Addendum

App Architecture
creative focused design

615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

DATE: 01/29/2025

PROJECT: Huber Heights FS23 Renovation and Addition

PROJECT ADDRESS: 7435 Old Troy Pike
Dayton, Ohio 45424

ADDENDUM NO. 1

RECEIPT OF THIS ADDENDUM MUST BE NOTED ON THE FORM OF PROPOSAL

TO ALL BIDDERS:

This addendum supplements and amends the original Plans and Specifications and shall be taken into account in preparing proposals and shall become part of the Contract Documents.

GENERAL ITEMS:

ARCHITECTURAL CLARIFICATION:

Q1 What is the cost estimate for the project?
A1 The cost estimate is $2.5 million.

Q2 What is the correct allowance for the project? Discrepancy between Specifications 002113 and 012100.
A2 Refer to ITEM AS1.

ARCHITECTURAL SPECIFICATIONS:

ITEM AS1: 002113 INSTRUCTIONS TO BIDDERS
1. Revised allowance amount. Changes highlighted.

ITEM AS2: 007300 SUPPLEMENTARY CONDITIONS
1. Removed Section 3.7 PERMIT, FEES, AND NOTICES. Contractor to pay all building permit and tap fees as stated in AIA A201. Changes highlighted.

ITEM AS3: 075300 ELASTOMERIC MEMBRANE ROOFING
1. Added DEXcell to list of Deck Sheathing Products under Section 2.04. Refer to Substitution Requests. Changes highlighted.

ITEM AS4: 081113 HOLLOW METAL DOORS AND FRAMES
1. Removed FEMA P-361 references. Changes highlighted.

ITEM AS5: 087100 DOOR HARDWARE
1. Removed FEMA P-361 references. Changes highlighted.

ITEM AS6: 122400 WINDOW SHADES
1. Added room-darkening channels under Section 2.01.B. Changes highlighted.

GENERAL DRAWINGS:

ITEM G1 SHEET G0.1 – COVER SHEET
1. Added Sheet A8.7 to Drawing Index.

ITEM G2 SHEET G0.2 – STORM SHELTER
1. Modified Fixed Objects and Net Clear Area SFs under Section 501.1.2.2 and in F2 Plan.
2. Added Section 502.3.
3. Modified Section 702.8.
4. Moved Door 111 4" to the South.
5. Revised Construction Note 2 reference page number.
6. Added Construction Note 6 to Plan D2.

ARCHITECTURAL DRAWINGS:

ITEM A1 SHEET A0.3 – DOOR SCHEDULES
1. Modified undercut for Door 111.

ITEM A2 SHEET A0.6 – DOOR AND WINDOW DETAILS
1. Added clarifying dimensions for anchors to Details C4 and D4.
2. Added flooring note and modified undercut dimensions on Detail F4.

ITEM A3 SHEET A3.2 – EXTERIOR ELEVATIONS
1. Showed mechanical louver on Elevation F2.

ITEM A4 SHEET A7.1 – INTERIOR ELEVATIONS
1. Clarified Porcelain Wall Tile (PWT) on Notes 18, 19, and 20.

ITEM A5 SHEET A8.7 – CASEWORK DETAILS
1. Added Sheet.

ITEM A6 SHEET A9.1 – FINISH PLANS
1. Added Construction Note 4.
2. Modified Legend for MAT-1 and SC-1.

STRUCTURAL DRAWINGS:

ITEM S1 SHEET S0.1 – GENERAL STRUCTURAL INFORMATION
1. Revised the "Collapse/Laydown" load in the General Storm Shelter Notes.

ITEM S2 SHEET S4.4 – FRAMING DETAILS
1. Revised the spacing of the reinforcing bars in Sections 5, 6, and 7.

FIRE SUPPRESSION DRAWINGS:

ITEM F1 SHEET F1.1 – PHASE 1 – FIRE SUPPRESION PLAN
1. Added storm shelter penetration general protection notes.

HVAC DRAWINGS:

ITEM H1 SHEET H1.2 – PHASE 1 – NEW WORK PLANS
1. Added reference callout to shelter intake detail.
2. Added Construction Note 32.
3. Added storm shelter penetration general protection notes.

ELECTRICAL DRAWINGS:

ITEM E1 SHEET E0.2 – DETAILS AND SCHEDULE
1. Modified acceptable manufacturers for fixtures K1 and UC.
2. Added Note 20 to Lighting Fixture Schedule.

ITEM E2 SHEET E1.4 – PHASE 1 – LIGHTING NEW WORK PLANS
1. Added additional fixture EM to storm shelter.

SUBSTITUTION REQUESTS:

ITEM SR1 DECK SHEATHING PRODUCTS – NATIONAL GYPSUM
1. Approved.
2. Refer to ITEM AS3.

END OF ADDENDUM NO. 1

ATTACHMENTS: Pre-Bid Meeting Notes and Sign-In Sheets

Specifications
002113 INSTRUCTIONS TO BIDDERS
007300 SUPPLEMENTARY CONDITIONS
075300 ELASTOMERIC MEMBRANE ROOFING

081113 HOLLOW METAL DOORS AND FRAMES
087100 DOOR HARDWARE
122400 WINDOW SHADES

Drawing sheets

G0.1, G0.2
A0.3, A0.6, A3.2, A7.1, A8.7, A9.1
S0.1, S4.4
F1.1
H1.2
E0.2, E1.4

Substitution Requests

SR1 – Deck Sheathing Products – National Gypsum

Pre-Bid Meeting Notes

App Architecture
creative focused design

615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

DATE: January 23, 2025

PROJECT: City of Huber Heights, Fire Station 23
Renovation and Addition
7435 Old Troy Pike

SIGN-IN & INTRODUCTIONS: Owner – App Architecture – Contractors – Subcontractors

Keith Knisley – Fire Chief
Mike Muhl – Assistant Fire Chief, Owner's Representative
Tim Bement – App Architecture, Principal in Charge
Brenda Lynn – App Architecture, Construction Administration
Maria Mundy – App Architecture, Design Professional
David Zelinski – Nauman and Zelinski, Mechanical and Plumbing Engineer
Mark Meek – Nauman and Zelinski, Electrical Engineer
Michael Seeger – Choice One Engineering, Civil Engineer
Stan Fuller – Jezerinac Geers and Associates, Structural Engineer

GENERAL SCOPE OF PROJECT:

- New 2,422 square foot Addition and 6,298 square foot Renovation of existing Fire Station 23
- Project consists of 2 Phases:
  - Phase 1 generally consists of the Addition
  - Phase 2 generally consists of the Renovation
  - Phases designed to maintain the continuous operation of Fire Station 23
- Two Stories, approx. 8,720 SF, Load Bearing and Non-load bearing light gage metal framing with brick and siding, cold formed metal framing for roof, and membrane roof
- Single Prime Contract covering all branches of Work
- No Alternates
- $100,000 Allowance for unforeseen conditions
- 5 Unit Prices associated with site work

BID REQUIREMENTS:

- Bid due date – Thursday, February 13, 2025; 1:00 pm
- Bids are to be submitted in-person at 6131 Taylorsville Road, Huber Heights, Ohio
- Use bid forms provided in the Project Manual
- Required forms are in the Instructions to Bidders
- Bid Bond (10%) required
- Performance and Payment Bond (100%) required. Cost to be included in bid and listed separately on bid form, only awarded contractor to provide P&P Bond
- All work is Prevailing Wage as established by Ohio Department of Commerce

- Last day for substitution requests – 1:00 pm on February 5
- Last day for project related questions – 1:00 pm on February 7
- Submission dates for substitutions and questions are firm
- Submit questions by email to Maria Mundy at maria.mundy@app-arch.com
- All necessary clarifications will be made by Addendum
- Use AIA 305 Contractor's Qualification Statement as provided in project specifications

OWNER COMMENTS:

- GC to obtain all permits at no cost to the Owner
- Owner is sales tax exempt
- Expected Start Date – City expects to award by end of February for March start
- Project Duration – City anticipates 12 months for construction
    - Approximately 8 months for Phase 1
    - Approximately 4 months for Phase 2

TEMPORARY FACILITIES:

- Utilities – by the GC
- Field offices and storage trailers by the GC
- Temporary toilets by the GC
- Organization and use of site to be determined by the GC

REVIEW DRAWINGS AND SPECS:

- Follow recommendations from Two Geotechnical Reports, which includes, but not limited to removing 5'-0" of fill as stated in Koontz Bryant Johnson Williams report in section 4.0 Discussion and Recommendations
    - Koontz Bryant Johnson Williams on October 7, 2024
    - CBC Engineers and Associates, Ltd. on October 29, 2021
- Storm Shelter (this room doubles as an enlarged restroom, located off Corridor, adjacent to Kitchen)
- Bi-Fold doors are labelled as basis-of-design on drawings
- Existing generator is going to be reused for City of Huber Heights. Coordinate with owner
- Long Lead Items: Generator. Contractor to advise of any additional

CONTRACTOR QUESTIONS AND OPERATIONAL REQUIREMENTS:

- The estimate of the project is $2.5 million
- Tap in fees for water and sewer should be included in the bid
- The drive on the South side of the project must be clear for continued use by Station vehicles at the end of each day. During active construction hours, the Station vehicles can back into the bays via the front apron
- Access through the Decon corridor must be completed during Phase 1 to maintain cleared pathways from Dorms to the Apparatus Bays during and after active construction hours
- Phase 2 will require working around occupancy and maintaining cleared pathways to Apparatus Bays

Pre-Bid Sign-In Sheet

App Architecture
creative focused design

DATE: January 23, 2025

PROJECT: City of Huber Heights, Fire Station 23 Renovation and Addition
7435 Old Troy Pike, Dayton, OH 45424

Name	Company	Address	Communication Numbers
CHRIS ROBINSON	BRUMBAUGH CONST	3520 ST RT 49 ARCANUM OH	Phone: 937.692.5707 Mobile: 937.423-3981 E-Mail: chris@brumbaughconstruction.com
GRAHAM KING	LEVEL MB	226 S. MARKET ST. TROY OH, 45359	Phone: 937-216-8435 Mobile: E-Mail: gking@levelmb.com
Roger Kunkel	TRITON SERVICES	8162 DUKE BLVD MASON OH.	Phone: 513-679-6803 Mobile: E-Mail: RKunkel@tritonservicesinc.com
Cambell Gostonsky	AKA Construction	903 Salem St. Brookville OH	Phone: 937-241-0046 Mobile: E-Mail: cambell@aka-construction.com
Jacob Sowers	Double Jay Construction	29 HAWKESBURY DR. ENGLEWOOD, OH 45322	Phone: 937-832-3123 Mobile: 937-570-2466 E-Mail: jacob@doublejayinc.com
Tyler Ponchot	KKT construction	275 Conover Dr Franklin OH 45005	Phone: 937-790-6020 Mobile: E-Mail: tyler@kktconstructioninc.com
			Phone: Mobile: E-Mail:
			Phone: Mobile: E-Mail:

PROJECT NUMBER: 4262.00

Pre-Bid Sign-In Sheet

App Architecture
creative focused design

DATE: January 23, 2025

PROJECT: City of Huber Heights, Fire Station 23 Renovation and Addition
7435 Old Troy Pike, Dayton, OH 45424

Name	Company	Address	Communication Numbers
ERIC MORTON	MEGEN	11130 Ashburn Cincinnati OH	Phone: 513 742 9191 Mobile: 915 838 5804 E-Mail: emorton@megenconstruction.com
Jason Redd	DeBra Koerper	Dayton, Ohio	Phone: 937 321-0622 Mobile: E-Mail: jredd@dkemcor.com
Chris Brown	Point to Point Systems	620 E 1st Street Dayton, OH	Phone: 937-902-6148 Mobile: E-Mail: cbrown@p2psystems.net
Jason Owens	Anro Builders	5944 Executive Blvd Dayton 45424	Phone: 937-537-2284 Mobile: E-Mail: jason@anrobuilders.com
Jimmie Woody	Frederick Electric	2452 Stanley Ave, Dayton 45404	Phone: 614.753.6894 Mobile: same E-Mail: jimmie@frederick-electric.com
			Phone: Mobile: E-Mail:
			Phone: Mobile: E-Mail:
			Phone: Mobile: E-Mail:

Pre-Bid Sign-In Sheet

App Architecture
creative focused design

DATE: January 23, 2025

PROJECT: City of Huber Heights, Fire Station 23 Renovation and Addition
7435 Old Troy Pike, Dayton, OH 45424

Name	Company	Address	Communication Numbers
Gregg Inskeep	KAPP Construction	329 Mount Vernon Ave Springfield Oh.	Phone: 937-324-0134 Mobile: 937-305-9096 E-Mail: GInskeep@KAPPCONSTRUCTION.com
JOHN WAITES	TRUE UNITED CONTRACTORS	1330 FAIR DR DAYTON OH	Phone: 937-938-0262 Mobile: E-Mail: jwaites@trueunitedContractors.com
Shane Rhodehamel	True United Contractors	" "	Phone: 937.459.9873 Mobile: E-Mail: srhodehamel@trueunitedcontractors.com
Jermaine Carter	Mega Construction	11130 Ashburn Rd Cincinnati 45240	Phone: Mobile: 513-894-8816 E-Mail: jcarter@megaconstruction.com
			Phone: Mobile: E-Mail:
			Phone: Mobile: E-Mail:
			Phone: Mobile: E-Mail:
			Phone: Mobile: E-Mail:

PROJECT NUMBER: 4262.00

SECTION 00 2113
INSTRUCTIONS TO BIDDERS

A. Description of Project

1. Work of Construction of a New 2,422 square foot Addition and a 6,298 square foot Renovation of existing Fire Station 23.

2. Work by Owner: The following work will be accomplished by the owner or will be let under separate Contracts not included in this Specification:
    1) Furniture and Furnishing

3. Unusual Conditions: Is it assumed that no unusual conditions will be encountered during the actual performance of the Work. However, the Contractor should study the site carefully for accessibility, mechanical access, etc.

4. Project includes two phases of Work as reflected on the drawings. The fire station will remain operational during construction.

5. The Contractor for the General Contract shall commence work under the Contract on its execution and shall fully complete all work thereunder no later than the time indicated on the Proposal form.

B. Definitions and Standards

1. Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The bidding requirements consist of the Advertisement or Invitation to Bid, Instruction to Bidders, Supplementary Instruction to Bidders, the Bid Form and other sample bidding and contract forms. The proposed Contract Documents consist of the Form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

2. Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A 201, or in other Contract Documents are applicable to the bidding Documents.

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

4. A **Bid** is complete and properly signed proposal to do the Work or designated portion thereof for the sums stipulated therein, submitted in accord with the Bidding Documents.

5. The **Base Bid** is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids.

6. An **Alternate Bid (or Alternate)** is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work as described in the Bidding Documents, is accepted.

7. A **Unit Price** is an amount stated in the Bid as a price per unit measurement for materials, equipment or services or a portion of the Work as described in the Bidding documents.

8. A **Bidder** is a person or entity who submits a Bid.

9. A **Sub-bidder** is a person or entity who submits a Bid to a Bidder for materials, equipment or labor for a portion of the Work.

10. **Interpretation of Trade Names or Titles**: Each item listed in the Specifications is intended to be complete and fully workable item or piece of equipment. The Contractor will include in the Proposal this item or equipment in such a manner that the Owner may take it over and find it capable of performing to the intention of its design. This is not intended to make the Contractor responsible for the engineering design of what is shown, intended or indicated, but only to ensure the furnishing of complete and functioning installations.

11. **Reference to Standard Specifications**: Such reference shall mean latest edition as of time of Advertisement for Bids.

12. **"Or Equal" Clause:** Whenever the Contract Documents designate any article, material or equipment by describing a propriety product, or by using the name of a Manufacturer or vendor, the term "or equal" shall apply. The article, material or equipment so named, shall be understood to define a type, function, minimum standard of design, efficiency and quality desired, and is not intended to eliminate competition. The Contractor may, by complying with the requirements of Paragraph 3 of Section E, Substitutions, of the Instructions to Bidders, use authorized substitutions in the Bid.

13. **Match Existing:** When the term "Match Existing" is used, the contractor will supply new materials that will match existing in all aspects including form, function, color, texture, size, etc. Contractor will inform the Architect, prior to bidding, if any existing product cannot be matched as stated above so that the situation can be researched and an addendum issued.

C. Qualifications of Bidders

1. All General Contractors are required to submit all of the information listed below for study by the Owner, in order to determine the ability of the Contractor to perform.
    a. AIA Document A305 Contractors Qualification Statement, completed in full.

2. Failure of a Contractor to supply information requested will be grounds for rejection

of the General Contractors bid.

D. Examination of Project Requirements

1. Each Bidder by making a Bid represents that:
    a. The Bidder has read and understands the Bidding Documents and the Bid is made in accord therewith.
    b. The Bidder has read and understands the Bidding Documents or Contractor Documents, to the extent that such documentation relates to the Work for which the Bid is submitted, for other portions of the project, if any, being bid concurrently or presently under construction.
    c. The Bidder has visited the site, become familiar with the local conditions under which the Work is to be performed and has correlated the Bidder's observations with the requirements of the proposed Contract Documents.
    d. The Bid is based upon the materials, systems and equipment required by the Bidding Documents without exception.

E. Bidding Documents

1. Copies
    a. Bidders may obtain complete sets of the Bidding Documents from the Architect via its electronic ShareFile site designated in the Advertisement or Invitation to Bid.
    b. Bidders shall use complete sets of Bidding Documents in preparing Bids. Neither the Owner nor the Architect assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
    c. The Owner or Architect, in making copies of the Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use of the Bidding Documents.

2. Interpretation or Correction of Bidding Documents
    a. The Bidders shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, and shall examine the site and local conditions, and should Bidders or Sub-bidders find their work impossible to perform as detailed or items impossible to furnish as specified, or resulting installation unusable, unsafe, impracticable, unworkable or unable to perform upon examination of the Bidding Documents or of the Site and local conditions, Bidders will notify Architect prior to submission of Bid, or will assume responsibility of proper performance at no additional cost to the Owner.
    b. Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least seven days prior to the date for receipt of Bids.
    c. Any interpretation, correction or change of the Bidding Documents will be made 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.

d. Where not covered under Article E.2.a.,b. and c. above, a discrepancy between items or materials or equipment indicated and/or specified, the Bidders shall assume the greatest number, the best quality or the most complete indicated or required. Where items are listed in more than one Contract, each listed shall include item in their Proposal.

3. Substitutions
   a. General:
      1) The materials, products and equipment described in the Bidding Documents establish a standard or required function, dimension, appearance and quality to be met by any proposed substitution.
      2) Where any Contractor provides an item or installation not as specified but as accepted as an equal or as a substitution, the Contractor will assume responsibility for the performance of same and provide for any modifications to architectural, structural or mechanical work as required to accommodate such items.
   b. Pre-Bid
      1) No substitution will be considered prior to receipt of Bids unless written requests for approval have been received by the Architect at least seven days prior to the date for receipt of Bids. Such requests 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 other portions of the Work including changes in the work of other contracts that incorporation of the proposed substitution would require shall be included. The burden of proof of the merit of the proposed substitute is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.
      2) If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.
   c. With Bid: Substitutions or modifications of specified items suggested by the Bidder as to being equal to or better than as specified, may be stated on the Bid Form by the Base Bid for the Owner's consideration.
   d. After Award: No substitutions will be considered after the Contract award unless specifically provided in the Contract Documents.

4. Addenda:
   a. Addenda will be mailed or delivered to all who are known by the Architect to have received a complete set of Bidding Documents.
   b. Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
   c. No Addenda will be issued later than One days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

d. Each Bidder shall ascertain prior to submitting a Bid that all addenda issued have been received and shall acknowledge their receipt in the Bid.

F. Bidding Procedures

1. Type of Bid: Bids will be received under the following Contracts:
    a. General

2. Unit Prices: Unit prices requested on the Bid Form shall be given and, if included in the Contract, will be used for additions to or deductions from amount of Work required under the Contract. Unit prices shall include all cost of materials, labor, transportation, insurance, applicable taxes, overhead and profit.

3. Subsurface Conditions: Base Bid shall include subsurface soil improvements per either Section 31 20 00 <or> Section 31 66 00.

4. Alternate Bids:
    a. Alternate Bids must be submitted for different items entering into the construction of the building as called for under the different headings in the Specifications and as provided in the Bid Forms under each division of Work. Failure to bid alternates will result in rejection of the Bid.
    b. The Owner reserves the right to accept or reject any alternates that will result in advantage for the Owner.
    c. Allowances: Bidders shall include all items for which cash allowances are specified for the various sections of the Specifications. The amount of the allowances will be part of the Base Bid.

5. Allowances: Bidders shall include in their Base Bid a cash allowance of $100,000. Any unused portion of this Allowance shall be returned to the Owner as a Deduct Change Order at the end of the Project.

6. Form and Preparation of Bid
    a. Bids shall be submitted upon the prescribed bid form furnished within the specification.
    b. The form shall be completely filled out in ink or type written in words and figures (in case of discrepancy, words shall govern) including applicable phase-of-work.
    c. Any interlineations, alteration or erasure must be initialed by the signer of the Bid.
    d. All requested Alternates shall be bid. If no change in the Base Bid is required, enter “No Change”.
    e. Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the Bid Security, state the Bidders refusal to accept award of less than the combination of Bids the Bidder so stipulates. The Bidder shall make no additional stipulations on the Bid Form nor qualify the Bid in any other manner.
    f. List of Subcontractors: Each Bidder is required to submit a complete list of subcontractors with the proposal or within 24 hours after bid due date on the spaces provided on the proposal and as outlined under the Invitation for

Bids. This list shall conform to the breakdown form requested in Paragraph 9.2 of the General Conditions. Work and material furnished by the Prime Contractor shall be so listed along with actual subcontractors. This list will meet the requirements of Article 5.2 of the General Conditions.

g. Requirements for Signing Bids:
   1) Each copy of the Bid shall include the legal name of the Bidder, and a statement that the Bidder is a sole proprietor, a partnership, a corporation or other legal entity. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a Contract.
   2) Bids which are not signed by individuals making them, shall have attached thereto, a Power-of-Attorney evidencing authority to sign the Bid in the name of the person for whom it is signed.
   3) Bids which are signed for a partnership, shall be signed by the partners or by an Attorney-in-Fact. If signed by an Attorney-in-Fact, there shall be attached to the Bid, a Power-of-Attorney evidencing authority to sign the Bid, executed by the Partners.
   4) Bids which are signed for a Corporation, shall have the correct corporate names thereof and the signature of the President of the Corporation, hand-written below and stamped with the Corporation Seal. A Bid by a Corporation shall further give the State of Incorporation.
   5) All Bids must be notarized.

7. Bid Security
   a. A satisfactory Bid Bond executed by the Bidder and Surety Company or a certified check in an amount equal to ten percent of the Bid shall be submitted with each Bid payable to the Owner. Form should be similar to AIA Document A 310. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney.
   b. Bidders by submitting a Bid and Bid Bond pledges that the Bidder will enter into a Contract with the Owner, within twenty days after the proposal is accepted by the Owner and the Bidder is given written notice thereof, on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. The amount of the bid security shall not be forfeited to the Owner in the event that the Owner fails to comply with Subparagraph H.1.
   c. Each surety will determine the ability of each Contractor they bond to meet all the requirements of this Specification.
   d. Bid Bonds or checks of unsuccessful Bidders will be returned within seven days after bids are opened.
   e. The Owner will have the right to retain the Bid Security of Bidders to whom an award is being considered until either the Contract has been executed and bonds, if required, have been furnished, or

f. The specified time has elapsed so that Bids may be withdrawn, or all bids have been rejected.

8. Submission of Bids:
    a. All copies of the Bid, the Bid Security, if any and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope
        1) The envelope shall state the Bid, Project, Time for Opening, the Branch of Work and Bidders name and address;
        2) If the Bid is sent by mail the sealed envelope shall be enclosed in a separate mailing envelope with the notion 'SEALED BID ENCLOSED' on the face thereof.
    b. Bids shall be deposited at the designated location prior to the time and date for receipt of Bids indicated in Advertisement or Invitation to Bid, or any extension thereof made by Addendum. Bids received after the time and date for receipt of Bids will be returned unopened.
    c. The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.
    d. Oral, telephonic, telegraphic, or electronic Bids are invalid and will not receive consideration.
    e. Any deviation from the exact procedure described above or omission of any item or line of the Bid Form requested may result in rejection of the Bid. Owner assumes no responsibility to open Bids received by mail after the Bid Opening.

9. Modification or Withdrawal of Bid
    a. A Bid may not be modified, withdrawn or cancelled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting the Bid.

    b. Prior to the time and date designated for receipt of Bids, any Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder, written confirmation over the signature of the bidder shall be mailed and postmarked on or before the date and time set for receipt of Bids, and it shall be so worded as not to reveal the amount of the original Bid.
    c. Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.
    d. Bid security, if any is required, shall be in an amount sufficient for the Bid as modified or resubmitted.

G. Consideration of Bids

1. Opening of Bids: Unless stated otherwise in the Advertisement or Invitation to Bid, the properly identified Bids received on time will be opened publicly. An abstract of the Base Bids and Alternate Bids, if any, may be made available to Bidders.

2. Rejection of Bids: The Owner shall have the right to reject any or all Bids and to reject a Bid not accompanied by any required Bid security or by other data required by the Bidding Documents, or to reject a Bid which is in any way incomplete or irregular.

3. Acceptance of Bid (Award):
    a. It is the intent of the Owner to award a Contract to the lowest responsible, responsive bidder provided the Bid has been submitted in accord 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 the Owner's judgment, is in the Owner's best interests.
    b. The low Bidder will be determined solely on the basis of the Base Bid and accepted Alternates. Substitutions, while welcome, will not be used to determine the low bidder. However, should all Contractors submit the same substitution in the same manner, this substitution will then be considered to be an Alternate.
    c. The Owner shall have the right to accept Alternates in any order or combination, unless otherwise provided, and to determine the low Bidder on the basis of the sum of the Base Bid and the Alternates accepted.
    d. Formal notice in writing to the awardee from the office of the Architect shall constitute award of the Contract. Acceptance of any substitution by the Owner shall be in writing by the Architect after the award of the Contract to the low bidder, in the form of Change Orders.

H. Post Bid Information

1. Owner's Financial Capability: The Owner shall, at the request of the Bidder to whom award of a Contract is under consideration and no later than seven days prior to the expiration of the time for withdrawal of Bids, furnish to the Bidder reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Unless such reasonable evidence is furnished, the Bidder will not be required to execute the Owner-Contractor Agreement.

2. Subcontractors and Supplies
    a. The Bidder will be required to establish to the satisfaction of the Architect and the Owner the reliability and responsibility of the subcontractors and suppliers listed with the Bid or proposed to furnish and perform the Work described in the Bidding Documents.
    b. Prior to the award of the Contract, the Architect will notify the Bidder in writing if either the Owner or the Architect, after due investigation, has reasonable objection to any such proposed subcontractor or supplier. If the Owner or Architect has reasonable objection to any such proposed subcontractor or supplier, the Bidder has the option to:
        1) Withdraw the Bid, or
        2) Submit an acceptable substitute subcontractor or supplier with an

adjustment in the Bid price to cover the difference in cost occasioned by such substitution. The Owner may, at the Owner's discretion, accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification under this Subparagraph, Bid Security will not be forfeited, notwithstanding the provisions of Paragraph F.7.a.

c. Subcontractors or suppliers proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection under the provisions of Subparagraph H.2.b. must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and the Architect.

I. Performance Bond and Labor and Material Payment Bond

1. Bond Requirements
   a. The successful Bidders will take out and pay for a Performance Bond and a Material and Labor Payment Bond in the amount equal to 100 percent of the contract.
   b. Prior to execution of the Contract, the Bidder shall furnish bonds covering the faithful performance of the Contract and the payment of al obligations arising thereunder in such form and amount as the Owner may prescribe. Bonds may be secured through the Bidder's usual sources. If the furnishing of such bonds is stipulated, the cost shall be included in the Bid.
   c. If the Owner has reserved the right to require that bonds be furnished subsequent to the execution of the Contract, the cost shall be adjusted as provided in the Contract Documents.
   d. If the Owner requires that bonds be obtained from other than the Bidder's usual source, any change in cost will be adjusted as provided in the Contract Documents.

2. Time of Delivery and Form of Bonds
   a. The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract, or if the Work is to be commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.
   b. Unless otherwise required in Article I, the bonds shall be written on AIA Document A 312, Performance Bond and Labor and Material Payment Bond.
   c. The bonds shall be dated on or after the date of the Contract.
   d. The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his/her power-of-attorney.

J. Execution of Agreement

1. The form of Agreement which the successful Bidder, as Contractor, will be required to execute is AIA-A101-Standard form of agreement between Owner and Contractor.

2. The Bidder to whom the Contract is awarded by the Owner shall, within 20 days after notice of award and receipt of Agreement forms from the Owner, sign and deliver to the Owner all required copies of the Agreement.

3. At or prior to delivery of the signed Agreement, the Contractor shall deliver to the Owner the Performance Bond and the policies of insurance certificates as required by the Contract Documents. All bonds and policies or certificates of insurance shall be approved by the Owner before the successful Bidder may proceed with the Work.

4. Failure or refusal to furnish bonds or insurance policies or certificates in the form satisfactory to the Owner shall subject the Bidder to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.

END OF SECTION 00 2113

This page intentionally left blank

DOCUMENT 00 7300
SUPPLEMENTARY CONDITIONS

The following supplements modify the *General Conditions of the Contract for Construction*, AIA Document A201-2017. Where a portion of the General Conditions is modified or deleted by these supplementary conditions, the unaltered portions of the General Conditions shall remain in effect.

ARTICLE 1 - GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

Add the following sentence to the End of Section 1.1.1:

The Contract Documents executed or identified in accordance with Subparagraph 1.5.1 shall prevail in case of an inconsistency with subsequent versions made through manipulatable electronic operations involving computers.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add Section 1.2.1.2 to Section 1.2.1:

1.2.1.2 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

1. The Agreement.
2. Addenda, with those of later date having precedence over those of earlier date.
3. The Supplementary Conditions.
4. The General Conditions of the Contract for Construction.
5. Division 1 of the Specifications.
6. Drawings and Division 2-33 of the Specifications.

In the case of conflicts or discrepancies between Drawings and Divisions 2-33 of the Specifications or within either Document not clarified by Addendum; the Architect will determine which takes precedence in accordance with Subparagraph 4.2.11.

1.7 DIGITAL DATA USE AND TRANSMISSION

Add the following Section 1.7.1 to Section 1.7:

1.7.1 Contractor's Use of Instruments of Service in Electronic Form.

1.7.1.1 The Architect may, with the concurrence of the Owner, furnish to the Contractor versions of Instruments of Service in electronic form. The Contract Documents executed or identified in accordance with Subparagraph 1.5.1 shall prevail in case of an inconsistency with subsequent versions made through manipulatable electronic operations involving computers.

1.7.1.2 The Contractor shall not transfer or reuse Instruments of Service in electronic or machine readable form without the prior written consent of the Architect.

1.7.1.3 The Contractor may obtain these computer aided design files for use in preparation of shop drawings and/or coordination drawings by completing the Architect's Agreement and Waiver for Use of Computer Aided Design File. Refer to form at end of this section.

Add the following Section 1.9 to Article 1:

1.9 Representatives of the Owner, Contractor and Architect shall meet periodically at mutually agreed-upon intervals for the purpose of establishing procedures to facilitate cooperation, communication and timely responses among the participants. By participating in this arrangement, the parties do not intend to create additional contractual obligations or modify the legal relationships which may otherwise exist.

ARTICLE 2 - OWNER

2.3 INFORMATION AND SERVICES REQUIRED BY THE OWNER

Delete Section 2.3.6 and substitute the following:

The General Contractor will be furnished free of charge, electronic copies of Drawings and Project Manual.

ARTICLE 3 - CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

To Paragraph 3.2 add the following Subparagraph 3.2.5:

3.2.5 Do not scale the Drawings. Follow indicated dimensions. In case of any discrepancy in the figures, bring the matter to the attention of the Architect for decision before proceeding with the Work. Failure to follow this procedure shall be at the Contractor's own risk, and the Architect's decision shall be final.

3.4 LABOR AND MATERIALS

Delete Section 3.4.2 and substitute the following:

3.4.2 After the Contract has been executed, the Owner and Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 1 of the Specifications). By making requests for substitutions, the Contractor:

.1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
.2 represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;

.3 certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and

.4 will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

Add the following Section 3.4.4 to Section 3.4:

3.4.4 The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect to evaluate the Contractor's proposed substitutions and to make agreed-upon changes in the Drawings and Specifications made necessary by the Owner's acceptance of such substitutions.

3.6 TAXES

Add Subparagraph 3.6.1 to Section 3.6:

3.6.1 The Owner is exempt from State of Ohio sales and use tax laws and such taxes shall not be included in bid.

3.7 PERMITS, FEES, AND NOTICES

~~Delete Section 3.7.1 and substitute the following:~~

~~3.7.1 The Owner shall pay for the general building permit and all utility tap fees. The Contractor shall secure and pay for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.~~

3.8 ALLOWANCES

Delete semicolon at end of Section 3.8.2.2 and add the following:

, except that if installation is included as part of an allowance in Divisions 1-33 of the Specifications, the installation and labor cost for greater or lesser quantities of Work shall be determined in accordance with Subparagraph 7.3.6;

3.9 SUPERINTENDENT

Delete Section 3.9.1 and substitute the following:

3.9.1 The Contractor shall employ a superintendent or an assistant to the superintendent who is responsible for coordinating Drawings, Specifications, and shop drawings pertaining to such systems. The coordinator shall assist the Subcontractors in arranging space conditions to eliminate interference between the mechanical and electrical systems and other Work and shall supervise will perform as a coordinator for mechanical and electrical Work. The coordinator shall be knowledgeable in mechanical and electrical systems and capable of reading, interpreting and the preparation of coordination drawings documenting the spatial arrangements for such systems within

restricted spaces. The coordinator shall assist in planning and expediting the proper sequence of delivery of mechanical and electrical equipment to the site.

Add the following Sections to 3.9.1:

3.9.1.1 The Contractor shall submit an outline of the qualifications and experience of the Contractor's proposed superintendent, including references, to the Architect within ten (10) days of the Notice to Proceed.

3.9.1.2 The Owner reserves the right to reject the Contractor's proposed superintendent. Failure of the Architect to notify the Contractor within 30 days of receipt of the required information shall constitute notice that the Owner has no objection.

3.9.1.3 Should the Owner reject the Contractor's superintendent, the Contractor shall replace the superintendent at no additional cost.

3.9.1.4 The Contractor shall not change the Contractor's superintendent without written approval of the Owner.

3.9.1.5 If the Contractor proposes to change the Contractor's superintendent, the Contractor shall submit to the Architect a written justification for the change, along with the name and qualifications of the individual whom the Contractor proposes to be the new superintendent.

4.1 ARCHITECT

No Changes.

ARTICLE 5 – SUBCONTRACTORS

Delete Section 5.2.1, 5.2.2 and 5.2.3 and substitute the following:

5.2.1 Not later than 30 days after the date of commencement of the Work, the Contractor shall furnish in writing to the Owner through the Architect the names of persons or entities proposed as manufacturers, fabricators or material suppliers for the products, equipment and systems identified in the General Requirements (Division 1 of the Specifications) and, where applicable, the name of the installing Subcontractor.

ARTICLE 6 - CONSTRUCTION BY OWNER OF BY SEPARATE CONTRACT

No changes.

