ELEVATUS
ARCHITECTURE

A D D E N D U M

Project No.: 2301108
Project: West Noble Weight High School Renovation and Addition

Addendum No: 1
Date: 02-21-2024

TO: ALL BIDDERS OF RECORD

ADDENDUM NO. 1, to Drawings and Specifications dated 02-12-2024, for the West Noble High School Renovation and Addition for West Noble; as prepared by ELEVATUS Architecture, 111 E. Wayne Street, Suite 555, Fort Wayne, IN 46802

This ADDENDUM shall hereby be and become a part of the Contract Documents the same as if originally bound thereto.

The following clarifications, amendments, additions, revisions, changes, and modifications change the original Contract Documents only in the amount and to the extent hereinafter specified and set forth in this ADDENDUM.

Each Bidder shall acknowledge receipt of this ADDENDUM on the Bid Form.

SPECIFICATIONS:

ITEM NO. 1.01 - PROJECT MANUAL, , 00 01 10, TABLE OF CONTENTS

A. Add Section 01 74 19 – Construction Waste Management And Disposal
B. Add Section 07 11 13 – Dampproofing
C. Remove Section 07 54 00 – Fully Adhered TPO Sheet Roofing
D. Add Section 07 54 20 – Fully Adhered Fleece Back Kee Hybrid Sheet Roofing
    a. Drawings will be updated to reflect this change.
E. Add Section 32 31 13 – Chainlink Fences
F. Add Section 32 31 19 – Ornamental Picket Fences and Gates
G. Add Section 33 41 00 – Storm Drainage System to TOC only. Specification Section already included.

ITEM NO. 1.02 - PROJECT MANUAL, 00 21 13, INSTRUCTIONS TO BIDDERS

A. Re-issue specification section in its entirety with changes below.
    a. 1.7.C.1 – Revise to read “by the Printer not later than five (5) days prior to the date”.
    b. 1.11.E.1 –
        1. Revise to read “Bid Bond” in lieu of “Bid Bind.”
        2. Revise to read "five percent” in lieu of “ten percent”.

ITEM NO. 1.03 - PROJECT MANUAL, 00 43 00, BID PROPOSAL FORM

A. Re-issue specification section in its entirety with changes below.
    a. Remove “(fill-in)” from statements:
        1. “I have also received Addenda Nos. _____ and have included…..”
        2. G. To complete the Work covered by this Proposal within_____ (list calendar days)

ITEM NO. 1.05 - PROJECT MANUAL, 00 73 00, SUPPLEMENTARY CONDITIONS

A. Re-issue specification section in its entirety with changes below.
    a. 3.6 – Remove article in its entirety.
    b. 9.3.6 – Remove article in its entirety.

c. 9.9.5 – Remove article in its entirety.

ITEM NO. 1.06 - PROJECT MANUAL, 01 22 00, UNIT PRICES

A. Re-issue specification section in its entirety with changes below:
   a. 1.3.B – Remove line in its entirety.

ITEM NO. 1.07 - PROJECT MANUAL, 01 23 00, ALTERNATES

A. Re-issue specification section in its entirety with changes below:
   a. 1.3.A – Alternate #1
      1. Revise to read “State the cost to provide and install……”
      2. Revise Weights Room number to be A105.
   b. 1.3.B – Alternate #2
      1. Revise to read “State the cost to provide and install……”
      2. Revise Track Room number to be A108.
   c. 1.3.C – Alternate #3
      1. Revise to read “State the cost to provide and install……”
      2. Revise Weights Room number to be A105.
      3. Revise Track Room number to be A108.

ITEM NO. 1.08 - PROJECT MANUAL, 01 25 00, SUBSTITUION REQUIREMENTS

A. Re-issue specification section in its entirety with changes below:
   a. 1.2.B.1 – Revise to read “Section 01 60 00 "Product, Materials, and Equipment.”
   b. 1.4.A.1 – Revise to read “or Substitution Request Form included in this document.”

ITEM NO. 1.09 - PROJECT MANUAL, 01 31 13, PROJECT COORDINATION

A. Re-issue specification section in its entirety with changes below:
   a. Revise Section to select General Prime Contractor

ITEM NO. 1.10 - PROJECT MANUAL, 01 31 19, PROJECT MEETINGS

A. Re-issue specification section in its entirety with changes below:
   a. 1.4.D – Remove unneeded specifications listed requiring meetings.
   b. 1.5.A – Remove “(or) Construction Manager”
   c. 1.5.D – Remove unneeded specifications listed requiring meetings.
   d. 1.6.A – Revise to read “…...Progress Meetings will be as a minimum, bi-weekly for the duration of construction.

ITEM NO. 1.11 - PROJECT MANUAL, 01 33 00, SUBMITTALS

A. Re-issue specification section in its entirety with changes below:
   a. 1.2 – Remove editor’s note from section.
   b. 1.2.1 – Remove Acrobat Reader requirement.
   c. 1.6.E.10.e – Remove editor’s note from section.

ITEM NO. 1.12 - PROJECT MANUAL, 01 33 33, DELEGATED DESIGN REQUIRMENTS

A. Remove this Section in its entirety.

ITEM NO. 1.13 - PROJECT MANUAL, 01 50 00, TEMPORARY FACILITIES

A. Re-issue specification section in its entirety with changes below:
   a. 1.3.A.1 – Add line in its entirety.
   b. 1.3.B.1 – Revise line to read “……, each Subcontractor if required, may provide…...”
   c. 1.4.2 – Remove in its entirety.

d. 1.5 – Remove in its entirety.
e. 1.6.I.2.b – Remove in its entirety.
f. 1.10 – Revise to read General Contractor in lieu of Earthwork/Utility Contractor.
g. 1.16.B – Remove in its entirety.
h. 1.16.D – Revise to read "Electrical contractor shall provide the following temporary lighting and power distribution system for this Project as required. Coordinate requirements with Owner, Architect, and General Contractor.
    1. 1.16.D.1-7 – Remove line items in their entirety.

ITEM NO. 1.14 - PROJECT MANUAL, 01 70 00, PROJECT CLOSEOUT

A. Re-issue specification section in its entirety with changes below:
    a. 1.3.A.7 – Revise Section to read 01 74 13

ITEM NO. 1.15 - PROJECT MANUAL, 01 73 29, CUTTING AND PATCHING

A. Re-issue specification section in its entirety with changes below:
    a. 1.2.A – Replace new structure with existing building
    b. 1.3.A.1 – Add "For cutting and patching required over and above what is indicated on the drawings for new work in existing structure", describe ……
    c. 3.1.B – Add line in its entirety

ITEM NO. 1.16 - PROJECT MANUAL, 01 74 19, CONSTRUCTION WASTE MANAGEMENT

A. Add Specification Section in its entirety.

ITEM NO. 1.17 - PROJECT MANUAL, 04 05 13, MORTAR

A. Re-issue Specification Section in its entirety with changes below:
    a. 1.3.D – Revise Section to read 04 22 00, Unit Masonry

ITEM NO. 1.18 - PROJECT MANUAL, 04 05 16, MASONRY GROUT

A. Re-issue specification section in its entirety with changes below:
    a. 1.1.A.1 – Remove (add to as required for all the other Division 4 sections as may be applicable)
    b. 1.1.C – Remove non-detention and detention.

ITEM NO. 1.19 - PROJECT MANUAL, 04 22 00, UNIT MASONRY

A. Re-issue specification section in its entirety with changes below:
    a. 1.1.D.5 – Remove line item in its entirety.
    b. 1.1.D.6 – Remove line item in its entirety.
    c. 1.1.E.1 – Remove line item in its entirety.
    d. 1.1.F – Remove line item in its entirety.
    e. 1.8.4 – Replace 2000 psi with 2800 psi
    f. 2.2.B – Replace 2000 psi with 2800 psi
    g. 2.2.B.8.a.1) – Add (interior) to Smooth Face
    h. 2.2.B.8.a.2) – Add Split Face (Exterior) by Try County
    i. 2.2.B.8.a.2)a) – Add Color: Stormy
    j. 2.2.C – Remove in its entirety.
    k. 3.4.E – Remove in its entirety.
    l. 3.10 – Remove in its entirety.
    m. 3.12.C – Remove in its entirety.
    n. 3.13.C – Select 2000 psi for grout

ITEM NO. 1.20 - PROJECT MANUAL, 07 11 13, – DAMPPROOFING

A. Add Specification Section in its entirety.

ITEM NO. 1.21 - PROJECT MANUAL, 07 54 00, FULLY ADHERED TPO SHEET ROOFING

A. Remove Specification Section in its entirety.

ITEM NO. 1.22 - PROJECT MANUAL, 07 54 20, FULLY ADHERED FLEECE BACK KEE HYBRID SHEET ROOFING

A. Add Specification Section in its entirety.

ITEM NO. 1.23 - PROJECT MANUAL, 08 33 13, COILING COUNTER DOORS

A. Re-issue Specification Section in its entirety with changes below:
   a. 1.1.A – Add “with integral frame”
   b. 2.1.B - Add “with integral frame”
   c. 2.1.B.1 – Replace ESC10 with ESC20
   d. 2.1.B.2 – Replace Model 500 with Model 560
   e. 2.1.B.3 – Replace Model 652 with Model 655
   f. 2.1.B.4 – Replace CESC10 with CESC20

ITEM NO. 1.24 - PROJECT MANUAL, 08 51 13, ALUMINUM WINDOWS

A. Re-issue Specification Section in its entirety with changes below:
   a. 1.3.A.2.g – List Indiana as State required for licensed engineer to be registered in for stamped drawings.
   b. 1.3.A.2.h – List Indiana as State required for licensed engineer to be registered in for stamped drawings.

ITEM NO. 1.25 - PROJECT MANUAL, 08 80 00, GLAZING

A. Re-issue Specification Section in its entirety with changes below:
   a. Add article 2.13 SAFETY GLASS MIRRORS in its entirety.

ITEM NO. 1.26 - PROJECT MANUAL, 09 29 00, GYPSUM BOARD

A. Re-issue Specification Section in its entirety with changes below:
   a. 1.4.E – Select Indiana as state required for stamping of design calculations.

ITEM NO. 1.27 - PROJECT MANUAL, 09 51 13, ACOUSTICAL PANEL CEILINGS

A. Re-issue Specification Section in its entirety with changes below:
   a. 2.2.A.3 – Revise AT-2 to be AT-1 to match drawing designation

ITEM NO. 1.28 - PROJECT MANUAL, 09 65 19, RESILIENT TILE FLOORING

A. Re-issue Specification Section in its entirety with changes below:
   a. 1.6.D – Temperature range selections made for clarity.

ITEM NO. 1.29 - PROJECT MANUAL, 10 44 00, FIRE EXTINGUISHERS, CABINETS, AND ACCESSORIES

A. Re-issue Specification Section in its entirety with changes below:
   a. 1.1.A – Add Fire Extinguisher Cabinets
   b. 2.2.C – Remove in its entirety.
   c. 2.4 thru 2.6 – Add in their entirety.

ITEM NO. 1.30 - PROJECT MANUAL, 32 31 13, CHAINLINK FENCES

A. Add Specification Section in its entirety.

ITEM NO. 1.31 - PROJECT MANUAL, 32 31 19, ORNAMENTAL PICKET FENCES AND GATES

A. Add Specification Section in its entirety.

DRAWINGS – WEIGHT ROOM ADDITION AREA A:

ITEM NO. 1.01 - DRAWING NO. G-001 Cover Sheet
- A. Add sheet A-502 Architectural Details Area B.

ITEM NO. 1.02 - DRAWING NO. A-111B Architectural Plan – First Floor Area B
- A. Changing the opening direction of the exit gate.

ITEM NO. 1.03 - DRAWING NO. A-121A Reflected Ceiling Plan – First Floor Area A
- A. Revision of AT-1 in rooms A105 Weights and A108 Track.
- B. Addition of ceiling plan note 8.
- C. Removal of ceiling material C from ceiling material legend.

ITEM NO. 1.05 - DRAWING NO. A-201 Building Elevations – Area B
- A. Revision of 5.01 note.
- B. Revision of 5.02 note.
- C. Add note 5.03.
- D. Revision of 10.01 note.
- E. Add note 10.03.

ITEM NO. 1.06 - DRAWING NO. A-311A Wall Sections – Area A
- A. Updates details to reflect the roof standard specification.
    - a. Details 1,2,3,6,9.

ITEM NO. 1.07 - DRAWING NO. A-312A Wall Sections – Area A
- A. Updates details to reflect the roof standard specification.
    - a. Details 1,2,3,4,5.

ITEM NO. 1.08 - DRAWING NO. A-311B Wall Sections – Area B
- A. Revision of 12-Enlarged Detail – Area B.

ITEM NO. 1.09 - DRAWING NO. A-313A Wall Sections – Area A
- A. Updates details to reflect the roof standard specification.
    - a. Details 1,2,6,9,11.

ITEM NO. 1.10 – DRAWING NO. A-314 Architectural Details – Area B
- A. Addition of sheet A-314 Architectural Details - Area B

ITEM NO. 1.07 - DRAWING NO. A-601 Architectural Schedules & Details
- A. Review of the Door Schedule for door A102B.

ITEM NO. 2.01 – Civil Addendum #1
- A. Refer to attached Civil Addendum

ITEM NO.2.03 – Structural Addendum #1
- A. Refer to attached Structural Addendum

ITEM NO. 2.02 – MEP Addendum #1
- A. Refer to attached MEP Addendum

Submitted By:

Andreia Rossato, PA

ELEVATUS
ARCHITECTURE

cc:
- ☐ File: Document55
- ☐ Owner:
- ☐ Contractor:
- ☐ Consultant:
- ☐ Consultant:

West Noble

Addendum #1
Date: 02/21/2024

This addendum is issued as a supplement to the plans and specifications and shall be considered an integral part of the same.

Item:	Sheet:	Description:
1.01	C-201A	Parking bumper reference tag has been adjusted to be note #7 in lieu of note #21.
1.02	C-401A/B	Note #9 revised to call out correct pipe outfall detail.

Item:	Spec Section:	Description:
1.03	312000	Spec section revised to delete items that were not applicable. Clarification made for contractor to engage testing agency.
1.04	321313	Spec section revised to delete items that were not applicable. Clarification made for contractor to engage testing agency.
1.05	330500	Spec section revised to delete items and pipe materials that were not applicable. Clarification made on tracer wire requirement.
1.06	331116	Spec section revised to delete items that were not applicable.
1.07	333114	Spec section revised to delete items that were not applicable. Clarification made for all castings to have “SANITARY” labeled on sanitary sewer castings.
1.08	334100	Spec section revised to delete items that were not applicable. Clarification made for all castings to have “STORM” labeled on storm sewer castings.

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ENGINEERING, LLC

Addendum

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Fort Wayne, IN 46804
(260) 436-9213
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ADDENDUM NO.	Addendum No. 1
DATE:	02/21/2024
PROJECT:	West Noble Renovation and Addition
COMMISSION NO.	***SCO*** Engineering, LLC – 232707

The Contractor shall incorporate, into the Contract Documents and into his bid, the following changes and/or clarifications to the Drawings, Specifications and Scope of Work.

GENERAL

1. Mechanically formed tee's (t-drills) are **NOT** to be allowed or used in this project.
2. All exposed round and rectangular ductwork is to be internally lined with perforated liner. Contractor shall clean and paint all internally lined supply / return air ductwork and diffusers. Architect to select color.
3. All diffusers that are to be connected to exposed ductwork are to be hard connected to ductwork. NO flexible connectors are to be used.
4. It is the intent of this project that the Plumbing Contractor shall provide and install a shutoff valve at each water service main, branch main, riser, and branch to a group of fixtures.
5. It is the intent of this project that the Mechanical Contractor shall coordinate the final installation location of all roof mounted equipment with the approved steel shop drawings and shall bring any issues to the attention of architect and engineer prior to the initiation of any work.

PLUMBING

1. It is the intent of this project to carefully remove the existing wall hydrant that is located on the northeast side of the existing building where the new Weight Room addition is to be constructed. The plumbing contractor shall remove the wall hydrant complete and cap the existing cold-water piping in a concealed location.

ELECTRICAL

Sheet E-601:

1. On Luminaire Schedule, fixture types L11, W02, W03, and P01 as shown on the attached Supplemental Information Drawing 2707 E-601-02-21-24.

Sheet CE-101:

1. All work (labor and material) indicated on this drawing will be performed by others and shall not be in this projects scope of work.

Sheet E-501:

1. Detail #1 - Existing Stadium Risor Diagram.
2. Detail #2 - Electrical Stadium Risor Diagram.
3. Detail #4 – Stadium Pedestal Detail.
4. Detail #5 – Pad Mount Transformer.
5. Transformers “T- PB and T-LV.

All work (labor and material) associated with these will be performed by others and shall not be in this project scope of work.

Sheet E-602:

1. Panel HV.
2. Panel LV.
3. Panel East Play Clock.
4. Panel Scoreboard.

All work (labor and material) associated with these will be performed by others and shall not be in this projects scope of work.

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33 41 00	Storm Drainage System	2/21/2024	Addendum #1

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SECTION 00 21 13 - INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. To be considered, bids must be submitted in accordance with these Instructions to Bidders.

B. Communications for the administration of the Contract shall be as set forth in the General Conditions and, in general, shall be through the Architect.

1.2 DEFINITIONS

A. Definitions set forth in the General Conditions of the contract for Construction, AIA Document A201, 2017 ed., are applicable to these Instructions to Bidders.

B. A Bidder is the person or entity who submits a Bid for the Work as described in the Contract Documents and with whom the Owner would enter into a Contract.

C. A Sub bidder is the person or entity who submits a bid, to a Bidder, for materials or labor for a portion of the Work.

1.3 DOCUMENTS

A. Failure to Execute Contract Documents: In the event the bidder withdraws the bid or fails to execute a satisfactory Contract and furnish a satisfactory Contract Performance Bond and Labor and Material Payment Bond with a surety company in accordance with Article 1.15 of these Instructions to Bidders within 5 days after a contract has been awarded to such a bidder by the Owner, said Owner may declare such certified or cashier's check or bid bond forfeited to the Owner for extra costs incurred by reason of delay of the project and obtaining acceptable prices from another bidder.

1.4 BIDDER'S REPRESENTATION AND EXAMINATION

A. By submitting a Bid, each Bidder represents that:

1. He has visited the site of the proposed Work and has fully acquainted himself with conditions as they exist, so that he may fully understand the facilities, difficulties and restrictions attending the execution of the Work.
2. He has thoroughly examined, read and understands the Bidding Documents, and where the Bidding Documents require, in any part of the Work, a given result to be produced, that the Bidding Documents are adequate and the required result can be produced under the Bidding Documents.
3. His Bid is based upon materials, equipment and systems as shown in the Bidding Documents, all as prepared by Elevatus Architecture, Fort Wayne, IN.

B. The failure or omission of any Bidder to receive or examine any form, instrument or document, or to visit the site and acquaint himself with conditions there existing, shall in no way relieve any Bidder from any obligations with respect to his Bid.

C. No claim for any extra will be allowed because of alleged impossibilities in the performance of the Work because of inadequate or improper Bidding Documents.

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D. Each bidder by making his bid represents that he has read and understands the bidding requirements and the Construction Documents.

E. Each bidder by making his bid represents that he has visited the site and familiarized himself with the local conditions under which the Work is to be performed.

1.5 QUALIFICATIONS OF BIDDERS

A. AIA Document A305, Contractor Qualifications Statement shall be included with the Bid Proposal. This shall clearly show the bidder's financial resources, his construction experience, his organization, and equipment available for Work contemplated.

B. The Owner shall have the right to take such steps as he deems necessary to determine the ability of the bidder to perform the Work, and the bidder shall furnish the Owner such data for this purpose as the Owner may request.

C. Where Bidder is a corporation, limited liability company, or other entity, evidence that Bidder is in good standing under the laws of the State of Indiana is required. In case of entities organized under the laws of any other state, it shall produce evidence that Bidder is licensed (or is capable of being licensed) to do business and is in good standing under the laws of the State of Indiana or a sworn statement that it will take all necessary action to become so licensed, if its bid is accepted.

1.6 BIDDING DOCUMENTS

A. Complete sets of Bidding Documents may be obtained by Bidders from the office of the printer. Eastern Engineering, in such numbers and for the deposit sum or purchase amount as determined by Copy Country. Bidders have the option to purchase printed sets of Bidding Documents or electronic sets of Bidding Documents as defined by Copy Country.

B. The Owner or the Architect, in making printed or electronic copies of the Bidding Documents do so only for the purpose of obtaining Bids on the Work. They do not confer a license or grant for any other use.

C. All documentation and submittals provided to Owner may be considered public documents under applicable laws and may be subject to disclosure under the Indiana Access to Public Records Act. By submitting a bid, Bidder recognizes and agrees that Owner will not be responsible or liable in any way for any losses that Bidder may suffer from the lawful disclosure of information or materials to third parties.

D. Owner accepts its legal obligations under IC § 5-14-3-4(a)(4) not to release any public record that constitutes a trade secret. To that end, any material requested to be treated as a confidential document, proprietary information, or trade secret must be clearly identified as such and readily separable from the balance of the bid or proposal. Such designation will not necessarily be conclusive, and Bidder may be required to justify why such material should not, upon written request, be disclosed by Owner under the applicable public records act.

1.7 INTERPRETATION, SUBSTITUTION, AND ADDENDA

A. Interpretation:

1. No oral interpretation or clarification will be made to any Bidder as to the meaning of the Bidding Documents. Every request for such an interpretation or clarification shall be made in writing, and submitted, by the Bidder, to the Architect.

B. Substitutions:

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1. Each bidder represents that his bid is based upon the materials and equipment described in the Bidding Documents.
2. The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.
3. No substitution will be considered unless a written request for approval has been submitted by the Bidder, to the Architect, within ten (10) days prior to bid due date. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including Drawings, cuts, performance and test data, and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment, or work that incorporation of the substitute would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of the proposed substitution shall be final.

C. Addenda:

1. No request for an interpretation or clarification of, or no request for a substitution received by the Architect earlier than ten (10) days prior to the date fixed for opening of bids will be given consideration. Every interpretation or clarification made to a Bidder or every proposed substitution approved, will be set forth in an Addendum to the Bidding Documents. Issued Addendum will be emailed or distributed electronically to all prospective bidders by the Printer not later than ~~seven~~ five (5) days prior to the date fixed for the opening of bids, except where such Addendum withdraws request for bids or postpones date for receipt of bids, or other reason as deemed necessary by the Architect. Failure of any bidder to receive any such Addendum shall not relieve any bidder from any obligation under his bid as submitted.
2. All Addenda so issued shall become a part of the Contract Documents. Indicate receipt of addenda on Bid Proposal Form. Failure to do so may result in rejection of bid.
3. Bidders shall not rely upon interpretations, clarifications, and/or approvals made in any other way.

1.8 ALTERNATES AND UNIT PRICES

A. Requested unit prices and alternatives are listed on the Bid Proposal Form and are described in detail under Section 01 22 00 Unit Prices and Section 01 23 00, Alternates.

1. NOTE: The terms "alternate" and "alternative" are used interchangeably in this Project Manual and on the Drawings.

B. The cost of each Alternate shall include omissions, additions, and adjustments of trades as may be necessary because of each change, substitution, addition, or omission.

C. Each bidder shall be responsible for bidding alternatives which affect the Work. No additional monies will be allowed after signing of contracts for failure to bid applicable Alternates.

D. If, during the progress of the Work, the Owner desires to reinstate alternates not included in the Contract, the Owner reserves the right to reinstate the alternates at the price bid by the contractor. If this action is not taken in sufficient time and causes delay in the progress of the work or causes the Contractor uncontrollable and justifiable additional expense, this expense shall be negotiated and resolved with the Owner by Change Order.

1.9 TIME FOR RECEIVING THE BIDS

A. Bids received prior to the time of opening will be securely kept unopened. The person whose duty it is to open them will decide when the specified time has arrived, and no bid received thereafter will be considered; No responsibility will be attached to the office for the premature opening of a bid not properly addressed and identified.

1.10 ARCHITECT'S COOPERATION DURING BIDDING PERIOD

A. Each bidder is requested to contact the Architect in the event that problems occur or questions arise in analyzing the Drawings and Specifications, where additional clarification or information would be helpful in the preparation of a proper bid.

B. The Architect will cooperate fully in connection with requests, and will provide information required, providing the Architect's ethical responsibilities are not encroached upon.

C. It is the general policy of the Architect to be as helpful as possible to bidders, insofar as is consistent with fair and open competition.

1.11 PREPARATION AND SUBMISSION OF BIDS

A. Bid Forms:

1. Bids must be submitted on Indiana State Board of Accounts Form No. 96 - Revised 2013, including the Supplemental Bid Proposal Form included in the Project Manual
2. Oral, telephonic, telegraphic or emailed Bids are invalid and will not receive consideration.

B. Preparation of Bid Forms:

1. Taxes, Permits, Inspections, Etc.:

   a. All bid amounts are to include all applicable taxes, cost of all required permits and inspections as required by governing agencies and other tests or inspections, if any, assigned to the General Contractor in the Contract Documents. State sales tax is not to be included in the bid price. The Owner is sales tax exempt. The exemption number will be furnished by the Owner to the Contractor for his use.
   b. State approval and fee incidental thereto will be obtained and paid for directly by the Owner through the Architect.

2. Indication of Amounts:

   a. Each proposal shall have bid amounts written with ink or type written in both words and figures. Should there be any discrepancies between the words and figures indicating any amount in the proposal, the amount written in words shall be taken as the correct amount.

3. Time of Completion:

   a. Each bidder shall state, in his proposal, the number of calendar days which he will require to complete the Work after formal Notice to Proceed is issued or Agreement with the Owner signed. The time so stated in his Bid Proposal will be the basis of establishing a completion date in the Contract.

C. Requirements for Signing Bids:

1. Any bid not signed by the individual making same, shall have attached to it a Power of Attorney evidencing authority to sign the bid in the name of the person for whom it is signed.
2. A bid submitted by a partnership shall be signed by one of the partners, or by an attorney in fact. If signed by an attorney in fact, there shall be a Power of Attorney attached to the bid evidencing authority to sign the bid, executed by the partners.
3. Bids which are submitted by a corporation shall have the correct name thereof and the signature of the president or other authorized officers of the corporation. Signatures affixed by secretary or assistant secretary shall be identified by signer manually "by_____".

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D. Alternates, Unit Prices, Allowances:

1. All bidders are required to submit proposals for all requested alternates and unit prices. In the event the bidder does not desire to make a change from the base bid, he shall so indicate by using the words "No Change".
2. Failure of any bidder to submit proposals for any requested alternate and/or unit price shall be sufficient reason for rejection of his bid or acceptance of alternate by the Owner at no additional cost to the Bid.
3. Voluntary alternates will not be considered unless called for or approved by the Architect.
4. Refer to Section 01 23 00, Alternates, for the complete description of alternates.
5. Refer to Section 01 22 00, Unit Prices, for the complete description of unit prices.
6. Refer to Section 01 22 00, Unit Prices, for the complete description of unit prices.

E. Bid Security

1. Each bid must be accompanied by a bid security which shall not be less than five percent (5%) of the Base Bid. Submit bid security in the form of a certified check, or cashier's check. If a Bid ~~**Bind**~~ Bond is to be used by a surety company, the Bid Bond shall not be less than ~~ten~~ five percent (5%) of the Base Bid. Bid bond shall Bid Bond AIA Form A310, or similar from an acceptable surety. No bid will be considered unless it is so guaranteed. The bid security shall insure the execution of the Contract and the furnishing of 100% Performance & Labor and Material Payment Bonds by the successful bidder, as specified in the Bidding Documents.

    a. Bidders whose principle place of business is not in the State of Indiana shall submit bid security in the form of a certified check only.

2. Bidder is authorized to use the bonding company's standard Bid Bond, in lieu of the AIA form specified above, providing the form is substantially the same.
3. Revised bids, whether forwarded by mail or telegram, if representing an increase in excess of two percent (2%) of the original bid, must have the bid security adjusted accordingly, otherwise, the revision of the bid will not be considered, and the original bid shall remain in force.
4. In case the Bid Bond is in the form of a certified check for 5% of the Base Bid, Owner may make such disposition of same as will accomplish the purpose for which it was submitted. Certified checks of unsuccessful bidders will be returned as soon as practicable after the opening of the bids.
5. In case the bid bond is in the form of a certified check, Owner may make such disposition of same as will accomplish the purpose for which it was submitted. Certified checks of unsuccessful bidders will be returned as soon as practicable after the opening of the bids.

F. Non Collusion Affidavit:

1. Each bidder shall furnish, with his bid, an affidavit that such bidder has not directly or indirectly entered into a combination, undertaking, collusion, or agreement with any other bidder or prospective bidder, or with any officer or members of the Owner which tends to or does lessen or destroy free competition in the letting of contracts sought for by these Instructions to Bidders.
2. Non Collusion Affidavit shall be properly notarized and with seal affixed.

G. Employment Practices:

1. Bidders and sub bidders shall not discriminate in employment practices.

H. Submission of Bids:

1. All bids must be submitted in duplicate in hard copy paper form inside a sealed envelope.

2. Bid documents shall be enclosed in envelopes (inner and outer), both of which shall be sealed and clearly labeled "West Noble Weight Room and Stadium Renovation", so as to guard against opening prior to the time set thereof. The bidder shall be responsible for the placement of his firm's name and address, the name of the Work, and the name of the project on the outside of both such bid envelopes.
3. A bid is invalid if it has not been deposited at the designated location prior to the time and date for receipt of bids indicated in the Advertisement for Bids, or prior to extension thereof issued to the bidders.
4. A bid is invalid if it has not been deposited at the designated location prior to the time and date for receipt of bids indicated in the Notice To Bidders, or prior to extension thereof issued to the bidders.
5. Telecommunicated bids, emailed or texted bids will not be considered.

1.12 MODIFICATION OR WITHDRAWAL OF BIDS

A. A Bidder with proper notice may withdraw or modify his Bid at any time prior to the scheduled time and date set for receipt of the Bids. Notice shall be in writing over the signature of the Bidder or by telegram; telegraphic notice must be confirmed in writing and postmarked on or before the time set for receipt of bids.

B. No Bid or any portion thereof, may be modified, withdrawn or canceled by the Bidder after the pronouncement of the closing of bids.

1.13 OPENING OF BIDS

A. The Advertisement for Bids indicates the time and place fixed for opening bids.

B. Bids received prior to the time of opening will be securely kept, unopened. The officer whose duty it is to open them will decide when the specified time has arrived, and no bid received thereafter will be considered.

C. No responsibility will be attached to an officer for the premature opening of a bid not properly addressed and identified.

D. Every bid received within the time fixed for the receiving of bids will be opened and read aloud, irrespective of irregularities therein. Bidders and other persons properly interested may be present, in person or by representative.

E. The amounts involved in alternatives requested will be read or disclosed as part of the requirements of this Article. Voluntary alternates will not be read.

F. The Owner, reserves the right to delay the time for opening of bids when, in his judgment, is desirable or necessary. Comply with IC 36-1-12-4(7).

1.14 DISQUALIFICATION

A. The Owner reserves the right to reject each and every bid, to waive informalities and irregularities in bidding, to accept and reject alternatives regardless of their order or sequence, unless otherwise called for on the Bid Proposal Form.

B. The Owner reserves the right to reject each and every bid, to waive informalities and irregularities in bidding, to accept and reject alternatives regardless of their order or sequence, unless otherwise called for on the Supplemental Bid Proposal Form.

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C. The right is reserved to reject bids where an investigation of the available evidence of information does not satisfy the Owner that the bidder is qualified to properly carry out the terms of the Contract Documents.

D. Bona fide bids in a definite stated amount, without special clauses governing price of labor and material increases, shall be the only ones that will be considered. No contract shall be entered into carrying what is commonly known as an "Escalator Clause."

E. Bids which contain qualifications or conditions that are contrary to the text or intent of the Contract Documents, and which are inserted in the bid for the purpose of limiting or otherwise qualifying the responsibility of the bidder, outside of the text or intent of the Contract Documents, will be subject to disqualification.

F. The Owner also reserves the right to reject the bid or a bidder who has previously failed to perform properly or to complete contracts of a similar nature on time, who is not in a position to perform the Contract, or who has habitually, and without just cause neglected the payment of bills or otherwise disregarded his obligations to subcontractors, materialmen, or employees.

G. The ability of the bidder to obtain or qualify for a performance bond or labor and material payment bond shall not be regarded as a sole test of such bidder's competence or responsibility.

H. The bidder acknowledges the right of the Owner to reject bids and to waive informalities and irregularities in bids received. In addition, the bidder recognizes the right of the Owner to reject a bid, if the bidder failed to furnish required bid security, or to submit the data required by the bidding documents, or if the bid is incomplete or irregular.

1.15 AWARD OF CONTRACT

A. When Award is Effectual:

1. The Contract shall be deemed to have been awarded when notice of award shall have been duly served upon the awardee (i.e., the bidder or bidders to whom the Owner contemplates awarding the Contract or Contracts) by some officer or agent of the Owner duly authorized to give such notice.

B. Award of Contract, Rejection of Bids:

1. The Contract will be awarded to the lowest responsive and responsible bidder complying with the conditions of the Bidding and Contract Documents, provided his bid is reasonable, and it is to the interest of the Owner to accept it. The bidder to whom the award is to be made, will be notified at the earliest possible date. The Owner, however, reserves the right to reject any and all bids, and waive any informality in bids received whenever such rejection or waiver is in the interest of the Owner.
2. In determining the lowest legal bidder, the following elements, in addition to those above mentioned, will be considered:

    a. Maintains a permanent place of business,
    b. Has adequate plant equipment and personnel to do the work properly and expeditiously,
    c. Has a suitable financial status to meet the obligations incidental to the work, and,
    d. Has appropriate technical experience.
    e. The bidder's financial ability to complete the Contract successfully without resort to its Surety;
    f. The bidder's prior experience with similar work on comparable or more complex projects.
    g. The bidder's prior history for the f]successful and timely completion of projects;
    h. The bidder's prior experience on other projects of the Owner, including the bidder's demonstrated ability to complete its work on these projects in accordance with the Contract Documents

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i. The bidder's compliance with federal, state, and local laws, rules, and regulations, including, but not limited to, the prevailing wage law.
j. Depending upon the type of the work, other essential factors.

3. The Bidder shall submit to the Architect a properly executed Contractor's Qualifications Statement, AIA Document A305, and include with the Bid Proposal.
4. The Owner reserves the right to accept any, or all, or any combination of the requested alternates, and accept them in any order as he may deem it to be in his best interest, in determining the lowest responsible bidder.

C. Performance Bond, Payment Bond, and Certificates of Insurance:

1. The successful Bidder shall furnish Performance & Labor and Material Payment Bonds in a penal sum of one hundred percent (100%) of the total amount payable by the terms of the Contract. Such bond shall be in a form and by a bonding company acceptable to the Owner.
2. The successful bidder shall furnish Certificates of Insurance covering Workmen's Compensation, Public Liability, Property Damage and any other which may be required, as stated in Supplementary Conditions.
3. No Contracts can be issued and signed until the Performance & Labor and Material Payment Bonds, and Certificate of Insurance have been furnished to the Owner by the successful bidder.

D. Execution of Contract:

1. The successful bidder shall execute the Contract with the Owner in the Standard AIA Form AIA A101, 2017 ed., in such number of counterparts as the Owner may request.
2. Such Performance & Labor and Material Payment Bonds, and such Certificates of Insurance, will be furnished, and such Contract shall be executed and delivered to the Owner, by the successful bidder, within ten (10) days after he has received notice of the acceptance of his bid.
3. The Contractor shall submit with his bid, in writing, the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work.

a. After submission of this list by the bidder, and after approval by the Owner, and Architect, it shall not be changed unless written approval of change is authorized by the Owner, Architect,

4. The failure of the Awardee to **execute** the Contract and to supply the required bonds when the Agreement is presented for signature, or within such extended period as the Owner may grant, based upon reasons determined adequate by the Owner, shall constitute a default; and the Owner may either award the Contract to the next responsible bidder or re-advertise for bids. In the event of a default, the Owner shall have the right to declare the amount of the bid security forfeited. It shall be a further condition that the Owner not collect more on a defaulted bid than the difference between the defaulted bid amount and the bid of the firm to which the award is made, after giving due weight and consideration to alternatives accepted.

E. Liquidated Damages for Failure to enter into Contract:

1. The successful bidder, upon his refusal to execute and deliver the Contract, Bonds, Certificates and other required documents, within ten (10) days after he has received notice of the acceptance of his bid, shall forfeit, to the Owner as liquidated damage for such failure or refusal, the bid security (5%) deposited with his bid.

1.16 CONTRACTOR'S REQUIREMENTS SPECIFIC TO INDIANA STATE LAW

A. Contractor submitting bids must be qualified by the State Certification Board or the Indiana Department of Transportation on accordance with IC 5-16-13-10© or IC 8-23-10-0.5(d).

B. Contractors shall E-Verify each employee on the project in accordance with IC 22-5-1.7-11.1.

C. Contractors cannot pay employees in cash in accordance with IC 5-16-13-11(2).

D. Contractors shall certify that they are compliant with the federal Fair Labor Standards Act (FLSA); Indiana worker's compensation laws; Indiana self-insurance laws; Indiana unemployment insurance laws; Indiana drug-testing program laws; the Indiana Minimum Wage Law; and Indiana journeyman training programs where applicable. IC § 36-1-12-15(a); IC § 5-16-13-11(3)-(7).

E. Contractors shall certify that they are compliant with antidiscrimination laws. IC § 36-1-12-15(b).

F. Steel Products. Pursuant to IC § 5-22-15-25, steel or foundry products that are to be used or supplied in the performance of this Project or any subcontract related thereto, only steel or foundry products made in the United States shall be used or supplied.

G. The General Prime Contractor shall contribute at least 15% of the contract price in work, materials, services, or any combination thereof. IC § 5-16-13-9.

H. In accordance with IC § 4-13-18-5, Bidder shall submit with the Bid a written plan for a program to test Bidder's employees for drugs. A contractor that is subject to a collective bargaining agreement that establishes an employee drug-testing program shall only submit a copy of the relevant part of the collective bargaining agreement establishing the program. Failure to submit a written plan for an employee drug-testing program, or relevant parts of a collective bargaining agreement establishing an employee drug-testing program shall result in the Bid being rejected as non-responsive.

I. Bidder's employee drug-testing program must satisfy all of the following requirements:

1. In accordance with IC § 4-13-18-5, if Bidder's employee drug-testing program is established by a collective bargaining agreement it shall include the following:

    a. Provides for the random testing of the contractor's employees.
    b. Contains a five (5) drug panel that tests for the following substances:

        1) amphetamines;
        2) cocaine;
        3) opiates (2000 ng/ml);
        4) PCP;
        5) THC;

    c. Imposes disciplinary measures on an employee who fails a drug test which includes at a minimum all of the following:

        1) the employee is subject to suspension or immediate termination;
        2) the employee is not eligible for reinstatement until the employee tests negative on a five-(5)-panel test certified by a medical review officer;
        3) the employee is subject to unscheduled sporadic testing for at least one (1) year after reinstatement; and
        4) the employee successfully completes a rehabilitation program recommended by a substance abuse professional if the employee fails more than one (1) drug test.

2. In accordance with IC § 4-13-18-6, if Bidder has its own employee drug-testing program (which is not included as part of a collective bargaining unit), Bidder's program shall include the following:

    a. Subject each of the contractor's employees to a drug test at least one (1) time each year.

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b. Provide for random employee testing, with at least two percent (2%) of the contractor's employees randomly selected each month for testing.
c. Contain at least a five (5) drug panel that tests for:

1) amphetamines;
2) cocaine;
3) opiates (2000 ng/ml);
4) PCP;
5) THC.

d. Impose progressive discipline on an employee who fails a drug test with at least the following progression:

1) after the first positive test, an employee must be:

a) suspended from work for 30 days;
b) directed to a program of treatment or rehabilitation; and
c) subject to unannounced drug testing for one (1) year from the day the employee returns to work.

2) after a second positive test, an employee must be:

a) suspended from work for 90 days;
b) directed to a program of treatment or rehabilitation; and
c) subject to unannounced drug testing for one (1) year from the day the employee returns to work.

3) after a third or subsequent positive test, an employee must be:

a) suspended from work for one (1) year;
b) directed to a program of treatment or rehabilitation; and
c) subject to unannounced drug testing for one (1) year from the day the employee returns to work.

e. The program may require dismissal of the employee after any positive drug test or other discipline more severe than described above. An employer complies with the requirement to direct an employee to a program of treatment or rehabilitation if the employer either advised the employee of any such program covered by employer-provided insurance, or, if the employer's insurance does not provide insurance coverage, the employer advises the employee of agencies that provide such programs.
f. In accordance with IC § 4-13-18-7, if awarded a contract for the Project, Bidder must implement the employee drug-testing program as described in the plan or collective bargaining agreement. Owner shall cancel the contract with the successful Bidder if it:

1) fails to implement its employee drug-testing program during the term of the contract;
2) fails to provide information regarding implementation of the employee drug-testing program at the request of Owner; or
3) provides Owner with false information regarding the Contractor's employee drug-testing program.

1.17 PUBLIC DISCLOSURE

A. All documentation and submittals provided to Owner may be considered public documents under applicable laws and may be subject to disclosure under the Indiana Access to Public Records Act. By submitting a bid, Bidder recognizes and agrees that Owner will not be responsible or liable in any way for any losses that Bidder may suffer from the lawful disclosure of information or materials to third parties.

B. Owner accepts its legal obligations under IC § 5-14-3-4(a)(4) not to release any public record that constitutes a trade secret. To that end, any material requested to be treated as a confidential document, proprietary information, or trade secret must be clearly identified as such and readily separable from the balance of the bid or proposal. Such designation will not necessarily be conclusive, and Bidder may be required to justify why such material should not, upon written request, be disclosed by Owner under the applicable public records act.

1.18 TIME OF COMMENCEMENT AND COMPLETION

A. The General Prime Contractor shall commence Work for this project and shall complete the Work as established for the project, as follows:

1. Time of Commencement = May 1st, 2024

2. Time of Completion = July 15th, 2025

a. General Prime Contractor (Bidder) shall indicate on the Bid Proposal Form the number of consecutive calendar days required to complete the project. That date will strictly be used to establish the construction schedule and will be used for the Substantial Competition Date for the project. This date also determines the start of the Liquidated Damages Clause date as specified in Section 00 73 00 Supplementary Conditions, Article 9.8.7 in this Project Manual.

END OF SECTION **00 21 13**

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SECTION 00 43 00 - BID PROPOSAL FORM

BID PROPOSAL FORM
(BASE BID SINGLE PRIME CONTRACT)

Bidder
Address
Phone #

SINGLE PRIME BID

To: West Noble School Corporation
5050 N. US Hwy 33
Ligonier, IN 46767

Project: West Noble Weight Room and Stadium Renovation
5094 N US Highway 33
Ligonier, Indiana 46767

I have received and carefully reviewed the Contract Documents prepared by:
Elevatus Architecture
111 East Wayne, Suite 555
Fort Wayne, Indiana.

I have also received Addenda Nos. _____~~(fill-in)~~ and have included their provisions in my Bid Proposal.
I have examined the Documents, Drawings, and the site, and submit the following Proposal, IN DUPLICATE.

In submitting this Proposal, I agree to the following:

A. To hold my bid(s) open for thirty (30) days after receipt of bids.

B. To accept the provisions in the Instructions to Bidders, regarding Bid Security.

C. To enter into and execute a Contract, if awarded on the basis of this Proposal, and to furnish 100% Performance Bond and Labor and Material Payment Bonds in accordance with the Instructions to Bidders.

D. To submit Certificates of Insurance for the coverage specified.

E. To accomplish the Work in accordance with the Contract Documents.

F. This bid includes all allowances identified in the Specification Section 01 21 00 - Allowances

G. To complete the Work covered by this Proposal within ~~*(fill-in)*~~_____(list calendar days) from the date of written order or signing of Agreement with the Owner to proceed with the Work at which work under this Proposal is completed.

BASE BID: I agree to execute the work under the following Base Bid indicated for the lump sum amount given therein.

BASE BID AMOUNT
$_____

(State amount in words) _____

1.2 ALTERNATES - Refer to specification Section 01 23 00 Alternates for complete descriptions of the alternates listed below.

