTED
CEILING PLAN

Project Number 24157

Sheet Number A-510



BUILDING SECTION

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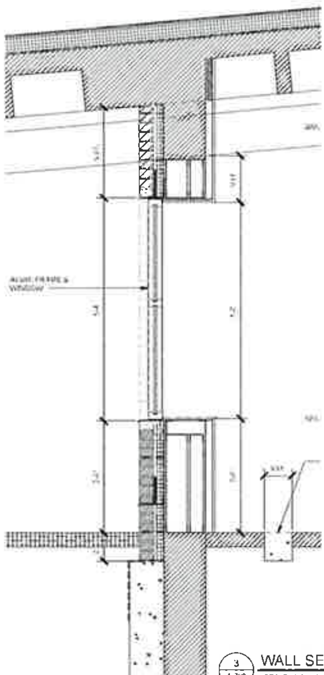
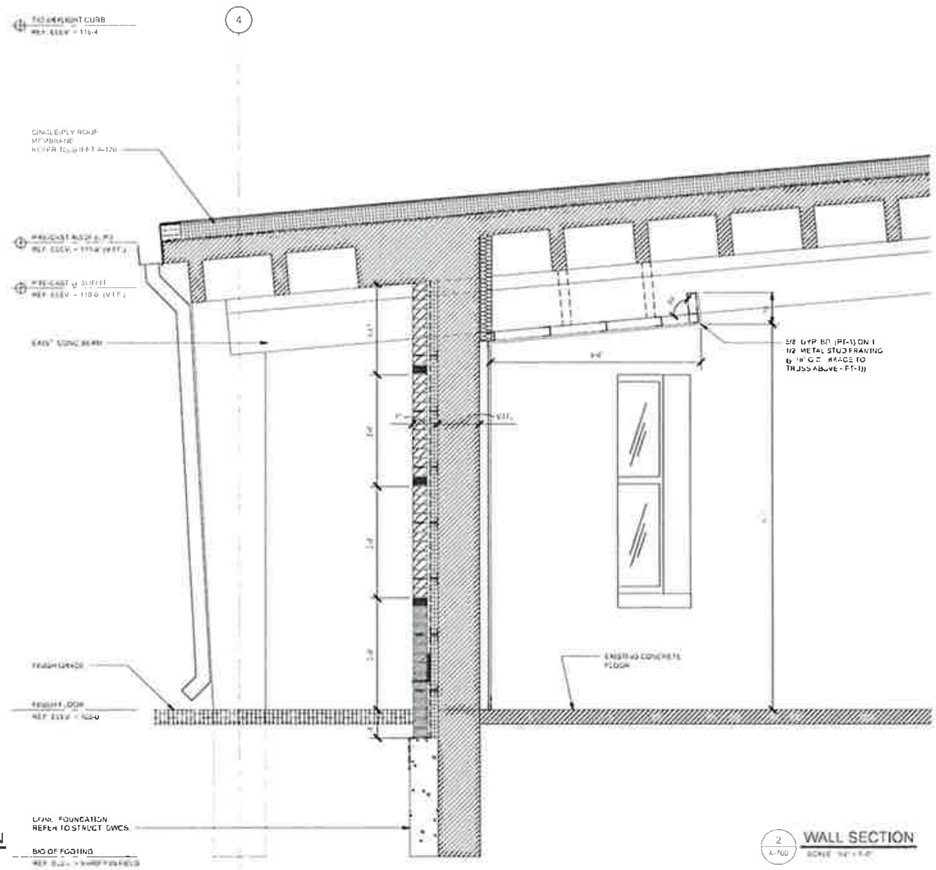
Sheet Title
BUILDING
SECTION

Project Number 24157

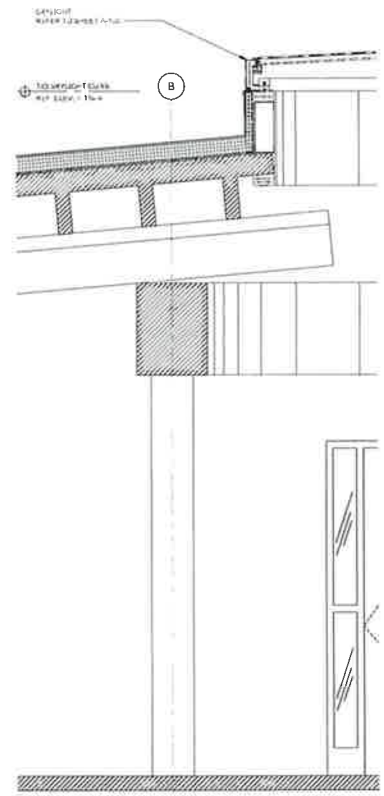
Sheet Number A-600



3 WALL SECTION



2 WALL SECTION



1 WALL SECTION

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Drawn	REV
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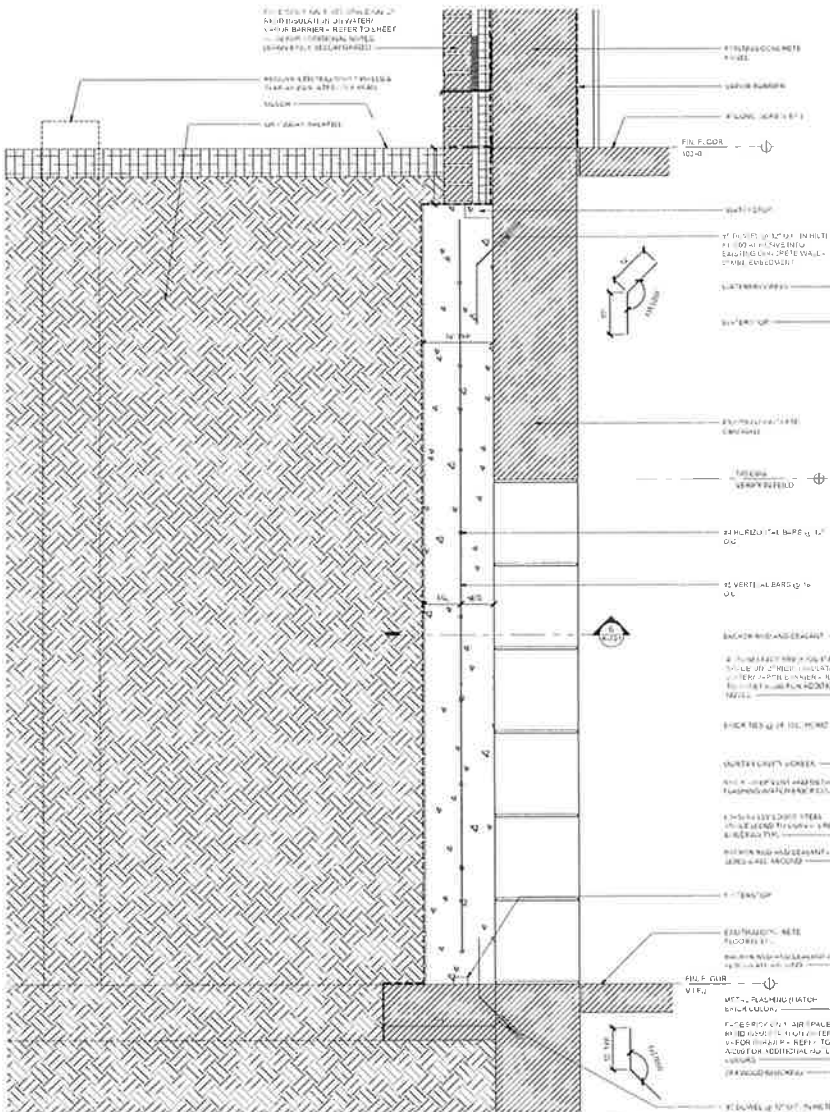
Approved	SEH

Sheet Title
WALL SECTIONS

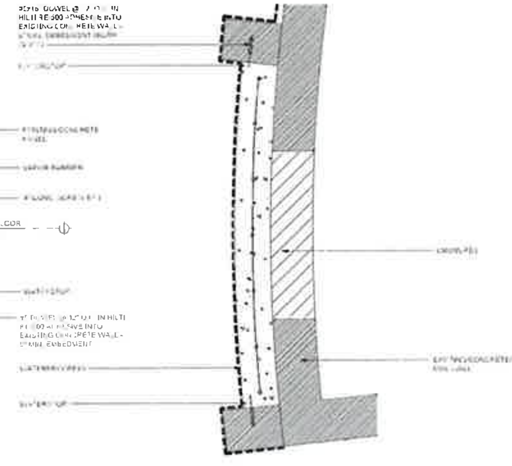
Project Number 24157

Sheet Number A-700



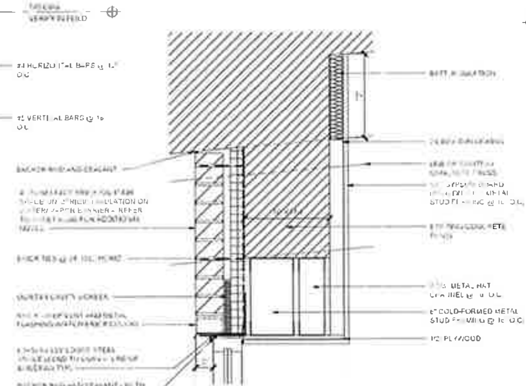
ENLARGED DETAIL @ SHAFT WALL

SCALE: 1 1/2" = 1'-0"



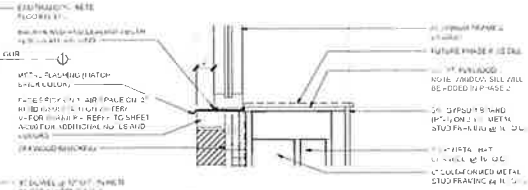
ENLARGED PLAN @ LOWER LEVEL WALL

SCALE: 1 1/2" = 1'-0"



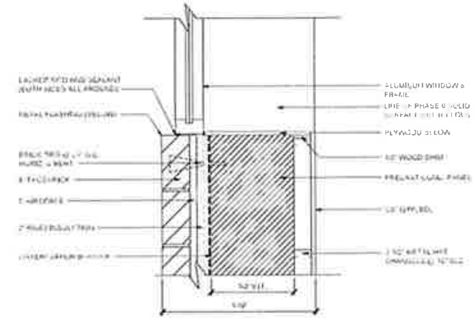
ENLARGED DETAIL @ WINDOW HEAD

SCALE: 1 1/2" = 1'-0"



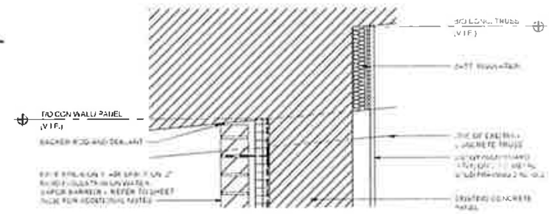
ENLARGED DETAIL @ WINDOW SILL

SCALE: 1 1/2" = 1'-0"



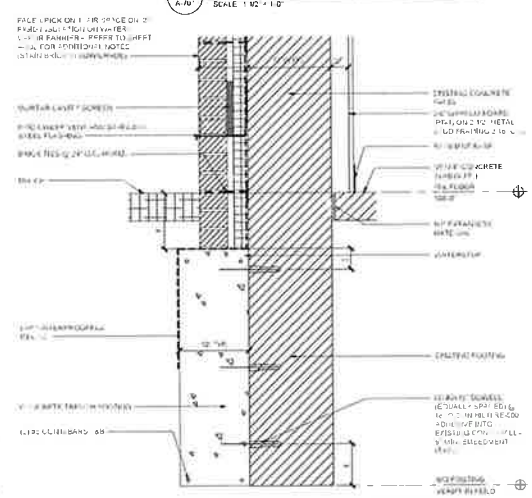
ENLARGED PLAN DETAIL @ WINDOW JAMB

SCALE: 1 1/2" = 1'-0"



ENLARGED DETAIL @ TOP OF WALL

SCALE: 1 1/2" = 1'-0"



ENLARGED DETAIL @ BASE OF WALL

SCALE: 1 1/2" = 1'-0"

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Sheet Title

ENLARGED SECTIONS & PLANS

Project Number 24157

Sheet Number A-701

ROOM FINISH SCHEDULE

ROOM NO	ROOM NAME	FLOOR	BASE	WALLS N	WALLS S	WALLS E	WALLS W	CEILING	CEILING HEIGHTS	NOTES
FIRST FLOOR										
100	VESTIBULE	-	-	-	-	PT-1	PT-1	GYP/PT-1	8'-0"	
101	MULTI-PURPOSE ROOM	EPX	-	PT-1	PT-1	PT-1	PT-1	EXP/PT-3	VARIES	
102	MECHANICAL / ELECTRICAL ROOM	SC	VB	PT-1	PT-1	PT-1	PT-1	EXP/PT-3	VARIES	

SCHEDULE LEGEND
CPT-1 CARPET
CPT-2 WALK OFF CARPET
SC SEALED CONCRETE
CFT CERAMIC FLOOR TILE
WT WALL TILE
PT PAINT
VB VINYL BASE
EXP EXPOSED
ACT ACOUSTICAL CEILING TILE
SS SOLID SURFACE

FINISH SELECTIONS

PAINT

PT-1 (ALL WALLS U.O.N)
MFR SHERWIN WILLIAMS
COLOR PRIMER
FINISH MATTE

PT-2 (EXT. DOOR & DOOR FRAMES)
MFR SHERWIN WILLIAMS
COLOR SW 6233 SAMOVAR SILVER
FINISH SEMI-GLOSS

PT-3 (EXPOSED CEILING)
MFR SHERWIN WILLIAMS
COLOR SW 7074 FROSTY WHITE
FINISH MATTE

DOOR SCHEDULE

DOOR NO.	ROOM NAME	SIZE: WIDTH	SIZE: HEIGHT	DOOR: DOOR TYPE	DOOR: DOOR ELEVATION	DOOR: DOOR FINISH	DOOR: FIRE RATING	DOOR: HARDWARE SET	FRAME: FRAME TYPE	FRAME: FRAME ELEVATION	FRAME: FRAME FINISH	FRAME: FIRE RATING	THRESHOLD	DETAILS: HEAD	DETAILS: JAMB	DETAILS: SILL	COMMENTS
100	VESTIBULE	(2) 3'-0"	7'-10"	ALUM	B	PFM	-	1	ALUM	2	PFM		YES				
100A	VESTIBULE	(2) 3'-0"	7'-10"	ALUM	B	PFM	-	1	ALUM	2	PFM		YES				
101	MULTI-PURPOSE ROOM	(2) 3'-0"	7'-10"	HM	A	PT-2		2	HM	1	PT-2		YES				
101A	MULTI-PURPOSE ROOM	3'-0"	7'-0"	HM	A	PT-2		2	HM	1	PT-2		YES				
102	MECHANICAL / ELECTRICAL ROOM	3'-0"	7'-0"	HM	A	PT-2		4	HM	1	PT-2	1-HOUR	-				
102A	MECHANICAL / ELECTRICAL ROOM	3'-0"	7'-10"	HM	A	PT-2		2	HM	1	PT-2		YES				

SCHEDULE LEGEND
PFM PRE-FINISHED METAL
HM HOLLOW METAL
ALUM PRE-FINISHED ALUMINUM
PT PAINT
TEMP TEMPERED

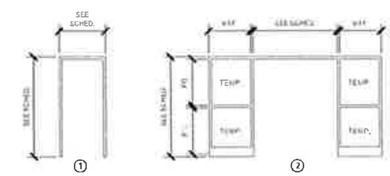
DOOR HARDWARE SETS (LEVERS TO BE APPROVED BY OWNER)

SET 1
2 CONT. HINGES
1 ENTRY LOCKSET W/ 2 PANIC BAR
2 OVERHEAD CLOSER
1 SET WEATHERSTRIP
1 SWEEP
1 ALUM. THRESHOLD

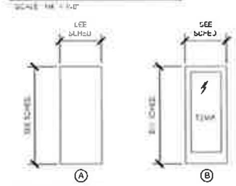
SET 3
2 CONT. HINGES
1 ENTRY LOCKSET W/ 2 PANIC BAR
1 MAGNETIC HOLD
2 OVERHEAD CLOSER
1 SET WEATHERSTRIP
1 SWEEP
1 DOOR STOP

SET 2
1 CONT. HINGE
1 ENTRY LOCKSET W/ PANIC BAR
2 OVERHEAD CLOSER
1 SET WEATHERSTRIP
1 SWEEP
1 DOOR STOP

SET 4
3 HD HINGES
1 PASSAGE STYLE LOCKSET
1 OVERHEAD CLOSER
1 DOOR STOP

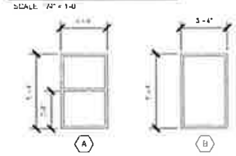


FRAME TYPES



DOOR TYPES

SCALE: 1/4" = 1'-0"



WINDOW TYPES

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Project
CITY OF INKSTER
CULTURAL
CENTER

Sheet Title
DOOR, WINDOW, & ROOM SCHEDULES

Project Number 24157

Sheet Number A-900

ELECTRICAL SPECIFICATION

PART 1 - GENERAL

COOPERATION WITH OTHER TRADES

WHEN INTERFERENCES EXIST WITH THE WORK OF OTHER TRADES, NOTIFY THE OWNER BEFORE PROCEEDING WITH THE INSTALLATION OF THE WORK. IF ADDITIONAL WORK IS REQUIRED TO REARRANGE INTERFERING EQUIPMENT AND THE CONTRACTOR HAS FAILED TO NOTIFY THE OWNER OF THE INTERFERENCE, THEN THE CORRECTIVE WORK REQUIRED TO RELIEVE THE INTERFERENCE WILL BE DONE AT NO ADDITIONAL EXPENSE TO THE OWNER.