ARTICLE 7 - CHANGES IN THE WORK

7.1 GENERAL

Add the following Section 7.1.4 to Section 7.1:

7.1.4 The combined overhead and profit included in the total cost to the Owner of a change in the Work shall be based on the following schedule:

.1 For the Contractor, for Work performed by the Contractor's own forces, 10 percent of the cost.
.2 For the Contractor, for Work performed by the Contractor's Subcontractor, 5 percent of the amount due the Subcontractor.
.3 For each Subcontractor involved, for Work performed by that Subcontractor's own forces, 10 percent of the cost.
.4 For each Subcontractor involved, for Work performed by the Subcontractor's subcontractors, 5 percent of the amount due the Sub-subcontractor.
.5 Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.6.
.6 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in a manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over $500. be approved without such itemization.

ARTICLE 8 - TIME

No changes.

ARTICLE 9 - PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Add the following sentence to Section 9.2:

The form of Schedule of Values shall be that each major item of Work and each subcontracted item of Work is shown as a single line item on a current AIA Document G703 - 1992, Certificate of Payment, Continuation Sheet.

9.3 APPLICATIONS FOR PAYMENT

To Subparagraph 9.3.1 add the following sentence:

The form of application for Payment, duly notarized, shall be a current authorized edition of AIA Document G702 -1992, Application and Certification for Payment, supported by a current authorized edition of AIA Document G703 - 1992, Continuation Sheet.

ARTICLE 10 - PROTECTION OF PERSONS AND PROPERTY

No changes.

ARTICLE 11 - INSURANCE AND BONDS

To Section 11.1.1, add the following:

11.1.1.1 As part of its proposal, each Bidder shall submit evidence of the following insurance coverage, and if awarded the contract, shall always during the term of the contract maintain such insurance. The insurance company(ies) providing the required insurance shall be authorized by the Ohio Department of Insurance to do business in Ohio and rated "A" or above by A. M. Best Company or equivalent. The successful Bidder shall provide a copy of the policy or policies and any necessary endorsements, or a substitute for them satisfactory to and approved by the Owner, evidencing the required insurances upon execution of the contract.

1. Commercial General Liability Insurance, including Contractual Liability Coverage Products and Completed Operations Coverage and Broad Form Property Damage, written on an "occurrence" basis, with limited of liability not less than One Million Dollars ($1,000,000) per person/One Million Dollars ($1,000,000) per occurrence/Two Million Dollars ($2,000,000) annual aggregate, and with a deductible no greater than $25,000, covering bodily injury, personal injury, property damage and loss of use of property.

2. Business automobile liability insurance to cover each automobile, truck or other vehicle used in the performance of the Contract in an amount not less than a combined single limit of One Million Dollars ($1,000,000) for bodily injury (including death at any time occurring) and property damage per occurrence.

3. Workers' compensation and employer's liability insurance as provided under the laws of the State of Ohio.

4. Statutory unemployment insurance protection for all its employees.

5. The successful Bidder will name the City of Springfield, Ohio, as additional insured on all policies, and all policies will contain a clause stating the coverage will be primary and noncontributor as respect to all work being performed for the City of Springfield, Ohio.

7. The successful Bidder will provide the Owner with no less than thirty days' written notice if the Bidder's insurance will be cancelled, non-renewed, or has any material changes in coverage.

ARTICLE 12 - UNCOVERING AND CORRECTION OF WORK
No change.

ARTICLE 13 - MISCELLANEOUS PROVISIONS

To Article 13 add the following Section 13.6:

13.6 MECHANICS LIEN LAW

13.6.1 The Owner and all Contractors will comply with the regulations and requirements of Chapter 1311 of the Ohio Revised Code. Prior to the start of construction, the Owner will file a Notice of Commencement (NOC) with the county recorder where the project is located. A copy of the NOC

will be posted on the job site and copies will be given to the Original Contractors, who, in turn, must provide copies to its Subcontractors, lower tier Subcontractors, suppliers and materialmen.

ARTICLE 14 - TERMINATION OR SUSPENSION OF CONTRACT

No changes.

SECTION 07 5300
ELASTOMERIC MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

1.01.A. Elastomeric roofing membrane application.

1.01.B. Insulation, flat and tapered.

1.01.C. Deck sheathing.

1.02 RELATED REQUIREMENTS

1.02.A. Section 06 1000 - Rough Carpentry: Wood cant strips.

1.03 REFERENCE STANDARDS

1.03.A. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2017.

1.03.B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2023a.

1.03.C. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015, with Editorial Revision (2022).

1.03.D. FM DS 1-28 - Wind Design; 2015, with Editorial Revision (2024).

1.04 SUBMITTALS

1.04.A. See Section 01 3000 - Administrative Requirements for submittal procedures.

1.04.B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, vapor retarder, surfacing, and fasteners.

1.04.C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, and setting plan for tapered insulation.

1.04.D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.04.E. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.

1.04.F. Installer's qualification statement.

1.04.G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

1.05.A. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

1.06.A. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact.

1.06.B. Store materials in weather protected environment, clear of ground and moisture.

1.06.C. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.

1.06.D. Protect foam insulation from direct exposure to sunlight.

1.07 FIELD CONDITIONS

1.07.A. Do not apply roofing membrane during unsuitable weather.

1.07.B. Do not apply roofing membrane when ambient temperature is below 40 degrees F (5 degrees C).

1.07.C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

1.07.D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

1.07.E. Schedule applications so that no partially completed sections of roof are left exposed at end of workday.

1.08 WARRANTY

1.08.A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

1.08.B. Correct defective work within a two-year period after Date of Substantial Completion.

1.08.C. Provide ten year manufacturer's material and labor warranty to cover failure to prevent penetration of water.

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.01.A. EPDM Membrane Materials:
1. Carlisle SynTec Systems: www.carlisle-syntec.com/#sle.
2. GenFlex Roofing Systems, LLC; _____: www.genflex.com.
3. Johns Manville: www.jm.com/#sle.
4. Firestone Building Products, RubberGard (Basis-of-Design).

2.02 ROOFING - UNBALLASTED APPLICATIONS

2.02.A. Elastomeric Membrane Roofing: One ply membrane, fully adhered, over insulation.

2.02.B. Roofing Assembly Requirements:
1. Factory Mutual Classification: Class 1 and windstorm resistance of 1-90, in accordance with FM DS 1-28.
2. Insulation Thermal Resistance (R-Value): 3 per inch, minimum; provide insulation of thickness required.

2.02.C. Acceptable Insulation Types - Tapered Application: Any type that meets requirements and is approved by membrane manufacturer for application.

2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

2.03.A. Membrane: Ethylene-propylene-diene-monomer (EPDM); non-reinforced; complying with minimum properties of ASTM D4637/D4637M.
1. Thickness: 60 mil, 0.060 inch (1.5 mm), minimum.
2. Sheet Width: 76 inches (1,930 mm), maximum.
   a. Adhered Application: Limit width to 120 inches (3,048 mm), maximum, when ambient temperatures are less than 40 degrees F (4.4 degress C) for extended period of time during installation.
3. Color: Black.

2.03.B. Seaming Materials: As recommended by membrane manufacturer.

2.03.C. Flexible Flashing Material: Same material as membrane.

2.04 DECK SHEATHING

2.04.A. Deck Sheathing: Glass mat faced gypsum panels, ASTM C1177/C1177M, fire resistant type, 1/4 inch (6.4 mm) thick.
1. Thickness: 5/8 inch (15.9 mm), Type X, fire-resistant.
2. Products:

a. Georgia-Pacific; DensDeck Prime with EONIC Technology: www.densdeck.com/#sle. (Basis-of-Design)
b. USG Corporation: www.usg.com/#sle.
c. National Gypsum: DEXcell Roof Board

2.05 INSULATION

2.05.A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.

1. Classifications:
   a. Type II: Faced with either cellulosic facers or glass fiber mat facers on both major surfaces of the core foam.
      1) Class 1 - Faced with glass fiber reinforced cellulosic facers on both major surfaces of the core foam.
      2) Compressive Strength: Classes 1-2-3, Grade 2 - 20 psi (138 kPa), minimum.
      3) Thermal Resistance, R-value (RSI-value): At 1-1/2 inches (38 mm) thick; Class 1, Grades 1-2-3 - 8.4 (1.48) at 75 degrees F (24 degrees C).
2. Board Size: 48 by 96 inches (1220 by 2440 mm).
3. Board Thickness: 1.5 inch (37.5 mm).
4. Tapered Board: Slope as indicated; minimum thickness 1/4 inch (6.35 mm); fabricate of fewest layers possible.
5. Board Edges: Square.

2.06 ACCESSORIES

2.06.A. Cant and Edge Strips: Wood fiberboard, compatible with roofing materials; cants formed to 45 degree angle.

2.06.B. Sheathing Adhesive: Noncombustible type, for adhering gypsum sheathing to metal deck.

2.06.C. Sheathing Joint Tape: Heat resistant type, self-adhering.

2.06.D. Insulation Joint Tape: Glass fiber reinforced type as recommended by insulation manufacturer, compatible with roofing materials; 6 inches (152 mm) wide; self-adhering.

2.06.E. Membrane Adhesive: As recommended by membrane manufacturer.

2.06.F. Insulation Adhesive: As recommended by insulation manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

3.01.A. Verify that surfaces and site conditions are ready to receive work.

3.01.B. Verify deck is supported and secure.

3.01.C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.

3.01.D. Verify deck surfaces are dry and free of snow or ice.

3.01.E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.02 PREPARATION - METAL DECK

3.02.A. Install deck sheathing on metal deck.

1. Lay with long side at right angle to flutes; stagger end joints; provide support at ends.
2. Cut sheathing cleanly and accurately at roof breaks and protrusions to provide smooth surface.
3. Tape joints.

3.02.B. Mechanically fasten sheathing to roof deck, in accordance with Factory Mutual recommendations and roofing manufacturer's instructions.

1. Over entire roof area, fasten sheathing using six fasteners with washers per sheathing board.

3.03 INSTALLATION - INSULATION, UNDER MEMBRANE

3.03.A. Attachment of Insulation: Embed insulation in adhesive in full contact, in accordance with roofing and insulation manufacturers' instructions.

3.03.B. Lay subsequent layers of insulation with joints staggered minimum 6 inches (152 mm) from joints of preceding layer.

3.03.C. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.

3.03.D. On metal deck, place boards parallel to flutes with insulation board edges bearing on deck flutes.

3.03.E. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.

3.03.F. Tape joints of insulation in accordance with roofing and insulation manufacturers' instructions.

3.03.G. At roof drains, use factory-tapered boards to slope down to roof drains over a distance of 18 inches (457 mm).

3.03.H. Do not apply more insulation than can be covered with membrane in same day.

3.04 INSTALLATION - MEMBRANE

3.04.A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.

3.04.B. Shingle joints on sloped substrate in direction of drainage.

3.04.C. Fully Adhered Application: Apply adhesive to substrate at rate of to meet the manufacturer's system warranty requirements. 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.

3.04.D. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches (76 mm). Seal permanently waterproof. Apply uniform bead of sealant to joint edge.

3.04.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.

3.04.F. Around roof penetrations, seal flanges and flashings with flexible flashing.

3.04.G. Coordinate installation of roof drains and sumps and related flashings.

3.05 FIELD QUALITY CONTROL

3.05.A. See Section 01 4000 - Quality Requirements for additional requirements.

3.05.B. Owner will provide testing services, and Contractor to provide temporary construction and materials for testing in accordance with requirements.

3.05.C. Provide daily on-site attendance of roofing and insulation manufacturer's representative during installation of this work.

3.06 CLEANING

3.06.A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.

3.06.B. Remove bituminous markings from finished surfaces.

3.06.C. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.

3.06.D. Repair or replace defaced or damaged finishes caused by work of this section.

3.07 PROTECTION

3.07.A. Protect installed roofing and flashings from construction operations.

3.07.B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION 07 5300

This page intentionally left blank

SECTION 08 1113
HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Standard and custom hollow metal doors and frames.
2. Steel sidelight, borrowed lite and transom frames.
3. Louvers installed in hollow metal doors.
4. Light frames and glazing installed in hollow metal doors.

B. Related Sections:

1. Division 01 Section "General Conditions".
2. Division 04 Section "Unit Masonry" for embedding anchors for hollow metal work into masonry construction.
3. Division 08 Section “Flush Wood Doors”.
4. Division 08 Section "Glazing" for glass view panels in hollow metal doors.
5. Division 08 Section "Door Hardware".
6. Division 08 Section "Access Control Hardware".
7. Division 09 Sections "Exterior Painting" and "Interior Painting" for field painting hollow metal doors and frames.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
2. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
4. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.

6. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
7. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
8. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
9. ASTM C 1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
10. ANSI/BHMA A156.115 - Hardware Preparation in Steel Doors and Frames.
11. ANSI/SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
12. ANSI/NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
13. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.
14. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
15. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
16. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.

B. Maintenance manual must be provided for tornado/hurricane storm shelter impact protective systems.

C. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.

D. Shop Drawings: Include the following:

1. Elevations of each door design.
2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of anchorages, joints, field splices, and connections.
6. Details of accessories.
7. Details of moldings, removable stops, and glazing.
8. Details of conduit and preparations for power, signal, and control systems.

E. Samples for Verification:

1. Samples are only required by request of the architect and for manufacturers that are not current members of the Steel Door Institute.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.

B. Quality Standard: In addition to requirements specified, furnish SDI-Certified manufacturer products that comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".

C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL10C (neutral pressure at 40" above sill) or UL 10C.

1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.
2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
3. Smoke Control Door Assemblies: Comply with NFPA 105.

a. Smoke "S" Label: Doors to bear "S" label and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.

D. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Provide labeled glazing material.

E. Storm Shelter Openings: Provide complete door systems for hurricane or tornado storm shelters, and other areas of refuge, complying and tested according to ICC 500 (2014/2020), ICC/NSSA Standard for the Design and Construction of Storm Shelters.

1. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.

F. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow

metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project site storage. Do not use non-vented plastic.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch high wood blocking. Do not store in a manner that traps excess humidity.

1. Provide minimum 1/4-inch space between each stacked door to permit air circulation. Door and frames to be stacked in a vertical upright position.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.7 COORDINATION

A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

B. Building Information Modeling (BIM) Support: Utilize designated BIM software tools and obtain training needed to successfully participate in the Project BIM processes. All technical disciplines are responsible for the product data integration and data reliability of their Work into the coordinated BIM applications.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide steel doors and frames from a SDI Certified manufacturer:

1. CECO Door Products (C).
2. Curries Company (CU).

2.2 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

C. Frame Anchors: ASTM A 653/A 653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

2.3 HOLLOW METAL DOORS

A. General: Provide 1-3/4 inch doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8 and ANSI/NAAMM HMMA 867.

B. Exterior Doors (Energy Efficient): Face sheets fabricated of commercial quality hot-dipped zinc coated steel that complies with ASTM A924 A60. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model, ANSI/SDI A250.4 for physical performance level, and HMMA 867 for door construction.

1. Design: Flush panel.
2. Core Construction: Foamed in place polyurethane and steel stiffened laminated core with no stiffener face welds, in compliance with HMMA 867 “Laminated Core”.

    a. Provide 22-gauge steel stiffeners at 6 inches on-center internally welded at 5" on- center to integral core assembly, foamed in place polyurethane core chemically bonded to all interior surfaces. No stiffener face welding is permitted.
    b. Thermal properties to rate at a fully operable minimum U-Factor 0.37 and R-Value 2.7, including insulated door, thermal-break frame and threshold.
    c. Kerf Type Frames: Thermal properties to rate at a fully operable minimum U-Factor 0.38 and R-Value 2.6, including insulated door, kerf type frame, and threshold.

3. Level/Model: Level 3 and Physical Performance Level A (Extra Heavy Duty), Minimum 16 gauge (0.053 inch - 1.3-mm) thick steel, Model 2.
4. Vertical Edges: Vertical edges to be mechanically interlocked with hairline seam. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
5. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
6. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9".
7. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

C. Exterior Doors: Face sheets fabricated of commercial quality hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

1. Design: Flush panel.
2. Core Construction: Manufacturer's thermally enhanced QMax core. Where indicated provide doors fabricated as thermal-rated assemblies with a minimum thermal rating of 0.41 BTU/hr-ft2-F.
3. Core Construction: Manufacturer's standard vertical steel-stiffener core. Minimum 22 gauge steel-stiffeners at 6 inches on-center construction attached by spot welds spaced not more than 5" on centers. Spaces between stiffeners filled with fiberglass insulation (minimum density 0.8#/cubic ft.).
4. Vertical Edges: Vertical edges to have the face sheets joined by a continuous weld extending the full height of the door. Welds are to be ground, filled and dressed smooth. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
5. Vertical Edges: Vertical edges to have the face sheets spot welded and filled full height with an epoxy filler. Welds are to be ground, filled and dressed smooth. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
6. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
7. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
8. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

D. Interior Doors (Energy Efficient): Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A366 or 620. Provide doors complying with requirements

indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

1. Design: Flush panel.
2. Core Construction: Steel stiffened laminated core with fiberglass filler with no stiffener face welds, in compliance with HMMA 867 "Laminated Core".

    a. Provide 22-gauge steel-stiffeners at 6 inches on-center internally welded at 5" on- center to integral core assembly, no stiffener face welding is permitted.
    b. Acoustical sound transmission rating shall be no less than STC 38 complying with ASTM E 90 and must be visible on factory applied labels.
3. Level/Model: Level 2 and Physical Performance Level B (Heavy Duty), Minimum 18 gauge (0.042-inch - 1.0-mm) thick steel, Model 2.
4. Vertical Edges: Vertical edges–to be mechanically interlocked with hairline seam. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
5. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
6. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9".
7. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

E. Interior Doors: Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A 1008/A 1008M. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

1. Design: Flush panel.
2. Core Construction: Manufacturer's standard kraft-paper honeycomb, or one-piece polystyrene core, securely bonded to both faces.

    a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.

3. Level/Model: Level 2 and Physical Performance Level B (Heavy Duty), Minimum 18 gauge (0.042-inch - 1.0-mm) thick steel, Model 2.
4. Vertical Edges: Vertical edges to have the face sheets spot welded and filled full height with an epoxy filler. Welds are to be ground, filled and dressed smooth. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
5. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.

6. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
7. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

F. Manufacturers Basis of Design:

1. Curries Company (CU) - QMax Core - 707 Series.

2.4 HOLLOW METAL DOOR AND SHUTTER ASSEMBLIES FOR STORM SHELTERS

A. General: Provide complete tornado or hurricane storm shelter resistant assemblies constructed, test, and listed/labeled to resist the design pressures for components and cladding and missile impact resistance as described in ICC 500 (2014/2020), ICC/NSSA Standard for the Design and Construction of Storm Shelters.

1. Door and shutter systems, tested and complying with ICC 500 (2014/2020) ~~and FEMA P-361 (2015/2021)~~, Design and Construction Guidance for Community Safe Rooms and supported by third party test results.
2. Sheets fabricated on exterior openings from commercial quality hot dipped zinc coated steel complying with ASTM A924 A60. Gauges to be in accordance with manufacturers tested assemblies.
3. Vertical Edges: Vertical edges to have the face sheets joined by a continuous weld extending the full height of the door. Welds are to be ground, filled and dressed smooth. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
4. Top Edge: Reinforce top of doors with a continuous steel channel extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached and welded in place with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
5. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9".

B. Manufacturers Basis of Design:

1. CECO Door Products (C) - StormPro Series.
2. Curries Company (CU) - StormPro Series.

2.5 HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Thermal Break Frames: Subject to the same compliance standards and requirements as standard hollow metal frames. Tested for thermal performance in accordance with NFRC 102, and resistance to air infiltration in accordance with NFRC 400. Where indicated provide thermally broken frame profiles available for use in both masonry and drywall

construction. Fabricate with 1/16" positive thermal break and integral vinyl weatherstripping.

C. Exterior Frames: Fabricated of hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60.

1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
2. Manufacturers Basis of Design:

a. CECO Door Products (C) - SU SR Series.
b. CECO Door Products (C) - Mercury 3 Thermal Break TQB Series.
c. Curries Company (CU) - M Series.
d. Curries Company (CU) - Mercury 3 Thermal Break TQ Series.

D. Interior Frames: Fabricated from cold-rolled steel sheet that complies with ASTM A 1008/A 1008M.

1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
2. Manufacturers Basis of Design:

a. CECO Door Products (C) - SU Series.
b. Curries Company (CU) - M Series.

E. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.

F. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

2.6 FRAMES FOR STORM SHELTERS

A. General: Subject to the same compliance standards and requirements as standard hollow metal frames, provide complete tornado or hurricane storm shelter resistant assemblies tested and labeled as complying with ICC 500 (2014/2020) ~~and FEMA P-361 (2015/2021)~~ and supported by third party test listings.

1. Fabricate exterior frames from 14 gauge hot dipped zinc coated steel that complying with ASTM designations A924 A60.
2. Manufacturers Basis of Design:

a. CECO Door Products (C) - StormPro Series.
b. Curries Company (CU) - StormPro Series.

2.7 FRAME ANCHORS

A. Jamb Anchors:

1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
2. Stud Wall Type: Designed to engage stud and not less than 0.042 inch thick.
3. Compression Type for Drywall Slip-on (Knock-Down) Frames: Adjustable compression anchors.

B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.

C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.8 LIGHT OPENINGS AND GLAZING

A. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints at fabricator's shop. Fixed and removable stops to allow multiple glazed lites each to be removed independently. Coordinate frame rabbet widths between fixed and removable stops with the type of glazing and installation indicated.

B. Moldings for Glazed Lites in Doors and Loose Stops for Glazed Lites in Frames: Minimum 20 gauge thick, fabricated from same material as door face sheet in which they are installed.

C. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated. Provide fixed frame moldings and stops on outside of exterior and on secure side of interior doors and frames.

D. Preformed Metal Frames for Light Openings: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated. Match pre-finished door paint color where applicable.

E. Glazing: Comply with requirements in Division 08 Section "Glazing" and with the hollow metal door manufacturer's written instructions.

1. Factory Glazing: Factory install glazing in doors as indicated. Doors with factory installed glass to include all of the required glazing material.

2.9 ACCESSORIES

A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.10 FABRICATION

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.

C. Hollow Metal Doors:

1. Exterior Doors: Provide optional weep-hole openings in bottom of exterior doors to permit moisture to escape where specified.
2. Glazed Lites: Factory cut openings in doors with applied trim or kits to fit. Factory install glazing where indicated.
3. Astragals: Provide overlapping astragals as noted in door hardware sets in Division 08 Section "Door Hardware" on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.
4. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge strap for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".

D. Hollow Metal Frames:

1. Shipping Limitations: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.

    a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.

3. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
4. High Frequency Hinge Reinforcement: Provide high frequency hinge reinforcements at door openings 48-inches and wider with mortise butt type hinges at top hinge locations.
5. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge straps for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".

6. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.
7. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
8. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
9. Jamb Anchors: Provide number and spacing of anchors as follows:

    a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches on-center and as follows:

        1) Two anchors per jamb up to 60 inches high.
        2) Three anchors per jamb from 60 to 90 inches high.
        3) Four anchors per jamb from 90 to 120 inches high.
        4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.

    b. Stud Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

        1) Three anchors per jamb up to 60 inches high.
        2) Four anchors per jamb from 60 to 90 inches high.
        3) Five anchors per jamb from 90 to 96 inches high.
        4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
        5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.
10. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware".
11. Bituminous Coating: Where frames are fully grouted with an approved Portland Cement based grout or mortar, coat inside of frame throat with a water based bituminous or asphaltic emulsion coating to a minimum thickness of 3 mils DFT, tested in accordance with UL 10C and applied to the frame under a 3rd party independent follow-up service procedure.

E. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."

1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
2. Reinforce doors and frames to receive non-template, mortised and surface mounted door hardware.

3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

2.11 STEEL FINISHES

A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

B. Factory Pre-Finished: Factory apply electrostatic paint finish to doors and frames in accordance with ANSI A250.3 test procedure acceptance criteria for factory applied finished coatings. Color as selected by the architect from manufacturer’s full range of standard colors.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Prior to installation, adjust and securely brace welded hollow metal frames for square, level, twist, and plumb condition.

C. Tolerances shall comply with SDI-117 "Manufacturing Tolerances Standard Steel Doors and Frames."

D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.

E. Verify tolerances against manufacturers installations instructions for tornado and hurricane storm shelter openings.

3.3 INSTALLATION

A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and NFPA 80 at fire rated openings.

1. Set frames accurately in position, plumbed, leveled, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.
4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.

C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Standard Steel Doors:

a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.

2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.

D. Field Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow metal work immediately after installation.

C. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

3.5 FIELD QUALITY CONTROL

A. Field Inspection (Punch Report): Reference Division 01 Sections “Closeout Procedures”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

B. Fire Door Assembly Inspection: Reference Division 01 Sections "Closeout Procedures". Conduct an initial fire door assembly inspection, including documentation reporting, upon completion of door hardware installation according to NFPA 80 Standard for Fire Doors and Other Opening Protectives, paragraph 5.2.4, requirements.

END OF SECTION 08 1113

SECTION 08 7100
DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Sliding doors.
3. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section “Hollow Metal Doors and Frames”.
2. Division 08 Section “Flush Wood Doors”.
3. Division 08 Section “Aluminum-Framed Entrances and Storefronts”.
4. Division 08 Section “All-Glass Entrances”.

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.
5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. Content: Include the following information:

    a. Type, style, function, size, label, hand, and finish of each door hardware item.
    b. Manufacturer of each item.
    c. Fastenings and other pertinent information.
    d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    e. Explanation of abbreviations, symbols, and codes contained in schedule.
    f. Mounting locations for door hardware.
    g. Door and frame sizes and materials.
    h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

    a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
    b. Complete (risers, point-to-point) access control system block wiring diagrams.
    c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

1.4 CLOSEOUT SUBMITTALS

A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

B. Project Record Documents: Provide record documentation of as-built door hardware sets in digital format (.pdf, .docx, .xlsx, .csv) and as required in Division 01, Project Record Documents.

1.5 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

F. Storm Shelter Openings: Provide complete door systems for hurricane or tornado resistant storm shelters and other areas of refuge complying and tested according to ICC 500 (2014/2020), ICC/NSSA Standard for the Design and Construction of Storm Shelters.

G. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.

H. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

I. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers

of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.

2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

J. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

1.6 DELIVERY, STORAGE AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.7 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.8 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

1.9 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

B. Storm Shelter Openings: Furnish a complete set of operational and maintenance instructions as needed for Owner's continued adjustment, maintenance, and repairs of door hardware as required by ICC 500 (2020), ICC/NSSA Standard for the Design and Construction of Storm Shelters.

PART 2 - PRODUCTS

2.1 BUTT HINGES

A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:

a. Two Hinges: For doors with heights up to 60 inches.
b. Three Hinges: For doors with heights 61 to 90 inches.
c. Four Hinges: For doors with heights 91 to 120 inches.

d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following:

a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for all out-swinging lockable doors.

5. Manufacturers:

a. McKinney (MK) - TA/T4A Series, 5-knuckle.

B. Hinges at Storm Shelter Assemblies: At a minimum, provide heavy weight hinges with stainless steel screws used in accordance with and specified as part of a Severe Storm Shelter Opening meeting ICC 500 ~~and FEMA 361~~.

1. Quantity: Provide the following hinge quantity:

a. Three Hinges: For shutters with heights 36 to 60 inches, and doors at height of 80 inches.
b. Four Hinges: For shutters with heights > 60 inches to 80 inches, and doors with heights greater than 84 inches.

2. Quantity: Provide the following hinge quantity:

a. Three Hinges: For shutters with heights 36 to 60 inches, and doors at height of 80 inches.
b. Four Hinges: For shutters with heights > 60 inches to 80 inches, and doors with heights greater than 84 inches.
c. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
d. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.

e. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.

3. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.

4. Hinge Weight and Base Material: At a minimum, provide heavy weight hinges with stainless steel screws used in accordance with and specified as part of a certified Storm Shelter Opening meeting ICC 500.
5. Manufacturers:

a. McKinney (MK) - SP3386/SP3786.
b. No Substitution.

2.2 SLIDING AND FOLDING HARDWARE

A. Sliding and Folding Door Hardware: Hardware is to be of type and design as specified and should conform with ANSI/BHMA A156.14.

1. Sliding Bi-Passing Pocket Door Hardware: Provide complete sets consisting of track, hangers, stops, bumpers, floor channel, guides, and accessories indicated.
2. Cascading: Provide a bi-parting or single direction telescoping system as required with a minimum 200 lb. per door capacity.
3. Bi-folding Door Hardware: Rated for door panels weighing up to 125 lb.
4. Pocket Sliding Door Hardware: Rated for doors weighing up to 200 lb.
5. Manufacturers:

a. Pemko (PE).

2.3 POWER TRANSFER DEVICES

A. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:

a. McKinney (MK) - Electrical Connecting Kit: QC-R001.
b. McKinney (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

    a. McKinney (MK) - QC-C Series.

2.4 DOOR OPERATING TRIM

A. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Pulls, where applicable, shall be provided with a 10" clearance from the finished floor on the push side to accommodate wheelchair accessibility.
5. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets. When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
6. Manufacturers:

    a. Rockwood (RO).

2.5 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.
2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
6. Keyway: Manufacturer's Standard.

C. Large Format Interchangeable Cores: Provide removable cores (LFIC) as specified, core insert, removable by use of a special key, and for use with only the core manufacturer's cylinder and door hardware.

D. Patented Cylinders: ANSI/BHMA A156.5, Grade 1 Certified Products Directory (CPD) listed cylinders employing a utility patented and restricted keyway requiring the use of a patented key. Cylinders are to be protected from unauthorized manufacture and distribution by manufacturer's United States patents. Cylinders are to be factory keyed with owner having the ability for on-site original key cutting.

1. Patented key systems shall not be established with products that have an expired patent. Expired systems shall only be specified and supplied to support existing systems.
2. Manufacturers:

a. Corbin Russwin (RU) - Access 3 AP.
b. Sargent (SA) - Degree DG1.
c. No Substitution.

E. Keying System: Each type of lock and cylinders to be factory keyed.

1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Field verify and key cylinders to match Owner's existing system.

F. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).

G. Construction Keying: Provide construction master keyed cylinders.

H. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.6 KEY CONTROL

A. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers,

permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.

1. Manufacturers:

   a. Lund Equipment (LU).
   b. MMF Industries (MM).
   c. Telkee (TK).

2.7 MORTISE LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): Provide ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed mortise locksets. Listed manufacturers shall meet all functions and features as specified herein.

1. Manufacturers:

   a. Corbin Russwin Hardware (RU) - ML2000 Series.
   b. Sargent Manufacturing (SA) - 8200 Series.

2.8 CYLINDRICAL LOCKS AND LATCHING DEVICES

A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed cylindrical locksets. Listed manufacturers shall meet all functions and features as specified herein.

1. Manufacturers:

   a. Corbin Russwin Hardware (RU) - CLX3300 Series.
   b. Sargent Manufacturing (SA) - 10X Line.

2.9 MULTI-POINT LOCKS AND LATCHING DEVICES

A. Multi-Point Locksets, Storm Shelter: Provide ANSI/BHMA A156.37, Series 1000, Operational Grade 1 and Security Grade 1 Certified Products Directory (CPD) listed multi-point locksets. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide locksets with functions and features as follows:

   a. Where required by code, provide knurling or abrasive coating on all levers leading to hazardous areas.
   b. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
   c. Meets Florida Building Code FL2998 and UL Certification Directory ZHEM.R21744 for latching hardware for hurricane requirements.

d. Approved for usage as part of a complete ICC 500 (2014/2020) ~~and FEMA P-361 (2015/2021)~~ door, frame, and hardware assemblies for storm shelter components.
e. Lever torque to retract all bolts less than 28 in.lb.
f. Cycle tested to 1,000,000 cycles.
g. Seven-year limited warranty for mechanical functions.

2. Manufacturers:

a. Corbin Russwin Hardware (RU) - FE6600 Series.
b. Sargent Manufacturing (SA) - FM7300 Series.

2.10 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.11 ELECTRIC STRIKES

A. Surface Mounted Rim Electric Strikes: Surface mounted rim exit device electric strikes conforming to ANSI/BHMA A156.31, Grade 1, and UL Listed for both Burglary Resistance and for use on fire rated door assemblies. Construction includes internally mounted solenoid with two heavy-duty, stainless steel locking mechanisms operating independently to provide tamper resistance. Strikes tested for a minimum of 500,000 operating cycles. Provide strikes with 12 or 24 VDC capability supplied standard as fail-secure unless otherwise specified. Option available for latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike. Strike requires no cutting to the jamb prior to installation.

1. Manufacturers:

a. HES (HS) - 9400/9500/9600/9700/9800 Series.

B. Provide electric strikes with in-line power controller and surge suppressor by the same manufacturer as the strike with the combined products having a five year warranty.

2.12 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. Exit devices shall have a five-year warranty.
2. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
4. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

    a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide exit devices with functions and features as follows:

a. Where required by code, provide knurling or abrasive coating on all levers leading to hazardous areas.
b. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
c. No catch points: addition of applied deflectors or other added components are not allowed.
d. No visible plastic.
e. Heavy duty end caps with flush and overlapping options made of stainless steel, brass, or bronze with architectural finishes.
f. Constructed of all stainless steel.
g. Stainless steel pullman type latch with deadlock feature.
h. Narrow or wide style exterior trim as specified in the hardware sets.
i. Center case adjustability on concealed vertical rod exit devices; single operation with hex key individually adjusts top or bottom latches. No retainer screws or clips required to maintain adjustment.
j. Ten-year limited warranty for mechanical features.

2. Manufacturers:

a. Corbin Russwin Hardware (RU) - PED4000 / PED5000 Series.
b. Sargent Manufacturing (SA) - PE80 Series.

2.13 SURFACE DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.

1. Large body cast iron surface mounted door closers shall have a 30-year warranty.
2. Manufacturers:

a. Corbin Russwin Hardware (RU) - DC8000 Series.
b. Norton Rixson (NO) - 9500 Series.
c. Sargent Manufacturing (SA) - 281 Series.

C. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Heavy duty surface mounted door closers shall have a 30-year warranty.

2. Manufacturers:

a. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - 4400 Series.
b. Corbin Russwin Hardware (RU) - DC6000 Series.
c. Norton Rixson (NO) - 7500 Series.
d. Sargent Manufacturing (SA) - 351 Series.

D. Door Closers, Surface Mounted (Unitrol): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted closers with door stop mechanism to absorb dead stop shock on arm and top hinge. Hold-open arms to have a spring loaded mechanism in addition to shock absorber assembly. Arms to be provided with rigid steel main arm and secondary arm lengths proportional to the door width.

1. Manufacturers:

a. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - Unitrol Series.
b. Corbin Russwin Hardware (RU) - Unitrol Series.
c. Norton Rixson (NO) - Unitrol Series.

2.14 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:

    a. Stainless Steel: 300 grade, 050-inch thick.

5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
6. Manufacturers:

    a. Rockwood (RO).

2.15 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:

    a. Rockwood (RO).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1. Manufacturers:

    a. Norton Rixson (RF).
    b. Rockwood (RO).
    c. Sargent Manufacturing (SA).

2.16 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:

1. Pemko (PE).

2.17 ELECTRONIC ACCESSORIES

A. Networked Proximity Card Readers: Card readers to support HID 125 kHz proximity technology and interface with the access control reader modules and door control hardware devices as specified. Card readers to meet the following, minimum, design and performance specifications.