ALTERNATE NO. 1: State the cost to install Resilient Athletic Flooring (RBT-1) and (RBT-2) in lieu of Sealed Concrete (SC-1) in Weights A104.

Add $_____

ALTERNATE NO. 2: State the cost to install Synthetic Turf (TRF-1) in lieu of Sealed Concrete (SC-1) in Track A107.

Add $_____

ALTERNATE NO. 3: State the cost to install Acoustical Panel (AT-1) directly mounted to metal deck in Weights A104 and Track A107 in lieu of leaving deck fully exposed.

Add $_____

1.3 ALLOWANCES - Refer to specification Section 01 21 00 Allowances for complete descriptions of the alternates listed below.

1. Contingency $ 50,000.00

1.4 UNIT PRICES - Refer to specification Section 01 22 00 Unit Prices for complete descriptions of the Unit Prices listed below.

No.	Classifications	Unit	For Additions	For Deductions
1	Machine excavate common earth or clay; deposit and compact within the area	cu.yd.		
2	Remove & stockpile topsoil (max. 1000' Haul)	cu.yd.		
3	Trench Excavation (Backhoe)	cu.yd.		
4	Stone backfill (No. 53 compacted in place) for trenches	cu.yd.		
5	Engineered backfill for undercut or over excavated areas	cu.yd.		
6	Removal of poor soils and replacement with engineered fill	cu.yd.		
7	Over excavation/removal of existing poor soils and replace with lean concrete fill material	cu.yd.		

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LIST OF SUBCONTRACTORS

Concrete subcontractor:	
Concrete Floor Sealer/Densifier/Hardener subcontractor:	
Masonry subcontractor:	
Structural Steel subcontractor:	
Roofing & Flashing subcontractor:	
Builder's Door Hardware subcontractor:	
Glazing, Storefront & Curtain Wall subcontractor:	
Plumbing subcontractor:	
Mechanical subcontractor:	
Electrical subcontractor:	
Site Work subcontractor:	

I have also attached or completed the following required submissions:
5% Bid Security in form of Cashier's Check or Certified Check

(or)

10% Bid Bond in form of AIA A310 Bid Bond or similar from an acceptable surety

AIA A305-2020, Contractor's Qualification Statement

Non-Collusive Certification, which is part of this Bid Proposal Form, is signed, dated and notarized

Use this form if Bidder is Sole Proprietor:

IN TESTIMONY WHEREOF, the Bidder has hereunto set his hand this_____day of _____, 2024

Bidder _____

Address_____

City/State_____

Phone _____

Signature_____

Use this form if Bidder is a Partnership:

IN TESTIMONY WHEREOF, the Bidder (a firm) has hereunto set their hands this_____day of _____, 2024

_____
(Firm Name)

Address_____

City/State_____

Phone _____

Signature_____

(Individual Names)

Signature_____

(Individual Names)

Use this form if Bidder is a Corporation or LLC:

IN TESTIMONY WHEREOF, the Bidder (a Corporation) has caused this proposal to be signed by its President and Secretary, and affixed its corporate seal this _____ day of _____ 2024.

_____
(Name of Corporation)

Address_____

City/State_____

Phone _____

_____
(President)

(C O R P. S E A L)

_____
(typed)

_____
(Secretary)

_____
(typed)

(THIS BID SHALL BE FURNISHED IN DUPLICATE, WITH BOTH COPIES ENCLOSED IN THE SEALED BID ENVELOPE INCLUDING THE NON-COLLUSIVE CERTIFICATION)

NON-COLLUSIVE CERTIFICATION

No bid will be accepted that does not have this form completely executed and notarized.

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, as to its own organization, under penalty of perjury, that to the best of knowledge and belief:

1. The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or any competitor;
2. Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor;
3. No attempt has been made or will be made by the bidder to insure any other person, partnership, or corporation to submit or not to submit a bid for the purpose of restricting competition;
4. The person signing this bid or proposal certifies that he has fully informed himself regarding the accuracy of the statements contained in this certification, and under the penalties of perjury, affirms the truth thereof, such penalties being applicable to the bidder as well as to the person signing in its behalf.
5. That attached hereto (if corporate bidder) is a certified copy of resolution authorizing the execution of this certificate by the signature of this bid or proposal in behalf of the corporation bidder.

_____
(Individual)

_____
(Corporation)

Date: By:

This Non-Collusive Bidding Certificate must be submitted with the Bid.

Notary;

Notarized and witnessed this day _____, 2024.

END OF BID PROPOSAL FORM

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SECTION 00 73 00 - SUPPLEMENTARY CONDITIONS

SUPPLEMENTARY CONDITIONS

The following supplements modify, change, delete from, or add to the "General Conditions of the Contract for Construction," AIA Document A201-2017 edition. Where an Article of the General Conditions is modified or a Paragraph, Subparagraph, or a Clause thereof is modified or deleted by these supplements, the unaltered provisions of that Article, Paragraph, Subparagraph, or Clause shall remain in effect.

ARTICLE 1 - GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 Add the following sentence to the end of this Subparagraph to read as follows:

"…The Contract Documents will also include Lien Waiver, Partial Waiver, Advertisement to Bidders, Instructions to Bidders, Addenda and its attachments, and any other documents specifically agreed by the parties to be included in the Contract Documents. Bonds as covered in the Instructions to Bidders shall be considered a part of the Contract Documents. Submittals and shop drawings are not part of the Contract Documents."

1.1.3 (Add the following sentence to the end of the Subparagraph) "…The Contractor acknowledges and agrees that the Contract Documents are sufficient to provide for the completion of the Work and include Work, whether or not shown or described, which reasonably may be inferred to be required or useful for the completion of the Work in accordance with applicable laws, codes, and customary standards of the construction industry."

1.1.9 (Add the following) MISCELLANEOUS DEFINITIONS

.1 The term "product" as use herein includes materials, systems, and equipment.

.2 The term "supplier" as used herein, includes a firm or organization furnishing or delivering products directly to the jobsite, and because of such direct delivery, could be construed under the lien laws of the State in which the work is being performed as having lien rights against the funds due the Contractor. Suppliers of material and equipment, delivering to Contractor or Subcontractor on an open account basis and not having lien rights on the Work, will not be considered suppliers within the meaning of the Contract Documents.

.3 A bidder selected to enter into a Contract with the Owner for Work included under the bidder's proposal is termed an "Awardee," until such time as he is awarded a Contract and becomes the Contractor.

.4 Where "complete" is used, it shall mean "complete with connections, supports, attachments and incidental items necessary for a finished and properly operating assembly or installation."

.5 Where "drawing" is used, it shall mean plans and detail drawings, both large and small scale, furnished by the Architect and Engineer for the purpose of showing the Work to be done.

.6 The term "furnish" - to supply (only) to another party for their use of installation, including cost of delivery and unloading at the jobsite.

.7 The term "install" - to distribute, uncrate, assemble, and fix into the intended final positions, the installer to provide all miscellaneous hardware and supplies required to anchor and support securely, clean-up, and dispose of rubbish.

.8 The term "connect" - to bring service(s) to point of installation and make final connections to the service(s) to the installed equipment, and to provide miscellaneous auxiliary appurtenances necessary to make operable for its intended use.

.9 The term "provide" - to furnish, install, and connect complete.

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.10 The term "or equal" means an equal approved in writing by the Architect at least 10 days prior to bid receipt and listed in an Addendum.

.11 The term "Contractor" refers to the Prime Contractor or General Prime Contractor that has the direct contract with the Owner. Any person providing work on the Project other than the Prime Contractor is a "Subcontractor."

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

1.2.4 (Add) "If there should be a conflict between two or more of the Contract Documents, the following order of interpretation shall apply:

.1 The terms and conditions as set forth in the Bidding Requirements, including legal advertisement thereof, shall have full force and effect until such time as the Standard Form of Agreement between Owner and Contractor is executed between the Owner and the Awardee.

.2 Where there is a conflict between the Bidding Requirements and the Contract Documents, the Contract Documents shall govern.

.3 Where requirements specifically set forth in AIA A101, 2017 ed., Standard Form of Agreement Between Owner and Contractor are in conflict, AIA A201, 2017 ed., General Conditions of the Contract for Construction shall govern.

.4 Where there is conflict between the requirements of the General Conditions of the Contract and the Supplementary Conditions, the requirements of the Supplementary Conditions shall govern, except where the requirements set forth in the Supplementary Conditions are contrary to law, in which case the legal requirements shall govern. The General Conditions of the Contract shall take precedence over other Contract Documents.

.5 Where there is conflict between the Drawings and Specifications and conflict within the Drawings or within the Specifications, the conflict, where applicable, shall be resolved by providing better quality or greater quantity as provided in the Supplementary Conditions, Clause 3.2.4 as defined by the Architect."

1.2.5 (Add) "It is the intent of the Contract Documents to accomplish a complete and first-grade installation in which there shall be installed new products of the latest and best design and manufacturer, and workmanship shall be thoroughly first class, executed by competent and experienced workmen.

.1 Details of preparation, construction, installation, and finishing encompassed by the Contract Documents shall conform to the best practices of the respective trades, and that workmanship, construction methods, shall be of first class quality so as to accomplish a neat and first class finished job.

.2 Where specific recognized standards are mentioned in the Specifications, it shall be interpreted that such requirements shall be complied with.

.3 The intent of the Contract Documents is to include all labor, equipment, and materials necessary for the proper and timely execution and completion of the Work, even though such labor, equipment, materials are not expressly included in the Contract Documents.

.4 The Contract Documents are complimentary, and what is required by one will be as binding as if required by all.

.5 The Prime Contractor will be required to perform all parts of the Work, regardless of whether the parts of the Work are described in Sections of the Contract Documents applicable to other trades."

ARTICLE 2: OWNER

2.4 OWNER'S RIGHT TO STOP THE WORK

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2.4.1 (Add the following text to the end of the Subparagraph) "…This right shall be in addition to, and not in limitation of, the Owner's rights under Paragraph 13.4."

PART 3: CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.5 (Add) "Where there is a conflict in or between the Drawings and Specifications, the Contractor shall be deemed to have estimated on the more expensive way of doing the Work and the larger quantity required. Only changes or interpretations covered by Addenda or written from the Architect will be permitted during construction of the Work. The Contractor shall perform no portion of the Work at any time without Contract Documents or where required, received Shop Drawings, Product Data, or Samples for such portion of the Work."

3.2.6 (Add) "Before ordering material or performing any Work, the contractor shall verify all measurements at the Project site. Any differences between dimensions on the Drawings and actual measurements shall be brought to the Architect's attention for consideration before the Work proceeds. Where actual measurements require more material and work than the Drawings call for, such material and Work shall be supplied at the cost of the Contractor. No extra compensation will be allowed because of difference between actual measurements and dimensions indicated on the Drawings. The Contractor shall assume full responsibility for accuracy of measurements obtained at the work site."

3.2.7 (Add) "Mechanical and Electrical Drawings are diagrammatic only. Actual work involved shall be installed from received Shop Drawings with all measurements obtained at the Project Site by the Contractor."

3.2.8 (Add) "Dimensions which are lacking from the Drawings shall be obtained from the Architect or field verified. In no case will the Contractor assume that the Drawings are scaled."

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.1 (Add last sentence) "Additional provisions pertaining to coordination are included in Division 01, General Requirements."

3.5 WARRANTY

3.5.1 (Add) "In addition to any other warranties, guarantees, or obligations set forth in the Contract Documents or applicable as a matter of law and not in limitation of the terms of the Contract Documents, the Contractor warrants and guarantees that:

.1 The Owner will have good title to the Work and materials and equipment incorporated into the Work will be new.

.2 The Work and materials and equipment incorporated into the Work will be free from defects, including defects in the workmanship or materials.

.3 The Work and equipment incorporated into the Work will be fit for the purpose for which they are intended.

.4 The Work and materials and equipment incorporated into the Work will be merchantable.

.5 The Work and materials and equipment incorporated into the Work will conform in all respects to the Contract Documents."

3.5.2 (Add) "The Contractor shall, upon completion of the Work, assign to the Owner all warranties obtained or obtainable by, the Contractor from manufacturers and suppliers of equipment and materials incorporated into the Work by written instrument of assignment in a form acceptable to the Owner."

3.5.3 (Add) "The Contractor warrants and represents to the Owner that the Drawings and Specifications for the Work are suitable and adapted for said Work and guarantees the sufficiency of said Drawings and Specifications for their intended purpose and agrees that it will perform said construction work and complete

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same to the entire satisfaction of the Owner and Architect."

3.5.4 (Add) "In addition to all of Contractor's warranties and obligations to correct defective Work provided by law or as set forth in any of the Contract Documents, the Contractor agrees, upon notice from Owner or Architect, immediately to repair, restore, correct and cure, at Contractor's expense, all defects and omissions in workmanship and materials and all failures to comply with the Contract Documents which appear within one (1) year from the Date of Substantial Completion. Contractor shall pay for, and if requested, correct, repair, restore and cure any damage or injury, whenever the same shall occur or appear, resulting from any defects, omissions or failure in workmanship and materials, and indemnify, hold harmless, and defend Owner against any and all claims, losses, costs, damages and expenses, including attorney's fees, suffered by Owner as a result of such damage or injury, whenever such damage or injury shall occur or appear."

3.5.5 (Add) "The foregoing guarantees and warranties shall not shorten any longer warranty or liability period provided for by law or in the plans, drawings or specifications or otherwise received from Contractor or any subcontractor, material supplier or manufacturer of Contractor nor supersede the terms of any liability for defective Work, but shall be in addition thereto, and shall be in addition to all manufacturers and factory warranties."

~~3.6 Replace with the following:~~

~~3.6 TAXES~~

~~3.6.1 (add) No public corporation may award any contract for the construction unless the public corporation has verified with the Department of Revenue that the contractor has a contractor's tax license pursuant to SDCL 5-18B-17~~.

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

3.12.11 (Add) "Refer to Section 01 33 00 - Submittals, for additional provisions on this subject."

3.13 USE OF SITE

3.13.1 (Add) "Refer to Section 01 33 00 Submittals, for provisions on this subject."

3.19 (Add the following) NON-INTERFERENCE

3.19.1 (Add) "The Contractor shall perform Work so as not to interfere with the Owner's ongoing activities and so as not to create any hazards to the Owner's employees or members of the public using the Owner's property."

ARTICLE 4: ARCHITECT

4.1 GENERAL

4.1.3 (Add) "…The term "Architect," "Architect/Engineer," or "Engineer" as used herein means the Architect or his authorized representative."

4.2 ADMINISTRATION OF THE CONTRACT

4.2.2.1 (add) "The Architect will visit the site for observation twenty-four (24) times during the construction period, assuming one (1) visit every thirty (30) days."

4.2.2.2 (add) "The Architect will provide two (2) inspections for any portion of the Work to determine such portion is Substantially Complete."

4.2.2.3 (add) "The Architect will provide two (2) inspections for any portion of the Work to determine Final Completion."

4.2.4 Delete the last sentence in its entirety.

4.2.7 Delete this Subparagraph in its entirety. Refer to Specification Section 01 33 00 - Submittals, for provisions on the subject. References to subparagraph 4.2.7 elsewhere in the Contact Documents shall read as referring to that Section in the Specifications.

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4.2.11 (Add to the end of the first sentence) “...referring specifically to this Subparagraph 4.2.11."

ARTICLE 5: SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTORS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.1 (Delete the first sentence of this Subparagraph and substitute the following) "The Contractor shall furnish to the Architect in writing the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work, in accordance with the requirements under Specification Section 01 33 00, Submittals, in a form acceptable to the Architect, for review by the Owner and the Architect.”

5.2.4 (Add the following sentence at the end of this Subparagraph) "…The Owner may require the Contractor to change a Subcontractor or Sub-subcontractor previously approved, and, if at such time the Contractor is not in default under this Agreement, the Contract sum shall be increased or decreased by the difference in the cost resulting from the change.”

5.3 SUBCONTRACTUAL RELATIONS

5.3.1 (Add) ... "Not withstanding the provisions of Subparagraph 5.3.1, any part of the Work performed for the Contractor by a Subcontractor or its Sub-subcontractor shall be pursuant to a written Subcontract between the Contractor and such Subcontractor (or the Subcontractor and its Sub-subcontractor at any tier). Architect will assume no responsibility for reviewing, monitoring, or verifying activities or relationships involving a Subcontractor or its Sub-subcontractor."

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

6.1.5 (Add) "Refer to Specification Section 01 11 00 - Summary of the Work, for provisions concerning the administrative responsibilities of the Prime Contractor."

6.2 MUTUAL RESPONSIBILITY

6.2.6 (Add) "If any such other Contractor initiates legal or other proceedings against the Owner on account of damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor, who shall defend such proceedings at its own expense, by counsel reasonably acceptable to the Owner, and if judgment or award against the Owner arises therefrom, the Contractor shall pay or satisfy it and shall reimburse the Owner for attorneys' fees and court or other costs which the Owner has incurred over and above those paid for directly by the Contractor."

ARTICLE 7: CHANGES IN THE WORK

7.2 CHANGE ORDERS

7.2.2 (Replace with the following) "Methods used in determining adjustments to the Contract Sum shall be those listed in Subparagraph 7.3.3."

ARTICLE 8: TIME

8.1 DEFINITIONS

8.1.2 (Delete and replace with the following) "The date of commencement of the Work is the effective date established in the Agreement or the date established in the Notice to Proceed given by the Owner or Architect."

8.3 DELAYS AND EXTENSION OF TIME

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8.3.1 (Delete and replace with the following) "If the Contractor is delayed at any time in its progress of the Work by one of the delays for which an extension of time is permitted and gives the Architect written notice specifically describing the delay within 48 hours of its commencement, the date for the Substantial Completion of the Work will be extended by Change Order for such reasonable time as the Architect may determine. The failure to give such notice will constitute an irrevocable waiver of the contractor's right to seek an extension of the time for completion will be delays caused by the i) Architect, or the Owner, ii) physical damage to the Project over which the Contractor has no control, iii) labor disputes beyond the control of the Contractor, and iv) unusually severe weather conditions not reasonably anticipated (temperature, rain, or other precipitation within a range of twenty percent (20%) of normal amounts for the time of the year covered by the Agreement shall not be considered unusually severe weather conditions). Extensions of time will only be granted pursuant to the procedures for Change Orders set forth in the General Conditions. The Contractor agrees not to make claims for compensation for delays or acceleration in the performance of the Work resulting from acts or failure to act by the Owner, the Architect, or the employees, agents, or representatives of the Owner, or the Architect and agrees that such claim shall be fully compensated by an extension of time to complete the Work, regardless of when granted."

8.3.4 (Add) "If in the opinion of the Architect the Work is behind where it is supposed to be in the Project Time Schedule or it is likely that the Work will not be substantially complete by the applicable date for Substantial Completion, the Contractor upon written notice from the Architect and without additional cost or compensation will increase its work force and, if requested by the Architect, work such overtime to make up for the delay. Should the Contractor fail to increase its work force, work overtime, or proceed to make up for the delay to the satisfaction of the Architect or the Owner, the Architect or the Owner, in addition to other remedies under this Agreement and other Contract Documents, will have the right to cause other Contractors to work overtime and to take whatever other action is deemed necessary to avoid delay in the Substantial Completion of the Work and of the Project, and the cost and expense of such overtime and other action will be borne by the Contractor and may be set off against sums due the Contractor

ARTICLE 9: PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Delete this Paragraph in its entirety. Refer to Specification Section 01 33 00 Submittals, for provisions on this subject. References to Paragraph 9.2 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 Delete this Subparagraph, Clauses 9.3.1.1 and 9.3.1.2, and substitute the following) "Applications for payment shall be made at approximately 30 day intervals in accordance with the dates established in the Standard Form of Agreement Between Owner and Contractor. At least 15 days before each progress payments falls due, the Contractor shall submit to the Architect, in quintuplet, an itemized Application for Payment, supported by such data sustaining the Contractor's right to payment as the Owner, or the Architect may require. The form of Application for Payment shall be AIA Document G702 - Application and Certification for Payment, supported by AIA Document G703 - Continuation Sheet. No other forms of Application for Payment will be acceptable. Continuation Sheet G703 shall be prepared the same as in the Schedule of Values submitted by the Contractor. Contractor's payment will be made within thirty (30) days after the Contractor's payment application is approved by the Architect. The Contractor will only be paid as described in the Owner-Contractor Agreement.

9.3.1.1 (Add) "Contractor shall submit with each monthly Application for Payment, 1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the previous Application, was submitted and the Owner or his property might in any way be responsible, have been paid or otherwise satisfied, and 2) release or waivers of liens arising out of the Contract from each Subcontractor, materialmen, supplier, and laborer of the Contractor in the form of Partial Lien Waiver provided with the Contract Documents or such other form as may be approved by the Architect and Owner.

9.3.2 (To this Subparagraph, add the following) "Payment to Contractor for materials stored off site is discouraged. Where circumstances indicate that the Owner's best interest is served by off-site storage, the Contractor shall

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make written request to the Architect for approval to include such material costs in his next progress payment. The Contractor's request shall include the following information:

.1 A list of the fabricated materials consigned to the project (which shall be clearly identified), giving the place of storage, together with copies of invoices and reasons why materials cannot be delivered to the site.

.2 Certification that items have been tagged for delivery to the project and that they will not be used for another purpose.

.3 A letter from the Bonding Company indicating agreement to the arrangements and that payment to the Contractor shall not relieve either party or their responsibility to complete the facility.

.4 Evidence of adequate insurance covering the material in storage, which shall name the Owner as additionally insured.

.5 Costs incurred by the Architect to inspect material in off-site storage shall be paid by the Contractor.

.6 Subsequent pay requests shall itemize the materials and their cost which were approved on previous pay requests and remain in off-site storage

9.3.3 (Replace with the following) "The Contractor warrants the title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment and is free and clear of all liens and encumbrances. The Contractor will indemnify the Owner and the Owner's property from any liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors or their Sub-subcontractors, regardless of tier, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials, equipment, services or supplies relating to the Work, and from all cost and expenses, including attorneys' and consultants' fees incurred by the Owner in evaluating or defending against such liens, claims, security interests or encumbrances.

9.3.4 (Add) "Partial payments to the Contractor for labor performed under either a unit or lump sum price Contract shall be made at the rate of 95 percent (95%) of the Contract Sum.

.1 When the payment is made on account of materials or equipment not yet incorporated into the Project, such materials and equipment will become the property of the Owner; provided that if such materials or equipment are stolen, destroyed, or damaged before being fully incorporated into the Project, the Contractor will be required to replace them at its own expense, if not covered by builder’s risk policy.

9.3.5 (Add) "Partial or full payment to the Contractor(s) for material, equipment, or work in place shall not start the warranty period, refer to Division 1, Specification Section 01 60 00."

~~9.3.6 (Add) “Progress payments, retention of funds from final payment and interest shall comply with SDCL 5-18B-11 in all respects.”~~

9.4 CERTIFICATES FOR PAYMENT

9.4.1 (Change text) ... "seven days" ... to read ... "fifteen days".

9.5 DECISIONS TO WITHHOLD CERTIFICATION

9.5.1 (Delete Clauses .1 through .7 and replace with the following)

.1 The Contractor is in default of the performance of any of its obligations under the Contract Documents, including, but not limited to: failure to provide sufficient skilled workers; work, including equipment or materials, which is defective or otherwise does not conform to the Contract Documents; failure to conform to the Project Time Schedule; or failure to follow the directions of or instructions from the Architect or Owner.

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.2 The Contractor is in default of the performance of any of its obligations under another Contract, which it has with the Owner.

.3 The filing of the third party claims or reasonable evidence that third party claims have been or will be filed.

.4 The Work has not proceeded to the extent set forth in the Application for Payment.

.5 Representations made by the Contractor are untrue.

.6 The failure of the Contractor to make payments to its Subcontractors, materialmen, or laborers.

.7 Damage to the Owner's property or the property of another Contractor or person.

.8 The determination by the Architect that there is a substantial possibility that the Work cannot be completed for the unpaid balance of the Contract Sum.

.9 Liens filed or reasonable evidence indicating the probable filing of such liens with respect to the Project.

9.5.4 (Add) "Contractor's application for a payment shall reflect an equal percentage amount (within 2-3 percent) for labor and materials for Work completed. The Architect may adjust applications where labor exceeds materials or where materials exceed labor quantities in the Work completed columns."

9.5.5 (Add) "If the Contractor disputes a determination by the Architect with regard to Certificate of Payment, and during any related dispute resolution, litigation, or other proceeding, the Contractor nevertheless shall continue to execute the Work as described in the Contract Documents."

9.7 FAILURE OF PAYMENT

9.7 (Change text) Each time "seven" appears in this Subparagraph, replace with "fourteen".

9.8 SUBSTANTIAL COMPLETION

9.8.1 (After ... "Contract Documents" ... insert the following) "...and when all required occupancy permits, if any, have been issued…"

9.8.2 (Add the following at the end of this Subparagraph) "…The time fixed by the Architect for the completion of all items on the list accompanying the Certificate of Substantial Completion shall not be greater than 30 days. The Contractor shall complete items on the list within such 30 day period. If the Contractor fails to do so, the Owner in its discretion may perform the Work by itself or others and the cost thereof shall be charged against the Contractor. If more than one inspection by the Architect for the purpose of evaluating corrected work is required by the subject list of items to be completed or corrected, it will be performed at the Contractor's expense.

.1 At the time the Architect commences the Substantial Completion Inspection, if the Architect discovers excessive additional items requiring completion or correction, the Architect may decline to continue the inspection, instructing the Contractor as to the general classification of deficiencies which must be corrected before the Architect will resume the Substantial Completion Inspection. If the Contractor fails to pursue the Work so as to make it ready for Substantial Completion Inspection in a timely fashion, the Architect shall, after notifying the Contractor, conduct inspections and develop a list of items to be completed or corrected. This list of items shall be furnished to the Contractor who shall proceed to correct such items within 7 days. The Architect will conduct additional inspections. The Architect will involve the Owner for 1) The cost of inspections between the termination of the initial Substantial Completion Inspection and the commencement of the satisfactory Substantial Completion Inspection, 2) The cost of inspection or review after the 7 day period established for the completion of the list by the Contractor. The Contractor shall reimburse the Owner for such cost, and the Owner may offset the amounts payable to the Architect for such services from the amounts due the Contractor under the Contract Documents."

9.8.6 (Add) "The Contractor shall fully complete all Work under its Contract within thirty (30) days of receiving a

Certificate of Substantial Completion with attached list of items required to be completed or corrected. Failure to do so may serve as cause for the Owner to declare the Contractor in default and terminate the Contractor pursuant to Paragraph 14.2 of these Supplementary General Conditions."

9.8.7 (Add) "If Substantial Completion is not achieved within the allowable contract time, the contractor is subject to liquidated damages of $500 per calendar day, excluding federally or state recognized holidays, for the first 14 days past the allowable contract time. For each subsequent calendar day beyond the 14th day, the contractor is subject to liquidated damages of $1,000.00 per calendar day, excluding federally or state recognized holidays. In total, Liquidated Damages shall be limited to a total of $50,000.00. Contractor shall not be held liable or required to pay liquidated damages if the substantial completion date cannot be achieved because of schedule failure caused by an owner's separate contractor or design team, or because of unforeseen supply chain delays and issues out of the control of the contractor, the contractor shall not be required to compensate the owner for liquidated damages."

9.9 PARTIAL OCCUPANCY OR USE

9.9.4 (Add) "Agreements as to the acceptance of the Work not complying with the requirements of the Contract Documents shall be in writing."

~~9.9.5 (Add) "Occupancy before completion and acceptance shall comply with SDCL 5-18B-13.~~

9.10 FINAL COMPLETION AND FINAL PAYMENT

9.10.2 (Add the following to the end of this Subparagraph) "…The Contractor shall furnish such evidence as may be necessary to show that any out-of-state subcontractor or supplier has fully met the requirements of payment of taxes as established in any law of the State or local subdivision thereof which may be in effect at the time of final payment. The Owner will require the submission of such proof or evidence before final payment will be approved or made. The following must be submitted to the Architect before approval of final payment:

.1 Affidavit of payment as required under this Paragraph shall be in the form of AIA Document G706 - Contractor's Affidavit of Payment of Debt and Claims.

.2 Consent of Surety as required under this Paragraph shall be in the form of AIA Document G707 - Consent of Surety Company to Final Payment.

.3 Submit certification stating that no materials containing asbestos were incorporated into the Work."

.4 Submit certification that all punch list items have been completed."

9.10.3 (Add the following to the end of this Subparagraph) "…Final Payment, constituting the unpaid balance of the Contract Sum, shall be paid to the Contractor in full, including retainage or escrowed principal and escrowed income by the escrow agent, no less than 61 days following the date of Substantial Completion. If at that time there are remaining uncompleted items, an amount equal to 200 percent of the value of each item as determined by the Architect shall be withheld until said items are completed, and a Final Certificate of Payment issued by the Architect."

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.2 (Add) "In the event the Contractor encounters on the site material reasonably believed to the asbestos or polychlorinated biphenyl (PCB), which results in exposure after the use of any permissible personal protective equipment that exceeds limits established by the Governmental agencies having jurisdiction over exposure to asbestos or PCB, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner in writing. Thereafter, the Contractor shall not resume Work until such time testing of the affected area by a qualified consultant hired by the owner confirms that exposure after the use of any permissible personal protective equipment is within permissible limits.

10.2 SAFETY OF PERSONS AND PROPERTY

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10.2.1 After "take" in line 1 of this subparagraph add "all".

10.4 EMERGENCIES

10.4.1 (Add) "Nothing in this paragraph shall be construed as relieving the Contractor from the cost and responsibility for emergencies covered hereby, which with normal diligence, planning, and the close supervision of the Work as required under the Contract, could have been foreseen or prevented. The General Contractor shall provide the Owner and Architect a list of names and telephone numbers of the designated employees for each Subcontractor to be contacted in case of emergency during non-working hours. A copy of the list will also be displayed on the jobsite."

ARTICLE 11: INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 (First line following the word “maintain”, modify as follows): “… in a company or companies with ratings of no less than A- as determined by A.M. Best Company licensed to do business in the jurisdiction in which the project is located and to which the Owner has no reasonable objection …”

11.1.2 (Add the following Clauses) "The Contractor's Insurance required by subparagraph 11.1.1 shall be written for not less than the following, or greater if required by law:

.1 Workers' Compensation:

a. State: Statutory

b. Applicable Federal (e.g., Longshoremen's): Statutory

c. Employer's Liability: Statutory

.2 Commercial General Liability Insurance, including Contractual Liability Insurance against the liability assumed hereinabove, and including Contractors' Protective Liability Insurance if the Contractor sublets to another all or any portion of the Work, with the following minimum limits:

Bodily injury (including death) and property damage with a combined single limit of $1,000,000.00.

.3 Comprehensive Automobile Liability Insurance covering any auto used in connection with the Work, with the following minimum limits:

Bodily injury (including death) and property damage with a combined single limit of $2,000,000.00.

"The Contractor shall maintain the foregoing coverage for not less than one (1) year after the Date of Substantial Completion. The foregoing policy limits may be provided in conjunction with an umbrella policy." The following shall be listed as additional insured:

.1 The Owner, its employees and staff.
.2 The Architect, its employees, its consultants and their employees.

"The Contractors Commercial Liability insurance shall be written on an occurrence basis."

11.1.3 (Add the following to the end of this subparagraph) "Within two (2) business days of a request from the Owner or the Architect, the Contractor will provide the Owner with true copies of any insurance policies under which the coverages required herein are provided. Certificates of Insurance shall be submitted on the latest edition of AIA Form G705 or Accord form as acceptable to the Architect.”

11.1.5 (Add) Contractor's commercial general liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:

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.1 Premises-Operations (including X-C/U as applicable).
.2 Independent Contractors' Protective.
.3 Products and Completed Operations.
.4 Personal Injury Liability, coverages A, B, and C, with Fellow Employee Exclusion deleted.
.5 Contractual - including specified provision for Contractor's obligations under Paragraph 3.18.
.6 Owned, non-owned and hired motor vehicles.
.7 Broad Form Property Damage including Completed Operations.
.8 Stopgap liability for $100,000.00 limit.

11.1.6 (Add) "The Contractor shall require all Subcontractors to provide Workers' Compensation. Comprehensive General Liability, and Automobile Liability Insurance with the same minimum limits specified herein."

11.1.7 (Add) “The General Prime Contractor shall provide Builder’s Risk insurance.”

11.3 PROPERTY INSURANCE

11.3.1 (Delete the phrase "without optional deductibles" at the end of the first sentence in this subparagraph. Add the following at the end of this subparagraph): "The amount of any self insurance or deductible will not exceed $1,000.00 without the written approval of the Contractor."

11.3.1.1 (Add sub-subparagraph)

".1 The property insurance purchased by the Owner shall be in the form as indicated and provide such coverage as selected by the Owner. The Owner will make the policy available for inspection and copying by the Contractor. This insurance is not intended and will not cover machinery, tools, and equipment which will not be a permanent part of the project. The Contractor shall bear the entire risk of loss with respect to such machinery, tools, and equipment.

11.3.1.3 (Add) "The Contractor shall be responsible for any minimum deductible or self insurance up to $1,000.00 per claim. Above such limit, the Owner shall be responsible.

11.3.1.4 Delete

11.3.6 (Delete first sentence and replace with the following) "The Owner shall maintain copies of the insurance it is required to purchase and maintain hereunder at its offices and shall permit the Architect or the Contractor to inspect the policies during normal business hours and upon reasonable advance written notice…”

11.3.9 (After "reach" in third sentence delete the remainder of this sentence and replace with the following) ..."or if the Parties are unable to reach agreement, by litigation in the Court of Competent Jurisdiction."

11.3.10 Delete the last sentence

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.2 CORRECTION OF WORK

12.2.1 (Replace this Subparagraph with the following) "Within 48 hours after written notices from the Architect, or the Owner (except such period shall be 7 days when notice is given after final payment) that the work does not conform to the Contract Documents, or immediately upon oral notice, if the nonconformance constitutes a threat to the safety of persons or property, the Contractor, without waiting for the resolution of disputes that may exist i) shall commence to correct such nonconformance, ii) shall thereafter use its best efforts to where an extension of time is granted in writing by the Owner, shall complete necessary corrections so that the nonconformance is eliminated to the satisfaction of the Architect, and the Owner within 7 days of such notice. The Contractor shall bear all costs of correcting the nonconformance, including additional testing and inspections and additional service fees of the Architect. The notice provided for in this Subparagraph 12.2.1 may be given at any time. It is the intent that the obligations under this Subparagraph 12.2.1 shall continue to apply after final completion and final payment."

12.2.6 (Add) "If the Contractor fails to correct nonconforming Work as provided in Subparagraph 12.2, the Owner may correct it in accordance with Paragraph 2.4. If the Subcontractor does not proceed with correction of such

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nonconforming Work as provided in Subparagraph 12.2.1, the Owner may remove it and store the salvageable materials or equipment at the Contractor's expense." ...

12.3 ACCEPTANCE OF NONCONFORMING WORK

12.3 (Add the following sentence to the end of this subparagraph) "…The acceptance of nonconforming Work by the Owner shall be by written Change Order, signed by the Owner's authorized representative. No person has authority to accept nonconforming work except pursuant to such written Change Order."

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.4 TESTS AND INSPECTIONS

13.4.1.1 (Add) "Refer to Specification Section 01 45 00 - Quality Control and Testing Laboratory Services for additional provisions on this subject."

13.4.4 (Delete this Subparagraph in its entirety and replace with the following) "Certificates of inspection, testing, or approval, as required by Paragraphs 13.5.1 or 13.5.2, shall be secured by the Contractor using an independent agency, subject to the approval of the Architect, and Owner. The independent agency shall complete field work, testing, and prepare the test reports, logs, and certificates promptly; and deliver the required number of copies directly to the Architect."

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

14.1 (Delete Subparagraphs 14.1.1., 14.1.2, and 14.1.3 and replace the following)

14.1.1 “Events of Default; each of the following constitutes an event of default of the Contractor:

.1 The failure of the Contractor to perform its obligation under the Contract Documents or under the Contract Documents pertaining to other agreement which the Contractor may have with the Owner and to proceed to commence to correct such failure within 48 hours after written notice thereof from the Owner, or the Architect or such lesser time as is provided in the Contract Documents, or ii) thereafter to use its best efforts to correct such failure to the satisfaction of the Owner, or, iii) except where an extension of time is granted in writing by the Owner, to correct such failure within 30 days after written notice thereof.

.2 The failure of the Contractor to pay its obligations as they become due, or the insolvency of the Contractor.”

14.1.2 “Owner's Remedies; upon the occurrences of an event of default the Owner will have the following remedies, which will be cumulative:

.1 To order the Contractor to stop the Work or part of it, in which case the Contractor will do so immediately;

.2 To perform through others all or part of the Work remaining to be done and to deduct the cost thereof from the unpaid of the Contract Price;

.3 To terminate this Agreement and take possession, for the purpose of completing the Work or part of if, materials, equipment, scaffolds, tools, appliances, and other items belonging to or possessed by the Contractor, of which the Contractor hereby transfers and assigns to the Owner for such purpose, and to employ a person or persons to complete the Work, including the Contractor's employees, and the Contractor will not be entitled to receive further payment until the Work is completed;

.4 Other remedies which the Owner may have at law or in equity or otherwise under the Contract Documents.”

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14.1.3 "Payments Due Contractor: If the unpaid balance of the Contract Sum exceeds the cost of finishing the Work, including compensation of the Architect's additional services and costs, expenses, or damages incurred by the Owner as a result of the event of default, including attorney's fees and the administrative expensive of the Owner's staff, such excess will be paid by the Contractor. If such costs exceed the unpaid balance, the Contractor will pay the difference to the Owner. The amounts to be paid by the Owner or the Contractor will be certified by the Architect, and such certification will be final determination of the amount owed, except for sums coming due thereafter. The obligations under this Subparagraph will survive the termination of this Agreement."

14.2 TERMINATION BY THE OWNER FOR CAUSE

14.2.1 (Replace with the following) "The Contract may be terminated by the Owner in whole or in part without cause and for its convenience on three (3) days written notice to the Contractor. In the event of such termination for convenience, the Contractor shall be compensated for that portion of the contract sum earned to the date of termination, but Owner shall not be liable for any additional or other consequential damages. Such entitlement of Contractor shall constitute Contractor's sole and exclusive remedy and recover, and in no event shall the Contractor be entitled to recover anticipated profits and overhead on unperformed Work by reason of such termination for convenience."

14.2.5 (Add) "Owner shall have the right to terminate the Contract at any time upon three (3) days' written notice to contractor in the event Owner is unable to obtain or maintain financing for the portion of the Work as yet un-financed or uncompleted. Owner shall be obligated to pay Contractor that portion of the Contract Sum earned to the date of termination, but Owner shall not be liable for any additional or other consequential damages."

14.2.6 (Add) "The occurrence of any labor dispute, work stoppage, strike (including sympathetic strike), slow down, picketing, or any other activity directly or indirectly attributable to Contractor's employees, either caused by them or resulting from their employment on the Project which interrupts, interferes with or delays the Work of Contractor or other separate contractors shall constitute a breach of Contract. In such event, the Owner shall have the right, in addition to any other rights and remedies provided by this Contract or the Contract Documents, or by law, following two (2) days' written notice to the Contractor, to terminate this Contract or any part thereof for all or any portion of the Work, and for purpose of completing the Work, to enter upon the premises and take possession in the same manner, to the same extent, and upon the same terms and conditions as set forth in Subparagraph 14.2.3."

14.2.7 (Add) "If termination of the Contract is effectuated by Owner for cause resulting from Contractor's failing to substantially perform in accordance with the terms of the Contract, and it is subsequently found or determined in legal proceedings that the Contractor was not in substantial breach of the Contract by failure to perform in accordance with its terms, or that such failure was caused through fault of the Owner, then such termination shall be deemed to be a termination for convenience pursuant to Subparagraph 14.2.1, and the Contractor's remedy and recovery as against the Owner shall, in such case, be limited to the payments provided by such Subparagraph 14.2.1."

14.2.8 (Add) "With fixed and agreed liquidated damages provided in the Contract, if the Owner terminates for cause the Contractor's right to proceed, the resulting damage to the Owner will consist of such liquidated damages until such reasonable time as may be required for final completion of the Work, together with any increased cost and expenses, including attorneys' fees, occasioned or incurred by Owner in completing the Work."

ARTICLE 15: CLAIMS AND DISPUTES

15.1.1 (Add to the end of Subparagraph 15.1.1) "…The Contractor shall not knowingly (as "knowingly" is defined in the Federal False Claims Act, 31 USC Section 3729 et seq.) present or cause to be presented a false or fraudulent Claim. As a condition precedent to making a Claim, the claim shall be accompanied by an affidavit sworn to before a notary public or other person authorized to administer oaths in the State of Indiana, Noble County and executed by an authorized representative of the Contractor, which states that:

"The Claim which is submitted herewith complies with Subparagraph 15.1.1 of the Supplementary Conditions, which provides that the Contractor shall not knowingly present or cause to be a false or fraudulent Claim."

15.3.2 Delete this Paragraph and all subparagraphs in their entirety

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15.4 Delete this Paragraph and all subparagraphs in their entirety

ARTICLE 16: (Add the following) EQUAL OPPORTUNITY

16.1 POLICIES OF EMPLOYMENT

16.1.1 The Contractor shall not discriminate against employee or applicant for employment because of race, religion, color, sex, or national origin. The Contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices forth the policies of non-discrimination.

16.1.2 The Contractor shall in solicitations or advertisements for employees placed by them or on their behalf, state that qualified applicants will receive consideration without regard to race, religion, color, sex, or national origin.

END OF SECTION 00 73 00

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SECTION 01 22 00 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

A. Measurement and payment criteria applicable to the work performed under a unit price payment method.

B. Defect assessment and nonpayment for rejected work.

C. Submit completed Unit Price Sheet, Section 00 43 22, with the Bid Proposal Form.

1.2 AUTHORITY

A. The Owner and Architect will verify measurements and quantities.

1.3 UNIT PRICES REQUESTED

A. The following unit prices will be added to (or deducted from) the Base Bid amount.

Classifications	Unit	For Additions	For Deductions
Machine excavate common earth or clay; deposit and compact within the area	cu.yd.		
Remove & stockpile topsoil (max. 1000' Haul)	cu.yd.		
Trench Excavation (Backhoe)	cu.yd.		
Stone backfill (No. 53 compacted in place) for trenches	cu.yd.		
Engineered backfill for undercut or over excavated areas	cu.yd.		
Standard Type I Manhole/ L.F. of Depth with casting	L.F.		
Standard Type I Inlets with casting	each		
Concrete Curbs	L.F.		
Seeding and Mulching	acre		
Removal of poor soils and replacement with engineered fill	cu.yd.		
Over excavation/removal of existing poor soils and replace with lean concrete fill material	cu.yd.		

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~~B. Refer to additional Kitchen Equipment unit prices in Division 0. Submit those unit prices in addition to the unit prices defined in this Section of the specifications.~~

1.4 PAYMENT

A. Payment includes compensation for required labor, products, materials, tools, equipment, plant, transportation, application and installation of the work; overhead and profit.

B. Final payment for work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Architect multiplied by the unit price for work.

1.5 DEFECT ASSESSMENT

A. Immediately replace the work not conforming to specified requirements and as directed by the Architect and Owner.

B. It is the authority of the Architect and Owner to assess the defect and identify payment adjustment.

1.6 NONPAYMENT FOR REJECTED PRODUCTS

A. Payment will not be made for any of the following:

1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after payment.
3. Products not completely unloaded from the transportation vehicle.
4. Products placed beyond the lines and levels of the required work.
5. Products remaining at site after completion of work.
6. Loading, hauling and disposing of rejected products.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with requirements of referenced specification sections for the product.

B. Install all items in strict accordance with the manufacturers written installation instructions.

END OF SECTION **01 22 00**

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 GENERAL

A. Alternates allow the Owner to compare total costs where alternative materials and methods might be used, certain alternatives have been established as described in this Section of these Specifications.

B. Required alternatives are worded briefly. Claims for additional compensation will not be granted because of manifest omissions or discrepancies due to the brevity. Pertinent Sections of these Specifications describe the materials and methods required under the various alternatives.

C. Each bidder shall submit with his proposal in the space provided on the Bid Proposal Form alternative proposals stating the additions or deductions from the base bid lump sum amount for substituting, omitting, adding, changing, or altering materials, equipment, or construction from that shown on the Drawings or specified.