[illegible]

THE ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE GOVERNING RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE, ALL LOCAL GOVERNING BOARDS HAVING JURISDICTION, AND IN ADDITION SHALL MEET ALL THE STANDARDS AND REQUIREMENTS OF THE OWNER.

THE ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF APPLICABLE FEDERAL, STATE AND LOCAL CODES, ORDINANCES AND REGULATIONS.

PROVIDE MATERIALS LISTED BY THE UNDERWRITERS LABORATORIES, INC. AND BEARING THEIR LABEL WHERE SUCH SERVICE IS AVAILABLE FOR THE TYPE OF EQUIPMENT SPECIFIED.

WHERE PLANS AND SPECIFICATIONS CONFLICT WITH SUCH LAWS AND ORDINANCES, NOTIFY THE ARCHITECT BEFORE SUBMISSION OF THE BID. AFTER ENTERING INTO THE CONTRACT, THE CONTRACTOR WILL BE HELD RESPONSIBLE TO COMPLETE ALL WORK IN STRICT ACCORDANCE WITH ALL GOVERNING REGULATIONS WITHOUT ADDITIONAL COST TO THE OWNER.

PERMITS

[illegible]

INSPECTIONS

GIVE ALL REQUIRED NOTICES OF INSPECTIONS REQUIRED BY THE LAWS OR OTHER REGULATIONS AND PAY ALL FEES IN CONNECTION THEREWITH.

FINAL ELECTRICAL INSPECTION IS REQUIRED BY THE LOCAL INSPECTION AUTHORITY.

[illegible]

[illegible]

GUARANTEE

[illegible] INSTALLED SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THE WORK AGAINST DEFECTIVE MATERIALS AND/OR WORKMANSHIP. UPON RECEIPT OF NOTICE OF FAILURE OF ANY PART OF THE WORK DURING THE GUARANTEE PERIOD, THE AFFECTED PART OR PARTS SHALL BE REPLACED PROMPTLY AT NO ADDITIONAL COST TO THE OWNER, INCLUDING ANY DAMAGE DONE TO THE WORK OF OTHERS CAUSED BY THE FAILURE OF THE ELECTRICAL SYSTEM.

CHARACTER OF WORK

[illegible] WILL FUNCTION TOGETHER AS A WORKABLE SYSTEM. IT SHALL BE COMPLETE WITH ALL ACCESSORIES NECESSARY FOR ITS OPERATION AND SHALL BE LEFT WITH ALL EQUIPMENT PROPERLY ADJUSTED AND IN WORKING ORDER.

EXECUTE THE WORK IN CONFORMITY WITH THE BEST PRACTICE SO AS TO CONTRIBUTE TO EFFICIENCY OF OPERATION, MINIMUM MAINTENANCE, ACCESSIBILITY AND SIGHTLINESS. EXECUTE SO THAT THE INSTALLATION WILL CONFORM AND ACCOMMODATE ITSELF TO THE BUILDING STRUCTURE, ITS EQUIPMENT AND ITS USAGE.

MOUNTING HEIGHTS

MOUNT OUTLET BOXES AND EQUIPMENT AS SHOWN BELOW UNLESS OTHERWISE INDICATED ON DRAWINGS. MOUNTING HEIGHTS SHOWN IN GENERAL ARE ABOVE FINISHED FLOOR TO CENTER LINE OF OUTLET BOXES OR EQUIPMENT.

[illegible]

SWITCHES: [illegible]

RECEPTACLES: [illegible]

[illegible]

[illegible]

[illegible]

MOTOR STARTERS: [illegible]

BRACKET EXIT LIGHTING FIXTURES: 6'-8" TO BOTTOM OF FIXTURE FOR CEILINGS UP TO 9 FEET. MOUNT AT 8'-0" FOR CEILINGS HIGHER THAN 9 FEET.

REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS BEFORE INSTALLING ANY OF THE ABOVE OUTLETS OR EQUIPMENT FOR INTERFERENCE AND ADJUST HEIGHTS TO AVOID INTERFERENCES THAT WOULD OCCUR. IF DEVIATIONS ARE REQUIRED OBTAIN APPROVAL OF THE OWNER BEFORE PROCEEDING WITH INSTALLATION.

DEMOLITION AND REMOVAL WORK

PROVIDE DEMOLITION AND REMOVAL WORK AS INDICATED. ITEMS FOR REUSE OR TO BE TURNED OVER TO OWNER SHALL BE CAREFULLY REMOVED, DISMANTLED AND STORED TO PREVENT DAMAGE TO SAME. WHERE EQUIPMENT IS TO BE REMOVED, ASSOCIATED CIRCUIT INCLUDING BOXES, CONDUIT AND WIRE SHALL ALSO BE REMOVED BACK TO THE SOURCE. ITEMS NOT NOTED TO BE REUSED OR TURNED OVER TO OWNER SHALL BECOME PROPERTY OF CONTRACTOR AND SHALL BE REMOVED FROM SITE AND LEGALLY DISPOSED.

WHEN RELOCATING OR REMOVING A LIGHTING FIXTURE, RECEPTACLE OR OTHER ELECTRICAL DEVICE, BUT NOT OTHER DEVICES ON SAME CIRCUIT, CIRCUIT SHALL BE RECONNECTED FOR CONTINUED SERVICE TO REMAINING ITEMS ON CIRCUIT.

[illegible] MODIFICATION FOR NEW REQUIREMENTS SHALL BE DISCONNECTED, REMOVED OR REROUTED TO SUIT FINAL INSTALLATION.

[illegible]

PERFORM ALL NECESSARY CUTTING AND PATCHING OF FLOORS, WALLS AND CEILINGS. RELOCATE EXISTING EQUIPMENT AND CONDUITS WHICH [illegible]

[illegible]

ALL DIRT AND RUBBISH RESULTING FROM THIS WORK SHALL BE REMOVED FROM THE PREMISES.

[illegible]

[illegible] BREAKERS, SWITCHES, [illegible] AS APPROVED IN ACCORDANCE WITH THE IDENTIFICATION MARKINGS SHOWN ON THE DRAWINGS AND/OR AS DIRECTED. IDENTIFY EQUIPMENT WITH SUITABLY SIZED ENGRAVED PLASTIC LAMINATE PHENOLIC WHITE BACKGROUND WITH BLACK LETTERING AND ATTACH WITH SHEET METAL SCREWS.

DISCONNECT SWITCHES (INDIVIDUALLY OR PANEL MOUNTED) COMBINATION STARTERS AND TRANSFORMERS SHALL BE IDENTIFIED BY NAME, SOURCE OF POWER AND EQUIPMENT SERVED. PROVIDE NEW NAMEPLATES FOR REVISIONS TO EXISTING EQUIPMENT AFFECTED BY WORK IN THIS CONTRACT.

PANELBOARDS SHALL HAVE TYPED CIRCUIT DIRECTORIES IDENTIFYING EACH LOAD AND LOCATION. UPDATE ALL EXISTING PANEL SCHEDULES WITH NEW TYPED SCHEDULES FOR PANELS AFFECTED BY WORK IN THIS CONTRACT INCLUDING ADDITIONS OR DELETIONS TO EXISTING PANELS.

[illegible] CIRCUIT NUMBER, WIRE NUMBER OR PHASE LETTER AT EVERY TERMINAL POINT OR SPLICE. PROVIDE CIRCUIT IDENTIFICATION OF EVERY UNSPLICED CONDUCTOR WITHIN EACH JUNCTION OR PULL BOX.

PARTS 2 AND 3 - PRODUCTS, INSTALLATION AND TESTING

[illegible]

[illegible]

CONDUIT

[illegible]

[illegible] THREADED STEEL [illegible] ANSI C80.1 SPECIFICATION FOR RIGID STEEL CONDUIT ZINC COATED. EACH LENGTH OF CONDUIT SHALL BE THREADED ON BOTH ENDS.

LIQUID-TIGHT FLEXIBLE STEEL CONDUIT: PER UL-360, LIQUIDTIGHT FLEXIBLE STEEL CONDUIT, ELECTRICAL SEALTITE ELECTRIFLEX.

RIGID NON METALLIC CONDUIT, ELBOWS AND COUPLINGS: SMOOTH-WALL POLYVINYLCHLORIDE (PVC), 90°C, UL LISTED AND IN COMPLIANCE WITH THE TESTING REQUIREMENTS DEFINED IN NEMA WTC-2, NEMA TC-3, UL 651 AND UL 514 (FITTINGS), SCHEDULE 40: CARLON PLUS 40 (HEAVY WALL EPC) & SCHEDULE 80: CARLON PLUS 80 (EXTRA HEAVY EPC-80).

MANUFACTURERS: ALLIED, ANACONDA SEALTITE, CERTAINTEED, ELECTRI-FLEX CO., APPLETON, CROUSE-HINDS, PITTSBURGH, REPUBLIC STEEL, DUCT, TRIANGLE/PWC AND WHEATLAND TUBE.

CONDUIT FITTINGS

COUPLINGS AND CONNECTORS FOR EMT: ZINC-PLATED STEEL COMPRESSION TYPE.

[illegible] OR CADMIUM PLATED SECURING THE CONDUIT BY CLAMPING ACTION AROUND THE PERIPHERY OF THE CONDUIT. DO NOT FURNISH FITTINGS [illegible]

MANUFACTURERS: SAME AS LISTED FOR CONDUIT PLUS APPLETON, CROUSE-HINDS, ERICKSON, T&B, INC., MIDLAND-ROSS, MIDWEST, RACO, O-Z/GEDNEY ELECTRIC CO., STEEL CITY, THOMAS & BETTS OR TOMIC.

CONDUIT SUPPORT

PIPE STRAPS USED FOR EXPOSED WORK SHALL BE ONE HOLE MALLEABLE IRON GALVANIZED. USE OF PERFORATED STRAP OR WIRE IS NOT ALLOWED. PROVIDE GALVANIZED TRAPEZE HANGERS FOR GROUPS OF CONDUITS.

INDIVIDUAL CONDUITS NOT SUPPORTED ON PIPE STRAPS SHALL BE PROVIDED WITH CLEVIS TYPE HANGERS. HANGER SUPPORTS SHALL BE [illegible]

[illegible] WROUGHT STEEL WITH HOOK RODS TO GRIP BEAM FLANGE. C-CLAMPS SHALL NOT BE USED.

MANUFACTURERS: SAME AS LISTED FOR CONDUITS PLUS B-LINE, HUBBELL INC., KINDORF, MIDLAND-ROSS, RACO, O-Z/GEDNEY ELECTRIC CO., STEEL CITY, THOMAS & BETTS AND UNISTRUT.

INSTALLATION - RACEWAYS AND FITTINGS

CONDUIT

USE EMT (WITH COMPRESSION FITTINGS ONLY) IN CONCEALED DRY LOCATIONS UP TO 4 INCHES WHERE CONDUITS ARE NOT SUBJECT TO MECHANICAL DAMAGE.

[illegible]

[illegible] INDICATED, INSTALL SIZES PER NEC REQUIREMENTS EXCEPT DO NOT USE CONDUIT SIZE SMALLER THAN 3/4 INCH UNLESS OTHERWISE SPECIFIED. USE 1/2 INCH FIXTURE STEMS OPTIONALLY UNLESS OTHERWISE INDICATED.

FLEXIBLE STEEL CONDUIT SHALL BE USED FOR ALL FINAL CONNECTIONS TO CEILING MOUNTED EQUIPMENT SUCH AS LIGHTING FIXTURES AND SMOKE DETECTORS. USE IN DRY LOCATIONS.

LIQUID TIGHT FLEXIBLE STEEL CONDUIT SHALL BE USED FOR ALL FINAL CONNECTIONS TO TRANSFORMERS, VIBRATING EQUIPMENT SUCH AS [illegible]

INSTALL CONDUIT A MINIMUM OF 12 INCHES FROM HOT WATER OR STEAM PIPES AND 3 INCHES FROM OTHER MECHANICAL PIPING.

SUPPORT CONDUIT EVERY 8 FEET IF SMALLER THAN 2 INCHES AND EVERY 10 FEET IF 2 INCHES OR LARGER.

[illegible]

[illegible]

DO NOT EXCEED LOADING LIMITS OF STRUCTURAL SYSTEMS WHERE GROUPS OF CONDUITS ARE SUPPORTED ON COMMON HANGERS. SEE [illegible]

EXPANSION FITTINGS

[illegible] WHEREVER IT CROSSES AN EXPANSION JOINT IN THE STRUCTURE TO WHICH IT IS ATTACHED. IN ADDITION INSTALL AN EXPANSION FITTING IN EACH CONDUIT RUN WHICH IS MECHANICALLY ATTACHED TO SEPARATE STRUCTURES. INSTALL A BONDING JUMPER OR GROUND CLAMP TO CONNECT THE CONDUITS.

SLEEVES

[illegible] FLOOR SLABS AND PIPE SLOTS ARE NOT PROVIDED, INSTALL PIPE SLEEVES OF SIZE AS INDICATED. INSTALL PIPE SLEEVES WITH BOTTOM OF [illegible]

[illegible] CONDUIT WITH OAKUM AND AN APPROVED MASTIC. SUPPORT CONDUIT AT EACH LEVEL. PROVIDE APPROVED MASTIC FOR FIRE STOP AND/OR FIRE RATED WALL/FLOOR PENETRATION SYSTEM AT ALL FLOOR/WALL PENETRATIONS.

BUSHINGS

INSTALL INSULATING BUSHINGS ON CONDUIT ENDS BEFORE THE INSTALLATION OF ANY CONDUCTORS.

PULL ROPE

INSTALL 1/8 INCH-DIAMETER NYLON PULLING ROPE WITH WOODEN BLOCKS AND IDENTIFICATION FASTENED TO BOTH ENDS IN ALL EMPTY ELECTRICAL AND TELEPHONE CONDUITS.

[illegible]

[illegible]

[illegible]

SHEET METAL BOXES: CODE GAGE, FULL SEAM WELDED WITH BENT-IN FLANGES SEAM WELDED AT CORNER JOINTS, SCREW-FASTENED COVER OF SAME GAGE AS BOX. FASTEN COVER WITH BRASS MACHINE SCREWS. GALVANIZE BOX AND COVER AFTER FABRICATION. PROVIDE SIZES CONFORMING TO NEC REQUIREMENTS FOR WIRING SPACE EXCEPT WHERE BOXES OF LARGER SIZE ARE INDICATED. FURNISH GASKETS WHEN LOCATED IN AREAS REQUIRING GASKETS.