1. Reader to operate on 12VDC or 5VDC power from the reader I/O modules at a maximum current rating of 150 mA per reader.
2. Reader to be weatherproof type when installed in exterior or other wet environments.
3. Reader to communicate with the reader I/O modules using industry standard Wiegand protocol interface.
4. Reader to have multi-color LED display and audible status indications.
5. Reader type and model to meet the design and mounting applications needs of each entry point as indicated on the drawings.
6. Manufacturers (125 kHz Proximity):

    a. Corbin Russwin Hardware (RU) - 752F909/751F929 Series.
    b. Sargent Manufacturing (SA) - 4302/4304 Series.

B. Networked Contactless Smart Card Readers: Contactless smart cards reader to securely read access control data from 13.56 MHz contactless smart cards. The contactless smart card reader is designed for use in access control applications by providing:

1. Secure access control data exchange between the smart card and the reader utilizing key diversification and mutual authentication routines.
2. Contactless smart card reader to be designed for low current operation to enable migration from most legacy proximity applications without the need to replace existing access control panels and/or power supplies. Operating voltage: 5-16 VDC. Current requirements: 55 mA Avg, 116 mA Peak at 12 VDC.
3. Universal compatibility with most access control systems and backwards compatibility with legacy 125 KHz proximity access control formats.
4. Product construction suitable for both indoor and outdoor applications.
5. Customizable behavior for indicator lights and audible tones.
6. Manufacturers (13.56 MHz iClass):

    a. Corbin Russwin Hardware (RU) - 744F709/744F719 Series.
    b. Sargent Manufacturing (SA) - 6100/6120 Series.

C. Wireless Card Readers: Card readers to support HID 125 kHz proximity technology or 13.56 MHz contactless smart cards as specified in the hardware sets. Card readers to meet the following minimum design and performance specifications.

1. Reader to wirelessly operate on one 3V CR2 lithium battery.
2. Reader to be suitable for outdoor use.
3. Contactless smart card versions to be compatible with the following technologies: iCLASS, iCLASS Seos, iCLASS SE, ISO1443B UID, Mifare, Mifare Plus, Desfire SE, Desfire EV1, NFC
4. Reader to come pre-paired with an Aperio hub and communicate with the hub via IEEE802.14.4 (2.4 GHz) wireless technology.

5. Aperio hub to communicate with the access control panel using industry standard Wiegand protocol interface.
6. Reader to have green LED status indicator.
7. Reader type and model to meet the design and mounting applications needs of each entry point as indicated on the drawings.
8. Manufacturers:

    a. Securitron (SU) - R100 Series.

D. Request-to-Exit Motion Sensor: Request-to-Exit Sensors motion detectors specifically designed for detecting exiting through a door from the secure area to a non-secure area. Include built-in timers (up to 60 second adjustable timing), door monitor with sounder alert, internal vertical pointability coverage, 12VDC or 24VDC power and selectable relay trigger with fail safe/fail secure modes.

1. Manufacturers:

    a. Alarm Controls (AK) - SREX Series.
    b. Securitron (SU) - XMS Series.

E. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Manufacturers:

    a. Securitron (SU) - DPS Series.

F. Switching Power Supplies: Provide power supplies with either single or dual voltage configurations at 12 or 24VDC. Power supplies shall have battery backup function with an integrated battery charging circuit and shall provide capability for power distribution, direct lock control and Fire Alarm Interface (FAI) through add on modules. Power supplies shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs.

1. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.
2. Manufacturers:

    a. Securitron (SU) - AQD Series.

G. Intelligent Switching Power Supplies: Provide power supplies with single, dual or multi-voltage configurations at 12 and/or 24VDC. Power Supply shall have battery backup

function with an integrated battery charging circuit. The power supply shall have a standard, integrated Fire Alarm Interface (FAI). The power supply shall provide capability for secondary voltage, power distribution, direct lock control and network monitoring through add on modules. The power supply shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs. Network modules shall provide remote monitoring functions such as status reporting, fault reporting and information logging.

1. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.
2. Manufacturers:

    a. Securitron (SU) - AQL Series.

2.18 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.19 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.

E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

A. Field Inspection (Punch Report): Reference Division 01 Sections “Closeout Procedures”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

B. Maintenance manual must be provided for tornado/hurricane storm shelter impact protective systems.

C. Fire Door Assembly Inspection: Reference Division 01 Sections "Closeout Procedures". Conduct an initial fire door assembly inspection, including documentation reporting, upon completion of door hardware installation according to NFPA 80 Standard for Fire Doors and Other Opening Protectives, paragraph 5.2.4, requirements.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.
2. The supplier is responsible for handing and sizing all products.
3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

B. Manufacturer's Abbreviations:

SECTION 080671 – DOOR HARDWARE SCHEDULE

PART 4 - PRODUCTS

4.1 SCHEDULED DOOR HARDWARE

A. Refer to "PART 3 – EXECUTION" for required specification sections

1. MK - McKinney
2. PE - Pemko
3. SA - SARGENT
4. HS - HES
5. RO - Rockwood
6. RF - Rixson
7. NO - Norton
8. OT - Other
9. SU - Securitron

Hardware Sets

Set: 1.0

Doors: 100A, 100B

3	Hinge, Full Mortise, Hvy Wt	T4A3386	US10BE(SS) MK
1	Rim Exit Device, Storeroom	DG164 16 PE8804 Less Pull	US10BE SA
1	Core	DG1 6300 GMK	US4 SA
1	SMART Pac Bridge Rectifier	2005M3	HS
1	Electric Strike	9600	613E HS
1	Door Pull	BF157	10BE RO
1	Conc Overhead Stop	6-X36	613E RF
1	Surface Closer	UNIJ7500 x mounting plate to suit application	613E NO
1	Weatherstrip	- Integral to door and frame assembly	OT
1	Sweep	29326DNB	PE
1	Threshold	2705DT	PE
1	ElectroLynx Harness	QC-C1500P (power transfer or electric strike to junction box above)	MK
1	Card Reader	- Provided by Security Contractor	OT
1	Motion Sensor	XMS	SU
1	Position Switch	DPS-M-BK	SU
1	Power Supply	AQL4-R8E1	SU
1	Wiring Diagram	- Elevation and Point to Point as Specified	OT

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader unlocks electric strike allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Motion sensor to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 2.0

Doors: 109A, B01A, B01B, C105

3	Hinge, Full Mortise, Hvy Wt	T4A3386	US10BE(SS) MK
1	Rim Exit Device, Storeroom	DG164 16 PE8804 Less Pull	US10BE SA

1 Core	DG1 6300 GMK	US4	SA
1 SMART Pac Bridge Rectifier	2005M3		HS
1 Electric Strike	9600	613E	HS
1 Door Pull	BF157	10BE	RO
1 Conc Overhead Stop	6-X36	613E	RF
1 Surface Closer	UNI7500	689	NO
1 Gasketing	2891_PK TKSP8		PE
1 Sweep	29326DNB		PE
1 Threshold	2705DT		PE
1 ElectroLynx Harness	QC-C1500P (power transfer or electric strike to junction box above)		MK
1 Card Reader	- Provided by Security Contractor		OT
1 Motion Sensor	XMS		SU
1 Position Switch	DPS-M-BK		SU
1 Power Supply	AQL4-R8E1		SU
1 Wiring Diagram	- Elevation and Point to Point as Specified		OT

Notes:
On existing door and/or frame, field verify for proper operation.
Modify set to achieve direct retrofit.
Provide proper door/frame prep and plates as req'd.

Door normally closed and locked.
Presentation of valid credential at card reader unlocks electric strike allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Motion sensor to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 2.1

Doors: C102A, C102B

3 Hinge, Full Mortise, Hvy Wt	T4A3386	US10BE(SS)	MK
1 Rim Exit Device, Storeroom	DG164 16 PE8804 Less Pull	US10BE	SA
1 Core	DG1 6300 GMK	US4	SA
1 SMART Pac Bridge Rectifier	2005M3		HS
1 Electric Strike	9600	613E	HS
1 Door Pull	BF157	10BE	RO
1 Conc Overhead Stop	6-X36	613E	RF
1 Surface Closer	UNI7500	689	NO

1 Gasketing	2891_PK TKSP8	PE
1 Sweep	29326DNB	PE
1 Threshold	2705DT	PE
1 ElectroLynx Harness	QC-C1500P (power transfer or electric strike to junction box above)	MK
1 Card Reader	- Provided by Security Contractor	OT
1 Motion Sensor	XMS	SU
1 Position Switch	DPS-M-BK	SU
1 Power Supply	AQL4-R8E1	SU
1 Wiring Diagram	- Elevation and Point to Point as Specified	OT

Notes:
Door normally closed and locked.
Presentation of valid credential at card reader unlocks electric strike allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Motion sensor to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 3.0

Doors: 101B, C103A

3 Hinge, Full Mortise, Hvy Wt	T4A3386	US10BE(SS)	MK
1 Rim Exit Device, Storeroom	DG160 16 PE8804 WEL	US10BE	SA
1 Core	DG1 6300 GMK	US4	SA
1 Surface Closer	UNI7500	689	NO
1 Gasketing	2891_PK TKSP8		PE
1 Sweep	29326DNB		PE
1 Threshold	2705DT		PE
1 Position Switch	DPS-M-BK		SU

Notes:
Door monitored for door ajar and forced entry.

Set: 4.0

Doors: C103B

3 Hinge (heavy weight)	T4A3786	US26D	MK
1 Rim Exit Device, Passage	PE8815 WEL	US32D	SA

1 Surface Closer	7500 - pull side mount	689	NO
1 Kick Plate	K1050 10" high CSK BEV	US32D	RO
1 Wall Stop	400	US26D	RO
1 Gasketing	S88_		PE

Set: 5.0

Doors: 101A, 216

3 Hinge, Full Mortise	TA2714	US26D	MK
1 Entry/Office Lock	DG160 10XG05 LL	US26D	SA
1 Core	DG1 6300 GMK	US15	SA
1 Kick Plate	K1050 10" high CSK BEV	US32D	RO
1 Wall Stop	400	US26D	RO
3 Silencer	608 / 609		RO

Notes:

Set: 6.0

Doors: 113

3 Hinge, Full Mortise	TA2714	US26D	MK
1 Passage Latch	10XU15 LL	US26D	SA
1 Conc Overhead Stop	2-X36	630	RF
3 Silencer	608 / 609		RO

Set: 7.0

Doors: 112

3 Hinge, Full Mortise, Hvy Wt	T4A3786	US10BE	MK
1 Passage Latch	10XU15 LL	US10BE	SA
1 Surface Closer	7500 - pull side mount	689	NO
1 Wall Stop	400	US26D	RO
1 Weatherstrip	- Integral to door and frame assembly		OT

Set: 8.0

Doors: 114

3 Hinge, Full Mortise	TA2714	US26D	MK
1 Passage Latch	10XU15 LL	US26D	SA

1 Surface Closer	7500 - pull side mount	689	NO
1 Kick Plate	K1050 10" high CSK BEV	US32D	RO
1 Wall Stop	400	US26D	RO
1 Gasketing	S88_		PE

Notes:

Set: 9.0

Doors: 107, 109B

3 Hinge, Full Mortise	TA2714	US26D	MK
1 Passage Latch	10XU15 LL	US26D	SA
1 Surface Closer	7500 - pull side mount	689	NO
1 Kick Plate	K1050 10" high CSK BEV	US32D	RO
1 Wall Stop	400	US26D	RO
1 Gasketing	S88_		PE

Notes:
On existing door and/or frame, field verify for proper operation.
Modify set to achieve direct retrofit.
Provide proper door/frame prep and plates as req'd.

Set: 10.0

Doors: 115, 116

3 Hinge, Full Mortise	TA2714	US26D	MK
1 Privacy Lock	LB V21 8265 LNL	US26D	SA
1 Surface Closer	7500 - pull side mount	689	NO
1 Kick Plate	K1050 10" high CSK BEV	US32D	RO
1 Mop Plate	K1050 6"" high CSK BEV	US32D	RO
1 Wall Stop	400	US26D	RO
3 Silencer	608 / 609		RO

Notes:

Set: 11.0

Doors: 117, 118, 119, 120, 121

3 Hinge, Full Mortise	TA2714	US26D	MK

1 Privacy Lock	LB V21 8265 LNL	US26D	SA
1 Surface Closer	7500 - pull side mount	689	NO
1 Kick Plate	K1050 10" high CSK BEV	US32D	RO
1 Wall Stop	400	US26D	RO
1 Gasketing	S88_		PE
1 Door Bottom	411APKL		PE

Set: 12.0

Doors: 112A

3 Hinge (heavy weight)	T4A3786	US26D	MK
1 Storeroom/Closet Lock	DG160 10XG04 LL	US26D	SA
1 Core	DG1 6300 GMK	US15	SA
1 Kick Plate	K1050 10" high CSK BEV	US32D	RO
1 Wall Stop	400	US26D	RO
3 Silencer	608 / 609		RO

Set: 13.0

Doors: 210

3 Hinge (heavy weight)	T4A3786	US26D	MK
1 Storeroom/Closet Lock	DG160 10XG04 LL	US26D	SA
1 Core	DG1 6300 GMK	US15	SA
1 Kick Plate	K1050 10" high CSK BEV	US32D	RO
1 Wall Stop	400	US26D	RO
3 Silencer	608 / 609		RO

Notes:

On existing door and/or frame, field verify for proper operation.
Modify set to achieve direct retrofit.
Provide proper door/frame prep and plates as req'd.

Set: 14.0

Doors: 104

3 Hinge (heavy weight)	T4A3786	US26D	MK
1 Pull Plate	BF 111x70B	US32D	RO
1 Push Plate	70E	US32D-316	RO
1 Surf Overhead Stop	10-X36	652	RF
1 Surface Closer	7500 - pull side mount	689	NO

1 Armor Plate	K1050 36" high CSK BEV	US32D	RO
3 Silencer	608 / 609		RO

Set: 15.0

Doors: 111

4 Hinge, Hvy Wt	SP3786 5" x 4-1/2"	US26D	MK
1 Multi-Point Lock	DG160 FM7325 LL 188	US26D	SA
1 Core	DG1 6300 GMK	US15	SA
1 Surface Closer	TB 281 O	EN	SA
1 Kick Plate (WS)	K1050 WS 10" high CSK BEV	US32D	RO
1 Gasketing	S773_		PE

Notes:
Bottom strike to be mounted directly to on the concrete floor.
Door will have a 3/8" undercut.

Set: 16.0

Doors: 200

2 Hinge, Full Mortise, Hvy Wt	T4A3386	US32D	MK
1 Passage Latch	10XU15 LL	US26D	SA
1 Surface Closer	UNI7500H	689	NO
1 Gasketing	S88_		PE

Set: 17.0

Doors: 102

1 Side Wall Track Kit	280D-SWTKIT 6'		PE
1 Sliding Door Lockset	SDL32D-ADA		PE
1 Privacy Seal Set	PEMKOSFSET5x3684C		PE

Set: 18.0

Doors: 103

1 Side Wall Track Kit	280D-SWTKIT 6'		PE
1 Door Pull	BF 110 Mtg-Type 5	US32D	RO

Set: 19.0

Doors: 109

3 Hinge, Full Mortise, Hvy Wt	T4A3386	US32D	MK
1 Communicating Classroom Lock	DG160 10XG08 LL	US26D	SA
1 Core	DG1 6300 GMK	US15	SA
1 Gasketing	2891_PK TKSP8		PE

Notes:
Install gasketing on all 4 sides of frame.

Set: 20.0

Doors: 117.1, 117.2, 117.3, 118.1, 118.2, 118.3, 119.1, 119.2, 119.3, 120.1, 120.2, 120.3, 121.1, 121.2, 121.3

3 Hinge, Full Mortise	TA2714	US26D	MK
1 Keypad Cylindrical Lock	KP10XG77 LL	US26D	SA
1 Core	DG1 6300 GMK	US15	SA

Notes:
Lockers
• Doors normally closed and secure.
• Authorized access by valid code at keypad; free egress at all times
• Door remains locked (fail secure) in event of power loss.
• Keyed cylinder override for emergency access.

END OF SECTION 08 7100

SECTION 12 2400
WINDOW SHADES

PART 1 GENERAL

1.01 SECTION INCLUDES

1.01.A. Interior manual roller shades.

1.02 REFERENCE STANDARDS

1.02.A. WCMA A100.1 - Standard for Safety of Window Covering Products; 2022.

1.03 ADMINISTRATIVE REQUIREMENTS

1.03.A. Sequencing:

1. Do not fabricate shades until field dimensions for each opening have been taken with field conditions in place.
2. Do not install shades until final surface finishes and painting are complete.

1.04 SUBMITTALS

1.04.A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

1.04.B. Product Data: Provide manufacturer's standard catalog pages and data sheets, including materials, finishes, fabrication details, dimensions, profiles, mounting requirements, and accessories.

1.04.C. Shop Drawings: Include shade schedule indicating size, location and keys to details, head, jamb and sill details, mounting dimension requirements for each product and condition, and operation direction.

1.04.D. Verification Samples: Minimum size 6 inches (150 mm) square, representing actual materials, color and pattern.

1.04.E. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

1.05.A. Installer Qualifications: Company specializing in performing work of this type with minimum 5 years of documented experience with shading systems of similar size and type.

1.06 DELIVERY, STORAGE, AND HANDLING

1.06.A. Deliver shades in manufacturer's unopened packaging, labeled to identify each shade for each opening.

1.06.B. Handle and store shades in accordance with manufacturer's recommendations.

1.07 FIELD CONDITIONS

1.07.A. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.08 WARRANTY

1.08.A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

1.08.B. Provide manufacturer's warranty from Date of Substantial Completion, covering the following:

1. Shade Hardware: One year.
2. Fabric: One year.
3. Aluminum and Steel Coatings: One year.

PART 2 PRODUCTS

2.01 Roller Shades

2.01.A. General:

1. Provide shade system components that are easy to remove or adjust without removal of mounted shade brackets.
2. Provide shade system that operates smoothly when shades are raised or lowered.

2.01.B. Roller Shades - Basis of Design: MechoShade Systems LLC; Mecho/5 System; www.mechoshade.com/#sle.

1. Description: Single roller, manually operated fabric window shades.
   a. Drop Position: Regular roll.
   b. Mounting: Ceiling mounted.
   c. Size: As indicated on drawings.
   d. Fabric: As indicated under Shade Fabric article.
2. Brackets and Mounting Hardware: As recommended by manufacturer for mounting indicated and to accommodate shade fabric roll-up size and weight.
   a. Material: Steel, 1/8 inch (3 mm) thick.
3. Roller Tubes:
   a. Material: Extruded aluminum.

b. Size: As recommended by manufacturer; selected for suitability for installation conditions, span, and weight of shades.
c. Fabric Attachment: Utilize extruded channel in tube to accept vinyl spline welded to fabric edge. Shade band to be removable and replaceable without removing roller tube from brackets or inserting spline from the side of the roller tube.
d. Capable of being removed and reinstalled without affecting roller shade limit adjustments.

4. Hembars: Designed to maintain bottom of shade straight and flat.
   a. Style: Full wrap fabric covered bottom bar, flat profile with heat sealed closed ends.
   b. Room-Darkening Shades: Provide a slot in bottom bar with wool-pile light seal.
5. Clutch Operator: Manufacturer's standard material and design integrated with bracket/brake assembly.
   a. Provide a permanently lubricated brake assembly mounted on an oil-impregnated hub with wrapped spring clutch.
   b. Brake must withstand minimum pull force of 50 lb (22.7 kg) in the stopped position.
   c. Mount clutch/brake assembly on the support brackets, fully independent of the roller tube components.
6. Drive Chain: Continuous loop stainless steel beaded ball chain, 95 lb (43 kg) minimum breaking strength. Provide upper and lower limit stops.
   a. Chain Retainer: Chain tensioning device complying with WCMA A100.1.
7. Accessories:
   a. Fascia: Extruded aluminum, size as required to conceal shade mounting, attachable to brackets without exposed fasteners; clear anodized finish.
      1) Profile: Square.
   b. Room-Darkening Channels: Extruded aluminum side and center channels with brush pile edge seals, SnapLoc mounting base, and concealed fasteners. Channels to accept one-piece exposed blackout hembar to assure side light control and sill light control.

2.02 Shade FABRIC

2.02.A. Fabric for Room-Darkening Shades: Nonflammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
1. Manufacturers:
   a. MechoShade Systems LLC: www.mechoshade.com/#sle.
2. Material: As selected from manufacturer's standard line of fabrics.

2.02.B. Fabric - for Black Out Shades: Nonflammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
1. Manufacturers:

a. MechoShade Systems LLC; www.mechoshade.com/#sle.

2. Material: As selected from manufacturer's standard line of fabrics.

2.03 Roller Shade FABRICATION

2.03.A. Field measure finished openings prior to ordering or fabrication.

2.03.B. Dimensional Tolerances: Fabricate shades to fit openings within specified tolerances.

1. Vertical Dimensions: Fill openings from head to sill with 1/2 inch (13 mm) space between bottom bar and window stool.
2. Horizontal Dimensions - Inside Mounting: Fill openings from jamb to jamb.

2.03.C. Dimensional Tolerances: As recommended in writing by manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

3.01.A. Examine finished openings for deficiencies that may preclude satisfactory installation.

3.01.B. Start of installation shall be considered acceptance of substrates.

3.02 PREPARATION

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

3.02.B. Coordinate with window installation and placement of concealed blocking to support shades.

3.03 INSTALLATION

3.03.A. Install in accordance with manufacturer's instructions and approved shop drawings, using mounting devices as indicated.

3.03.B. Replace shades that exceed specified dimensional tolerances at no extra cost to Owner.

3.03.C. Adjust level, projection, and shade centering from mounting bracket. Verify there is no telescoping of shade fabric. Ensure smooth shade operation.

3.04 CLEANING

3.04.A. Clean soiled shades and exposed components as recommended by manufacturer.

3.04.B. Replace shades that cannot be cleaned to "like new" condition.

3.05 PROTECTION

3.05.A. Protect installed products from subsequent construction operations.

3.05.B. Touch-up, repair, or replace damaged products before Substantial Completion.

END OF SECTION 12 2400

Renovation and Addition

Huber Heights Fire Station 23

7435 Old Troy Pike, Dayton, Ohio 45424

ARCHITECT

App Architecture

615 Woodside Drive
Englewood, Ohio 45322
(937) 836-8898

CIVIL ENGINEER

Choice One Engineering

8956 Glendale Milford Road, Suite 1
Loveland, Ohio 45140
(513) 239-8554

MECHANICAL & ELECTRICAL ENGINEERS

Nauman & Zelinski, LLC

204 South Ludlow Street, Suite 400
Dayton, Ohio 45402
(937) 223-3821

LANDSCAPE ARCHITECT

Yellow Springs Design, LLC

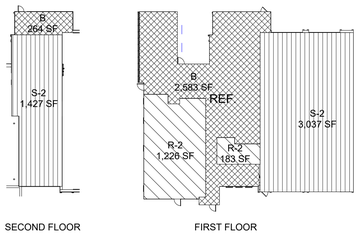
830 Xenia Avenue
Yellow Springs, Ohio 45387
(937) 767-8199

STRUCTURAL ENGINEER

Jezerinac Geers & Associates

5640 Frantz Road
Dublin, Ohio 43017
(614) 766-0066

VICINITY MAP

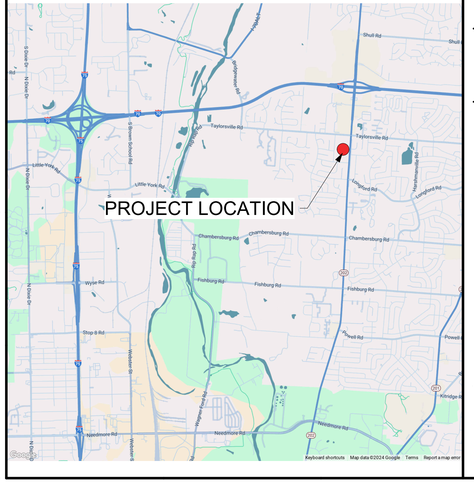


SECOND FLOOR FIRST FLOOR

B:	2,847 SF
S-2:	4,464 SF
R-2:	1,409 SF
TOTAL:	8,720 SF

DRAWING INDEX

VICINITY MAP



CODE INFORMATION (OBC 2024)

PROJECT DESCRIPTION

PROJECT CONSISTS OF RENOVATING EXISTING FIRST FLOOR OF 4,650 SF + 1,648 SF SECOND FLOOR. FOR A TOTAL OF 6,298 SF, AND CONSTRUCTING A 2,422 SF ADDITION TO THE SOUTH OF THE EXISTING STATION. SECOND FLOOR WILL NOW OPERATE AS A MEZZANINE.

USE GROUP CLASSIFICATION

OBC (302) USE GROUP= B: STATION OFFICES AND LIVING AREAS
R-2: CREW SLEEPING QUARTERS
S-2: APPARATUS BAYS AND TRAINING

OBC (508.3) MIXED OCCUPANCIES:
UNSEPARATED MIXED USE
EXCEPTION 2: R-2 DWELLING AND SLEEPING UNITS SHALL BE SEPARATED FROM OTHER OCCUPANCIES CONTIGUOUS TO THEM IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 420.

OBC (708.3) FIRE RESISTANCE RATING:
EXCEPTION 2: DWELLING UNIT AND SLEEPING UNIT SEPARATIONS IN BUILDINGS OF TYPE IIB, IIIB, AND VB CONSTRUCTION SHALL HAVE FIRE-RESISTANT RATINGS OF NOT LESS THAN 1/2" HOUR IN BUILDINGS EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM.

AREA OF R-2 GROUPED TOGETHER DORM ROOMS TO BE SURROUNDED BY 2-HR FIRE SEPARATION DUE TO PROVIDING LIMITED AREA SPRINKLER SYSTEM AS AGREED UPON WITH CHEIF BUILDING OFFICIAL TONY WENZLER AS MEETING INTENT OF CODE 10/9/2024.

SLEEPING UNITS TO HAVE 20 MIN. RATED DOORS AND FRAMES IN ACCORDANCE WITH OBC TABLE 716.1.

CONSTRUCTION TYPE CLASSIFICATION

OBC (602) CONSTRUCTION TYPE = VB

OCCUPANT LOAD

OBC (1004(ALLOWABLE)= 100 SF PER OCCUPANT

FIRE STATION
B: 2,847 SF / 100 = 28
S-2: 4,464 SF / 300 = 15
R-2: 1,409 SF / 200 = 7
TOTAL = 50 PEOPLE

DESIGN OCCUPANT LOAD=
B: 6
S-2: 0
R-2: 0
TOTAL = 6 OCCUPANTS

(PRIMARILY USED TO DETERMINE STORM SHELTER OCCUPANCY)

FIRE PROTECTION

BUILDING DESCRIPTION : LIMITED AREA FIRE SUPPRESSION FOR R-2 AREAS AND MECHANICAL ROOM. AGREED UPON WITH CHIEF BUILDING OFFICIAL TONY WENZLER AS MEETING INTENT OF CODE ON 10/9/2024.

MAINTAINING EXISTING 1-HOUR FIRE RATED WALL BETWEEN S-2 APPARATUS BAYS AND OTHER USES.

HEIGHT AND AREA LIMITATIONS

ALLOWABLE AREA (TABLE 506.2) = 9,000 SF
B USE GROUP IS MOST RESTRICTIVE. R-2 USE GROUP IS SPRINKLED.

EXISTING BUILDING FIRST FLOOR = 4,650 SF
MEZZANINE (SECOND FLOOR) = 1,648 SF

NEW ADDITION FIRST FLOOR = 2,422 SF
TOTAL = 8,720 SF

ALLOWABLE HEIGHT (TABLE 504.3) = 40'-0" (2 STORY)
B & S USE GROUP IS MOST RESTRICTIVE

ACTUAL HEIGHT (TABLE 504.4) = 36'-2" (2 STORY)

PLUMBING FIXTURES REQUIRED (BASED ON ALLOWABLE BUILDING OCCUPANCY)

USE GROUP	WC	LAVS	SHOWERS	D.F.	SERVICE SINK
B	1	1	0	1	1
R-2	1	1	1	1	1
S-2	1	1	0	0	1
TOTAL	3	3	1	1	1

PLUMBING FIXTURES PROPOSED (BASED ON ALLOWABLE BUILDING OCCUPANCY)

USE GROUP	WC	LAVS	SHOWERS	D.F.	SERVICE SINK
TOTAL	4	4	1	1	1

STORM SHELTER PROVISIONS

REFER TO SHEET G0.2 FOR STORM SHELTER INFORMATION.

OTHER CODE PROVISIONS

A STANDBY GENERATOR WILL SUPPORT THE ENTIRE BUILDING, ALL EMERGENCY SYSTEMS (EXIT/EGRESS LIGHTING, FIRE ALARM, ETC.) SHALL HAVE BATTERY BACKUP.

REFER TO SHEET S0.1 FOR ADDITIONAL CODE NOTES AND REFERENCES.

GOVERNING CODE: 2024 OHIO BUILDING CODE.

BUILDING RISK CATEGORY: CATEGORY IV

REFER TO STRUCTURAL DRAWINGS FOR ESSENTIAL FACILITY AND SEISMIC RISK CATEGORY INFORMATION.

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937-836-8898 F 937-832-3696
www.app-arch.com

STATE OF OHIO TIMOTHY J. BEMENT 12205 REGISTERED ARCHITECT
Timothy J. Bement, License #12205
Expiration Date 12/31/2025

Renovation and Addition
Huber Heights Fire Station 23
7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	1/29/2025	Addendum 1

DATE	12/18/2024
JOB NO.	4262.00
DRAWN	MSM
CHECKED	TJB

TITLE
COVER SHEET

SHEET NO.
G0.1

1/29/2025 10:53:39 AM

STORM SHELTER INFORMATION

GOVERNING CODES:
- OBC 2024, SECTION 423 STORM SHELTERS
- ICC 500 2020

THIS SHELTER IS CLASSIFIED AS A COMMUNITY TORNADO SHELTER.
THE SHELTER IS LOCATED ON THE MAIN FLOOR LEVEL OF THE FIRE STATION.

THE SHELTER IS DESIGNED TO ACCOMMODATE 6 OCCUPANTS OF THE FIRE STATION.

ICC 500, 2020 CHAPTER 1: APPLICATION AND ADMINISTRATION

DESIGN INFORMATION PER 106.2.1 IS LOCATED OR REFERENCE ON THIS SHEET.

ITEM 2: USE OF COMMUNITY STORM SHELTER IS BY BUILDING OCCUPANTS ONLY.
ITEM 9: DESIGN WIND PRESSURES ARE INCLUDED IN STRUCTURAL STORM SHELTER CALCULATIONS SECTION 1: DESIGN LOADS FOR BASIC DESIGN WIND LOAD AND SECTION 6 & 7 FOR COMPONENTS AND CLADDING WIND LOAD DESIGNS.
ITEM 20: FOUNDATION CAPACITY REQUIRMENTS AND REINFORECEMENT ARE INCLUDED ON STRUCTURAL SHEET S0.1.
ITEM 21: POST INSTALLED ANCHORS ARE USED FOR THE INSTALLATION OF THE IMPACT RESISTANT DOOR, AND THE WALL OPENING PLATE SHROUDS. REFER TO SHEETS A0.3, A0.6, AND S2.3 FOR ADDITIONAL INFORMATION.

ICC 500, 2020 CHAPTER 3: STRUCTURAL DESIGN AND TESTING CRITERIA

THE TORNADO SHELTER HAS BEEN DESIGNED PER THE REQUIREMENTS OF ICC 500 - 2020.

- SHELTER DESIGN WIND SPEED, V(ult): 250 mph
- WIND EXPOSURE CATEGORY: C
- INTERNAL PRESSURE COEFFICIENT (GCpi): +/- 0.55
- TOPOGRAPHICAL FACTOR: 1.0
- DIRECTIONALITY FACTOR: 1.0
- MINIMUM FOUNDATION CAPACITY REQUIREMENTS: REFER TO STRUCTURAL DRAWINGS
- SHELTER INSTALLATION REQUIREMENTS: REFER TO STRUCTURAL DRAWINGS

REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL STRUCTURAL NOTES AND DETAILS.

ICC 500, 2020 CHAPTER 4: SITING

THE SHELTER IS NOT BEING CONSTRUCTED WITHIN AN AREA SUSCEPTIBLE TO FLOODING PER FEMA.

THE SITE IS LOCATED OUTSIDE OF ANY FLOOD PLAINS. THEREFORE, BASE FLOOD ELEVATION IS NOT APPLICABLE.

THE SHELTER FINISHED FLOOR ELEVATION IS 938.50.
VERTICAL DATUM: NAVD88. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.

ICC 500 2020, SECTION 502 OCCUPANCY DENSITY IN COMMUNITY SHELTERS

TABLE 501.1.1 (TORNADO) - OCCUPANCY DENSITY
- 5 SF/STANDING OR SEATED MINIMUM
- 10 SF/WHEELCHAIR SPACE (1:200)

501.1.2.2 - ALTERNATIVE CALCULATION OF USABLE FLOOR AREA

GROSS AREA	-	88.77 SF
WALL AREA	-	31.76 SF
FIXED OBJECTS	-	20.81 SF
NET CLEAR AREA		36.18 SF

MAXIMUM OCCUPANCY = 5 OCCUPANTS + 1 WHEELCHAIR OCCUPANT
DECLARED BUILDING OCCUPANCY = 6 OCCUPANTS

501.2 - NUMBER OF DOORS
- BASED ON SHELTER OCCUPANCY, ONLY ONE MEANS OF EGRESS IS REQUIRED.
- PER EXCEPTION LISTED UNDER 501.2, NO EMERGENCY ESCAPE OPENING IS REQUIRED FOR SHELTERS WITH AN OCCUPANT LOAD NOT EXCEEDING 16 OCCUPANTS.

502.3 - REQUIRED USABLE FLOOR AREA

5 OCCUPANTS x 5 SF	25 SF
1 WHEELCHAIR x 10 SF	10 SF
TOTAL REQUIRED USABLE AREA	35 SF

504.3 - DIRECTION OF SWING
- DOORS SHALL SWING INTO THE SHELTER SPACE IN ACCORDANCE WITH OBC 2024.
- BOTH DOOR ASSEMBLIES TO BE TESTED AND LABELED IN ACCORDANCE WITH ICC 500 2020, CHAPTER 8 AND ASTM E361.

504 - SIGNAGE FOR COMMUNITY SHELTERS
- REFER TO VIEWS B5 AND G6 ON THIS SHEET FOR SIGNAGE LOCATIONS.
- REFER TO SIGNAGE LEGEND ON SHEET A0.03 FOR SIGNAGE DETAILS.

ICC 500, 2020 CHAPTER 6: FIRE SAFETY

601.1 - FIRE SEPARATION
- ALL SHELTER WALLS ARE 2 HOUR FIRE RATED PARTITIONS. UL DESIGN NO. U905.
- SHELTER HORIZONTAL ASSEMBLY (CEILING/ROOF) IS A 2 HR. RATED ASSEMBLY. UL DESIGN NO. D219.

602 - FIRE EXTINGUISHERS
- A WALL HUNG FIRE EXTINGUISHER IS PROVIDED MEETING IBC AND NFPA 10 REQUIREMENTS.
- REFER TO SHEET A0.01 FOR MOUNTING DETAILS.

ICC 500, 2020 CHAPTER 7: SHELTER ESSENTIAL FEATURES AND ACCESSORIES

SECTION 702: TORNADO SHELTERS
STORM SHELTER OCCUPANCY IS 6 PEOPLE.