D. The difference in cost shall include omissions, changes, alterations, additions, and adjustments of trades as may be necessary because of each addition, substitution, omission, change, or alteration.

E. If the Owner elects to proceed on the basis of one or more of the alternatives, make modifications to the Work required in the furnishing and installation of the selected alternative or alternatives to the approval of the Architect and at no additional cost to the Owner other than as proposed on the Bid Proposal Form.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for Alternates.

B. Definition: An Alternate is an amount proposed by Bidders and stated on the Bid Form for certain construction activities defined in the Bidding Requirements that may be added to or deducted from Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems or installation methods described in Contract Documents.

C. Coordination: Coordinate related Work and modify or adjust adjacent Work as necessary to ensure that Work affected by each accepted Alternate is complete and fully integrated into the project.

D. Notification: Immediately following the award of the Contract, prepare and distribute to each party involved, notification of the status of each Alternate. Indicate whether Alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to Alternates.

1.3 SUMMARY OF REQUESTED ALTERNATES

A. ALTERNATE NO. 1:

1. State the cost to provide and install Resilient Athletic Flooring (RBT-1) and (RBT-2) in lieu of Sealed Concrete (SC-1) in Weights A105~~A104~~. Install as indicated on sheet A-141Aa. Provide and install all items and accessories as required for a complete installation in every respect.

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B. ALTERNATE NO. 2:

1. State the cost to provide and install Synthetic Turf (TRF-1) in lieu of Sealed Concrete (SC-1) in Track ~~A107~~A108. Install as indicated on sheet A-141Aa. Provide and install all items and accessories as required for a complete installation in every respect.

C. ALTERNATE NO. 3:

1. State the cost to provide and install Acoustical Panel (AT-1) directly mounted to metal deck in Weights ~~A104~~ A105 and Track ~~A107~~ A108 in lieu of leaving deck fully exposed. Install as indicated on sheet A-121A. Provide and install all items and accessories as required for a complete installation in every respect.

PART 2 - EXECUTION

2.1 EXECUTION

A. Install in accordance with specification Sections and drawing notes and structural sheets. Provide all items and accessories as required for complete installation in every respect.

END OF SECTION 01 23 00

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Section 01 60 00 "Product, Materials, and Equipment ~~Requirements~~" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles at least ten (10) days prior to bid due date.

1. Substitution Request Form: Use form that is part of web-based Project management software or Substitution Request Form included in this document. ~~acceptable to Architect~~.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

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e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
i. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
j. Cost information, including a proposal of change, if any, in the Contract Sum.
k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within (7) seven days of receipt of request,

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.

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f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00

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SECTION 01 31 13 - PROJECT COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:

1. Coordination.
2. Administrative and supervisory personnel.
3. General installation provisions.
4. Cleaning and protection.

B. Progress meetings, coordination meetings and pre-installation conferences are included in Section 01 31 19, Project Meetings.

C. Requirements for the [General Prime Contractor's][~~Constuction Manager's~~] Construction Schedule are included in Section 01 33 00, Submittals.

1.3 COORDINATION

A. Coordination: [General Prime Contractor][~~Constuction Manager~~] shall coordinate construction activities included under all Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.

1. 1. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
2. 2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
3. 3. Make adequate provisions to accommodate items scheduled for later installation.

B. Where necessary, [General Prime Contractor][~~Constuction Manager~~] shall prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

C. Administrative Procedures: [General Prime Contractor][~~Constuction Manager~~] shall coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules.
2. Installation and removal of temporary facilities.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Project Close-out activities.

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D. Conservation: [General Prime Contractor][~~Constuction Manager~~] shall coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.4 SUBMITTALS

A. Coordination Drawings: [General Prime Contractor][~~Constuction Manager~~] shall prepare and submit coordination Drawings where close and careful coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space availability necessitates maximum utilization of space for efficient installation of different components, and as may be directed or requested by the Architect.

1. Show the interrelationship of components shown on separate Shop Drawings.
2. Indicate required installation sequences.
3. Comply with requirements contained in Section 01 33 00, Submittals.
4. Coordination Drawings are to be submitted and are required for the following items:

a. ~~a.~~ All above ceiling construction including HVAC, FP, Plumbing and Electrical Work.
b. ~~b.~~ All below-slab construction including Plumbing, Electrical and Security Electronics.
c. ~~c.~~ Refer to Section 01 31 19 project Meetings for additional requirements.

B. Staff Names: Within 15 days of Notice to Proceed or signing of Agreement, submit a list of the General Prime Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.

1.5 INDEMNIFICATION

A. [General Prime Contractor][~~Constuction Manager~~] shall request, from Architect, an Indemnification form for any CAD or BIM files required by subcontractors to coordinate and perform their required duties and responsibilites.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.

C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.

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E. Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.

F. Recheck measurements and dimensions, before starting each installation.

G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

I. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

3.2 CLEANING AND PROTECTION

A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration before or at Substantial Completion.

B. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

C. Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading.
2. Excessive internal or external pressures.
3. Excessively high or low temperatures.
4. Thermal shock.
5. Excessively high or low humidity.
6. Air contamination or pollution.
7. Water or ice.
8. Solvents.
9. Chemicals.
10. Light.
11. Radiation.
12. Puncture.
13. Abrasion.
14. Heavy traffic.
15. Soiling, staining and corrosion.
16. Bacteria.
17. Rodent and insect infestation.
18. Combustion.
19. Electrical current.
20. High speed operation,
21. Improper lubrication,
22. Unusual wear or other misuse.
23. Contact between incompatible materials.
24. Destructive testing.
25. Misalignment.
26. Excessive weathering.
27. Unprotected storage.
28. Improper shipping or handling.
29. Theft.

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30. Vandalism.
31. Mold.
32. Mildew.

D. Refer to Section 01 74 13 for additional construction cleaning requirements.

END OF SECTION 01 31 13

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SECTION 01 31 19 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for project meetings including but not limited to:

1. Pre-Construction Meeting
2. Pre-Installation Meetings
3. Coordination Meetings.
4. Progress Meetings.

B. Construction schedules are specified in Section 01 33 00 Submittals.

1.3 PRE-CONSTRUCTION MEETING

A. The Architect and General Prime Contractor shall schedule a pre-construction meeting and organizational meeting at the Project site or other designated location no later than 15 days after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.

B. Attendees: The Owner, Architect and their consultants, the Contractor and its superintendent, subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the meeting by persons familiar with and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance that could affect progress including such topics as:

1. Tentative construction schedule.
2. Critical Work sequencing.
3. Designation of responsible personnel.
4. Procedures for processing field decisions and Change Orders.
5. Procedures for processing Applications for Payment.
6. Distribution of Contract Documents.
7. Submittal of Shop Drawings, Product Data and Samples.
8. Preparation of record documents.
9. Use of the premises.
    a. Owner's requirements.
10. Office, Work and storage areas.
11. Equipment deliveries and priorities.
12. Safety procedures.
13. First aid.
14. Security.
15. Housekeeping.
16. Working hours.
17. Review Site Map of work areas, storage, parking, etc…

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1.4 PRE-INSTALLATION MEETINGS

A. The General Prime Contractor shall conduct a pre-installation meeting at the site before each construction activity that requires coordination with other construction or as specified in the technical specifications herein. The Installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Architect of scheduled meeting dates.

1. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation meeting, including requirements for:

a. Contract Documents.
b. Options.
c. Related Change Orders.
d. Purchases
e. Deliveries.
f. Shop Drawings, Product Data and quality control Samples.
g. Possible conflicts.
h. Compatibility problems.
i. Time schedules.
j. Weather limitations.
k. Manufacturer's recommendations.
l. Compatibility of materials.
m. Acceptability of substrates.
n. Temporary facilities.
o. Space and access limitations.
p. Governing regulations.
q. Safety.
r. Inspection and testing requirements.
s. Required performance results.
t. Recording requirements.
u. Protection.

B. Record significant discussions and agreements and disagreements of each meeting, along with the approved schedule. Distribute the record of the meeting to everyone concerned, promptly, including the Owner and Architect.

C. Do not proceed if the meeting cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the meeting at the earliest feasible date.

D. Preinstallation Meetings or conferences are required for the following Work as specified herein:

1. 03 30 00 - Cast-In-Place Concrete
2. 03 35 00 - Concrete Floor Sealer/Densifier/Hardener
3. 07 26 10 - Underslab Vapor Retarder
~~4. 05 50 10 - Detention Metal Fabrications (for pre-manufactured steel bulkheads)~~
~~5. 07 27 26 - Glass-Mat Sheathing Board with Integral Fluid-Applied Air & Water Barrier~~
~~6.~~4. 07 27 29 - Air Barrier Coatings
~~7.~~5. 07 42 10 - Singe Pass Continuous Insulation Wall Cladding Support System
~~8. 07 42 42 - Composite Fiber Cement Board Siding~~
~~9.~~6. 07 54 ~~10~~ 00 - Full Adhered ~~EPDM~~ TPO Sheet Roofing
~~10.~~7. 07 92 00 - Sealants and Caulking
~~11.~~8. 08 41 13 - Aluminum Framed Entrances and Storefronts
~~12. 08 44 00 - Glazed Curtain Wall~~
~~13. 09 30 00 - Tile~~
~~14.~~9. 09 67 00 - Resinous Floor Coating
~~15.~~10. 09 68 1300 - ~~Carpet Tile~~Tile Carpeting
~~16. 09 69 00 - Access Flooring~~
~~17.~~11. 09 91 00 - Painting

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~~18. 09 96 11 - High Performance Coatings~~
~~19. 11 19 05 - Detention Equipment Contractor/General Provisions for Detention Work~~
~~20. 11 19 08 - Security Glazing~~
~~21. 11 19 13 - Detention Equipment Furnishings and Accessories~~
~~22. 11 19 15 - Detention Steel Doors and Frames~~
~~23. 11 19 50 - Security Ceiling Assemblies~~
~~24. 11 19 53 - Detention Door Hardware~~
~~25. 13 42 64 - Pre-Engineered Steel Detention Modules~~
~~26.~~12. Refer to Divisions 21, 22, 23, 26, 27, 28, 31, 32, and 33 for pre-installation meeting requirements.

1.5 COORDINATION MEETINGS

A. The General Prime Contractor ~~(or) Construction Manager~~ shall conduct Project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings. Coordination Meetings will be as required by the GC or as requested by the Architect , or as specified.

B. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.

C. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

D. Coordination Meetings are specifically required for the following:

1. All above ceiling construction including HVAC, FP, Plumbing and Electrical Work.
2. All below-slab construction including ~~Plumbing,~~Plumbing and ~~–~~Electrical ~~and Security Electronics~~.
~~3. 05 50 10 - Detention Metal Fabrications (for pre-manufactured steel bulkheads)~~
~~4.~~3. 09 51 00 - Acoustical Ceilings
~~5. 11 19 05 - Detention Equipment Contractor/General Provisions for Detention Work~~
~~6. 11 19 15 - Detention Steel Doors and Frames~~
~~7. 11 19 50 - Security Ceiling Assemblies~~
~~8. 11 19 53 - Detention Door Hardware~~
~~9. 13 42 64 - Pre-Engineered Steel Detention Modules~~
~~10.~~4. Refer to Divisions 21, 22, 23, 26, 27, 28, 31, 32, and 33 for coordination meeting requirements.

1.6 PROGRESS MEETINGS

A. The General Prime Contractor shall conduct progress meetings at the Project site at regularly scheduled intervals. Notify the Owner and Architect of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request. Progress Meetings will be as a minimum, bi-weekly for the duration of construction~~. as required by the GC or as requested by the Architec~~t.

B. Attendees: In addition to representatives of the Owner and Architect, each Contractor, subcontractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress

C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the Project.

1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
2. Review the present and future needs of each entity present, including such items as:

    a. Interface requirements.
    b. Time.
    c. Sequences.
    d. Deliveries.
    e. Off-site fabrication problems.
    f. Access.
    g. Site utilization.
    h. Temporary facilities and services.
    i. Hours of Work.
    j. Hazards and risks.
    k. Housekeeping.
    l. Quality and Work standards.
    m. Change Orders.
    n. Documentation of information for payment requests.

D. Reporting: No later than 3 days after each progress meeting date, the General Prime Contractor shall distribute copies of minutes of the meeting minutes to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

1. Schedule Updating: Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION **01 31 19**

SECTION 01 33 00 - SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section shall be included as a part of the Contract Documents on this Project.

B. Shop drawings and submittals are not part of the Contract Documents.

1.2 SUBMITTAL PROCEDURES

A. General Prime Contractor shall utilize Web-Based Project Software.

B. Submittals, including those specified herein shall be submitted directly to the Architect for his review. General Prime Contractor shall forward required submittals to the Architect for review.

~~*(The following is optional until procedures are in place.)*~~

1. **General Prime Contractor shall submit shop drawings in electronic format.** Shop drawings or data submitted electronically to be in ~~Acrobat Reader~~ PDF format. Coordinate with Architect prior to submitting. ALL submittals shall be submitted in pdf format unless requested otherwise.

    a. General Prime Contractor shall utilize Web-Based Project Software with tracking capabilities.

2. MSDS and SDS sheets are not submittals. The Architect is not responsible for reviewing MSDS or SDS sheets and their chemical information for products. Do not submit these items. The Architect will reject all submittals and product data with the MSDS or SDS sheets attached to the submittals. Refer to Article 1.4 herein for directions about MSDS and SDS sheets.

C. General Prime Contractor shall provide submittals in accordance with the requirements of this Section and as specified in the individual technical specification sections.

D. Where submission of shop drawings, or other items are required from suppliers, it shall be the responsibility of the General Prime Contractor to see that the submittal items required are complete and properly submitted, and corrected and resubmitted at the time and in the order required so as not to delay the progress of the Work.

1. SUBMISSION OF SUBMITTALS WITHOUT THE REQUIRED INFORMATION WILL BE REJECTED AND RETURNED.

E. The General Prime Contractor shall check shop drawings, samples, and other submittals and submit them to the ***(or)***Architect with a letter of transmittal giving approval, comments, and suggestions. Each transmittal shall include the following information:

1. Date Submitted.
2. Project title and number.
3. General Prime Contractor's name and address.
4. **Identification by Specification Section and quantity submitted for each submittal including name of manufacturer, and supplier.**
5. Notification of deviations from the Contract Documents for each submittal. (if any, and reason explaining why)

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6. General Prime Contractor's written approval marked on each submittal. If General Prime Contractor's submittals are not stamped and reviewed by the General Prime Contractor prior to submitting for review, submittals will be sent back to the General Prime Contractor.

F. The General Prime Contractor shall prepare, review, and stamp with his approval and submit, with reasonable promptness or within the specified time periods and in orderly sequence so as to cause no delay in the Work or in the Work of another General Prime Contractor, submittals required by these Contract Documents or subsequently required by modifications.

1. If the product is not as specified or approved by Addenda, it will be rejected by the Architect. General Prime Contractor shall not make submittals if the product manufacturer is not specified or listed in the Addenda. This will delay the submittal process and the General Prime Contractor shall assume full responsibility for any delays caused by unapproved manufacturer submittals.

G. The Architect shall review and take action on submittals with reasonable promptness, so as to cause no delay in the progress. A reasonable period of time for review of and action taken on submittals shall be as specified herein, but in no case shall it be more than 10 calendar days from the time it is received by the Architect until the time the submittal is marked and forwarded or returned.

H. The same submittal will only be reviewed a maximum of two (2) times. If the same submittal is not correct within the two (2) submittal limit for the same item, the General Prime Contractor will be charged for the additional reviews required. The Architect's additional time will be issued by deduct Change Order.

I. Identification of Submittals: Submittals, including re-submittals, shall be numbered with a Submittal Number. The Submittal Number shall consist of the applicable specification section number followed by a prefix number in consecutive order starting with ie: 1-02 41 13 Selective Demolition. Additional submittals for the same specification section are to be numbered consecutively 1.1-Selective Demolition, etc.. The form of Submittals Numbers shall be as per example above.

1.3 SUBMITTAL SCHEDULE

A. General Prime Contractor shall submit a Submittal Schedule to the Architect no later than ten (10) business days after Notice to Proceed or signing of the Agreement. No payment applications will be processed until the Architect is in receipt of the Submittal Schedule.

B. Submittal Schedule: Submit a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.

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c. Submittal Category: Action; informational.
d. Name of subcontractor.
e. Description of the Work covered.
f. Scheduled date for Architect's [and Construction Manager's] final release or approval.

C. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of General Prime Contractor
5. Name of Subcontractor.
6. Name of firm or entity that prepared submittal.
7. Names of manufacturer, and supplier.
8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
9. Category and type of submittal.
10. Submittal purpose and description.
11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
12. Drawing number and detail references, as appropriate.
13. Indication of full or partial submittal.
14. Location(s) where product is to be installed, as appropriate.
15. Other necessary identification.
16. Remarks.
17. Signature of transmitter.

D. Options: Identify options requiring selection by Architect.

E. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect[and Construction Manager] on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

F. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

G. ALL submittals shall utilize web-based Project Software: Prepare submittals as PDF files or other format indicated by Project management software.

1.4 SUBMITTAL PEOCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project management software website. Enter required data in web-based software site to fully identify submittal.
2. Software shall have tracking capability.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.

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3. Submit action submittals and informational submittals required by the same Specification Section all included in one (1) submittal package as required by each specification section.
4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect and General Prime Contractor reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow ten (10) business days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect or General Prime Contractor will advise contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow ten (10) business days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect, Architect's consultants, Owner, or other parties is indicated, allow fifteen (15) business days for initial review of each submittal.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal. Submittals will only be reviewed a maximum of two (2) times.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's and General Prime Contractors action stamp.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.5 ARCHITECT'S AND GENERAL PRIME CONTRACTOR'S REVIEW

A. Submittals: Architect and General Prime Contractor will review each submittal, indicate corrections or revisions required, and return.

1. All submittals shall be by Web-Based Project Management Software: Architect will indicate, on Project management software website, the appropriate action.

B. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

C. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

D. Architect and General Prime Contractor will return without review submittals received from sources other than General Prime Contractor.

E. Submittals not required by the Contract Documents will be returned by Architect without action.

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1.6 REQUIRED SUBMITTALS

A. The General Prime Contractor shall be aware of the required dates that shop drawings are to be submitted for approval and the critical date for delivery. Dates submitted for shop drawings and samples shall be realistic and be coordinated with the Progress Schedule for critical dates that affect the progress of construction.

B. Construction Schedules

1. Construction Schedule and a Submittal Schedule shall be submitted to the Architect at least 10 calendar days prior to start of Work.

C. Schedule of Values

1. General Prime Contractor shall prepare and submit to the Architect a Schedule of Values for approval within 5 days after notice is given to proceed with Work. The Schedule of Values shall consist of a complete breakdown of the General Prime Contractor's contract sum showing the various items of the Work, divided so as to facilitate the approval of payments to the General Prime Contractor for Work completed. The Schedule of Values shall be prepared on AIA Document G703, Continuation Sheet, showing the breakdown of items of Work and supported by such data to substantiate its correctness as the Architect may require.
2. The contract breakdown shall be the same form as that to be used in submitting request for payments as covered by Article 9.3, Applications for Payment, of the General and Supplementary Conditions. Each item of work shall have indicated a separate cost for labor and material. This schedule when approved by the Architect shall be used as the basis of approving payments along with establishing percentages of Work complete.
3. Schedule of Values shall be coordinated with the Construction Schedules such that the percentages of Work completed closely relates to the values for the Work shown on the request for payments. At the beginning of the Project, each General Prime Contractor shall prepare a schedule of monthly progress payments showing the amount the General Prime Contractor may require for the Work proposed to be completed. The purpose of this schedule is to allow the Owner to determine what amounts of funds he will be required to have available each month during the progress of construction for progress payments.

D. Project Use Site Plan

1. The General Prime Contractor shall prepare a proposed project use of the site plan.
2. Contractors shall confine operations at the site to areas within the areas indicated and as approved on the use of the site plan, and as permitted by law, ordinances, and permits. Site shall not be unreasonably encumbered with materials, products, or construction equipment.
3. Submit Project use site plan to the Architect within 5 days after Notice to Proceed OR 10 days prior to occupation of site.

E. Shop Drawings and Product Data

1. Shop drawings are drawings, diagrams illustrations, schedules, performance charts, brochures, and other data which are prepared by the General Prime Contractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

    a. Advertising brochures will not be accepted as shop drawings.
    b. Shop drawings shall repeat the identification shown on the Contract Drawings.

2. Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the General Prime Contractor to illustrate a material, product, or system for some portion of the Work.

    a. Clearly mark each copy to identify pertinent materials.
    b. Show dimensions and clearance required.
    c. Show performance and characteristics and capacities.

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d. Note variances from the Contract Documents including manufacturer's recommended changes to sequencing and to piping and control diagrams.

3. Preparation of Submittals: Provide permanent marking on each submittal to identify project, date, General Prime Contractor, submittal name, and similar information to distinguish it from other submittals. Show General Prime Contractor's executed review and approval marking and provide space for Architect's "Action" marking. Package each submittal appropriately for transmittal and handling. Submittals which are received from sources other than through the General Prime Contractor will be returned "without action", which does not mean approval.
4. By approving and submitting shop drawings, the General Prime Contractor thereby represents that he has determined and verified field measurements, field construction criteria, materials, catalog numbers, and similar data, and that he has checked and coordinated each shop drawing with the requirements of the Work and of the Contract Documents prior to submitting to the Architect.
5. The General Prime Contractor shall make corrections required by the Architect and shall resubmit the required number of corrected copies of shop drawings until approved. The General Prime Contractor shall direct specific attention in writing or on resubmitted shop drawings to revisions other than the corrections requested by the Architect on previous submissions.
6. The Architect will review shop drawings with the information given in the Contract Documents.
7. The Architect's review of shop drawings shall not relieve the General Prime Contractor of responsibility for any deviation from the requirements or the Contract Documents unless the General Prime Contractor has informed the Architect in writing of such deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall the Architect's action relieve the General Prime Contractor from responsibility for errors or omissions in the shop drawings.
8. Notations and remarks added to shop drawings by the Architect are to insure compliance to Drawings and Specifications and do not imply a requested or approved change to contract cost.
9. Should deviations, discrepancies, or conflicts between shop and contract drawings and Specifications be discovered, either prior to or after review, Contract Documents shall control and be followed.
10. Shop drawings will be marked as follows: General Prime Contractor shall take the following action for each respective marking:

    a. "REVIEWED AND RELEASED" - Copies will be distributed as indicated under above schedule.
    b. "REVIEWED AND RELEASED WITH CORRECTIONS" - General Prime Contractor may proceed with fabrication, taking into account the necessary corrections. Corrected shop drawings shall be resubmitted before fabrication of this Work is completed.
    c. "REJECTED" - Not enough information has been sent. General Prime Contractor will be required to resubmit shop drawings in their entirety.
    d. "REVISE AND RESUBMIT" - General Prime Contractor will be required to resubmit shop drawings in their entirety. No fabrication or installation shall be started until shop drawings so marked have been completely revised, resubmitted, and marked by Architect according to preceding Paragraphs 1. or 2.
    e. "REFER TO NOTES BELOW" - Refer to the notes below on this Shop Drawing Review stamp for any special instructions from the Architect. ~~***(use on existing remodel projects, or verify use with Project Architect.)***~~

F. List of A.I.A. Documents (General Prime Contractors Source)

1. The following documents are required in the Project Manual to be furnished and executed by the General Prime Contractor and submitted to the Architect at various stages of the Project Work. Refer to Supplementary Conditions and Division 01 for additional requirements.

    a. G702 - Application and Certification for Payment
    b. G703 - Continuation Sheet
    c. G705 - Certificate of Insurance
    d. G706 - General Prime Contractor's Affidavit of Payment of Debt and Claims

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e. G706A - General Prime Contractor's Affidavit of Release of Liens
f. G707 - Consent of Surety Company to Final Payment, if required
g. G707A - Consent of Surety to Reduction in or Partial Release of Retainage, if required.

2. Special documents, if required, will be furnished by the Architect.

G. The work shall be furnished and installed in accordance with the Drawings, Specifications and as additionally required by the manufacturer's instructions, and where a conflict occurs between the Drawings or Specifications and the manufacturer's instructions, the General Prime Contractor shall request clarification from the Architect prior to commencing the work and shall follow the interpretations given by the Architect. In most cases, manufacturers written installation instructions take precedence over the Project Manual for installation procedures. Obtain clarification from Architect as previously stated herein.

1.7 MATERIAL SAFETY DATA SHEETS

A. In compliance with the OSHA Hazard Communication Standard (1910.1200, 08-24-1987) General Prime Contractors are required to have on the site, MSDS (Material Safety Data Sheets) for ALL products classified as hazardous that their firm has knowledge that they will be furnishing, using, or storing on the jobsite during the duration of this Project. MSDS sheets are not part of the shop drawing review process.

1. The General Prime Contractor at completion of the Work shall provide the Owner with the MSDS sheets for the hazardous products used on the Project site during construction.

PART 2 - PRODUCTS (NOT USED).

PART 3 - EXECUTION (NOT USED).

END OF SECTION **01 33 00**

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SECTION 01 50 00 - TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 REFERENCE

A. All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.

1.2 GENERAL

A. General Prime Contractor shall furnish labor, materials, tools, equipment, and services for temporary facilities as specified herein, including maintenance and their subsequent removal, in accordance with provisions of the contract Documents and as required for the progress and completion of the Project.

B. Pay applicable costs unless specifically stated otherwise.

C. General Prime Contractor shall coordinate temporary facilities work with the subcontractors, other trades and the Owner. Rerouting or relocation expenses shall be paid by the responsible contractor doing the Work if the temporary work has not been coordinated with other trades and the Owner. Routing or relocations of temporary facilities shall also be reviewed by the Architect and Owner before installation.

D. Provide, maintain, and remove supplementary or miscellaneous item, appurtenances, and devices incidental to, or necessary for, a sound, secure, and complete installation.

E. General Prime Contractor shall provide and maintain temporary facilities as required for the progress and completion of his contract except as otherwise noted.

F. Repair, as required, work that has been interfered with or damaged as a result of temporary facilities work.

G. The cost for repair of temporary facilities due to abuse or misuse of said facilities by other contractors will be the financial responsibility of the responsible contractor that abused or misused that temporary facility.

H. Provide every protection to temporary facilities as required.

I. General Prime Contractor or subcontractor requiring one of the temporary services before it can be provided as specified, or whose requirements with respect to a particular service differ from the service specified, shall provide such service as suits his needs as his own expense and in a manner satisfactory to the Architect.

1. NOTE: Temporary services will not commence until that Contractor responsible for such temporary services start their field work and place the temporary services into operation.

J. Temporary facilities are to be maintained and kept in good operating condition. Maintenance personnel necessary to perform this Work shall be provided. Maintenance work and repair shall be done in a timely manner causing minimal interference to other trades.

K. Temporary services shall be placed into operations by Contractor in an expedient manner as required by job conditions.

L. Additional costs for providing temporary services beyond the time period provided, shall be at the expense of that contractor requiring that extended service time period.

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M. Provide and maintain temporary facilities in compliance with governing rules, regulations, codes, ordinances, and laws of agencies and utility companies having jurisdiction over work involved in project.

N. Each Contractor is responsible for temporary work provided, and shall obtain necessary permits and inspections for such work.

O. Do not interfere with normal use of roads in vicinity of project site except as authorized by the City of Ligonier Street Department and all other authorities having jurisdiction.

P. Each Contractor shall provide at his own expense, normal weather protection as required to carry on his work expeditiously during inclement weather and to protect his work and materials form damage by the weather unless stated otherwise herein.

1.3 TEMPORARY FIELD OFFICES OF GENERAL CONTRACTOR

A. The General Contractor shall provide his own field office for his staff and for Architect and his staff, for their exclusive use on the project site.

1. General Contractor shall coordinate location of field office with Owner and Architect

B. Contractor's Field Office - Each Contractor

1. As jobsite space allows and as approved by General Contractor, each Subcontractor if required, may provide a secure office of sufficient size and facilities to accommodate his field personnel, storage of field documents, layout space for Drawings and a computer for production of as-built drawings.
2. Costs associated with Contractor's field office are the responsibility of the applicable Contractor.

C. Sheds: Each Contractor shall provide watertight trailers as required for his work for storage of materials subject to weather damage, vandalism, or theft, including lockable doors and floors above the ground.

1.4 CONSTRUCTION PLANT

A. Each Contractor is to provide all items such as cranes, hoists, and other lifting devices; scaffolding, staging, platforms, runways, and ladders; temporary flooring as required for the proper execution of his Work.

1. Scaffolding and ladders must meet OSHA requirements.
2. No aluminum ladders are permitted.

B. Provide such equipment with proper guys, bracing, guards, railing, and other safety devices as required by governing authority and safety standards.

C. Each Contractor shall provide, maintain and remove suitable means of travel between floor levels of building, including exterior grade levels and to all roof levels for his use until permanent stair systems are installed.

1.5 SIGNS

A. The General Contractor shall provide one 8 foot by 8 foot painted wood sign conforming to the Drawing provided by the Architect.

1. Obtain and pay for sign permit.

~~2. Erect sign prior to starting construction work.~~
~~3. Use 1/2 inch exterior grade plywood with 2 by 4 inch framing.~~

~~a. Paint face of sign white.~~
~~b. Paint edges and back of sign red.~~
~~c. Text to be determined.~~

~~B. No other signs will be permitted.~~

~~1.6~~1.5 TEMPORARY UTILITIES

A. General

1. Codes and Standards

a. National Electric Code (ANSI C1).
b. National Electric Safety Code.
c. National Fire Protection Association Pamphlet.
d. Federal and State Requirements.
e. Utility Company Regulations.
f. OSHA

2. Permanently Enclosed

a. "Permanently Enclosed" shall mean that permanent exterior walls and roofs ar in place and weathertight, windows are in place and glazed, and all entrance enclosures are either permanently in place or are provided with suitable temporary enclosures. The Architect shall determine when the building is permanently enclosed.
b. "Partially Enclosed" shall mean that permanent exterior walls (excluding caulking) and concrete floor(s) or roof is in place; windows are temporarily sealed; and entrances are temporarily sealed off. The Architect shall determine when the building or partial building is partially enclosed.

B. Each Contractor shall provide at his own expense, weather protection as required to carry on his work expeditiously during inclement weather and to protect his work and materials from damage by the weather unless stated otherwise herein.

C. Description of Temporary Systems

1. Temporary Electricity - Electrical Contractor

a. The Electrical Contractor is to provide temporary electric service as detailed below.
b. The Electrical Contractor shall comply with NEC and OSHA.
c. Each Contractor and subcontractor shall provide their own grounded, UL listed extension cords and other accessories to point of operation.
d. Contractors and subcontractors who require primary power, secondary power centers, or service connections in excess of the specified minimum shall make arrangements with the Electrical Contractor and pay costs thereof.
e. Refer to additional requirements specified in this Section.

2. Temporary Lighting - Electrical Contractor

a. Safety Lighting: Provide safety lighting in all construction areas and temporary walkways at all times.
b. Lamps shall be covered with safety guard or deeply recessed in reflector. Do not suspend by their electrical cords unless cord and fixture are designed for that purpose.
c. Circuits for power are to be separate from circuits used for lighting.

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d. Refer to additional requirements specified in this Section.

3. Temporary Water - Each Contractor

a. For construction purposes:

1) Each Contractor and subcontractor shall supply adequate water hoses from hose bibbs to point of his operations.
2) Provide protection against freezing of the temporary water system.
3) The temporary water service shall be removed when directed by the Architect.

b. Maintain adequate volume of water for required purposes.
c. Each Contractor and subcontractor is to provide drinking water and ice for his own forces.

4. Temporary Toilets - General Contractor

a. Provide and maintain temporary toilet facilities, including toilet paper for the use of all workmen and authorized parties throughout construction period.
b. Provide the following minimum number of approved enclosed combination toilet and urinal units for construction personnel:

1) For less than 20 employees: 1
2) For 20 or more employees: 2 per 40 workers.
3) Computation of men and women present included men and women of all Contractors.

c. Location

1) Within the project site.
2) Secluded from public observation.

d. Moving of portable chemical toilets for installation, cleaning, and removal shall be done during normal working hours.

5. Temporary Fire Protection - Each Contractor

a. Each Contractor shall provide, maintain, and perform protection and prevention of fire or fire hazards during the construction period for the protection of construction materials and personnel in accordance with Owner's Underwriter's recommendation, laws, and regulations. This includes but is not limited to, fire extinguishers, special signs, and removal of combustible materials.

D. Cost of Installation, Operation and Maintenance

1. Designated Contractor to provide and maintain specified temporary utilities until date of Substantial Completion unless otherwise indicated. pay costs of installation, operation and maintenance of temporary utilities.

a. Temporary Lighting: Electrical Contractor.
b. Temporary Toilets: General Contractor.
c. Temporary Fire Protection: All Contractors.

E. Cost of Utility Consumption

1. Designated Contractor responsible for costs of consumables for temporary utilities unless otherwise indicated.

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a. Temporary Electricity - Electrical Energy: By Owner.
b. Temporary Water - Water and Sewage: By Owner
c. Temporary Telephone: Telephone (by Contractor).

F. Monitor Temporary Utilities

1. Parties designated to provide a temporary utility shall be responsible for damage to his Work or to that of other Contractors caused by a defect in such utility.

a. Enforce compliance with applicable codes and standards.
b. Enforce safe practices.
c. Prevent abuse of services and utilities.
d. Prevent damage to finishes.

2. Do not allow wasteful use of consumables.

G. Use of Permanent Systems for Construction Purposes

1. Obtain prior written authorization for use of systems from Owner and Architect. Indicate the following:

a. Conditions and reasons for use.
b. Provisions relating to equipment warranties.

2. Modify and extend system as necessary to meet temporary utility requirements.
3. Upon completion of Work, or when required by the Architect, restore permanent system to specified condition prior to Substantial Completion.

a. Replace burned out or defective lamps (Electrical Contractor).
b. Repair or restore damaged parts or components.

4. Refer to additional requirements specified in this Section.

H. Materials

1. General

a. May be new or used, but must be adequate for purpose intended. Must not create unsafe or unsanitary conditions, nor violate requirements of applicable codes. Comply with applicable Federal and State regulations.
b. Must be removed when Project is completed.

2. Temporary Lighting (Electrical Contractor)

a. Comply with Division 26 and as specified above.
b. Existing lighting can be used as temporary lighting.
c. Receptacles, fixtures:

1) Standard products, meeting UL requirements.
2) Provide heavy duty guards on fixtures.
3) Provide appropriate types of fixtures and receptacles for environment in which used, in accordance with NNEC, NEMA, and OSHA standards.

d. Refer to additional requirements specified in this Section.

3. Temporary Toilets (by General Contractor)

a. Comply with Division 22.

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b. Equipment: Standard products, meeting code requirements. Toilet Facilities: Self ventilate portable toilets. Choose one of the following:

1) Chemical toilets

c. Toilet Tissue: Provide at each toilet, on suitable dispenser, with adequate reserve supply. Monitor daily.

I. Installation

1. General

a. Comply with applicable section of Divisions 22 and 26 and Federal and State regulations.
b. Install work in neat and orderly manner.
c. Make structurally, mechanically, and electrically sound throughout.
d. Maintain to give safe, continuous service, and to provide safe working conditions.
e. Modify and extend systems as work progress requires.

2. Temporary Lighting

a. Control lighting at secondary power centers unless otherwise specified.
~~b. Install exterior security lighting.~~

~~1) Illuminate project site as specified.~~

~~c.~~b. Refer to additional requirements specified in this Section.

3. Temporary Telephone

a. Service and distribution wiring may be overhead or under ground.

4. Temporary Toilets (By General Contractor)

a. Erect securely
b. Service as often as necessary to prevent accumulation of wastes and creation of unsanitary conditions.

~~1.7~~1.6 SPECIAL PRECAUTIONS AND REQUIREMENTS

A. Do not block required exits.

B. Conform to all Owner's rules and regulations.

C. Do not interfere with normal use of existing active utility services, except as absolutely necessary to execute required work involving such services, and then only after proper arrangements have been made through the proper authority.

D. Each Contractor is responsible in the performance of his work for protection of existing active utility services.

1. Notification of proposed interruption of service must be made 2 days in advance with the Owner.

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~~1.8~~1.7 SAFETY AND PROTECTION

A. General

1. Each Contractor must erect and maintain, as required by existing conditions and progress of the Work, every reasonable safeguard for safety and protection, including, but not limited to, posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent utilities.
2. Each Contractor must provide protection at all times against damage with vandalism, theft, weather, and other causes to completed Work, materials, and apparatus.
3. Each Contractor shall take every appropriate precaution to prevent damage to his work and workers of other Contractors. Damage which is caused to another Contractor's Work will be repaired or replaced at the damaging contractor's expense.
4. Site Contractor shall protect existing trees, planting, structures, road, and walks during progress to the Work.
5. Each Contractor shall submit 3 copies of Contractor(s)' safety Program and designate a responsible employee at the site whose duty shall be the prevention of accidents. The person shall be the Contractor's Superintendent unless otherwise designated by the Contractor in writing to the Architect.
6. No Contractor shall load or permit any part of the Work to be loaded so as to endanger its safety.
7. The General Contractor shall have a full-time, dedicated and qualified Safety Person for the Project to inspect job for safety hazards of all trades. This person will hold and record safety meetings once a week at the Superintendent Meeting. The Safety Person shall point out immediately to each Contractor each safety hazard he finds. Each Contractor shall correct the safety problem immediately.

    a. If safety problems are not corrected by appropriate trade, then the Safety Person shall take corrective action and charge the appropriate parties.
    b. This Safety Person shall record all accidents for the Project.

8. Each Contractor shall provide safety protection at each area which, because of his operation, creates a safety hazard.
9. Each Contractor that removes existing safety handrail(s) because of his operation shall reinstall or replace immediately upon completion of operation requiring removal. If above operation is not completed on the same day as started, the handrail will be replaced or reinstalled at the end of each workday. The Contractor removing the handrail shall have a employee remain at this location until the railing is replaced or reinstalled. If the Contractor fails to reinstall handrails, the Architect will direct reinstallation at said Contractor's cost.
10. Each Contractor shall take every appropriate safety precaution to prevent damage to the work or injury to the workers of other Contractors. This includes, but not limited to, overhead protection.
11. In an emergency affecting the safety of life, the work or adjoining property, the Contractor, without special instruction or authorization from the Architect, or Owner, shall take the action necessary to prevent such threatened loss of injury.
12. Each Contractor shall provide at the site first aid supplies for minor injuries. All injuries must be reported immediately to the job office, and the Superintendent of that Contractor shall make a written report thereof. A copy of same shall be sent to the Architect.

B. Water Control

1. Each Contractor shall protect his Work against precipitation.
2. Excavating Contractor shall be responsible for erosion control, dewatering, pumping, and removal of all water until mass excavation has been completed unless otherwise noted.
3. Each Contractor shall take every necessary precaution, including but not limited to, cleanup, to prevent floor and roof drains, being inoperable. If floor or roof drains are inoperable, the responsible Contractor(s) shall be responsible for the costs of related damages.

C. Safety Devices

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1. Each Contractor shall provide 6ft high fences, barricades, bridges, railings, and guards for protection of construction personnel and the public, and to provide protection of his Work installed.

D. Streets and Sidewalks

1. Each Contractor shall be responsible to keep public street adjacent to project site reasonably free of mud, debris, and other foreign materials resulting from all project construction and vehicular traffic leaving site, to the satisfaction of governing public authorities regulating such conditions.
2. Do not interfere with normal use of streets in vicinity if project site except as indicated or as absolutely necessary to execute required work, and then only after proper arrangements have been made with authorities having jurisdiction including traffic control as applicable.

E. Hazardous Materials

1. When the use of storage of hazardous materials or equipment is necessary for the execution of the Work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel. Such use and storage shall also be in accordance with governing authority. The use of explosives shall not be permitted.

~~1.9~~1.8 TEMPORARY STORAGE

A. Each Contractor shall provide suitable storage facilities for materials delivered to site and protect materials from weather and damage.

1. Temporary storage of materials at site shall not interfere with the Work of other Contractors or the Work and property of the Owner. If necessary or as directed by the Architect, stored materials shall be relocated or removed.
2. Location on site for storage facilities shall be in designated areas as approved by the Owner.

~~1.10~~1.9 TEMPORARY ROADS, ACCESS, AND DELIVERY

A. ~~Earthwork/Utility~~General Contractor shall provide and maintain a temporary access on site as necessary for vehicles and equipment of all Contractors requiring access. Remove temporary roads as directed by Architect.

B. Each Contractor shall repair damage to existing pavement or other construction and landscaping when damage results from operations under his Contract.

~~1.11~~1.10 OPENINGS FOR ELECTRICAL, MECHANICAL, AND OTHER TRADES

A. Temporary openings not called for on the Drawings, which may be required for the purpose of bringing equipment into the buildings or for placing same, shall be performed as approved by the Architect. The Contractor shall perform the Work of providing and maintaining such openings and of restoring the structure.

B. The Contractor whose equipment or work requires temporary openings are to bear the cost involved in providing such openings and restoring the structure. Ample notice shall be given of size and location of such openings by the Contractor requiring same.

C. Holes provided in general construction work to permit installation of lines for temporary mechanical and electrical services shall be restored by the Contractor doing the affected construction work, after removal of such lines, at no extra cost.

~~1.12~~1.11 TEMPORARY FIRST AID FACILITIES

A. Each Contractor and subcontractor shall provide first aid facilities as required by Federal, State, or Local Safety Regulations.

~~1.13~~1.12 SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION

A. These Construction Documents and the construction hereby contemplated shall be governed by applicable provisions of Federal, State, and local regulations for construction safety in the State in which the project is located.

1. Each Contractor shall be responsible for the safety and health of persons and property affected by the Contractor's performance of the Work including work performed by his subcontractors. This requirement shall apply continuously during the entire contact period and shall not be limited to normal working hours.
2. Each Contractor shall designate a qualified safety and health representative to be responsible for the administration of the Contractor's Safety and Health program.

B. Each Contractor shall be responsible for compliance with the above aforesaid safety and health regulations for construction as applicable to the Contractor's Contract and the Contractor's construction means and methods. Each Prime Contractor shall be liable for violations as may be cited or charged against the Contractor by authorities governing the safety and health regulations for construction.

1. The Architect and the Owner shall not be responsible for construction means and methods and shall not be responsible for construction safety. The Contractor shall indemnify and hold harmless the Architect and Owner under the provisions of paragraph "3.18 Indemnification" of the General Conditions of this Project Manual.
2. Each Contractor shall comply with the General Contractor's Safety Program.

~~1.14~~1.13 UTILITY PROTECTION

A. Existing utility lines and structures indicated or known, and utility lines constructed for this Project shall be protected from damage during construction operations.

B. Locate and flag lines and structures before beginning excavation and other construction operations.

C. When utility lines and structures that are to be removed or relocated are encountered within the area of operations, notify the Architect and affected utility in ample time for the necessary measures to be taken to prevent interruption of the services.

D. Damage to existing utility lines or structures not indicated or known shall be reported immediately to the Architect and the affected utility.

~~1.15~~1.14 ENVIRONMENTAL PROTECTION

A. In order to prevent and to provide for abatement and control of environmental pollution arising from the construction activities of the Contractor and his subcontractors in the performance of this Contract, they shall comply with applicable federal, state, and local laws, and regulations concerning environmental pollution control and abatement as well as the specific requirements stated elsewhere in the Contract Documents.

B. Items having apparent historical or archaeological interest which are discovered in the course of construction activities shall be carefully preserved. The Contractor shall leave the archaeological find undisturbed and shall immediately report the find to the Architect so that the proper authorities may be notified.

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C. No Contractor shall pollute water resources with fuels, oils, bitumens, calcium chloride, acids or harmful materials. It is the responsibility of each Contractor to investigate and comply with applicable federal, state, county, and municipal laws concerning pollution of rivers and streams. Work under this Contract shall be performed in such a manner that objectionable conditions will not be created in water resources through or adjacent to the project areas.

1. Spillages: Throughout the project, the Contractor will take special measures to prevent chemicals, fuels, oils, grease, bituminous materials, waste washings, herbicides and insecticides, and cement from entering water resources.
2. Disposal: If waste material is dumped in unauthorized areas, the Contractor shall remove the material and restore the area to the condition of the adjacent undisturbed area. If necessary, contaminated ground shall be excavated, disposed of as directed by the Architect, and replaced with suitable fill material, compacted and finished with topsoil, at the expense of the Contractor.