[illegible]

[illegible]

MANUFACTURERS: APPLETON, CROUSE-HINDS, HOFFMAN, KEYSTONE AND KILLARK.

INSTALLATION - PULL AND JUNCTION BOXES

FOR JUNCTION OR PULL BOXES NOT OVER 100 CUBIC INCHES IN SIZE USE 4-11/16 INCHES X 4-11/16 INCHES OUTLET BOXES. FOR JUNCTION OR PULL BOXES OVER 100 CUBIC INCHES IN SIZE CONSTRUCT SAME AS CABINETS WITH COVERS OF SAME GAGE METAL AS BOXES AND SECURED BY SCREWS OR BOLTS. USE GALVANIZED SHEET STEEL BOXES WITH METAL THICKNESS NOT LESS THAN NO. 14 GAGE. SIZE AND INSTALL BOXES PER THE LATEST EDITION OF NEC ARTICLE NO. 314. INSTALL REMOVABLE COVERS FOR ACCESS AT ALL TIMES.

OUTLET BOXES

IN GENERAL, USE OUTLET BOXES NOT LESS THAN 4 INCHES SQUARE, AT LEAST 2 INCHES DEEP AND OF SUFFICIENT SIZE TO ACCOMMODATE THE WIRING DEVICES TO BE INSTALLED AT THE OUTLET LOCATION. FLUSH MOUNTED BOXES FOR MULTIPLE OUTLET SHALL BE OF GANG TYPE AND SHALL BE NOT LESS THAN 2-1/2 INCH DEEP AND NOT LESS THAN 3 INCHES [illegible]

WHERE SHOWN ON THE DRAWINGS AND NOTED IN THE SPECIFICATIONS, USE THREADED-HUB CAST METAL OUTLETS ON EXPOSED CONDUIT SYSTEMS OR FOR WEATHERPROOF DEVICES SUITABLE FOR THE WIRING DEVICES TO BE INSTALLED.

USE OUTLET BOXES WITH PLASTER COVERS FOR WIRING DEVICES IN FINISHED WALLS WHERE PRACTICABLE TO BRING BOX OPENINGS FLUSH [illegible]

WHERE MOUNTING HEIGHT OR LOCATION OF OUTLETS IS NOT SHOWN OR SPECIFIED, LOCATE THE OUTLET AS BEST SUITED FOR THE EQUIPMENT CONNECTED THERETO OR AS DIRECTED.

USE 4 INCH OCTAGONAL BOXES WITH 3/8 INCH FIXTURE STUD FOR LIGHTING FIXTURES.

WIREWAYS

PAINTED STEEL ENCLOSURE NEMA 1 (OR OTHER AS NOTED ON DRAWINGS) WITH SCREWED FASTENED COVER, BENDS, ELBOWS, TEES, CROSSES, ADAPTERS AND ACCESSORIES AS REQUIRED, EASILY ASSEMBLED INTO A COMPLETE SYSTEM. PROVIDE SIZES PER NEC REQUIREMENTS FOR WIRING SPACE EXCEPT WHERE LARGER SIZES ARE INDICATED. FURNISH [illegible]

[illegible]

[illegible]

INSTALL WIREWAYS COMPLETE WITH ALL REQUIRED COUPLINGS, END CLOSURES, ETC. AS REQUIRED. TAPS & SPLICES ARE PERMITTED WITHIN THE WIREWAY BUT SHALL BE LIMITED TO THE REQUIREMENTS OF NEC [illegible]

WIRES AND CABLES

PROVIDE WIRE AND CABLE FOR STANDARD SPECIFICATIONS ESTABLISHED FOR SUCH MATERIAL AND CONSTRUCTION BY ASTM, ANSI, IPCEA AND NEMA. WIRE APPLICABLE, PROVIDE COPPER CONDUCTORS OF 98% CONDUCTIVITY NOT LESS THAN NO. 12 AWG. PROVIDE CONDUCTOR SIZES AS INDICATED. PROVIDE STRANDED CONDUCTORS.

WIRE FOR GENERAL INTERIOR AND EXTERIOR USE: SINGLE CONDUCTOR ANNEALED COPPER RATED 600 VOLTS AS FOLLOWS:

NEC TYPE THHN/THWN RATED 90 C. DRY LOCATIONS AND 75 C. WET LOCATIONS.

[illegible]

INSTALLATION - WIRES AND CABLES

[illegible]

INSTALL CONDUCTORS IN SUCH A MANNER THAT THE BENDING RADIUS OF ANY WIRE OR CABLE IS NOT LESS THAN THE MINIMUM RECOMMENDED BY ICEA AND/OR THE MANUFACTURER. DO NOT EXCEED MANUFACTURER'S RECOMMENDED VALUES FOR MAXIMUM PULLING TENSION OR SIDEWALL FORCE APPLIED TO ANY WIRE OR CABLE.

[illegible]

[illegible]

[illegible]

BRANCH CIRCUITS

PROVIDE A SEPARATE NEUTRAL WIRE FOR EVERY BRANCH CIRCUIT REQUIRING A NEUTRAL. SHARING OF NEUTRAL WIRES IS NOT ALLOWED.

[illegible]

[illegible] STRANDED COPPER AND SHALL MEET REQUIREMENTS OF WIRE FOR INTERIOR AND EXTERIOR USE.

MANUFACTURERS: AMERICAN INSULATED WIRE CORP., CABLEC, CAROL, GENERAL CABLE, OKONITE, ROME, SOUTHWIRE AND TRIANGLE.

INSULATING TAPE

SCOTCH 33 PLUS OR OKONITE TYPE CEF SERIES 602-73 FOR GENERAL USE AND SCOTCH 27 FOR HIGH TEMPERATURE AREAS.

WIRING DEVICES

RECEPTACLES

[illegible] VOLT SINGLE PHASE SERVICE: SPECIFICATION GRADE, 2 POLE, 3 WIRE, NEMA CONFIGURATION 5-20R, RATED 20 AMPERES, 125 VOLTS, NEMA PERFORMANCE STANDARD SPECIFICATION GRADE, FOR BACK AND SIDE WIRING. COLOR TO MATCH EXISTING OR PER ARCHITECT. NYLON ARROW-HART 5362, BRYANT OR HUBBELL INC.

GROUND-FAULT INTERRUPTER SHALL BE DUPLEX, 2 POLE, 3 WIRE GROUNDING TYPE, RATED 20 AMPERE, 125 VOLT, NEMA CONFIGURATION [illegible]

LIGHTING SWITCHES

TOGGLE OPERATED SINGLE POLE SINGLE THROW, SINGLE POLE DOUBLE THROW, DOUBLE POLE, DOUBLE THROW, SPECIFICATION GRADE, COMPOSITION BASED, HEAVY DUTY, FLUSH, QUIET TYPE WITH PROVISION FOR BACK AND SIDE WIRING AND RATED 20 AMPERES, 120/277 VOLTS AC. ARROW-HART 1991 THRU 1994, BRYANT 4901 THRU 4904 OR HUBBELL HBL 1221 THRU HBL 1224.

BOXES: PROVIDE PERMANENTLY INSTALLED BARRIERS BETWEEN ADJACENT SWITCHES.

[illegible]

DEVICE PLATES

GANG TOGETHER ALL SWITCHES LOCATED IN ONE LOCATION AND COVER WITH ONE CUSTOM MADE WALL PLATE. SELECT THE CORRECT COMBINATION AND TYPE OF OPENING.

DEVICE PLATES IN FINISHED AREAS SHALL BE SMOOTH BRUSHED STAINLESS STEEL NO. 302, 04 FINISH. FOR RECEPTACLES WIRED TO THE EMERGENCY SYSTEM, THE PLATE SHALL BE ENGRAVED WITH [illegible]

[illegible]

[illegible] FINALLY HUNG 6 INCHES FROM DOOR FRAME. INSTALL SWITCHES IN 4-11/16 INCHES SQUARE BOXES WHERE POSSIBLE.

USE GANGED BOXES 2-1/2 INCH DEEP FOR 120 VOLT AND 277 VOLT SWITCHES AT THE SAME LOCATION WITH ISOLATING PARTITION BETWEEN 120 VOLT AND 277 VOLT SWITCHES. PROVIDE ISOLATING PARTITION BETWEEN 277 VOLT SWITCHES.

[illegible] INDICATED, INSTALL STRIPS ABOVE COUNTER OR IN SPACE BACKSPLASH AND STRIPS ABOVE BASEBOARD FLUSH WITH TOP OF BASEBOARD.

GROUNDING

GROUNDING CONDUCTORS

BARE GROUNDING CONDUCTORS: STRANDED ANNEALED COPPER (SIZE AS INDICATED ON THE DRAWINGS).

INSULATED GROUNDING CONDUCTORS: REFER TO WIRES AND CABLES IN THIS SPECIFICATION.

GROUNDING CONNECTIONS

FOR OCCUPIED INTERIOR OF BUILDINGS, USE THE LOW EMISSION WELD PROCESS WHICH IS VIRTUALLY SMOKELESS. IGNITION SHALL BE BY MEANS OF A BATTERY POWERED ELECTRICAL IGNITION WHICH ELIMINATES ALL OPEN FLAME.

[illegible]

COPPER COMPRESSION GROUNDING: PIPE AND CLAMP-ON CONNECTIONS SHALL BE MADE WITH APPROVED BOLT CLAMPS OF CAST BRONZE OR [illegible]

[illegible]

[illegible]

[illegible]

THOROUGHLY CLEAN ALL BONDING SURFACES OF NON-CONDUCTING MATERIALS. TIN AND SWEAT CONTACT SURFACES WHILE BOLTING. DO NOT USE SOLDER TYPE CONNECTIONS.

[illegible]

[illegible]

[illegible] QUICK-BREAK, NON ROTARY (600 VOLT) AND/OR (250 VOLT) AC RATED HORSEPOWER RATED AND CAPABLE OF INTERRUPTING STALLED MOTOR CURRENT OF CONNECTED MOTOR, FUSED OR UNFUSED AS SHOWN WITH VISIBLE BLADES. PROVIDE NEMA 1 UNLESS OTHERWISE NOTED. FOR [illegible]

[illegible]

DISCONNECT SWITCHES LOCATED AT MOTORS CONTROLLED BY REMOTE VARIABLE FREQUENCY DRIVES (VFD'S) SHALL BE PROVIDED WITH EARLY BREAK CONTACTS TO DISCONNECT THE LOAD PRIOR TO DISCONNECTING THE LINE.

UNITS SHALL BE AS MANUFACTURED BY SQUARE D OR EATON.

FUSING

[illegible] AMPERE OR LOWER: UL CLASS RK1 CURRENT LIMITING TYPE WITH 200,000 AMPERE INTERRUPTING RATING, BUSSMANN LOW-PEAK LPN-RK AND [illegible]

[illegible] CURRENT LIMITING TYPE WITH 200,000 AMPERE INTERRUPTING RATING, BUSSMANN LIMITRON KTS-R AND KTS-R, GOULD SHAWMUT A2K-R AND A6K-R.

[illegible] CURRENT LIMITING WITH 200,000 AMPERE INTERRUPTING RATING, BUSSMANN LOW-PEAK, GOULD SHAWMUT A4J-R AND A6J-R.

[illegible]

[illegible]

[illegible]

FURNISH AND INSTALL LIGHTING SYSTEMS AS REQUIRED, AND ALL MATERIALS AND EQUIPMENT INCLUDING LUMINAIRES, LAMPS, DRIVERS, POLES, ACCESSORIES AND ASSOCIATED SYSTEMS AND EQUIPMENT AS [illegible]

FURNISH LUMINAIRES AND OTHER EQUIPMENT INCLUDING ALL MODIFICATIONS THERETO AND COMPONENT ELECTRICAL PARTS LISTED BY UNDERWRITERS LABORATORIES AS MEETING NATIONAL ELECTRICAL CODE REQUIREMENTS AND BEARING THE UL LABEL WHERE SUCH SERVICE IS AVAILABLE FOR EQUIPMENT SPECIFIED.

[illegible] THAT ARE LISTED AND LABELED FOR THEIR INDICATED USE ON THE PROJECT.

FURNISH AND INSTALL LUMINAIRES FOR USE IN DAMP OR WET LOCATIONS, UNDERWATER AND RECESSED IN COMBUSTIBLE CONSTRUCTION SPECIFICALLY LISTED AND LABELED FOR SUCH USE. PROVIDE LUMINAIRES FOR USE IN HAZARDOUS LOCATIONS THAT ARE LISTED AND LABELED FOR [illegible]

[illegible]

[illegible]

[illegible]

LED LAMP SHAPE AND BASE BAR MEETS FEDERAL MINIMUM FOR EFFICIENCY STANDARDS, EPA TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) COMPLIANT. LUMEN MAINTENANCE PER LAMP, COLOR RENDERING INDEX (CRI) GREATER THAN 85, CORRELATED COLOR TEMPERATURE (CCT) OF 3500K UNLESS OTHERWISE NOTED. AVERAGE RATED LIFE 50,000 HOURS HOURS, MINIMUM STARTING TEMPERATURE OF MINUS 40 DEGREES CELCIUS(40 DEGREES FAHRENHEIT). OPERATE LAMPS AT FREQUENCY OF 60 HERTZ OR HIGHER. DESIGNED FOR USE WITH OCCUPANCY SENSORS PROVIDING 50,000 STARTS MINIMUM.

DRIVERS

SINGLE OR MULTI-VOLTAGE DRIVERS, INPUT FREQUENCY 50/60 HERTZ, INPUT VOLTAGE 120 VOLTS OR 277 VOLTS. SUSTAINED VARIATIONS OF LINE VOLTAGE AND FREQUENCY WITH NO DAMAGE TO DRIVER. NON-PCB, CSM CERTIFIED AND CLASS P APPROVED UNLESS OTHERWISE SPECIFIED IN THE FIXTURE SPECIFICATIONS. POWER FACTOR GREATER THAN 90%, TOTAL HARMONIC DISTORTION (THD) LESS THAN 20% FOR PRIMARY LAMP APPLICATION, LAMP CURRENT CREST FACTOR (LCCF) LESS THAN 1.5, MINIMUM DRIVER EFFICACY OF 60%. FURNISH COMMERCIAL AND RECESSED TYPE FIXTURES WITH DRIVERS HAVING A NEMA SOUND RATING OF "A" OR BETTER. CONTAIN AUTO-RESTART CIRCUITRY IN ORDER TO RESTART LAMPS WITHOUT RESETTING POWER. TOLERATE SUSTAINED OPEN CIRCUIT AND SHORT CIRCUIT OUTPUT CONDITIONS WITHOUT DAMAGE AND SHALL BE REDUCTION OF HAZARDOUS SUBSTANCES (ROHS) COMPLIANT.

LIGHTING CONTROL SYSTEM

AS INDICATED ON THE DRAWINGS.

[illegible]

[illegible]

SUPPORTS

[illegible] SPECIFIED OR AS OTHERWISE REQUIRED BY THE FIXTURE SPECIFIED. SUPPORT SINGLE UNITS FROM FIXTURE STUDS IN OUTLET BOXES. IN FINISHED AREAS, PROVIDE SUPPORTS INDEPENDENT OF THE ACOUSTIC TILE OR PLASTER. SUPPORT FIXTURES FROM THE CEILING SUPPORT [illegible]

PROVIDE SUPPORTS FOR RECESSED FIXTURES AS RECOMMENDED BY THE FIXTURE MANUFACTURER OR AS SPECIFIED. VERIFY CEILING SUPPORT SYSTEMS AND COORDINATE FIXTURE INSTALLATION. FASTEN LAY IN FIXTURES TO THE CEILING GRID.

[illegible]
TYPE

[illegible] FLUORESCENT LIGHTING SHALL [illegible] AND SHALL BE LABELED SWD.

NEUTRAL BUS BAR: PROVIDE NEUTRAL BUS BAR OF SUFFICIENT CAPACITY TO TERMINATE ALL THE BRANCH CIRCUIT NEUTRAL WIRES. THE SIZE OF NEUTRAL LUGS SHALL BE AT LEAST 125% OF PHASE LUGS FOR PANELBOARDS FED FROM K-RATED TRANSFORMERS OR OTHERWISE NOTED.