TABLE 702.4 VENTILATION
- AN OUTDOOR AIR FLOW RATE OF 5 SQ. IN. PER OCCUPANT IS REQUIRED. AT 6 OCCUPANTS, A TOTAL AIRFLOW RATE OF 30 SQ. IN. OF FREE AREA IS REQUIRED.
  - 36 SQ. IN. FREE ARE (120% OF REQUIRED 30 SQ. IN.) IS PROVIDED VIA A 6x6 TRANSFER AIR DUCT AND TRANSFER AIR DEVICE 'R3'.
  - 60 SQ. IN. FREE AREA (200% OF REQUIRED 30 SQ. IN.) IS PROVIDED WITHIN 46" OF THE FLOOR VIA A 12"/16" INTAKE. THE INTAKE PROTECTIVE SHROUD HAS AN OPENING APPROXIMATELY 12x5, RESULTING IN THE 60 SQ. IN. FREE ARE. THIS DUCT PROVIDES OUTSIDE AIR INTAKE TO THE STORM SHELTER.
  - A TOTAL OF 96 SQ. IN. OF FREE AREA IS PROVIDED IN THE SHELTER.
  - VENTILATION OPENINGS ARE LOCATED ON DIFFERENT SHELTERS WALLS TO PROMOTE CROSS VENTILATION OF THE SPACE.
  - BOTH OPENINGS ARE PROVIDED WITH THERMALLY INSULATED CONTROL DAMPERS. THE DAMPERS ARE POWERED CLOSED, SPRING RETURN, FAIL OPN AND WILL ACTIVATE UPON AN OCCUPANT ACTIVATING THE STORM SHELTER HVAC CONTROL SWITCH OR A BUILDING LOSS OF POWER.
  - PENETRATIONS INTO THE STORM SHELTER ARE PROTECTED BY A 2-HOUR FIRE DAMPER.

TABLE 702.3
- ONE WATER CLOSET IS REQUIRED.
- THE LAVATORY IS NOT REQUIRED.
- HAND SANITIZER WILL BE STORED BY THE OWNER.

BASED ON 3 WATER CLOSET USES PER 8 HOUR PERIOD (FROM L.E.E.D.), IN A 2 HOUR PERIOD THAT WOULD EQUAL 3/4 USES PER PERSON. FOR 6 PEOPLE, 5 FLUSHES WOULD BE REQUIRED.

THE WATER CLOSET TANK WILL BE FILLED UPON ENTRY INTO THE SHELTER, SO ENOUGH WATER FOR 5 FLUSHES IS REQUIRED TO BE STORED IN THE SHELTER.

AT 1.6 GALLONS PER FLUSH THAT WILL REQUIRE 6.4 GALLONS MINIMUM BE STORED FOR WATER CLOSET USAGE.

ADDITIONAL POTABLE WATER SHALL BE STORED FOR DRINKING.
INCLUDE THESE REQUIREMENTS IN THE OWNER'S INSTRUCTIONS

REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

702.8 STANDBY LIGHTING
- INTEGRAL BATTERY TYPE EMERGENCY LIGHTING FIXTURES WILL BE PROVIDED IN THE STORM SHELTER. EMERGENCY BATTERY BACK-UP TO POWER LIGHTS IN SHELTER FOR A MINIMUM OF 2 HOURS UPON LOSS OF NORMAL POWER TO PROVIDE AN AVERAGE ILLUMINATION LEVEL OF NOT LESS THAN ONE FOOR CANDLE. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.

STORM SHELTER INSTRUCTIONS

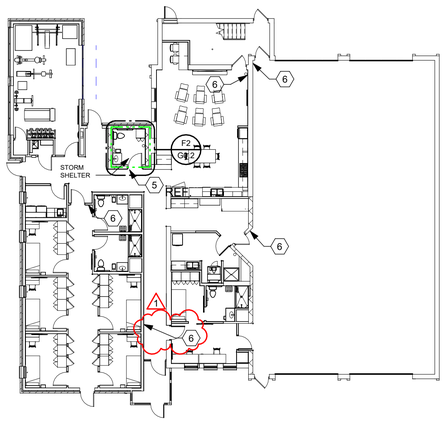
STORM EVENT OPERATIONS PLAN

POSITION DESIGNATED PERSONNEL AT DOOR TO ENSURE THAT ONCE ALL OCCUPANTS ARE INSIDE SHELTER, DOOR REMAINS CLOSED AND LOCKED DURING THE ENTIRE STORM EVENT.
- OPENING DOOR DURING HIGH PRE-EVENT OR EVENT WINDS COULD DAMAGE THE DEVICE, REMOVE THE DEVICE, OR MAKE IT WHERE THE DEVICE CANNOT BE RE-CLOSED MAKING ALL SHELTER OCCUPANTS VULNERABLE TO THE WIND EVENT FOR WHICH THEY ARE SEEKING PROTECTION.

SHELTER OCCUPANTS ARE NOT TO PHYSICALLY CONTACT THE EXTERIOR WALLS OR OPENING PROTECTIVE DEVICES OF THE SHELTER.
- VERY LARGE POINT LOADS CREATED BY DEBRIS MAY BE EXERTED ON THE EXTERIOR WALL AND THIS KINETIC ENERGY MAY BE TRANSFERRED THROUGH THE SHELTER WALL WHICH COULD INJURE AN INDIVIDUAL THAT IS CONTACT WITH THE EXTERIOR WALL OF THE SHELTER.

STORAGE CABINET CONTENTS

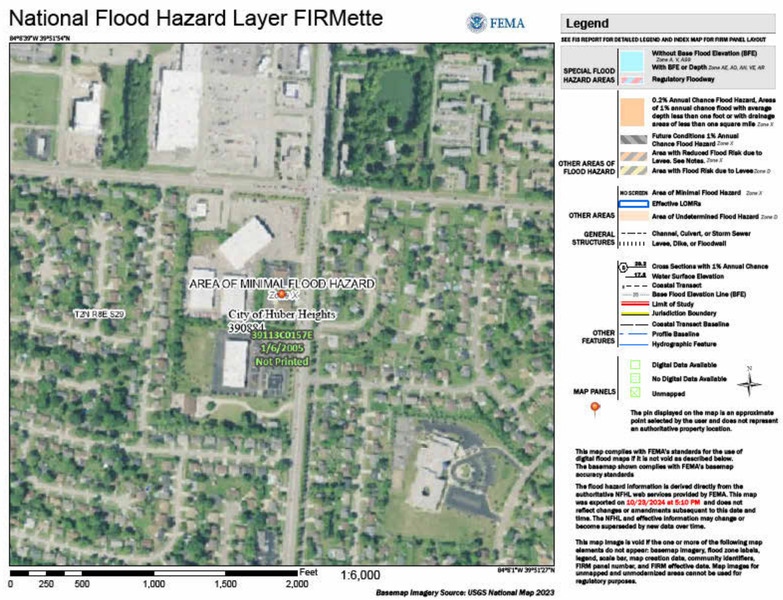
- 7 GALLONS OF POTABLE WATER FOR TOILET FLUSHING. (1) 5-GALLON BOTTLES TO BE STORED ON BOTTOM SHELF. (2) 1-GALLON BOTTLES TO BE STORED ON THE SHELF ABOVE.
- 2 CASES OF 16 OZ. WATER BOTTLES (EQUALING 3 GALLONS) FOR DRINKING
- HAND SANITIZER
- FIRST AID KIT COMPLYING WITH ANSI/ISEAI Z308.1
- (1) FLASHLIGHTS WITH > 150 LUMENS OUTPUT EACH
- EVACUATION TOOLS
  - HAMMER
  - PRY BAR
  - WORK GLOVES

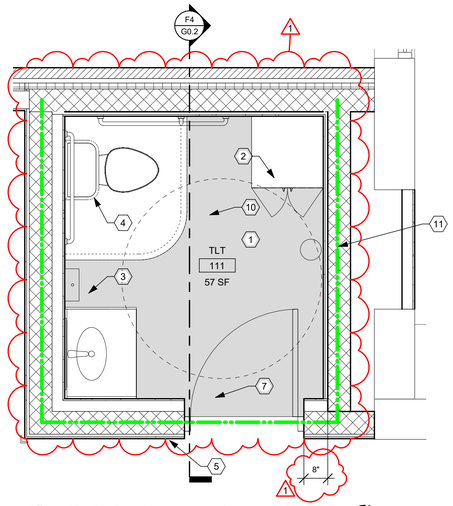


D2 TORNADO SHELTER KEY PLAN
1/16" = 1'-0"

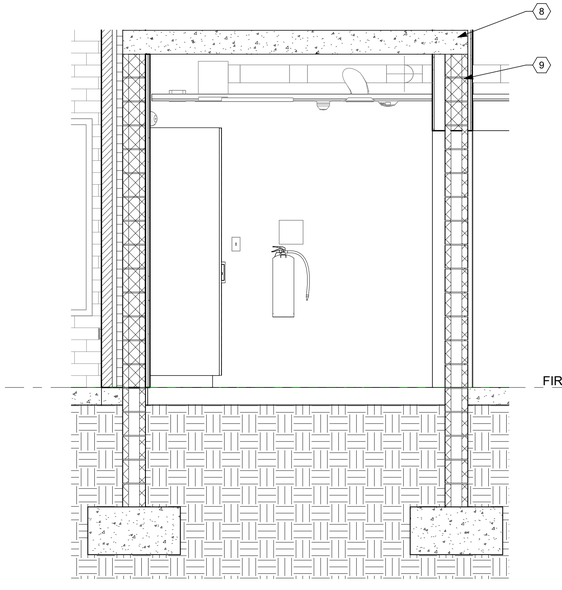
STORM SHELTER EVENT OPERATIONS PLAN – MECHANICAL VENTILATION

THE STORM SHELTER IS EQUIPPED WITH A NATURAL VENTILATION SYSTEM TO PROVIDE OUTSIDE AIR DURING USE. THE STORM SHELTER HAS A DEDICATED OUTSIDE AIR INTAKE DUCT, TRANSFER AIR DUCT OUT, AND CONTROL DAMPERS THAT ARE MANUALLY CONTROLLED THROUGH A TOGGLE SWITCH. UNDER NORMAL BUILDING OPERATION, THE SWITCH SHALL REMAIN IN THE "DAMPER CLOSED" POSITION TO STOP OUTSIDE AIR INFILTRATION COMING INTO THE CONDITIONED BUILDING. WHEN THE STORM SHELTER IS IN USE DURING A TORNADO EVENT, TURN THE SWITCH TO THE "DAMPER OPEN" POSITION TO PROVIDE OUTSIDE AIR TO THE STORM SHELTER. THE CONTROL DAMPERS HAVE A FAIL-SAFE BUILT IN TO AUTOMATICALLY OPEN THE DAMPERS IN THE EVENT OF BUILDING NORMAL AND BACKUP POWER LOSS. IF THE CONTROL SWITCH IS NOT ACTUATED PRIOR TO NORMAL AND BACKUP POWER LOSS, THE DAMPERS FAIL-SAFE WILL OPEN THE DAMPERS AUTOMATICALLY.





F2 STORM SHELTER ENLARGED
1/2" = 1'-0"



F4 STORM SHELTER SECTION
1/2" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 SHADED AREA REPRESENTS ACTUAL CLEAR FLOOR AREA OF 35.70 SF. TOTAL ROOM AREA IS 59 SF.

2 (TC) STORAGE CABINET FOR WATER AND EMERGENCY SUPPLIES. REFER TO A8.7 FOR DETAILS.

3 ADA LAVATORY. REFER TO PLUMBING DRAWINGS AND MOUNTING AND CLEARANCE STANDARDS ON SHEET A0.1 FOR DETAILS.

4 ADA TANK TYPE TOILET. REFER TO PLUMBING DRAWINGS AND MOUNTING AND CLEARANCE STANDARDS ON SHEET A0.1 FOR DETAILS.

5 SIGN TYPE 3. REFER TO SIGNAGE LEGEND ON SHEET A0.3 FOR DETAILS.

6 SIGN TYPE 4. REFER TO SIGNAGE LEGEND ON SHEET A0.3 FOR DETAILS.

7 SIGN TYPE 5. REFER TO SIGNAGE LEGEND ON SHEET A0.3 FOR DETAILS.

8 2 HR FIRE RATED CONCRETE LID. REFER TO STRUCTURAL DRAWINGS FOR DETAILS.

9 REFER TO HVAC DRAWINGS FOR DUCT PENETRATIONS. REFER TO STRUCTURAL DRAWINGS FOR SHROUD DETAILS.

10 CUBICLE CURTAIN. REFER TO SHEET A0.10 FOR DETAILS. BASIS OF DESIGN: INRPO CORPORATION, FORMATRAC. PVC CURTAIN TRACK; NOT LESS THAN 1-1/4" WIDE x 15/16" HIGH. CURTAIN GROMMETS: TWO-PIECE, ROLLED EDGE, RUSTPROOF, NICKEL PLATED BRASS; SPACED NOT MORE THAN 6".

11 WALL HUNG FIRE EXTINGUISHER. COORDINATE EXACT LOCATION WITH WALL MOUNTED MEP ITEMS.

GENERAL NOTES

A. THIS SHEET CONTAINS A GERNERAL OVERVIEW OF TORNADO SHELTER INFORMATION. FOR FURTHER NOTES AND DETAILS REFER TO THE PERTINENT DISCIPLINE'S DRAWINGS CONTAINED IN THIS SET.

: 1/2 HOUR RATED WALL

: 2 HOUR RATED WALL

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937-836.8898 F 937-832-3696
www.app-arch.com

STATE OF OHIO TIMOTHY J. BEMENT 12305 REGISTERED ARCHITECT
Timothy J. Bement, License #12305
Expiration Date 12/31/2025

Renovation and Addition

Huber Heights Fire Station 23

7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	1/29/2025	Addendum 1

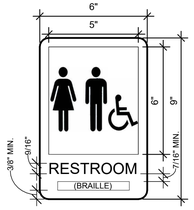
DATE	12/18/2024
JOB NO.	4262.00
DRAWN	MSM
CHECKED	TJB

TITLE
STORM SHELTER

SHEET NO.
G0.2

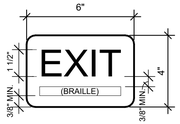
1/29/2025 11:21:44 AM

SIGNAGE LEGEND



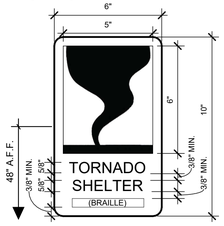
UNISEX RESTROOM - TYPE 1

3" = 1'-0"



EXIT SIGN - TYPE 2

3" = 1'-0"

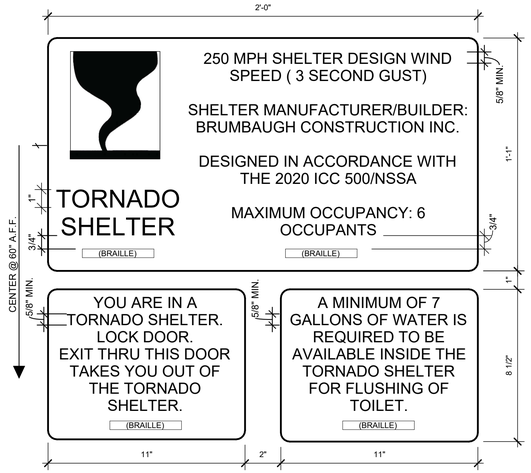


TORNADO SHELTER - TYPE 3

3" = 1'-0"

TORNADO SHELTER - TYPE 4

3" = 1'-0"



TORNADO SHELTER - TYPE 5

3" = 1'-0"

SIGN NOTES

A. ALL SIGNS ARE CFCI.

B. ALL SIGNS SHALL HAVE BRAILLE LETTERING BENEATH TEXT, TYPICAL.

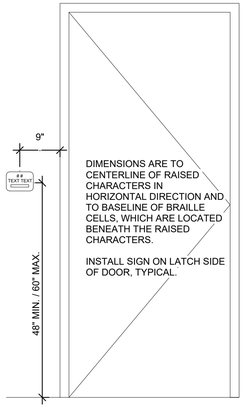
C. SIGNS MOUNTED ON GLASS AT DOOR NEED TO BE MOUNTED WITH ADHESIVE AND MATCHING BACKER PLATE FOR OTHER SIDE OF GLASS.

D. TEXT AND GRAPHICS TO BE NON-GLARE COLOR IN HIGH CONTRAST WITH BACKGROUND. SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS.

E. BACKGROUND TO BE NON-GLARE COLOR IN HIGH CONTRAST WITH TEXT AND GRAPHICS. SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS.

F. 1/2" RADIUS CORNERS.

G. ALL TEXT ON SIGNS LOCATED NEXT TO INTERIOR DOORS WILL BE 1/32" RAISED CHARACTERS, UPPERCASE, AND VIEWABLE AT LESS THAN 6 FEET.



SIGNAGE LOCATION

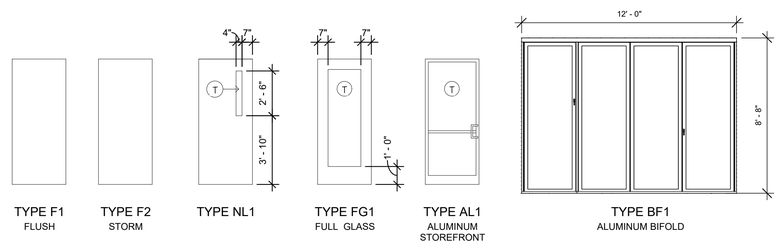
3/4" = 1'-0"

DOOR AND FRAME SCHEDULE

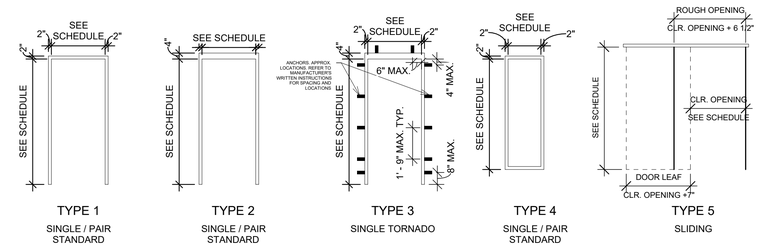
DOOR No.	ROOM NAME	HDW. SET	DOOR SIZE W	DOOR SIZE H	DOOR SIZE T	DOOR MAT.	DOOR TYPE	DOOR FIN.	DOOR U/C	FRAME MAT.	FRAME TYPE	FRAME FIN.	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS SILL	FIRE RTG.	REMARKS
100A	VEST.	1	3' - 0"	7' - 0"	1 3/4"	ALUM	AL1	POWDER COATED	-	ALUM.	-	POWDER COATED	D1/A5.4	B3/A0.8	B1/A0.6	-	8,9
100B	VEST.	1	3' - 4"	7' - 0"	1 3/4"	ALUM	AL1	POWDER COATED	-	ALUM.	-	POWDER COATED	B2/A0.6	C2/A0.6	B1/A0.6	-	
101A	OFFICER OFFICE	5	3' - 0"	7' - 0"	1 3/4"	WD	NL1	STAIN	-	HM	1	EP-3	E6/A0.6	F6/A0.6	-	90 MIN	
101B	OFFICER OFFICE	3	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-3	-	HM	2	EP-3	B6/A0.6	C6/A0.6	-	20 MIN.	
102	OFFICER DORM	17	3' - 0"	6' - 8"	2"	WD	F1	STAIN	-	HM	5	EP-3	B1/A0.8	E1/A0.8	-	20 MIN.	
103	OFFICER TLT	18	3' - 0"	6' - 8"	2"	WD	F1	STAIN	-	HM	5	EP-3	B1/A0.8	E1/A0.8	-		1
104	DECON.	14	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-3	-	HM	2	EP-3	E6/A0.6	F6/A0.6	-	-	
107	STAIRS	9	3' - 0"	7' - 0"	1 3/4"	HM	EXISTING	EP-3	-	EXISTING	-	EP-3	-	-	-	-	4,12
109	STAIRS	19	2' - 8"	3' - 10"	1 3/4"	HM	F1	EP-3/EP-6	-	HM	4	EP-3/EP-6	E6/A0.6	6/A0.6F	-	-	7,14
109A	STAIRS	2	3' - 0"	7' - 0"	1 3/4"	HM	EXISTING	EP-3/EP-6	-	EXISTING	-	EP-3/EP-6	-	-	-	-	2,9,12,14
109B	STAIRS	9	3' - 0"	7' - 0"	1 3/4"	HM	EXISTING	EP-3	-	EXISTING	-	EP-3	-	-	-	-	4,12
111	TLT	15	3' - 0"	7' - 0"	1 3/4"	HM	F2	EP-3	3/4" MAX.	HM	3	EP-3	C4/A0.6	D4/A0.6	F4/A0.6	90 MIN	1,3,5,6
112	FITNESS	7	3' - 0"	7' - 0"	1 3/4"	ALUM	AL1	POWDER COATED	-	ALUM.	1	POWDER COATED	B2/A0.6	C2/A0.6	C1/A0.6 & B1/A0.6	-	8
112A	FIRE RISER	12	2' - 6"	7' - 0"	1 3/4"	HM	F1	EP-3	-	HM	1	EP-3	B6/A0.6	C6/A0.6	-	-	
112B	FITNESS	-	12' - 0"	8' - 9 3/8"	1 3/4"	AL	NL2	POWDER COATED	-	ALUM		POWDER COATED	B5/A0.7		D5/A0.7		11
113	JAN.	6	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	3/4"	HM	1	EP-3	B6/A0.6	C6/A0.6	-	-	
114	CREW LAUNDRY	8	3' - 0"	7' - 0"	1 3/4"	WD	NL1	STAIN	-	HM	1	EP-3	B6/A0.6	C6/A0.6	-	90 MIN	
115	TLT/SHWR	10	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	3/4"	HM	1	EP-3	B6/A0.6	C6/A0.6	-	-	1
116	TLT/SHWR	10	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	3/4"	HM	1	EP-3	B6/A0.6	C6/A0.6	-	-	1
117	ADA DORM	11	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	1	EP-3	B6/A0.6	C6/A0.6	-	20 MIN.	
117.1	ADA DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
117.2	ADA DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
117.3	ADA DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
118	DORM	11	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	1	EP-3	B6/A0.6	C6/A0.6	-	20 MIN.	
118.1	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
118.2	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
118.3	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
119	DORM	11	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	1	EP-3	B6/A0.6	C6/A0.6	-	20 MIN.	
119.1	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
119.2	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
119.3	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
120	DORM	11	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	1	EP-3	B6/A0.6	C6/A0.6	-	20 MIN.	
120.1	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
120.2	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
120.3	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
121	DORM	11	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	1	EP-3	B6/A0.6	C6/A0.6	-	20 MIN.	
121.1	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
121.2	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
121.3	DORM	20	1' - 10"	7' - 0"	1 3/4"	WD	F1	STAIN	-	HM	4	EP-3	F3 & F5/A8.3	C6/A0.6 SIM	F3 & F5/A8.3	20 MIN.	
200	TRAINING	16	3' - 8"	3' - 8"	1 3/4"	HM	F4	EP-3	-	HM	4	EP-3					
209A	MECHANICAL	EXISTING	3' - 0"	7' - 0"	1 3/4"	HM	EXISTING	EP-3	-	EXISTING	-	EP-3	-	-	-	-	10
209B	MECHANICAL	EXISTING	3' - 0"	7' - 0"	1 3/4"	HM	EXISTING	EP-3	-	EXISTING	-	EP-3	-	-	-	-	10
210	DATA/IT	13	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	-	RELOCATED	1	EP-3	B6/A0.6	C6/A0.6	-	-	13
216	SEWING ROOM	5	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-3	-	RELOCATED	1	EP-3	B6/A0.6	C6/A0.6	-	-	13
B01A	APPARATUS BAYS	2	3' - 0"	7' - 0"	1 3/4"	HM	EXISTING	EP-3/EP-6	-	EXISTING	-	EP-3/EP-6	-	-	-	-	9,12,14
B01B	STAIRS	2	3' - 0"	7' - 0"	1 3/4"	HM	EXISTING	EP-3	-	EXISTING	-	EP-3	-	-	-	-	4,12
C102A	CORR.	2.1	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-3/EP-6	-	HM	2	EP-3/EP-6	B3/A0.7	D3/A0.7	-	-	2,7,9,14
C102B	CORR.	2.1	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-3/EP-6	-	HM	2	EP-3/EP-6	B3/A0.7	D3/A0.7	-	-	2,7,9,14
C103A	CORR.	3	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-3/EP-6	-	HM	2	EP-3/EP-6	B3/A0.7	D3/A0.7	-	-	2,7,14
C103B	CORR.	4	3' - 0"	7' - 0"	1 3/4"	WD	NL1	STAIN	-	HM	1	EP-3	B6/A0.6	C6/A0.6	-	90 MIN.	4
C105	APPARATUS BAYS	2	3' - 0"	7' - 0"	1 3/4"	HM	EXISTING	EP-3	-	EXISTING	-	EP-3	-	-	-	-	4,12

DOOR REMARKS

No.	REMARK
1	SIGN TYPE 1 AT THIS DOOR.
2	SIGN TYPE 2 AT THIS DOOR.
3	SIGN TYPE 3 AT THIS DOOR.
4	SIGN TYPE 4 AT THIS DOOR.
5	SIGN TYPE 5 AT THIS DOOR. MOUNT INSIDE SHELTER.
6	HIGH IMPACT DOOR AND FRAME TO MEET ICC 500 STANDARDS. 3/8" MAXIMUM UNDERCUT. COORDINATE WITH DOOR MANUFACTURER TO ENSURE COMPLIANCE.
7	HIGH R VALUE INSULATED DOOR. INSULATED GLAZING IN TYPE NL1.
8	REFER TO STOREFRONT AND WINDOW SCHEDULE FOR MORE DETAILS.
9	PROVIDE ELECTRICAL ROUGH-IN AT THIS OPENINGS WITH CONDUIT ON THE HINGE SIDE OF THE ACTIVE LEAF AND INCLUDE A RACEWAY INSIDE THE ACTIVE DOOR FOR FURTURE INSTALLATION OF ELECTRIFIED HINGE AND ELECTRIC LOCKSET.
10	EXISTING DOOR, FRAME, AND HARDWARE TO REMAIN. PAINT HM DOORS AND FRAMES COLOR AS INDICATED.
11	BASIS OF DESIGN: WESTERN WINDOW SERIES 9500 (3L1R), 4 PANEL BI-PARTING BI-FOLD DOOR, FLOOR LOAD (SWING OUT)
12	PROVIDE AND INSTALL NEW HARDWARE. EXISTING DOOR AND FRAME TO REMAIN. PAINT HM FRAME AND DOOR AS INDICATED.
13	SALVAGE EXISTING DOOR AND FRAME. PROVIDE AND INSTALL NEW HARDWARE. REFER TO REFENCE PLANS FOR DETAILS.
14	PAINT INTERIOR OF DOOR AND FRAME EP-3. PAINT EXTERIOR OF DOOR AND FRAME EP-6.



DOOR ELEVATIONS



FRAME ELEVATIONS

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

STATE OF OHIO
TIMOTHY J. BEMENT
12205
REGISTERED ARCHITECT

Timothy J. Bement, License #12205
Expiration Date 12/31/2025

Renovation and Addition

Huber Heights Fire Station 23

7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

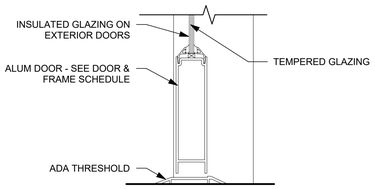
NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	1/29/2025	Addendum 1

DATE	12/18/2024
JOB NO.	4262.00
DRAWN	MSM
CHECKED	TJB

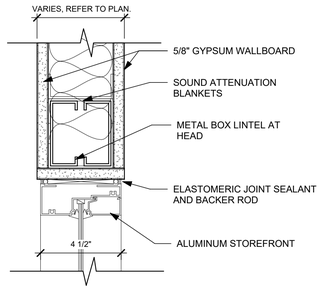
TITLE
DOOR SCHEDULES

SHEET NO.
A0.3

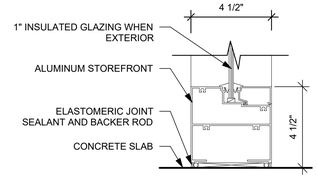
1/29/2025 10:54:27 AM



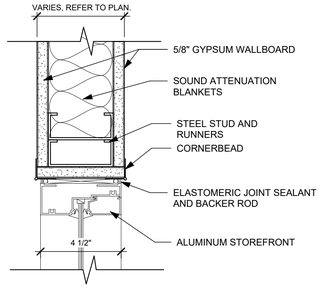
B1 SILL DETAIL - STOREFRONT DOOR
3" = 1'-0"



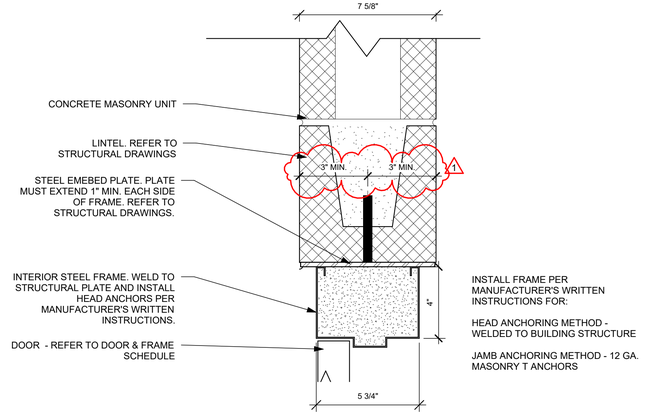
B2 HEAD DETAIL - INTERIOR STOREFRONT
3" = 1'-0"



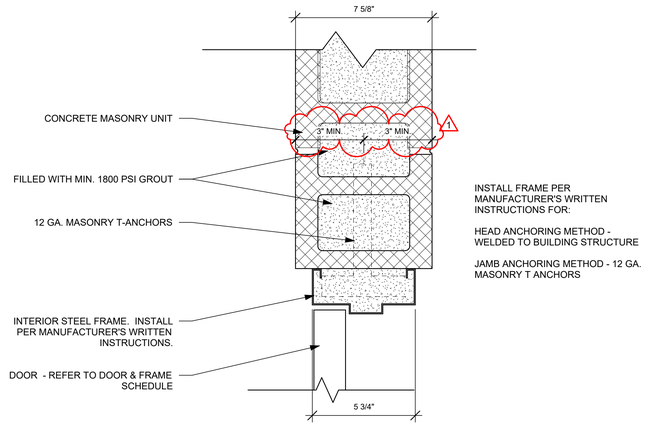
C1 SILL DETAIL - STOREFRONT
3" = 1'-0"



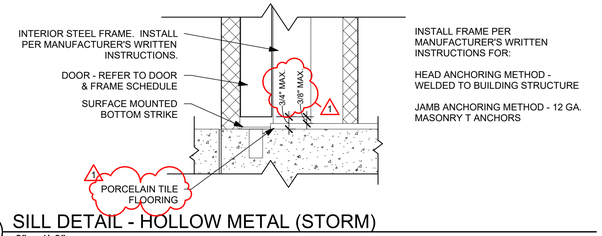
C2 JAMB DETAIL - INTERIOR STOREFRONT
3" = 1'-0"



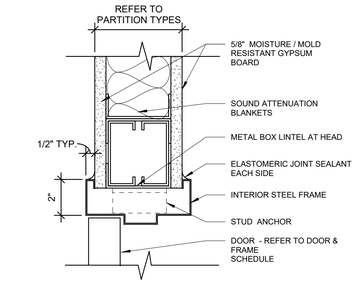
C4 HEAD DETAIL - HOLLOW METAL (STORM)
3" = 1'-0"



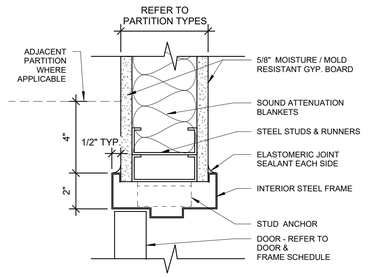
D4 JAMB DETAIL - HOLLOW METAL (STORM)
3" = 1'-0"



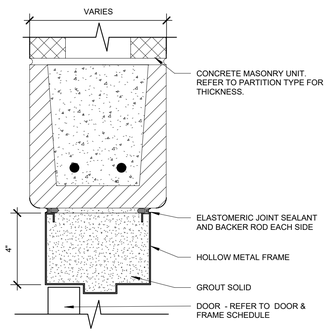
F4 SILL DETAIL - HOLLOW METAL (STORM)
3" = 1'-0"



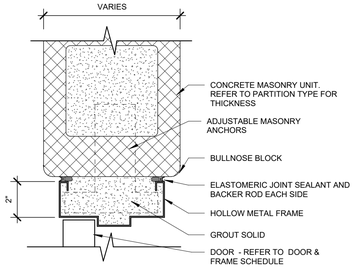
B6 HEAD DETAIL - METAL STUD DOOR FRAME
3" = 1'-0"



C6 JAMB DETAIL - METAL STUD DOOR FRAME
3" = 1'-0"



E6 HEAD DETAIL - CMU
3" = 1'-0"



F6 JAMB DETAIL - CMU
3" = 1'-0"

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937-836.8898 F 937-832-3696
www.app-arch.com

STATE OF OHIO TIMOTHY J. BEMENT 12305 REGISTERED ARCHITECT
Timothy J. Bement, License #12305
Expiration Date 12/31/2025

Renovation and Addition

Huber Heights Fire Station 23

7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

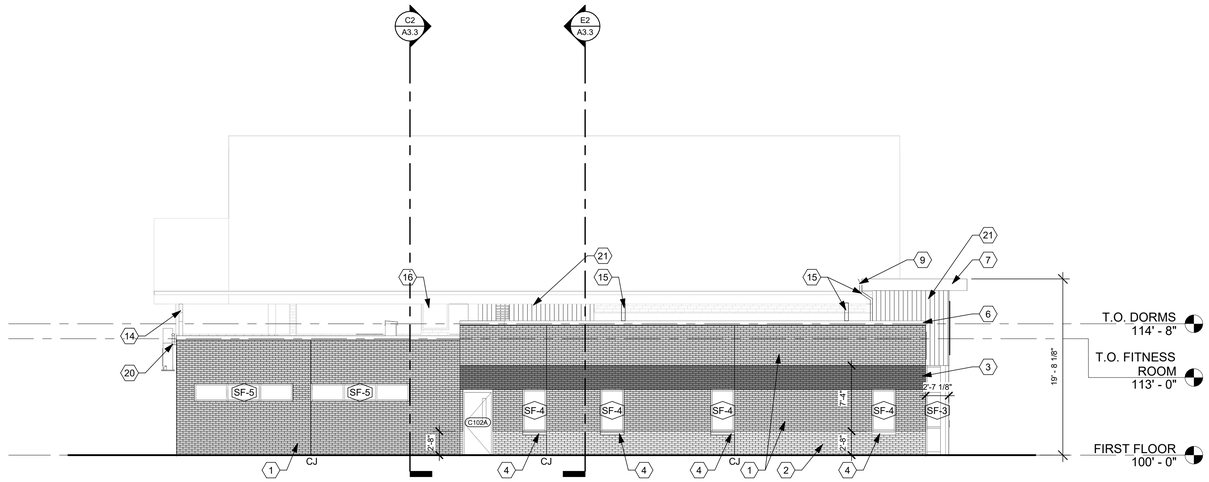
NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	1/29/2025	Addendum 1

DATE	12/18/2024
JOB NO.	4262.00
DRAWN	MSM
CHECKED	TJB

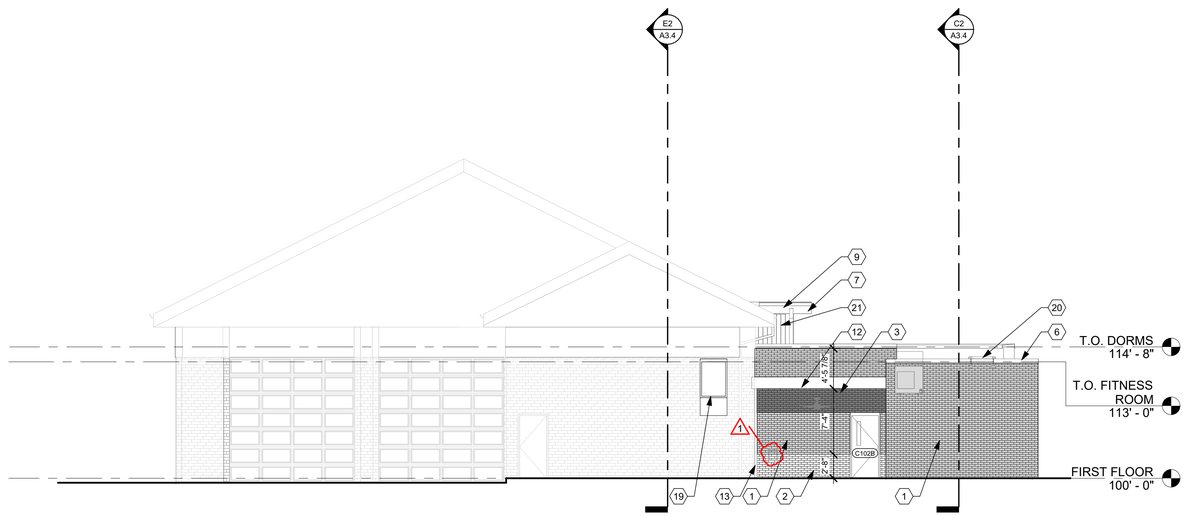
TITLE
DOOR AND WINDOW DETAILS

SHEET NO.
A0.6

12/30/2025 10:54:36 AM



C2 SOUTH ELEVATION
1/8" = 1'-0"



F2 WEST ELEVATION
1/8" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 NEW MODULAR BRICK VENEER COLOR 1.