~~1.16~~1.15 TEMPORARY ELECTRICAL POWER AND LIGHT

A. The Owner will pay for the cost of electrical energy used on this Project.

~~B. The Electrical Contractor shall make arrangements for and pay for installation of temporary metered service including one time utility company "up/down" charges. Charges for connections to mains, extensions, furnishing of meters or equipment and accessories shall be included in the Electrical Contractor's bid. Regardless of whether the Owner may have to sign with the utility company for these services, the Contractor shall include in his proposal fees, inspection charges, permit charges, work charges, and other charges and shall be ready to deposit with the utility company said fees when required at time of Owner's signing for utility service.~~

~~C.~~B. The Electrical Contractor, shall provide, maintain, and connect the temporary electric service for the project office, temporary lighting and power tool usage during the construction and shall include service pole, main disconnect means, wiring, and distribution equipment.

~~D.~~C. Electrical contractor shall provide ~~the following~~ temporary lighting and power distribution system for this Project as required. Coordinate requirements with Owner, Architect, and General Contractor.

~~1. Provide ninety circuit center panel with 408 amp main disconnect and with a minimum of ninety 20 ampere receptacles (one per circuit) at the point of service.~~
~~2. Provide 60 ampere, three wire plus ground circuit with appropriate outlets at the point of service for miscellaneous power taps.~~
~~3. Provide 60 ampere, three wire plus ground circuit form the point of service to each corridor with load center panels and a sufficient quantity of 20 ampere receptacles and 60 ampere, three wire plus ground receptacles along each corridor as directed by ***Construction Manager***. It is intended that power distribution points are located so that extension cords will not have to be over 100 feet long. When corridors are not denoted, as with open plan designs or in rooms over 2500 SF in area, corridors shall be considered as a line between exits.~~

~~a. Provide overcurrent protective device at point of service.~~

~~4. Provide lighting outlets, protected by 20 ampere circuits, 30 foot candles for each corridor. Outlets shall be lamped with not less than 200 watt fluorescent lamps.~~
~~5. Extend temporary lighting into all rooms for lighting of work spaces.~~
~~6. Circuits and feeders shall be protected by appropriately rated ground fault detection and interruption devices.~~
~~7. In addition to the preceding temporary power and lighting, provide and subsequently remove for:~~

~~a. Temporary safety lighting and security lighting. Security light to work at hours of darkness and include exterior floodlights; safety lighting shall be continuous during working hours.~~

~~b. Project office: Reconnect existing General Contractor's trailer into new temporary power.~~

~~E.~~D. Lamps for temporary lighting shall be provided and maintained by the Electrical Contractor at his expense. Every temporary lamp outlet must be properly lamped throughout the construction; dark or burned-out lamps shall be immediately replaced.

~~F.~~E. Wiring of Contractors' offices, trailers, storage facilities, and equipment used during construction, shall be the responsibility of the individual Contractors requiring same.

~~G.~~F. Where a Contractor requires the use of energy at places other than those herein specified or of an amount greater than would be available from the specified temporary service, the Contractor shall make independent arrangements with the Electrical Contractor for the service at his own expense.

~~H.~~G. When permanent facilities are approved by the Architect and Owner as ready for operation, they may be used for temporary light and power. The Electrical Contractor shall arrange with the utility for removal of the temporary metering and shall bear the cost involved in the changeover.

~~I.~~H. Upon approval of use and completion of the changeover to the permanent electrical system, the Electrical Contractor shall remove the temporary electrical service, including power and lighting, distribution and utilization, equipment and wiring.

~~1.17~~1.16 TEMPORARY HEATING - PRIOR TO BUILDING ENCLOSURE

A. The building shall not be considered enclosed until the permanent specified building shell is essentially completed with exterior openings, windows, and doors closed by permanent or temporary closures.

B. Each Contractor, until the building is enclosed, shall provide heating for his materials to afford protection of water bearing material against injury by frost or freezing and to permit construction to continue and progress uninterrupted. Each Contractor shall maintain such temporary heating until danger of frost or freezing has past.

C. Salamanders and electric heaters will not be permitted; however, portable direct fired heaters, fired with LP gas, kerosene, #1, or #2 fuel oil will be allowed. When such heaters are employed, the Contractor shall observe safety precautions necessary; and in no case shall LP gas fired heaters be used in low places of construction, such as pits, tunnels, etc., which can collect heavier than air gas or fumes. Portable heaters must be UL approved.

D. Equipment producing carbon monoxide shall not be used where fumes will contact freshly placed concrete or mortar.

E. Each Contractor shall pay for fuel, maintenance, and related costs for these units until the permanent building is enclosed. Temporary heating equipment shall be subject to the approval of the Architect.

~~1.18~~1.17 TEMPORARY HEATING - AFTER BUILDING ENCLOSURE

A. The building shall be considered enclosed when the permanent specified building shell is essentially completed with exterior openings, windows, and doors closed by permanent or temporary closures.

B. Heating required after enclosure of the additions or designated portion thereof shall be done by the Owner. Temporary heating facilities shall have adequate capacity based upon the following:

1. When incorporating special materials into the construction, maintain space temperatures in strict accordance with the manufacturer's instructions.

2. The following temperatures shall be maintained: 50 degrees minimum during working and non-working hours. For a period of 14 days prior to interior finishing (painting, resilient tile, acoustical ceilings, etc.) and until final acceptance or occupancy by the Owner, spaces shall be kept 60 degrees F. minimum.
3. Maintain constantly in heated areas when the space temperature is once raised above 60 degrees F., a minimum space temperature of 60 degrees F. to prevent thermal shock to the structure.
4. Preheat materials in accordance with manufacturer's instructions and accepted trade practice.

C. Afer the building or designated portion have been enclosed and temporary heat is required, as directed by the Architect and the Construction Manager, the HVAC Contractor shall provide temporary heat using the following method:

1. The of the Permanent Heating System

a. The permanent heating system may be used for temporary heating where available and if approved by the Architect. If the permanent system is used, the HVAC Contractor shall have installed in their permanent location such fan systems, heating coils, convectors, etc., as approved by the Architect. Provide necessary insulated piping to the enclosed space when the boiler is remotely located.
b. Temporary filters shall be used in the permanent system. Provide bases, shields, etc., around heating elements where required to prevent too rapid drying of adjacent concrete, masonry, or plaster. Some of the permanent heating system equipment may require relocation by the HVAC Contractor as required during construction, to prevent interference with continuing construction, where authorized by the Architect. Equipment so used shall be cleaned and restored to new conditions except for ordinary wear, prior to final acceptance, and its use shall in no way negate the Owner's one year warranty specified to commence on the date of Substantial Completion.
c. If the permanent system is not fully operable or does not have sufficient controls to maintain the necessary heat in light of existing conditions, the HVAC Contractor shall furnish, install, and maintain temporary units connected to the permanent system. Each unit shall be installed complete with safety controls, venting, power and fuel connections, room thermostat and necessary ductwork, and piping approved by the Architect. Portions of the temporary heating system shall be removed by the HVAC Contractor after they are no longer necessary. The temporary heating equipment shall be relocated by the HVAC Contractor as required during construction to prevent interference with continuing construction.
d. The start of the warranty on the permanent heating equipment and system(s) will not start until Substantial Completion is issued for complete HVAC Base Bid Work.

D. The cost of fuel and energy used for the operation of the temporary heating system after the building is enclosed shall be paid for by the Owner.

~~1.19~~1.18 VENTILATION - AFTER BUILDING ENCLOSURE

A. Each contractor shall provide and pay for ventilation of the enclosed space as needed for their own workmen in accordance with applicable laws. Contractor shall also provide ventilation of the enclosed space as required to facilitate drying of plaster, poured decks and floors, or other materials requiring ventilation in accordance with manufacturer's directions.

B. If the permanent ventilation system is used, HVAC Contractor shall assume full responsibility for maintenance of the permanent equipment and shall keep the system clean, furnish and change filters as needed, and turn the complete new heating- ventilation system over to the Owner in a clean condition when the project is completed. Permanent equipment shall not be used for temporary ventilation unless maintained and operated as follows:

1. Return air ducts shall not be used.
2. Supply air to reach unit shall be filtered.
3. Filters shall be constantly checked and changed when necessary.

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4. Operation of permanent equipment for ventilation shall not negate the Owner's one year warranty specified to commence on the date of Substantial Completion.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

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SECTION 01 70 00 - PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section shall be included as a part of the Contract Documents to the Contractors on this Project.

B. Refer to the General and Supplementary Conditions of the Contract, for Substantial Completion and final payment.

1.2 SUMMARY

A. Closeout is hereby defined to include general requirements near the end of Contract Time in preparation for final acceptance, final payment, normal termination of contract, occupancy by Owner, and similar actions evidencing completion of the work. Specific requirements for individual parts of the Work are specified in Sections of Divisions 2 through 49. Time of closeout is directly associated to Date of Substantial Completion.

1.3 PREQUISITES TO SUBSTANTIAL COMPLETION

A. Prior to requesting Architect review for Certificate of Substantial Completion, (for either entire Work or portions thereof), complete the following and list known exceptions in request.

1. Advise Owner of pending insurance changeover requirements.
2. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, agreements, final certifications, and other required closeout documents.
3. Obtain and submit release enabling Owner's full and unrestricted use of the Work and access to services and utilities, including occupancy permits, operating certificates, and other similar required releases.
4. Deliver tools, spare parts, extra stocks of materials, and similar physical items as specified to the Owner. Obtain receipts for deliveries.
5. Take final changeover of locks and transmit keys to Owner and advise Owner's personnel of changeover in security provisions.
6. Complete start-up testing of systems and instruction of Owner's operating/maintenance personnel. Discontinue and remove from project site temporary facilities and service, construction tools and facilities, mock-ups, and other construction elements.
7. Complete final cleaning up requirements as specified in Section 01 74 ~~19~~13.

1.4 PREQUISITES TO FINAL PAYMENTS

A. Prior to requesting Architect final review for certification of final payment, complete the following:

1. Refer to the Supplementary Conditions.
2. Submit final payment request with required closeout attachments.
3. Submit copy of Architect's final punch list of itemized Work to be completed or corrected, stating that each and every item has been completed or otherwise resolved for acceptance.
4. Submit record drawings, maintenance manuals, and similar final record information as specified.
5. Submit certification of code compliance.
6. Submit certification stating that no materials containing asbestos were incorporated into the Work.

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7. Plumbing Contractor shall submit certification stating that no flux or solder used for drinking water piping containing more than 0.2 percent lead, and that no pipe or fittings used for drinking water piping contained no more than 0.8 percent lead.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PUNCH LIST

A. Prior to the Architect's preparation of a Project Punch List, General Prime Contractor shall prepare his own punch list and submit to the Architect for use by the Architect to facilitate completion of the Work.

B. The Contractor's inspection shall be as thorough as possible, in accordance with his aspiration to provide first-class workmanship and maintain good reputation and shall include Work under his Contract, including that of his subcontractors.

C. The Architect shall observe the Work, providing that the Work on the General Prime Contractor's punch list has been completed and prepare the Project Punch List for use by contractors and their subcontractors to expedite proper completion of the Work.

3.2 WARRANTY - CORRECTION OF THE WORK

A. The General Prime Contractor and Architect shall check to see if additional Work by the subcontractor's is needed to make good the warranties. An itemized list will be furnished to the subcontractors for corrective or replacement work with a copy to the Architect.

1. At approximately one month prior to the one year warranty expiration, the Owner, Architect, and a representative of the Contractor shall visit the site and prepare the warranty punch-list.

B. This Work shall be completed immediately by the Contractor(s) after receiving notification.

3.3 PROJECT RECORD DRAWINGS AND PROJECT MANUAL

A. Contractor shall keep current during the progress of the Work, and submit updated Project Record Drawings at the completion of the project, especially for the purpose on this project. Drawings shall incorporate changes made in the Work of the respective trades during the construction period. Such changes shall be indicated at the time they occur for accuracy.

B. Maintain at the job site one copy of Drawings, Project Manual, Addenda, approved shop drawings, change orders, field orders, other Contract modifications, and other approved documents submitted by the Contractor(s), in compliance with various Sections of the Project Manual.

1. All of this information should be in PDF format, clearly identified, in a filing format that is acceptable to the Owner and easily accessible by the Owner and maintenance staff.

C. Each of these Project Record Documents shall be clearly marked "Project Record Copy"; maintained in good condition; available for observation by the Architect; and shall not be used for construction purposes. Mark up the documents to indicate the following:

1. Significant changes and selections made during the construction process;
2. Significant detail not shown in the original Contract Documents including change orders;
3. The location of underground utilities and appurtenances dimensionally referenced to permanent surface improvements;

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4. The location of internal utilities and appurtenances concealed in building structures, referenced to visible and accessible features of the structure;
5. When elements are placed exactly as shown on the Drawings, so indicate; otherwise, indicate changed location.

D. Keep Project Record Documents current. Do not permanently conceal Work until the required information has been recorded.

E. Prior to final payment on the Project, submit to the Architect the Project Record Drawings for changes recorded for the Work of Divisions 02 through 14.

F. Prior to final complete and payment, the Contractors for Mechanical/Plumbing Work and Electrical Work, Divisions 21, 22, 23, 26, 27 and 28, shall update their working drawings with changes made in his Work. Submit PDF of these changed working drawings to the Architect.

1. Each drawing shall be labeled "Project Record Drawing", dated and signed by the Contractor.

G. Prior to final complete and payment, the Contractors for Site Work, Divisions 31, 32 and 33, shall update their working drawings with changes made in their respective Work. Submit one complete set of transparencies and 2 complete sets of prints of these changed working drawings to the Architect.

1. Each drawing shall be labeled "Project Record Drawing", dated and signed by the Contractor.

H. The General Prime Contractor shall certify that the Project Record Drawings show complete and accurate as-built conditions, including without limitation, sizes, kinds of materials, vital piping and valves, conduit locations, and other similar and required items.

I. Contractor(s) shall include as part of the Project Record Drawings, a complete and current Project Manual; indicating changes made relating to the specifications. All requirements for the Project Record Drawings apply to the Project Record Project Manual.

END OF SECTION 01 70 00

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SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for cutting and patching of existing building ~~new structure~~ as may be required to observe covered up Work.

1.3 SUBMITTALS

A. Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required prior to installing new work in existing building, submit a proposal to the Architect describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:

1. For cutting and patching required over and above what is indicated on the drawings for new work in existing structure, ~~D~~describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.
2. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
3. List products to be used and firms or entities that will perform Work.
4. Indicate dates when cutting and patching is to be performed.
5. Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure.
6. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

1.4 QUALITY ASSURANCE

A. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Use new materials for patching that are as specified in the Project Manual.

PART 3 - EXECUTION

3.1 INSPECTION

A. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

~~A.~~B. Consult with Architect and Structural Engineer if concerns or questions arise.

3.2 PREPARATION

A. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

B. Take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

1. Cut existing construction to provide for installation of new components and the subsequent fitting and patching required to restore surfaces to their new and original condition.

B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.

1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

C. Patching: Patch with new materials as specified in the Project Manual.

3.4 CLEANING

A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION **01 73 29**

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 WASTE MANAGEMENT GOALS FOR THE PROJECT

A. This Project shall minimize the creation of construction and demolition waste on the job site. Factors that contribute to waste, such as over packaging, improper storage, ordering error, poor planning, breakage, mishandling, and contamination, shall be minimized. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.

B. Diversion Goals: Provide documentation for waste and excess materials taken off site and not disposed of in CM designated areas. The following waste categories, at a minimum, shall be diverted from landfill:

C. Diversion Goals: A minimum 50% of total Project waste shall be diverted from landfill. Records shall be kept to attempt for verification. The following waste categories, at a minimum, shall be diverted from landfill:

1. Concrete
2. Concrete Masonry Units (CMU)
3. Electrical wiring
4. Cardboard, paper, packaging
5. Aluminum
6. Gypsum drywall (unpainted)
7. Paint
8. Plastics
9. Beverage containers

1.2 REFERENCES, RESOURCES

A. *WasteSpec*, Triangle J Council of Governments, PO Box 12276, Research Triangle Park, NC 27709

B. California Integrated Waste Management Board, 916/255-2296, e-mail: opa@ciwmb.ca.gov

1.3 WASTE MANAGEMENT PLAN

A. Produce and submit a Waste Management Plan. The Plan shall contain the following:

1. Estimate of total Project waste to be generated, name of the landfill(s) where Project waste would normally be disposed of, tipping fees, and estimated cost of disposing of Project waste in landfill(s).

    a. Provide the name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all Project waste in the landfill(s).
    b. Identify licensed haulers and processors of recyclables for categories of materials to be separated.

2. Estimate of total tons of the following waste category to be diverted from landfill:

    a. Concrete
    b. Other

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3. Estimate of total cubic yards of the following waste categories to be diverted from landfill:

    a. Cardboard, paper, packaging
    b. Other

4. Estimate of amounts (weight, feet, square yards, gallons, etc.) of the following waste categories:

    a. Aluminum
    b. Copper
    c. Paint
    d. Other

5. Estimate of net cost savings or additional costs resulting from separating and recycling (versus landfilling) each material. "Net" means that the following have been subtracted from the cost of separating and recycling:

    a. Revenue from the sale of recycled or salvaged materials
    b. Landfill tipping fees saved due to diversion of materials from the landfill

1.4 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Waste Management plan is to be included in the Environmental Goals Report.

B. Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used at the appropriate stages of the Project.

C. Conduct Construction Waste Management meetings.

D. Separation Facilities: Designate a specific area or areas to facilitate separation of materials for potential reuse, salvage, recycling, and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid commingling of materials. Bins shall be protected during non-working hours from off-site contamination.

    1. Separate, store, protect, and handle at the site identified recyclable and salvageable waste products in order to prevent contamination of materials and to maximize recyclability and salvageability of identified materials.

E. Materials Handling Procedures: Materials to be recycled shall be protected from contamination and shall be handled, stored, and transported in a manner that meets the requirements set by the designated facilities for acceptance.

F. Transportation: A description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site) and destination of materials. Provide an estimate of how often bins will need to be emptied.

G. Hazardous Wastes: Hazardous wastes shall be separated, stored, and disposed of according to local regulations.

    1. Recycle any thermostats to be discarded to Thermostat Recycling Corporation (703) 841 3249 or www.nema.org/trc

H. Application for Progress Payments: Submit with each Application for Progress Payment a Summary of the Project waste generated. Failure to submit this information may render the Application for Payment incomplete and may delay Progress Payment. The Summary shall contain the following information:

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1. The amount (in tons or cubic yards) of material landfilled from the Project, the identity of the landfill, the total amount of tipping fees paid at the landfill, and the total disposal cost. Include manifests, weight tickets, receipt, and invoices.
2. For each material recycled, reused, or salvaged from the Project, include the amount (in tons or cubic yards, pounds, feet, square yards, gallons, etc.), the date removed from the job site, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material, and the net total cost or savings of salvage or recycling each material. Attach manifests, weight tickets, receipts, and invoices.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

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SECTION 04 05 13 - MORTAR

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies the mortar for unit masonry materials specified in the following Sections:

1. Concrete Masonry Units, Section 04 22 00
2. Face Brick, Section 04 22 00.

1.2 SUBMITTALS

A. All mortar products specified in this Section shall be submitted as a single package as practicable. Separate submittals for each system or product may not be acceptable.

B. **Do not submit MSDS or SDS sheets with the product data submittal.** Architect is not responsible for review of this information. Submittals that include MSDS or SDS data sheets may be returned as rejected.

C. All required submittals shall be approved prior to the start of masonry construction.

D. Approved manufacturer's published complete product data for: Proposed prepared masonry cement and mortar colors.

E. Proposed mortar mix design(s) including complete identities and proportions of ingredients as well as adherence to standards where so specified.

F. Test results from mortar cube breaks reporting compressive strength of mortar to be used.

G. Contractor shall receive from supplier and provide to Architect certification, in writing, that materials meet requirements of ASTM C1142.

H. Submit mortar colors for Architect selection, including full range of colors available.

I. Submit mortar test reports indicating mortar property requirements in accordance with ASTM C270.

J. Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

1.3 QUALITY ASSURANCE

A. Codes and Specifications: Comply with the provisions of the following codes specifications, and standards, except as otherwise shown or specified.

1. ACI 530-99/ASCE 5-99 Building Code Requirements for Masonry Structures.
2. ACI 530.1-99/ASCE 6-99 Specifications for Masonry Structures.
3. NCMA-TEK 20B Mortars for Concrete Masonry.
4. ASTM C144, Aggregate for Masonry Mortar.
5. ASTM C150, Portland Cement
6. ASTM C207, Hydrated Lime for Masonry Purposes.
7. ASTM C270, Mortar for Unit Masonry.
8. ASTM C979, Pigments for integrally Colored Concrete.

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9. ASTM E514, Standard Test Method for Water Penetration and Leakage Through Masonry.

B. Field Quality Control.

1. Materials may require testing and re-testing, as directed by the Architect, during the progress of the Work. Allow free access to material stockpiles and facilities. Tests shall be performed at the Contractor's expense.
2. Do not change source or brands of masonry mortar material during the course of the Work. If changes become necessary, resubmit data for material being changed and for tests of materials in which the changed material is and ingredient.
3. Mortar properties shall comply with ASTM C270.

C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

D. Provide mortar in mock-ups as required in Section 04 ~~20~~ 22 00, Unit Masonry.

1.4 MATERIAL STORAGE, DELIVERY, AND HANDLING

A. Store mortar materials off the ground, under cover, using tarpaulins, felt paper, or polyethylene sheets in a dry location.

B. Deliver and store manufactured products in original unopened containers.

C. Store cementitious ingredients in weather-tight enclosures and protect against contamination. Store on platforms, under cover, and in a dry location.

D. Stockpile and handle aggregates to prevent contamination form foreign materials.

E. Deliver preblended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.

1.5 TESTS FOR MORTAR

A. Test for compressive strength by the methods of sampling and testing of ASTM C109 and ASTM C780.

1. Provide a minimum of one set of cubes of testing per 5,000 sq. ft. of masonry wall construction, maximum.

B. Submit written reports for each material sampled and tested. Provide the project identification name and number, date of report, name of Contractor, name of testing service, source of aggregates, material manufacturer and brand name for manufactured materials, values specified in the referenced specification for each material, and test results. Indicate whether or not material is acceptable for intended use.

C. If the compressive strength tests fail to meet the minimum requirements specified, the mortar represented by such tests will be considered deficient in strength.

D. Deficient mortar shall be removed and replaced by the Contractor without additional cost to the Owner.

1.6 PROJECT CONDITIONS

A. To assure mortar temperatures between 40 degrees F and 120 degrees F until used heat mixing water or aggregates when air temperature is between 32 degrees F and 40 degrees F. When the air temperature is between 25 degrees F and 32 degrees F, heat both water and aggregate.

B. Produce subsequent mortar batches within plus or minus 10 degrees of first batch.

C. Do not heat water or sand above 160 degrees F.

D. Stain Prevention: Prevent mortar and soil from staining the face of masonry to be left exposed or painted. Immediately remove mortar, and soil that come in contact with such masonry.

1. Protect sills, ledges, and projections from mortar droppings.
2. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
3. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

PART 2 - PRODUCTS

2.1 MATERIALS- Comply with the provisions of the latest editions for the following specifications, and standards:

A. Portland Cement: ASTM C150, Type I, non-staining, without air entertainment and of natural color or white, to produce the required color of mortar or grout.

B. Masonry Cement: Current ASTM C91, non-staining, with 12 to 22 percent air content by volume.

C. Hydrated Lime: ASTM C207, Type S.

D. Aggregates: ASTM C144, except for joint less than 1/4 inch, use aggregate graded with 100 percent passing the No. 16 sieve.

E. Water: Clean, free of deleterious materials which would impair strength or bond.

F. Ready Mixed Mortar: ASTM C270 Standard Specification for ready mixed mortar for unit masonry.

G. Cold-Weather Admixture: Non-chloride, non-corrosive, accelerating admixture complying with ASTM C 494, Type C, and recommended by the manufacturer for use in masonry mortar of composition indicated.

H. Use gray (non-colored) mortar for concrete block masonry.

I. Use colored mortar for Face Brick. Color as selected by Architect.

J. Integral Water Repellent Admixture: “Dry-Block Water Repellent Mortar Admixture as manufactured by Grace Construction Products, Cambridge, MA.; or Spec Mix, Mendota Heights, MN.

2.2 MORTAR MIXES

A. Do not lower the freezing point of mortar by use of admixture or anti-freeze agents.

1. Do not use calcium chloride in mortar.

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B. Mortar for Unit Masonry shall comply with ASTM C270 Proportion Specification. Provide the following types of mortar for application stated:

1. For masonry below grade or contact with earth: Type M
2. For reinforced masonry: Type S
3. For interior non-load-bearing partitions: Type N

PART 3 - EXECUTION

3.1 INSTALLATION

A. Refer to Section 04 22 00, Unit Masonry.

END OF SECTION **04 05 13**

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SECTION 04 05 16 - MASONRY GROUT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies the masonry grout for unit masonry materials specified in the following Sections:

1. Concrete masonry units, Section 04 22 00~~(add to as required for all the other Division 4 sections as may be applicable)~~

B. The types of masonry grout required include the following:

1. Fine grout.
2. Coarse grout.

C. This Section also specifies the grout for use in ~~non-detention and detention~~ hollow metal frames. Install masonry grout in all hollow metal frames installed in concrete and CMU walls, interior and exterior.

1.2 SUBMITTALS

A. All masonry grout products specified in this Section shall be submitted as a single package as practicable.. Separate submittals for each system or product may not be acceptable.

B. **Do not submit MSDS or SDS sheets with the product data submittal.** Architect is not responsible for review of this information. Submittals that include MSDS or SDS data sheets may be returned as rejected.

C. Approved manufacturer's published complete product data for:

1. Proposed Portland cement.

D. Proposed grout mix designs for both fine and coarse grouts including complete identities and proportions of ingredients as well as adherence to standards where so specified. All grout shall be plant-mix.

E. Compression test results from an independent certified testing laboratory from grout samples made from the proposed grout mix design. Test reports may be from previous Projects within the previous 6 months.

F. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.

1. Submittal is for information only. Neither receipt of list nor approval of mockup constitutes approval of deviations from the Contract Documents, unless such deviations are specifically brought to the attention of the Architect and approved in writing.

G. Submit grout test reports indicating grout compressive strength property requirements in accordance with ASTM C476.

1.3 QUALITY ASSURANCE

A. Codes and Standards: Comply with the provisions of the following codes, specifications, and standards, except as otherwise shown or specified:

1. ACI 530-99/ASCE 5-99 Building Code Requirements for Masonry Structures.
2. ACI 530.1-99/ASCE 6-99 Specifications for Masonry Structures.
3. NCMA-TEK 23-A Grouting for Concrete Masonry Walls.

B. Field Quality Control

1. Materials may require testing and re-testing, as directed by the Architect, during the progress of the Work. Allow free access to material stockpiles and facilities. Tests will be performed at the Contractor's expense.
2. Do not change source or brand of masonry grout materials during the course of the Work. If changes become necessary, resubmit data for material being changed and for tests of materials in which the changed material is an ingredient.
3. Provide grout in mock-ups as required in Section 04 22 00, Unit Masonry.

C. Provide grout in mock-ups as required in Section 04 22 00, Unit Masonry.

1.4 MATERIAL STORAGE

A. Store grout materials off the ground, under cover, using tarpaulin, felt paper, or polyethylene sheets and in a dry location.

1.5 TESTS FOR GROUT

A. Grout for filling reinforced or un-reinforced concrete masonry cores or brick cavities test for compressive strength by methods as described in Section 04 05 16.

1. Provide a minimum of one set of 3 test specimens for testing per 5000 square feet of masonry wall construction, maximum.

B. Submit written reports for each material sampled and tested. Provide the project identification name and number, date of report, name of Contractor, name of testing service, source of aggregates, material manufacturer and brand name for manufactured materials, valves specified in the referenced specification for each material, specific location where material represented by sample is used and test results. Indicate whether or not material is acceptable for intended use.

C. If the compressive strength tests fail to meet the minimum requirements specified, the grout represented by such tests shall be considered deficient in strength.

D. Deficient grout shall be removed and replaced by the Contractor without additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portland Cement: ASTM C150, Type I, unless otherwise acceptable to Architect.

B. Flyash: ASTM C618-89a, Type C may be substituted for up to 15 percent of the Portland cement in the grout mix.

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C. Fine Aggregates: Clean, sharp, natural sand free from loam, clay lumps, or other deleterious substances.

D. Coarse Aggregates: Clean, uncoated, pea gravel containing no clay, mud, loam, or foreign matter. Maximum aggregate size 3/8 inch.

E. Water: Clean, free of deleterious materials which shout impair strength or bond.

2.2 GROUT MIXES

A. Do not lower the freezing point of grout by use of admixtures or anti-freeze agents.

1. Do not use calcium chloride in grout.

B. Grout for Unit Masonry and Hollow Metal Frames: Comply with ASTM C476.

1. Fine Grout: 2000 psi average compressive strength at 28 days for 6 inches and smaller hollow concrete masonry units and between 2 wythes of masonry where space is less than 2 inches in width.
2. Coarse Grout: 2000 psi average compressive strength at 28 days for 8 inches and larger hollow concrete masonry units and between 2 wythes of masonry where space is 2 inches in width or wider.
3. Fine grout shall be used in non-detention and detention hollow metal frames.

C. Grout Proportions (by volume): Comply with Table 1, ASTM C476.

1. Fine Grout: 1 part Portland cement, 0 to 1/10 part hydrated lime or lime putty, 2 ¼ to 3 parts fine aggregate.
2. Coarse Grout: 1 part Portland cement, 0 to 1/10 part hydrated lime or lime putty, 2 ¼ parts fine aggregate, 1 to 2 parts coarse aggregate.

D. Grout Slump

1. Properly proportioned grout shall have a slump of 8 to 9 inches.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Refer to Section 04 22 00, Unit Masonry.

B. Install fine grout in all steel frames installed in concrete and CMU walls. Do not install until asphaltic emulsion coating is installed in frames and has dried. Refer to Section 08 11 00 and Section 11 19 15 for additional requirements.

3.2 SAMPLING AND TESTING

A. Field Sampling and Testing of Grout: NCMA-TEK 18-08B.

B. Grout Test (Compressive Strength): For each mix provided, in accordance with ASTM C1019.

~~C.~~

~~D.~~

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END OF SECTION **04 05 16**

SECTION 04 22 00 - UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

A. Provide labor, materials, and equipment necessary for complete installation of unit masonry as shown on the Drawings and specified herein.

1. The Work of this section also includes metal CMU embed to be installed where indicated on the drawings and details.
2. The Work of this section also includes the installation of rigid cavity and/or continuous insulation

B. Work installed under this Section, but materials or products furnished under the following Divisions or Sections:

1. Masonry mortar furnished under the Work of Section 04 05 13.
2. Masonry grout furnished under the Work of Section 04 05 16.
3. Masonry accessories furnished under the Work of Section 04 05 23.
4. Anchor bolts, steel plates, and steel lintels; refer to Division 5.

    a. Installation of lintels in masonry walls shall be included under the Work of this Section.

5. Wood bucks and nailing blocks in masonry construction; refer to Section 06 10 00.

C. Cooperate with other trades requiring items of equipment or services to be installed within or in conjunction with Unit Masonry Work.

D. Other Materials provided and installed by this Section:

1. Masonry cleaners
2. Concrete slab protection.
3. Integral color
4. Integral water repellent additive
5. ~~Sound absorbing concrete masonry units~~
6. ~~Preformed insulation inserts~~

E. Products installed, but not furnished, under this Section include the following:

1. ~~Cast-stone trim, furnished under Division 4 Section "Cast Stone."~~
2. 1. Steel lintels and shelf angles for unit masonry, furnished under Division 5 Section "Metal Fabrications."
3. 2. Manufactured reglets in masonry joints for metal flashing, furnished under Division 07 Section "Flashing and Sheet Metal."
4. 3. Hollow-metal frames in unit masonry openings, furnished under Division 8 Section "Steel Doors and Frames."

~~F. Specific Contractor requirements for Renovation Work:~~

1. ~~Site Examination: Masonry Contractor shall field verify existing masonry conditions. Notify Architect of discrepancies between existing conditions and Drawings/Specifications and details.~~
2. ~~Review with Architect as required.~~
3. ~~Coordinate with Section 02 41 19, Selective Structural Demolition.~~

~~4. New masonry walls and partitions in existing building structure may require additional shoring and support during curing of grout and/or mortar.~~
~~5. Evaluating existing concrete masonry construction shall comply with NCMA TEK, Evaluating Existing Concrete Masonry Construction, TEK 18-9A (latest edition).~~
~~6. Temporary Shoring and Bracing, refer to Article 3.4 herein~~.

1.2 SUBMITTALS

A. All unit masonry products specified in this Section shall be submitted as a single package as practicable.. Separate submittals for each system or product may not be acceptable.

B. **Do not submit MSDS or SDS sheets with the product data submittal.** Architect is not responsible for review of this information. Submittals that include MSDS or SDS data sheets may be returned as rejected.

C. Test report from independent laboratory showing result of efflorescent test conducted per ASTM C67 for each provided face brick type.

D. Upon regular presentation within past 6 months of representative units by approved manufacturer, a test report from an independent laboratory showing resultant weight, compressive strength (based on net area), and water absorption properties, as well as adherences to standards where so specified, for:

Name of Manufacturer
Date of Manufacture of Test Specimen
Dimension Measurements (in.)
Calculated Gross Area (sq.in.)
Calculated Net Area (sq.in.)
Total Load (lbs.)
Net Unit Load (psi)
Sample Weight (lbs.)
Dry Weight (lbs.)
Wet Weight (lbs.)
Immersed Weight (lbs.)
Density (pcf)
Moisture Content (%)
Absorption (%)

E. Letter from approved manufacturer certifying that provided units will meet or exceed qualities of tested representative units for:

1. Each proposed type of concrete masonry unit.

F. A test report from an independent testing laboratory showing compressive strength of concrete masonry prisms constructed from the concrete masonry units and mortar to be used in the masonry work for:

1. Each proposed type and size of concrete masonry unit as required on the Reinforced Masonry Plans in the Drawings.

G. Mock-up panels as erected on site grounds are only samples required.

H. Approved manufacturer's published complete product data, with particular items to be provided clearly marked thereon, for:

1. Proposed masonry cavity wall insulation
2. Integral color
3. Integral water repellant additive
4. Preformed insulation inserts

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I. Submit minutes from preinstallation conference.

J. Installer's examination report.

K. Submit written masonry inspection reports as specified herein.

L. Product Data: For each different masonry unit, accessory, and other manufactured product specified.

M. Shop Drawings: Show fabrication and installation details for the following:

1. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.
2. Fabricated Flashing Details: Detail corner units, end-dam units, and other special applications.
3. Stone Trim Units: Show sizes, profiles, and locations of each stone trim unit required.

N. Samples for Initial Selection: For the following:

1. Unit masonry Samples in small-scale form showing the full range of colors and textures available for each different exposed masonry unit required.
2. Colored mortar Samples showing the full range of colors available.

O. Samples for Verification: For the following:

1. Full-size units for each different exposed masonry unit required, showing the full range of exposed colors, textures, and dimensions to be expected in the completed construction.
2. Colored mortar Samples for each color required, showing the full range of colors expected in the finished construction. Make samples using the same sand and mortar ingredients to be used on Project. Label Samples to indicate types and amounts of pigments used.
3. Stone trim samples not less than 12 inches in length, showing the full range of colors and textures expected in the finished construction.
4. Weep holes/vents in color to match mortar color.
5. Accessories embedded in the masonry.

P. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.

1. Submittal is for information only. Neither receipt of list nor approval of mockup constitutes approval of deviations from the Contract Documents, unless such deviations are specifically brought to the attention of the Architect and approved in writing.

Q. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:

1. Each type of masonry unit required.
2. Include test data, measurements, and calculations establishing net-area compressive strength of masonry units.
3. Each cement product required for mortar and grout, including name of manufacturer, brand, type, and weight slips at time of delivery.
4. Each combination of masonry unit type and mortar type. Include statement of net-area compressive strength of masonry units, mortar type, and net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
5. Each material and grade indicated for reinforcing bars.
6. Each type and size of joint reinforcement.
7. Each type and size of anchor, tie, and metal accessory.

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R. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

S. Submit metal embed performance requirements as specified, as tested by an independent testing laboratory. Documentation for each specified test shall be submitted.

1.3 QUALITY ASSURANCE

A. Codes and Standards: Comply with the provisions of the following codes, specifications, and standards, except as otherwise shown or specified:

1. ACI 530/530.1 Building Code Requirements and Specifications for Masonry Structures and Relates Commentaries.
2. NCMA-TEK 18-1A Compressive Strength Evaluation of Concrete Masonry.
3. NCMA-TEK 3-2A Grouting Concrete Masonry Walls.
4. NCAM-TEK 18-2A Sampling and Testing Concrete Masonry Units.
5. ASTM C140 Standard test Methods for Sampling and Testing Concrete Masonry Units and Related Units.
6. NCMA-TEK 70A Concrete Masonry Prism Strength.
7. NCMA-TEK 132
8. Comply with ALL NCMA-TEK Standards.

B. Changes in the source or brand of masonry materials during construction will require resubmission and re-testing at the Contractor's expense.

C. Job Mock-Up

1. Prior to installation of masonry work, erect sample wall panel mock-up using materials, bond, and joint tooling shown or specified for final work. Provide special features as directed for caulking and contiguous work. Build mock-up at the site, where directed, of full thickness and approximately 4’ x 4’ 8' x 8', unless otherwise shown, indicating the proposed range of color, texture, and workmanship to be expected in the completed work. Erect panels with finish face of panels facing south. Obtain Architect's acceptance of visual qualities of the mock-up before start of masonry work. Retain mock-up during construction as a standard for judging completed masonry work. Do not alter, move, or destroy mock-up until work is completed. Provide mock-up panel for the following:

a. Typical exterior face brick wall.
b. Typical interior partition of concrete masonry units.
c. Typical exterior CMU wall indicating all of the different types of CMU and finishes as specified herein.
d. Uniformity of joints

D. Concrete Masonry Inspection

1. Refer to Division 01 for additional requirements.

a. Masonry inspection is required for those masonry elements where it is imperative that construction produces elements which can attain high design strengths. These masonry elements include, but are not limited to, grout filled CMU walls, CMU bearing walls, and grout filled and vertically reinforced CMU walls, and other walls as may be indicated on the Drawings.
b. The Contractor will be responsible for the masonry inspections. Masonry inspections shall be by an independent laboratory as specified in Division 01. Submit reports as specified herein.

2. Submit written reports for each section of wall inspected to include:

a. Project identification name and number.

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b. Name of Masonry Contractor.
c. Name of inspecting service.
d. Date of report.
e. Specific location of work inspected.
f. Horizontal joint reinforcing size, type, spacing, and lap.
g. Preparation of cores and cavities to be grouted. Inspect every core and cavity.
h. Vertical reinforcing centering clip size, type, spacing, and proper alignment.
i. Size spacing and lap of vertical reinforcing and installation in centering clips.
j. Installation and vibration of grout in cores and cavities.
k. Remarks as to general conditions pertinent to the strength and quality of the masonry work.

3. Inspection shall use NCMA-TEK 65 Field Inspection of Engineered Concrete Masonry and NCMA-TEK 132 Inspector's Guide for Concrete Masonry Construction as guidelines.
4. The masonry inspection agency shall be selected prior to the pre-masonry conference and shall have the inspector who will inspect this project attend the conference.
5. The contractor for the work of this Section shall be responsible for the masonry inspection to be performed by an independent testing laboratory.
6. Frequency of masonry inspections shall be as defined herein.

E. Definitions:

1. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.
2. CMU: Concrete masonry unit.

F. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.

G. Pre-Installation Conference: Conduct an on-site pre-installation conference prior to beginning masonry work on the project. Masonry contractor and all parties shall attend. Refer to Division 01 for additional requirements. Notify Architect 14 days prior to pre-installation conference. Suggested agenda as follows:

1. All of the contractor's masonry submittals shall be previously submitted, completed and reviewed by the Architect prior to the Pre-Installation Conference.
2. Locations of load-bearing walls.
3. Locations of CMU control joints.
4. Contractor's concern for missing/incomplete details.
5. Verify use of up-to-date plans/specifications.
6. Contractor's responsibility for temporary wall bracing.
7. Installation procedures.
8. Coordination issues with other trades.
9. Protection of concrete floors during masonry installation.
10. Open issues/concerns.
11. Job-site storage and staging areas
12. Mortar dropping concerns on exposed concrete floors in the Dayrooms and Booking.
13. Concrete slab protection during construction.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver masonry materials to project in undamaged condition.

B. Store and handle masonry units off the ground, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not place until units are in an air-dried condition.

C. Store cementitious materials off the ground, under cover, and in dry location.

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D. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

E. Store masonry accessories including metal items to prevent corrosion and accumulation of dirt and oil.

1.5 TESTS OF CONCRETE MASONRY PRISMS

A. For grout filled and reinforced or un-reinforced concrete masonry wall construction tests for the compressive strength of prisms as described in ASTM E 447, latest edition and NCMA-TEK 70A.

1. Provide a minimum of one set of 3 masonry prisms for testing per each 5000 square feet of masonry wall construction.

B. Submit written reports for each prism tested. Provide the project identification name and number, date of report, name of Contractor, name of Testing service, name of material suppliers, specific location where masonry represented by the prism is used, test results, and values specified in the referenced specification. Indicate whether tested prism is acceptable for intended use.

C. If the compressive strength tests fail to meet the minimum requirements specified, the concrete masonry represented by such tests shall be considered deficient in strength.

D. Deficient masonry construction shall be removed and replaced by the Contractor without additional cost to the Owner. In lieu or removal and replacement, additional cores may be grouted as required and directed by the Architect without additional cost to the Owner.

1.6 PROJECT CONDITIONS

A. Protect partially complete masonry against weather, when Work is not in progress, by covering top of walls with strong, waterproof, non-staining membrane. Extend membrane at least 2 foot down both sides of walls and anchor securely in place.

B. Protect partially complete masonry walls against wind damage by bracing as required until support of walls is integral with the building structure.

C. Protect masonry against freezing when the temperature of the surrounding air is 40 degrees F and falling. Heat materials and provide temporary protection of complete portions of masonry work. Comply with the requirements of the governing code and with the "Construction and Protection Recommendations for Cold Weather Masonry Construction" of the Technical Notes on Brick.

D. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Remove immediately any grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes from mortar droppings.

E. Cold-Weather Construction: Comply with referenced unit masonry standard for cold-weather construction and the following:

1. Do not lay masonry units that are wet or frozen.
2. Remove masonry damaged by freezing conditions.

F. Hot-Weather Construction: Comply with referenced unit masonry standard.

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1.7 MASONRY INSPECTION

A. The Contractor's testing agency is responsible for all masonry inspections and reports as specified herein.

B. Provide masonry construction inspection of concrete masonry walls indicated as requiring inspection on the drawings to ensure that masonry construction is in conformance with the Contract Documents. Masonry inspection is required for those masonry elements which must be constructed to attain high design strengths, such as, but not limited to, vertically reinforced grouted CMU walls, grouted CMU wall, and load-bearing CMU walls.

C. Qualification of Inspection Agency: Refer to Division 1 requirements.

D. Inspection shall use NCMA-TEK 65 Field Inspection of Engineered Concrete Masonry and NCMA-TEK 132 Inspector's Guide for Concrete Masonry Construction as guidelines.

E. The individual or individuals who will perform the masonry inspection shall be present for the Pre-masonry Conference.

F. The masonry inspector shall prepare a written report or reports for each day of inspection.

G. The masonry inspector shall be present and observe all grouting operations in walls requiring inspection. The masonry inspector shall be present at the project site within sufficient time, in advance of grouting operations, to inspect the construction to ensure its conformance to the contract Documents and that grouting may proceed. Periodically, the masonry inspector shall be present during the placing of masonry units and reinforcement. No grouting shall be permitted unless the masonry inspector is present and has indicated that the masonry construction is properly prepared for the grouting operation.