CIRCUIT BREAKERS: BOLT-ON MOLDED CASE TYPE, THERMAL MAGNETIC, 1, 2 OR 3 POLES, QUICK-MAKE, QUICK-BREAK WITH COMMON TRIP FOR 2 AND 3 POLE BREAKERS, TRIP INDICATION AND MINIMUM INTERRUPTING RATING OF 10,000 RMS SYMMETRICAL AMPERES AT 120 VOLTS AC FOR SINGLE POLE BREAKERS AND AT 240 VOLTS AC FOR 2 AND 3 POLE BREAKERS. SERIES RATED BREAKERS ARE NOT ACCEPTABLE.

CABINETS: FLUSH OR SURFACE MOUNTING TYPE AS INDICATED, WITH MINIMUM 20 INCH BOX, EXCEPT COLUMN WIDTH PANEL. PROVIDE NEMA 1 UNLESS OTHERWISE NOTED. FABRICATE CABINETS FROM CODE GAGE SHEET STEEL, GALVANIZE OR PHOSPHATIZE AND PRIME AND FINISH PAINT SURFACES WITH MANUFACTURER'S STANDARD FINISH. GALVANIZE RECESSED BOXES. PROVIDE GUTTER SPACE TO ACCOMMODATE SIZE OF CABLE USED IN COMBINATION CATCH AND LOCK. PROVIDE A THREE-POINT COMBINATION CATCH AND LOCK WITH VAULT-TYPE HANDLE FOR DOORS MORE THAN 48 INCHES HIGH. KEY ALL LOCKS ALIKE OR TO THE EXISTING [illegible]

MANUFACTURERS / PRODUCTS: SQUARE D OR EATON.

[illegible]

INSTALL PANELBOARDS AT LOCATIONS INDICATED ON THE DRAWINGS. INSTALL HANDLE LOCKING DEVICES FOR NIGHT LIGHTING, EMERGENCY LIGHTING AND OTHER DESIGNATED CIRCUITS.

SECURELY FASTEN TO WALLS OR COLUMNS AS INDICATED, WITH REQUIRED INSERTS, ANCHORS, BOLTS AND BRACKETS. DO NOT SUPPORT [illegible]

TESTING

PERFORM TESTS REQUIRED TO ENSURE THE PROPER AND DESIRED OPERATION OF ALL ELECTRICAL EQUIPMENT, SYSTEMS AND WIRING AT THE COMPLETION OF THE WORK AND IN THE PRESENCE OF THE OWNER OR THEIR AUTHORIZED REPRESENTATIVE.

[illegible]

[illegible]

PROPERLY ADJUST ALL MOTOR OVERLOAD PROTECTIVE DEVICES AND CHECK EACH MOTOR FOR CORRECT ROTATION.

CORRECT OR REPLACE ANY FAULTS OR DEFECTS FOUND IN MATERIALS AND/OR WORKMANSHIP DURING THESE TESTS TO THE SATISFACTION OF THE OWNER.

[illegible]

PROVIDE AN ADDRESSABLE ANALOG NON-CODED FIRE ALARM SYSTEM PER THE LATEST APPLICABLE CODES AND ALL REQUIREMENTS.

MANUFACTURER: SIMPLEX/GRINNELL, NOTIFIER, GAMEWELL OR OWNER STANDARD.

END OF SECTION

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Sheet Title
ELECTRICAL
SPECIFICATIONS

Project Number 24157

Sheet Number E-000

GENERAL NOTES

A. REFER TO ELECTRICAL SPECIFICATIONS ON DRAWING E-000 FOR ADDITIONAL INFORMATION.

B. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR GENERAL SCOPE OF DEMOLITION WORK REQUIRED UNDER THIS CONTRACT AND COORDINATE WITH ELECTRICAL DEMOLITION.

C. DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE GENERAL ARRANGEMENT OF ELECTRICAL DEMOLITION WORK TO BE PERFORMED. LOCATIONS ARE APPROXIMATE. EXACT EXTENT OF ELECTRICAL DEMOLITION WORK SHALL BE AS REQUIRED BY NEW ELECTRICAL WORK TO BE PERFORMED.

DEMOLITION KEYED NOTES:

1. DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURES AND LIGHTING CONTROL DEVICES, INCLUDING ALL ASSOCIATED WIRING BACK TO SOURCE. CONDUIT TO REMAIN IF IN GOOD CONDITION. NEW LIGHTING FIXTURES TO BE INSTALLED IN SAME LOCATION UNDER THIS CONTRACT. REFER TO EL-200 SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

2. DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURES AND LIGHTING CONTROL DEVICES, INCLUDING ALL ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE. NEW LIGHTING FIXTURES TO BE INSTALLED IN SAME LOCATION UNDER THIS CONTRACT. REFER TO EL-200 SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

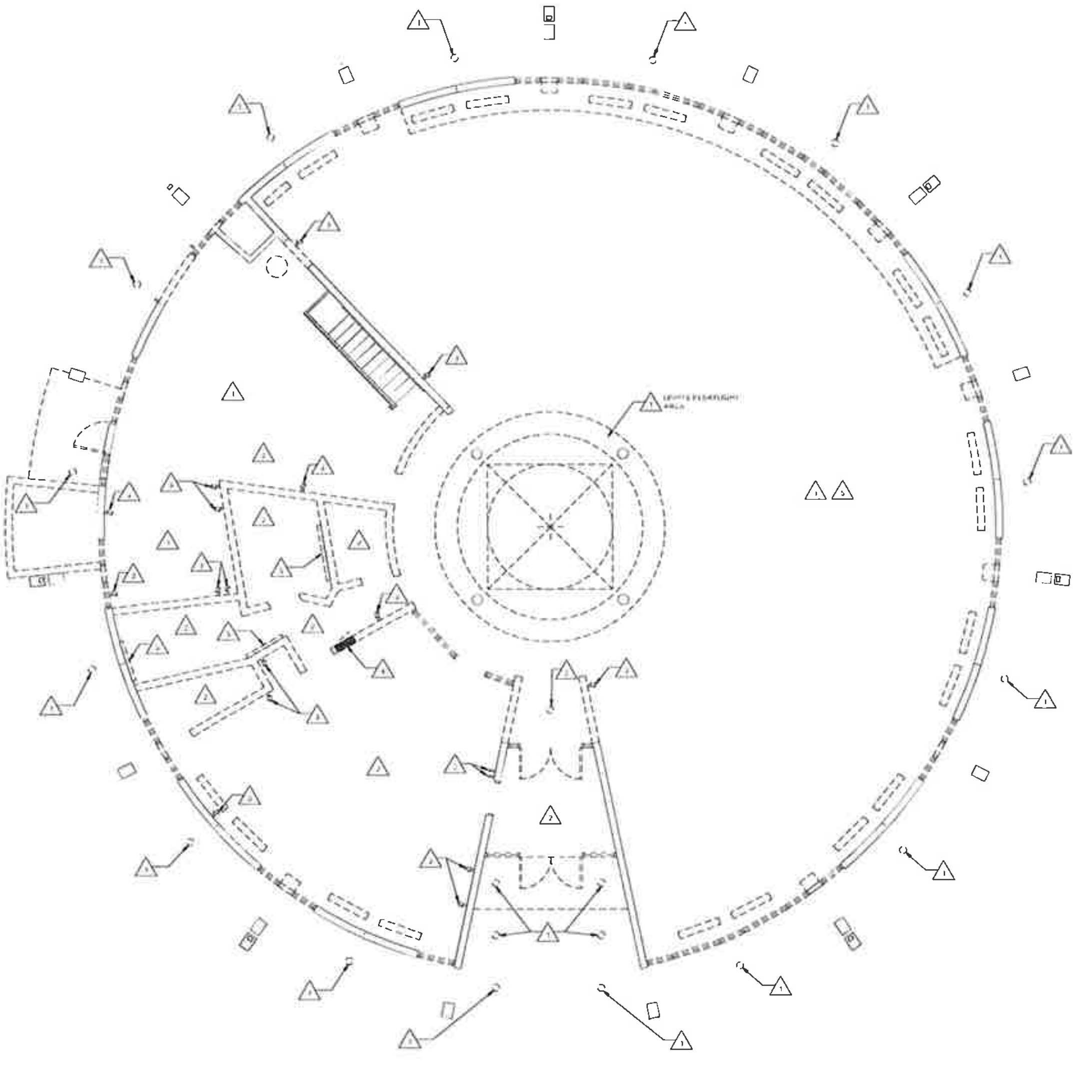
3. DISCONNECT AND REMOVE EXISTING RECEPTACLE, INCLUDING ALL ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.

4. DISCONNECT AND REMOVE EXISTING PANELBOARD, INCLUDING ALL ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.

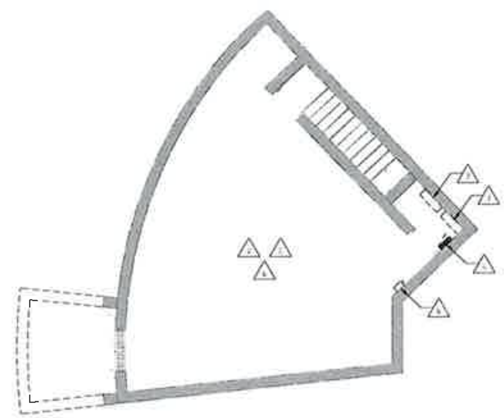
5. DISCONNECT AND REMOVE ALL ELECTRICAL EQUIPMENT ASSOCIATED WITH ALL MECHANICAL EQUIPMENT, INCLUDING ALL ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.

6. DISCONNECT ALL ELECTRICAL EQUIPMENT, INCLUDING ALL ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.

7. [illegible]



ELECTRICAL DEMOLITION FLOOR PLAN



ELECTRICAL DEMOLITION BASEMENT FLOOR PLAN

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Checked	LMR
Approved	SRK

Sheet Title
ELECTRICAL DEMOLITION FLOOR PLAN

Project Number 24157

Sheet Number ED-100

GENERAL NOTES

A. [illegible]

B. DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE GENERAL ARRANGEMENT OF ELECTRICAL WORK. LOCATIONS ARE APPROXIMATE AND SUBJECT TO MINOR MODIFICATIONS BY THE OWNER/ENGINEER.

C. COORDINATE EXACT LOCATION OF DEVICES WITH OTHER TRADES FOR AVOIDANCE OF ANY OBSTRUCTIONS. VERIFY W[illegible] SWITCHING OF ELECTRICAL LIGHTING PLANS FOR PROPER TYPES OF OPTIONS REQUIRED ON ALL FIXTURES. VERIFY CEILING TYPES ON ARCHITECTURAL REFLECTED CEILING PLANS FOR PROPER INSTALLATIONS OF TRIMS AND FOR EXACT MOUNTING LOCATIONS ON ALL FIXTURES.

D. USE #12 CONDUCTORS FOR 20A CIRCUIT HOME RUNS IF BRANCH CIRCUIT RUN IS [illegible] THAN 100 FEET FOR 120 VOLT. USE #10 CONDUCTORS IF BRANCH CIRCUIT RUN EXCEEDS 100 FEET FOR 120 VOLT.

E. LIGHTING FIXTURE MANUFACTURER AND MODEL SERIES SHOWN IN LIGHTING FIXTURE SCHEDULE AND ON PLAN ARE BASIS OF DESIGN. ALTERNATE MANUFACTURER AND EQUIPMENT LISTED THAT MEETS THE SALIENT CHARACTERISTICS OF THE LIGHTING FIXTURES LISTED ARE ACCEPTABLE. THE ENGINEER RESERVES THE RIGHT FOR THE MANUFACTURER OR MANUFACTURER'S REPRESENTATIVE TO PROVIDE PROOF THAT THE SELECTED EQUIPMENT MEETS OR EXCEEDS ALL FUNCTIONS, PLANS, AND SPECIFICATIONS. ALL "OR EQUALS" ARE SUBJECT TO APPROVAL BY ARCHITECT-ENGINEER.

F. LIGHTING CONTROL SYSTEM MANUFACTURER IS BASIS OF DESIGN. ALTERNATE MANUFACTURER AND EQUIPMENT LISTED THAT MEETS THE SALIENT CHARACTERISTICS OF THE LIGHTING CONTROL DEVICES LISTED ARE ACCEPTABLE. THE ENGINEER RESERVES THE RIGHT FOR THE MANUFACTURER OR MANUFACTURER'S REPRESENTATIVE TO PROVIDE PROOF THAT THE SELECTED EQUIPMENT MEETS OR EXCEEDS ALL FUNCTIONS, PLANS, AND SPECIFICATIONS. "ALL OR EQUALS" ARE SUBJECT TO APPROVAL BY ARCHITECT/ENGINEER.

G. [illegible] PACKS, AUXILIARY RELAYS, LOW VOLTAGE TRANSFORMERS, [illegible] REQUIRED AND RECOMMENDED BY THE LIGHTING CONTROL [illegible]

H. LETTER NEXT TO LIGHTING FIXTURE INDICATE FIXTURE TYPE. REFER TO FIXTURE SCHEDULE ON DRAWING [illegible] FOR ADDITIONAL INFORMATION.

I. [illegible]

J. [illegible]

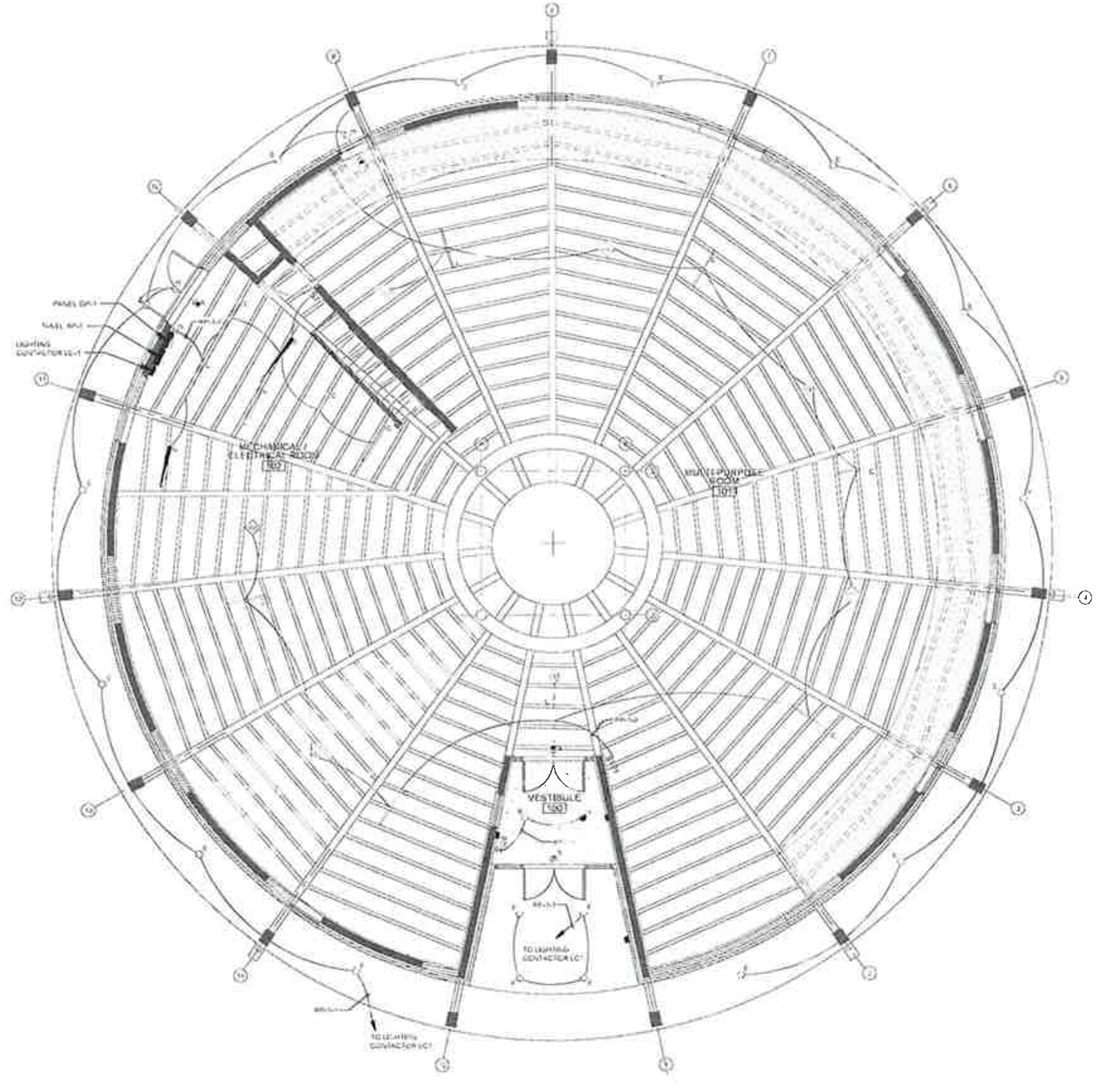
K. EMERGENCY AND EXIT LIGHTING FIXTURES TO BE INSTALLED UNDER THIS CONTRACT SHALL BE FED FROM THE SAME CIRCUIT AS NORMAL LIGHTING IN SPACE AND SHALL BE CONNECTED AHEAD OF THE SWITCH.