2 NEW MODULAR BRICK VENEER COLOR 2.

3 NEW MODULAR BRICK VENEER COLOR 3.

4 CAST STONE WINDOW SILL. MATCH EXISTING.

5 METAL DIMENSIONAL LETTERING. REFER TO A5.4 FOR DETAILS.

6 PREFINISHED GALVALUME COPING.

7 PREFINISHED GALVALUME FASCIA. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

8 KNOX BOX MOUNTED AT 48" A.F.F.

9 NEW 5" PREFINISHED GALVALUME GUTTER.

10 INFILL PORTION OF WALL WITH MODULAR BRICK VENEER. MATCH EXISTING BRICK VENEER.

11 METAL WALL SIGN. REFER TO A5.01 FOR DETAILS.

12 PREMANUFACTURED METAL AWNING. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLORS. REFER TO SHEET A5.1 FOR DETAILS

13 NEW 4"X6" PREFINISHED GALVALUME DOWNSPOUT. REFER TO A5.2 FOR DOWNSPOUT ADAPTOR DETAILS.

14 EXISTING DOWNSPOUT TO REMAIN.

15 NEW 4"x6" PREFINISHED GALVALUME DOWNSPOUT TO DRAIN ONTO NEW FLAT ROOF. INSTALL INTO EXISTING OR NEW GUTTER.

16 EXISTING WINDOW TO REMAIN.

17 EXISTING WINDOWS TO REMAIN.

18 NEW STOREFRONT WINDOW TO MATCH ADJACENT FRAMES AND FINISH.

19 TRAINING OPENING @ 0'-6" ABOVE LANDING ON INTERIOR. 1/16" DIAMOND PLATE FROM LANDING TO BOTTOM OF FRAME AND 24" ABOVE FRAME ON INTERIOR. 1/16" DIAMOND PLATE 24" BELOW FRAME ON EXTERIOR. REFER TO DOOR SCHEDULE FOR DETAILS.

20 PARAPET GUARDRAIL. REFER TO ROOF PLAN FOR DETAILS.

21 VERTICAL METAL PLANK SYSTEM.

GENERAL NOTES

A. "CJ" = MASONRY CONTROL JOINT.

B. FOR SIDWALKS AND EXTERIOR PADS REFER TO CIVIL SITE PLAN AND LANDSCAPE PLAN.

C. ALL BRICK VENEER TO BE 1/2 RUNNING BOND.

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

STATE OF OHIO
TIMOTHY J. BEMENT
12305
REGISTERED ARCHITECT
Timothy J. Bement, License #12305
Expiration Date 12/31/2025

Renovation and Addition

Huber Heights Fire Station 23

7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

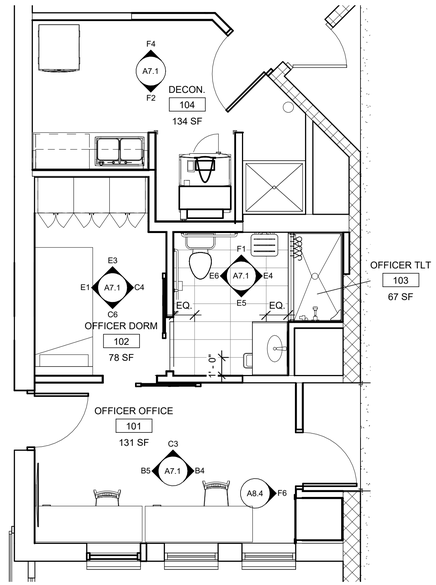
NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	1/29/2025	Addendum 1

DATE	12/18/2024
JOB NO.	4262.00
DRAWN	MSM
CHECKED	TJB

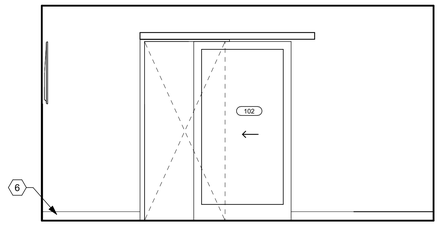
TITLE
EXTERIOR ELEVATIONS

SHEET NO.
A3.2

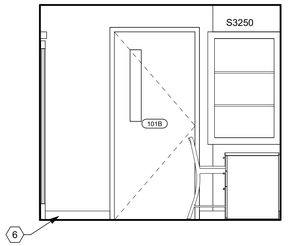
1/29/2025 10:54:47 AM



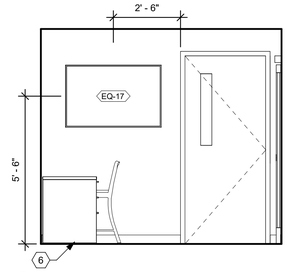
C1 PARTIAL ENLARGED FLOOR PLAN A
1/4" = 1'-0"



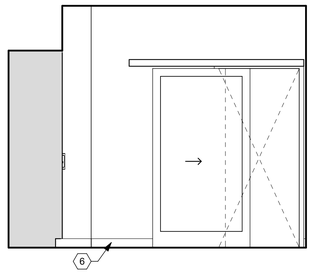
C3 101 OFFICER OFFICE - WEST
3/8" = 1'-0"



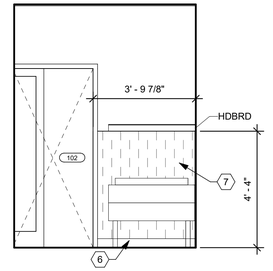
B4 101 OFFICER OFFICE - NORTH
3/8" = 1'-0"



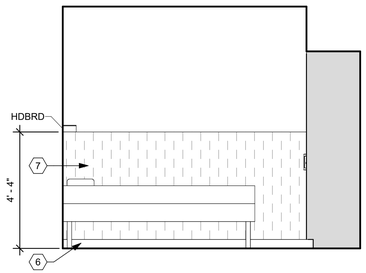
B5 101 OFFICER OFFICE - SOUTH
3/8" = 1'-0"



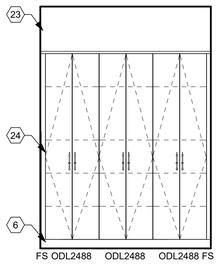
C4 102 OFFICER DORM - NORTH
3/8" = 1'-0"



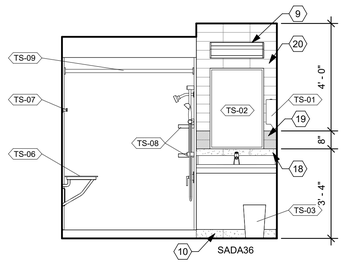
C6 102 OFFICER DORM - EAST
3/8" = 1'-0"



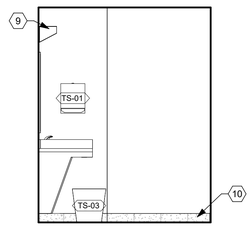
E1 102 OFFICER DORM - SOUTH
3/8" = 1'-0"



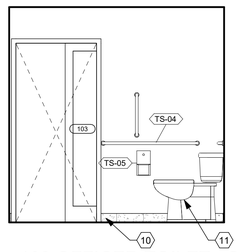
E3 102 OFFICER DORM - WEST
3/8" = 1'-0"



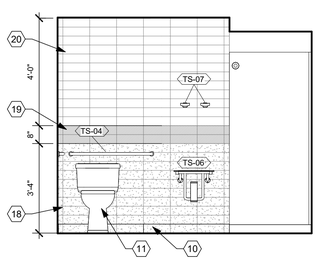
E4 103 OFFICER TOILET - NORTH
3/8" = 1'-0"



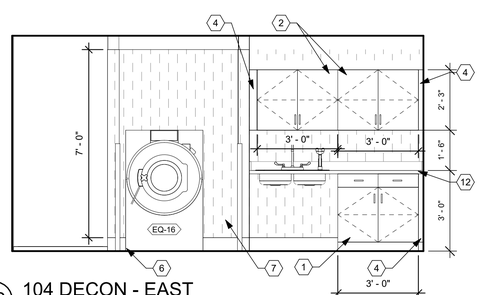
E5 103 OFFICER TOILET - EAST
3/8" = 1'-0"



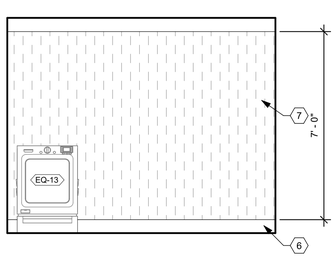
E6 103 OFFICER TOILET - SOUTH
3/8" = 1'-0"



F1 103 OFFICER TOILET - WEST
3/8" = 1'-0"



F2 104 DECON - EAST
3/8" = 1'-0"



F4 104 DECON - WEST
3/8" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 STEEL CASEWORK. BASIS OF DESIGN: ULINE H-8531. ARCHITECT TO CHOOSE FROM MANUFACTURER'S STANDARD COLORS.

2 STEEL CASEWORK. BASIS OF DESIGN: ULINE H-4472. ARCHITECT TO CHOOSE FROM MANUFACTURER'S STANDARD COLORS.

3 STAINLESS STEEL BACKSPLASH (SSB).

4 STEEL FILLER STRIP. COLOR TO MATCH STEEL CASEWORK.

5 SOLID SURFACE COUNTERTOP.

6 BASE, REFER TO ROOM FINISH SCHEDULE.

7 VINYL WALL PROTECTION. REFER TO FINISH SCHEDULE FOR TYPE.

8 PLASTIC LAMINATE (PL-1) SLOPE TOP.

9 WALL MOUNTED LIGHT. REFER TO ELECTRICAL DRAWINGS.

10 PORCELAIN TILE WALL BASE (PTWB-1)

11 TOILET FIXTURE. REFER TO PLUMBING DRAWINGS.

12 STAINLESS STEEL COUNTERTOP WITH BACK AND SIDE SPLASHES AND INTEGRAL SINK.

13 SOLID SURFACE COUNTERTOP WITH BACK AND SIDE SPLASHES.

14 PLASTIC LAMINATE (PL-2) COUNTERTOP.

15 STAINLESS STEEL COUNTERTOP WITH BACK AND SIDE SPLASHES.

16 GYPSUM BOARD SOFFIT.

17 METAL SUPPORT BRACKETS @ 4' - 0" O.C. MAX.

18 PORCELAIN WALL TILE. (PWT-1) ALIGN GROUT LINES WITH FLOOR TILE GROUT LINES.

19 PORCELAIN WALL TILE. (PWT-2) ALIGN GROUT LINES WITH FLOOR TILE GROUT LINES.

20 PORCELAIN WALL TILE. (PWT-3) ALIGN GROUT LINES WITH FLOOR TILE GROUT LINES.

21 MOP SINK WITH MOP HANGER ABOVE. REFER TO PLUMBING DRAWINGS AND EQUIPMENT PLAN.

22 HDBRD SIM. REFER TO MOUNTING HEIGHT ON ELEVATION.

23 GYPSUM BOARD SOFFIT. PAINT P-2.

24 DORM LOCKERS (PL-1).

25 WALL-HUNG TV CASEWORK. REFER TO SHEET A8.6 FOR DETAILS.

GENERAL NOTES

A. NOT ALL NOTES APPLICABLE TO SHEET.

B. REFER TO ROOM FINISH SCHEDULE, MATERIAL LEGEND, AND FINISHES PLANS FOR FINISH AND MATERIAL DETAILS.

C. MEP INFORMATION SHOWN FOR REFERENCE ONLY. REFER TO MEP PLANS FOR DETAILS.

D. PROVIDE FIRE RETARDANT WOOD BLOCKING BEHIND ALL WALL HUNG ACCESSORIES, CABINETS, FURNISHINGS, HANDRAILS U.N.O.

E. REFER TO ELEVATIONS ON SHEET A0.1 FOR TOILET ROOM ACCESSORY MOUNTING HEIGHTS AND CLEARANCES.

F. ALL COUNTERTOPS AND WORK SURFACES TO HAVE BACK AND SIDE SPLASHES WHEREVER THE SURFACE ABUTS A WALL.

G. MATCHING SCRIBE STRIPS TO BE PROVIDED TO FILL GAPS AND IRREGULARITIES WHERE THE EDGE OF CABINETS AND LOCKERS MEET WALLS. FILLER STRIPS ALSO TO BE PROVIDED AT CABINETRY AND LOCKER CORNERS TO FILL ANY GAPS LEFT TO ALLOW DOORS AND DRAWERS TO FUNCTION PROPERLY.

H. PROVIDE FINISHED END ON ALL EXPOSED SURFACES OF CASEWORK.

I. DIMENSIONS ARE FROM FACE OF GYP. BD. TO FACE OF GYP. BD.

J. REFER TO THE REFERENCE PLANS ON SHEET A1.5 FOR WALL TYPES.

K. ELEVATIONS SHOW FINISHED WORK. REFER TO SHEETS A1.1, A1.2, A1.3, A1.4 ,A2.1, A2.2, A2.3, AND A2.4 FOR PHASES OF WORK TO BE COMPLETED.

L. EXAMPLE OF CASEWORK DIMENSIONS (2426) INDICATES: 24" WIDE x 36" HEIGHTS. FOR DEPTH OF CASEWORK, REFER TO CASEWORK SECTION DETAILS.

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937-836-8898 F 937-832-3696
www.app-arch.com

STATE OF OHIO TIMOTHY J. BEMENT 12305 REGISTERED ARCHITECT
Timothy J. Bement, License #12305
Expiration Date 12/31/2025

Renovation and Addition
Huber Heights Fire Station 23
7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

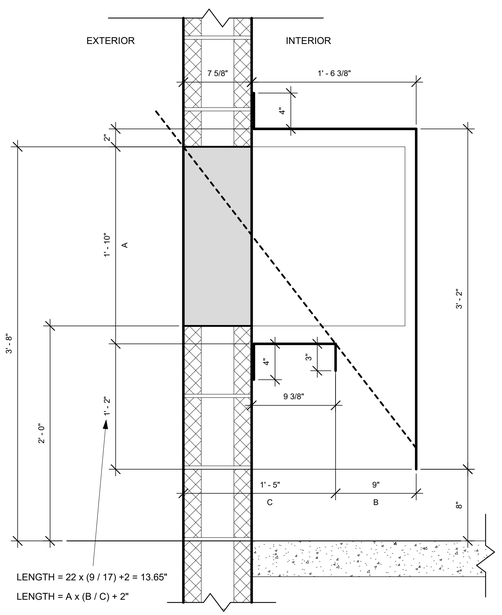
NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	1/29/2025	Addendum 1

DATE	12/18/2024
JOB NO.	4262.00
DRAWN	MSM
CHECKED	TJB

TITLE
INTERIOR ELEVATIONS

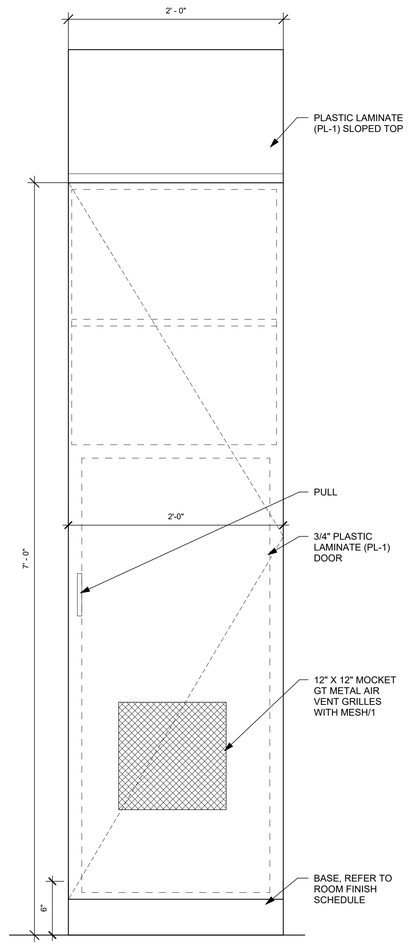
SHEET NO.
A7.1

1/29/2025 10:54:59 AM

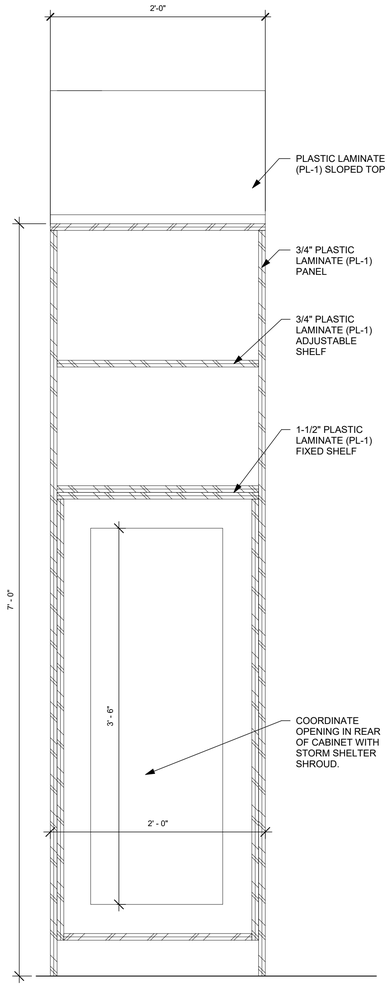


THIS DETAIL SHOWS THE SPECIFIC DIMENSIONS FOR LOW AIR LOUVER SHROUD FOR THE STORM SHELTER. REFER TO STRUCTURAL DRAWINGS FOR SHROUD CONSTRUCTION DETAILS.

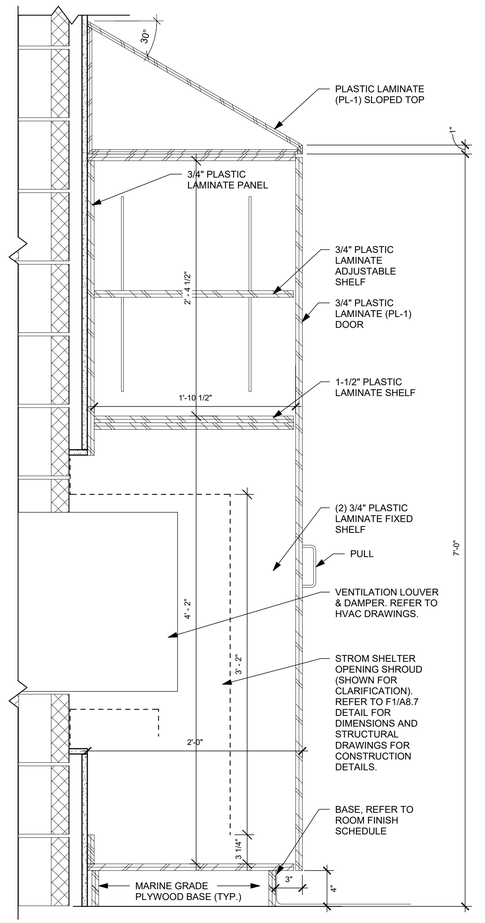
F1 SHROUD DIMENSIONS
1 1/2" = 1'-0"



F3 TALL CABINET (TC) ELEVATION
1 1/2" = 1'-0"



F5 TALL CABINET (TC) SECTION
1 1/2" = 1'-0"



F6 TALL CABINET (TC) DETAIL
1 1/2" = 1'-0"

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

STATE OF OHIO
TIMOTHY J. BEMENT
12205
REGISTERED ARCHITECT
Timothy J. Bement, License #12205
Expiration Date 12/31/2025

Huber Heights Fire Station 23

Renovation and Addition

7435 Old Troy Pike, Dayton, Ohio 45424

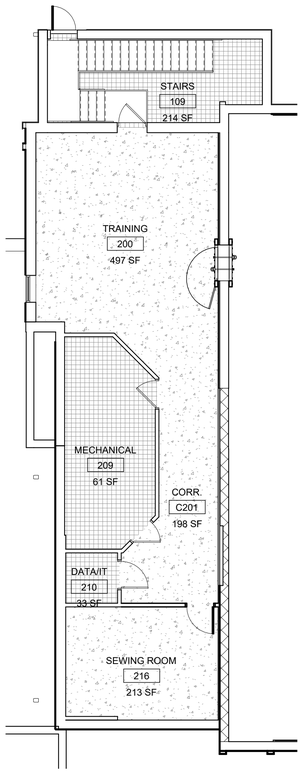
ISSUE		
NO.	DATE	DESCRIPTION
1	1/29/2025	Addendum 1

DATE	12/18/2024
JOB NO.	4262.00
DRAWN	MSM
CHECKED	TJB

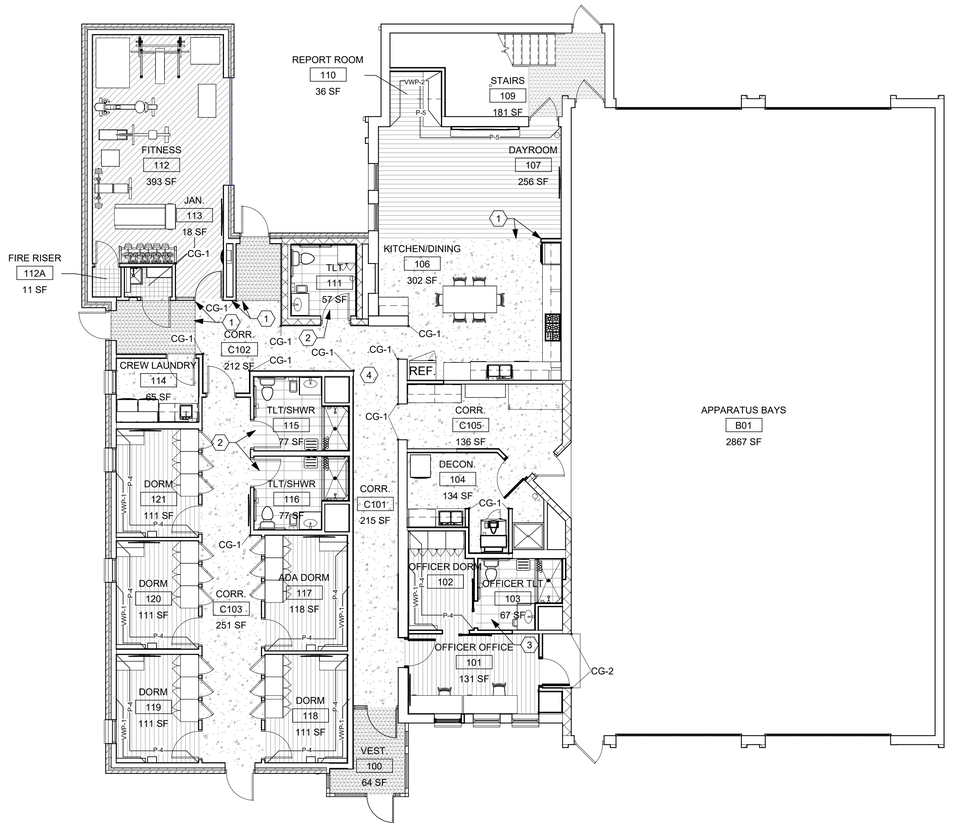
TITLE
CASEWORK DETAILS

SHEET NO.
A8.7

1/29/2025 10:55:19 AM



E1 SECOND FLOOR FINISHES PLAN
1/8" = 1'-0"



E3 FIRST FLOOR FINISHES PLAN
1/8" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 ALIGN.

2 REFER TO D1/A7.02, PARTIAL ENLARGED FLOOR PLAN B, FOR FLOOR TILE (PT-1) LAYOUT.

3 REFER TO C1/A7.01, PARTIAL ENLARGED FLOOR PLAN A, FOR FLOOR TILE (PT-1) LAYOUT.

4 EPOXY FLOOR BASIS OF DESIGN: GFC CONCRETE COATINGS. 7678 MCEWEN ROAD, CENTERVILLE, OHIO 45459.

GENERAL NOTES

A. REFER TO FINISH SCHEDULE ON A0.2 FOR ADDITIONAL MATERIAL DETAILS AND LOCATIONS.

B. TRANSITION STRIPS ARE REQUIRED WHERE DIFFERING FLOORING TYPES MEET.

LEGEND

- EXISTING
- CPT-2 CARPET TILE
- CPT-1 CARPET TILE
- MAT-1 WALK OFF MAT
- EPOXY
- PT-1 PORCELAIN TILE
- RT-1 RUBBER TILE
- SC-1 SEALED CONCRETE
- VWP — VINYL WALL PROTECTION TYPE
- P — ACCENT PAINT COLOR LOCATION
- CG-1, CG-2 — CORNER GUARD LOCATION

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937-836.8898 F 937-832-3696
www.app-arch.com

STATE OF OHIO TIMOTHY J. BEMENT 12205 REGISTERED ARCHITECT
Timothy J. Bement, License #12205
Expiration Date 12/31/2025

Renovation and Addition
Huber Heights Fire Station 23
7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	1/29/2025	Addendum 1

DATE	12/18/2024
JOB NO.	4262.00
DRAWN	MSM
CHECKED	TJB

TITLE
FINISH PLANS

SHEET NO.
A9.1

1/29/2025 10:55:18 AM

GENERAL STRUCTURAL NOTES

GENERAL

1. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE CONSTRUCTION IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, SHEETING, TEMPORARY BRACING, GUYS, OR TIEDOWNS WHICH MIGHT BE NECESSARY. SUCH MATERIAL IS TO REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.
2. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
3. MECHANICAL EQUIPMENT LOADS, OPENINGS AND STRUCTURE IN ANY WAY RELATED TO MECHANICAL REQUIREMENTS ARE SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR IS TO OBTAIN APPROVAL OF MECHANICAL AND OTHER TRADES BEFORE PROCEEDING WITH SUCH PORTION OF THE WORK. EXCESS COST RELATED TO VARIATION IN MECHANICAL REQUIREMENTS TO BE BORNE BY MECHANICAL CONTRACTOR.
4. DO NOT SCALE THE DRAWINGS WHERE DIMENSIONS ARE NOT SPECIFICALLY GIVEN. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS NOT SHOWN. COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE NOT INTENDED TO AUGMENT, NOR SUPERSEDE THOSE SHOWN ON THE ARCHITECTURAL DRAWINGS.
5. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY THE ARCHITECT IMMEDIATELY WHERE CONFLICTS EXIST WITHIN THE DRAWINGS OR BETWEEN THE DRAWINGS AND FIELD CONDITIONS.
6. THROUGHOUT THESE PLANS, THE TERM "PROVIDE" IS DEFINED AS "SUPPLY AND INSTALL".
7. SHOP DRAWINGS ARE TO BE SUBMITTED BY COMPLETE ERECTION PHASE OR SEQUENCE. LIMITS OF EACH INDIVIDUAL ERECTION PHASE OR SEQUENCE ARE TO BE CLEARLY INDICATED ON THE PLANS. INCOMPLETE OR PIECEMEAL SHOP DRAWINGS WILL BE RETURNED PRIOR TO REVIEW. RESUBMITTALS ARE TO HAVE REVISIONS CLEARLY MARKED OR IDENTIFIED. THE CONTRACTOR SHALL REVIEW AND ACCEPT FULL RESPONSIBILITY FOR DIMENSIONAL CORRECTNESS. ALL SHOP DRAWINGS MUST BEAR THE APPROVAL STAMP OF THE CONTRACTOR PRIOR TO REVIEW BY THE ARCHITECT OR ENGINEER.
8. SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THE GENERAL STRUCTURAL NOTES, THE SPECIFICATIONS OR WITH EACH OTHER, THE STRICTEST PROVISION WILL GOVERN.
9. CODE INFORMATION

- GOVERNING CODE:	2024 OHIO BUILDING CODE	
- BUILDING RISK CATEGORY:	CATEGORY IV	
LOADING TYPE:	UNIFORM (PSF)	CONCENTRATED (LB)
FLOOR LIVE LOADS (WITH ALLOWABLE REDUCTIONS WHERE APPLICABLE):		
- MEZZANINE	80 PSF	1,000 LB
ROOF LIVE LOADS:		
- ORDINARY ROOFS	20 PSF	--
ROOF RAIN LOADS	PRIMARY	SECONDARY
- RAIN INTENSITY (i)	2.8 IN/HR	1.5 IN/HR
SNOW LOADS:		
- GROUND SNOW LOAD (Pg)	20 PSF	
- FLAT ROOF SNOW LOAD (Pf)	24 PSF	
- SNOW EXPOSURE FACTOR (Ce)	1.0	
- SNOW LOAD IMPORTANCE FACTOR (Is)	1.2	
- THERMAL FACTOR (Ct)	1.0	
- SNOW DRIFTING (Pd) AND EXTENTS	INDICATED ON PLAN	
WIND LOADS:		
- BASIC WIND SPEED (V)	119 MPH	
- BASIC ALLOWABLE WIND SPEED (V asd)	92 MPH	
- SITE EXPOSURE CATEGORY	B	
- INTERNAL PRESSURE COEFFICIENT	+/- 0.18	
SEISMIC LOADS:		
- SEISMIC IMPORTANCE FACTOR (Ie)	1.5	
- MAPPED SPECTRAL RESPONSE ACCELERATION (Ss)	0.155	
- MAPPED SPECTRAL RESPONSE ACCELERATION (S1)	0.070	
- SEISMIC SITE CLASS	D	
- DESIGN SPECTRAL RESPONSE ACCELERATION (Sds)	0.165	
- DESIGN SPECTRAL RESPONSE ACCELERATION (Sd1)	0.112	
- SEISMIC DESIGN CATEGORY	C	
- RESPONSE MODIFICATION COEFFICIENT (R)	2.0	
- SEISMIC RESPONSE COEFFICIENT (Cs)	0.124	
- SEISMIC DESIGN BASE SHEAR (V)	6.0 K	
- ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE	
- BASIC SEISMIC FORCE-RESISTING SYSTEM:	SHEAR WALLS SHEATHED WITH OTHER MATERIALS	
SPECIAL LOADS		
- INTERIOR WALLS & PARTITIONS	5 PSF HORIZONTAL (ALLOWABLE)	
GEOTECHNICAL:		
- GEOTECHNICAL ENGINEER:	KOONTZ BRYANT JOHNSON WILLIAMS	
- REFERENCE REPORT I.D. OR NUMBER:	31673-001-01-1024	
- REFERENCE REPORT DATE:	OCTOBER 7, 2024	
- ALLOWABLE DESIGN BEARING PRESSURE:	1,500 PSF	
- FOUNDATION TYPE:	SHALLOW SPREAD FOOTINGS	

DELEGATED DESIGN ITEMS

1. PREFABRICATED ITEMS SHOWN ON THE STRUCTURAL DRAWINGS ARE REFERENCED FOR GENERAL COORDINATION PURPOSES ONLY. THESE SYSTEMS SHALL BE DESIGNED, FURNISHED, AND INSTALLED AS REQUIRED BY OTHER PORTIONS OF THE CONTRACT DOCUMENTS. JEZERINAC GEERS WILL REVIEW THE DESIGN METHODOLOGY, LOADS, AND INSTALLATION DETAILS AS PART OF THE SHOP DRAWING REVIEW PROCESS AND MAY REQUEST A SEALED CALCULATION PACKAGE FOR REVIEW. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE ENGINEER RESPONSIBLE FOR THE DESIGN OF THE DESIGNED ITEMS. DELEGATED DESIGN ITEMS FOR THIS PROJECT INCLUDE THE FOLLOWING:
   - A. DIVISION 5:
     1. COLD-FORMED METAL FRAMING AND THEIR CONNECTIONS
     2. CURTAIN WALLS AND STOREFRONT SYSTEMS
     3. PREFABRICATED CANOPIES, AWNINGS, AND THEIR CONNECTIONS

REINFORCED CONCRETE

1. SPECIFICATIONS: IN GENERAL, COMPLY WITH ACI-301-20, "SPECIFICATIONS FOR STRUCTURAL CONCRETE".
2. MATERIALS:
   - A. STRUCTURAL CONCRETE:

MIX USAGE	f'c (PSI)	MAX w/cm	EXPOSURE CLASS	AIR CONTENT
LEAN CONCRETE	1,500	---	F0	---
FOOTINGS & INTERIOR COLUMN PIERS	3,500	0.55	F1	---
INTERIOR SLABS ON GRADE	4,100	0.45	F0	---
ELEVATED STRUCTURAL CONCRETE SLABS (STORM SHELTER)	5,000	0.42	F0	---
EXTERIOR FOUNDATION STEMWALLS, EXTERIOR FOUNDATION WALLS, & EXTERIOR COLUMN PIERS	4,500	0.45	F2	5%-7%
EXTERIOR UNREINFORCED SLABS ON GRADE & EXTERIOR CONCRETE NOT OTHERWISE IDENTIFIED	4,500	0.45	F2, C1	5%-7%