1.8 PERFORMANCE REQUIREMENTS

A. Provide unit masonry that develops the following net-area compressive strengths (f'm) at 28 days. Determine compressive strength of masonry from net-area compressive strengths of masonry units and mortar types according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

1. For Concrete Unit Masonry: f'm = ~~2000~~ 2800 psi
~~2. For Brick Unit Masonry: f'm = 2000 psi~~

1.9 CONCRETE SLAB PROTECTION

A. Protect all new concrete floors scheduled to be sealed that are directly under and adjacent to CMU walls. Mortar droppings on concrete floors scheduled to be sealed will not be allowed. Discuss this requirement at the Preinstallation Meeting.

B. Mortar stains on concrete floors shall be removed in their entirety prior to concrete floor sealer final installation and buffing installation. Refer to Section 03 35 00 for additional requirements.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Comply with referenced unit masonry standard and other requirements specified in this Section applicable to each material indicated.

2.2 MASONRY UNITS

A. Obtain masonry units from one manufacturer for uniform texture and color for each kind required, for each continuous area and visually related areas.

B. Concrete Masonry Units (CMU) (NOTE: All CMU on this PROJECT to have minimum compressive strength of ~~2000~~ 2800 psi on net area per ASTM C90.)

1. CMU Manufacturer: Shall be member of the National Concrete Masonry Association.
2. Size: Manufacturer's standard units with face dimensions of 15-5/8 by 7-5/8 inches (actual), and other sizes as may be indicated on the drawings and details.
3. Special Shapes: Provide, where shown and where required, lintels, inside and outside corners, jambs, sash, control joints, headers, bond beams, bullnoses, and other special conditions.

    a. Provide bullnose corners at all exposed external corners (except at heads), and sills.

4. Hollow Load-Bearing (HL) CMU: Provide units complying with ASTM C90, 2N Class Designation for the aggregates, with a minimum compressive strength of 2800 psi on the net section.
5. Solid Loadbearing CMU (Solid CMU): Provide units complying with ASTM C90, 2N Class Designation for the aggregates, with a minimum compressive strength of 2800 psi on the gross section.
6. Normal Weight Units: ASTM C33 concrete aggregates for a dry net weight of not less than 125 pounds per cu. ft. Strength shall be as indicated above.
7. Curing: Cure units in a non-moisture-controlled atmosphere or in an autoclave at normal pressure and temperature to comply with ASTM C90, Type II.
8. Exposed Face:

    a. Manufacturer's standard color and texture.

        1) Smooth face (Interior).
        2) Split face (Exterior) by Try County
            ~~a.~~a) Color: Stormy

9. Provide masonry lintels at all openings greater than 1'-0" in width that occur in CMU walls unless indicated to be steel on the drawings.
10. All vertical wall corners (exposed corners) and window and opening jambs shall be bullnose CMU. ¾" radius corners.

~~C. Face Brick~~

~~1. Quality Standard: ASTM C216, latest edition, Grade SW for exterior exposure, Type FBX.~~
~~2. Size~~

~~a. Face brick shall be Utility size~~
~~b. Other special sizes as may be required or indicated for a total and complete installation in every respect.~~
~~c. Face Brick Type/Manufacturer:~~

~~1) 4.01 Belden Brick "Concord Blend", sanded velour. Color: Buff. Size: Modular.~~

~~2) 4.02 & 4.04 Belden Brick "Mayo Clear", smooth texture. Color: gray. Size: Modular~~

~~3) 4.03 Belden Brick "#8621 Coarse Velour□coarse velour. Color: Brown. Size: Modular.~~

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~~3. Provide special molded shapes and solids as required. No brick holes shall be visible in the final product.~~
~~4. Compressive Strength: Shall exceed 3000 psi when tested with the loads applied normally to the bedding surface.~~
~~5. Water Absorption: Average maximum water absorption by submersion in boiling water for 5 hours shall be less than 17 percent. Average saturation coefficient shall be less than 0.78.~~
~~6. The Contractor for this Section of the Work shall include in the Base Bid the cost for solid brick required, the cost for cutting of brick required, the cost for cutting of brick required to obtain special shapes, the cost of special size brick required, and the cost of special molded shapes required.~~
~~7. Lay in 1/2 running bond~~

2.3 CAVITY WALL INSULATION AND CONTINUOUS INSULATION

A. Extruded Polystyrene Insulation: Rigid polystyrene board. Insulation shall be 2 inches thick or as indicated on Drawings, and have an aged "R" value of 10. Cavity wall insulation shall conform to ASTM C578, latest edition, Type IV.

1. "Styrofoam-SM": Dow Chemical
2. "Foamular 250": UC Industries, Inc.
3. “Certifoam”: DiversiFoam Products.

B. Mastic: Shall be equal to Cntech Brands "PL200" or H.B. Fuller "Maxbond" for application to outside face of inner wythe of cavity walls.

C. Sealant: Shall be equal to Contech Brands "PL300" for sealing insulation joints and penetrations.

2.4 MASONRY CLEANERS

A. "NMD 80" buffered-detergent based solution for new masonry as manufactured by EaCo Chem, Inc., New Castle, PA; or Architect approved equal.

B. Clean concrete masonry (CMU) by means of cleaning method indicated in NCMA TEK 8-2A applicable to type of stain present on exposed surfaces.

2.5 SOURCE QUALITY CONTROL

A. Concrete Masonry Unit Tests: For each type, class, and grade of concrete masonry unit indicated, units will be tested by qualified independent testing laboratory for strength, absorption, and moisture content per ASTM C 140, latest edition.

2.6 INTEGRAL WATER REPELLANT ADDITIVE

A. Acceptable Manufacturers: “Dry-Block□by W.R. Grace and Company; or Architect approved equal.

B. Install the integral waterproofing additive in all smooth face CMU, split-face CMU and ground face CMU installed in exterior walls.

C. Integral water repellent additive shall comply with the provisions of the latest editions for the following codes, specifications, and standards: ASTM E514, extended to 72 hours, ASTM C1357, ASTM C1314, and ASTM C1148.

D. Description: Integral liquid polymeric admixture for CMU added during block production.

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E. Water Permeance of Masonry: Capable of achieving a Class E Rating when evaluated using ASTM E 514, latest edition, with the test extended to 72 hours, using the rating criteria specified in ASTM E 514, latest edition.

F. Flexural Bond Strength of Masonry: An increase of minimum 10% in masonry flexural bond strength shall occur as a result of adding integral water-repellent CMU and mortar admixtures when compared to a control (containing no admixtures) CMU and mortar when tested according to ASTM C 1357, latest edition.

G. Compressive Strength of Masonry Prisms: Maximum 5% decrease in compressive strength of prisms shall occur as a result of adding integral water-repellent CMU and mortar admixtures when compared to a control (containing no admixtures) CMU and mortar when tested according to ASTM C 1314, latest edition.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other specific conditions, and other conditions affecting performance of unit masonry.

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of unit masonry.

B. Examine rough-in and built-in construction to verify actual locations of piping connections prior to installation.

C. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with referenced unit masonry standard and other requirements indicated applicable to each type of installation included in Project.

B. Thickness: Build single-wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.

C. Build chases and recesses as shown or required to accommodate items specified in this and other Sections of the Specifications. Provide not less than 8 inches of masonry between chase or recess and jamb of openings and between adjacent chases and recesses.

D. Leave openings for equipment to be installed before completion of masonry. After installation of equipment, complete masonry to match construction immediately adjacent to the opening.

E. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining construction. Use full-size units without cutting where possible.

F. Frozen Materials and Work: Do not use frozen materials mixed or coated with ice or frost. For masonry, which is specified to be wetted, comply with the BIA recommendations. Do not build on frozen work. Remove and replace masonry work damaged by frost or freezing.

G. Matching Existing Masonry: Match coursing, bonding, color, and texture of new masonry with existing masonry.

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3.3 CONSTRUCTION TOLERANCES

A. Comply with construction tolerances of referenced unit masonry standard.

B. CMU shall comply with NCMA-TEK standards.

C. Variation from Plumb: For vertical lines and surfaces of columns, walls and arises do not exceed 1/4" in 10", or 3/8" in a story height not to exceed 20', nor 1/2" in 40' or more. For external corners, expansion joints, control joints and other conspicuous lines, do not exceed 1/4" in any story or 20' maximum, nor 1/2" in 40' or more. For vertical alignment of head joints do not exceed plus or minus 1/4" in 10', 1/2" maximum.

D. Variation from Level: For bed joints and lines of exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines, do not exceed 1/4" in any bay or 20' maximum, nor 1/2" in 40' or more. For top surface of bearing walls do not exceed 1/8" between adjacent floor elements in 10' or 1/16" within width of a single unit.

E. Variation of Linear Building Line: For position shown in plan and related portion of columns, walls and partitions, do not exceed 1/2" in any bay or 20' maximum, nor 3/4" in 40' or more.

F. Variation in Cross-Sectional Dimensions: For columns and thicknesses of walls, from dimensions shown, do not exceed minus 1/4" nor plus 1/2".

G. Variation in Mortar Joint Thickness: Do not exceed bed joint thickness indicated by more than plus or minus 1/8", with a maximum thickness limited to 1/2". Do not exceed head joint thickness indicated by more than plus or minus 1/8"

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint widths and for accurate locating of openings, movement-type joints, returns, and offsets. Avoid the use of less-than-half-size units at corners, jambs, and where possible at other locations.

B. Lay-up walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other construction.

1. For the first and second block courses above and below apertures, run reinforcing continuous or extend two feet back from aperture edge. Refer to notes on Structural drawings.

C. Lay-up walls plumb and true and with courses level, accurately spaced and coordinated with other work. Do not wedge partitions tight against structural ceiling or beams, but provide a caulk or insulation filled joint between top of masonry and the structural roof deck, structural steel framing or structural floor deck. Stop masonry a minimum of 1/2 inch from vertical, horizontal and sloped steel surfaces.

D. Pattern Bond: Lay concrete masonry units (CMU) in ½ running bond. Lay concealed masonry with all units in a wythe bonded by lapping not less than 2 inches. Lay masonry with vertical joints plumb, one above the other.

~~E. Pattern Bond Face Brick: Lay face brick in 1/2 running bond unless noted otherwise on the Drawings.~~

~~F.~~E. Weight Requirements for CMU Units:

1. Normal Weight: All CMU.

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~~G.~~F. Stopping and Resuming Work: In each course, rack back 1/2-unit length for one-half running bond or 1/3-unit length for one-third running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly (if required), and remove loose masonry units and mortar prior to laying fresh masonry.

~~H.~~G. Built-In Work: As construction progresses, build-in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.

1. Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.
2. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.
3. Fill cores in hollow concrete masonry units with grout 3 courses (24 inches) under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.
4. Install adjustable hollow metal frame anchors, locating anchors on jambs in horizontal bed courses near the top and bottom of each frame and at intermediate points not over 24 inches apart.
5. Fill jambs and heads of all hollow metal door and window frames installed in CMU or concrete walls solid with grout.
6. Rake joints around exterior side of exterior hollow metal door frames for sealant under Division 07.
7. Where hollow metal frames do not wrap around masonry jambs and heads, rub exposed corners of block to remove sharp, irregular edges.

~~I.~~H. Intersecting Masonry Walls: Where interior non-load-bearing masonry partition or wall intersects interior load-bearing masonry wall at 90 degrees, stop horizontal joint reinforcing in interior partition 4 inches short of intersection. Horizontal joint reinforcing in interior load-bearing wall shall run continuous. In the same courses as horizontal reinforcing, install wire mesh extending 8 inches minimum into interior partition and projecting into the exterior wall to within 2 inches of exterior face of wall. Install wire mesh reinforcing in horizontal joints 16 inches o.c. vertically.

~~J.~~I. Grout masonry walls where indicated on drawings.

3.5 MORTAR BEDDING AND JOINTING

A. Mix mortar ingredients for a minimum of 5 minutes in a mechanical batch mixer. Use water clear and free of deleterious materials which would impair the work. Each mortar batch is allowed only one re-tempering. Do not use mortar which has begun to set after the first re-tempering or if more than 2-1/2 hours has elapsed since initial mixing.

B. Lay solid masonry units with completely filled bed and head joint; butter ends with sufficient mortar to fill head joints and shove into place. Butter ends of brick in hand and in the wall at closures. Do not slush head joints.

C. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells; also bed webs in mortar in starting course on footings and foundation walls and in all courses of piers, columns and pilasters, and where adjacent to cells or cavities to be reinforced or to be filled with concrete or grout.

D. Joints: Maintain joint widths shown, except for minor variations required, to maintain joint alignment. Lay walls with 3/8 inch joints. Cut joints flush for masonry walls which are to be concealed or to be covered by other materials. For exposed masonry, provide joints as follows:

1. Fill Exposed Joints: Concave tooled.
2. Fill Concealed Joints: Struck flush.

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E. Remove masonry units disturbed after laying; clean and relay in fresh mortar. Do not pound corners at jams to fit stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar, and reset in fresh mortar.

3.6 STRUCTURAL BONDING OF MULTI-WYTHE MASONRY

A. Use continuous horizontal joint reinforcement installed in horizontal mortar joints for bond tie between wythes.

B. Corners: Provide interlocking masonry unit bond in each course at corners, unless otherwise shown.

1. Provide continuity with horizontal joint reinforcement at corners using prefabricated "L" units, in addition to masonry bonding.

C. Intersecting and Abutting Walls: Unless vertical expansion or control joints are shown at juncture, provide same type of bonding specified for structural bonding between wythes and space as follows:

1. Provide individual metal ties.
2. Provide continuity with horizontal joint reinforcement using prefabricated "T" units.

D. Nonbearing Interior Partitions: Build full height of story to underside of solid floor or roof structure above and as follows:

1. Install pressure-relieving joint filler in joint between top of partition and underside of structure above.
2. Wedge nonbearing partitions against structure above with small pieces of tile, slate, or metal.

3.7 CAVITIES/AIR SPACES

A. Keep cavities/air spaces clean of mortar droppings and other materials during construction. Strike joints facing cavities/air spaces flush.

B. Tie exterior wythe to interior wythe with individual metal ties. Stagger alternate courses.

C. Tie exterior wythe to interior wythe with continuous horizontal joint reinforcing embedded in mortar joints at not more than 16 o.c.

D. Install vents in vertical head joints at the top of each continuous cavity/air space. Space vents and close off cavities/air spaces vertically and horizontally with blocking in manner indicated.

3.8 CAVITY WALL INSULATION

A. On units of rigid insulation, install small pads of adhesive spaced approximately 1'-0" o.c. both ways on inside face or attach to inside face with plastic fasteners designed for this purpose. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Press units firmly against inside wythe of masonry or other construction as shown.

1. Fill all cracks and open gaps at all perimeter edges in insulation with crack sealer compatible with insulation and masonry.

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3.9 HORIZONTAL JOINT REINFORCEMENT

A. Provide continuous horizontal joint reinforcing as shown and specified. Fully embed longitudinal side rods in mortar for their entire length with a minimum cover of 5/8 inch on exterior side of walls and 1/2 inch at other locations. Lap reinforcement a minimum of 6 inches at ends of units. Do not bridge control and expansion joints with reinforcing. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend units as directed by manufacturers for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

B. Space continuous horizontal reinforcing as specified in Section 04 05 23.

C. Reinforce masonry openings greater than 1 foot wide, with horizontal joint reinforcing placed in 2 horizontal joints approximately 8 inches apart, both immediately above the lintel and immediately below the sill. Extend reinforcing a minimum of 2 foot beyond jambs of the opening except at control joints.

D. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

E. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend reinforcement units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

~~3.10 ANCHORING MASONRY TO STRUCTURAL MEMBERS~~

~~A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:~~

~~1. Provide an open space not less than 1 inch in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar or other rigid materials.~~
~~2. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure.~~
~~3. Space anchors as indicated, but not more than 24 inches o.c. vertically and 36 inches o.c. horizontally.~~
~~4. Refer to the applicable drawing details and structural details.~~

~~3.11~~3.10 MOVEMENT (CONTROL AND EXPANSION) JOINTS

A. Install control and expansion joints in unit masonry where indicated, or if not indicated, space at a maximum of 30'-0" o.c. Build in related items as the masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement.

B. Form control joints in concrete masonry as follows:

1. Fit bond breaker strips into hollow contour in ends of block units on one side of control joint. Fill the resultant core with grout and rake joints in exposed faces.
2. Install preformed control joint gaskets designed to fit standard sash block.
3. Install special shapes designed for control joints. Install bond breaker strips at joint. Keep head joints free and clear of mortar or rake joint.

C. Control Joint Locations: If control joints are not shown on the Drawings, provide as follows:

1. Minimum 20 feet to maximum 30 feet between joints in CMU walls and Face Brick walls, unless otherwise noted.
2. Vertical in exterior Face Brick shall occur within 6 feet of a building corner.
3. At change from wall setting on foundation to wall setting on floor slab.
4. At change from exterior wall to interior wall.
5. At walls setting on floors, that cross floor construction and control joints.

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6. At columns within masonry walls.
7. At changes in wall thickness.

~~3.12~~3.11 INSTALLATION OF REINFORCED UNIT MASONRY

A. Install reinforced unit masonry to comply with requirements of referenced unit masonry standard.

B. Temporary Formwork: Construct formwork and shores to support reinforced masonry elements during construction.

1. Construct formwork to conform to shape, line, and dimensions shown. Make sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.

C. Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.

D. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

~~3.13~~3.12 FLASHING/WEEP HOLES

A. Install embedded flashing and weep holes in exterior wythe ~~face brick~~ CMU masonry at shelf angles, lintels, ledges, other obstructions to the downward flow of water in the wall, and where indicated.

B. Prepare face brick masonry surfaces so that they are smooth and free from projections that could puncture flashing. Place through-wall flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing with adhesive/sealant/tape as recommended by flashing manufacturer before covering with mortar.

~~C. Install flashings as follows at exterior Face Brick wythe:~~

~~1. At lintels and shelf angles, extend flashing a minimum of 4 inches into masonry at each end. Extend flashing from exterior face of outer wythe of masonry, through the outer wythe, turned up a minimum of 4 inches, and through the inner wythe to within 1/2 inches of the interior face of the wall in exposed masonry. Where interior surface of inner wythe is concealed by furring, carry flashing completely through the inner wythe and turn up approximately 2 inches, unless otherwise indicated.~~
~~2. At heads and sills and where flashing is interrupted, extend flashing as specified above unless otherwise indicated but turn up ends not less than 2 inches to form a pan.~~
~~3. Install flashing in masonry veneer walls as specified above but carry flashing up face of sheathing at least 8 inches and behind air infiltration barrier/building paper.~~
~~4. Interlock end joints of ribbed sheet metal flashings by overlapping ribs not less than 1-1/2 inches or as recommended by flashing manufacturer and seal and lap with adhesive as recommended by the flashing manufacturer.~~
~~5. Install brick vents in the head joints of the second brick course above each flashing and the third course of brick below each flashing and spaced at a maximum of 4'-0" o.c. horizontally.~~

~~D.~~C. Install weep holes in the head joints in exterior wythes of the first course of masonry immediately above embedded flashings and as follows:

1. For weep holes with product specified in Part 2 of this Section.
2. Space weep holes 16 inches o.c.
3. In un-insulated cavities/air spaces place pea gravel to a height equal to height of first course but not less than 2 inches immediately above flashing embedded in the wall, as masonry construction progresses, to splatter mortar droppings and to maintain drainage.

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4. In insulated cavities/air spaces cover cavity/air space side of open weep holes with copper or plastic insect screening before placing loose-fill masonry insulation in cavity.

~~E.~~D. Install reglets and nailers for flashing and other related construction where shown to be built into masonry.

~~F.~~E. Provide concealed flashing in the first in the first course above grade. Provide concealed flashing at other locations in masonry work as shown. Prepare masonry surfaces smooth and free from projections which might puncture flashing. Place through-wall flashing on bed of mortar and cover with mortar. Seal flashing penetrations with mastic before covering with mortar. Terminate flashing 1/4 inch beyond face of wall and bend down at 45 degree angle to create a drip edge, unless otherwise shown. Extend flashings beyond edges of lintels and sills at least 4 inches and turn up edge on sides to form pan to direct moisture to exterior. Provide weep holes in the head joints of the first course of masonry immediately above concealed flashings, spaced 16 inches o.c.

1. Interlock end joints of deformed metal flashings by over-lapping deformations not less than 1-1/2 inches and seal lap with elastic sealant, or in accordance with manufacturer's instructions.

~~3.14~~3.13 VERTICAL REINFORCED CONCRETE MASONRY

A. Where grout filled or steel reinforced concrete block masonry foundations or masonry walls are called for on the Drawings, they shall be reinforced and grouted in accordance with the Drawings and details. All cells to be grouted shall be clean and free of mortar protrusions and droppings in the cells.

B. The low-lift grouting procedure shall be used as described in the Drawings and in NCMA-TEK 23A Grouting for Masonry Walls. Maximum height of grouting shall be 4 feet.

C. ~~1500 psi~~ 2000 psi ~~3000 psi~~ grout shall be installed in the block cavities so as to completely fill each cavity with homogenous grout, extending from the lowest course to the top of the reinforced portion of the foundation or wall. Concrete or mortar shall not be used as grout for CMU.

D. After the grout is placed, it shall be consolidated with a small vibrator. The top of the grout filling shall be stopped 1-1/2 inches below the top of the concrete block, except for the top course in the wall where the grout shall be struck flush with the top. If highly absorptive masonry units are used, the grout shall be re-vibrated after it has begun to stiffen.

E. Aggregate used in the grout shall be small enough not to interfere with placement and plasticity. Water-cement ratio shall be maintained so compressive strength at 28 days shall not be less than 2000 lbs. per sq. in.

F. Caging devices and centering clips shall be spaced vertically such that every section of vertical reinforcing steel bar is restrained by 2 clips or devices, one near its top and one near its bottom.

~~3.15~~3.14 LINTELS

A. Install steel lintels where indicated and/or as required for masonry openings.

B. For CMU walls, use specially formed bond beam units with reinforcement bars placed as indicated and filled with coarse grout, or as may be indicated on the Structural Drawings.

C. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

~~3.16~~3.15 INSTALLATION OF REINFORCED UNIT MASONRY

A. Install reinforced unit masonry to comply with requirements of referenced unit masonry standard.

B. Temporary Formwork: Construct formwork and shores to support reinforced masonry elements during construction.

1. Construct formwork to conform to shape, line, and dimensions shown. Make sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.

C. Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.

D. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

~~3.17~~3.16 ANCHORING MASONRY WORK

A. Provide anchoring devices of the type shown and as specified.

B. Anchor masonry to structural members where masonry abuts or faces such members to comply with the following:

1. Provide an open space not less than 1/2 inch width between masonry and structural member, unless other types of anchoring devices are shown. Keep open space free of mortar or other rigid materials.
2. Anchor masonry to structural members with metal ties embedded in masonry joints and attached to structure. Provide anchors with flexible tie sections, unless other types of anchoring devices are shown.
3. Space anchors as shown, but not more than 16 inches o.c. vertically and 24 inches o.c. horizontally.
4. The ends of wall ties shall be embedded in mortar joints. Wall tie ends shall engage outer face shells of hollow units by at least 1/2 inch. Wire wall ties shall be embedded at least 1-1/2 inch into the mortar bed of solid masonry units or solid grouted hollow units.
5. Unless otherwise required, wythes not bonded by headers shall be bonded with wall ties as follows:

    a. Size - Minimum number of ties required
    b. #9 gauge - One wall tie wire per 2.67 sq.ft.
    c. 3/16 inch diameter - One wall tie wire per 4.50 sq.ft.

6. Uless accepted by the Architect/Engineer, reinforcement shall not be bent after being embedded in grout or mortar.
7. Unless otherwise required adjustable ties shall meet the following requirements:

    a. Use one tie for each 1.77 sq.ft. of wall area.
    b. Neither horizontal nor vertical spacing shall exceed 16 inches.
    c. Maximum misalignment of bed joints from one wythe to the other shall be 1-1/4 inch.
    d. Maximum clearance between connecting parts of the ties shall be 1/16 inch.

END OF SECTION **04 22 00**

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SECTION 07 11 13 - DAMPPROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Dampproof coating on exterior side of building perimeter ~~CMU or~~ concrete foundation walls to stop moisture penetration through surfaces.
2. ~~Apply to interior walls of CMU or concrete that is arranged in such a way that the floor on one side of the wall is on fill or structural supported and lies above the floor elevation on the opposite side of the wall.~~
3. ~~Apply dampproof coating to outside of inner CMU wythe in cavity wall construction.~~

1.2 SUBMITTALS

A. Submit in accordance with Division 01 requirements.

B. Product Data: Include data substantiating that materials comply with specified requirements for dampproofing material specified.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer who has completed bituminous dampproofing work similar in material, design, and extent to that indicated for Project and that has resulted in construction with a record of successful in-service performance.

B. Single-Source Responsibility: Obtain primary dampproofing materials and primers from a single manufacturer. Provide secondary materials only as recommended by manufacturer of primary materials.

C. VOC Limit: Maximum of 500 g/L for bituminous coatings and mastics as required by the U.S. EPA Architectural Coatings Rule.

1.4 PROJECT CONDITIONS

A. Substrate: Proceed with dampproofing work only after substrate construction and penetrating work have been completed. Starting of work means acceptance of substrate.

B. Weather: Proceed with dampproofing work only when existing and forecast weather conditions will permit work to be performed in accordance with manufacturer's recommendations.

C. Ventilation: Provide adequate ventilation during application of solvent-based components in enclosed spaces. Maintain ventilation until dampproofing membrane has thoroughly cured.

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PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Material for dampproof coating shall be fibered bituminous material of a consistency suitable for application by troweling or spraying.

1. Basis of Design: Sonneborn "Hydrocide 700B" as manufactured by BASF The Chemical Company, Shakopee, Minnesota
2. "Perm-A-Barrier VP Liquid" as manufactured by W.R. Grace & Co., Inc., Cambridge, MA

B. Rigid protective boards shall be 1/8 inch thick "Protection Course II" material by Sonneborn; or equal.

1. Protection boards shall be used if rigid perimeter insulation is not protecting.

2.2 MATERIALS

A. Waterborne, emulsified-asphalt dampproofing compound.

B. Comply with the latest edition of provisions for ASTM D1187 and ASTM D1227.

C. 50% solids by volume, minimum.

D. Fibrated.

PART 3 - EXECUTION

3.1 PREPARATION OF SUBSTRATE

A. Clean substrate of projections and substances detrimental to work; comply with recommendations of prime materials manufacturer.

B. Install cant strips and similar accessories as shown and as recommended by prime materials manufacturer even though not shown.

C. Fill voids, seal joints, and apply bond breakers (if any) as recommended by prime materials manufacturer, with particular attention at construction joints.

D. Install separate flashings and corner protection stripping as recommended by prime materials manufacturer, where indicated to precede application of dampproofing. Comply with details shown and manufacturer's recommendations. Give particular attention to requirements at building expansion joints, if any.

E. Prime substrate as recommended by prime materials manufacturer.

F. Protection of Other Work: Do not allow liquid and mastic compounds to enter and clog drains and conductors. Prevent spillage and migration onto other surfaces of work, by masking or otherwise protecting adjoining work.

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G. Before applying dampproofing, fill cracks, holes, voids, and open areas in surfaces. Surfaces shall be dry and free of dirt, grease, excess mortar, or other foreign matter that might interfere with adhesion and penetration of the coating. Surface shall be dry and free of dust or loose particles.

3.2 INSTALLATION

A. Comply with manufacturer's recommendations for troweled application, except where more stringent requirements are indicated or specified and where project conditions require extra precautions or provisions to ensure satisfactory performance of work.

B. Install in strict accordance with the manufacturers written installation instructions.

C. Provide all items and accessories as required for a complete installation in every respect.

3.3 APPLICATION

A. Apply coating material in accordance with the manufacturer's printed instructions using sufficient quantity to form a continuous unbroken coating over surfaces to be dampproofed. Retouch surfaces as necessary to provide a continuous coating. Protect adjacent surfaces from damage by the dampproofing. Material applied with trowel or by spray, shall have at least 1/8 inch thickness.

1. Application by spray method shall be applied with a minimum of 3 coats to achieve the 1/8" consistent thickness.

B. Apply mastic in one coat directly from the container without thinning. Form a cove at the corner junction of surfaces which are coated. Joints, grooves, slots, or breaks in the surface shall be completely and continuously covered. Spread coating into chases, corners, reveals, soffits, or other surfaces which occur below grade. Reinforce at corners and angles with one additional thickness of membrane.

3.4 PROTECTION

A. After the mastic has set, cover dampproofing mastic with a protective board course. As soon as solvents have left the mixture, apply one board layer over the entire surface of the mastic, holding in place with spots of additional mastic.

3.5 GENERAL INSTALLATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.

C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.

E. Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.

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F. Recheck measurements and dimensions, before starting each installation.

G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

END OF SECTION

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SECTION 07 54 20 - FULLY ADHERED FLEECE BACK KEE HYBRID SHEET ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Provide labor, materials, and equipment necessary for complete installation of fully adhered Elvaloy sheet roofing system indicated on the Drawings and specified herein.

1.2 SUBMITTALS

A. Submit product data in accordance with Division 1 requirements, to substantiate that the products being installed are as specified. Product data shall be submitted so that it can be established that the roofing subcontractor has clear understanding as to what was specified.

B. When warranties are delivered to the Owner, a cover letter shall be included directing the Owner to inform (copy) the manufacturer as well as the Roofing Contractor when reporting roofing problems, regardless of when they occurred during the warranty period.

C. Contractor shall submit shop drawings for ordering, manufacturing, and final inspection of the Roofing System. Drawings shall include roof outline, roof dimensions, roof penetrations, insulation type and thickness, piece layout, parapet size and location, and other information which may affect the suitability and installation of the Roofing System on the respective project.

D. Pre-roofing conference meeting minutes.

E. Roof inspection and maintenance manual.

F. Copies of each roof inspection as conducted by the manufacturer's representative.

G. Submit warranties as specified.

H. Submit copies of FM 1-90 approvals and certifications.

1.3 QUALITY ASSURANCE

A. Roofing Contractor shall obtain from the roofing manufacturer copies of each roof inspection and furnish a copy to the Architect. Contractor shall inform roofing manufacturer, with regard to warranties, that warranties shall be issued, based upon the acceptance of the roofing work, and that deficiencies noted on inspection reports have been corrected. Manufacturer shall not refuse or restrict the provisions of its warranty, based upon deficiencies noted on inspection reports, especially any report that may not have been furnished to Architect. Architect will not approve final payment of roofing work until final and interim inspection reports and warranty are in hand. Architect's representative shall accompany manufacturer's inspector and Roofing Installer during final inspection before issuing manufacturer's warranty.

B. Roofing firm (installer) and roofing membrane manufacturer shall have a least 10 years successful experience in the type of roofing system specified. Roofing contractor shall be approved and trained specifically by the membrane manufacturer in the installation of the fully adhered Elvaloy thermoplastic membrane roofing.

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C. Project Foreman/Supervisor: Roofing installer shall have on the job whenever roofing work is being done, a foreman/supervisor with a minimum 3 years experience in the type of roofing specified or the roofing manufacturer's technical field representative.

D. Roofing and associated work shall be performed by a single firm called the "Installer" in this Section, so that there will be undivided responsibility for the specified performance of components parts including, but not limited to, the following (even though some parts may be subcontracted to others):

1. Insulation and saddles, Section 07 22 00.
2. Metal flashing and counterflashing in connection with roofing, Section 07 62 00.
3. Provide wood insulation stops, wood nailers, and blocking required for installation of new roof and sheet metal in conformance with requirements of Section 06 10 00.

E. Roofing membrane manufacturer shall provide a qualified technical roofing inspector on the job site during installation of the fully adhered Elvaloy flexible sheet roofing. The technical roofing inspector shall be present for the pre-installation conference, a minimum of two (2) times per week during the roofing membrane and flashing installation and shall accompany the Architect during the Substantial Completion inspection for the project.

F. Roofing Membrane Manufacturer must be a Partner in the United States Environmental Protection Agency Energy Star Roof Products Program. Roof Membrane Manufacturer and Product must be listed on the Energy Star Roof Products Program Compliant Product List.

G. Roof membrane system shall be designed to meet wind-loading requirements for State of Indiana Building Codes and Regulations. Refer to Structural Drawings for wind velocity.

H. Membrane shall comply with ASTM D6754, latest edition. Manufacturer shall submit written certification of compliance to the Architect for review.

I. Protect roofing membrane during installation from shoe marks, debris, mud, loose screws and fasteners, adhesive over runs and overflows. Clean roof in its entirety following completion of roofing Work. Marked-up, scuffed-up and all of the above will not be tolerated.

J. Patching at roof areas will NOT BE ALLOWED regardless of manufacturers warranty requirements.

K. Cleaning of the roof membrane shall be in strict accordance with the manufacturers written instructions. Power cleaners (washers or scrubbers)will not be allowed.

L. Final payment may be withheld if final roof appearance is not satisfactory to the Architect or Owner

M. The Architect and the Owner reserve the right, at their discretion, to reject all roofing Work based on appearance of the final roof membrane installation. Excessive patching, striping and corrections will not be allowed and may be cause for rejection.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened containers and rolls with labels intact and legible. Materials having fire resistance classifications shall be delivered to the Project with labels attached as required. Deliver materials in sufficient quantity to allow continuity of work.

B. Product shall be stored indoors or in properly protected areas outdoors to provide continuous protection against wetting and moisture absorption. Emulsion shall be stored in temperature above 40 degrees F.

1. Materials stored outdoors shall be on raised platforms and cover top and sides with waterproofed materials properly tied down. Remove wet products from project site.
2. Handle roll goods as to prevent damage to edge or ends.

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3. Provide continuous protection of products during delivery, storage, handling, and application.
4. Do not store roofing materials in concentrated areas of roof deck.

1.5 PROJECT CONDITIONS

A. Pre-Roofing Conference

1. Before installation of roofing and associated work, meet at Project site with installer, installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of other work in and around roofing that must follow the roofing work (including Mechanical Work, if any), the Architect and other representatives directly concerned with performance of the work, including (where applicable) insurers, test agencies, product manufacturers, governing authorities, and the Owner. Record (by Contractor) the discussions of the conference and the decisions and agreements (or disagreements) reached and furnish a copy of the record to each party attending. Review foreseeable methods and procedures related to roofing work, including, but not necessarily limited to, the following:

    a. Review project requirements (Drawings, Specifications and other Contract Documents).
    b. Review required submittals, both completed and yet to be completed.
    c. Review status of substrate work (not by the roofing installer), including drying, structural loading limitations, and similar considerations.
    d. Review availability of materials, tradesmen, equipment, and facilities needed to make progress and avoid delays.
    e. Review required inspection, testing, certifying, and accounting procedures.
    f. Review weather and forecasted weather conditions, and procedures for coping with unfavorable conditions, including the possibility of temporary roofing.
    g. Review regulations concerning code compliance, environmental protection, health, safety, fire, and similar considerations.
    h. Review procedures needed for protection of roofing during the remainder of the construction period.
    i. Consider each party's extant judgment, as advanced in the interest of successful completion of the work.

2. Roofing work may not begin until after the pre-roofing conference. Meeting minutes of the pre-roofing conference shall be reviewed and commented by all involved parties prior to the application of the roofing work.
3. PRE-ROOFING CONFERENCE IS MANDATORY for the:

    a. Roofing membrane manufacturer's technical inspector for the project.
    b. Roofing membrane representative for the membrane manufacturer.
    c. General Prime Contractor
    d. Architect or Architect's representative.
    e. Roof and deck insulation manufacturer's representative.
    f. Flashing and sheet metal contractor.
    g. Mechanical contractor for coordination of roof top curbs and air handler unit penetrations.

B. Weather Condition Limitations

1. Proceed with roofing and associated work only when weather conditions will permit unrestricted use of materials and quality control of the Work being installed, complying with the requirements and with the recommendations of the roofing materials manufacturer.

    a. Proceed only when the Installer is willing to guarantee the work as required and without additional reservations and restrictions.

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2. Apply in dry weather on a dry deck only. Where rain or inclement weather occur during application, the Work shall stop and not resume until the weather has cleared and the deck is properly dry.

1.6 ROOF MAINTENANCE MANUAL

A. Roofing membrane manufacturer shall submit a Roof Maintenance and Inspection Manual with warranties and project closeout submittals. (Final payment will not be made until roof maintenance manual is submitted).

B. Roof Maintenance and Inspection Manual shall be bound in a 3-ring binder with name of project, Owner, Architect, and Contractor on front cover.

C. Roof Maintenance and Inspection Manual shall include:

1. Cover letter recommending to the Owner that 2 roof maintenance inspections should be conducted per year.
2. Table of Contents.
3. Visual inspection checklist indicating specific flashings and details to be inspected. Include items such as base flashing seams, reglets and counterflashings, roof edge flashings, roof penetration flashings, roof curb flashings, boot flashings, roof drain areas, parapet wall flashings, copings, roof membrane seams, skylight flashings, etc. Applicable items shall be listed per project.
4. Copies of as-built roofing details.
5. Roof plan indicating penetrations, detail locations, roof drains, and seams.

1.7 WARRANTIES

A. The Contractor shall furnish to the Owner a written guarantee warranting the roofing insulation and flashing work, including the installation of products furnished by others and installed under this Section of the Work, against defects in materials and workmanship for a period of 5 years from the Date of Substantial Completion.

1. Guarantee shall include, but not be limited to, roofing, roof insulation, sheet metal flashings and gravel stops, gutters and downspouts, flexible flashings, expansion joints, control joints, and curbs at roof openings.
2. Guarantee period shall begin on the date of Substantial Completion for the Project or such date that the roof is accepted by the Architect and Owner, if the date is after the date of Substantial Completion.
3. Repairs required, either permanent or temporary, to roofing or roof flashings under this guarantee to keep the roof watertight shall be made within 3 days after notice of the need for repairs. Should the Contractor fail to make such repairs within the time period, the Owner may have such repairs made and charge the cost to the Contractor.

B. In addition to the guarantee above, provide to the Owner a written warranty from the roofing membrane manufacturer, warranting the roofing system membrane, flashing, and all roof system items against leaks and defects in materials and workmanship for a period of 30 years no dollar limit, starting the day of Substantial Completion as established by the Architect.

1. Warranties shall be extended as required to cover the time period between roof membrane completion and the Date of Substantial Completion for the building or portion thereof.

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PART 2 - PRODUCTS

2.1 2-PLY KEE THERMOPLASTIC HYBRID ROOF SYSTEM

A. Manufacturers:

1. "2-PLY Kee Thermoplastuc Hybrid Roof System" by The Garland Co., Cleveland, OH
2. Or pre-approved equal

B. Roof Membrane System Load-Strain Physical Properties: The submitted roof system shall meet or exceed the minimum load-strain performance criteria and minimum number of roof membrane plies specified. Testing shall be conducted by an ISO 17025 accredited independent third-party laboratory in accordance with ASTM D 2523 methodology. All testing results shall be submitted on laboratory letterhead

C. KEE-STONE Green-Lock Plus System:

1. System Physical Properties:

a. Tensile Strength, ASTM D 2523

1) 20.0 in/min. @ 73.4 +/- 3.6° MD 452.1 lbf/in. / XMD 468.2 lbf/in.

b. Tensile Strength, ASTM D 2523

1) 20.0 in/min. @ 0°F MD 876.9 lbf/in. / XMD 755.5 lbf/in.

c. Elongation at Failure, ASTM D 2523

1) 20.0 in/min. @ 73.4 +/- 3.6° MD 26.6% / XMD 18.0%

d. Elongation at Failure, ASTM D 2523

1) 20.0 in/min. @ 0°F MD 7.8% / XMD 5.9%

e. Tear Strength, ASTM D 4073 @ 77°F

1) 20.0 in/min. @ 73.4 +/- 3.6° / MD 778.8 lbf. / XMD 675.4 lbf

D. Roofing sheet materials shall include but not be limited to:

1. Base Ply Sheet Modified Membrane: Type III membrane complying with ASTM 6163, Grade S. Physical requirements below.
2. Cap Ply Sheet Ketone Ethylene Elvaloy: Fleece-backed membrane complying with ASTM D 6754. Physical requirements below.
3. Stripping Ply Sheet Modified Membrane: Type III membrane complying with ASTM 6163, Grade S. Physical requirements below.
4. Base Flashing Assembly: Two ply hybrid modified, modified bitumen base ply with the finished thermoplastic ply complying with ASTM D 6754 and base ply meeting Type III membrane complying with ASTM 6163, Grade S minimum.

2.2 ROOFING SHEET MATERIALS

A. Base Ply Sheet Modified Membrane: ASTM D 6163, Grade S, Type III, 80 mil SBS-modified asphalt sheet; suitable for application method specified, and as follows:

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1. FLEXBASE 80
2. Or equal

B. Roofing Cap Sheet: ASTM D 6754, 60 mil fleece backed KEE sheet with polyester composite scrim; suitable for application method specified, and as follows:

1. KEE STONE FB 60.
2. Or equal

2.3 BASE FLASHING SHEET MATERIALS

A. Base Ply Sheet Modified Membrane: ASTM D 6163, Grade S, Type III, 80 mil SBS-modified asphalt sheet; suitable for application method specified, and as follows:

1. FLEXBASE 80
2. Or approved equal

B. Roofing Cap Sheet: ASTM D 6754, 60 mil non-fleece back KEE sheet with polyester composite scrim; suitable for application method specified, and as follows:

1. KEE STONE NF 60 Flashing.
2. Or approved equal

2.4 BITUMINOUS ROOFING MATERIALS

A. General: Auxiliary materials provided or recommended by roofing system manufacturer for intended use and compatible with roofing.

B. Thermoplastic Adhesive: Dual-component urethane foam adhesive.

1. KEE-LOCK FOAM.
2. Or approved equal

C. Base Ply Asphalt Primer: ASTM D 41/D 41M.

1. GARLA-PRIME.
2. Or approved equal

D. Base Ply Membrane Adhesive: ASTM D 4586, asbestos free, Solvent-Free, Zero V.O.C. Of consistency required by roofing system manufacturer for application.

1. GREEN-LOCK PLUS MEMBRANE ADHESIVE
2. Or approved equal

E. Base Flashing Ply Membrane Adhesive: ASTM D 4586, asbestos free, Solvent-Free, Zero V.O.C. Of consistency required by roofing system manufacturer for application.

1. GREEN-LOCK PLUS FLASHING ADHESIVE
2. Or approved equal

F. Miscellaneous Materials: Provide those recommended by roofing system manufacturer.

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2.5 ROOF BOARD INSULATION MATERIALS

A. Base Layer Insulation: Rigid, closed cell polyisocyanurate rigid board insulation utilizing non-chlorine/non-ozone depleting blowing agent, bonded to non-asphaltic fiberglass facers, ASTM C 1289, Type II, Class 1, Grade 2 (20 psi), 1"-inch total thickness; maximum board size 48" x 96" for steel fastener with plate attachment and 48" x 48" maximum board size for high-rise foam adhered attachment applications: "" by Viking Products Group.

B. Low-Rise Foam Insulation Adhesive: Dual-component, VOC compliant, two-part reaction-cure urethane foam adhesive. "INSUL-LOCK HR" by The Garland Co., Inc.

2.6 RELATED MATERIALS

A. Plumbing stacks should be 4lb sheet lead formed and rolled.

B. Nails and Fasteners: Non-ferrous metal or galvanized steel, except that hard copper nails shall be used with copper; aluminum or stainless steel nails shall be used with aluminum; and stainless steel nails shall be used with stainless steel. Fasteners shall be self-clinching type of penetrating type as recommended by the manufacturer of the deck material. Nails and fasteners shall be flush-driven through flat metal discs of not less than one (1) inch diameter. Omit metal discs when one-piece composite nails or fasteners with heads not less than one (1) inch diameter are used.

C. Butyl Tape: 100% solids, asbestos free and compressive tape designed to seal as recommended and furnished by the membrane manufacturer.

PART 3 - EXECUTION

3.1 SUBSTRATE AND SURFACE PREPARATION

A. Roofing contractor shall verify proper surfaces to receive roofing and flashing materials. Do not apply roofing membrane during periods of precipitation. Do not apply below 32 degrees F.

3.2 GENERAL INSTALLATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

1. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
2. Prevent materials from entering and clogging roof drains and conductors, and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecasted.
3. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing at end of workday or when rain is forecasted. Remove and discard temporary seals before beginning work on adjoining roofing area.