NOTES:

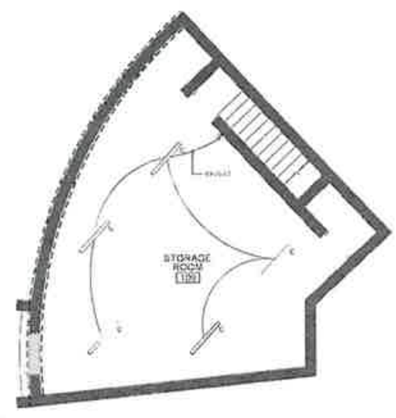
1. FURNISH AND INSTALL WALL MOUNTED OCCUPANCY SENSOR, SENSOR SWITCH MODEL WSX PDT WH OR EQUIVALENT.
2. FURNISH AND INSTALL WALL MOUNTED ON/OFF SWITCH WITH DIMMING, NLIGHT MODEL NPODM DX WH OR EQUIVALENT.
3. FURNISH AND INSTALL CEILING MOUNTED OCCUPANCY SENSOR, NLIGHT MODEL NCM PDT 10 AR RJB OR EQUIVALENT.

SYMBOLS

$\$_{OC}$	[illegible]
$\$_3$	THREE WAY SWITCH
$\$_{LC1}$	WALL MOUNTED ON/OFF SWITCH WITH DIMMING - REFER TO NOTE 2
LS1	CEILING MOUNTED OCCUPANCY SENSOR - REFER TO NOTE 3



ELECTRICAL LIGHTING FLOOR PLAN - PHASE 1



ELECTRICAL LIGHTING BASEMENT FLOOR PLAN - PHASE 1

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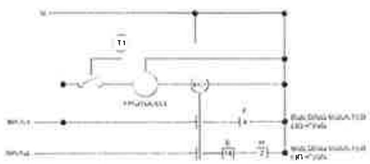
ELECTRICAL LIGHTING FLOOR PLAN - PHASE 1

Project Number 24157

EL-200A

Sheet Number



LIGHTING CONTACTOR LC1 (NOTE D)

NOTES
1. FURNISH AND INSTALL LIGHTING CONTACTOR TO BE CONTROLLED BY PHOTOCELL AND TIME CLOCK. 3 POLE, 120VAC COILS, ELECTRICALLY HELD, NEMA 1 ENCLOSURE, SQUARE D 8903 MODEL SPG[illegible]. FURNISH AND INSTALL PHOTOCELL INTERMATIC K4[illegible] OR EQUAL. PHOTOCELL TO BE MOUNTED ON EXTERIOR OF BUILDING FACING NORTH. TIME CLOCK SHALL BE CAPABLE OF [illegible]

FIXTURE SCHEDULE

SYMBOL	TYPE	SIZE AND MOUNTING	VOLTAGE (INPUT WATTAGE)	LAMPS AND LUMENS	MANUFACTURER / CATALOG NUMBER	REMARKS
[illegible]	B	6" DIA (NOMINAL) DOWNLIGHT	120V ([illegible])	4000K WHITE LIGHT EMITTING DIODES - 1,512 LUMENS (NOMINAL)	LITHONIA LDN6 SERIES - [illegible]	NOTE 1
[illegible]	C	1'x4' (NOMINAL) SURFACE MOUNT	120V ([illegible])	4000K WHITE LIGHT EMITTING DIODES - 4,237 LUMENS (NOMINAL)	LITHONIA CLX SERIES - CLX L48 4000LM SEF FDL MVOLT GZ1 40K 80CRI WH	NOTE 1
[illegible]	[illegible]	[illegible] (NOMINAL) CANOPY SURFACE MOUNT	120V ([illegible])	4000K WHITE LIGHT EMITTING DIODES - 1,099 LUMENS (NOMINAL)	LITHONIA [illegible] SERIES - [illegible]	[illegible]
[illegible]	[illegible]	6" (NOMINAL) RETROFIT DOWNLIGHT (WET LOCATION LISTED)	120V ([illegible])	4000K WHITE LIGHT EMITTING DIODES - 521 LUMENS (NOMINAL)	LITHONIA [illegible] SERIES - [illegible]	NOTE 2
[illegible]	[illegible]	EXTERIOR MANDOOR WALLPACK	120V ([illegible])	4000K WHITE LIGHT EMITTING DIODES - [illegible] LUMENS (NOMINAL)	LITHONIA WDGE1 LED - WDGE1 LED P2 40K 80CRI VF MVOLT SRM E1 WH DBLXD	NOTE 5
[illegible]	[illegible]	EXIT LIGHT - CEILING OR WALL MOUNT	120V ([illegible])	RED LIGHT EMITTING DIODES	LITHONIA [illegible] SERIES - [illegible]	NOTE 4

GENERAL NOTES

A. REFER TO ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.

B. LIGHTING FIXTURE MANUFACTURER AND MODEL SERIES SHOWN IN LIGHTING FIXTURE SCHEDULE AND ON PLAN ARE BASIS OF DESIGN. ALTERNATE MANUFACTURER AND EQUIPMENT LISTED THAT MEETS THE SALIENT CHARACTERISTICS OF THE LIGHTING FIXTURES LISTED ARE ACCEPTABLE. THE ENGINEER RESERVES THE RIGHT FOR THE MANUFACTURER OR MANUFACTURERS REPRESENTATIVE TO PROVIDE PROOF THAT THE SELECTED EQUIPMENT MEETS ALL FUNCTIONS, PLANS, AND SPECIFICATIONS ARE MET OR EXCEEDED. ALL "OR EQUALS" ARE SUBJECT TO APPROVAL BY ARCHITECT-ENGINEER.

C. [illegible]

D. EXTERIOR LIGHTING CONTROL DEVICES AND CONTROL SYSTEMS SHALL BE TESTED TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED, AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTION PER ASHRAE 90.1-2013 SECTION 9.4.3. TESTING OF THIS SYSTEM SHALL BE PERFORMED BY AN APPROVED THIRD-PARTY. DOCUMENTATION CERTIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET OR EXCEED ALL DOCUMENTED PERFORMANCE CRITERIA SHALL BE RECEIVED ONCE COMMISSIONING OF EXTERIOR LIGHTING CONTROL SYSTEM IS COMPLETE.

NOTES

1. FIXTURES WITH HALF SHADING SHOWN ON FLOOR PLANS SHALL BE FURNISHED AND INSTALLED WITH E10WCP BATTERY PACK.
2. FIXTURES WITH HALF SHADING SHOWN ON FLOOR PLANS SHALL BE FURNISHED AND INSTALLED WITH E10W BATTERY PACK.
3. [illegible]
4. [illegible]
5. MOUNT BOTTOM OF FIXTURE 1'-0" ABOVE MANDOOR FRAME.

LIGHTING CONTROL – SEQUENCE OF OPERATION

LIGHTING CONTROL SYSTEM HAS BEEN DESIGNED TO MEET SPECIFIC OPERATIONAL REQUIREMENTS AND FUNCTIONALITY AS FOLLOWS:

1. VESTIBULE 100
   a. CONTROLLED BY: LOCAL WALL MOUNTED OCCUPANCY SENSOR(S) WITH ON/OFF SWITCHES AT MAIN ACCESS DOOR(S) OR ENTRANCE FOR MANUAL OVERRIDE OF AUTOMATIC CONTROL
   b. CIRCUIT CAPABILITY: SINGLE
   c. TIME DELAY: SET FOR 10-MINUTE DELAY
   d. SYSTEM BRANCH: NORMAL
   e. AUTOMATIC SWITCHING MODE: [illegible] AUTOMATIC OFF
2. MECHANICAL/ELECTRICAL ROOM 102
   a. CONTROLLED BY: CONVENTIONAL WALL MOUNTED TOGGLE SWITCHES NEAR MAIN ACCESS DOOR(S). AUTOMATIC CONTROLS ARE EXEMPT FOR SAFETY REASONS.
   b. CIRCUIT CAPABILITY: SINGLE
   c. TIME DELAY: NONE
   d. SYSTEM BRANCH: NORMAL AND EMERGENCY
   e. AUTOMATIC SWITCHING MODE: NONE

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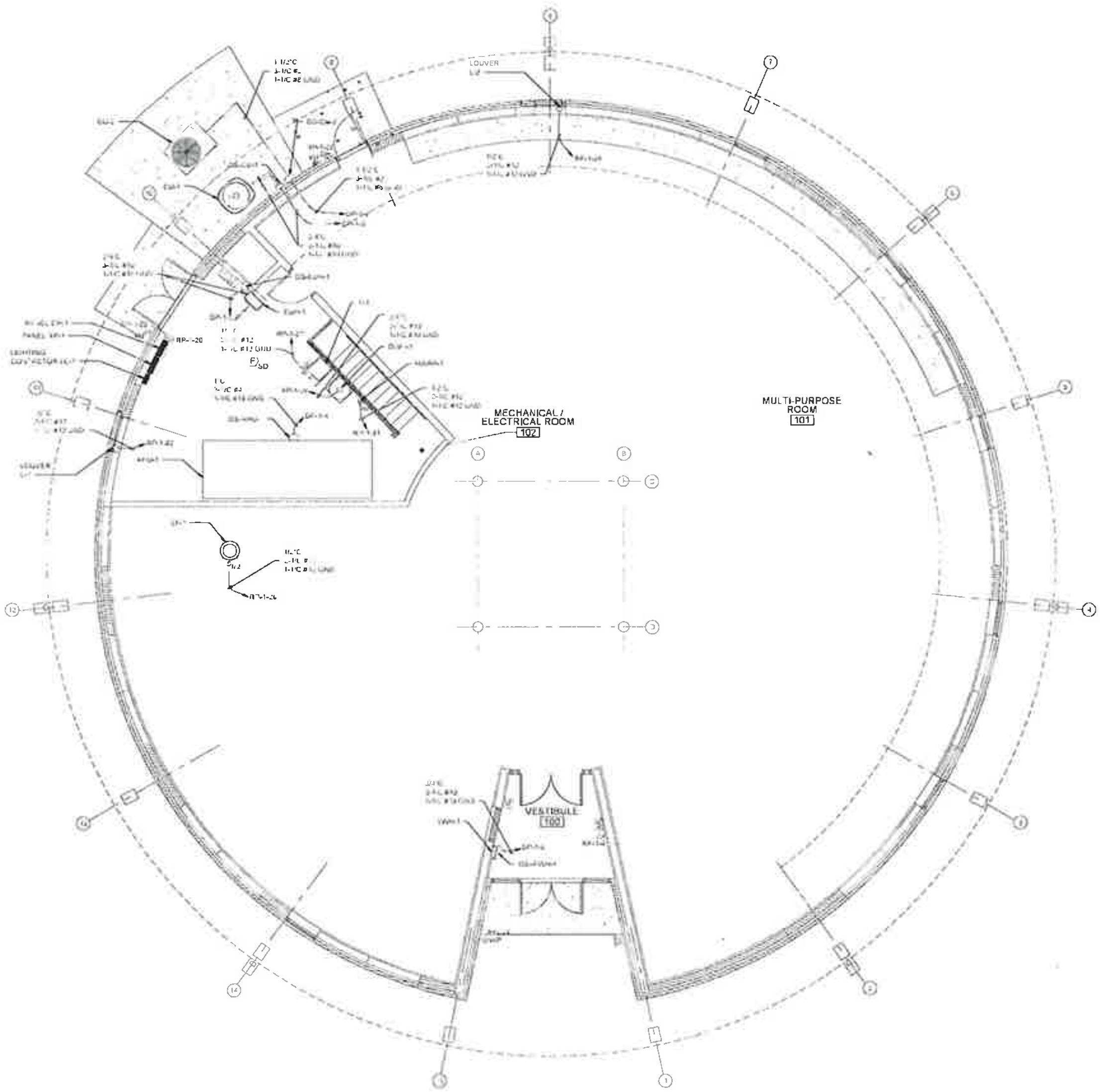
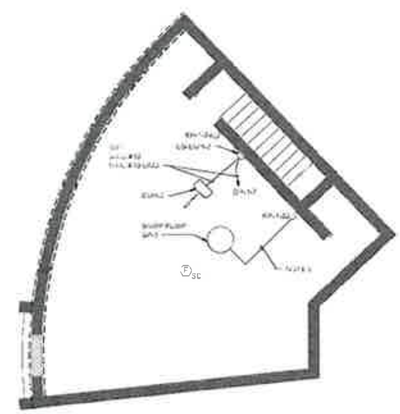
Sheet Title
ELECTRICAL LIGHTING FIXTURE SCHEDULE - PHASE 1

Project Number 24157

Sheet Number EL-600A



ELECTRICAL POWER FLOOR PLAN - PHASE 1



ELECTRICAL POWER BASEMENT FLOOR PLAN - PHASE 1

SYMBOLS

- 20A DUPLEX RECEPTACLE
- [illegible]
- [illegible]
- 20A GFCI WEATHERPROOF DUPLEX RECEPTACLE
- VOICE/DATA OUTLETS - REFER TO NOTE 1
- [illegible]
- INTERCOM REMOTE STATION - REFER TO NOTE 3
- FIRE ALARM PULL STATION
- FIRE ALARM HORN STROBE
- FIRE ALARM STROBE
- SMOKE DETECTOR
- MOTOR RATED TOGGLE SWITCH - REFER TO NOTE 4
- JUNCTION BOX
- MOTOR RATED TOGGLE SWITCH - REFER TO NOTE 5

GENERAL NOTES:

A. REFER TO ELECTRICAL SPECIFICATIONS ON DRAWING FOR ADDITIONAL INFORMATION

B. [illegible] ARRANGEMENT OF ELECTRICAL WORK. LOCATIONS ARE APPROXIMATE AND SUBJECT TO MINOR MODIFICATIONS BY THE OWNER/ENGINEER

C. USE #12 CONDUCTORS FOR 20A CIRCUIT HOME RUNS IF BRANCH CIRCUIT RUN IS LESS THAN 100 FEET FOR 120 VOLT. USE #10 CONDUCTORS IF BRANCH CIRCUIT RUN EXCEEDS 100 FEET FOR 120 VOLT.