   - B. ALL DEFORMED REINFORCING BARS: FY = 60,000 PSI.
   - C. CEMENT: PORTLAND CEMENT, ASTM C150: TYPE I OR TYPE II; ASTM C1157: TYPE LH OR GU; OR ASTM C595: TYPE IL. ALL CEMENT FOR CONCRETE EXPOSED TO VIEW IS TO BE FROM THE SAME MILL.
   - D. AGGREGATES: ASTM C33, USE SIZE NO. 57 FOR ALL MIXES UNLESS NOTED OTHERWISE.
   - E. ADMIXTURES:
     1. WATER-REDUCING, LOW AND MID RANGE: ASTM C494, TYPE A OR D.
     2. HIGH-RANGE WATER REDUCING, SUPERPLASTICIZER: ASTM C494, TYPE F OR G.
   - F. AIR-ENTRAINING: ASTM C260.
   - G. FLY-ASH: ASTM C618, TYPE C OR F.
   - H. NON-CHLORIDE, NON-CORROSIVE ACCELERATOR: ASTM C494, TYPE C OR E.
   - I. VAPOR RETARDER SHALL CONFORM TO ASTM E1745 "STANDARD SPECIFICATION FOR PLASTIC WATER VAPOR RETARDERS USED IN CONTACT WITH SOIL OR GRANULAR FILL UNDER CONCRETE SLABS", CLASS A.
   - J. VAPOR RETARDER SHALL BE INSTALLED IN ACCORDANCE WITH ASTM E1643 "STANDARD PRACTICE FOR INSTALLATION OF WATER VAPOR RETARDERS USED IN CONTACT WITH EARTH OR GRANULAR FILL UNDER CONCRETE SLABS. THE VAPOR RETARDER/BARRIER SHALL BE A MINIMUM OF 15 MILS THICK AND PLACED DIRECTLY ON THE GRANULAR FILL, BELOW THE CONCRETE FLOOR SLAB. LAP JOINTS A MINIMUM OF 6 INCHES AND SEAL WITH MANUFACTURER'S RECOMMENDED TAPE OR ADHESIVE.
3. FIELD MANUAL: PROVIDE AT LEAST ONE COPY OF THE ACI FIELD REFERENCE MANUAL, MNL-15(20) IN THE FIELD OFFICE AT ALL TIMES.
4. SUBMITTALS:
   - A. SUBMIT A MIX DESIGN FOR EACH MIXTURE USAGE REQUIRED FOR THE PROJECT. CONCRETE PROPORTIONS ARE TO BE ESTABLISHED ON THE BASIS OF PREVIOUS FIELD EXPERIENCE OR TRIAL MIXTURES.
   - B. SUBMIT PLACING DRAWINGS FOR ALL REINFORCING. INDICATE STRENGTH, SIZE, AND DETAILS OF ALL BAR REINFORCING.
   - C. SUBMIT PRODUCT LITERATURE FOR ADMIXTURES AND CURING COMPOUNDS PROPOSED FOR USE.
   - D. SUBMIT REPORTS OF ALL REQUIRED TESTING AND INSPECTIONS.
5. CONTINGENCIES:
   - A. PROVIDE LEAN CONCRETE UNDER FOUNDATIONS FOR ACCIDENTAL OVER EXCAVATION, SOFT SPOTS, AND UTILITY TRENCHES.
6. FOOTINGS, PIERS, WALLS:
   - A. DOWELS IN FOOTINGS TO MATCH VERTICAL PIER OR WALL REINFORCING.
   - B. PROVIDE CORNER BARS AT WALL AND FOOTING CORNERS TO MATCH HORIZONTAL REINFORCING.
   - C. LAP BARS AS INDICATED IN THE CONCRETE REINFORCING LAP SCHEDULE.
7. SPLICES:
   - A. LAP SPLICE REINFORCING BARS AS SCHEDULED. MINIMUM LAP = 36 DIAMETERS.
8. CONSTRUCTION JOINTS:
   - A. CONSTRUCTION JOINTS PERMITTED ONLY WHERE SHOWN OR AS APPROVED BY THE STRUCTURAL ENGINEER.
9. FINISHES:
   - A. PER ACI 117, SURFACES OF INTERIOR SLABS ON GRADE ARE TO BE FINISHED TO THE FOLLOWING TOLERANCES: FLOOR FLATNESS F(f)=30 AND LEVELNESS F(l)=20 UNLESS NOTED OTHERWISE IN SPECIFICATIONS.
   - B. TYPICAL INTERIOR FLOOR AREAS TO RECEIVE CARPET, RESILIENT FLOOR COVERING, OR TO REMAIN EXPOSED - TROWELED FINISH.
   - C. INTERIOR FLOOR AREAS TO RECEIVE QUARRY TILE OR CERAMIC TILE - FLOATED FINISH.
   - D. EXTERIOR SLABS - BROOM FINISH.
10. CURING:
    - A. CURING IS TO COMMENCE IMMEDIATELY AFTER CONCRETE PLACEMENT AND CONTINUE FOR AT LEAST 7 DAYS. DO NOT ALLOW CURING TO BE DELAYED OVERNIGHT.
    - B. INTERIOR SLABS TO RECEIVE QUARRY TILE OR CERAMIC TILE ARE TO BE MOIST-CURED WITHOUT THE USE OF A CURING COMPOUND.
    - C. ALL OTHER SLABS MAY BE EITHER MOIST-CURED OR RECEIVE AN APPLICATION OF CURING COMPOUND.
11. FIELD QUALITY CONTROL:
    - A. OBTAIN CONCRETE FOR REQUIRED TESTS AT POINT OF PLACEMENT. IF CONCRETE IS PUMPED, OBTAIN CONCRETE AT DISCHARGE END.
    - B. FOR EACH CLASS OF CONCRETE, OTHER THAN LEAN CONCRETE, PERFORM ONE STRENGTH TEST FOR EACH 50 YARDS, OR FRACTION THEREOF, FOR ONE DAY PLACEMENT.
    - C. DETERMINE SLUMP FOR EACH STRENGTH TEST.
    - D. DETERMINE AIR CONTENT FOR EACH STRENGTH TEST OF EXTERIOR EXPOSED CONCRETE.
    - E. MAINTAIN RECORDS OF ALL TESTS INDICATING EXACT LOCATION OF THE STRUCTURE REPRESENTED BY EACH TEST.

MASONRY

1. MATERIALS:
   - A. CONCRETE BLOCK: ASTM C90 (HOLLOW AND SOLID), MINIMUM NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS = 2,600 PSI.
   - B. MORTAR: ASTM 270 TYPE S, MINIMUM COMPRESSIVE STRENGTH = 1,800 PSI
   - C. GROUT FOR BOND BEAM AND CORE FILL: ASTM C476, COARSE TYPE WITH f'c = 2,500 PSI MIN.
   - D. DESIGN COMPRESSIVE STRENGTH OF MASONRY SYSTEM: f'm = 2,250 PSI
   - E. ALL DEFORMED REINFORCING BARS: FY = 60,000 PSI. LAP BARS AS INDICATED IN THE CONCRETE MASONRY REINFORCING LAP SCHEDULE.
   - F. HORIZONTAL JOINT REINFORCING: STANDARD LADDER TYPE, 9 GA., HOT-DIPPED GALVANIZED FINISH. PROVIDE AT 8" O.C. BELOW GRADE, AND 16" O.C. ABOVE GRADE, UNLESS NOTED OTHERWISE.
2. CONTROL JOINTS:
   - A. PROVIDE CONTROL JOINTS IN ALL MASONRY WALLS AT A SPACING NOT TO EXCEED THREE TIMES THE WALL HEIGHT OR 24 FEET ON CENTER, WHICHEVER IS SMALLER. IN ADDITION, PROVIDE CONTROL JOINTS AT THE ENDS OF LINTELS, CHANGES IN WALL HEIGHT, CHANGES IN WALL THICKNESS, WITHIN 2 FEET OF WALL CORNERS AND INTERSECTIONS, TRANSITIONS FROM INTERIOR WALL TO EXTERIOR WALL, AND TRANSITIONS FROM WALL BEARING ON FOUNDATION TO WALL BEARING ON FLOOR SLAB.
3. MISCELLANEOUS:
   - A. PROVIDE SOLID OR GROUT-FILLED CMU FOR ALL BELOW-GRADE FOUNDATION WALLS.
   - B. FILL CORE SOLID AROUND CAST-IN ANCHOR RODS.
   - C. PROVIDE SOLID CMU OR SOLIDLY FILLED HOLLOW CMU AT ALL EPOXY ANCHOR AND WEDGE ANCHOR LOCATIONS. EXTEND SOLID AREA AT LEAST 8" IN ALL DIRECTIONS FROM CENTER OF ANCHOR.
   - D. SET WELD PLATES IN BOND BEAMS AFTER THE GROUT IS PLACED, BUT WHILE IT IS STILL PLASTIC.
   - E. HOLLOW MASONRY UNITS TO BE LAID WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. WEBS ARE TO ALSO BE BEDDED IN ALL COURSES OF PIERS, PILASTERS, THE STARTING COURSE ON FOOTINGS, AND WHEN ADJACENT TO CELLS OR CAVITIES TO BE REINFORCED OR FILLED WITH CONCRETE OR GROUT. SOLID UNITS TO BE LAID WITH FULL HEAD AND BED JOINTS.
   - F. PROVIDE APPROPRIATE MASONRY ANCHORS AT 16" O.C. MAX. TO TIE MASONRY TO ABUTTING STEEL COLUMNS, STEEL BEAM WEBS, AND ALL ABUTTING CONCRETE SURFACES.
   - G. WHERE HOLLOW MASONRY UNITS ARE USED ABOVE HOLLOW MASONRY UNITS OF A DIFFERENT THICKNESS, PROVIDE A CONTINUOUS COURSE OF SOLID MASONRY AT LEAST 8" HIGH BELOW THE TRANSITION.
   - H. LAP SPLICE REINFORCING BARS AS SCHEDULED.
   - I. ALL GROUTING OF MASONRY WALLS IS TO BE BY THE LOW-LIFT GROUTING METHOD (MAXIMUM LIFT HEIGHT 5'-0"), UNLESS CLEAN-OUTS AND INSPECTIONS ARE PROVIDED.

STRUCTURAL STEEL

1. MATERIALS:
   - A. STRUCTURAL STEEL WIDE FLANGE SHAPES: ASTM A992, Fy = 50 KSI
   - B. STRUCTURAL STEEL CHANNELS, ANGLES, PLATES, ETC.: ASTM A36, Fy = 36 KSI
   - C. HIGH STRENGTH BOLTS: ASTM A325 OR A490
   - D. ANCHOR RODS: ASTM F1554, GRADE 36, UNLESS NOTED OTHERWISE
   - E. ELECTRODES: SERIES E70
   - F. RECTANGULAR HSS: ASTM A500, GRADE C, FY = 50 KSI
   - G. STRUCTURAL PIPES: ASTM A53, GRADE B, FY = 35 KSI
   - H. SHEAR STUDS: ASTM A108, FY = 60 KSI
   - I. DEFORMED BAR ANCHORS: ASTM A1064, Fy = 70 KSI
2. SPECIFICATIONS:
   - A. WELDING PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS D1.1. UNLESS SPECIFICALLY SHOWN OTHERWISE, DESIGN, FABRICATION AND ERECTION TO BE GOVERNED BY THE LATEST REVISIONS OF:
     1. AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
     2. AISC CODE OF STANDARD PRACTICE.
     3. STRUCTURAL WELDING CODE, AWS D1.1 OF THE AMERICAN WELDING SOCIETY.
     4. SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
3. SUBMITTALS:
   - A. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL WHICH INCLUDE ERECTION PLANS, CONNECTION DETAILS, AND SHOP DETAILS INDICATING CUTS, COPES, CAMBERS, CONNECTIONS, HOLES, THREADED FASTENER TYPES AND SIZES, AND SIZES AND LENGTHS OF WELDS.
   - B. INDICATE MATERIAL SPECIFICATIONS, STRENGTHS, AND FINISHES.
4. CONNECTIONS:
   - A. FIELD CONNECTIONS ARE TO BE BOLTED, EXCEPT AS INDICATED OTHERWISE. SHOP CONNECTIONS MAY BE WELDED OR BOLTED.
   - B. CONNECTIONS ARE TO BE DESIGNED BY THE FABRICATOR TO DEVELOP EITHER 110% OF THE FULL UNIFORM LOAD CAPACITY OF THE MEMBER (55% EACH END), OR THE FORCES SHOWN ON THE PLANS. MINIMUM CONNECTION CAPACITY TO BE 15 KIPS. FOLLOW INSTRUCTIONS ON DRAWINGS FOR GENERAL ARRANGEMENT OR PARTICULAR DETAILS.
5. COATINGS:
   - A. DO NOT PAINT STEEL OR ANCHOR RODS WHICH WILL BE ENCASED IN CONCRETE OR MASONRY.
   - B. PAINT ALL INTERIOR EXPOSED STEEL (INCLUDING INTERIOR LINTELS) WITH TWO COATS OF RED-OXIDE PRIMER.
   - C. HOT-DIP GALVANIZE ALL EXTERIOR STEEL (INCLUDING LINTELS AND BRICK SHELF ANGLES).
   - D. PROVIDE A FIELD-APPLIED COAT OF ASPHALT-MASTIC PAINT FOR ALL BELOW-GRADE STEEL (INCLUDING ANCHOR RODS, NUTS, WASHERS, BASE PLATES, AND THE BELOW-GRADE PORTION OF COLUMNS) WHICH IS NOT FULLY ENCASED IN CONCRETE.
   - E. INTERIOR NON-EXPOSED STEEL NEED NOT BE PRIME PAINTED.
6. MISCELLANEOUS:
   - A. PROVIDE HOLES FOR OTHERS. IF OPENING IS NOT SHOWN ON THE STRUCTURAL DRAWINGS, OBTAIN PRIOR APPROVAL.
   - B. STEEL SUPPORTING OR CONNECTING TO MECHANICAL AND OTHER EQUIPMENT AND ROOF OPENINGS AS SHOWN ON ARCHITECTURAL, MECHANICAL AND/OR ON STRUCTURAL DRAWINGS IS SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR IS TO RECONCILE EXACT SIZE AND LOCATION WITH MECHANICAL AND OTHER REQUIREMENTS BEFORE PROCEEDING WITH THIS WORK.
   - C. GROUT UNDER BEARING PLATES TO BE NON-METALLIC, NON-SHRINKING TYPE.
   - D. STEEL BELOW GRADE TO BE PROTECTED BY A MINIMUM OF 3" OF CONCRETE, 4" OF SOLID MASONRY, OR A FIELD-APPLIED COAT OF ASPHALT-MASTIC PAINT.
   - E. PROVIDE 1/4" THICK SETTING PLATES FOR ALL BEAMS AND BEAM LINTELS BEARING ON MASONRY OR CONCRETE WHICH DO NOT REQUIRE A THICKER BEARING PLATE.
   - F. PROVIDE HEAVY PLATE WASHERS AT ALL ANCHOR RODS.
   - G. FINISH ENDS OF ALL COLUMNS, STIFFENERS AND ALL OTHER MEMBERS IN DIRECT BEARING.
   - H. PROVIDE BOLT HOLES FOR WOOD NAILERS BOLTED TO STEEL.
   - I. STEEL IN CONTACT WITH PRESSURE-TREATED LUMBER IS TO BE PROTECTED FROM CORROSION FROM PRESERVATIVE CHEMICALS WITH A 20 MIL (MIN.) VAPOR BARRIER. BOLTS AND SCREWS THROUGH PRESSURE-TREATED LUMBER ARE TO BE HOT DIPPED GALVANIZED PER ASTM A153 WITH A MINIMUM G185 COATING OR STAINLESS STEEL WITH CHEMICAL COMPOSITION CONFORMING TO AISI 303/304 OR AISI 316.
   - J. SEE ARCHITECTURAL SECTIONS AND DETAILS FOR ALL MISCELLANEOUS STRUCTURAL STEEL NOT OTHERWISE INDICATED IN THE STRUCTURAL DRAWINGS.
7. FIELD QUALITY CONTROL:
   - A. INSPECTION AGENCY IS TO PERFORM INSPECTION OF BOLTED CONNECTIONS PER THE REQUIREMENTS OF AISC SPECIFICATION FOR STRUCTURAL JOINTS.

COLD FORMED METAL FRAMING

1. MATERIALS:
   - A. COLD-FORMED METAL STUDS AND JOISTS SHOWN ON THE CONTRACT DOCUMENTS ARE DESIGNATED BY "DEPTH", "SHAPE", "WIDTH", AND "THICKNESS" AS FOLLOWS:
     1. DEPTH: 362 (3-5/8"), 600 (6"), 800 (8"), ETC.
     2. SHAPE: S (C-SHAPE), T (TRACK), U (CHANNEL)
     3. WIDTH: 125 (1-1/4"), 162 (1-5/8"), 200 (2"), ETC.
     4. THICKNESS: -43 (18 GA.), -54 (16 GA.), -68 (14 GA.), -97 (12 GA.)

     EXAMPLE: 600S162-54 = 6" C-SHAPE, 1 5/8" FLANGE, 16 GA.
   - B. ALL 18 GA AND LIGHTER STUDS TO BE 33 KSI MATERIAL; ALL 16 GA AND HEAVIER STUDS TO BE 50 KSI MATERIAL.
   - C. ALL TRACKS AND ACCESSORIES: FY = 33 KSI MINIMUM.
2. SPECIFICATIONS:
   - A. WELDING PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS. DESIGN, FABRICATION, AND ERECTION TO BE GOVERNED BY LATEST REVISIONS OF:
     1. AISI "SPECIFICATION OF THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS."
     2. STRUCTURAL WELDING CODE, AWS D1.3 OF THE AMERICAN WELDING SOCIETY.
3. SUBMITTALS:
   - A. SUBMIT MANUFACTURER'S STANDARD PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH TYPE OF COLD-FORMED METAL FRAMING AND ACCESSORY REQUIRED.
   - B. SUBMIT FULLY DIMENSIONED ERECTION PLANS AND CONNECTION DETAILS INDICATING ALL COMPONENT AND MEMBER LOCATIONS, ORIENTATION, AND LAYOUT. PLANS TO INCLUDE MEMBER SIZES, TYPES, GAGE DESIGNATIONS, QUANTITY AND SPACING. ALSO INCLUDE DETAILS OF CONNECTIONS NOTED SCREW TYPES, QUANTITIES, LOCATIONS, WELD SIZES, LENGTHS, AND LOCATIONS, AND ADDITIONAL STRAPPING, BRACING, OR ACCESSORIES REQUIRED FOR A PROPER AND COMPLETE INSTALLATION.
4. CONNECTIONS:
   - A. FIELD CONNECTIONS MAY BE EITHER WELDED OR SCREWED, EXCEPT AS SPECIFICALLY DETAILED OTHERWISE.
   - B. WELD SIZE TO BE 1/8" WITH AWS TYPE 6013 OR 7014 ROD.
   - C. EXCEPT AS NOTED OTHERWISE, MECHANICAL FASTENERS TO BE SELF TAPPING #10-16 SCREWS.
5. FINISH:
   - A. ALL MATERIAL TO BE GALVANIZED COATED IN ACCORDANCE WITH ASTM A525 G-60.
   - B. TOUCH-UP FIELD WELDS WITH ZINC RICH PAINT.
6. MISCELLANEOUS:
   - A. ALL FIELD CUTTING TO BE PERFORMED WITH A SAW.
   - B. TRACKS TO BE SECURELY ANCHORED TO SUPPORTING STRUCTURE WITH WELD OR SCREW AT EACH SIDE OF TRACKS.
   - C. PROVIDE HORIZONTAL BRIDGING AT 6'-0" O.C. MAX. FOR ALL STUD WALLS UNLESS NOTED OTHERWISE. BRIDGING IS NOT REQUIRED FOR PORTIONS OF INTERIOR NON-LOADBEARING STUD WALLS WHERE BOTH SIDES ARE FACED WITH SHEATHING.
   - D. JOISTS TO BE LOCATED DIRECTLY OVER BEARING WALL STUDS UNLESS A LOAD DISTRIBUTION MEMBER IS PROVIDED AT THE TOP TRACK.
   - E. BEARING WALL STUDS ARE TO BE LOCATED DIRECTLY BELOW JOIST OR ROOF TRUSS BEARING UNLESS A LOAD DISTRIBUTION MEMBER IS PROVIDED AT THE TOP TRACK.
   - F. END BLOCKING OR CONTINUOUS TRACK IS TO BE PROVIDED WHERE JOIST ENDS ARE NOT OTHERWISE RESTRAINED FROM ROTATION.
   - G. WEB PUNCH-OUTS FOR BEAMS, JOISTS, AND RAFTERS ARE TO BE LOCATED A MINIMUM OF 10" AWAY FROM BEARING AND CONCENTRATED LOAD LOCATIONS. IF A PUNCH-OUT FALLS WITHIN 10" OF THESE LOCATIONS, PROVIDE REINFORCEMENT FOR THE MEMBER AS REQUIRED. ALTERNATELY, UN-PUNCHED SECTIONS MAY BE PROVIDED FOR BEAMS, JOISTS, AND RAFTERS.
   - H. EACH MEMBER OF MULTIPLE MEMBER COLUMNS ARE TO BE SCREWED TOGETHER USING FULL-HEIGHT TRACKS AND #10 SCREWS AT 12" O.C. ALTERNATELY, MULTIPLE MEMBER COLUMNS MAY BE WELDED TOGETHER WITH A 1" WELD AT 18" ON CENTER, EACH SIDE, EACH PIECE, FOR THE FULL LENGTH OF THE COLUMN.

POST-INSTALLED ANCHOR SYSTEMS

1. GENERAL:
   - A. LISTED ANCHOR PRODUCTS PROVIDED BELOW ARE NOT TO BE USED AS INTERCHANGEABLE PRODUCTS. EACH ANCHOR HAS DEFINED CAPACITIES BASED UPON TESTED PERFORMANCE WITH APPLICABLE SAFETY FACTORS AND WILL VARY ACROSS MANUFACTURERS. TYPES OF ANCHORS INDICATED THROUGHOUT THE DESIGN DOCUMENTS ARE DETAILED FOR THEIR SPECIFIC PURPOSE AND CAPACITY. SUBSTITUTION OF ANCHORS FROM THOSE SPECIFIED ARE ONLY ALLOWED AFTER ENGINEER REVIEW AND APPROVAL OR AMENDMENT FROM WRITTEN REQUEST BY THE CONTRACTOR.
   - B. PROVIDE ANCHORAGE MATCHING MANUFACTURER, TYPE, DIAMETER, EMBEDMENT, AND BASE MATERIAL AS INDICATED IN THE DOCUMENTS.
   - C. ALL POST-INSTALLED ANCHORS TO BE HAMMER DRILLED. FOLLOW ALL HOLE CLEANING AND INSTALLATION INSTRUCTIONS AS STIPULATED BY THE ANCHOR MANUFACTURER. FOLLOW ALL OSHA GUIDELINES FOR CONCRETE DRILLING AS IT PERTAINS TO SILICA DUST.
   - D. INSTALLATION OF ADHESIVE ANCHORS MUST BE PERFORMED BY PERSONNEL TRAINED TO INSTALL ADHESIVE ANCHORS THROUGH MANUFACTURER TRAINING PROGRAMS.
   - E. INSTALLATION OF ADHESIVE ANCHORS IN THE HORIZONTAL OR UPWARDLY INCLINED ORIENTATION AND WHERE SUPPORTING SUSTAINED TENSION LOADS SHALL BE INSTALLED BY CERTIFIED PERSONNEL BY ACI/CRSI INSTALLATION PROGRAMS.
   - F. MINIMUM CONCRETE AGE FOR POST-INSTALLED ADHESIVE ANCHORS SHALL BE NOT LESS THAN 28 DAYS.
   - G. ALL ANCHORS IN CONTACT WITH PRESSURE TREATED LUMBER ARE TO BE HOT DIPPED GALVANIZED PER ASTM A153 WITH A MINIMUM G185 COATING OR STAINLESS STEEL WITH CHEMICAL COMPOSITION CONFORMING TO AISI 303/304 OR AISI 316. FASTENERS AND CONNECTORS ARE TO BE OF THE SAME MATERIAL, STAINLESS STEEL OR HOT DIPPED GALVANIZED, DO NOT MIX MATERIALS.
   - H. MINIMUM EMBEDMENT FOR MECHANICAL EXPANSION ANCHORAGE SYSTEMS IS TO BE 7 BOLT DIAMETERS. MINIMUM EMBEDMENT FOR SCREW ANCHORAGE AND ADHESIVE ANCHORAGE SYSTEMS IS TO BE 9 BOLT DIAMETERS.
2. ANCHORAGE TO CONCRETE
   - A. ACCEPTABLE MECHANICAL EXPANSION ANCHORAGE SYSTEMS:
     1. DEWALT POWER STUD +SDI OR +SD2 WEDGE EXPANSION ANCHOR
     2. HILTI KWIK BOLT 3 EXPANSION ANCHOR
     3. HILTI KWIK BOLT TZ2 EXPANSION ANCHOR
     4. SIMPSON STRONG-BOLT 2 WEDGE EXPANSION ANCHOR
   - B. ACCEPTABLE MECHANICAL SLEEVE ANCHORAGE SYSTEMS: (MAY NOT BE USED TO SECURE MAIN BUILDING FRAME COMPONENTS)
     1. DEWALT LOK-BOLT AS SLEEVE ANCHOR
     2. HILTI HLC SLEEVE ANCHOR
     3. SIMPSON SLEEVE-ALL SLEEVE ANCHOR
   - C. ACCEPTABLE MECHANICAL SCREW ANCHORAGE SYSTEMS:
     1. DEWALT SCREW-BOLT+
     2. HILTI KWIK HUS-EZ SCREW ANCHOR
     3. SIMPSON TITEN HD SCREW ANCHOR
   - D. ACCEPTABLE ADHESIVE ANCHORAGE SYSTEMS:
     1. DEWALT AC200+ ADHESIVE FOR REINFORCING BAR
     2. DEWALT PURE50+ ADHESIVE FOR THREADED ROD AND REINFORCING BAR
     3. DEWALT PURE110+ ADHESIVE FOR THREADED ROD AND REINFORCING BAR
     4. HILTI HIT-HY 200v3 ADHESIVE FOR THREADED ROD, REINFORCING BAR, AND HILTI SPECIFIC ROD AND INSERT SYSTEMS.
     5. HILTI HIT-RE 500 ADHESIVE FOR THREADED ROD AND REINFORCING BAR.
     6. HILTI HIT-RE 100 ADHESIVE FOR THREADED ROD AND REINFORCING BAR.
     7. SIMPSON AT-XP ADHESIVE FOR THREADED ROD AND REINFORCING BAR.
     8. SIMPSON SET-3G ADHESIVE FOR THREADED ROD AND REINFORCING BAR.
3. ANCHORAGE TO CONCRETE MASONRY OR BRICK MASONRY AS INDICATED:
   - A. FOLLOW ALL MANUFACTURERS INSTALLATION INSTRUCTIONS IN REGARD TO LOCATION OF ANCHORS AWAY FROM HEAD JOINTS, MINIMUM EDGE DISTANCES, AND MINIMUM ANCHOR SPACING.
   - B. ACCEPTABLE MECHANICAL EXPANSION ANCHORAGE SYSTEMS:
     1. DEWALT POWER STUD +SDI, SD4/SD6 WEDGE EXPANSION ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY
     2. HILTI KWIK BOLT 3 EXPANSION ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY
     3. SIMPSON STRONG-BOLT 2 WEDGE EXPANSION ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY
   - C. ACCEPTABLE MECHANICAL SLEEVE ANCHORAGE SYSTEMS: (MAY NOT BE USED TO SECURE MAIN BUILDING FRAME COMPONENTS)
     1. DEWALT LOK-BOLT AS SLEEVE ANCHOR IN GROUT FILLED, SOLID, OR HOLLOW CONCRETE MASONRY, AND SOLID BRICK MASONRY
     2. HILTI HLC SLEEVE ANCHOR IN GROUT FILLED, SOLID, OR HOLLOW CONCRETE MASONRY, AND SOLID BRICK MASONRY
     3. SIMPSON SLEEVE-ALL SLEEVE ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY
   - D. ACCEPTABLE MECHANICAL SCREW ANCHORAGE SYSTEMS:
     1. HILTI KWIK HUS-EZ SCREW ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY
     2. DEWALT SCREW-BOLT+ SCREW ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY AND BRICK MASONRY
     3. SIMPSON TITEN HD SCREW ANCHOR IN GROUT FILLED, SOLID, OR HOLLOW CONCRETE MASONRY
   - E. ACCEPTABLE ADHESIVE ANCHORAGE SYSTEMS:
     1. DEWALT AC100+ GOLD FOR THREADED ROD AND REINFORCING BAR IN GROUT FILLED MASONRY CONSTRUCTION. USE WITH SCREEN TUBES IN HOLLOW MASONRY CONSTRUCTION.
     2. HILTI HIT-HY 270 ADHESIVE FOR THREADED ROD, REINFORCING BAR, AND HILTI SPECIFIC ROD AND INSERT SYSTEMS IN GROUT FILLED OR SOLID CONCRETE MASONRY CONSTRUCTION. USE WITH SCREEN TUBES IN HOLLOW MASONRY, MULIT-WYTHE MASONRY, OR BRICK WITH HOLES CONSTRUCTION.
     3. SIMPSON SET-XP ADHESIVE FOR THREADED ROD AND REINFORCING BAR IN GROUT FILLED, SOLID, AND HOLLOW CONCRETE MASONRY.

ABBREVIATIONS

AB	ANCHOR BOLT
ADD'L	ADDITIONAL
ALUM	ALUMINUM
ARCH	ARCHITECTURAL
B/ or BO	BOTTOM OF
BFB	BOTTOM FLANGE BRACE
BLDG	BUILDING
BM	BEAM
BOT	BOTTOM
CFMF	COLD-FORMED METAL FRAMING
CFMT	COLD-FORMED METAL TRUSS
CJ	CONTROL OR CONSTRUCTION JOINT
CLR	CLEAR
CM	CONSTRUCTION MANAGER
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATE
CY	CUBIC YARD
DBL	DOUBLE
DEMO	DEMOLISH OR DEMOLITION
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
EA	EACH
EJ	EXPANSION JOINT
ENG	ENGINEER
EW	EACH WAY
EXP	EXPANSION
FDN	FOUNDATION
FIN	FINISH OR FINISHED
FLR	FLOOR
FTG	FOOTING
FRTW	FIRE-RETARDANT TREATED WOOD
FV	FIELD VERIFY
GA	GAGE
GALV	GALVANIZE
GC	GENERAL CONTRACTOR
HC	HOLLOW CORE
HORIZ	HORIZONTAL
ID	INSIDE DIMENSION
IF	INSIDE FACE
INT	INTERIOR
JST	JOIST
JT	JOINT
KB	KICKER BRACE
L	ANGLE
LGMF	LIGHT GAGE METAL FRAMING
LLBB	LONG LEG BACK-TO-BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MAS	MASONRY
MAX	MAXIMUM
MIN	MINIMUM
MTL	METAL
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OPP	OPPOSITE
OPNG	OPENING
OSB	ORIENTED STRAND BOARD
PAF	POWDER ACTUATED FASTENERS
PC	PRECAST
PEMB	PRE-ENGINEERED METAL BUILDING
PERP	PERPENDICULAR
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
REINF	REINFORCING
REQ'D	REQUIRED
SCHED	SCHEDULE
SECT	SECTION
SER	STRUCTURAL ENGINEER OF RECORD
SF	SQUARE FOOT
SL	SLOPED
SLBB	SHORT LEG BACK-TO-BACK
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
SY	SQUARE YARD
SYM	SYMMETRICAL
T/ or TO	TOP OF
T&B	TOP AND BOTTOM
TEMP	TEMPORARY OR TEMPERATURE
T&G	TONGUE AND GROOVE
TYP	TYPICAL
UN	UNLESS NOTED
UNO	UNLESS NOTED OTHERWISE
VB	VAPOR BARRIER
VERT	VERICAL
W	WIDE FLANGE
W/	WITH
W/O	WITHOUT
WT	WEIGHT
WWF	WELDED WIRE FABRIC
YD	YARD

GENERAL STORM SHELTER NOTES

1. DESIGN CRITERIA:

TYPE OF STORM SHELTER:	COMMUNITY TORNADO
MINIMUM SOIL BEARING PRESSURE:	1,500 PSF
DESIGN RAINFALL RATE:	3.0 IN/HR
ROOF LIVE LOADS:	
- SHELTER ROOF	100 PSF
- COLLAPSE / LAYDOWN	+95 PSF
WIND LOADS:	
- BASIC WIND SPEED (Vu)	250 MPH
- EXPOSURE CATEGORY	EXPOSURE C
- INTERNAL PRESSURE COEFF. (Gcpi)	+/- 0.55
- TOPOGRAPHIC FACTOR (Kzt)	1.0
- DIRECTIONALITY FACTOR (Kd)	1.0

(Revision 1)

2. THE STORM SHELTER AREA HAS BEEN DESIGNED IN ACCORDANCE WITH THE STRUCTURAL REQUIREMENTS OF ICC 500-2020, "STANDARD FOR THE DESIGN AND CONSTRUCTION OF STORM SHELTERS".
3. IMPACT RESISTANCE:
   - A. WALL AND ROOF SYSTEMS HAVE BEEN SELECTED FOR DEBRIS IMPACT RESISTANCE TESTED IN ACCORDANCE WITH ASTM E 1886. SEE THE "SUMMARY ON DEBRIS IMPACT TESTING OF BUILDING ASSEMBLIES" BY TEXAS TECH UNIVERSITY (et al.), DATED AUGUST 2006 FOR REFERENCED TEST SPECIMEN NUMBERS.
   - B. WALL SYSTEM IS TO BE 8 INCH MINIMUM REINFORCED CONCRETE MASONRY WITH #4 MIN. VERT. REINFORCING BARS GROUTED INTO EVERY CELL. ASSEMBLY HAS BEEN TESTED FOR A 15-POUND 2x4 TRAVELING AT 100 MPH PER TTU TABLE A.5, TEST NO. 1.
   - C. ROOF SYSTEM IS TO BE 4-INCH MINIMUM REINFORCED CONCRETE WITH #4 MIN. REINFORCING BARS AT 12 INCHES O.C. EACH WAY. ASSEMBLY HAS BEEN TESTED FOR A 15-POUND 2x4 TRAVELING AT 67 MPH PER TTU TABLE A.6, TEST NO. 37.
4. OPENINGS AND WALL JOINTS:
   - A. WINDOWS, DOORS, AND LOUVERS ARE TO BE SELECTED TO WITHSTAND THE DESIGN WIND LOADS SPECIFIED ABOVE, AND FOR DEBRIS IMPACT RESISTANCE TESTED IN ACCORDANCE WITH ASTM E 1886 FOR A 15-POUND 2x4 TRAVELING AT 100 MPH.
   - B. PROVIDE PLATE SHROUDS AS INDICATED AT ALL OPENINGS (MECHANICAL, ELECTRICAL, PLUMBING, ETC.) IN THE STORM SHELTER ENVELOPE EXCEEDING 3-1/2 SQUARE INCHES OR 2-1/16 INCH DIAMETER.
   - C. CONTROL JOINTS IN MASONRY CONSTRUCTION MAY NOT EXCEED 3/8 INCH AND MUST BE SEALED IN ACCORDANCE WITH TMS 602, SECTION 2.5 A.