B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.

C. Inspect materials immediately upon delivery and again before installation. Reject damaged and defective items.

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D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.

E. Recheck measurements and dimensions, before starting each installation.

F. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

3.3 SBS MODIFIED BITUMINOUS BASE PLY MEMBRANE INSTALLATION

A. Install base ply according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing as follows:

1. Lay out the roll in the course to be followed and unroll 6 feet (1.8 m). Cut base ply sheets into 18' lengths and allow plies to relax before installing. Install base sheet in Interply Adhesive applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout and over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
2. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum
3. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
4. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
5. Install subsequent rolls of modified across the roof as above with a minimum of 4-inch side laps and 8-inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
6. Extend underlayment 2 inches (50 mm) beyond top edges of cants at wall and projection bases.
7. Install base flashing ply to all perimeter and projections details.
8. Allow the one ply of base sheet to cure at least 30 minutes before installing the membrane.

B. Laps: Accurately align roofing sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Completely bond and seal laps, leaving no voids.

1. Repair voids in laps and lapped seams not completely sealed.

C. Install roofing sheets so side and end laps shed water.

3.4 KEE THERMOPLASTIC CAP SHEET MEMBRANE INSTALLATION

A. Install finish ply sheet according to roofing manufacturer's written instructions, starting at the low point of roofing system. Allow plies to relax before installing. Install in interply adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plies specified. Shingle in proper direction to shed water on each large area of roofing:

1. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
2. All field seams must be clean and dry prior to initiating any field welding. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
3. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.

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4. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
5. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
6. Follow local code requirements for electric supply, grounding and surge protection. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
7. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.

3.5 BASE FLASHING AND STRIPPING INSTALLATION

A. Install base flashing over cant strips and other sloped and vertical surfaces, at roof edges, and at penetrations through roof, and secure to substrates according to roofing system manufacturer's written instructions. Minimum base-flashing height of 8 inches (200 mm) is required. Install modified bituminous roofing sheet and cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing as follows:

1. Seal all curb, wall and parapet flashings with an application of flashing adhesive and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
2. Prepare all walls, penetrations, expansion joints [and where shown on the drawings] to be flashed with asphalt primer at the rate of one hundred (100) square feet per gallon. Allow primer to dry tack free.
3. Adhere to the underlying base flashing ply with specified flashing ply adhesive. Nail off at a minimum of 8 inches (203 mm) o.c.
4. Adhere finished NF flashing membrane in KEE-Stone WB Flashing Adhesive. Install termination bar at top of assembly and seal with a three-course application of trowel-grade mastic and fiberglass mesh.
5. Terminate all base flashings using extruded aluminum termination bar. Three-course all terminations with PVC Mesh and specified mastic.

B. Install roofing cap-sheet stripping where metal flanges and edgings are set on roofing according to roofing system manufacturer's written instructions.

3.6 ROOF DETAIL INSTALLATION

A. Coordinate counter flashing, cap flashings, expansion joints, and similar work with modified bitumen roofing work (as specified in other Sections).

B. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work (as specified in other Sections).

C. Curb Detail:

1. Minimum curb height is eight (8) inches. Prime vertically at a rate of one hundred (100) square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of two (2) inches.
3. Install base flashing assembly.
4. Install pre-manufactured counter-flashing with fasteners and neoprene washers or per manufacturer's recommendations.

D. Flanged Penetration Detail:

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1. Minimum stack height is twelve (12) inches.
2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
3. Prime both surfaces of flange of new sleeve. Install properly sized sleeves set in (¼) inch bed of roof cement.
4. Install stripping ply prior to cap sheet installation

3.7 PROTECTION AND CLEANING OF ROOFING

A. Upon completion of roofing, institute appropriate procedures for protection of roofing during remainder of construction period.

B. Protect white roofing membrane during installation from shoe marks, debris, mud, loose screws and fasteners, adhesive over runs and overflows. Clean roof in its entirety following completion of roofing Work. Marked-up, scuffed-up and all of the above will not be tolerated.

C. Patching at roof areas WILL NOT BE ALLOWED.

D. Cleaning of the roof membrane shall be in strict accordance with the manufacturers written instructions. Power cleaners will not be allowed.

E. Final payment may be withheld if final roof appearance is not satisfactory to the Architect or Owner.

F. The Architect and the Owner reserve the right, at their discretion, to reject all roofing Work based on appearance of the final roof membrane installation. Excessive patching, striping and corrections will not be allowed and may be cause for rejection.

END OF SECTION 07 54 20

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SECTION 08 33 13 - COILING COUNTER DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Provide labor, materials, and equipment necessary for complete installation of the coiling counter shutters with integral frame as shown on the Drawings and specified herein.

1.2 SUBMITTALS

A. Coiling counter doors and accessories specified in this Section shall be submitted as a single package as practicable. Separate submittals for each system or product may not be acceptable.

B. **Do not submit MSDS or SDS sheets with the product data submittal.** Architect is not responsible for review of this information. Submittals that include MSDS or SDS data sheets may be returned as rejected.

C. Shop Drawings: Shop drawings shall show elevations of each door type, door construction details and methods of assembling sections, hardware locations and installation methods, dimensions and shapes of materials, anchorage and fastening methods, door frame types and details, wall opening construction details, weatherstripping, and finish requirements.

D. Submit warranties as specified herein.

1.3 QUALITY ASSURANCE

A. All coiling counter doors shall be designed to a standard maximum of 25 cycles per day and an overall maximum of 25,000 operating cycles for the life of the door.

1.4 WARRANTY

A. Provide manufacturer's warranty of one (1) year from the Date of Substantial Completion against effects in workmanship and materials.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:

1. Cookson/Cornell, Goodyear, AZ
2. Wayne-Dalton, Mt. Hope, Ohio
3. Overhead Door Corporation, Lewisville, Texas
4. Clopay Corporation, Mason, Ohio

B. Type, Aluminum: Push-Up Manual with Integral Frame

1. "ESC20" ~~"ESC10"~~ by Cookson/Cornell.
2. "Model 560" ~~"Model 500"~~ by Wayne-Dalton

3. "Model 655" ~~"Model 652"~~ by Overhead Door Corp.
4. "CESC20" ~~CESC10"~~ by Clopay Corp.

2.2 MINIMUM MATERIALS AND CONSTRUCTION

A. Curtains: Assemble curtains of extruded aluminum, interlocking flat faced slats, 1/2 inch deep, 22 gauge, fasten endlocks to alternate slats. Furnish matching bottom bar.

B. Guides: Provide guides of extruded aluminum with wool pile strip. Attach to jambs with minimum 1/2-inch fasteners. Type to be determined by surrounding mounting surface.

C. Counterbalance Assembly: Barrel shall be steel tubing of not less than 4 inches in diameter. Oil tempered torsion springs shall be capable of correctly counterbalancing the weight of the curtain. Barrel shall be designed to limit the maximum deflection to .03 inch per foot of opening width.

D. Brackets: 3/16-inch die cast aluminum bolted to the wall angle with 1/2-inch fasteners.

E. Hood: .040-inch aluminum with intermediate supports as required to prevent sag. Form to fit the square brackets.

F. Operation: Push-Up

1. Also operate with a removable awning type handle through shafting and precision cast iron reduction gearing.

G. Finish: Aluminum curtain, bottom bar, guides, and hood shall be clear anodized; other parts shall receive one coat of aluminum paint.

H. Locking: Equip doors for locking with slide bolts operable from coil side.

2.3 OPERATION

A. Manual Push-Up operation.

1. Push-Up doors shall open and close with a maximum for 30 pounds of effort utilizing finger lifts in the bottom bar.

PART 3 - EXECUTION

3.1 INSTALLATION

A. The coiling counter doors shall be erected by the manufacturer or his authorized representative in compliance with detailed instructions of the manufacturer.

B. Install assemblies to provide a rigid, permanent attachment to the building according to supplier's instructions, approved shop drawings, and Architect's Drawings.

C. Provide all items and accessories as required for a complete and operating installation in every respect.

D. Install an additional hood around gears where exposed to view in their final configuration.

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3.2 ADJUSTMENT AND CLEANING

A. After installation moving parts shall be properly adjusted to give free, effortless operation.

B. Take every precaution to properly protect the assemblies during and after installation.

C. After installation clean exposed surfaces and demonstrate to the Architect that components are in proper working order.

END OF SECTION **08 33 13**

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SECTION 08 51 13 - ALUMINUM WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes heavy commercial-grade aluminum window units of the performance class indicated. Window types required include:

1. Sliding windows

1.2 SYSTEM PERFORMANCE REQUIREMENTS

A. General: Provide aluminum window units complying with performance requirements specified, as demonstrated by testing manufacturer's corresponding stock systems according to test methods indicated.

B. Design Requirements: Comply with structural performance, air infiltration, and water penetration requirements indicated in AAMA AW-PG40 for type, grade, and performance class of window units required.

C. Window systems shall be designed to meet wind-loading requirements of the **Indiana Building Code, latest edition.** Refer to Structural Drawings for wind velocity.

D. Testing: Test each type and size of required window unit through a recognized independent testing laboratory or agency, in accordance with ASTM E 330 for structural performance, with ASTM E 283 for air infiltration, and with both ASTM E 331 and ASTM E 547 for water penetration. Provide certified test results, complying with the provisions of the latest editions of the referenced standards.

1. Structural Performance: Provide window units with no failure or permanent deflection in excess of 0.4 percent of any member's span after removal of the imposed load, for a positive (inward) and negative (outward) test pressure of 75 lbf/sq. ft.
2. Air Infiltration: Provide units with air infiltration rate of not more than 0.06 cfm/ft. of operable sash joint for an inward test pressure of 6.24 lbf/sq. ft.
3. Water Penetration: Provide units with no water penetration as defined in the test method at an inward test pressure of 15 percent of the design pressure.
4. Condensation Resistance: Provide units that have been tested for thermal performance in accordance with AAMA 1503.1, latest edition, showing a condensation resistance factor (CRF) of not less than 50.
5. Thermal Transmittance: Provide window units that have a U-value maximum of 0.69 BTU/hour/sq. ft./deg F at 15-mph exterior wind velocity, when tested in accordance with AAMA 1503.1, latest edition.

1.3 SUBMITTALS

A. Submit the following in accordance with Division 1 requirements.

1. Submit copies of product data for each type of window required, including:

a. Construction details and fabrication methods.
b. Profiles and dimensions of individual components.
c. Data on hardware, accessories, and finishes.
d. Recommendations for maintenance and cleaning of exterior surfaces.

2. Shop drawings for each type of window required. Include information not fully detailed in manufacturer's standard product data and the following:

a. Layout and installation details, including anchors.
b. Elevations of continuous work at 1/4-inch scale and typical window unit elevations at 3/4-inch scale.
c. Full-size section details of typical composite members, including reinforcement.

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d. Hardware including operators.
e. Glazing details.
f. Accessories.
g. Shop drawings shall be signed and sealed by a licensed engineer registered in the State of ~~<%States%>~~ Indiana.
h. Calculations for wind load design shall be stamped, sealed and signed by a Professional Engineer in the State of ~~<%States%>~~ Indiana verifying compliance with ASCE 7, latest edition ASCE/SEI 7, latest edition.
i. Sample of Approved Product Label and location of attachment to assembly.

B. Submit warranty as specified herein.

C. Submit proof of compliance with AAMA AW-PG40 requirements. Testing for this requirement shall be by an independent testing laboratory conducted within 5 years from the date of the submittal. Test must be for a window or windows larger than those required for this project. Non-current tests and inappropriate sizes will be cause for rejection.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed installation of aluminum windows similar in design and extent to those required for the project and whose work has resulted in construction with a record of successful in-service performance.

B. Standards: Requirements for aluminum windows, terminology and standards of performance, and fabrication workmanship are those specified and recommended in AAMA 101 and applicable general recommendations published by AAMA.

C. Single-Source Responsibility: Provide aluminum window units from one source and produced by a single manufacturer.

1.5 PROJECT CONDITIONS

A. Field Measurements: Check actual window openings by accurate field measurement before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.

1. Where necessary, proceed with fabrication without field measurements, and coordinate fabrication tolerances to ensure proper fit of window units.

1.6 WARRANTY

A. Aluminum Window Warranty: Written warranty, executed by the window manufacturer, agreeing to repair or replace window units that fail in materials or workmanship within the specified warranty period. Failures include but are not necessarily limited to:

1. Structural failures including excessive deflection, excessive leakage, or air infiltration.
2. Faulty operation of sash and hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

B. Warranty Period: 5 years from the Date of Substantial Completion.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers

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1. “0300 Series” as manufactured by Graham Architectural Products, York, PA
2. “Series 6551” as manufactured by EFCO, Monett, MO
3. “6700i Horizontal Sliding” as manufactured by Architectural Window Manufacturing Corporation, Rutherford, NJ

B. Any manufacturer capable of complying with all requirements as specified herein will be acceptable. However, final decision as to acceptance is solely the Architect’s.

2.2 MATERIALS

A. Aluminum Extrusions: Alloy and temper recommended by window manufacturer for strength, corrosion resistance and application of required finish, but not less than 22,000 psi ultimate tensile strength, a yield of 16,000 psi. Comply with ASTM B 221

C. Fasteners: Provide nonmagnetic stainless-steel screws.

1. Reinforcement: Where fasteners screw-anchor into aluminum less than 0.125 inch thick, reinforce the interior with aluminum or nonmagnetic stainless steel to receive screw threads.
2. Exposed Fasteners: Except where unavoidable for application of hardware, do not use exposed fasteners. For application of hardware, use torx pinned head fasteners.

D. Anchors, Clips, and Window Accessories: Fabricate of aluminum or nonmagnetic stainless steel, complying with the requirements of ASTM B 633; provide sufficient strength to withstand design pressures.

E. Compression Glazing Strips And Weatherstripping: At manufacturer's option, provide neoprene gaskets complying with ASTM D 2000 Designation 2BC415 to 3BC415, PVC gaskets complying with ASTM D2287, or expanded neoprene gaskets complying with ASTM C 509, Grade 4.

F Sliding Weatherstripping: Provide double weatherstripping using silicone coated woven pile with a polypropylene center fin complying with AAMA 701.

G. Sealant:

1. Unless otherwise indicated for sealants required within fabricated window units, provide elastomeric type as recommended by window manufacturer for joint size and movement, to remain permanently elastic, non-shrinking and non-migrating. Provide product complying with AAMA Specification 803 and 808.
2. Refer to Division 7 for perimeter sealants between window units and surrounding construction.

H. Insect Screens: Half

1. Fabric: 18 x 16 aluminum charcoal mesh retained in screen frames with vinyl splines that permit easy replacement.
2. Frames: Extruded aluminum sections or steel frames with corners mitered and crimped with corner gussets. Manufacturer’s standard finish.

I. General: Except as otherwise indicated, provide window units complying with requirements of AAMA Performance Classification "AW" grade windows. Windows for this project will be rated a minimum of AW40 for full size test units per AAMA/WDMA/CSA 101/I.S.2/A440-08 to withstand a design pressure of 40 psf minimum.

J. Horizontal Single-Sliding Windows (HS):

1. Units: One operable sliding sash capable of full travel within the main frame.
2. Sash: Roll on a minimum of two stainless steel ball bearing rollers housed in a molded nylon corner housing and be adjustable to a minimum of two (2) heights for ease of operation.
3. Provide units which have “lift-out” feature permitting easy removal of the sash from inside without special tools.

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2.3 FABRICATION AND ACCESSORIES

A. General: Provide manufacturer's standard fabrication and accessories which comply with specifications. Include complete system for assembly of components and anchorage of window units and provide complete pre-glazing at the factory.

B. Window Material:

1. Windows and Muntin Bars: Aluminum.
2. Secondary Members (friction tabs, shoes, weatherstripping guides, etc.): Aluminum or a material compatible with aluminum.
3. Main Frame and Sash: Nominal thickness of not less than 0.062 inches, except for fin trim either integral or applied.
4. Frame Sill: Nominal thickness of not less than 0.090 inches.
5. Standard wall thickness tolerance: In accordance with the Aluminum Association.

C. Master Frame: Not less than 3-1/4 inches in depth.

D. Sash: Hollow extruded horizontal sections and not less than 1-3/16 inches in depth.

E. Hardware:

1. Material: Aluminum, stainless steel or other non-corrosive materials compatible with aluminum for hardware having component parts which are exposed. Cadmium or zinc-plated steel where used must be in accordance with ASTM Specification B 766 or B 633.
2. Locking Mechanism: Engage automatically at meeting rail when window is closed.
3. Sash Rollers: Case hardened, coated steel in accordance with ASTM D 33, Type 2 with stainless steel ball bearings. Nylon rollers will not be accepted.

F. Thermal Barrier: Provides a continuous uninterrupted thermal barrier around the entire perimeter of the frame and all sash and shall not be bridged by any metal conductors at any point.

G. Construction:

1. Assembly: Fabricate butt joints of the main frame and the sash, coped and joined neatly and secured by means of screws anchored in integral ports. Seal main frame from the back with a narrow joint sealant meeting AAMA 803 specification for narrow joint sealants.
2. Sash: Screwed together construction so that they may be easily repaired.
3. Meeting Rail Interlock: Two separate and distinct metal interlocks with fin-seal weatherstripping.

H. Mullions - Other structural members: When mullion units occur, whether they are joined by integral mullions, independent mullions or by a combination of frame members, the resulting members must be capable of withstanding the load outlined under Uniform Load specified load requirements, without deflecting more than 1/175th of its span. When independent or integral mullions are used to join windows, the mullions shall contain a thermal barrier as specified. Evidence of compliance may be by mathematical calculations.

I. Sash:

1. Join at the corners with screws in integral screw ports.
2. The sash must be easily removed from the frame for either cleaning or repair.

J. Glazing:

1. Pre-glaze all units (except insulated panels as required for installation) at the factory with insulated glass as follows:

a. Typical Insulated Glass: Overall thickness of 5/8 inch – 1 inch with two lites of 1/8 inch or 3/16 inch or 1/4 inch as size and loading require.

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(1) Primary Sealant: Polyisobutylene applied to the edge of the spacer.
(2) Secondary Sealant: Silicone.
(3) Air Spacer: Continuous metal spacer with formed corners and an in-line connector, containing desiccant.

2. Glaze units to allow for glass replacement without the use of special tools.

K. Weather Protection:

1. Provide means of drainage for water and condensation which may accumulate in members of window units.
2. Weatherstripping: Provide sliding weatherstripping for operating sash.

L. Screens: Provide screens on operating vents as indicated on the architectural plans.

2.6 FINISHES

A. General: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to application and designations of finishes.

B. Finish designations prefixed by “AA” conform to the system established by the Aluminum Association for designating aluminum finishes.

C. AAMA 607 clear anodized finish conforming to AAM10C22A41 Class I, 0.7 mils thick.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

A. Inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

1. Verify cleaning of masonry is complete prior to installation of aluminum windows.

B. Verify that rough or masonry opening is correct and the sill plate is level.

3.2 INSTALLATION

A. Set sill members and other members in a bed of compound or with joint fillers or gaskets, as shown, to provide weathertight construction. Refer to the "Joint Sealer" sections of Division 7 for compounds, fillers, and gaskets to be installed concurrently with window units. Coordinate installation with wall flashings and other components of the work.

1. Compounds, joint fillers, and gaskets to be installed after installation of window units are specified as work in another section in Division 7.

B. Provide all items as required for a complete and watertight installation in every respect, whether or not indicated on the drawings or specifications. Provide all miscellaneous accessories and trim and panning flashing as required whether or not indicated on the drawings or specified herein.

C. All installed windows shall be weather and watertight in every respect.

D. Erection Tolerance: Maximum variation from plumb is 1/16-inch in 3’-0 non-cumulative or 1/8-inch in 10’-0, which ever is less.

3.3 ADJUSTING, CLEANING, AND PROTECTION

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A. Adjust operating sash and hardware to provide a tight fit at contact points and at weatherstripping for smooth operation and a weathertight closure.

B. Clean aluminum surfaces promptly after installation of windows. Exercise care to avoid damage to protective coatings and finishes. Remove excess glazing and sealant compounds, dirt, and other substances. Lubricate hardware and other moving parts.

C. Clean glass of pre-glazed units promptly after installation of windows. Comply with requirements of the "Glass and Glazing" section for cleaning and maintenance.

D. Initiate and maintain protection and other precautions required through the remainder of the construction period, to ensure that, except for normal weathering, window units will be free of damage or deterioration at the time of Substantial Completion.

END OF SECTION 08 51 13

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SECTION 08 80 00 - BUILDERS GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes builders glazing, including, but not limited to, the following:

1. Clear monolithic float glass
2. Laminated glass
3. Insulated glass
4. Glazing sealants
5. Glazing tapes
6. Miscellaneous glazing materials
7. Spandrel Panel

1.2 DEFINITIONS

A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.

B. Glass Thicknesses: Indicated by thickness designations in millimeters in accordance with ASTM C1036.

C. IBC: International Building Code.

D. Interspace: Space between lites of an insulating-glass unit.

1.3 SUBMITTALS

A. All builder's glazing products,accessories and sealants specified in this Section shall be submitted as a single package as practicable. Separate submittals for each system or product may not be acceptable.

B. Do not submit MSDS or SDS sheets with product data submittal. Architect is not responsible for review of this information. Submittals that include MSDS or SDS data sheets may be returned as rejected.

C. Product data for each glass product and glazing material indicated.

D. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

E. Glass samples for verification purposes of 12-inch-square samples of each type of glass indicated except for clear monolithic glass products.

1. Laminated glass
2. Insulated glass

F. Product certificates signed by glazing materials manufacturers certifying that their products comply with specified requirements.

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1. Separate certifications are not required for glazing materials bearing manufacturer's permanent labels designating type and thickness of glass, provided labels represent a quality control program of a recognized certification agency or independent testing agency acceptable to authorities having jurisdiction.

G. Preconstruction and Compatibility test report from manufacturer of insulating glass edge sealant indicating that glass edge sealants were tested for compatibility with other glazing materials including sealants, glazing tape, gaskets, setting blocks, and edge blocks.

H. Product test reports for each type of glazing sealant and gasket indicated; evidencing compliance with requirements specified.

I. Maintenance data for glass and other glazing materials to include in Operating and Maintenance Manual specified in Division 01.

J. Delegated Design Submittal: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by qualified professional engineer responsible for their preparation.

1.4 COORDINATION

A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances to achieve proper safety margins for glazing retention under each design load case, load case combination, and service condition.

1.5 QUALITY ASSURANCE

A. Comply with applicable codes and regulations and with the Consumer Product Safety Commission CPSC 16 CFR 1201 and with applicable recommendations of Flat Glass Marketing Association (FGMA) "Glazing Manual."

B. Provide labels showing glass manufacturer's identity, type of glass, thickness, and quality. Labels shall remain on glass until it has been set and approved by the Designer.

C. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, except where more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. FGMA Publications: "FGMA Glazing Manual."

D. Safety Glass: Products complying with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for Category II materials.

1. Subject to compliance with requirements, provide safety glass permanently marked with certification label of Safety Glazing Certification Council (SGCC) or other certification agency acceptable to authorities having jurisdiction.

E. Glazier Qualifications: Engage an experienced and qualified glazier who has completed glazing similar in material, design, and extent to that indicated for Project with a record of successful in-service performance

1. A qualified glazing contractor for this Project who is certified under the North American Contractor Certification Program (NACC) for Architectural Glass & Metal (AG&M) contractors

F. Single-Source Responsibility for Glass: Obtain glass from one source for each product indicated below:

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1. Primary glass of each (ASTM C 1036) type and class indicated.
2. Heat-treated glass of each (ASTM C 1048) condition indicated.
3. Insulating glass of each construction indicated.

G. Single-Source Responsibility for Glazing Accessories: Obtain glazing accessories from one source for each product and installation method indicated.

H. Glass Testing Agency Qualifications: A qualified independent testing agency accredited according to the NFRC CAP 1 Certification Agency Program.

I. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C1021 to conduct the testing indicated.

1.6 PRECONSTRUCTION TESTING

A. Preconstruction Adhesion and Compatibility Testing: Test each glass product, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants.

1. Testing is not required if data are submitted based on previous testing of current sealant products and glazing materials matching those submitted. Submit the results and dates of those tests.

2. Use ASTM C1087 to determine whether priming and other specific joint-preparation techniques are required to obtain rapid, optimum adhesion of glazing sealants to glass, tape sealants, gaskets, and glazing channel substrates.
3. Test no fewer than four (4) samples of each type of material, including joint substrates, shims, sealant backings, secondary seals, and miscellaneous materials.
4. Schedule enough time for testing and analyzing results to prevent delaying the Work.
5. For materials failing tests, submit sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver glass to site in suitable containers that will protect glass from the weather and from breakage. Carefully store material, as directed, in a safe place where breakage can be reduced to a minimum. Deliver sufficient glass to allow for normal breakage. Glazing compounds shall arrive at the project site in labeled containers which have not been opened.

B. Protect glazing materials to comply with manufacturer's directions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1. Where insulating glass units will be exposed to substantial altitude changes, comply with insulating glass fabricator's recommendations for venting and sealing to avoid hermetic seal ruptures.

1.8 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with glazing when ambient and substrate temperature conditions are outside the limits permitted by glazing materials manufacturer or when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1. Install liquid sealants at ambient and substrate temperatures above 40 deg F (4.4 deg C).

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1.9 WARRANTY

A. Warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

B. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

1. Warranty Period: 10 years from Date of Substantial Completion Date of Manufacture.

C. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1. Warranty Period: 10 years from date of Substantial Completion Date of Manufacture.

D. Manufacturer's Special Warranty for Heat-Soaked Tempered Glass: Manufacturer agrees to replace heat-soaked tempered glass units that spontaneously break due to nickel sulfide (NiS) inclusions at a rate exceeding 0.3 percent (3/1000) within specified warranty period. Coverage for any other cause is excluded.

1. Warranty Period: 5 years from Date of Substantial Completion Date of Manufacture.

PART 2 - PRODUCTS

2.1 GLASS MANUFACTURERS

A. Primary Glass Manufacturers:

1. Pilkington North America - NSG Group, Toledo, OH
2. Guardian Glass, Auburn Hills, MI
3. Vitro Architectural Glass, Carlisle, PA

B. Laminated Glass Manufacturers

1. Pilkington North America - NSG Group, Toledo, OH
2. Guardian Glass, Auburn Hills, MI
3. Cardinal Glass Industries, Fremont, IN
4. Viracon, Owatonna, MN

2.2 “GLASS FABRICATORS

A. Glass Fabricators

1. Cardinal Glass Industries, Fremont, IN
2. Tempglass, Inc., El Paso, TX
3. HGP Architectural Glass, Dallas, TX
4. McGrory Glass, Paulsboro, NJ
5. Viracon, Owatonna, MN
6. Oldcastle BuidingEnvelope, Cleveland, OH

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2.3 PERFORMANCE REQUIREMENTS

A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined in accordance with the IBC and ASTM E1300:

1. Design Wind Pressures: As indicated on Drawings.
   a. Wind Design Data: As indicated on Drawings.
   b. Basic Wind Speed: 85 mph 90 mph 100 mph 110 mph
   c. Importance Factor: 1.0 1.5
   d. Exposure Category: B C D
2. Design Snow Loads: As indicated on Drawings.
3. Probability of Breakage for Sloped Glazing: For glass sloped more than 15 degrees from vertical, design glass for a probability of breakage not greater than 0.001.
4. Maximum Lateral Deflection: For glass supported on all four edges, limit center-of-glass deflection at design wind pressure to not more than 1/50 times the short-side length or 1 inch, whichever is less.
5. Thermal Loads: Design glazing to resist thermal stress breakage induced by differential temperature conditions and limited air circulation within individual glass lites and insulated glazing units.

C. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
1. For monolithic-glass lites, properties are based on units with lites 1/4" thick.
2. For laminated-glass lites, properties are based on products of construction indicated.
3. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
4. U-Factors: Center-of-glazing values, in accordance with NFRC 100 and based on most current non-beta version of LBL's WINDOW computer program, expressed as Btu/sq. ft. x h x deg F.
5. SHGC and Visible Transmittance: Center-of-glazing values, in accordance with NFRC 200 and based on most current non-beta version of LBL's WINDOW computer program.
6. Visible Reflectance: Center-of-glazing values, in accordance with NFRC 300.

D. Acoustic Performance:
1. Exterior Glazing: 28 OITC 33 OITC 45 OITC. (Outdoor-Indoor Transmission Class).
2. Interior Glazing: 35 STC 37 STC 41 STC. (Sound Transmission Class)

2.4 BUILDER'S GLASS TYPES

A. **Insulated Glass Types:** One inch thick Insulated Glass: Shall be one inch thick insulated glass consisting of 1/4 inch thick , tinted, tempered, outer panel, a 1/2 inch wide hermetically sealed air space, and 1/4 inch thick clear glass tempered inner panel.

1. **Glass Type G-1:** Clear

   a. "Optifloat Clear" by Pilkington North America - NSG Group, Toledo, OH
   b. "Clarity" by Guardian Glass, Auburn Hills, MI
   c. "Acuity Series" by Vitro Architectural Glass, Cheswick, PA

2. **Glass Type G-2:** Tinted

   a. "Eclipse Advantage®Grey with Radiant Low-E" by Pilkington North America - NSG Group, Toledo, OH
   b. "Guardian SN68 Gray" by Guardian Glass, Auburn Hills, MI
   c. "Solargray + Solarban 67" by Vitro Architectural Glass, Cheswick, PA

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B. **Glass Type G-3:** 1/4 inch thick, clear tempered

D. Interior

1. Glass for Vestibule Doors, Sidelights, and Transoms: 1/4 inch thick clear tempered glass.
2. Glass for Interior Non-Fire Rated Doors and Windows: 1/4 inch clear tempered safety glass.

E. U-Values, Shading Coefficient and Other Properties:

1. 1" insulated Pilkington Eclipse Advantage®Grey with Radiant Low-E glass outer pane and Pilkington clear Optifloat inner pane. (other manufacturer's and products listed are acceptable in lieu of Pilkington).
2. Summer Day-time U-Value: 0.35
3. Winter Night-time U-Value: 0.35
4. Shading Coefficient: 0.39
5. Solar Heat Gain Coefficient: 0.34
6. Visible light transmittance: 29%
7. Solar energy transmittance: 23%
8. Solar energy reflectance: 9%
9. UV transmittance: 8%

2.5 PRIMARY FLOAT GLASS PRODUCTS

A. Float Glass: ASTM C 1036, Type I (transparent glass, flat), Class as indicated below, and Quality q3 (glazing select).

1. Class 1 (clear) unless otherwise indicated.

2.6 HEAT-TREATED FLOAT GLASS

A. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed, unless otherwise indicated.

B. Uncoated, Clear, Heat-Treated Float Glass: ASTM C 1048, Condition A (uncoated surfaces), Type I (transparent glass, flat), Class 1 (clear), Quality q3 (glazing select), kind as indicated below.

1. Kind FT (fully tempered) at all locations.

2.7 COATED MONOLITHIC GLASS PRODUCTS

A. General: Performance characteristics designated for coated monolithic glass products are nominal values based on manufacturer's published test data for glass products 6.0 mm thick (0.23 inch thick), unless otherwise indicated. Comply with requirements specified including those for primary and heat-treated float glass products as they relate to properties of glass to which coatings are applied.

1. U-values are expressed as Btu/hour x sq. ft. x deg F.
2. Provide heat-treated coated float glass of kind indicated or, if not otherwise indicated, Kind HS (heat strengthened) where recommended by manufacturer to comply with system performance requirements specified and Kind FT (fully tempered) where coated safety glass is designated or required.
3. Provide Kind HS (heat-strengthened) coated float glass except provide Kind FT (fully tempered) products where coated safety glass is designated or required.

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2.8 ELASTOMERIC GLAZING SEALANTS

A. General: Provide materials as recommended by the manufacturer for the required application and condition of installation in each case. Provide only compounds which are proven to be fully compatible with surfaces contacted.

B. Silicone Rubber Glazing Sealant: Shall be silicon rubber, one-part elastomeric sealant complying with FS TT-S-001543, Class A. Provide acid type for nonporous channel surfaces and provide nonacid medium-modulus type for porous channel surfaces.

2.9 GLAZING GASKETS

A. Dense Compression Gaskets: Molded or extruded gaskets of material indicated below, complying with standards referenced with name of elastomer indicated below, and of profile and hardness required to maintain watertight seal:

1. Silicone, ASTM C 1115.

B. Soft Compression Gaskets: Extruded or molded closed-cell, integral-skinned gaskets of material indicated below, complying with ASTM C 509, Type II, black, and of profile and hardness required to maintain watertight seal:

1. Silicone, ASTM C 1115

C. Manufacturers: Subject to compliance with requirements, provide products by one of the following companies.

D. Preformed Gaskets:

a. Advanced Elastomer Systems, L.P.
b. Schnee-Morehead, Inc.
c. Tremco, Inc.

2.10 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials involved for glazing application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers and Sealers: Type recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85 plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side-walking).

F. Compressible Filler Rod: Shall be closed-cell or waterproof jacketed rodstock of synthetic rubber or plastic foam with proven compatibility with sealants used. Rod shall be flexible and resilient with 5-10 PSI compression strength for 25 percent deflection.

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2.11 FABRICATION OF GLASS

A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with recommendations of product manufacturer and referenced glazing standard as required to comply with system performance requirements.

B. Clean cut or flat grind vertical edges of butt-glazed monolithic lites in a manner that produces square edges with slight kerfs at junctions with indoor and outdoor faces.

2.12 SPANDREL PANEL

A. Basis of Design: "Mapes R-Infill Panel" Mapes Architectural Products, Lincoln, Nebraska.

1. Other manufacturers may be acceptable provided compliance with colors, aesthetics, R-Value, etc. Final decision is by Architect/Interior Designer. Submit a product substitution request and actual samples for product approval during the bidding period at least 10 days prior to Bid Due Date. Acceptance, if accepted, will be by addendum

B. Coil coated Kynar on smooth aluminum, both sides, laminated to a 2 lb density polystyrene core material.

C. Finish:

1. Exterior: Kynar/Hylar - AAMA 665.2-92- resin based - 70%
2. Interior: Kynar/Hylar - AAMA 665.2-92- resin based - 70%

D. Panel Fabrication:

1. Exterior Substrate: High density tempered hardboard.
2. Interior Substrate: High density tempered hardboard.
3. Core: 2 pound density polystyrene.
4. Tolerances: 0.8% of panels dimension length and width - (+/-) 1/16 inch thickness.
5. Thickness: 1 inch.
6. R-Value: 4.46.

2.13 SAFETY GLASS MIRRORS

A. Glass: Provide float glass manufacturer by horizontal (roller hearth) process with roll wave distortion parallel with bottom edge of glass as installed, unless otherwise indicated, and complying with FS DD-G-1403 for Grade B, style I (uncoated surfaces), Type I (float), quality q2.

B. Mirror Glass Production and Fabrication:

1. Glass Coating: Coat second surface of glass, unless otherwise indicated, with glass coating system complying with FS DD-M-0041 requirements and consisting of successive layers of chemically deposited silver, electrically or chemically deposited copper, and manufacturer's standard protective organic coating.

C. Mirror Sizes: After application of glass coating, cut mirror glass to size as shown on Drawings and in ¼ inch glass thickness.

D. Edges: Seal edge after treatment to prevent chemical or atmospheric penetration of backing. Preform edge treatment and sealing in factory immediately after cutting to final sizes.

E. Mastic: Mirro-Mastic, Palmer Products Corp., Louisville, Kentucky.

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~~6.~~F. Provide CRL mirror mount system in satin anodized finish. Continuous top channel shall be 2 pieces, D1638 channel and D1637 cleat. Bottom and ends shall have D638 channel. System shall be as manufactured by C.R. Lawrence Co., Inc.

PART 3 - EXECUTION

3.1 STANDARDS AND PERFORMANCE

A. Watertight and airtight installation of each piece of glass required, except as otherwise shown. Each installation must withstand normal temperature changes, wind loading, impact loading (for operating sash and doors) without failure, including loss or breakage of glass, failure of sealants or gaskets to remain watertight and air tight, deterioration of glazing materials, and other defects in the Work.

B. Protect glass from edge damage at all times during handling, installation, and operation of the building.

C. Glazing channel dimensions as shown are intended to provide for necessary minimum bite on the glass, minimum edge clearance, and adequate sealant thicknesses with reasonable tolerances. The glazier is responsible for correct glass size for each opening within the tolerances and necessary dimensions established.

D. Comply with combined recommendations of glass manufacturer and manufacturer of sealants and other materials used in glazing and their technical representatives except where more stringent requirements are shown or specified.

E. Comply with "Glazing Manual" by Flat Glass Marketing Association and the manufacturers of the glass and glazing materials except as shown and specified otherwise.

F. Inspect each piece of glass immediately before installation and eliminate those which have observable edge damage or face imperfections.

G. Unify appearance of each series of lights by setting each piece to match others as nearly as possible. Inspect each piece and set with pattern, draw, and blow oriented in the same direction as other pieces.

3.2 EXAMINATION

A. Examine glass framing, with glazier present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, offsets at corners.
2. Presence and functioning of weep system.
3. Minimum required face or edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Do not proceed with glazing until unsatisfactory conditions have been corrected.

3.3 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings that are not firmly bonded to substrates.

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3.4 GLAZING, GENERAL

A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, except where more stringent requirements are indicated, including those in referenced glazing publications.

B. Glazing channel dimensions as indicated on Drawings provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.

C. Protect glass from edge damage during handling and installation as follows:

1. Use a rolling block in rotating glass units to prevent damage to glass corners. Do not impact glass with metal framing. Use suction cups to shift glass units within openings; do not raise or drift glass with a pry bar. Rotate glass lites with flares or bevels on bottom horizontal edges so edges are located at top of opening, unless otherwise indicated by manufacturer's label.
2. Remove damaged glass from Project site and legally dispose of off site. Damaged glass is glass with edge damage or other imperfections that, when installed, weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by pre-construction sealant-substrate testing.

E. Install elastomeric setting blocks in sill rabbets, sized and located to comply with referenced glazing standard, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Provide spacers for glass sizes larger than 50 united inches (length plus height) as follows:

1. Locate spacers inside, outside, and directly opposite each other. Install correct size and spacing to preserve required face clearances, except where gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and comply with system performance requirements.

2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

H. Provide edge blocking to comply with requirements of referenced glazing publications, unless otherwise required by glass manufacturer.

I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

K. Square cut wedge-shaped gaskets at corners and install gaskets in manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

L. Provide all items and accessories as required for a complete installation in every respect.

M. Install fire-rated glass in strict accordance with the manufacturers written installation instructions to achieve the required and specified fire rating.

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3.5 GASKET GLAZING (DRY)

A. Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with stretch allowance during installation.

B. Secure compression gaskets in place with joints located at corners to compress gaskets producing a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

C. Install gaskets so they protrude past face of glazing stops.

3.6 SEALANT GLAZING (WET)

A. Install continuous spacers between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel weep systems until sealants cure. Secure spacers in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial wash away from glass. Install pressurized gaskets to protrude slightly out of channel to eliminate dirt and moisture pockets.

3.7 PROTECTION AND CLEANING

A. Protect exterior glass from breakage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkali deposits, or stains, and remove as recommended by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents and vandalism, during construction period.

E. Wash glass on both faces in each area of Project not more than 4 days prior to date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

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SECTION 09 29 00 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Non-load-bearing steel framing members.
2. Gypsum board
3. Impact-resistant gypsum board.

1.2 DEFINITIONS

A. Gypsum Board Construction Terminology: Refer to ASTM C11 and GA-505 for definitions of terms related to gypsum board assemblies not defined in this Section or in other referenced standards.

1.3 ASSEMBLY PERFORMANCE REQUIREMENTS

A. Sound Transmission Characteristics: For gypsum board assemblies indicated to have STC ratings, provide materials and construction identical to those of assemblies whose STC ratings were determined per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing agency.

1.4 SUBMITTALS

A. All gypsum board products and accessories specified in this Section shall be submitted as a single package as practicable. Separate submittals for each system or product may not be acceptable.

B. Do not submit MSDS or SDS sheets with product data submittal. Architect is not responsible for review of this information as practicable. Submittals that include MSDS or SDS data sheets may be returned as rejected.

C. Product certificates signed by manufacturers of gypsum board assembly components certifying that their products comply with specified requirements.

D. Product data for each type of product specified, including wall boards, metal studs, deflection track, and other shapes, fasteners, and finishing materials.

E. Design calculations for all walls 12 feet high or over shall be submitted and shall be stamped sealed and signed by a Registered Professional Engineer in the State of Indiana ~~Missouri Michigan South Dakota~~

F. All interior non-structural walls over 12 feet high shall be designed by the metal framing manufacturer.

1.5 QUALITY ASSURANCE

A. Materials or operations specified by reference to the published specifications of a manufacturer or other published standards shall comply with the requirements of the standards listed.

1. Standards include ASTM C840 and GA216.

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B. Refer to "Recommended Specification on Levels of Gypsum Board Finish" as published by the Gypsum Association (and AWCI/CISCA/PDCA) for finish levels required herein.

C. Fire-Test-Response Characteristics: Where fire-rated gypsum board assemblies are indicated, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

1. Fire Resistance Ratings: As indicated by reference to GA File Numbers in GA-600 "Fire Resistance Design Manual" or to design designations in UL "Fire Resistance Directory" or in the listing of another testing and inspecting agency acceptable to authorities having jurisdiction.

D. Single-Source Responsibility for Steel Framing: Obtain steel framing members for gypsum board assemblies from a single manufacturer.

E. Single-Source Responsibility for Panel Products: Obtain each type of gypsum board and other panel products from a single manufacturer.

F. Single-Source Responsibility for Finishing Materials: Obtain finishing materials from either the same manufacturer that supplies gypsum board and other panel products or from a manufacturer acceptable to gypsum board manufacturer.

G. All interior non-load bearing metal stud walls over 12 feet high shall be designed by a Registered Professional Engineer registered in the State of **Indiana Missouri Michigan South Dakota** and shall comply with all State and local Codes and regulations.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Neatly stack gypsum panels flat to prevent sagging.

C. Candle gypsum board to prevent damage to edges, ends, and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1.7 PROJECT CONDITIONS

A. Environmental Conditions: Establish and maintain environmental conditions for applying and finishing gypsum board to comply with ASTM C 840 and with gypsum board manufacturer's recommendations.

B. Room Temperatures: For non-adhesive attachment of gypsum board to framing, maintain not less than 40 deg F For adhesive attachment and finishing of gypsum board, maintain not less than 50 deg F for 48 hours prior to application and continuously after until dry. Do not exceed 95 deg F when using temporary heat sources.

C. Ventilation: Ventilate building spaces, as required, for drying joint treatment materials. Avoid drafts during hot dry weather to prevent finishing materials from drying too rapidly.

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PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Steel Framing and Furring:

a. Clark Dietrich Metal Framing, Inc., Westchester, OH
b. Telling Industries, Willoughby, OH
c. Craco Manufacturing, York, SC
d. MRI Steel Framing, LLC, Hinsdale, IL
e. Marino\Ware, East Chicago, IN
f. MBA Metal Framing, Libertyville, IL
g. The Steel Network, Inc., Durham, NC

2. Gypsum Board and Related Products:

a. Georgia-Pacific Corp. Atlanta, GA
b. CertainTeed Gypsum, Valley Forge, PA
c. Fry Reglet; Alpharetta, GA
d. Pittcon Industries, Riverdale, MD
e. United States Gypsum Company, Chicago, IL
f. National Gypsum Co., Charlotte, NC

3. Non-Rated Deflection Track:

a. "Max-Track" by Clark Dietrich, Westchester, OH
b. "True-Action Slotted Track" by Telling Industries, Willoughby, OH
c. "Slotted Slip Track" by Craco Mfg, York, SC
d. "Slotted Track" by MRI Steel Framing, LLC, Hinsdale, IL

2.2 STEEL FRAMING FOR WALLS AND PARTITIONS

A. Provide steel framing members complying with the following requirements:

1. Component Sizes: As indicated but not less than that required to comply with ASTM C 754 under the following maximum deflection and lateral loading conditions:

a. Maximum Deflection: L/240 at 5 lbf per sq. ft.