D. REFER TO ONE-LINE DIAGRAM ON DRAWING EP-400 FOR ADDITIONAL INFORMATION

E. [illegible] INFORMATION

F. ALL POWER WIRING FOR MECHANICAL EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL CONTROL AND INTERLOCKING WIRING

G. FIRE ALARM DEVICES SHOWN ON DRAWINGS ARE INDICATED TO DEMONSTRATE DESIGN INTENT. ACTUAL NUMBERS AND LOCATION OF DEVICES SHALL BE AS RECOMMENDED BY THE FIRE ALARM MANUFACTURER SUPPLIER/CONTRACTOR. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS FOR ASSOCIATED CONDUIT AND BACKBOX LOCATIONS WITH FIRE ALARM CONTRACTOR PRIOR TO ROUGH-IN. PERMIT AND FINAL DESIGN OF FIRE ALARM SYSTEM IS BY [illegible]

NOTES

1. TYPICAL VOICE/DATA AND DATA OUTLETS SHALL BE 4" X 4" X 2-1/8" BOX WITH SINGLE GANG MUD RING AND 1" CONDUIT WITH PULL STRING TO OPEN SPACE ABOVE NEAREST CEILING (NORMALLY IN SAME ROOM). VOICE/DATA CABLING AND TERMINATIONS SHALL BE FURNISHED AND INSTALLED BY OWNER'S IT CONTRACTOR
2. [illegible] OUTLET BOX AND 1" CONDUIT WITH PULLSTRING TO OPEN SPACE ABOVE CEILING (NORMALLY IN SAME ROOM OR WITHIN BUILDING FOR EXTERIOR APPLICATIONS) FOR DOOR ACCESS CONTROL PUSH BUTTON. COORDINATE REQUIREMENTS AND LOCATION FOR OUTLET BOX WITH OWNERS SECURITY CONTRACTOR. DEVICES, CABLING, AND TERMINATIONS TO BE INSTALL BY SECURITY CONTRACTOR
3. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL APPROPRIATE OUTLET BOX AND 1" CONDUIT WITH PULLSTRING TO OPEN SPACE ABOVE CEILING (NORMALLY IN SAME ROOM OR WITHIN BUILDING FOR EXTERIOR APPLICATIONS) FOR DOOR SECURITY (INTERCOM OR CAMERA AS NOTED). COORDINATE REQUIREMENTS AND LOCATION FOR OUTLET BOX WITH OWNERS SECURITY CONTRACTOR. DEVICES, CABLING, AND TERMINATIONS TO BE INSTALL BY SECURITY CONTRACTOR.
4. FURNISH AND INSTALL A SQUARE D CLASS 2510 TYPE KG1A MOTOR RATED MANUAL SWITCH WITH A NEMA 1 ENCLOSURE FOR UNIT. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR
5. [illegible]
6. [illegible]

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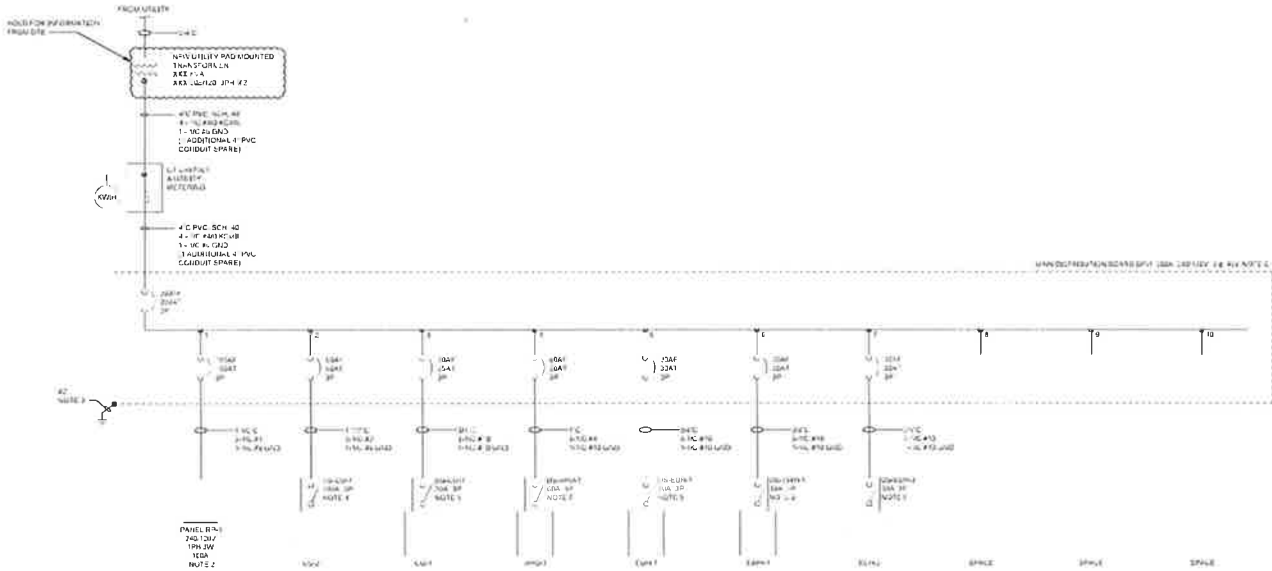
Sheet Title
ELECTRICAL POWER FLOOR PLAN - PHASE 1

Project Number 24157

EP-200A



GENERAL NOTES:

A. REFER TO ELECTRICAL SPECIFICATIONS ON DRAWING E-403 FOR ADDITIONAL INFORMATION.

B. [illegible]

C. REFER TO PANEL SCHEDULES ON THIS DRAWING FOR ADDITIONAL INFORMATION.

NOTES

1. CONTRACTOR SHALL COORDINATE WITH LOCAL ELECTRICAL SERVICE UTILITY PROVIDER FOR EXACT LOCATION OF POINT OF SERVICE TIE IN.
2. FURNISH AND INSTALL A 100A MCB, 240/120V, 1PH, 3W PANELBOARD SQUARE D INTERIOR NQ42L2C WITH BOX (NEMA 1) CAT #MH26 AND NC26S FRONT, PK27GTACU EQUIPMENT GROUND BAR AND [illegible] NEUTRAL BAR OR EQUIVALENT BY EATON.
3. [illegible]
4. FURNISH AND INSTALL A 100A, 3P FUSED DISCONNECT SWITCH, SQUARE D MODEL [illegible] OR EQUIVALENT. FURNISH AND INSTALL WITH 100A FUSES [illegible]
5. [illegible] D MODEL VH321NRB OR EQUIVALENT. FURNISH AND INSTALL WITH 30A FUSES, BUSSMANN LP-RK-30SP FUSES OR EQUIVALENT.
6. [illegible] PANELBOARD [illegible] CAT #MH44 AND [illegible] GROUND BAR AND [illegible] NEUTRAL BAR OR EQUIVALENT BY EATON.
7. [illegible] D MODEL [illegible] OR EQUIVALENT. FURNISH AND INSTALL WITH 20A FUSES, BUSSMANN LP-RK-20SP FUSES OR EQUIVALENT.
8. [illegible]

PANEL DESIGNATION: PANEL DP-1

Remarks	LIGHT LOAD	RECEPT LOAD	CONT LOAD	non-C LOAD	INTER. USE	OC PROT	CCT	A	B	C	CCT	OC PROT	INTER. USE	non-C LOAD	CONT LOAD	RECEPT LOAD	LIGHT LOAD	Remarks
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

LOAD DESCRIPTION	CONNECTED LOAD ØA	ØB	ØC	TOTAL	DEMAND FACTOR	DEMAND LOAD ØA	ØB	ØC	TOTAL
LIGHTING LOAD (VOLT-AMPS)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
180VA RECEPTACLE LOAD (VOLT-AMPS)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CONTINUOUS LOAD (VOLT-AMPS)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NON-CONTINUOUS LOAD (VOLT-AMPS)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INTERMITTENT USE LOAD (VOLT-AMPS)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL LOAD (KVA)	[illegible]	[illegible]	[illegible]	[illegible]	125% OF LIGHT, CONT AND RECEPT WITH ALL LOAD PLUS OTHER LOAD PER NEC ARTICLE 215.2	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL AMPACITY (AMPS)	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]

RECEPTACLE DEMAND FACTOR PER ARTICLE 220.44 OF THE NATIONAL ELECTRICAL CODE.

"PANEL DP-1"

PANEL DESIGNATION: PANEL RP-1

Remarks	LIGHT LOAD	RECEPT LOAD	CONT LOAD	non-C LOAD	INTER. USE	OC PROT	CCT	A	B	CCT	OC PROT	INTER. USE	non-C LOAD	CONT LOAD	RECEPT LOAD	LIGHT LOAD	Remarks
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

LOAD DESCRIPTION	CONNECTED LOAD ØA	ØB	TOTAL	DEMAND FACTOR	DEMAND LOAD ØA	ØB	TOTAL
LIGHTING LOAD (VOLT-AMPS)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
180VA RECEPTACLE LOAD (VOLT-AMPS)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CONTINUOUS LOAD (VOLT-AMPS)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NON-CONTINUOUS LOAD (VOLT-AMPS)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INTERMITTENT USE LOAD (VOLT-AMPS)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL LOAD (KVA)	[illegible]	[illegible]	[illegible]	125% OF LIGHT, CONT AND RECEPT WITH ALL LOAD PLUS OTHER LOAD PER NEC ARTICLE 215.2	[illegible]	[illegible]	[illegible]
TOTAL AMPACITY (AMPS)	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]

RECEPTACLE DEMAND FACTOR PER ARTICLE 220.44 OF THE NATIONAL ELECTRICAL CODE.

"PANEL RP-1"

Sidock Group
ARCHITECTS • ENGINEERS • CONSULTANTS
Corporate Headquarters

Client
CITY OF INKSTER
26215 TROWBRIDGE ST
INKSTER, MI 48141

Project
CITY OF INKSTER
CULTURAL
CENTER

Sheet Title
ELECTRICAL
ONE-LINE DIAGRAM
& PANEL
SCHEDULES -
PHASE 1

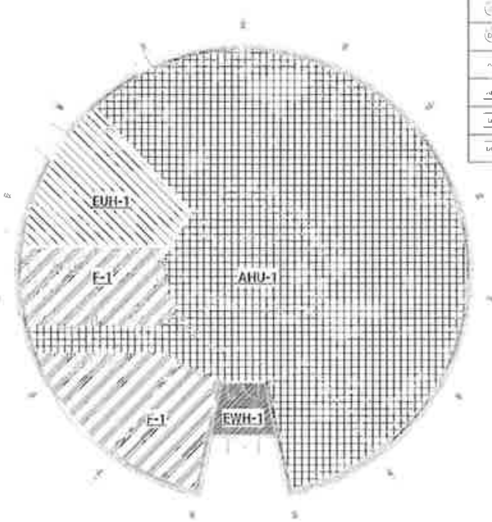
Project Number 24157

Sheet Number
EP-600A

TEMPERATURE CONTROLS SCHEMATIC SYMBOLS

ABBREVIATIONS AND DESCRIPTIONS

SYMBOLS AND NOTATION STANDARDS



KEY PLAN

SHEET LIST - MECHANICAL

DESIGN CONDITIONS

	OUTSIDE AIR	RETURN AIR
COOLING DB (°F)	[illegible]	[illegible]
COOLING WB (°F)	[illegible]	[illegible]
HEATING DB (°F)	[illegible]	72
CLIMATE ZONE		5A

NOTE: DESIGN CONDITIONS BASED ON ASHRAE 2013 CLIMATIC DESIGN INFORMATION

GREENPATH DESIGN

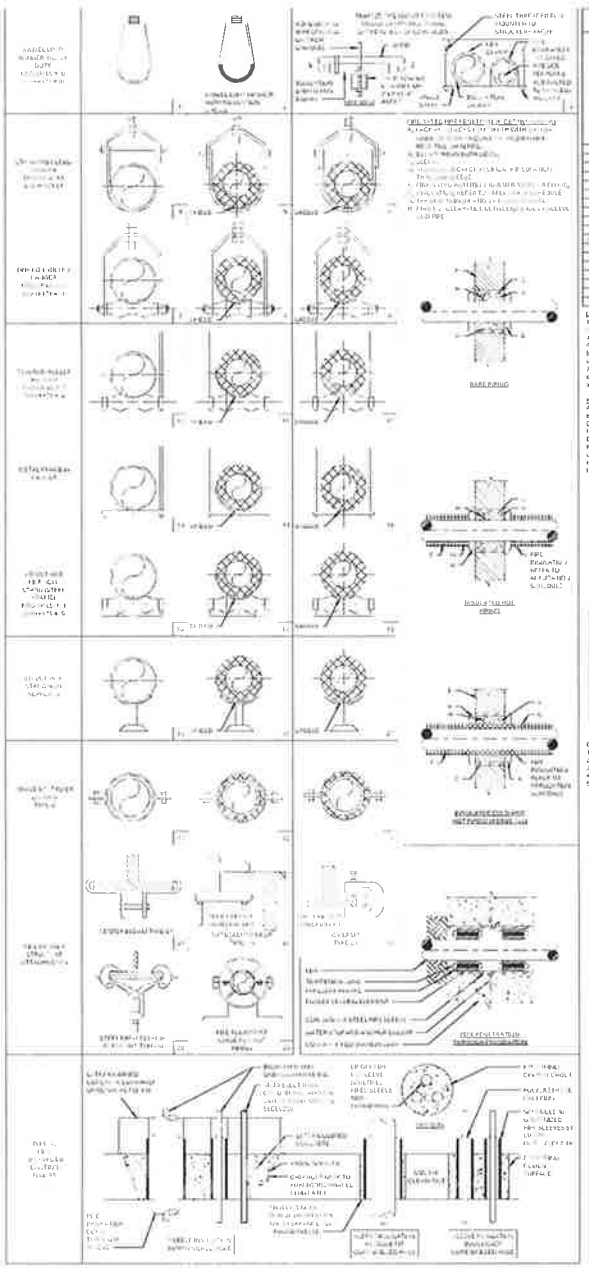
PROJECT: INKSTER CULTURAL CENTER

CITY OF INKSTER

PROJECT NO. 2024-0072

SHEET TITLE: INDEX, SYMBOLS, & ABBREVIATIONS

M-001



PIPING APPLICATION SCHEDULE

LOW PRESSURE DUCTWORK JOINT AND SUPPORT SCHEDULE

SHEET APPLICATION SCHEDULE

GREENPATH DESIGN

PROJECT
INKSTER CULTURAL CENTER
CITY OF INKSTER

PROJECT NO.
2024-0072

SHEET TITLE
STANDARD MATERIALS SCHEDULES

SHEET NO.
M-002

GREENPATH DESIGN

INKSTER CULTURAL CENTER

SPECIFICATIONS

M-003

GREENPATH DESIGN

1?? WEST LIBERTY STREET
PLYMOUTH, MI 48170
GREENPATHDESIGN

INKSTER CULTURAL CENTER

CITY OF INKSTER

2024-0072

SPECIFICATIONS

M-004

GREENPATH DESIGN

FOR WEST LIBERTY STATE UNIVERSITY
WOLFCRAFT, WV 26571
GREENPATH DESIGN
1-(262)-307-2561

PROJECT: MINISTER CULTURAL CENTER

CITY OF MINISTER

STATE OF OHIO

SHEET TITLE: SPECIFICATIONS

SHEET NO.: M-005

DATE

SECTION 23 0713 – DUCT INSULATION

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes thermal insulation for the following HVAC duct systems:

1. Supply air ductwork, including plenums and casings.
2. Return air ductwork, including plenums and casings.
3. Outdoor air intake ductwork.
4. Exhaust air ductwork between the point of connection to the building and the exhaust fan.
5. Duct liner for rectangular supply air ductwork.

B. Related Sections:

1. Section 23 0593 – Testing, Adjusting, and Balancing for HVAC.
2. Section 23 3113 – Metal Ducts.
3. Section 23 3300 – Air Duct Accessories.

1.2 DEFINITIONS

A. ASTM C 168: Standard Terminology Relating to Thermal Insulating Materials.

B. Concealed: Ductwork above ceilings and in chases, pipe spaces, and similar enclosed spaces.

C. Exposed: Ductwork in mechanical equipment rooms, occupied spaces without ceilings, and outdoors.

D. Thermal conductivity (k-value): Rate of heat flow through a material, expressed in Btu·in/(h·ft²·°F).

E. Vapor retarder: A material with a permeance of 0.1 perm or less when tested in accordance with ASTM E 96.

1.3 SUBMITTALS

A. Product Data: For each insulation material and accessory, including thermal properties, fire-hazard ratings, and installation instructions.

B. Shop Drawings: Show duct systems to be insulated, with insulation thickness noted for each run.

C. Samples: 12 inches square of each insulation material, for Architect's review.

D. Manufacturer's Installation Instructions: For each insulation system.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Experienced in duct insulation work similar to this Project.