STORM SHELTER QUALITY ASSURANCE PLAN

JGA PROJECT NAME: HUBER HEIGHTS FS 23 ADDITION & RENOVATION
JGA PROJECT NUMBER: 24.27.524

1. THE REQUIREMENTS SPECIFIED IN THIS QUALITY ASSURANCE PLAN ARE APPLICABLE TO ALL ELEMENTS WITHIN THE IDENTIFIED "STORM SHELTER" PORTION OF THE PROJECT. THESE REQUIREMENTS ARE EXTENDED TO ALL REFERENCED DETAILS AND ALL NOTED COMPONENTS THEREOF. SEE THE PLANS FOR AREA(S) DESIGNATED AS THE "STORM SHELTER" CONSTRUCTION.
2. PRIOR TO CONSTRUCTION OF THE STORM SHELTER PORTION OF THE PROJECT, THE OWNER IS TO RETAIN AN INDEPENDENT AGENCY TO PERFORM THE SPECIAL INSPECTIONS, TESTING, AND STRUCTURAL OBSERVATIONS REQUIRED IN THIS QUALITY ASSURANCE PLAN. WHERE APPLICABLE, INDIVIDUALS PERFORMING SPECIAL INSPECTIONS AND TESTING ARE TO BE QUALIFIED THROUGH RECOGNIZED INDUSTRY CERTIFICATION. INDIVIDUALS PERFORMING STRUCTURAL OBSERVATIONS ARE TO REGISTERED DESIGN PROFESSIONALS IN THE JURISDICTION OF THE PROJECT.
3. ON A REGULAR BASIS, THE SPECIAL INSPECTION AND STRUCTURAL OBSERVATION AGENCY SHALL SUBMIT WRITTEN REPORTS IDENTIFYING DEFICIENCIES IN THE STORM SHELTER CONSTRUCTION. THE CONTRACTOR/CM SHALL BE RESPONSIBLE FOR PROMPTLY CORRECTING ALL DEFICIENCIES INDICATED IN THESE WRITTEN REPORTS. AT THE COMPLETION OF THE STORM SHELTER CONSTRUCTION, THE AGENCY SHALL SUBMIT A STATEMENT INDICATING THAT ALL DEFICIENCIES IDENTIFIED DURING CONSTRUCTION HAVE BEEN PROPERLY ADDRESSED, AND THAT STRUCTURAL OBSERVATIONS HAVE BEEN REGULARLY PERFORMED. ALL REPORTS ARE TO BE SUBMITTED TO THE OWNER, ARCHITECT, CONSTRUCTION MANAGER, AND THE AUTHORITY HAVING JURISDICTION.
4. EACH CONTRACTOR RESPONSIBLE FOR CONSTRUCTING ELEMENTS OF THE STORM SHELTER SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE OWNER, ARCHITECT, CONSTRUCTION MANAGER, AND THE AUTHORITY HAVING JURISDICTION. PARTIES RESPONSIBLE FOR THIS STATEMENT INCLUDE, BUT ARE NOT LIMITED TO, THE SITE GRADING CONTRACTOR, CAST-IN-PLACE CONCRETE SUPPLIER AND CONTRACTOR, STRUCTURAL STEEL FABRICATOR AND ERECTOR, MASONRY CONTRACTOR, REINFORCING STEEL FABRICATOR AND IRON WORKERS, PRECAST MANUFACTURER AND ERECTOR, DOOR MANUFACTURER AND INSTALLER, AND OPENING PROTECTIVE DEVICE FABRICATOR AND ERECTOR. THIS STATEMENT IS TO INCLUDE THE FOLLOWING:
   - A. ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS IN THE QUALITY ASSURANCE PLAN.
   - B. ACKNOWLEDGMENT THAT CONTROL WILL BE EXERCISED TO OBTAIN COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS.
   - C. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING, AND THE DISTRIBUTION OF REPORTS.
   - D. IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.
5. THE FOLLOWING SPECIAL INSPECTIONS AND TESTING OF THE STORM SHELTER CONSTRUCTION ARE TO BE PERFORMED AS PART OF THIS QUALITY ASSURANCE PLAN. THESE REQUIREMENTS ARE IN ADDITION TO THE TESTING AND INSPECTIONS REQUIRED FOR THE REMAINDER OF THE BUILDING:
   - A. SOILS
     - i. PERIODICALLY INSPECT SOILS BELOW FOOTINGS FOR ADEQUATE BEARING CAPACITY AND CONSISTENCY WITH GEOTECHNICAL REPORT. INSPECT REMOVAL OF UNSUITABLE MATERIAL AND PREPARATION OF SUBGRADE PRIOR TO PLACEMENT OF CONTROLLED FILL.
     - ii. PERIODICALLY VERIFY DEPTH AND WIDTH OF FOUNDATION EXCAVATIONS.
   - B. CONCRETE (FOOTINGS, SLABS ON GRADE, CAPS/ROOFS)
     - i. PERIODICALLY INSPECT SIZE, SPACING, COVER, POSITIONING, AND GRADE OF REINFORCING STEEL. VERIFY THAT REINFORCING BARS ARE FREE OF FORM OIL OR OTHER DELETERIOUS MATERIALS. INSPECT BAR LAPS AND MECHANICAL SPLICES. VERIFY THAT BARS ARE ADEQUATELY TIED AND SUPPORTED ON CHAIRS OR BOLSTERS.
     - ii. PERIODICALLY INSPECT SIZE, POSITIONING, AND EMBEDMENT OF ANCHOR RODS, WELD PLATES, AND ALL OTHER CAST-IN EMBEDDED ITEMS. INSPECT CONCRETE PLACEMENT AND CONSOLIDATION AROUND ANCHORS.
     - iii. CONTINUOUSLY INSPECT SIZE, POSITIONING, EMBEDMENT, AND INSTALLATION OF POST-INSTALLED CHEMICAL AND MECHANICAL ANCHORS. VERIFY INSTALLATION PROCEDURE IS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PULL-TEST ANCHORS THAT ARE DEEMED SUSPECT DUE TO IMPROPER TORQUE AND/OR INADEQUATE EMBEDMENT DEPTH.
     - iv. PERIODICALLY VERIFY USE OF PROPER MIX DESIGN.
     - v. PERIODICALLY VERIFY FORM WORK FOR SHAPE, LOCATION, AND DIMENSIONS OF CONCRETE BEING FORMED.
     - vi. PERIODICALLY INSPECT PLACEMENT OF CONCRETE. VERIFY THAT CONCRETE CONVEYANCE AND DEPOSITING AVOIDS SEGREGATION OR CONTAMINATION. VERIFY THAT CONCRETE IS PROPERLY CONSOLIDATED. INSPECT CURING, COLD-WEATHER PROTECTION, AND HOT-WEATHER PROTECTION PROCEDURES.
     - vii. PERIODICALLY SAMPLE AND TEST CONCRETE FOR COMPRESSIVE STRENGTH, SLUMP, AIR CONTENT, AND TEMPERATURE. SAMPLE EACH 50 CUBIC YARDS OF CONCRETE, OR FRACTION THEREOF, PLACED IN ANY ONE DAY.
   - C. MASONRY
     - i. CONTINUOUSLY INSPECT PROPORTIONING, MIXING, AND RETEMPERING OF MORTAR AND GROUT. INSPECT CONSTRUCTION OF MORTAR JOINTS INCLUDING TOOLING AND FILLING OF HEAD JOINTS.
     - ii. CONTINUOUSLY INSPECT SIZE, LAYOUT, BONDING, GROUT SPACE, AND PLACEMENT OF MASONRY UNITS.
     - iii. CONTINUOUSLY INSPECT PLACEMENT, SIZE, GRADE, POSITIONING, AND LAPPING OF REINFORCING STEEL.
     - iv. CONTINUOUSLY INSPECT PLACEMENT AND CONSOLIDATION OF GROUT. INSPECT MASONRY CLEAN-OUTS FOR HIGH-LIFT GROUTING.
     - v. CONTINUOUSLY INSPECT SIZE, POSITIONING, AND EMBEDMENT OF ANCHOR RODS, WELD PLATES, AND ALL OTHER CAST-IN EMBEDDED ITEMS. INSPECT CONCRETE PLACEMENT AND CONSOLIDATION AROUND ANCHORS.
     - vi. CONTINUOUSLY INSPECT SIZE, POSITIONING, EMBEDMENT AND INSTALLATION OF POST-INSTALLED CHEMICAL AND MECHANICAL ANCHORS. VERIFY INSTALLATION PROCEDURE IS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PULL-TEST ANCHORS THAT ARE DEEMED SUSPECT DUE TO IMPROPER TORQUE AND/OR INADEQUATE EMBEDMENT DEPTH.
     - vii. CONTINUOUSLY INSPECT COLD-WEATHER PROTECTION AND HOT-WEATHER PROTECTION PROCEDURES. VERIFY THAT WALL CAVITIES ARE PROTECTED AGAINST PRECIPITATION.
     - viii. CONTINUOUSLY SAMPLE AND TEST COMPRESSIVE STRENGTH OF MORTAR AND GROUT CUBE SAMPLES. TEST COMPRESSIVE STRENGTH OF ASSEMBLED MASONRY PRISMS.
   - D. OPENING PROTECTIVE DEVICES
     - i. CONTINUOUSLY INSPECT SHOP-FABRICATED OPENING PROTECTIVE BAFFLES PRIOR TO INSTALLATION TO VERIFY THAT COMPONENT SIZES AND WELDS MATCH DRAWINGS AND SPECIFICATIONS.
     - ii. CONTINUOUSLY INSPECT INSTALLATION OF DOOR ANCHORAGES AND ANCHORAGE OF PROTECTIVE BAFFLES FOR OPENINGS.
     - iii. UPON COMPLETION, VERIFY THE PROPER OPERATION OF DOORS AND SHUTTERS. CONFIRM MAXIMUM ALLOWABLE GAPS AT THRESHOLDS, SILLS, JAMBS, AND HEADS OF OPENING LEAVES.
6. THE FOLLOWING STRUCTURAL OBSERVATIONS OF THE STORM SHELTER CONSTRUCTION ARE TO BE PERFORMED AS PART OF THIS QUALITY ASSURANCE PLAN. THESE OBSERVATIONS ARE TO VISUALLY VERIFY THAT THE IDENTIFIED ASSEMBLIES ARE BEING BUILT IN GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. ADDITIONAL OBSERVATIONS OF THE CONSTRUCTION ARE TO BE PERFORMED AT THE OBSERVER'S DISCRETION.
   - A. FOUNDATIONS
     - i. VERIFY THAT DOWEL BARS IN FOUNDATIONS AND SLABS ARE BEING PROVIDED WHERE INDICATED.
     - ii. VERIFY THAT FOUNDATIONS HAVE BEEN BUILT INDEPENDENTLY OF HOST BUILDING AND THAT PROPER BOND BREAK MATERIAL HAS BEEN PLACED BETWEEN CONCRETE POURS.
     - iii. VERIFY THAT ANCHOR BOLTS HAVE BEEN PROVIDED WITH SUFFICIENT LENGTHS TO RECEIVE FURTHER CONSTRUCTION. VERIFY THAT ANCHORS HAVE NOT BEEN BENT OR OTHERWISE MODIFIED.
   - B. WALLS
     - i. VERIFY THAT OPENINGS ARE BEING BUILT AS INDICATED.
     - ii. VERIFY THAT SUFFICIENT LAP LENGTHS ARE BEING PROVIDED BETWEEN SEQUENCES OF CONSTRUCTION.
     - iii. VERIFY THAT CAST-IN AND POST-INSTALLED ANCHORS HAVE SUFFICIENT LENGTH TO RECEIVE FURTHER CONSTRUCTION. VERIFY THAT ANCHORAGES HAVE NOT BEEN BENT OR OTHERWISE MODIFIED.
     - iv. VERIFY THAT PROPER CAST-IN ITEMS FOR DOORS AND SHUTTERS ARE BEING PROVIDED.
     - v. VERIFY THAT VERTICAL CONTROL JOINTS ARE 3/8" OR LESS IN WIDTH AND HAVE BEEN FILLED ACCORDING TO TMS 602 FOR MASONRY OR ASTM C920 FOR CONCRETE.
     - vi. VERIFY THAT BOND PATTERN AT CORNERS HAS BEEN CONSTRUCTED AS INDICATED.
   - C. CAPS
     - i. VERIFY THAT ANCHORAGES BETWEEN THE STORM SHELTER WALLS AND CAPS ARE BEING PROVIDED AS INDICATED.
     - ii. VERIFY THAT MEMBER BRACING, CONFIGURATION, AND CONNECTIONS HAVE BEEN PROVIDED AS INDICATED.
     - iii. VERIFY FILLING OF GAPS AND JOINTS BETWEEN ROOF FRAMING MEMBERS, AND AT BEARING LOCATIONS.
   - D. OPENINGS
     - i. VERIFY THAT POST-INSTALLED ANCHORAGES OF OPENING PROTECTIVE DEVICES HAVE BEEN INSTALLED.
     - ii. VERIFY THAT PROTECTIVE BAFFLES HAVE BEEN PROVIDED FOR ALL PENETRATIONS THROUGH THE STORM SHELTER ENVELOPE.

Jezerinac Geers
Structural Engineering

PROJECT NUMBER:	24.27.524
DESIGNED BY:	KRA
DRAWN BY:	JPK (R24)
CHECKED BY:	SNF
DOCUMENT STATUS:	☐ PROGRESS ■ PERMIT ■ BIDDING ☐ CONSTRUCTION

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

STATE OF OHIO
STANLEY N. FULLER
E-67148
REGISTERED PROFESSIONAL ENGINEER

Renovation and Addition
Huber Heights Fire Station 23
7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

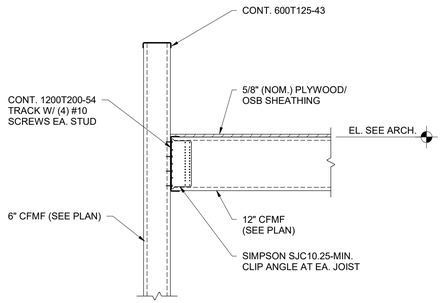
NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	01/29/2025	ADDENDUM 1

DATE	12/18/2024
JOB NO.	4262.00
DRAWN	JPK (R24)
CHECKED	SNF

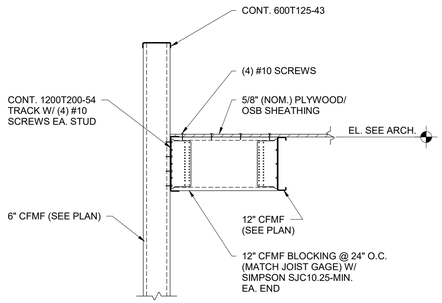
TITLE
GENERAL STRUCTURAL INFORMATION

SHEET NO.
S0.1

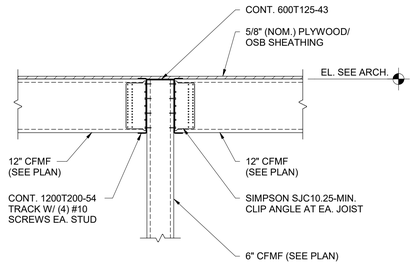
1/28/2025 2:44:39 PM



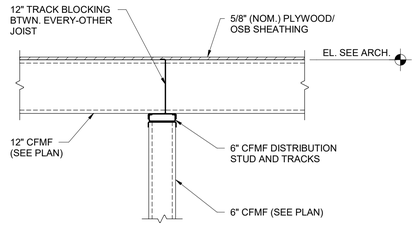
SECTION 1 — 3/4" = 1'-0"



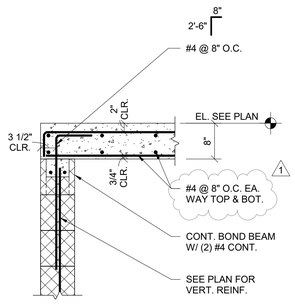
SECTION 2 — 3/4" = 1'-0"



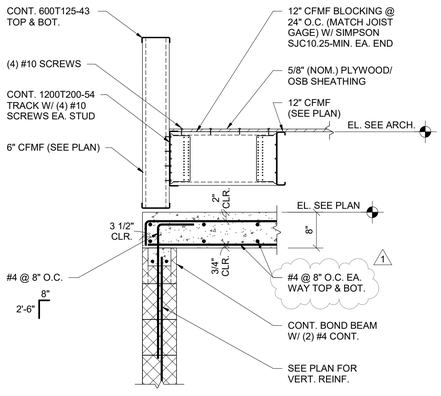
SECTION 3 — 3/4" = 1'-0"



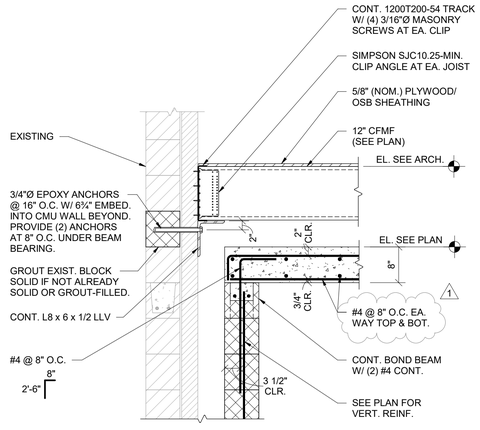
SECTION 4 — 3/4" = 1'-0"



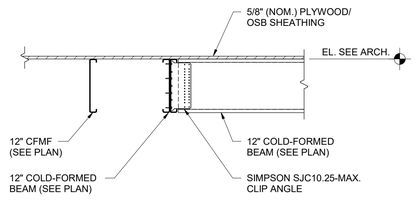
SECTION 5 — 3/4" = 1'-0"



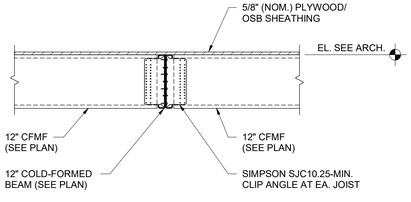
SECTION 6 — 3/4" = 1'-0"



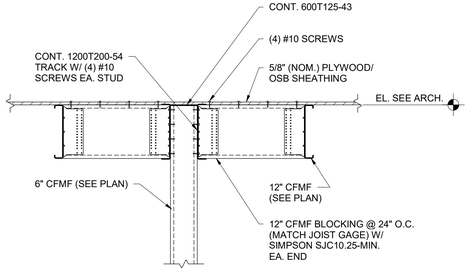
SECTION 7 — 3/4" = 1'-0"



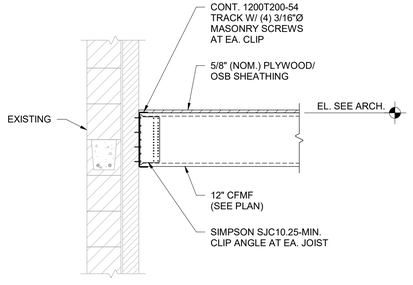
SECTION 8 — 3/4" = 1'-0"



SECTION 9 — 3/4" = 1'-0"



SECTION 10 — 3/4" = 1'-0"



SECTION 11 — 3/4" = 1'-0"

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

STATE OF OHIO
STANLEY N. FULLER
E-67148
REGISTERED PROFESSIONAL ENGINEER

Renovation and Addition

Huber Heights Fire Station 23

7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

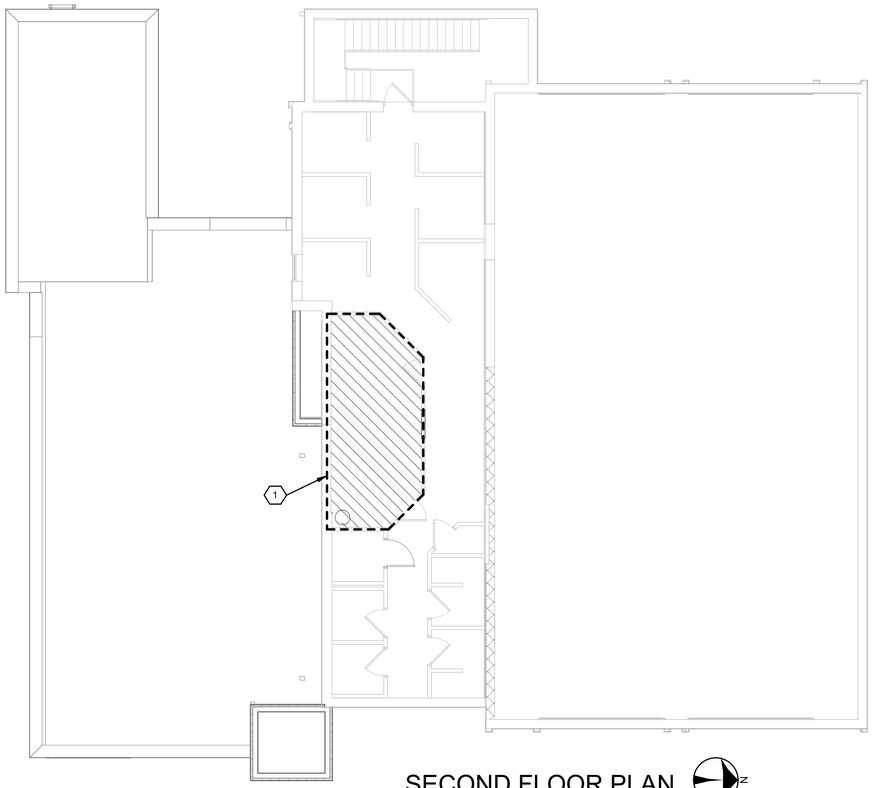
NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	01/29/2025	ADDENDUM 1

DATE	12/18/2024
JOB NO.	4262.00
DRAWN	JPK (R24)
CHECKED	SNF

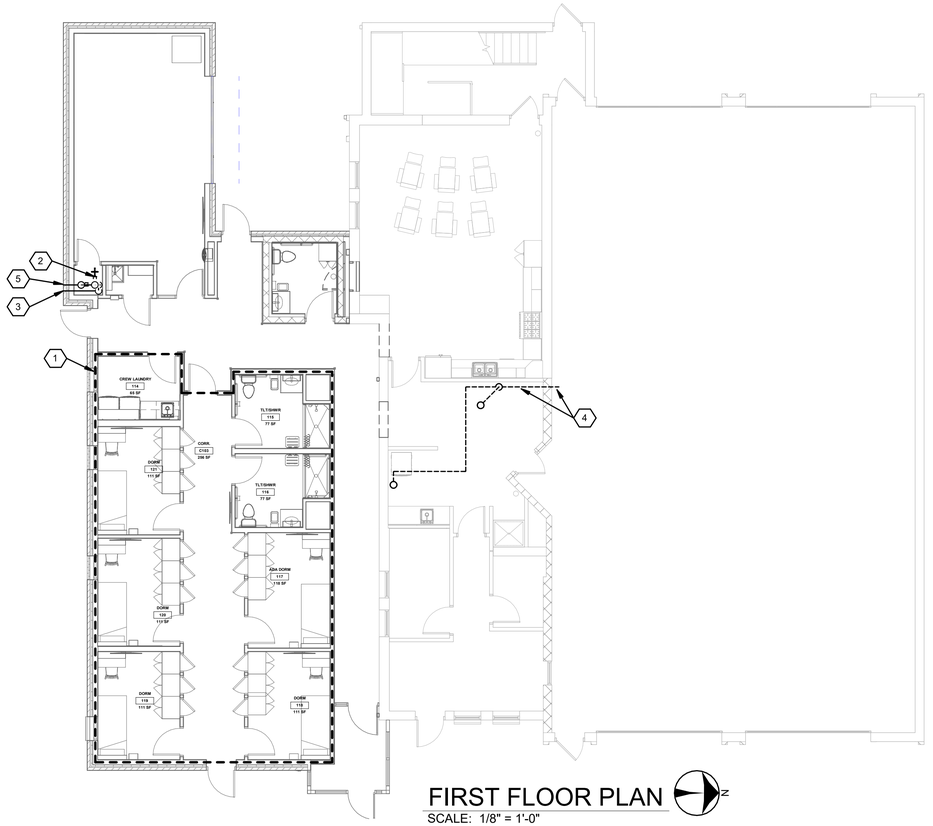
TITLE
FRAMING DETAILS

SHEET NO.
S4.4

1/29/2025 2:44:54 PM



SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"



FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

HAZARD CLASSIFICATIONS

NO HATCH

LIGHT HAZARD
DENSITY - 0.10GPM/SP
MAX AREA PER HEAD - 225 SF
HOSE ALLOWANCE - 100 GPM

ORDINARY HAZARD GROUP 1
DENSITY - 0.15GPM/SP
MAX AREA PER HEAD - 130 SF
HOSE ALLOWANCE - 250 GPM

ORDINARY HAZARD GROUP 2
DENSITY - 0.20GPM/SP
MAX AREA PER HEAD - 130 SF
HOSE ALLOWANCE - 250 GPM

CONSTRUCTION NOTES

1. AREA OF LIMITED FIRE SUPPRESSION.
2. FIRE SUPPRESSION RISER AND MAIN DRAIN. REFER TO DETAIL 1, F0.1.
3. MAIN DRAIN CONNECTS TO EXTERIOR OUTLET, OUTLET EQUAL TO ZURN #ZF199. COLOR SELECTED BY ARCHITECT.
4. REMOVE EXISTING LIMITED AREA FIRE SUPPRESSION SYSTEM. REMOVE ALL PIPING, MONITORING VALVES, AND OTHER ACCESSORIES. CAP PIPING BRANCH AT TEE CONNECTION TO DOMESTIC WATER SYSTEM TO AVOID A DEAD LEG.
5. FIRE DEPARTMENT CONNECTION. REFER TO DETAIL AND SPECIFICATION.

STORM SHELTER NOTES

PENETRATIONS THROUGH THE STORM SHELTER ENVELOPE LARGER THAN 3-1/2 SQUARE INCHES IN AREA FOR RECTANGULAR OPENINGS OR 2-1/2" IN DIAMETER SHALL BE PROVIDED WITH AN OPENING PROTECTIVE DEVICE. REFER TO STRUCTURAL DRAWINGS FOR DETAILS OF PROTECTIVE DEVICES.

0 4 8 16 24 32 40
SCALE: 1/8"=1'-0"

NAUMAN & ZELINSKI LLC.
204 S. Ludlow Street Suite 400 Dayton, Ohio 45402
Phone: (937) 223-3921 – Fax: (937) 223-3949
PROJECT # 24045

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

STATE OF OHIO
JEFFREY D. ZELINSKI
63822
REGISTERED PROFESSIONAL ENGINEER

JEFFERY D. ZELINSKI, LICENSE #63822
EXPIRATION DATE 12/31/2025

Renovation and Addition

Huber Heights Fire Station 23

7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

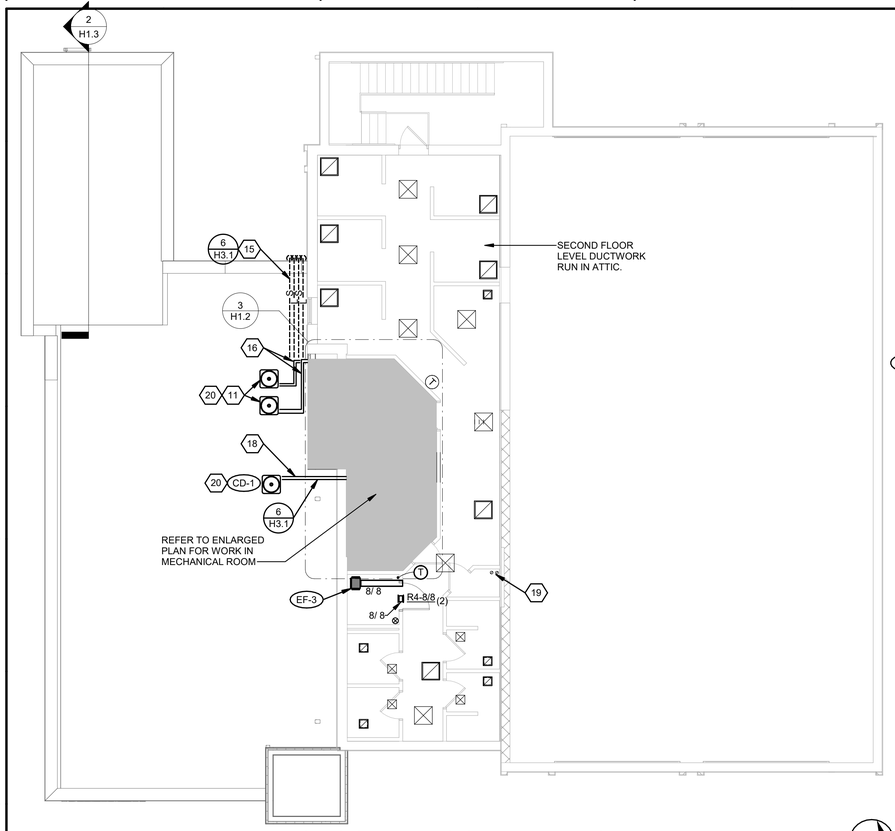
NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	01/29/2025	ADDENDUM 1

DATE	12/13/2024
JOB NO.	4262.00
DRAWN	DJZ
CHECKED	JDZ

TITLE
PHASE 1 - FIRE SUPPRESSION PLAN

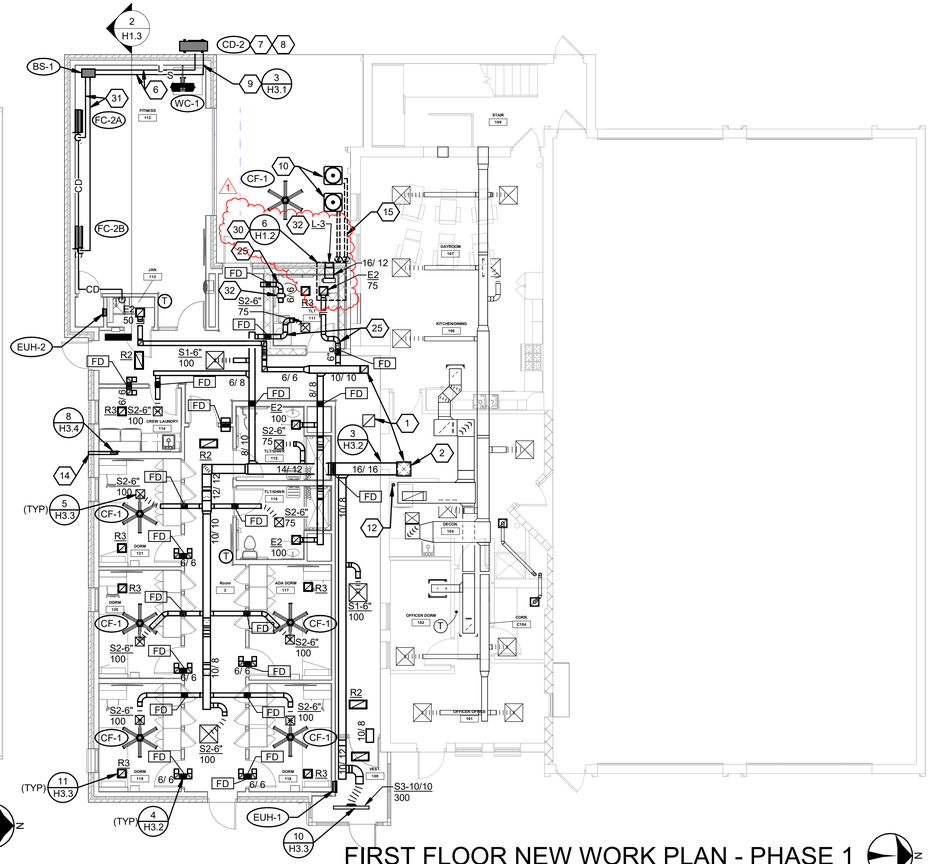
SHEET NO.
F1.1

1/29/2025 8:44:27 AM



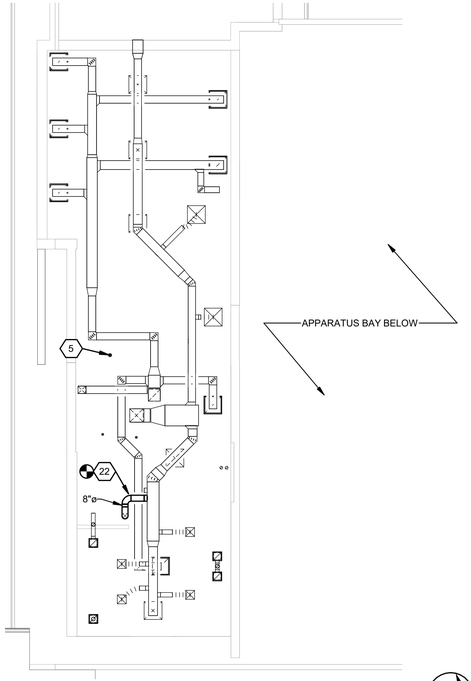
SECOND FLOOR NEW WORK PLAN - PHASE 1

SCALE: 1/8" = 1'-0"



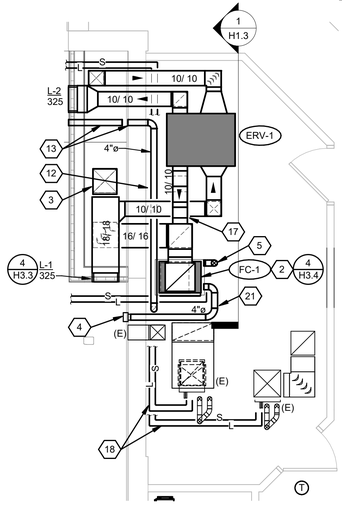
FIRST FLOOR NEW WORK PLAN - PHASE 1

SCALE: 1/8" = 1'-0"



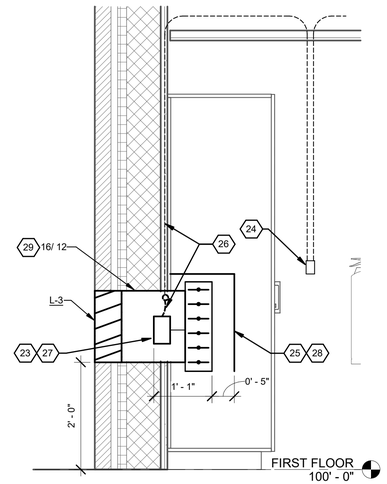
ATTIC NEW WORK PLAN - PHASE 1

SCALE: 1/8" = 1'-0"



3 ENLARGED MECH. ROOM PLAN

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



6 STORM SHELTER INTAKE

SCALE: 3/4" = 1'-0"

CONSTRUCTION NOTES

1. UP TO FLOOR ABOVE. REFER TO SECOND FLOOR PLAN THIS SHEET.
2. SUPPLY DUCT OUT OF BOTTOM OF UNIT. REUSE EXISTING FIRE POLE FLOOR PENENTRATION.
3. DUCT OFFSETS IN DOGHOUSE TO COORDINATE WITH SANITARY PIPING BELOW.
4. 4" DIAMETER INTAKE HOOD WITH BIRD SCREEN. PAINT TO MATCH EXTERIOR WALL COLOR.
5. 4" DIAMETER FLUE UP THROUGH ROOF. INSTALL THROUGH ATTIC PER MANUFACTURERS RECOMMENDATION.
6. REFRIGERANT PIPING LINESET TO INDOOR UNIT. INSTALL TIGHT TO ROOF DECK. PAINT INSULATION TO MATCH BASE MATERIAL COLORS.
7. PROVIDE SIDEWALL PLATFORM TO MOUNT CONDENSING UNIT. TOP OF CONDENSING UNIT SHALL NOT EXCEED HEIGHT OF BUILDING WALL.
8. MOUNT UNIT 9' A.F.F.
9. PIPING THROUGH EXTERIOR WALL.
10. TEMPORARY LOCATION FOR EXISTING CONDENSING UNITS. PROVIDE PLASTIC CONDENSING UNIT PAD AT TEMPORARY LOCATION, MOUNT UNITS FLUSH ON PADS.
11. FINAL LOCATION FOR EXISTING CONDENSING UNITS. UNITS SHALL BE INSTALLED ON NEW ADDITION ROOF AT END OF PHASE 1.
12. NEW DRYER VENT UP TO MECHANICAL ROOM. PROVIDE STAINLESS STEEL ESCUTCHEON RING AT LAY-IN CEILING PENETRATION.
13. TERMINATE DRYER VENT ON EXISTING EXTERIOR WALL. UPON CONSTRUCTION OF NEW ROOF "DOG HOUSE", EXTEND DRYER VENT THROUGH TO NEW EXTIERIOR WALL. PROVIDE EXIT HOOD WITH BACKDRAFT DAMPER AT EACH LOCATION.
14. DRYER VENT OUTLET. REFER TO DETAIL.
15. REFRIGERANT PIPING ROUTED TO EXISTING CONDENSING UNITS TEMPORARILY LOCATED TO PATIO.
16. UPON RELOCATION OF THE EXISTING CONDENSING UNITS TO THE FINAL LOCATION ON THE ROOF TOP, REESTABLISH REFRIGERANT PIPING CONNECTION. THE INTENT IS THAT REWORK OF THE REFRIGERANT PIPING ORIGINALLY RAN TO THE TEMPROARY LOCATION TO THE FINAL LOCATION SHALL ONLY OCCUR ON THE EXTERIOR REFRIGERANT PIPING AND NO NEW INTERIOR REFRIGERANT PIPING NOR NEW WALL PENETRATIONS ARE REQUIRED TO RECONNECT.
17. ERV-1 SUPPLY CONNECTS TO FC-1 RETURN DUCT.
18. NEW REFRIGERANT LINE SET. CONNECT TO NEW INDOOR FURNACE.
19. RECONNECT DISCONNECTED EXHAUST DUCT IN CLOSET.
20. MOUNT UNITS ON 14" RAIL CURBS. REFER TO DETAIL 6, H3.4.
21. COMBUSTION AIR INTAKE DUCT.
22. NEW SUPPLY DUCT TO IT ROOM. CONNECT TO EXISTING SUPPLY DUCT. REFER TO PHASE 2 FOR FINAL SUPPLY CONNECTION TO MAIN DUCT.
23. WIRE CONTROL DAMPER POWER THROUGH STORM SHELTER DAMPER CONTROL SWITCH .
24. STORM SHELTER DAMPER CONTROL SWITCH. LABEL SWITCH "DAMPER CLOSED" AND "DAMPER OPEN". "DAMPER CLOSED" SHALL BE THE POSITION WHICH THE SWITCH CIRCUIT IS CLOSED AND IS POWERING THE DAMPERS CLOSED.
25. G.C. SHALL PROVIDE SHROUD AROUND WALL OPENING / DUCT PENETRATION IN STORM SHELTER. REFER TO DETAILS ON STRUCTURAL ENGINEER DRAWINGS FOR REQUIRED DUCT OFFSET FOR PENETRATION SHROUD.
26. 120V POWER TO DAMPER ACTUATOR BY E.C.. ROUTE TO ACTUATOR THROUGH WALL FURRING.
27. CONTROL DAMPER ACTUATOR LOCATED INSIDE OF INTAKE DUCTWORK.
28. PROVIDE REQUIRED CLEARANCE BETWEEN SHROUD AND DAMPER.
29. SHEET METAL WALL SLEEVE.
30. REFER TO DETAIL 6, THIS SHEET FOR SHELTER LOUVER INSTALLATION.
31. REFRIGERANT LINESET. SINGLE PIPE INDICATED ON PLAN FOR CLARITY. TWO PIPES TOTAL, LIQUID AND SUCTION, REQUIRED.
32. STORM SHELTER VENTILATION CONTROL DAMPER. EQUAL TO GREENHECK #ICD-45, 120V ACTUATOR, POWERED CLOSED, SPRING RETURN, FAIL OPEN.