2. Protective Coating: G-40 hot-dip galvanized coating per ASTM C 645.

B. Steel Studs and Runners: ASTM C 645, with flange edges of studs bent back 90 deg and doubled over to form 3/16-inch-wide minimum lip (return) and complying with the following requirements for depth:

1. Depth: 3-5/8 inches, unless otherwise indicated.

C. Steel Rigid Furring Channels: ASTM C 645, hat-shaped, 7/8" deep.

D. Furring Brackets (if required): Serrated-arm type, adjustable, fabricated from corrosion-resistant steel sheet complying with ASTM C 645, minimum thickness of base (uncoated) metal of 0.0329 inch, designed for screw attachment to steel studs and steel rigid furring channels used for furring.

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E. Fasteners for Metal Framing: Provide fasteners of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel framing and furring members securely to substrates involved; complying with the recommendations of gypsum board manufacturers for applications indicated.

F. Unless indicated otherwise, metal stud framing shall be formed from the following gauge metal. If two conditions apply in the following listing, use the heavier gauge:

1. Framed openings (heads and jambs of door and window openings) - 16 gauge.

a. 16-gauge studs include both (2) studs at each jamb, full height, and horizontal headers.

2. Remaining metal studs - 20 gauge.

G. Runners: Galvanized steel, sizes and gauges as recommended by the steel stud manufacturer for the wall systems indicated. Runners shall not be lighter than 20 gauge. Comply with ASTM C645. Flex-C Trac by Flex-Ability Concepts Edmund, OK or equal may be used in lieu of cutting top and bottom tracks at curved partitions.

2.3 GYPSUM BOARD PRODUCTS

A. Provide gypsum board of types indicated in maximum lengths available to minimize end-to-end butt joints.

1. Thickness: Provide gypsum board 5/8 inch thick to comply with ASTM C 840 for application system and support spacing indicated.

B. """Abuse/Impact/Mold-Resistant Gypsum Panels (all locations): Panels shall comply with ASTM C 1629, Level 2 requirements and ASTM D3273, score of 10 as rated according to ASTM D3274.

1. Application: All vertical and horizontal assemblies 10 feet and below, unless otherwise noted.

a. USG Fiberock Aqua Tough AR Interior Panels: United States Gypsum. (no exceptions)

2. 5/8" thick at all locations.

2.4 JOINT TREATMENT MATERIALS

A. Provide joint treatment materials complying with ASTM C 475 and the recommendations of both the manufacturers of sheet products and of joint treatment materials for each application indicated.

B. Joint Tape for Gypsum Board: Paper reinforcing tape, unless otherwise indicated.

C. Setting-Type Joint Compounds for Gypsum Board: Factory-packaged, job-mixed, chemical-hardening powder products formulated for uses indicated.

1. There setting-type joint compounds are indicated as a taping compound only or for taping and filling only, use formulation that is compatible with other joint compounds applied over it.
2. For prefilling gypsum board joints, use formulation recommended by gypsum board manufacturer for this purpose.
3. For filling joints and treating fasteners of water-resistant gypsum backing board behind base for ceramic tile, use formulation recommended by the gypsum board manufacturer for this purpose.
4. For topping compound, use sandable formulation.

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2.5 MISCELLANEOUS MATERIALS

A. Provide auxiliary materials for gypsum board construction that comply with referenced standards and recommendations of gypsum board manufacturer.

B. Steel drill screws complying with ASTM C 1002 for the following applications:

1. Fastening gypsum board to steel members less than 0.03 inch thick.
2. Fastening gypsum board to gypsum board.

C. Steel drill screws complying with ASTM C 954 for fastening gypsum board to steel members from 0.033 to 0.112 inch thick.

D. Corrosion-resistant-coated steel drill screws of size and type recommended by board manufacturer for fastening cementitious backer units.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to which gypsum board assemblies attach or abut, installed hollow metal frames, cast-in-anchors, and structural framing with Installer present for compliance with requirements for installation tolerances and other conditions affecting performance of assemblies specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Ceiling Anchorages: Coordinate installation of ceiling suspension systems with installation of overhead structural assemblies to ensure that inserts and other provisions for anchorages to building structure have been installed to receive ceiling hangers that will develop their full strength and at spacing required to support ceilings.

1. Furnish concrete inserts and other devices indicated to other trades for installation well in advance of time needed for coordination with other construction.

3.3 INSTALLING STEEL FRAMING, GENERAL

A. Steel Framing Installation Standard: Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation.

B. Install supplementary framing, blocking, and bracing at terminations in gypsum board assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction. Comply with details indicated and with recommendations of gypsum board manufacturer.

C. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement. Comply with details shown on Drawings, or if not shown, use vertical sliding slide clip application or use of deflection track and plate track two-piece system, or slip-joint with U-channel.

1. There building structure abuts ceiling perimeter or penetrates ceiling.
2. There partition framing and wall furring abut structure, including steel beams, steel joists, at bottom of roof decks and floor decks, except at floor.

a. Provide slip-type joints as detailed to attain lateral support and avoid axial loading.

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3. Rated Deflection Track: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated.

   a. SLP-TRK by Slip Track Systems
   b. Snap Track by Totle Steel Solutions
   c. Slotted Stud by Steeler Inc.

D. Do not bridge building expansion and control joints with steel framing or furring members. Independently frame both sides of joints with framing or furring members as indicated.

E. Provide all required accessories for a complete installation in every respect.

3.4 INSTALLING STEEL FRAMING FOR WALLS AND PARTITIONS

A. Install runners (tracks) at floors, ceilings, and structural walls and columns where gypsum board stud assemblies abut other construction.

1. Where metal framing is installed directly against exterior walls, install asphalt felt strips between studs and wall.

B. Installation Tolerances: Install each steel framing and furring member so that fastening surfaces do not vary more than 1/8 inch from the plane formed by the faces of adjacent framing.

C. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Cut studs short of full height to allow for roof or floor above, structural deflection. Calculate and indicate on submittals. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum board.

D. Terminate partition framing at suspended ceilings where indicated and continue to structure above where indicated.

E. Install steel studs and furring in sizes and at spacings indicated but not less than that required by the referenced steel framing installation standard to comply with maximum deflection and minimum loading requirements specified:

1. Space all studs at 16 inches o.c.

F. Install steel studs so that flanges point in the same direction and so that leading edges or ends of each gypsum board can be attached to open (unsupported) edges of stud flanges first.

G. Frame door openings to comply with details indicated, with GA-219, and with applicable published recommendations of gypsum board manufacturer. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

1. Extend vertical jamb studs through suspended ceilings and attach to underside of floor or roof structure above.

H. Frame openings other than door openings to comply with details indicated or, if none indicated, in same manner as required for door openings. Install framing below sills of openings to match framing required above door heads.

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3.5 APPLYING AND FINISHING GYPSUM BOARD, GENERAL

A. Gypsum Board Application and Finishing Standards: Install and finish gypsum panels to comply with ASTM C 840 and GA-216.

B. Install ceiling board panels across framing to minimize the number of abutting end joints and avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install wall/partition board panels to minimize the number of abutting end joints or avoid them entirely. Stagger abutting end joints not less than one framing member in alternate courses of board. At stairwells and other high walls, install panels horizontally with end abutting joints over studs and staggered.

D. Install gypsum panels with face side out. Do not install imperfect, damaged, or damp panels. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

E. Locate both edge or end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position adjoining panels so that tapered edges abut tapered edges, and field-cut edges abut field-cut edges and ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions. Avoid joints at corners of framed openings where possible.

F. Attach gypsum panels to steel studs so that the leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

G. Attach gypsum panels to framing provided at openings and cutouts.

H. Do not attach gypsum panels across the flat grain of wide-dimension lumber including floor joists and headers. Instead, float gypsum panels over these members using resilient channels or provide control joints to counteract wood shrinkage.

I. Form control joints and expansion joints at locations indicated and as detailed, with space between edges of adjoining gypsum panels, as well as supporting framing behind gypsum panels. Provide control joints spread not more than 30 feet on center in partitions. Not more than 50 feet on center in gypsum board ceilings.

1. Control Joint: Apply over face of gypsum board where specified. Cut to length with a fine-toothed hacksaw (32 teeth per inch). Cut end joints square, butt together and align to provide neat fit. Attach control joint to gypsum board with fasteners spaced 6 inches o.c. maximum along each flange. Remove plastic tape after finishing with joint compound or veneer finish.

    a. Leave a ½ inch continuous opening between gypsum boards for insertion of surface-mounted joint.
    b. Interrupt wood floor and ceiling plates with a ½ inch gap, wherever there is a control joint in the structure.
    c. Do not attach gypsum board to steel studs on one side of control joint.
    d. Provide separate supports for each control joint flange.
    e. Provide an adequate seal and an additional layer of Type "X" gypsum board behind control joints where sound or fire ratings are prime considerations.

J. Cover both faces of steel stud partition framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chase walls that are braced internally.

1. Except where concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
2. Fit gypsum panels around ducts, pipes, and conduits.

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3. Where partitions intersect open concrete coffers, concrete joists, and other structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by coffers, joists, and other structural members; allow ¼ to ½ inch-wide joints to install sealant.

K. Isolate perimeter of non-load-bearing gypsum board partitions at structural abutments, except floors, as detailed. Provide ¼ inch to ½ inch-wide spaces at these locations and trim edges with U-bead edge trim where edges of gypsum panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

L. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's recommendations.

3.6 GYPSUM BOARD APPLICATION METHODS

A. Single-Layer Application: Install gypsum wallboard panels as follows:

1. On ceilings, apply gypsum panels prior to wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated, and provide panel lengths that will minimize end joints.
3. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing), unless parallel application is required for fire-resistive-rated assemblies. Use maximum-length panels to minimize end joints.

B. Single-Layer Fastening Methods: Apply gypsum panels to supports as follows: Fasten with screws.

C. Multilayer Application:

1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, 16 inchesminimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
3. On Z-shaped furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.

D. Fastening Methods: Fasten base layers [and face layers separately to supports with screws][with screws; fasten face layers with adhesive and supplementary fasteners].

3.7 INSTALLING TRIM ACCESSORIES

A. General: For trim accessories with back flanges, fasten to framing with the same fasteners used to fasten gypsum board. Otherwise, fasten trim accessories according to accessory manufacturer's directions for type, length, and spacing of fasteners.

B. Install corner beads at external corners.

C. Install edge trim where edge of gypsum panels would otherwise be exposed or semi-exposed. Provide edge trim type with face flange formed to receive joint compound except where other types are indicated.

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1. Install LC-bead where gypsum panels are tightly abutted to other construction and back flange can be attached to framing or supporting substrate.
2. Install L-bead where edge trims can only be installed after gypsum panels are installed.
3. Install U-bead where indicated.

D. Install control joints at locations indicated, and where not indicated according to ASTM C 840, and in locations approved by Architect for visual effect.

E. All trim, accessories and corner beads shall be installed using screws. "Crimping" tool and staple attachment is not allowed.

3.8 FINISHING GYPSUM BOARD ASSEMBLIES

A. Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration and levels of gypsum board finish indicated.

B. Prefill open joints, rounded or beveled edges, and damaged areas using setting-type joint compound.

C. Apply joint tape over gypsum board joints and to trim accessories with concealed face flanges as recommended by trim accessory manufacturer and as required to prevent cracks from developing in joint compound at flange edges.

D. Levels of Gypsum Board Finish: Provide the following levels of gypsum board finish per GA-214.

1. Level 4: Joints and interior angles shall have tape embedded in joint compound and three separate coats of joint compound applied over joints, angles, fastener heads, and accessories. Joint compound shall be smooth and free of tool marks and ridges. Note: Prepare surface to be coated with a primer/sealer prior to the application of final finishes. This finish level shall be used where textured finishes, wall coverings, and painted finishes are to be applied.

3.9 CLEANING AND PROTECTION

A. Promptly remove any residual joint compound from adjacent surfaces.

B. Provide final protection and maintain conditions, in a manner suitable to Installer that ensures gypsum board assemblies remain without damage or deterioration at time of Substantial Completion.

END OF SECTION 09 29 00

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SECTION 09 51 13 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Provide labor, materials, and equipment necessary for complete installation of acoustical panel ceilings and related items indicated on Drawings and specified herein including the removal and renovation of existing systems as indicated.

B. Review "Room Finish Schedule" and Mechanical and Electrical Drawings for type of material, layout, and pattern of acoustical units, location of recessed light fixtures, ceiling diffusers and grilles, details of suspension system, details at change of level, details at ceiling penetrations, details of fire rated acoustical treatment, access doors, special edge treatment, and necessary connections to work of other trades.

1.2 SUBMITTALS

A. All acoustical panel ceiling products and accessories specified in this Section shall be submitted as a single package as practicable. Separate submittals for each system or product may not be acceptable.

B. Do not submit MSDS or SDS sheets with product data submittal. Architect is not responsible for review of this information as practicable. Submittals that include MSDS or SDS data sheets may be returned as rejected.

C. Product data for each type of product specified.

D. Coordination drawings for reflected ceiling plans drawn accurately to scale and coordinating penetrations and ceiling-mounted items. Show the following:

1. Ceiling suspension members.
2. Method of attaching hangers to building structure.
3. Size and location of initial access modules.
4. Ceiling-mounted items including light fixtures; air outlets and inlets; speakers; sprinkler heads; and special moldings at walls, column penetrations, and other junctures with adjoining construction.

E. Samples for verification purposes of each type of exposed finish required, prepared on samples of size indicated below and of same thickness and material indicated for final unit of Work. Where finishes involve normal color and texture variations, include sample sets showing full range of variations expected.

F. Qualification data for firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, names of Architects and Owners, and other information specified.

G. Research reports or evaluation reports of the model code organization acceptable to authorities having jurisdiction that show compliance of acoustical ceiling system and components with building code in effect for Project.

H. Product test reports from qualified independent testing laboratory that are based on its testing of current products for compliance of acoustical ceiling systems and components with requirements.

I. Submit pre-installation conference meeting minutes as specified herein.

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J. Submit warranties as specified herein.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has successfully completed acoustical ceilings similar in material, design, and extent to that indicated for Project.

B. Fire Performance Characteristics: Provide acoustical ceilings that are identical to those tested for the following fire performance characteristics, per ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.

1. Surface Burning Characteristics: As follows, tested per ASTM E84 and complying with ASTM E 1264 for Class A products.

    a. Flame Spread: 25 or less.
    b. Smoke Developed: 50 or less.

2. FIre-Resistance Ratings: As indicated by reference to design designations in UL Fire Resistance Directory, for types of assemblies where acoustical ceilings function as a fire ceiling assembly and tested per ASTM E119.

    a. Protect lighting fixtures and air ducts to comply with requirements indicated for rated assembly.

C. Single-Source Responsibility for Ceiling Units: Obtain each type of acoustical ceiling unit from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.

D. Single-Source Responsibility for Suspension System: Obtain each type of suspension system from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.

E. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system components, and partition system.

1. Confirm MEP/FP above-ceiling review with the Architect/Engineers has occurred and has been documented prior to installation of acoustical ceiling tile.

F. Preinstallation Conference: Conduct conference at Project site to comply with requirements of Division 1.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

D. Packages required under this Section shall be properly marked on the outside with the identification of the materials contained in the package, so that they may be readily identified with the location to be used.

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1.5 PROJECT CONDITIONS

A. Space Enclosure: Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet work in space is completed and nominally dry, work above ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

1.6 EXTRA MATERIALS

A. Maintenance Stock: Under this Section furnish to the Owner before final acceptance, extra maintenance stock of acoustical materials, consisting of a minimum of one (1) two (2) three (3) five (5) ten (10) percent of area of each size, type, and thickness installed on the job. This extra stock is for the Owner's use after completion of the Project and is not to be used for repair or replacement required during the construction period or during the 60-day period following Substantial Completion. Properly package, seal, and identify extra stock material,

B. Replacement Stock: In addition to the maintenance stock specified above, provide extra replacement stock of acoustical materials, consisting of a minimum of one (1) two (2) three (3) five (5) ten (10) percent of area of each size, type and thickness installed on the job.

1. Extra stock is for replacement of damaged materials during the 60-day period following Substantial Completion, when the party responsible for the damage cannot be ascertained by the Owner's agent.
2. Replacement stock that is not used shall be furnished to the Owner as maintenance stock.

1.7 WARRANTY

A. Acoustical Panel: Submit a written warranty executed by the manufacturer agreeing to repair or replace acoustical panels that fail within the warranty period. Failures include: sagging and warping, and rusting of the suspension system and components.

B. Warranty Periods:

1. Acoustical Panels: Ten (10) years from the Date of Substantial Completion.
2. Grid: Ten (10) years from the Date of Substantial Completion.
3. Acoustical panels and grid system provided by the same manufacturer shall be warranted for fifteen (15) years from the Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Acoustical Panel Ceilings

1. Armstrong World Industries, Lancaster, PA
2. USG Interior Systems, Chicago, IL

2.2 MATERIALS

A. Acoustical Ceiling Tile: Provide manufacturer's standard tiles of configuration indicated and item numbers indicated, that comply with ASTM E1264 classifications as designated by type, form, pattern, acoustical rating, and light reflectance unless otherwise noted. Finish shall be factory applied, washable, white latex paint, unless noted otherwise.

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1. **APC-1:**

   a. Armstrong Item No. 1713 square lay-in "School Zone Fine Fissured" 3/4 inch thick by 24 inches by 24 inches with an NRC of .70 and a CAC minimum of 35. Color: White. LR = 0.82.

2. **APC-2:**

   a. Armstrong Item No. 607 square edge lay-in "Ceramaguard Fine Fissured" 5/8 inch thick by 24 inches by 24 inches, perforated, fire resistive (UL labeled) with an NRC of .55 and a CAC of 38 minimum. Washable and scrubbable. Color: white. LR = 0.79.

3. **AT-~~2~~1:** **ALTERNATE #1**

   a. Autex Acoustics "Quietspace Panel" 1 inch thick by 48 inches by 96 inches with a minimum NRC of .85

      1) Color: as indicated on drawings.

4. Other manufacturers may be acceptable provided compliance with colors, aesthetics, NRC and CAC values, etc. Final decision is by Architect/Interior Designer. Submit a product substitution request and actual samples for product approval during the bidding period at least 10 days prior to Bid Due Date. Acceptance, if accepted, will be by addendum

B. Standard for Acoustical Ceiling Units: Provide manufacturers' standard units of configuration indicated that comply with ASTM E1264 classifications as designated by reference to types, patterns, acoustical ratings, and light reflectance's, unless otherwise indicated.

C. Colors and Patterns: Provide products to match appearance characteristics indicated under each product type.

1. For acoustical ceiling units whose appearance characteristics are indicated by reference to ASTM E 1264 designations for pattern and not by limiting to the naming of one or more products or manufacturers, provide Architect's selections from each named manufacturer's full range of standard products of type, color, pattern, and light reflectance indicated.

D. Antimicrobial Treatment for Type APC-2 ceilings: Manufacturer's standard broad spectrum, antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D3273, ASTM D3274, or ASTM G21 and evaluated according to ASTM D3274 or ASTM G21.

2.3 CEILING SUSPENSION SYSTEMS

A. Acoustical ceiling suspension systems materials shall be products of the following manufacturers, and are the type, size, function, quality, and arrangement required.

B. Other Acceptable Manufacturers: Products of the following manufacturers are acceptable providing they meet or exceed the requirements and specifications of the specified product:

1. "Chicago Metallic 200 Snap-Grid 15/16" Exposed" by Rockfon North America, Chicago, IL
2. "Prelude XL 15/16" Exposed Tee" by USG Interior Systems, Chicago, L
3. "15/16" EZ Stab Classic System" by CartainTeed Corporations, Tampa, FL

C. Suspension systems shall meet or exceed the requirements of ASTM C635 for dimensional tolerances, coatings and finishes, and load carrying capabilities. Grid color shall match with no variance in color to the tile. Individual component deflection shall not exceed 1/360 of the span.

D. Finishes and Colors: Provide hot-dipped galvanized finish (G-30 minimum) on all ceiling suspension components. Exposed surfaces of suspension system components shall receive a white baked-on enamel paint.

E. Acoustical Lay-In Suspension System: Armstrong "Prelude XL System" snap grid exposed hot-dipped galvanized grid with 15/16" face; or equal by other listed manufacturers. This type of suspension system shall be used at all ceilings unless specified otherwise herein.

F. Wall channel, except as specified following; shall be Armstrong hemmed edge type.

G. Rough Suspension Materials:

1. Metal Channel Runners: 1 ½ inch, 475 pounds per thousand lineal feet and ¾ inch, 300 pounds, per thousand lineal feet, cold rolled painted channels.
2. Hanger and Tie Wire: Not less than 12 gauge galvanized soft annealed steel.
3. Wood Plank Suspension Systems: Provide the required wood plank clip system that attaches to the suspension system for a complete installation.

H. Do not hang suspension system from metal floor or roof decks.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and structural framing to which ceiling system attaches or abuts, with Installer present, for compliance with requirements specified in this and other sections that affect installation and anchorage of ceiling system. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

B. Testing Substrates: Before installing adhesively applied tile on wet-placed substrates such as cast-in-place concrete or plaster, test and verify that moisture level is below tile manufacturer's recommended limits.

C. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half-width units at borders, and comply with reflected ceiling plans.

D. Refer to Room Finish Schedule and Legend for spaces to receive acoustical ceiling tile. Grid shall be laid out and coordinated for lighting fixtures and mechanical system items.

E. Application of acoustical treatment shall be done by the manufacturer of his authorized applicator and in strict accordance with the manufacturer's specifications, except as herein modified.

F. The installation of the ceiling shall be done before the installation of shelving, built-in counters, and finished floors; but after the other work in the room has been completed, including painting, unless otherwise approved by the Architect.

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3.3 INSTALLATION

A. Support ceiling suspension system from building structural steel and joists. Provide steel angles or uni-strut system between structural members and steel joists. Do not attach directly to metal roof deck.

B. Install suspension wires 4 foot on centers, maximum, both directions. Secure suspension hangers to building structure above. For lighting fixtures install hanger wires to runners at all 4 corners of fixtures. Do not attach hanger wire to metal roof or floor decks, electrical, or mechanical equipment or related support systems.

1. Suspension wires, straps, and chains shall not be attached to or through steel roof decks.

C. Install metal channel by saddle tying hanger wire or with leveling clips to a leveling tolerance of 1/8 inch in 12 feet each way.

D. Install grid suspension system in strict accordance with the manufacturer's recommendations.

E. Install wall angle at intersection of suspended ceiling and vertical surfaces. Where plenum space occurs above ceiling, apply continuous ribbon of acoustical adhesive or caulking compound on top of vertical wall angle after installation.

F. Install acoustical units in a true and even plane, in straight line courses following lay out pattern shown in reflective ceiling plan. If no reflective ceiling plan is indicated, lay out symmetrically about center lines of ceiling or panel, continuing pattern through wall openings. Border tile shall not be less than 6 inches wide. Fit border units neatly against vertical surfaces.

G. Recessed fixtures in fire rated ceiling assemblies shall be protected per UL requirements using "tent" type assemblies to comply with the fire ratings indicated in the Finish Schedule. Use hold-down clips and edge clips at border units.

H. Seal joints in acoustical units around pipes, ducts, and electrical outlets with caulking compound.

I. Just before final acceptance, remove and replace skinned, damaged, or dirty tiles with new material.

J. Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.

1. Sealant Bed: Apply continuous ribbon of acoustical sealant, concealed on back of vertical leg before installing moldings.
2. Screw-attach moldings to substrate at intervals not over 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to tolerance of 1/8 inch in 12 ft. - 0 inches. Miter corners accurately and connect securely.

K. Install acoustical tile in coordination with suspension system.

3.4 CLEANING

A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION **09 51 13**

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SECTION 09 65 19 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. Provide labor, materials, and equipment necessary for complete resilient tile flooring work, including accessories as indicated and as specified herein; including but not limited to, the following:

1. Rubber coved base

1.2 SUBMITTALS

A. All resilient tile flooring and accessories specified in this Section shall be submitted as a single package as practicable. Separate submittals for each system or product may not be acceptable.

B. Do not submit MSDS or SDS sheets with product data submittal. Architect is not responsible for review of this information. Submittals that include MSDS or SDS data sheets may be returned as rejected.

C. Product data for each type of product specified.

1. Certification by tile manufacturer that products supplied for tile installation comply with local regulations controlling use of volatile organic compounds (VOC's).

D. Samples for initial selection purposes in form of manufacturer's color charts consisting of actual tiles or sections of tiles showing full range of colors and patterns available for each type of resilient floor tile indicated.

E. Submit results from calcium chloride and bond and moisture tests as specified herein, prior to installation of resilient flooring.

1.3 QUALITY ASSURANCE

A. Single-Source Responsibility: Obtain each type, color, and pattern of tile from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.

B. Calcium Chloride Test: Contractor shall provide a calcium chloride test to measure moisture vapor emissions from the concrete slab on grade, prior to the installation of the resilient flooring. Maximum moisture emissions levels shall be as recommended by the resilient flooring manufacturer. Provide one test for every 2,000 square feet of floor area, or as otherwise recommended by the manufacturer.

C. Bond and Moisture Tests: Contractor shall provide bond and moisture tests prior to the installation of the resilient flooring. Bond and moisture tests shall be in strict accordance with the resilient flooring manufacturer's recommendations. Provide amount of tests as recommended by the resilient flooring manufacturer.

D. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

E. Fire-Test-Response Characteristics: For resilient floor tile, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.

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1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

1.4 SEQUENCING AND SCHEDULING

A. Install base and accessories after other finishing operations, including painting, have been completed.

B. Do not install tiles or accessories over concrete slabs until the slabs have cured and are sufficiently dry to bond with adhesive as determined by tile manufacturer's recommended bond and moisture test.

C. Specified items shall not be delivered or installed until building is enclosed, wet work completed and HVAC system is operating and maintaining temperature and humidity at occupancy level during remainder of construction period.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver tiles and installation accessories to Project site in original manufacturer's unopened cartons and containers each bearing names of product and manufacturer, Project identification, and shipping and handling instructions.

B. Store flooring materials in dry spaces protected from the weather with ambient temperatures maintained between 50 deg F (10 deg C) and 90 deg F

1.6 COLD CONDITIONS

A. Maintain a minimum temperature of 70 deg F in spaces to receive tiles for at least 48 hours prior to installation, during installation, and for not less than 48 hours after installation. After this period, maintain a temperature of not less than 55 deg F

B. Do not install linoleum until it is at the same temperature as the space where it is to be installed.

C. Close spaces to traffic during installation.

D. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than [55 deg F] ~~<Insert temperature>~~ or more than [95 deg F.] ~~<Insert temperature>.~~

E. Close spaces to traffic for 48 hours after floor tile installation.

F. Install base after other finishing operations, including painting, have been completed.

1.7 EXTRA MATERIALS

A. Deliver extra materials to Owner. Furnish extra materials matching products and from the same lot, installed as described below, packaged with protective covering for storage and identified with labels clearly describing contents.

1. Furnish not less than 1% of total amount of base, installed of each color,

1.8 WARRANTY

A. Manufacturer’s Warranty covering manufacturing defects and installation integrity shall be for five (5) years. Installation integrity is defined as products installed in accordance with the manufacturer’s installation manual.

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B. Installer's Warranty: Fully guarantee installation of VCT and wall base against defects in installation, workmanship and loss of adhesion for a period of one (1) year.

C. Warranties shall begin on the date of Substantial Completion.

PART 2 - PRODUCTS

2.1 RUBBER COVE BASE

A. Rubber Cove Base: 4 3/8 inches in height by roll stock and 1/8 inch thick, ribbed back, rounded top, and set on type. (4 foot length base material is not acceptable.)

1. Provide pre-molded corners 4 3/8" inches in height by 4 inches in length each way for external corners.

B. Edge Reducing Strips: Beveled one inch to 1-1/2 inch wide by 1/8-inch-thick rubber, same manufacturer as tile; colors as selected by Architect. Use where meeting unfinished floor or flooring of different material.

C. All coved rubber or vinyl base shall be installed without air bubbles, voids, or non-adherence to the wall substrate.

2.2 MISCELLANEOUS MATERIALS

A. Adhesive: Non-toxic, solvent-free, odor-free, low or no-VOC and as recommended by the linoleum manufacturer.

B. Latex Underlayment (as may be required): Quick set type as per recommendation of tile manufacturer, as required to level uneven subfloor conditions

C. Cleaner: as recommended by the linoleum manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas where installation of base will occur, with Installer present, to verify that substrates and conditions are satisfactory for tile installation and comply with tile manufacturer's requirements and those specified in this Section.

B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Comply with manufacturer's installation specifications to prepare substrates indicated to receive tile.

3.3 INSTALLATION

A. Comply with base manufacturer's installation directions and other requirements indicated that are applicable to each type of tile installation included in Project.

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END OF SECTION **09 65 19**

SECTION 10 44 00 - FIRE EXTINGUISHERS, CABINETS, AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Fire extinguishers.
2. Fire extinguisher mounting brackets.
3. Fire extinguisher cabinets.

1.2 SUBMITTALS

A. All fire extinguishers, cabinets and accessories specified in this Section shall be submitted as a single package. Separate submittals for each system or product will not be acceptable.

B. Do not submit MSDS or SDS sheets with product data submittal. Architect is not responsible for review of this information. Submittals that include MSDS or SDS data sheets will be returned as rejected.

C. Product data for cabinets include rough-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type and materials, trim style, door construction, panel style, and materials.

D. Samples for initial selection purposes in the form of manufacturer's color charts consisting of actual units or sections of units showing full range of colors, textures, and patterns available for each type of cabinet finish indicated or exposed to view.

1.3 QUALITY ASSURANCE

A. Single-Source Responsibility: Obtain extinguishers and cabinets from one source from a single Manufacturer.

B. Coordination: Verify that cabinets are sized to accommodate type and capacity of extinguishers indicated and provided by Owner under separate Contract.

C. UL-Listed Products: Fire extinguishers shall be UL listed with UL listing mark for type, rating, and classification of extinguisher.

D. FM-Listed Products: Fire extinguishers approved by Factory Mutual Research Corporation for type, rating, and classification of extinguisher with FM marking.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. J.L. Industries.
2. Larsen's Manufacturing Co.

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3. Potter-Roemer, Inc.

2.2 FIRE EXTINGUISHERS

A. Provide fire extinguishers for each cabinet and other locations indicated, in colors and finishes selected by Architect from manufacturer's standard that comply with authorities having jurisdiction.

B. Multipurpose Dry Chemical Type: UL-rated 4-A:60-B:C, 10-lb nominal capacity, in enameled steel container.

~~C. Where fire extinguishers are provided and installed in Kitchens, provide fire extinguishers that are listed and labeled for Class K fires in enameled steel container.~~

2.3 MOUNTING BRACKETS

A. Brackets: Designed to prevent accidentally dislodging extinguisher, of sizes required for type and capacity of extinguisher indicated, in plated finish.

1. Provide brackets for extinguishers not located in cabinets.

2.4 CABINETS

A. Construction: Manufacturer's standard box, with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated. Weld joints and grind smooth. Miter and weld perimeter door frames.

B. Cabinet Type: Suitable for containing a fire extinguisher.

C. Cabinet Mounting: Suitable for the following mounting conditions:

1. Semi-recessed: Cabinet box (tub) partially recessed in walls of shallow depth.

D. Trim Style: Fabricate trim in one piece with corners mitered, welded, and ground smooth.

1. Exposed Trim: One-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend).

a. Rolled-edge trim with 2-1/2-inch backbend depth.

E. Door Material and Construction: Manufacturer's standard door construction, of material indicated, coordinated with cabinet types and trim styles selected.

1. Enameled Steel: Manufacturer's standard finish, hollow steel door construction with tubular stiles and rails.

F. Identify fire extinguisher in cabinet with FIRE EXTINGUISHER lettering applied to door. Provide lettering to comply with authorities having jurisdiction for letter style, color, size, spacing, and location.

1. Application Process: Die-cut, surface applied.

G. Identify bracket-mounted extinguishers with FIRE EXTINGUISHER in red letter decals applied to wall surface. Use letter size, style, and location as selected by Architect.

H. Door Style: Manufacturer's standard design.

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1. Solid Panel: Full flush opaque panel of material indicated.

a. Die-cut, surface applied lettering.

~~B.~~I. Door Hardware: Provide Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated. Provide either lever handle with cam-action latch or exposed or concealed door pull and friction latch. Provide concealed or continuous-type hinge permitting door to open 180 deg.

2.5 FINISHES FOR CABINETS, GENERAL

A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying temporary strippable protective covering prior to shipping.

2.6 STEEL CABINET FINISHES

A. Surface Preparation: Solvent-clean surfaces complying with SSPS-SP 1 to remove dirt, oil, grease, and other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5 (white metal blast cleaning) or SSPC-SP 8 (pickling).

B. Baked-Enamel Finish: Immediately after cleaning and pretreatment, apply Manufacturer's standard two-coat baked-enamel finish consisting of prime coat and thermosetting topcoat. Comply with paint Manufacturer's instructions for applying and baking to achieve a minimum dry film thickness of 2.0 mils.

1. Color and Gloss: Match Architect's sample. Paint the following:

a. Exterior of cabinet, except for those surfaces indicated to receive another finish.
b. Interior of cabinet.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine walls and partitions for thickness and framing for cabinets to verify cabinet depth and mounting prior to cabinet installation.

B. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Follow manufacturer's printed instructions for installation.

B. Install in locations and at mounting heights indicated or, if not indicated, at heights to comply with applicable regulations of governing authorities.

1. Prepare recesses in walls for cabinets as required by type and size of cabinet and style of trim and to comply with Manufacturer's instructions.
2. Fasten mounting brackets and cabinets to structure, square and plumb.

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C. Provide all items and accessories as required for a complete installation in every respect.

END OF SECTION

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SECTION 32 31 00 - FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Polyvinyl chloride (PVC)-coated steel chain link fabric.
2. Polymer-coated steel framework.

1.2 SUBMITTALS

A. Submit in accordance with Division 01 requirements.

B. Product data in the form of manufacturer's technical data, specifications, and installation instructions for fence and gate posts, fabric, gates, gate operators, and accessories.

C. Shop drawings showing location of fence, gates, each post, and details of post installation, extension arms, gate swing, hardware, and accessories.

D. Samples for initial selection of PVC color in form of manufacturer's color charts or 6-inch lengths of actual fabric wire showing colors available.

E. Submit complete and detailed shop drawings for all fences and gates. Show heights, materials and gauges, connection details, installation instructions, post anchoring details, and all miscellaneous details and conditions. Shop drawings shall be prepared to scale and indicate all appurtenances and details of the fencing and construction.

F. Submit manufacturer’s product data including maintenance instructions and warranties.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has at least three years' experience and has completed at least five chain link fence projects with same material and of similar scope to that indicated for this Project with a successful construction record of in-service performance.

B. Single-Source Responsibility: Obtain chain link fences and gates, including accessories, fittings, and fastenings, from a single source.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver chain link fencing fabric and all components to the project site in protected condition.

B. Store undercover as directed by the chain link manufacturer.

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify layout information for fences and gates shown on the Drawings in relation to the property survey and existing structures. Verify dimensions by field measurements.

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B. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect not less than 2 days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

PART 2 - PRODUCTS

2.1 FABRIC

A. Selvage: Knuckled on both selvages for 2-inch and 2-1/8-inch mesh sizes with heights of 60 inches and less.

B. Steel Chain-Link Fence Fabric: Fabricated in one-piece widths for fencing 12 feet and less in height to comply with Chain Link Fence Manufacturers Institute (CLFMI) "Product Manual" and with requirements indicated below:

1. Mesh and Wire Size: 2-inch mesh, 0.148-inch diameter (9 gage).
2. Coating: ASTM F 668, Class 1, PVC.
3. PVC Coating Color: As selected by Architect from manufacturers' standard colors of green, olive green, brown, or black complying with ASTM F 934.

2.2 FRAMING

A. Round member sizes are given in actual outside diameter (OD) to the nearest thousandth of inches. Round fence posts and rails are often referred to in ASTM standard specifications by nominal pipe sizes (NPS) or the equivalent trade sizes in inches. The following indicates these equivalents all measured in inches:

B. Type I Round Posts: Standard weight (schedule 40) galvanized-steel pipe conforming to ASTM F 1083, according to heavy industrial requirements of ASTM F 1043, Group IA, with minimum yield strength of 25,000 psi, not less than 1.8 oz. of zinc per sq. ft. Type A coating inside and outside according to ASTM F 1234, as determined by ASTM A 90, and weights per foot as follows:

C. Supplemental Color Coating: In addition to above metallic coatings, provide posts and rails with manufacturer's standard polymer coating according to ASTM F 1234, 10-mil minimum polyvinyl chloride (PVC) or 3-mil minimum polyester plastic resin finish applied to exterior surfaces and, except for tubular shapes, to exposed interior surfaces. Color to match chain link fabric.

D. Top Rail: Manufacturer's longest lengths (17 to 21 feet) with swaged-end or expansion-type coupling, approximately 6 inches long for joining. Provide rail ends or other means for attaching top rail securely to each gate corner, pull, and end post.

1. Round Steel: 1.660-inch OD Type I or II steel pipe.

E. Steel posts for fabric heights up to 6 feet:

1. Round Line or Intermediate Posts: 1.90-inch OD Type I or II steel pipe.
2. Round End, Corner, and Pull Posts: 2.375-inch OD Type I or II steel pipe.

F. Swing Gate Posts: Furnish posts to support single gate leaf, or one leaf of a double-gate installation, according to ASTM F 900, sized as follows for steel and aluminum pipe posts:

1. Steel posts for fabric height of 6 feet or less and gate leaf width:

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a. Over 4 to 10 Feet: 2.875-inch OD pipe weighing at least 4.64 lb per ft.

2.3 FITTINGS AND ACCESSORIES

A. Material: Comply with ASTM F 626. Mill-finished aluminum or galvanized iron or steel to suit manufacturer's standards.

1. Steel and Iron: Unless specified otherwise, hot-dip galvanize pressed steel or cast-iron fence fittings and accessories with at least 1.2 oz. zinc per sq. ft. as determined by ASTM A 90.
2. Supplemental Color Coating: In addition to above metallic coatings, provide a 10-mil minimum polyvinyl chloride (PVC) plastic resin finish applied to exterior surfaces and, except inside cap shapes, to exposed interior surfaces. Color to match chain link fabric.

B. Post and Line Caps: Provide weathertight closure cap for each post. Provide line post caps with loop to receive tension wire or top rail.

C. Post Brace Assembly: Manufacturer's standard adjustable brace. Use material specified below for brace, and truss to line posts with 3/8-inch-diameter rod and adjustable tightener. Provide manufacturer's standard galvanized-steel, cast-iron or cast-aluminum cap for each end.

1. Round Steel: 1.660-inch OD Type I or II steel pipe.
2. Roll-Formed Steel: 1-1/4-by-1-5/8-inch C section weighing a minimum of 1.40 lb per linear ft.

D. Bottom and Center Rail: Same material as top rail. Provide manufacturer's standard galvanized-steel, cast-iron or cast-aluminum cap for each end.

E. Tension Bars: Hot-dip galvanized steel with a minimum length 2 inches less than the full height of fabric, a minimum cross section of 3/16 inch by 3/4 inch, and a minimum of 1.2 oz. of zinc coating per sq. ft. Provide one bar for each gate and end post, and two for each corner and pull post, except where fabric is integrally woven into the post.

F. Tension Bands: 3/4-inch-wide minimum hot-dip galvanized steel with a minimum of 1.2 oz. of zinc coating per sq. ft.

1. Tension Bands: 0.074 inch thick (14 gage) minimum.

G. Tie Wires: 0.106-inch-diameter (12-gage) galvanized steel with a minimum of 0.80 oz. per sq. ft. of zinc coating according to ASTM A 641, Class 3 or 0.148-inch-diameter (9-gage) aluminum wire alloy 1350-H19 or equal, to match fabric wire.

2.4 CONCRETE

A. Concrete: Provide concrete consisting of portland cement per ASTM C 150, aggregates per ASTM C 33, and potable water. Mix materials to obtain concrete with a minimum 28-day compressive strength of 3000 psi. Use at least four sacks of cement per cu. yd., 1-inch maximum size aggregate, 3-inch maximum slump.

B. Packaged Concrete Mix: Mix dry-packaged normal-weight concrete conforming to ASTM C 387 with clean water to obtain a 2- to 3-inch slump.

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2.5 GATES

A. Fabricate perimeter frames of gates from same material and finish as fence framework. Assemble gate frames by welding. Provide horizontal and vertical members to ensure proper gate operation and attachment of fabric, hardware, and accessories. Space frame members maximum of 8 feet apart unless otherwise indicated.

1. Fabric: Same as for fence unless otherwise indicated. Secure fabric at vertical edges with tension bars and bands and to top and bottom of frame with tie wires.
2. Bracing: Install diagonal cross-bracing consisting of 5/16-inch-diameter adjustable-length truss rods on gates to ensure frame rigidity without sag or twist.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install fence to comply with ASTM F 567. Do not begin installation and erection before final grading is completed, unless otherwise permitted.

1. Apply fabric to outside of framework. Install fencing on boundary lines inside of property line established by survey as required by Division 1.

B. Excavation: Drill or hand-excavate (using post-hole digger) holes for posts to diameters and spacings indicated, in firm, undisturbed or compacted soil.

1. If not indicated on Drawings, excavate holes for each post to minimum diameter recommended by fence manufacturer, but not less than four times the largest cross section of post.
2. Unless otherwise indicated, excavate hole depths approximately 3 inches lower than post bottom, with bottom of posts set not less than 36 inches below finish grade surface.

C. Setting Posts: Center and align posts in holes 3 inches above bottom of excavation. Space a maximum of 10 feet o.c., unless otherwise indicated.

1. Protect portion of posts above ground from concrete splatter. Place concrete around posts and vibrate or tamp for consolidation. Check each post for vertical and top alignment, and hold in position during placement and finishing operations.

a. Unless otherwise indicated, extend concrete footings 2 inches above grade and trowel to a crown to shed water.

D. Top Rails: Run rail continuously through line post caps, bending to radius for curved runs and at other posts terminating into rail end attached to posts or post caps fabricated to receive rail. Provide expansion couplings as recommended by fencing manufacturer.

E. Center Rails: Install center rails in one piece between posts and flush with post on fabric side, using rail ends and special offset fittings where necessary.

F. Brace Assemblies: Install braces at end and gate posts and at both sides of corner and pull posts. Locate horizontal braces at midheight of fabric on fences with top rail and at two thirds fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

G. Bottom Tension Wire: Install tension wire within 6 inches of bottom of fabric before stretching fabric and tie to each post with not less than same gage and type of wire. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch-diameter (11-gage) hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c.

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H. Top Tension Wire: Install tension wire through post cap loops before stretching fabric. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch-diameter (11-gage) hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c.

I. Fabric: Leave approximately 2 inches between finish grade and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Install fabric on security side of fence, and anchor to framework so that fabric remains under tension after pulling force is released.

J. Tension Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not over 15 inches o.c.

K. Tie Wires: Use wire of proper length to secure fabric firmly to posts and rails. Bend ends of wire to minimize hazard to persons or clothing.

1. Maximum Spacing: Tie fabric to line posts 12 inches o.c. and to rails and braces 24 inches o.c.

L. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts for added security.

END OF SECTION

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SECTION 31 20 00 - SITE EARTHWORK

PART 1 - GENERAL

1.1 WORK INCLUDES:

A. Site earthwork as shown on the Site Plans within the project limits.

B. Detention basin earthwork.

C. Excavation and Backfill for site utilities.

1.2 REFERENCE STANDARDS AND SPECIFICATIONS:

A. Terms and conditions of construction as required by the Contractor's permit with the controlling agency. When conditions of the permit conflict with proposed work, the contractor shall notify the Engineer for correction prior to installation. Any non-compliant work performed by the Contractor shall be at the Contractor's expense.

B. Site Demolition specification for removals and topsoil stripping.

C. Control of Site Work Specification.

1.3 UNKNOWN CONDITIONS (change to contract):

A. Rock: Material 1 cy and larger that exceeds a standard penetration resistance of 100 blows/2 inches. Notify the Owner's Agent if any rock is encountered. Removal of material will be considered a change to the contract. Work shall not commence until instructed by the Owner's Agent.

B. Unsuitable subgrade: Notify the Owner's Agent if any unsuitable subgrade is encountered. Stabilization of subgrade material above and beyond as stated in part two of this section, will be considered a change to the contract beyond the work covered in this specification. Work shall not commence until instructed by the Owner's Agent.