B. Fire-Hazard Ratings: Provide insulation and accessories with a flame-spread index of 25 or less and a smoke-developed index of 50 or less, tested per ASTM E 84.

C. Mockup: Insulate a 4-foot length of duct, including a joint and a hanger, for Architect's review before proceeding with the balance of the work.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver insulation materials in manufacturer's original packaging with labels intact.

B. Store insulation materials indoors, protected from moisture, dirt, and crushing.

C. Do not install insulation that is wet, damaged, or contaminated.

PART 2 – PRODUCTS

2.1 DUCT INSULATION MATERIALS

A. Fibrous-Glass Duct Insulation: Rigid boards, ASTM C 612, Type IB, with a maximum thermal conductivity of 0.23 Btu·in/(h·ft²·°F) at 75°F mean temperature.

B. Flexible Elastomeric Duct Insulation: Closed-cell, sheet or tubular, ASTM C 534, Type II, with a maximum thermal conductivity of 0.27 Btu·in/(h·ft²·°F) at 75°F mean temperature.

C. Mineral-Fiber Duct Insulation: Rigid boards, ASTM C 612, Type IA, with a maximum thermal conductivity of 0.24 Btu·in/(h·ft²·°F) at 75°F mean temperature.

2.2 DUCT LINER

A. Rectangular Duct Liner: Fibrous-glass, ASTM C 1071, Type I for flat surfaces and Type II for surfaces subject to air velocities over 2,000 fpm.

B. Round Duct Liner: Fibrous-glass, ASTM C 1071, Type II.

C. Liner Adhesive: Water-based, low-VOC, complying with SCAQMD Rule 1168.

D. Mechanical Fasteners: Galvanized steel, self-adhering, with integral washer.

2.3 VAPOR RETARDERS

A. Vapor Retarder Jacket: Aluminum-foil, fiberglass-reinforced scrim, and kraft paper, ASTM C 1136, Type I, with a permeance of 0.02 perm.

B. Vapor Retarder Tape: Matching jacket material, with a permeance of 0.02 perm.

C. Vapor Retarder Mastic: Water-based, fire-resistive, with a permeance of 0.1 perm.

2.4 ACCESSORIES

A. Insulation Pins: Self-sticking, galvanized steel, with integral washer.

B. Duct Wrap Clips: Galvanized steel, spring-tension type.

C. Corner Angles: Aluminum, 0.040 inch thick, for protecting insulation at corners.

D. Banding Material: Stainless steel, 0.015 inch thick, 3/4 inch wide.

PART 3 – EXECUTION

3.1 PREPARATION

A. Clean ductwork surfaces of dirt, oil, and loose debris before insulation.

B. Do not insulate ductwork until it has been tested and accepted by the Testing, Adjusting, and Balancing agency.

3.2 INSTALLATION

A. Install insulation in accordance with SMACNA HVAC Duct Construction Standards.

B. Apply insulation with joints tightly butted and staggered.

C. Seal all vapor retarder penetrations with mastic.

D. Do not compress insulation beyond its rated thickness.

E. Install duct liner by adhering and mechanically fastening to the duct surface.

F. Cut liner edges at transverse joints to prevent erosion.

3.3 FIELD QUALITY CONTROL

A. Inspect insulation for gaps, voids, and damage.

B. Repair damaged insulation before concealing.

3.4 PROTECTION

A. Protect installed insulation from weather, moisture, and physical damage during construction.

B. Replace insulation that becomes wet or damaged.

PART 4 – MEASUREMENT AND PAYMENT

A. Duct insulation is measured by the square foot of duct surface area insulated.

B. Payment includes insulation, vapor retarder, jacket, adhesive, mastic, fasteners, and labor.

C. Payment is made under the unit price bid for duct insulation.

SECTION 23 0923 – DIRECT DIGITAL CONTROL SYSTEM FOR HVAC

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes a direct digital control (DDC) system for HVAC, including:

1. Stand-alone digital controllers.
2. Operator workstation and software.
3. Communication interfaces.
4. Sensors and actuators.
5. Integration with the fire alarm system.

B. Related Sections:

1. Section 23 0593 – Testing, Adjusting, and Balancing for HVAC.
2. Section 23 3113 – Metal Ducts.
3. Section 23 3300 – Air Duct Accessories.
4. Section 23 0713 – Duct Insulation.

1.2 DEFINITIONS

A. BACnet: Building Automation and Control Networks, ASHRAE 135.

B. DDC: Direct digital control.

C. I/O: Input/output.

D. Point: A single input or output value.

1.3 SUBMITTALS

A. Product Data: For each controller, sensor, actuator, and software module.

B. Shop Drawings: Show network architecture, controller locations, and wiring diagrams.

C. Sequence of Operation: Narrative and flowcharts for each HVAC system.

D. Point List: Complete list of all points, with addresses and descriptions.

E. Submittals are specified in Section 01 3300.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Factory-trained and experienced in DDC systems similar to this Project.

B. Testing: Perform a complete system test before acceptance.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver controllers in manufacturer's original packaging with labels intact.

B. Store controllers indoors, protected from moisture, dirt, and crushing.

C. Do not install controllers that are wet, damaged, or contaminated.

PART 2 – PRODUCTS

2.1 DDC CONTROLLERS

A. Stand-Alone Controllers: Microprocessor-based, with non-volatile memory and battery backup.

B. Controller Hardware: Modular, with plug-in I/O modules.

C. Controller Software: Programmable, with PID control, scheduling, and alarming.

D. Controller Communication: BACnet MS/TP or BACnet IP.

E. Controller Power: 24 VAC, with transformer.

F. Controller Enclosure: NEMA 1, with lockable door.

2.2 OPERATOR WORKSTATION AND SOFTWARE

A. Operator Workstation: Desktop computer, with monitor, keyboard, and mouse.

B. Software: Graphical user interface, with dynamic color graphics.

C. Software Functions: Monitoring, control, scheduling, alarming, trending, and reporting.

D. Software Licenses: Perpetual, for the number of workstations indicated.

2.3 SENSORS AND ACTUATORS

A. Temperature Sensors: Platinum RTD, 1000 ohm, with accuracy of ±0.2°F.

B. Humidity Sensors: Capacitive, with accuracy of ±2% RH.

C. Pressure Sensors: Differential, with accuracy of ±1% of span.

D. Flow Sensors: Thermal dispersion, with accuracy of ±2% of reading.

E. Actuators: Electronic, with position feedback.

F. Valve Actuators: Modulating, with spring return.

G. Damper Actuators: Modulating, with spring return.

2.4 COMMUNICATION INTERFACES

A. BACnet MS/TP: RS-485, 9600 to 76,800 baud.

B. BACnet IP: 10/100 Mbps Ethernet.

C. Gateways: As required to connect to third-party systems.

2.5 FIRE ALARM INTERFACE

A. Interface with the fire alarm system to shut down HVAC systems on alarm.

B. Provide dry contacts for fire alarm shutdown.

C. Provide status indication to the fire alarm system.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install controllers in accessible locations, with adequate clearance for maintenance.

B. Install sensors in representative locations, away from heat sources and drafts.

C. Install actuators on dampers and valves, with linkages adjusted for full travel.

D. Label all controllers, sensors, and actuators with their point names.

3.2 WIRING

A. Install wiring in conduit, except for low-voltage wiring in accessible ceilings.

B. Use shielded cable for analog signals.

C. Use twisted pair for communication wiring.

D. Label all wiring at both ends.

3.3 PROGRAMMING

A. Program controllers in accordance with the sequence of operation.

B. Provide a backup of all programming on a USB drive.

C. Provide a printed copy of all programming.

3.4 FIELD QUALITY CONTROL

A. Test all points for proper operation.

B. Test all alarms for proper operation.

C. Test the fire alarm interface for proper operation.

D. Repair or replace any defective equipment.

3.5 TRAINING

A. Provide training for operators and maintenance personnel.

B. Training shall include system operation, programming, and troubleshooting.

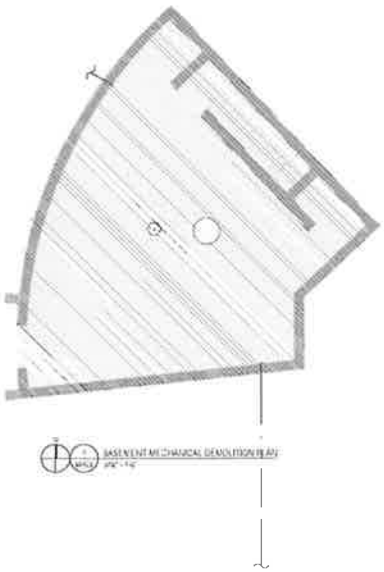
C. Provide training materials, including manuals and videos.

PART 4 – MEASUREMENT AND PAYMENT

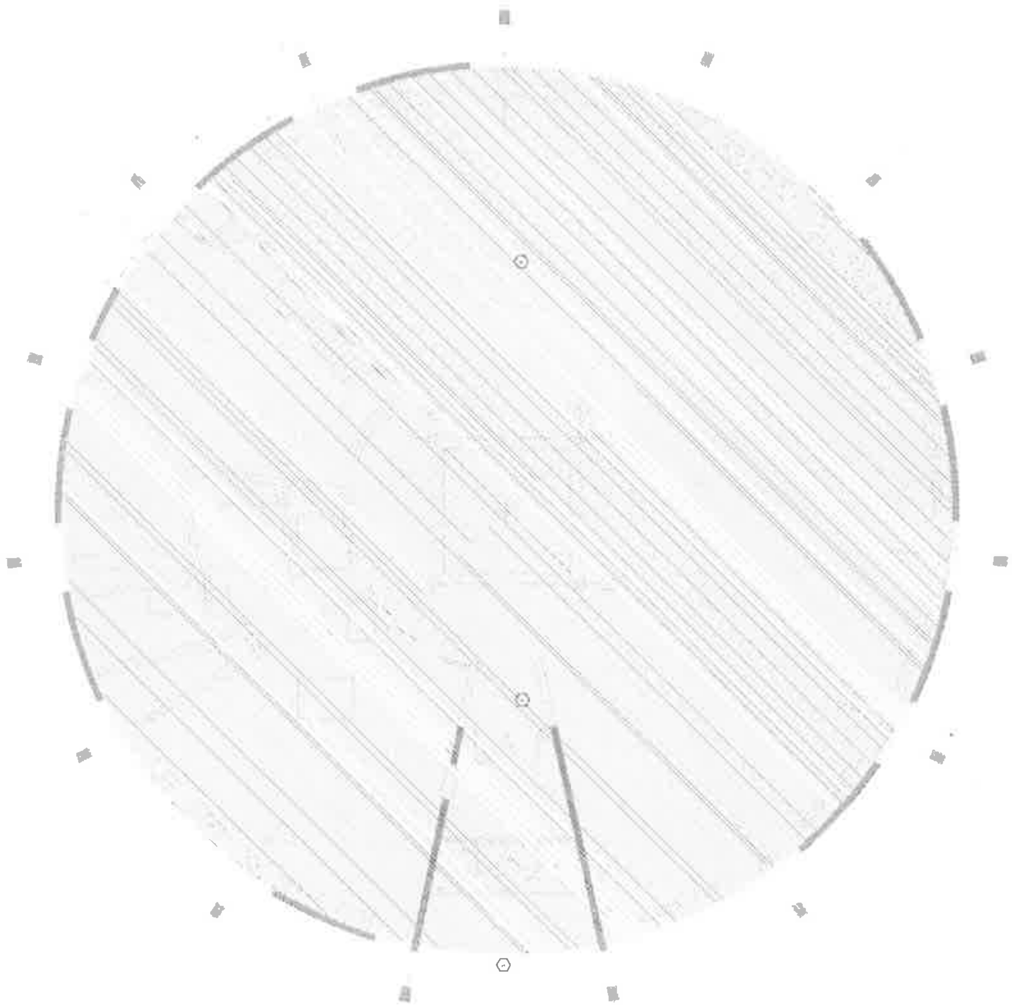
A. DDC system is measured by the lump sum.

B. Payment includes controllers, software, sensors, actuators, wiring, programming, and training.

C. Payment is made under the lump sum bid for the DDC system.



BASEMENT MECHANICAL DEMOLITION PLAN



MECHANICAL DEMOLITION PLAN

GENERAL MECHANICAL DEMOLITION NOTES

MECHANICAL DEMOLITION KEYNOTES

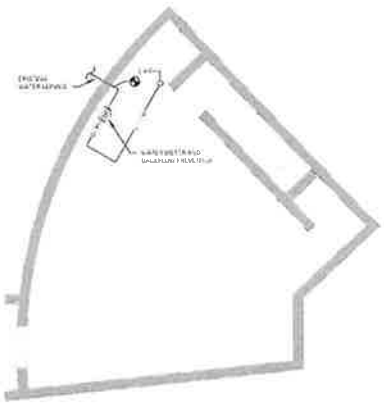
GREENPATH DESIGN
1?? WEST LIBERTY STREET
PLYMOUTH, MI 48170
GREENPATH DESIGN
1 248 ??0 7?26

INKSTER CULTURAL CENTER
CITY OF INKSTER

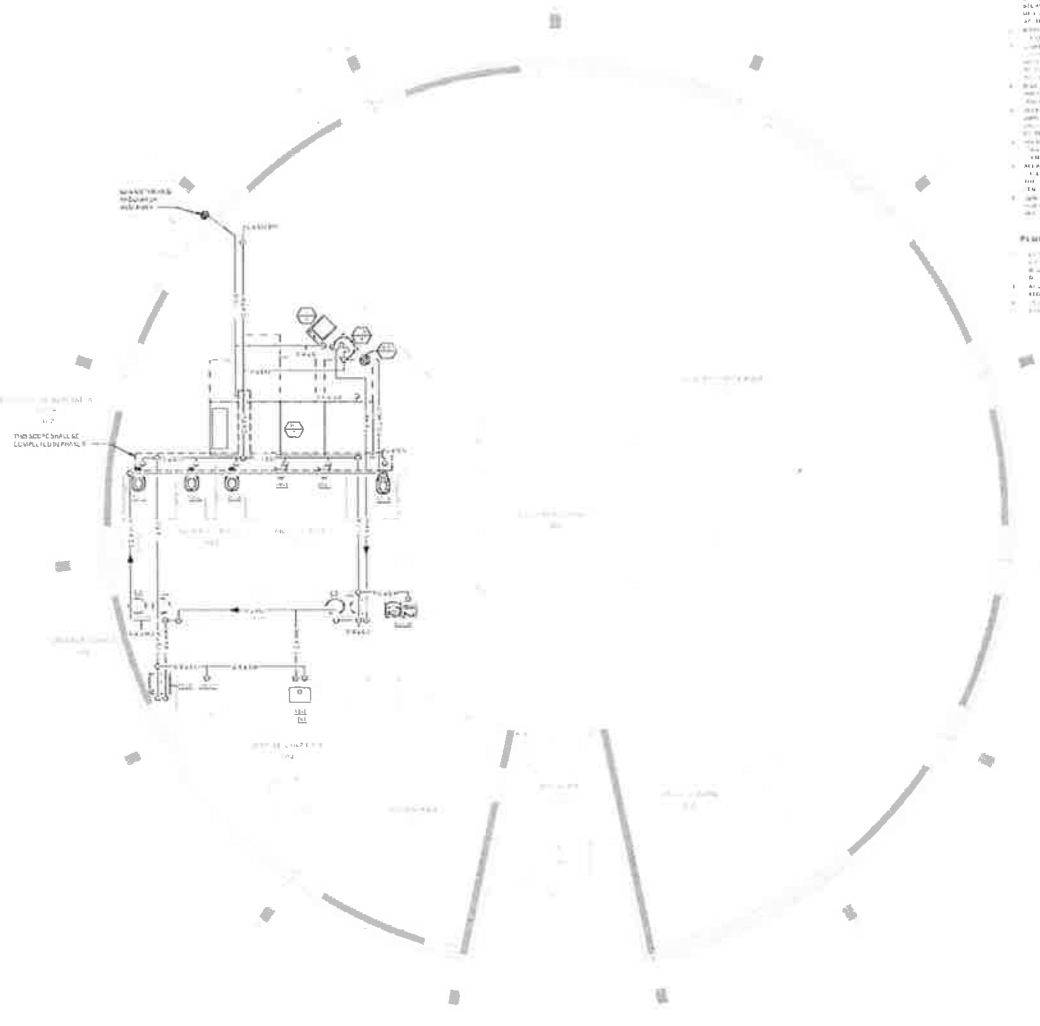
2024-0072

MECHANICAL DEMOLITION PLAN

M-100



2 BASEMENT WATER AND GAS PIPING



1 WATER AND GAS PIPING

PLUMBING GENERAL NOTES

PLUMBING CONSTRUCTION KEYNOTES

GREENPATH DESIGN

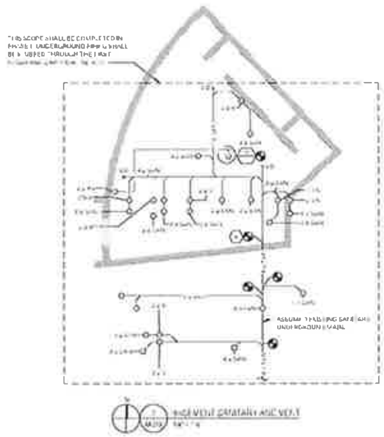
119 WEST LIBERTY STREET
PLYMOUTH, MI 48170
GREENPATH.DESIGN
1.248.3?0.7266