STORM SHELTER NOTES

PENETRATIONS THROUGH THE STORM SHELTER ENVELOPE LARGER THAN 3-1/2 SQUARE INCHES IN AREA FOR RECTANGULAR OPENINGS OR 2-1/2" IN DIAMETER SHALL BE PROVIDED WITH AN OPENING PROTECTIVE DEVICE. REFER TO STRUCTURAL DRAWINGS FOR DETAILS OF PROTECTIVE DEVICES.

GENERAL NOTE:
THE H.C. SHALL PROVIDE ALL REQUIRED REFRIGERANT CHARGE, STORAGE TANKS, EVACUATION, ETC. REQUIRED TO TEMPORARILY RELOCATE THE EXISTING CONDENSING UNITS AND TO LOCATE THE EXISTING CONDENSING UNITS IN THEIR FINAL LOCATION. FIELD VERIFY REFRIGERANT TYPE PRIOR TO PURCHASING ADDITIONAL REFRIGERANT CHARGE.

SCALE: 1/2"=1'-0"
SCALE: 3/4"=1'-0"
SCALE: 1/4"=1'-0"
SCALE: 1/8"=1'-0"

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

JEFFREY D. ZELINSKI, LICENSE #63822
EXPIRATION DATE 12/31/2025

Renovation and Addition

Huber Heights Fire Station 23

7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	01/29/2025	ADDENDUM 1

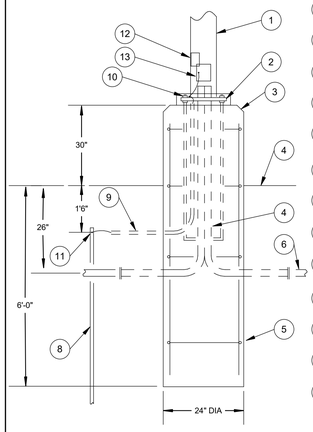
DATE	12/18/2024
JOB NO.	4262.00
DRAWN	DJZ
CHECKED	JDZ

TITLE
PHASE 1 - NEW WORK PLANS

SHEET NO.
H1.2

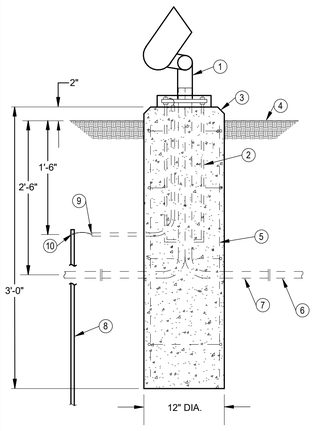
NAUMAN & ZELINSKI LLC.
204 S. Ludlow Street Suite 400 Dayton, Ohio 45402
Phone: (937) 223-3827 ~ Fax: (937) 223-3949
PROJECT # 24045

1/28/2025 8:44:59 AM



1. SEE FIXTURE SCHEDULE FOR POLE AND FIXTURE ASSEMBLY.
2. ANCHOR BOLTS BY POLE SUPPLIER, WELD TO REBARS.
3. CHAMFERED EDGE.
4. FINISH GRADE, COMPACT TO 95%
5. SIX #4 rEINFORCING BARS VERTICALLY ON #3 STIRRUPS AT 18" O.C.
6. PVC CONDUIT, SCHEDULE 40.
7. RIGID GALVANIZED STEEL CONDUIT.
8. GROUND ROD.
9. 0.50" PVC GROUND CONDUCTOR SLEEVE WITH #8 GROUND CONDUCTOR.
10. BASE PLATE, LEVELING NUTS, GROUT BASE.
11. EXOTHERMICALLY WELDED GROUND CONNECTION.
12. LIGHTNING ARRESTOR.
13. HANDHOLE.

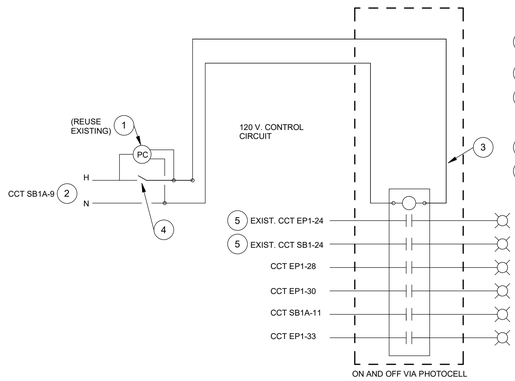
1 TYPICAL POLE BASE DETAIL - RAISED
N.T.S.



1. SEE FIXTURE SCHEDULE FOR FIXTURE ASSEMBLY AND BASE MOUNTING STYLE.
2. ANCHOR BOLTS (IF REQ'D.) BY E.C, WELD TO REBARS.
3. CHAMFERED EDGE.
4. FINISH GRADE, COMPACT TO 95%.
5. SIX #4 REINFORCING BARS VERTICALLY ON # 3 STIRRUPS AT 18" O.C.
6. PVC CONDUIT, SCHEDULE 40.
7. RIGID GALVANIZED STEEL CONDUIT.
8. GROUND ROD.
9. 0.50" PVC GROUND CONDUCTOR SLEEVE WITH #8 GROUND CONDUCTOR.
10. EXOTHERMICALLY WELDED GROUND CONNECTION.

NOTE: BLI BOLLARD FIXTURE BASE TO MATCH

2 FLOOD LIGHT BASE DETAIL
N.T.S.



DETAIL NOTES

1. CONNECT TO EXISTING PHOTOCELL MOUNTED ON BUILDING EXTERIOR. NORTH WALL.
2. 120V POWER FOR CONTROL CIRCUIT.
3. ELECTRICALLY HELD CONTACTOR NEMA 1 - SQ D LC6-V02-P1 WITH 120V COIL AND RED 'ON' PILOT LIGHT 30A. 6-POLE CONTACTOR.
4. LOCAL MANUAL OVER-RIDE SWITCH AT CONTACTOR - LABEL FUNCTION AT SWITCH
5. RECONNECT TO NEW CONTACTOR.

3 EXTERIOR LIGHTING CONTROL
N.T.S.

LIGHTING FIXTURE SCHEDULE

FIXTURE SYMBOL	LUMINAIRE TYPE LED	LUMINAIRE TYPE LOW VOLTAGE	WATTS/ FIXTURE	LUMENS/ COLOR TEMP	FIXTURE VOLTAGE	MANUFACTURER & CATALOG NO.	OTHER ACCEPTABLE MANUFACTURES	DIFFUSING MEDIA	TRIM COLOR WHITE	TRIM COLOR BLACK	TRIM COLOR ALUMINUM	TRIM COLOR BRONZE	TRIM COLOR STANDARD	SEE NOTES	MOUNTED (S - SURFACE. R - RECESSED, SM - STEM MTD. WM - WALL MTD. C - CHAIN MTD. UC - UNDER CAB. CS - CLG. SURF.)	SIZE WIDTH	SIZE LENGTH	SIZE DEPTH	SIZE DIAMETER	SEE NOTES
B1	•		20	2500 LUMENS/ 4000K	120	LITHONIA# CPX 2X2-AL07-(2500LM)-80CRI-SWW7-SWL-(40K)-MVOLT	COLUMBIA, DAYBRITE	MATTE WHITE LENS	•						R(GRID)	24	24	2		2,13
B2	•		27	3200 LUMENS/ 4000K	120	LITHONIA# CPX 2X2-AL07-(3200LM)-80CRI-SWW7-SWL-(40K)-MVOLT	COLUMBIA, DAYBRITE	MATTE WHITE LENS	•						R(GRID)	24	24	2		2
B3	•		33	4800 LUMENS/ 4000K	120	LITHONIA# CPX 2X2-AL07-(4000LM)-80CRI-SWW7-SWL-(40K)-MVOLT	COLUMBIA, DAYBRITE	MATTE WHITE LENS	•						R(GRID)	24	24	2		2
C1	•		32	5000 LUMENS/ 4000K	120	LITHONIA# CLX L48 5000LUM SEF FDL MVOLT GZ10 40K	COLUMBIA, DAYBRITE	FLAT DIFFUSE LENS	•						WM/S/SM	3	48	3		
C2	•		64	10000 LUMENS/ 4000K	120	LITHONIA# CLX L96 100000LM SEF FDL MVOLT GZ10 40K	COLUMBIA, DAYBRITE	FLAT DIFFUSE LENS	•						WM/S/SM	3	96	3		
C3	•		18	2500 LUMENS/ 4000K	120	LITHONIA# CLX L24 2500LUM SEF FDL MVOLT GZ10 40K	COLUMBIA, DAYBRITE	FLAT DIFFUSE LENS	•						WM/S	3	24	3		
D1	•		50	5400 LUMENS/ 4000K (BLUE UPLIGHT)	120	LUX ILLUMINAIRE # EOS - 3.0 - W - D1 - ASY - 1000LM /FT - 4000K - LAM - STATIC - BLUE - 500LM/FT - 4' - 8-2-120 - S1 - DMX - W (CUSTOM)	LUMENWERX, PMC	UPLIGHT AND DOWNLIGHT / ACRYLIC LENS - BLUE UPLIGHT	•						WM (6'-8" A.F.F)	3.5	48	4		2,12, 13
D2	•		10	1300 LUMENS/ 3000K	120	LITHONIA# FMVTSL-24IN-MVOLT-30K-90CRI-BN-M4	COLUMBIA, DAYBRITE	SQUARE WHITE LENS	•						WM @ MIRROR (7'-0" A.F.F)	6	24	4		13
F1	•		19	1500 LUMENS / 4000K	120	LITHONIA# LDN6 AL02-SWW1-LO6AR LSS 120 UGZ TRW	PRESCOLITE, LITEOLIER	SEMI SPECULAR REFLECTOR	•						R			6	6	2,8,13
F2	•		13	950 LUMENS/ 4000K	120	LITHONIA# WF6-REG-SWW5-90CRI-MW-M6	PRESCOLITE, LITEOLIER	RECROSSED BAFFLE/ WHITE LENS	•						R-SHOWER			2	7	2,9,13
F3	•		19	1000 LUMENS / 4000K	120	LITHONIA# LDN6 AL02-SWW1-LO6AR LSS 120 UGZ TRW	PRESCOLITE, LITEOLIER	SEMI SPECULAR REFLECTOR	•						R			6	6	2,8,13
F4	•		14	1500 LUMENS / BLUE	120	CONTECH PR3D - 15L - 40K - WF - MVD2 - P3RT - R - PLW - P3RD/NG - HB30 - LF16B - 67MM	KENALL	SEMI SPECULAR REFLECTOR	•						R			4	5.5	14
K1	•		24	2300 LUMENS/ 4000K	120	LITHONIA #WDGE2	GARDCO, BEACON	MATTE WHITE ACRYLIC DIFFUSER				•			WM					
L1	•		5.0W/FT	560 LUMENS/FT / 4000K	24	ACOLYTE # CHAC2 - F - WH/RB - 90 - SWS220 - 5.0 - 40 - 1 - F1 - XX - (PER PLAN) WITH 0-10V DIMMING	LUMINII	FROSTED LENS	•						S	.63	PER PLAN	.63		2,17, 18,19
UC	•		3.1W/FT	330 LUMENS/FT/ 4000K	24V	OMNILIGHT 'TRU-FIT'-41K-S0-XX-TAPE LIGHT WITH OCH-SWC-CC-FR-WH HOUSING AND LENS	ACOLYTE, LUMIMIS	FROSTED LENS	•						S-STRIP	0.96	PER PLAN	0.6		10,11
UC1	•		7	500 LUMENS/ 4000K	120	LITHONIA #UPLD-14IN-30K-90CRI-SWR-WH	CONTECH, NORA	MATTE WHITE LENS	•				2		UC (OR SHELF)	4	14	1		13
UC2	•		12	800 LUMENS/ 4000K	120	LITHONIA #UPLD-22IN-30K-90CRI-SWR-WH	CONTECH, NORA	MATTE WHITE LENS	•				2		UC (OR SHELF)	4	22	1		13
P1	•		23	2000 LUMENS/ 4000K	120	LITHONIA LDN4-CYL-40K-2000-L04-AR-LSS-GZ10-PM-DBL	PRESCOLITE, LIGHTLOIER	SEMI SPECULAR DOWNLIGHT REFLECTOR		•					PENDANT CYLINDER BOTTOM 9'-0" AFF		12		6.1	2,6,13
BL1	•		20	800 LUMENS / 4000K	120	LITHONIA# KBD8 LED-16C-530-40K-SYM-120-DNAXD	HUBBELL, LITON	SYMMETRIC CUTOFF LENS				•			BOLLARD BASE		42		8	3,7
FL1	•		20	2600 LUMENS / 4000K	120	LITHONIA# DSXF1-LED-P1-40K-NSP-MVOLT-IS-DDBXD	HUBBELL, GARDCO	NARROW SPOT FLOODLIGHT				•			S (GRADE)	8.9	13.4	3.7		7
PL1/ PL1R	•		93	10000 LUMENS / 4000K	120	LITHONIA# DSX0-LED-P4-40K-T2-MVOLT-SPA-DDBXD/ SSS-20-4C-DM19AS-DDBXD (FDL-1.6 OPTION)	BEACON, GARDCO	FULL CUTOFF (SHIELDING)				•			20' (5") SQUARE STEEL POLE	13	26	7		4,7
S1	•		15W/FT	4333 LUMEN (3' SEGMENTS)	120	INSIGHT MX - H0 - LFS - D - ASY - CES - (QTY 2) 36 - DMXDM - XXX - WITH CELDMX - CDS - RDM - DMX POWER SUPPLY	LUMEN PULSE	WALL WASH ASYMETRIC LENS							S - SOFFIT	3.25	72	6		9, 15, 16
X1	•		5W	---	120	LITHONIA # LQM-SW3R-120/277-EL-N-M6	COMPASS, CHLORIDE	LED EXIT RED LETTERS ON WHITE - SINGLE FACE	•						WM OR CLG SURFACE	2	12	8		1
X2	•		5W	---	120	LITHONIA # LQM-SW3R-120/277-EL-N-M6	COMPASS, CHLORIDE	LED EXIT RED LETTERS ON WHITE - DOUBLE FACE	•						WM OR CLG SURFACE	2	12	8		1
EMX1	•		5W	TWO LAMPS	120	LITHONIA ECRG-HO-SG-M6	COMPASS, CHLORIDE	LED EXIT RED LETTERS ON WHITE - SINGLE FACE							WM - ABOVE DOOR	9	19	4		5
EM	•		5W	TWO 1W LAMPS	120	LITHONIA #EU2C	COMPASS, CHLORIDE	EMERGENCY LIGHT - TWIN HEAD	•						WM 7'-6"	4	14	4		20
EMH	•		2	-	6V	LITHONIA ERE-W-SGL-WP-SG	COMPASS, CHLORIDE	REMOTE HEAD	•						WM	6	5	5		9

NOTES:

1. BATTERY EXIT LIGHT - W=WALL MOUNT; C=CEILING MOUNT.
2. 0-10V DIMMING TO 10 PERCENT.
3. CONFIGURABLE (2500-3200-4000) LUMENS AND (3500-4000-5000K) COLOR TEMPERATURE, SET AS NOTED.
4. 'R' SUFFIX POLES INCLUDE 'FDL-1-6' PROVISIONS FOR CONTRACTOR FURNISHED GFCI RECEPTACLE AND 'IN USE' COVER 1'-6" ABOVE BASE OF POLE
5. HIGH OUTPUT BATTERY.
6. COORDINATE FIXTURE SUSPENSION HEIGHT WITH ARCHITECT.
7. REFER TO BASE DETAIL.
8. F1 - CONFIGURABLE (1000 - 1500 - 2000) LUMENS AND (3000 - 3500 - 4000K) COLOR TEMPERATURE; SET AS NOTED.
9. WET LOCATION LISTED
10. FIXTURE FIELD CUTTABLE IN MIN. 0.5"/MAX. 2" INCREMENTS - CUT TO FILL SPACE BELOWCABINET. CUT HOUSING AND LENS TO MATCH.
11. PROVIDE 24V DRIVER POWER SUPPLYSIZED FOR FIXTURE RUN; SUITABLE FOR 0-10V DIMMING. MOUNT POWER SUPPLY ABOVE CEILING AND WIRE TO FIXTURE SEGEMENT(S) PER MANUFACTURER INSTALLATION INSTRUCTIONS. POWER SUPPLY OMNI-LIGHT APG-XX-E-24 0-10V DIMMABLE (30/60/96/192/288W @3.1 W/LF).
12. SEPARATELY CONTROLLED MIN 1400 LUMEN UPLIGHT AND 4000 LUMEN DOWNLIGHT COMPONENTS. UPLIGHT TO BE BLUE COLOR SET AT FACTORY; AND DOWNLIGHT TO BE FORWARD ASYMETRIC THROW.
13. PROVIDE ONE (1) PACKAGED SPARE FIXTURE OF THIS TYPE AND TURN OVER TO OWNER AT COMPLETION OF PROJECT.
14. BLUE COLOR LENS
15. PROVIDE DMX DIMMING POWER SUPPLY AND INSIGHT 'LIGHTDIAL' REV NS V/M EA DMX CONTROLLER
16. COLOR SELECTED BY ARCHITECT.
17. PROVIDE ALL MANUFACTURER'S CABLING, MOUNTING HARDWARE, TRIM, FEED ENOS, ETC FOR COMPLETE INSTALLATION.
18. PROVIDE 0-10V DC 120V-24V DC DIMMING DRIVER POWER SUPPLY.
19. COORDINATE FIXTURE LENGTH WITH ACTUAL SITE MEASURED DIMENSIONS.
20. 'EM' FIXTURE TO INCLUDE HIGH OUTPUT BATTERY - FIXTURE TO OPERATE MIN 120 MINUTES (WITHOUT REMOTE HEADS).

NAUMAN & ZELINSKI LLC.
204 S. Ludlow Street Suite 400 Dayton, Ohio 45402
Phone: (937) 223-3821 – Fax: (937) 223-3849

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

STATE OF OHIO
JEFFREY D. ZELINSKI 63822
REGISTERED PROFESSIONAL ENGINEER

JEFFERY D. ZELINSKI, LICENSE #63822
EXPIRATION DATE 12/31/2025

Renovation and Addition

Huber Heights Fire Station 23

7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

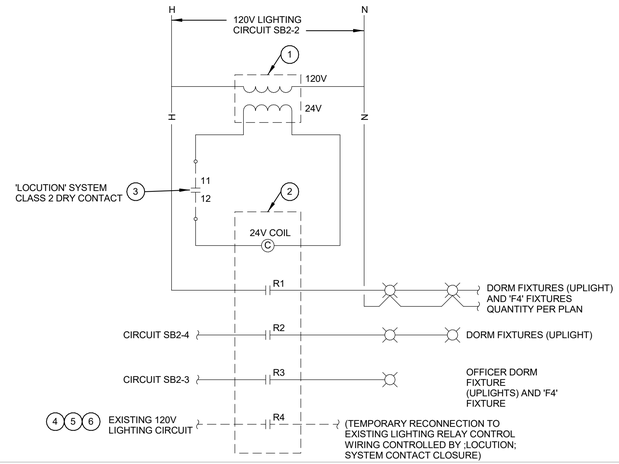
NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	01/29/2025	ADDENDUM 1

DATE	12/18/24
JOB NO.	4262.00
DRAWN	DAC
CHECKED	MFM

TITLE
DETAILS AND SCHEDULE

SHEET NO.
E0.2

1/29/2025 8:49:59 AM



'LOCUTION' ALERTING SYSTEM LIGHTING INTERFACE

SCALE: N.T.S.

A/E1.4

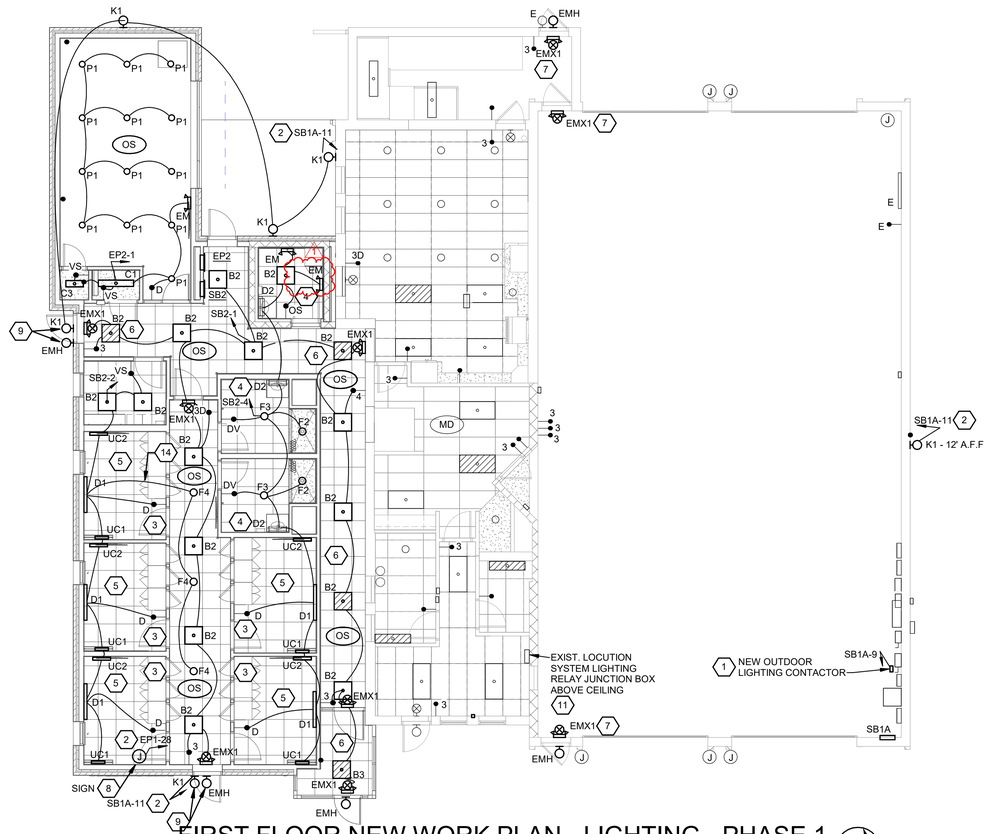
DETAIL NOTES

1. 120V-24VAC CLASS 2 TRANSFORMER - 40 VA (EDWARDS SIGNALING #599 OR EQUAL; WITH #593 MOUNTING PLATE) - MOUNT TO SURFACE BOX ON WALL IN I.T. ROOM.
2. ELECTRICALLY HELD 4-POLE LIGHTING CONTACTOR WITH SURFACE ENCLOSURE AND 24VAC COIL - SQUARE D 'L' SERIES #LG40 WITH #V01 24VAC COIL - MOUNT TO WALL IN I.T. ROOM.
3. WIRE THROUGH LIGHTING CONTROL CONTACTS 11 + 12 (90 SECOND ON) IN TERMINAL STRIP IN 'LOCUTION' SYSTEM PANEL.
4. WHEN NEW LIGHT CONTROL RELAY IS INSTALLED BY E.C. THE EXISTING CONTROL WIRING (TO TERMINALS 11 - 12) CONTROLLING EXISTING RELAY (ABOVE CEILING AT EXISTING LUCUTION PANEL LOCATION) FOR CONTROLLING EXISTING DORM LIGHTS IS TO BE DISCONNECTED FROM 'LOCUTION' PANEL TERMINALS BY E.C. TO PERMIT REUSE OF THIS OUTPUT CONTACT TO CONTROL NEW LIGHT RELAY. E.C. TO TEMPORARILY WIRE EXISTING LIGHT RELAY CONTROL CIRCUIT THROUGH CONTACT 'R4' ON NEW LIGHT CONTACTOR.
5. E.C. TO DISCONNECT EXISTING LIGHTING RELAY (ABOVE CEILING AT EXISTING LOCUTION PANEL LOCATION) CONTROL WIRING FROM TERMINALS 11 -12 IN 'LOCUTION' PANEL AND RECONNECT TO NEW LIGHT CONTACTOR TERMINAL 'R4' UNTIL EXISTING DORM LIGHTING IS REMOVED; AND REMOVE CONTROL WIRING AFTER EXISTING DORM SLEEPING ROOM LIGHTING IS REMOVED.
6. MAINTAIN EXISTING LIGHT CONTROL RELAY (ON FIRST FLOOR) IN OPERATION UNTIL EXISTING ROOMS ARE DEMOLISHED IN PHASE 2 OF PROJECT. REMOVE RELAY AND CONTROL WIRING AFTER DORM DEMOLITION.

CONSTRUCTION NOTES

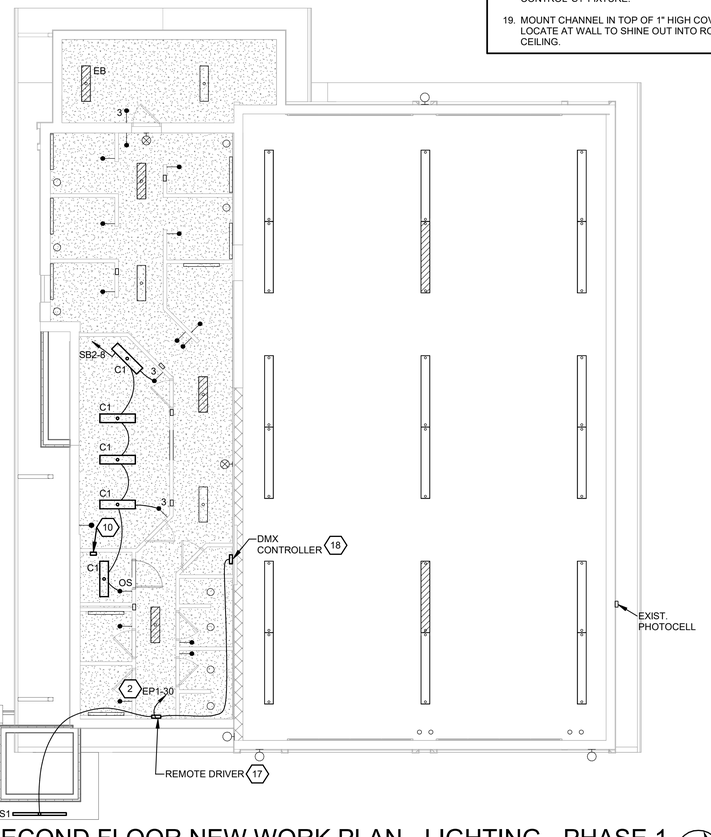
NOTE: THESE NOTES ARE APPLICABLE TO BOTH PHASE 1 AND PHASE 2 WORK AS SHOWN ON THIS SHEET AND SHEET E2.4.

1. REFER TO DETAIL ON SHEET E0.2.
2. CIRCUIT TO EXTERIOR LIGHTING CONTACTOR, LOCATED IN APPARATUS BAY.
3. TYPE 'UC1' AND 'UC2' FIXTURES SWITCHED VIA INTEGRAL ROCKER SWITCH ONLY, NOT CONTROLLED VIA DIMMER/SWITCH.
4. 'D2' FIXTURE NON-DIM; WIRE FOR ON-OFF CONTROL ONLY VIA OCCUPANCY SENSOR.
5. 'D1' FIXTURE 'DOWNLIGHT' CONTROLLED BY DIMMER; UPLIGHT CONTROLLED BY RELAY IN 'LOCUTION' ALARM ALERTING SYSTEM PER DETAIL ON THIS SHEET.
6. 'NIGHT LIGHT' WIRED TO UNSWITCHED CIRCUIT (TYP.).
7. CONNECT NEW EXIT/EM LIGHT FIXTURE TO EXISTING UNSWITCHED SUPPLY CIRCUIT SERVING EXISTING REMOVED EXIT LIGHT IN THIS LOCATION.
8. CONNECT TO INTERNALLY ILLUMINATED SIGN.
9. MOUNT 'K1' FIXTURE 12' AFF AND MOUNT 'EMH' FIXTURE 9' AFF; BOTH CENTERED OVER DOOR.
10. DORM ROOOM LIGHT CONTROL CONTACTOR AND TRANSFORMER - REFER TO DETAIL ON THIS SHEET.
11. REFER TO DETAIL ON THIS SHEET.
12. OCCUPANCY SENSOR WITH 120V RATED DRY CONTACT RELAY RATED FOR 15A (FOR CONTROL OF RESTROOM EXHAUST FAN).
13. MOUNT TYPE 'UC' FIXTURE REMOTE DRIVER ABOVE ACCESSIBLE CEILING.
14. CONNECT TO 'D1' FIXTURE 'UPLIGHT' CCT PEX DETAIL ON SHEET E1.4.
15. MOUNT TYPE 'L1' FIXTURE REMOTE DRIVER ABOVE ACCESSIBLE CEILING.
16. MOUNT TO BOTTOM OF SOFFIT NEAR FRONT EDGE. (AWAY FROM WALL FACE)
17. MOUNT REMOTE DRIVER IN ATTIC AND WIRE TO 'S1' FIXTURE AND DMX CONTROLLER PER MANUFACTURER DIRECTIONS.
18. INSTALL DMX CONTROLLER RECESSED IN WALL AND WIRE TO CONTROL 'S1' FIXTURE.
19. MOUNT CHANNEL IN TOP OF 1" HIGH COVE ABOVE MONITOR - LOCATE AT WALL TO SHINE OUT INTO ROOM AND LIGHT CEILING.



FIRST FLOOR NEW WORK PLAN - LIGHTING - PHASE 1

SCALE: 1/8" = 1'-0"



SECOND FLOOR NEW WORK PLAN - LIGHTING - PHASE 1

SCALE: 1/8" = 1'-0"

0 4 8 16 24 32 40

SCALE: 1/8"=1'-0"

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

STATE OF OHIO
JEFFREY D. ZELINSKI
63822
REGISTERED PROFESSIONAL ENGINEER

JEFFERY D. ZELINSKI, LICENSE #63822
EXPIRATION DATE 12/31/2025

Renovation and Addition

Huber Heights Fire Station 23

7435 Old Troy Pike, Dayton, Ohio 45424

ISSUE

NO.	DATE	DESCRIPTION
	12/18/2024	FOR CONSTRUCTION
1	01/29/2025	ADDENDUM 1

DATE	12/18/24
JOB NO.	4262.00
DRAWN	DAC
CHECKED	MFM

TITLE
PHASE 1 - LIGHTING NEW WORK PLANS

SHEET NO.
E1.4

NAUMAN & ZELINSKI LLC.
204 S. Ludlow Street Suite 400 Dayton, Ohio 45402
Phone: (937) 223-3821 ~ Fax: (937) 223-3849

1/29/2025 8:51:42 AM

NG Corporate, LLC
2001 Rexford Road
Charlotte, NC 28211
Nationalgypsum.com

DEXcell Roof Boards

APPROVED

PROJECT NAME: ____

Dear Specifier

Please accept this letter as verification that National Gypsum's DEXcell Roof Boards meet the same industry standards as GP DensDeck Roof Boards and USG Securock Roof Boards. DEXcell Roof Boards were first installed on commercial, low-slope roof projects in 2014.

DEXcell Glass Mat, DEXcell FA and DEXcell FA VSH gypsum-based roof boards conform to ASTM C1177, the standard test methods for glass mat gypsum substrates. DEXcell Cement Board conforms to ASTM C1325, the standard for mat reinforced cementitious backer units.

These boards can be used as a part of a Class A, B, or C roof covering. The gypsum boards are tested in accordance with UL 1256, ULC CAN-S126 or FM 4450. DEXcell Cement Board is tested in accordance with UL 790 and ULC CAN-S107. Used as a part of a rated system, DEXcell Roof Boards provide a thermal barrier meeting IBC Section 2603.

The DEXcell manufacturing plants are part of 3rd-party inspection programs conducted by FM, UL and Miami-Dade.

DEXcell is approved in most full system approvals or pending approvals from low-slope roofing system manufacturers. Recognizing the trend to full system warranties, DEXcell will be compatible with the roof systems that you specify.

For these reasons you can confidently specify and approve DEXcell Roof Boards on your roofing projects. DEXcell Roof Boards will perform as intended.

Sincerely,