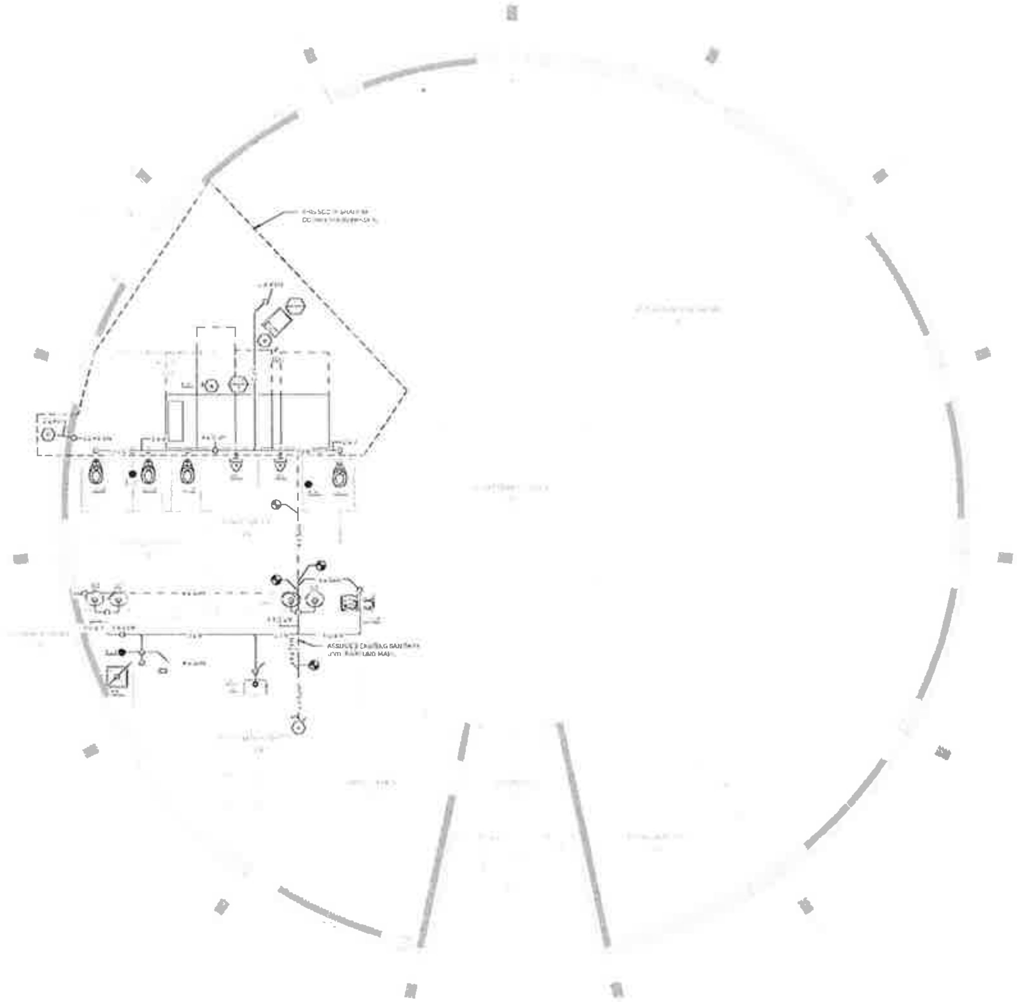
INKSTER CULTURAL CENTER
CITY OF INKSTER

PROJECT NO.
2024-0072

DOMESTIC NEW WORK PLAN

M-200





SANITARY AND VENT PIPING

PLUMBING GENERAL NOTES

PLUMBING CONSTRUCTION KEYNOTES

120 WEST LIBERTY STREET
PLYMOUTH MI 48170
GREENPATH DESIGN

GREENPATH DESIGN

INKSTER CULTURAL CENTER

CITY OF INKSTER

2024-0072

SANITARY AND VENT PLAN

M-210

MECHANICAL - GENERAL NOTES

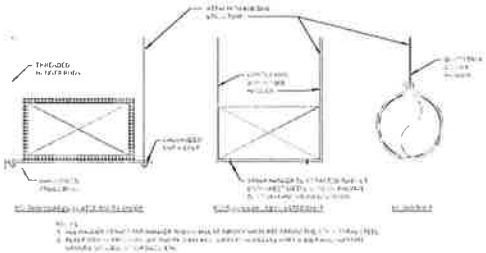
MECHANICAL CONSTRUCTION KEYNOTES

GREENPATH DESIGN

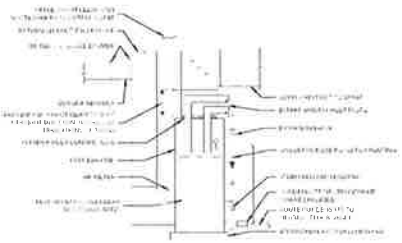
INKSTER CULTURAL CENTER

MECHANICAL PLAN

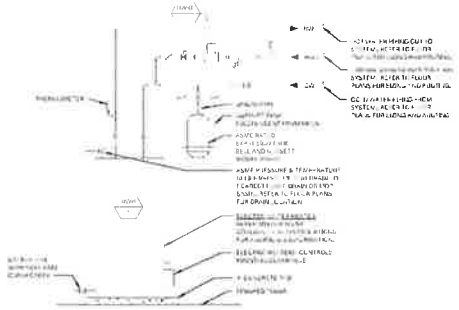
M-400



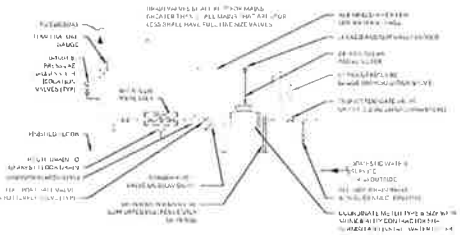
DUCT SUPPORT DETAIL



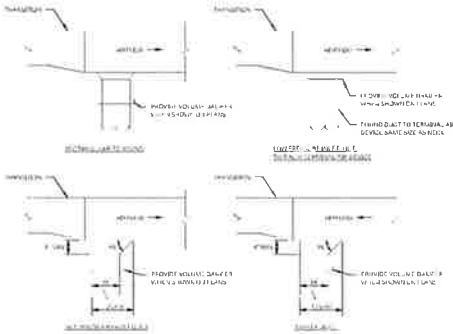
HIGH EFFICIENCY GAS FURNACE AND COOLING COIL DIAGRAM AND INSTALLATION DETAIL



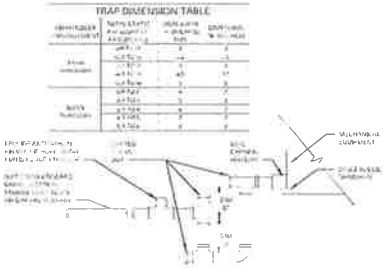
ELECTRIC STORAGE WATER HEATER DETAIL



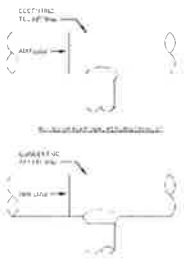
WATER SERVICE ENTRANCE DETAIL



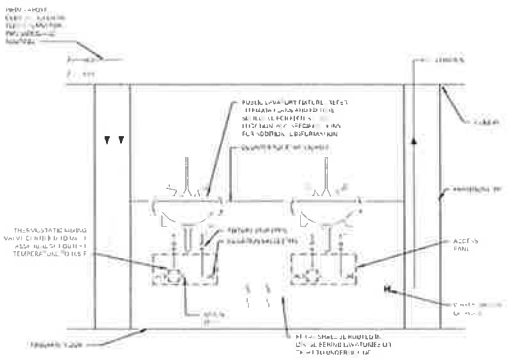
RECTANGULAR BRANCH DUCT DETAILS



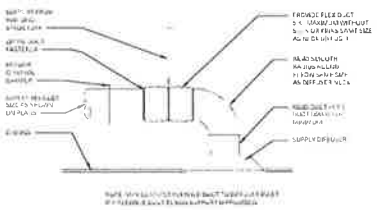
CONDENSATE DRAIN TRAP DETAIL



ROUND BRANCH DUCT DETAILS

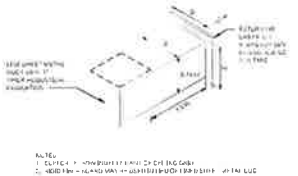


PUBLIC LAVATORY THERMOSTATIC MIXING VALVE PIPING SCHEMATIC

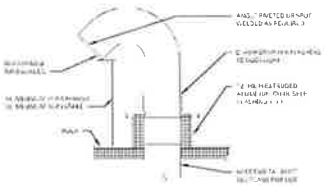


ROUND NECK SUPPLY AIR DIFFUSER DETAIL

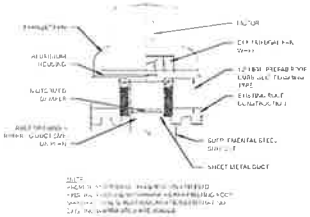
EXPOSED ROUND DUCT DIFFUSER DETAIL



RETURN AIR TRANSFER GRILLE DETAIL



GOOSENECK DETAIL



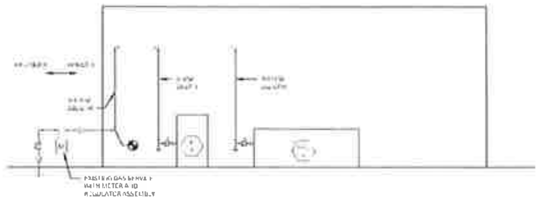
GREENPATH DESIGN

WATER CULTURAL CENTER

CITY OF WATER

DETAILS

M-500



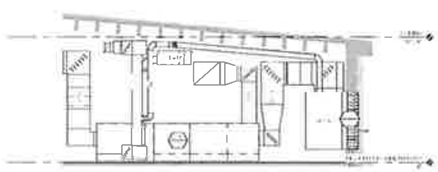
GAS PIPE DESIGN CRITERIA	
PIPE SIZING PER IFGC-2015 SECTION 402	
SYSTEM GAS PRESSURE	
LOW PRESSURE	X
MEDIUM PRESSURE 2 PSIG	
MEDIUM PRESSURE PSIG	
MEDIUM PRESSURE PSIG	
HIGH PRESSURE __ PSIG	
DEVELOPED PIPE LENGTH FT	70
PIPE SIZE	CAPACITY CFH
[illegible]	[illegible]

* GAS TRAIN PROVIDED BY EQUIPMENT MANUFACTURER - SEE SPECIFICATIONS

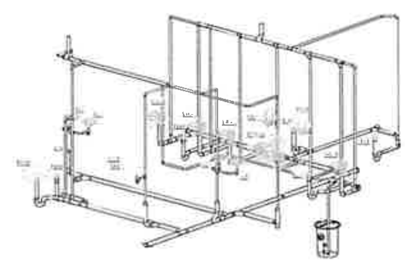
GAS CAPACITY TABLE	
ITEM	TOTAL CFH
AHU	[illegible]
F	[illegible]
[illegible]	[illegible]

CONNECTED GAS LOAD = [illegible] CFH @ 7" W.C.

NATURAL GAS PIPING DIAGRAM



③ MECHANICAL ROOM SECTION
3/16" = 1'-0"



PLUMBING RISER DIAGRAM - SANITARY & VENT PIPING

GREENPATH DESIGN
139 WEST LIBERTY STREET
PLYMOUTH, MI 48170

INKSTER CULTURAL CENTER
CITY OF INKSTER

PROJECT NO.
2024-0072

SHEET TITLE
DIAGRAMS AND SECTIONS

M-600

GRILLE, REGISTER, AND DIFFUSER SCHEDULE

GAS FIRED FURNACE SCHEDULE

DX COOLING COIL SCHEDULE

CONDENSING UNIT SCHEDULE (OUTDOOR)

LOUVER SCHEDULE

AIR HANDLER SCHEDULE

ELECTRIC WATER HEATER SCHEDULE

PUMP SCHEDULE

PLUMBING FIXTURE SCHEDULE - FLOOR DRAINS / FLOOR SINKS / TRENCH DRAINS

PLUMBING FIXTURE SCHEDULE - SERVICE SINK

PLUMBING FIXTURE SCHEDULE - DRINKING FOUNTAIN / BOTTLE FILLER

PLUMBING FIXTURE SCHEDULE - LAVATORY / SINK

PLUMBING FIXTURE SCHEDULE - WATER CLOSET / URINAL

CODE MINIMUM VENTILATION SCHEDULE

CODE MINIMUM SYSTEM VENTILATION RESULTS

ELECTRIC WALL HEATER SCHEDULE

ELECTRIC UNIT HEATER SCHEDULE

FAN SCHEDULE

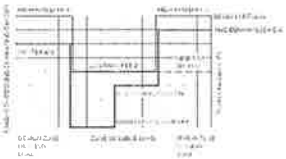
SUMP PUMP SCHEDULE

THERMOSTATIC MIXING VALVE SCHEDULE

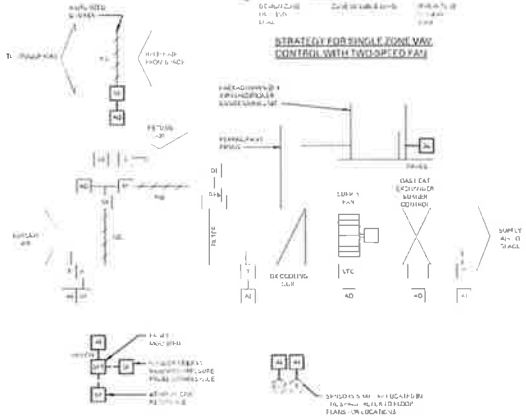
GREENPATH DESIGN

PROJECT
INKSTER CULTURAL CENTER
2024-0073

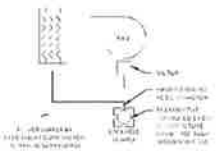
SHEET
SCHEDULES
M-700



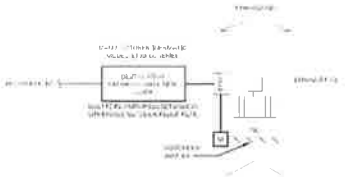
STRATEGY FOR SINGLE ZONE VAV CONTROL WITH TWO SPEED FAN



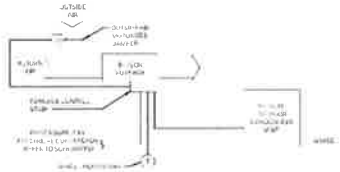
AIR HANDLER W/ GAS AND DX SPLIT FIELD WIRING & CONTROL



TYPICAL ELECTRIC UNIT HEATER CONTROL



EXHAUST FAN EF-1 CONTROL



SPLIT SYSTEM FURNACE AND AIR CONDITIONER FIELD WIRING & CONTROL

GREENPATH DESIGN

TEMPERATURE CONTROLS

M-800