1.4 TESTING:

A. Contractor shall engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing. See Part II of this specification for testing requirements.

1.5 FINISH GRADING:

A. Final grades shall direct storm water to all collection points and meet the intent of the storm water management plan as identified in the site drawings. Establish grades to within required tolerances. Fill any settled areas as required to meet the specifications within the one year warranty period. Final grade is defined as the elevation of the final surface, including any mulching material in landscaping beds, applied rubberized surfaces, etc.

1.6 EARTHWORK BALANCE:

A. No guarantee is made that the site grading plan provides a balanced site condition. The contractor shall import or export soil materials from site as required to meet the conditions of the construction documents.

1.7 PROTECTION OF EXPOSED GRADE:

A. Protect exposed layers against freezing temperatures, frost, rain, accumulated water, and construction activities, including any open excavations and utility trenches. Reconstruction of damaged layers will be corrected by the contractor according to this specification at no additional cost to the Owner, including areas previously approved by the Geotechnical Engineer.

PART 2 - INSTALLATION

2.1 PREPARATION OF SUBGRADE:

A. Soil surface immediately below proposed fills (after stripping topsoil) and bottom of proposed excavations (in cut areas).

B. See the site demolition specification for site clearing requirements.

C. Notify Geotechnical Engineer when excavations have reached the required subgrade elevations for approval prior to continuing with backfill and fill operations. The contractor shall proof roll the existing subgrade that is not wet or saturated with heavy pneumatic-tired equipment of not less than 10 ton rated weight and identify any soft pockets or areas of excessive yielding. The contractor shall re-work the existing subgrade material to the depth and moisture content as recommended in the soil report. The subgrade will not be approved until both minimum compaction, and optimum moisture content is achieved.

2.2 SUBGRADE STABILIZATION (change to contract):

A. Any stabilization measures must be authorized by the owner and approved by the Geotechnical Engineer prior to operations or all work shall be at the contractor’s risk. No payment will be made for unauthorized work.

B. If the Geotechnical Engineer determines that unsatisfactory soils are present, continue the excavation and replace with compacted backfill or fill material as directed and after the Owner approves. Additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work. Any stabilization measures must be authorized by the owner and approved by the geotechnical engineer prior to operations or all work shall be at the contractor’s risk. No payment will be made for unauthorized work.

C. Lime stabilization: Blend the top 16” of subgrade with 65% fly ash, 30% lime, and 5% kiln dust. Lime stabilization will not be allowed under building foundations and slabs.

D. Engineered subgrade: Undercut the existing subgrade 8” and replace with 8” of #53/#73 limestone over a Tensar BX1100 structural geogrid.

2.3 BACKFILL AND FILL:

A. Soil materials used to fill an excavation or raise existing grades.

B. Subgrade Backfill and Fill: Do not place backfill or fill material on surfaces that are muddy, frozen, wet, or contain frost or ice. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

C. Foundation and Slab Backfill and Fill: Do not place backfill or fill material on surfaces that are muddy, frozen, wet, or contain frost or ice. Place backfill and fill materials in layers not more than 6 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

D. The Geotechnical Engineer shall test each lift for compliance with the specifications prior to continuing with backfill and fill operations. Each fill and backfill layer will not be approved until both minimum compaction, and optimum moisture content is achieved.

E. Moisture content: Each fill and backfill layer shall be within 2% of the materials optimum moisture content.

F. Standard Fill Material: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM, CL, or a combination of these group symbols; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and trash.

G. Unsuitable Soils: ASTM D 2487 soil classification groups GC, SC, ML, MH, CH, OL, OH, and PT, or a combination of these group symbols, and standard fill material not maintained within 2 percent of optimum moisture content at time of compaction.

H. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

I. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of weeds, roots, and other deleterious materials.

J. Amended Topsoil: Topsoil shall be fertile soil capable of sustaining vigorous plant growth, taken from a well drained site. Contractor to amend topsoil onsite to meet the following requirement. It should be free of subsoil, clay or impurities such as plants, weeds, and roots. It should have a minimum ph value of 5.5 and maximum of 7.4.

2.4 PAVEMENTS AND SITE SLABS ON GRADE:

A. Subgrade: scarify and compact the top 12 inches of existing subgrade, and each following lift of fill or base material to 95 percent of maximum dry unit weight according to ASTM D 1557 (modified proctor). Establish grades to within 1” of proposed.

B. Fill Material: Place and compact each lift with standard fill material to the bottom of the aggregate base layer.

C. Aggregate Base: See site drawings for material.

D. Frequency of testing: Coordinate with the Geotechnical Engineer to perform a minimum of one test per 500 sf.

2.5 WALKWAYS:

A. Subgrade: scarify and compact the top 12 inches of existing subgrade, and each following lift of fill or base material to 95 percent of maximum dry unit weight according to ASTM D 1557 (modified proctor). Establish grades to within 1” of proposed.

B. Fill Material: Place and compact each lift with standard fill material to the bottom of the aggregate base layer.

C. Aggregate Base: See site drawings for material.

D. Frequency of testing: Coordinate with the Geotechnical Engineer to perform a minimum of one test per 50 lf.

2.6 SPORT PLAY FIELDS:

A. Subgrade: scarify and compact the top 12 inches of existing subgrade, and each following lift of fill or base material (including warning tracks and skinned infields) to 92 percent of maximum dry unit weight according to ASTM D 1557 (modified proctor). Establish grades to within 1” of proposed.

B. Fill Material: Place and compact each lift with standard fill material to the bottom of the aggregate base layer.

C. Aggregate Base: See site drawings for material.

D. Frequency of testing: Coordinate with the Geotechnical Engineer to perform a minimum of one test per 500 sf.

E. Final Grade: Establish grades to within 1/2” of proposed.

2.7 DETENTION FACILITIES:

A. Subgrade: scarify and compact the top 12 inches of existing subgrade, and each following lift of fill or base material to 90 percent of maximum dry unit weight according to ASTM D 1557 (modified proctor). Establish grades to within 1” of proposed.

B. Fill Material: Place and compact each lift with standard fill material to final grade elevation. Unsuitable soil materials may be used as fill material in the bottom of the basin when approved by the Geotechnical Engineer. The bottom of the basin may be over-excavated for standard fill materials and replaced with unsuitable materials when approved by the Geotechnical Engineer.

C. Flow line treatment: See site drawings

D. Slope treatment: See site drawings.

E. Frequency of testing: Coordinate with the Geotechnical Engineer to perform a minimum of one test per 1000 sf.

F. Final Grade: Establish grades to within 1” of proposed.

2.8 BUILDING STRUCTURES:

A. Buildings, floor slabs, foundations, retaining walls, tanks, or other stationary features.

B. Subgrade: scarify and compact the top 12 inches of existing subgrade, and each following lift of fill or base material to 98 percent of maximum dry unit weight according to ASTM D 1557 (modified proctor). Establish grades to within 1” of proposed.

C. Subgrade Fill Material: Place and compact each lift with standard fill material, unless noted otherwise on drawings, to subgrade elevations directly beneath the bottom of the aggregate base layer.

D. Foundation Wall Backfill: Engineered Fill material unless noted otherwise on the building construction drawings.

E. Floor Slab Aggregate Base: See building plans for material.

F. Fill unauthorized excavation under structures by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill may be used when approved by Engineer.

G. Frequency of testing: Coordinate with the Geotechnical Engineer to perform a minimum of one test per 500 sf of building slab, one test per 50 lf of foundations, one test per column footing.

2.9 LAWN AND LANDSCAPING BEDS:

A. Subgrade: scarify and compact the top 12 inches of existing subgrade, and each following lift of fill or base material to 90 percent of maximum dry unit weight according to ASTM D 1557 (modified proctor). Establish grades to within 1” of proposed.

B. Fill Material: Place and compact each lift with standard fill material to the bottom of the topsoil layer. Unsuitable soil materials may be used as fill when approved by the Geotechnical Engineer and the Landscape Architect.

C. Frequency of testing: Coordinate with the Geotechnical Engineer to perform a minimum of one test per 1000 sf.

D. Final Grade: Establish grades to within 1” of proposed.

E. Contractor shall repair any settled areas to meet project specifications within the warranty period.

F. 6” of topsoil shall be used in lawn areas.

G. Amended topsoil shall be used in landscaping areas.

2.10 UTILITY TRENCH EXCAVATION AND BACKFILL:

A. Notify Geotechnical Engineer when excavations have reached the required bottom of trench elevation prior to continuing with backfill and fill operations. If the Geotechnical Engineer determines that unsatisfactory soils are present, the Engineer will instruct the contractor on corrective measures. Additional work required to correct and stabilize the existing subgrade will be paid for according to Contract provisions for changes in the Work.

B. Fill material required to re-establish the trench bottom due to over-excavation of the utility trench will be bedding material, and placed by the contractor at no additional cost to the Owner.

C. Place and shape the pipe bedding material as shown on the site drawings to provide continuous support for the conduit. Place and compact the initial backfill to a height of 12 inches over the utility pipe. Carefully compact backfill material under the pipe haunches and bring up evenly on both sides.

D. Backfill material: See site drawings.

E. Frequency of testing: Coordinate with the Geotechnical Engineer to perform a minimum of one test per 100 lf per lift.

2.11 DRAINAGE STRUCTURE EXCAVATION AND BACKFILL:

A. Notify Geotechnical Engineer when excavations have reached the required the bottom of trench elevation prior to continuing with backfill and fill operations. If the Geotechnical Engineer determines that unsatisfactory soils are present, the Engineer will instruct the contractor on corrective measures. Additional work required to correct and stabilized the existing subgrade will be paid for according to Contract provisions for changes in the Work.

B. Fill material required to re-establish the bottom of excavation due to over-excavation of the utility trench will be bedding material, and placed by the contractor at no additional cost to the Owner.

C. Place and compact a 6” minimum depth foundation of Class I or Class II special fill material according to ASTM D2321. After placement of structure and connection of sewer piping, continue special fill to a minimum of 12” above sewer piping in lawn areas, and to subgrade elevation in paved areas or within the influence of building foundations or site slabs on grade.

D. Frequency of testing: Coordinate with the Geotechnical Engineer to perform a minimum of one test per structure.

END OF SECTION 31 20 00

SECTION 32 13 13 – PORTLAND CEMENT CONCRETE PAVEMENT

PART 1 - GENERAL

1.1 WORK INCLUDES:

A. Concrete paving for site slabs on grade.

B. Concrete paving for drives.

C. Concrete paving for roadways.

D. Concrete for curb and gutter.

E. Sealants for construction joints.

F. Sealants for expansion joints.

1.2 REFERENCE STANDARDS AND SPECIFICATIONS:

A. Site Earthwork specification for subgrade and aggregate base requirements.

B. Terms and conditions of construction as required by the Contractor's permit with the controlling agency. When conditions of the permit conflict with proposed work, the contractor shall notify the Engineer for correction prior to installation. Any non-compliant work performed by the Contractor shall be at the Contractor's expense.

C. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by the requirements of the Contract Documents.

D. CRSI's "Manual of Standard Practice"

E. CRSI's "Placing Reinforcing Bars"

F. Control of Site Work specification.

1.3 DELIVERABLES:

A. Record Drawings: Include size, material, depth of cover, location, and elevation of all improvements within the contract documents. Include details of underground structures and connections.

B. Material certificates for the pavement design mix according to ACI 211.1 and ACI 301.

C. Passing test reports. **Contractor shall engage a qualified independent testing agency to perform field quality-control testing.**

D. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.

E. Submittal for hot applied joint sealant.

F. Submittal for cold applied joint sealant.

1.4 CONTROL OF WORK:

A. Schedule tests and inspections with the Owner's Geotechnical Engineer and as required under the conditions of the permit. The finished paving will not be accepted or considered complete until all improvements pass the testing requirements of these specifications and the permitting authority.

PART 2 - PRODUCTS

2.1 AGGREGATE BASE:

A. See the site drawings for material requirements. See the Earthwork Specification for subgrade compaction and installation requirements.

2.2 CONCRETE MATERIALS:

A. Provide ready mixed concrete according to ASTM C 94 with the following properties: 4000 psi at 28 day compressive strength, 0.45 maximum water to cement ratio, and a 4" maximum slump limit. Provide admixtures to establish an air content of 4.5 to 7.5% according to ASTM C 260

B. Portland Cement: ASTM C 150, Type I or II. Aggregate: ASTM C 33, uniformly graded, from a single source.

C. Water: ASTM C 94

D. Provide a medium textured broom finish on all surfaces unless noted otherwise on the plans.

E. Allowable Water-Reducing Admixture according to ASTM C 494, Type A

F. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cement and to be compatible with other admixtures

G. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

2.3 CONSTRUCTION JOINTS:

A. Place joints at the end of concrete pouring operations if more than 30 minutes has elapsed.

B. Provide joint filler strips according to ASTM D 1751 or ASTM D 1752 and type SL Silicone Sealant complying with ASTM D 5893 for Type SL. Install per the manufacturer's recommendations and according to ASTM C 1193.

C. Continue reinforcing steel through the construction joint and lap bars of a sufficient development length to assure a good bond with future concrete placement.

2.4 EXPANSION JOINTS:

A. Place joints at the interface between new concrete pavement and: concrete curbs, site structures, building stoops, and at maximum intervals of 50 feet.

B. Provide joint filler strips according to ASTM D 1751 or ASTM D 1752 and type SL Silicone Sealant complying with ASTM D 5893 for Type SL. Install per the manufacturer's recommendations and according to ASTM C 1193.

C. Do not continue reinforcing steel through the expansion joint.

2.5 CONTRACTION JOINTS:

A. Sawcut or hand tool contraction joints in the locations identified on the site drawings. The minimum depth of all joints shall be 25% of the total pavement thickness. Tooled joints shall be a minimum of 1/8" wide, with ¼" radii. Sawcut joints shall be a minimum of 1/8". Joint sealants are not required at contraction joint locations.

2.6 CURING MATERIALS:

A. Provide curing materials after initial placement of concrete. Acceptable methods include: Polyethylene sheeting according to ASTM C 171, burlap cloth according to AASHTO M 182, Class 2, and clear solvent according to ASTM C 309, Type 1, Class B.

2.7 CONCRETE PLACEMENT:

A. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction.

B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces. Do not place concrete when the surface temperature is below 40 deg F.

C. Install clean forms and apply a release agent prior to concrete placement. Use flexible forms for radii that are less than 100'. Allow forms to set for a minimum of 24 hrs after concrete placement before removal.

D. Moisten subbase to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.

E. Comply with requirements and with recommendations in ACI 304R for measuring, mixing, transporting, and placing concrete.

F. Do not add water to concrete during delivery, at Project site, or during placement.

G. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete according to recommendations in ACI 309R.

H. Cold-Weather Placement: Comply with ACI 306 R. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement. Do not use frozen materials or materials containing ice or snow. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

I. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F.

J. Tolerance: Gap below 10-foot long, unleveled straightedge not to exceed 1/8 inch. Comply with tolerances of ACI 117 and as follows: Thickness: Plus 3/8 inch, minus 1/4 inch. Elevation: 1/4 inch.

2.8 PAVEMENT MARKING PAINT:

A. Do not place pavement markings unless the surface temperature is between 50 deg F and 95 deg F.

B. Pavement-Marking Paint shall be waterborne latex complying with FS TT-P-1952 with a minimum thickness of 15 mils. Apply on clean surface.

2.9 TESTING:

A. Reports of compressive-strength tests shall include: concrete type and class, location of concrete batch in pavement, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

B. Additional Tests: Testing agency shall make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Architect. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

C. Frequency of testing: Coordinate with the Geotechnical Engineer to perform a minimum of one test per load delivered to the site.

END OF SECTION 32 13 13

SECTION 32 31 19 - ORNAMENTAL PICKET FENCES AND GATES

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. Ornamental picket fencing, gates, and accessories.
   2. Excavation for post bases, concrete footings for posts.

1.3 SUBMITTALS

A. Refer to Division 01 Sections "Submittal Log" and "LEED Requirements."

B. Product Data: Submit product data for fabric, posts, accessories, fittings, and hardware.

C. Shop Drawings: Include plan layout, grid, spacing of components, accessories, fittings, hardware, anchorages, and schedule of components.

D. Assurance/Control Submittals:
   1. Certificates: Manufacturer's certificate certifying that Products meet or exceed specified requirements.
   2. Qualification Documentation: Submit documentation of experience indicating compliance with specified qualification requirements.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the Work of this Section with minimum 5 years documented experience.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Approved Manufacturer: “Highland Plus Commercial” for 6-foot heights, by Master Halco, Dallas, TX (800) 883-8384. Substitutions permitted:

   1. Products from other qualified manufacturers having a minimum of 5 years’ experience manufacturing ornamental picket fencing will be acceptable to the General Prime Contractor as equal if they meet or exceed the following specifications for design, size, gage of metal parts and fabrication.

2.2 ORNAMENTAL FENCING

A. Ornamental Picket Infill: “U” channel rails formed of galvanized steel, 1-3/8 inches wide x 1-1/2 inches deep, 14 gage wall thickness. Punch rails to receive pickets and welded inside gate frames. Pickets, galvanized steel, 3/4-inch square tube. Attach pickets to “U” rails by industrial drive rivets #MIW 381080691.

B. Posts: Galvanized steel 4-inch square

C. Gate Hardware:
   1. Stop: For each leaf.
   2. Drop Rod: Interior side, one per leaf, to sleeves in slab at open positions (where hold back cannot be installed) and closed positions; lockable with padlock provided by Owner (not required at emergency exit gate).

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3. Latch: Double gate assembly; finish to match fence; lockable with padlock provided by Owner.
4. Hinge: Tamper proof, 0.080 steel, finish to match fence.
5. Gate Holdback (to hold gate in open position).

2.3 ACCESSORIES

A. Concrete: Minimum 28-day compressive strength of 3,000 psi.

B. Accessories: Assembled panels with ornamental accessories attached using industrial drive rivets to prevent removal and vandalism. Provide suitable materials to prevent galvanic action between dissimilar materials.

2.4 FINISH

A. Finish: After all steel components have been galvanized, clean and prepare the surface of all components to assure complete adhesion of finish coat. Apply 2 mil topcoat and 2 mil finish coat of polyester resin based powder coating by electrostatic spray process. Bake finish for 20 minutes at 450 degrees F metal temperature. Color: Black.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify areas to receive fencing are completed to final grades and elevations.

B. Verify areas to assure sufficient space to receive gate in open position (gate and overhang.)

C. Ensure property lines and legal boundaries of work are clearly established.

3.2 FRAMING INSTALLATION

A. Install in accordance with Manufacturers instructions.

B. Concrete Set Gate Posts: Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels. Drill holes in firm, undisturbed or compacted soil. Holes shall have diameter 4 times greater than outside dimension of post, and depths approximately 6 inches deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36 inches below surface when in firm, undisturbed soil. Place concrete around posts in a continuous pour, tamp for consolidation. Trowel finish around post and slope to direct water away from posts. Check each post for vertical and top alignment and maintain in position during placement and finishing operations.

3.3 GATE INSTALLATION

A. Install gates plumb, level, and secure for full opening without interference.

B. Attach hardware by means which will prevent unauthorized removal.

C. Adjust hardware for smooth operation.

3.4 CLEANING

A. Clean up debris and unused material and remove from the Site.

END OF SECTION 32 31 19

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SECTION 33 05 00 - SITE UTILITY PIPING

PART 1 - GENERAL

1.1 WORK INCLUDES:

A. Underground utility piping from 5’ outside building structures as identified on the site plans.

B. Sanitary sewer piping materials.

C. Storm sewer piping materials.

D. Water Main piping materials.

E. Materials shall be neatly stored on site. Excavated material shall be neatly stockpiled if not immediately removed from the site. Streets, driveways, and sidewalks shall be kept clear and open.

1.2 REFERENCE STANDARDS AND SPECIFICATIONS:

A. Storm Drainage System Specification.

B. Sanitary Sewer System Specification.

C. Water Distribution System Specification.

D. Site Earthwork Specification.

PART 2 - SEWER PIPING – See site drawings for allowable pipe materials.

2.1 FLEXIBLE GRAVITY SEWER PIPE:

A. Install piping per the flexible pipe utility trench detail on the site drawings for bedding and backfill requirements.

1. ASTM D 3034-97 SDR-35 PVC 15” and smaller.

a. Provide slip-on joints with rubber gasket or mechanical joints.

b. Join pipe with gaskets according to ASTM F 477 for elastomeric seals.

c. Install according to ASTM D 2321.

2. ASTM F 405 High Density Polyethylene (HDPE) for pipe 10” and smaller

a. Join pipe with gaskets according to ASTM F 477 elastomeric seals.

b. Install according to ASTM D 2321.

3. ASTM F 667 High Density Polyethylene (HDPE) for pipe larger than 10”

a. Join pipe with gaskets according to ASTM F 477 elastomeric seals.

b. Install according to ASTM D 2321.

2.2 IGID GRAVITY SEWER PIPE:

A. Install piping per the rigid pipe utility trench detail on the site drawings for bedding and backfill requirements.

1. ASTM C 76, Class III, Wall B, Reinforced Concrete Pipe

a. Slip-on joints with rubber compression gasket or mechanical joints

b. Round Pipe and Fittings: ASTM C 443, rubber gaskets.

c. Elliptical Pipe: ASTM C 877, Type I, Sealing Bands.

d. Arch Pipe: ASTM C 877, Type I, Sealing Bands. Install according to ACPA's "Concrete Pipe Installation Manual."

2.3 SUBDRAINAGE PIPING

A. ASTM F 405 Corrugated, perforated Polyethylene Pipe and fittings with coupled joints.

B. Join PE pipe and fittings with couplings for soiltight joints according to AASHTO's "Standard Specifications for Highway Bridges," Division II, Section 26.4.2.4, "Joint Properties"; or according to ASTM D 2321 and the Corrugated Pipe Associations “Recommendation Installation Practices for Corrugated Polyethylene Pipe and Fittings”.

2.4 STORM DRAINAGE FITTINGS

A. Storm drainage fittings shall be of the same material and classification as the main line. Provide adapters as necessary to adjust from the main line fitting to the branch line material.

B. Inserta-Tees for branch lines are acceptable provided:

1. The main line is 12” nominal pipe size or larger.

2. The branch line extends from the main at no greater than 45 degree slope from horizontal.

3. The protrusion into the main line does not exceed 1”.

PART 3 - WATER DISTRIBUTION AND FORCE MAIN PIPING – See site drawings for allowable pipe materials.

3.1 DUCTILE-IRON PIPE AND FITTINGS:

A. Mechanical joint and push on joint pipe conforming with AWWA C151 and Pressure Class 350.

B. Mechanical joint and push on joint pipe fittings conforming with AWWA C110 or AWWA C153.

C. Glands with rubber gaskets and steel bolts conforming with AWWA C111/A21.11.

D. Install according to AWWA C600 and AWWA M41.

E. Cement mortar lining according to AWWA C104/A21.4.

F. Asphaltic coating according to AWWA C151 / AWWA C110 / AWWA C153 as applicable.

G. Pressure and leak test ductile-iron piping according to AWWA C600-99.

H. Provide testing only after all restraints have hardened.

3.2 PVC PIPE AND FITTINGS

A. AWWA pressure class 150 C900 PVC, SDR 18 with push on joints according to ASTM D 3139 and socket fittings. The material shall conform to ASTM D 1784, Class 12454-B.

B. Gasketed Joints: Use joining materials according to AWWA C900. Construct joints with elastomeric seals and lubricant according to ASTM D 2774 and ASTM D 3139 and pipe manufacturer's written instructions.

C. Install according to AWWA M23 and ASTM F 645.

D. Pressure and leak test plastic piping according to AWWA C605-94.

E. Provide testing only after all restraints have hardened.

3.3 Tracer wire to be placed for all non-metallic pressure piping. Place waring tape 30" above pipe.

END OF SECTION 33 05 00

SECTION 33 11 16 – SITE WATER DISTRIBUTION

PART 1 - GENERAL

1.1 WORK INCLUDES:

A. Domestic water and fire protection facilities from the Public main to 5’ outside building structures as shown on the Site Plans.

1.2 REFERENCE STANDARDS AND SPECIFICATIONS:

A. The Indiana Department of Environmental Management rules and regulations.

B. Comply with requirements of utility company supplying water. Include tapping of water mains and backflow prevention.

C. Terms and conditions of construction as required by the Contractor’s permit with the controlling agency. When conditions of the permit conflict with proposed work, the contractor shall notify the Engineer for correction prior to installation. Any non-compliant work performed by the Contractor shall be at the Contractor’s expense.

D. Site Earthwork specification for excavation and backfill requirements.

E. Comply with ASTM F 645 for selection, design, and installation of thermoplastic water piping.

F. NFPA Compliance: Comply with NFPA 24 for materials, installations, tests, flushing, and valve and hydrant supervision for fire-service-main piping for fire suppression.

G. Control of Site Work Specification.

1.3 DELIVERABLES:

A. Product Data for the following: piping, fittings, valves and accessories, water meters and accessories, fire hydrants, blow off hydrants, post indicator valves and accessories.

B. Record Drawings: Contractor shall provide a marked-up set of drawings to the owner. Include size, material, depth of cover, location, and elevation of all improvements within the contract documents. Include details of underground structures and connections. Identify any items that deviate from the contract documents including but not limited to: underground utilities, finish grades, substitutions if approved, detail modification, etc.

C. Progress Reports: Soil conditions encountered, work completed, etc.

D. Passing test reports for the entire water distribution system.

1.4 CONTROL OF WORK:

A. Clean any debris that may accumulate within the water distribution system as a result of construction operations, including new and existing water piping and structures. Flush piping as required to purge the piping system.

B. Cap the end of exposed piping during installation to minimize infiltration of material into the piping system.

C. Inspect the distribution system and replace defective piping and structures using new materials, and repeat inspections until defects are within allowances specified. Re-inspect and repeat procedure until results meet specifications.

D. Do not enclose, cover, or put the water distribution system into service before final inspection and approval by the local utility owner.

E. Schedule tests and inspections with the utility owner as required under the conditions of the permit, and this section. The water distribution system will not be accepted or considered complete until all improvements pass the testing requirements of the local utility owner and a copy of all passing tests are provided to the Owner's Agent.

F. Protect piping from damage. Do not store PVC piping and fittings in direct sunlight.

PART 2 - PRODUCTS

2.1 WATER DISTRIBUTION PIPING:

A. See site plans for allowable pipe materials.

B. Install piping from the water service connection point to 5' outside the face of building. Connect to the building water system of sizes and in locations indicated. Site contractor shall be responsible for making the final connection to the building system, including any drop piping and fittings required to match invert elevations.

C. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for using lubricants and other installation requirements. Maintain a swab in line, and pull past each joint as it is completed.

D. Use proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.

E. Bury piping with depth of cover over top at least 60 inches.

F. Protect stored piping, fittings, and specialties from moisture and dirt, and elevate above grade.

2.2 VALVES:

A. Resilient-Seated gate valve, ductile-iron body, bonnet and gate; resilient seats, bronze stem and stem nut, with mechanical joints and conforming to AWWA C509. Provide interior coating according to AWWA C550. All valves and fittings shall have a minimum working pressure of 200 psig. Install valve nut extension if valve is installed deeper than 60" cover.

2.3 VALVE BOXES:

A. Comply with AWWA M44 for cast-iron valve boxes. Include top section, adjustable extension of length required for depth of burial of valve, plug with lettering "WATER," bottom section with base of size to fit over valve, and approximately 5-inch- diameter barrel. Install valve box and valve nut extensions if valve is installed deeper than 60" cover.

2.4 ANCHORAGE INSTALLATION

A. Install underground piping with restrained joints at horizontal and vertical changes in direction. Use restrained-joint piping, thrust blocks, anchors, tie-rods and clamps, and other supports. For water lines 12” and smaller, restrain joints and fittings in accordance with the manufacturer’s recommended restraint lengths or the controlling municipality specifications, whichever is more restrictive. Submit calculations for required restraint length to Engineer for water lines larger than 12”.

B. Install anchorages for tees, plugs and caps, bends, crosses, valves, and hydrant branches.

C. Provide anchorage for Ductile-Iron, Water-Service Piping according to AWWA C600.

D. Provide anchorage for PVC Water-Service Piping according to AWWA M23.

E. Apply full coat of asphalt or other acceptable corrosion-resistant material to surfaces of installed ferrous anchorage devices.

2.5 WATER METERS:

A. Contractor shall pay all required fees, and Install according to the Utility Owner’s requirements.

2.6 IDENTIFICATION

A. Install continuous underground detectable warning tape for all plastic pipe during backfilling of trench for underground water-service piping. Locate below finished grade, directly over piping. In addition, attach a continuous green sheathed solid conductor copper/copper clad steel wire line (minimum #12 AWG) directly to the plastic pipe.

B. Connect any break in the conductor line before construction with an electrical clamp, or solder, and coat the connection with a rubber or plastic insulator to maintain the integrity of the connection from corrosion. Clamp connections must be made of brass or copper and of the butt end type with wires secured by compression. Soldered connections must be made by tight spiral winding of each wire around the other with a finished length minimum of 3 inches overlap.

C. Test conductors for continuity. Conductors shall be installed to ground level at each hydrant and valve box.

2.7 LIVE TAP 3” AND LARGER:

A. Tap existing water main according to requirements of water utility company and according to MSS SP-60. Provide gate valve and valve box as shown on the site drawings.

PART 3 - TESTING AND DISINFECTION

3.1 CLEANING:

A. Clean and disinfect all public and private water distribution piping according to the Utility Owner requirements, and according to AWWA C651-99. Provide temporary testing connections as required by the permitting authority and to effectively complete disinfection requirements.

B. Fill the distribution system with a water and chlorine solution containing at least 50 ppm of chlorine. isolate and allow to stand for 24 hours.

C. Drain system or part of system of previous solution and refill with water/chlorine solution containing at least 200 ppm of chlorine; isolate and allow to stand as required.

D. After standing time, flush system with clean, potable water until no chlorine remains in water coming from system.

E. Submit water samples in sterile bottles to authorities having jurisdiction. Repeat procedure if biological examination shows evidence of contamination.

F. Prepare reports of purging and disinfecting activities.

3.2 WATER DISTRIBUTION TESTING:

A. Provide testing as required by the Indiana Department of Environmental Management, Indiana State Department of Health, and water utility Owner. In the absence of published standards, see site utility piping section for specific testing requirements.

END OF SECTION 33 11 16

SECTION 33 31 14 - SANITARY SEWER SYSTEM

PART 1 - GENERAL

1.1 WORK INCLUDES:

A. Sanitary sewerage 5’ outside building structures as shown on the Site Plans.

1.2 REFERENCE STANDARDS AND SPECIFICATIONS:

A. The Indiana Department of Environmental Management rules and regulations.

B. The Utility Owner Standards and Specifications.

C. Terms and conditions of construction as required by the Contractor’s permit with the controlling agency. When conditions of the permit conflict with proposed work, the contractor shall notify the Engineer for correction prior to installation. Any non-compliant work performed by the Contractor shall be at the Contractor’s expense.

D. Site Earthwork specification for excavation and backfill requirements.

E. Control of Site Work Specification.

1.3 DELIVERABLES:

A. Submittals for: piping, fittings, precast manholes, casting frames and covers.

B. Record Drawings: Include size, material, depth of cover, location, and elevation of all improvements within the contract documents. Include details of underground structures and connections.

1.4 CONTROL OF WORK:

A. Clean any debris that may accumulate within the sanitary sewer system as a result of construction operations, including new and existing sewer piping and structures. Flush piping as required to purge the piping system.

B. Cap the end of exposed piping during installation to minimize infiltration of material into the piping system.

C. Inspect interior of piping to determine whether line displacement or other damage has occurred throughout the construction process. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.

D. Replace defective piping and structures using new materials, and repeat inspections until defects are within allowances specified. Re-inspect and repeat procedure until results meet specifications.

E. Do not enclose, cover, or put the sanitary sewer into service before final inspection and approval by the local utility owner.

F. Schedule tests and inspections with the utility owner as required under the conditions of the permit, and this section. The sanitary sewer system will not be accepted or considered complete until all improvements

pass the testing requirements of the local utility owner and a copy of all passing tests are provided to the Owner's Agent.

G. Protect piping from damage. Do not store PVC piping and fittings in direct sunlight.

PART 2 - PRODUCTS

2.1 GRAVITY PIPE: See the site utility piping specification for material specifications, and the site drawings for allowable pipe materials.

A. Install piping from the sewer outlet point to 5' outside the face of building according to the site drawings. The site contractor shall be responsible for making the final connection to the building sewer, including any drop piping required to match invert elevations.

B. Use jointing materials and methods defined in the site utility piping specification.

2.2 PRECAST DRAINAGE STRUCTURES:

A. All structures shall be precast concrete according to ASTM C 478. Provide preformed flexible joint sealant per ASTM C 990 or rubber gasket joints per ASTM C 443 and ASTM C 891.

B. Grade Rings: Set structure depth to include two 6" thick reinforced concrete rings that are compatible with the specified castings.

C. Steps: Include steps that are placed in alignment with the access hole opening, and extend from the bottom of the structure to the top of the structure. Place each step at 12" intervals and provide a slip resistant surface on each step.

D. Provide resilient boot according to ASTM C 923 to connect the sewer piping to the precast drainage structure.

E. Concrete for Channels and Benches: Portland cement design mix, 3000 psi minimum, with 0.45 maximum water-cementitious materials ratio.

F. See Site Earthwork specification for backfill requirements.

G. Castings shall have "SANITARY" labeled on sanitary sewer castings.

2.3 CLEANOUTS:

A. Install piping so cleanouts open in direction of flow in sewer pipe. Set cleanout frames and covers as shown on the site drawings.

2.4 TAP CONNECTIONS:

A. Connect to existing sewer main according to the conditions of the sewer tapping permit.

PART 3 - INSTALLATION

3.1 GRAVITY PIPE TESTING:

A. Test to be performed 30 days after installation.

B. Flexible piping shall allow passage of a cylinder that is no smaller than 95% of the pipe inside diameter.

C. Any piping that is damaged shall be removed and re-installed before approval.

D. Air test concrete piping according to ASTM C 924-89.

E. Air test plastic pipe according to ASTM F1417-92: “Standard Test Method for Installation Acceptance of plastic gravity sewer lines using Low-Pressure Air”.

F. Test PVC Piping according to AWWA M23, "Testing and Maintenance" Chapter.

3.2 MANHOLE STRUCTURE TESTING:

A. Perform vacuum test on all manholes according to ASTM C1244-93 “Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure Test”.

END OF SECTION 33 31 14

SECTION 33 41 00 - STORM DRAINAGE SYSTEM

PART 1 - GENERAL

1.1 WORK INCLUDES:

A. Storm drainage 5’ outside building structures as shown on the Site Plans.

B. Subdrainage.

1.2 REFERENCE STANDARDS AND SPECIFICATIONS:

A. Local storm water review agency standards and specifications.

B. Terms and conditions of construction as required by the Contractor’s permit with the controlling agency. When conditions of the permit conflict with proposed work, the contractor shall notify the Engineer for correction prior to installation. Any non-compliant work performed by the Contractor shall be at the Contractor’s expense.

C. Site Earthwork specification for excavation and backfill requirements.

D. Control of Site Work Specification.

1.3 DELIVERABLES:

A. Product Data for the following: piping, fittings, cleanouts, precast concrete manholes, and casting frames and covers.

B. Record Drawings: Include size, material, depth of cover, location, and elevation of all improvements within the contract documents. Include details of underground structures and connections.

C. Progress Reports: Soil conditions encountered, work completed, etc.

D. Passing test reports for the entire storm sewer system.

E. Geotextile fabric data for subdrainage.

1.4 CONTROL OF WORK:

A. Clean any debris that may accumulate within the storm drainage system as a result of construction operations, including new and existing water piping and structures. Flush piping as required to purge the piping system.

B. Cap the end of exposed piping during installation to minimize infiltration of material into the piping system.

C. Inspect interior of piping to determine whether line displacement or other damage has occurred throughout the construction process. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.

D. Replace defective piping and structures using new materials, and repeat inspections until defects are within allowances specified. Re-inspect and repeat procedure until results meet specifications.

E. Do not enclose, cover, or put the storm sewer into service before final inspection and approval by the local utility owner.

F. Schedule tests and inspections with the utility owner as required under the conditions of the permit, and this section. The storm drainage system will not be accepted or considered complete until all improvements pass the testing requirements of the local utility owner and a copy of all passing tests are provided to the Owner's Agent.

G. Protect piping from damage. Do not store PVC piping and fittings in direct sunlight.

PART 2 - PRODUCTS

2.1 GRAVITY PIPE:

A. See the site utility piping specification for material specifications, and the site drawings for allowable pipe materials.

B. Install piping from the sewer outlet point to 5' outside the face of building according to the site drawings. The site contractor shall be responsible for making the final connection to the building sewer, including any drop piping required to match invert elevations.

C. Use jointing materials and methods defined in the site utility piping specification.

2.2 SUBDRAINAGE:

A. See the site drawings for allowable pipe materials and the utility piping specification for jointing methods.

B. Lay perforated pipe with perforations down.

C. Drainage fabric: Polypropylene nonwoven geotextile filter that will allow a hydraulic flow rate of 110 gallon per minute per square foot when tested according to ASTM D 4491.

2.3 DRAINAGE FILL:

A. Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D 448, coarse aggregate, Size No. 57, with 100 percent passing 1-1/2-inch sieve and not more than 5 percent passing No. 8 sieve.

2.4 PIPE END TREATMENTS

A. Place and shape 12" of soil to cap pipe bedding material at ends of exposed pipe.

2.5 PRECAST DRAINAGE STRUCTURES:

A. All structures shall be precast concrete according to ASTM C 478. Provide preformed flexible joint sealants per ASTM C 990 or rubber gasket joints per ASTM C 443 and ASTM C 891.

B. Grade Rings: Set structure depth to include two 6" thick reinforced concrete rings that are compatible with the specified castings.

C. Steps: Include steps that are placed in alignment with the access hole opening, and extend from the bottom of the structure to the top of the structure. Place each step at 12" intervals and provide a slip resistant surface on each step.

D. Concrete for Channels and Benches: Portland cement design mix, 3000 psi minimum, with 0.45 maximum water-cementitious materials ratio.

E. Castings shall have "STORM" labeled on all storm sewer castings.

F. See Site Earthwork specification for backfill requirements.

2.6 CLEANOUTS:

A. Install piping so cleanouts open in direction of flow in sewer pipe. Set cleanout frames and covers as shown on drawings.

END OF SECTION 33 41 00

West Noble High School
Renovation and Addition

5050 US-33,
Ligonier, IN, 46767

Design Team

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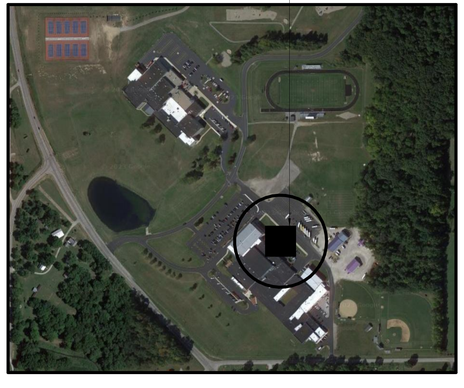
PROJECT LOCATION



Location Map
Not To Scale

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STRUCTURAL	S-402	Structural Details
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ELECTRICAL	E-602	Electrical Schedules

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SEAL

WEST NOBLE CHARGERS

West Noble High School
Renovation and Addition
5050 US-33,
Ligonier, IN, 46767

REVISIONS

NO.	DESCRIPTION	DATE

PROJECT NO. 2301108
ISSUE DATE 02-12-2024
SUBMITTAL
100% Construction Documents

Cover Sheet

G-001

2/7/2024 2:05:16 PM
Autodesk Docs://West Noble High/Room 6 Drawings/2301108 West Noble_Arch.rvt

PLAN NORTH

1 Site Layout Plan - Gym Addition
1" = 20'-0"

LAYOUT NOTES:

1. CONCRETE STOOP, SEE STRUCTURAL DRAWINGS.
2. PEA GRAVEL. PER DETAIL #8/C-600.
3. PAVEMENT MARKING SHALL BE 4" YELLOW WATERBORNE PAINT.
4. HANDICAP PAVEMENT MARKINGS SHALL BE 4" BLUE WATERBORNE PAINT.
5. 4" CONCRETE SIDEWALK PER DETAILS #2&3/C-600.
6. 6" CONCRETE WALK W/ TURNDOWN PER DETAIL #4/C-600.
7. CONCRETE PARKING BUMPER PER DETAIL #9/C-600.
8. "VAN ACCESSABLE" ADA SIGN PER DETAIL #7/C-600.
9. GRASS/LANDSCAPE AREA. ALL DISTURBED AREAS TO RECEIVE PERMANENT SEEDING. PER SPECIFICATIONS SECTION 329200 "LAWNS & GRASSES".
10. DETECTABLE TRAFFIC WARNING PER DETAIL #11/C-600.
11. CRITICAL MEASURE LINE MUST BE EXACTLY 400 METERS (VERIFY WITH NFHS STANDARDS:1312.336 FEET, ALL CONVERSIONS TO BE 1 M=3.28084 FT) ALL PROPOSED STRIPING IS APPROXIMATED FOR INFORMATIONAL PURPOSES ONLY. LESLIE COATINGS TO PROVIDE AND INSTALL EXACT PROPOSED STRIPING PLANS AND DIMENSIONS.
12. PROPOSED TRACK BY LESLIE COATINGS. LESLIE COATINGS TO ADD 2 RUNNING LANES, REPLACE EXISTING TRACK PER NFHS STANDARDS, AND SPECIFICATIONS AND STRIPE PROPOSED TRACK TO MEET ALL REQUIRED CODES.
13. 6' TALL BLACK DECORATIVE FENCE.
14. 6' TALL BLACK DECORATIVE FENCE GATE. SEE ARCHITECTURAL PLANS.
15. ASPHALT WALKWAY. PER DETAIL 10/C-600.
16. CONCRETE SLAB FOR BLEACHER SYSTEM. (BY OTHERS.)
17. PROPOSED PAVEMENT CROSSHATCH STRIPING SHALL BE 4" YELLOW WATERBORNE PAINT.
18. PLAY CLOCK TO BE RELOCATED. SEE SITE ELECTRICAL PLANS. COORDINATE FINAL LOCATION WITH OWNER.
19. CONCRETE SLAB TO BE COORDINATED WITH SOUTHERN BLEACHER AND INSTALLED (BY OTHERS). PROPOSED JOINTS ARE FOR INFORMATIONAL PURPOSES ONLY. SEE DETAIL #12/C-600.
20. DOWELED BUTT JOINT. PER DETAIL #5/C-600
21. 6' TALL BLACK VINYL COATED, 3/4" MESH CHAIN LINK FENCE AS NEEDED FOR PROPOSED CONSTRUCTION. ALL HARDWARE AND POSTS TO BE BLACK VINYL COATED. COORDINATE WITH OWNER ON LOCATIONS.
22. TRANSITION 6' BLACK DECORATIVE FENCE TO 6' TALL BLACK VINYL COATED, ¾" MESH CHAIN LINK FENCE. SET POSTS AS REQUIRED TO MAKE TRANSITION.

PROPOSED LEGEND:

- STORM INLET / MANHOLE
- STORM END SECTION
- SANITARY MANHOLE
- SANITARY CLEANOUT
- SIGN
- HANDICAP SYMBOL PER DETAIL #6/C-600.

LAYOUT LEGEND:

- TYPE "B" PAVEMENT PER DETAIL #1/C-600.
- TRACK SURFACING BY LESLIE COATINGS.
- 6" CONCRETE PER DETAIL #12/C-600. (BY OTHERS)
- CONCRETE BLEACHER SLAB (BY OTHERS)
- STONE DRIVE TYPE "A" PER DETAIL #13/C-600.
- 6" CONCRETE WALK W/ TURNDOWN PER DETAIL #4/C-600.

NOTE: ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.

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02-12-2024
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WEST NOBLE CHARGERS

West Noble Renovation and Addition
5050 US-33
Ligonier, IN 46767

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	02-21-24

PROJECT NO. 2301108
ISSUE DATE 02-12-2024
SUBMITTAL 100% Construction Documents

Site Layout Plan - Gym Addition

C-201A

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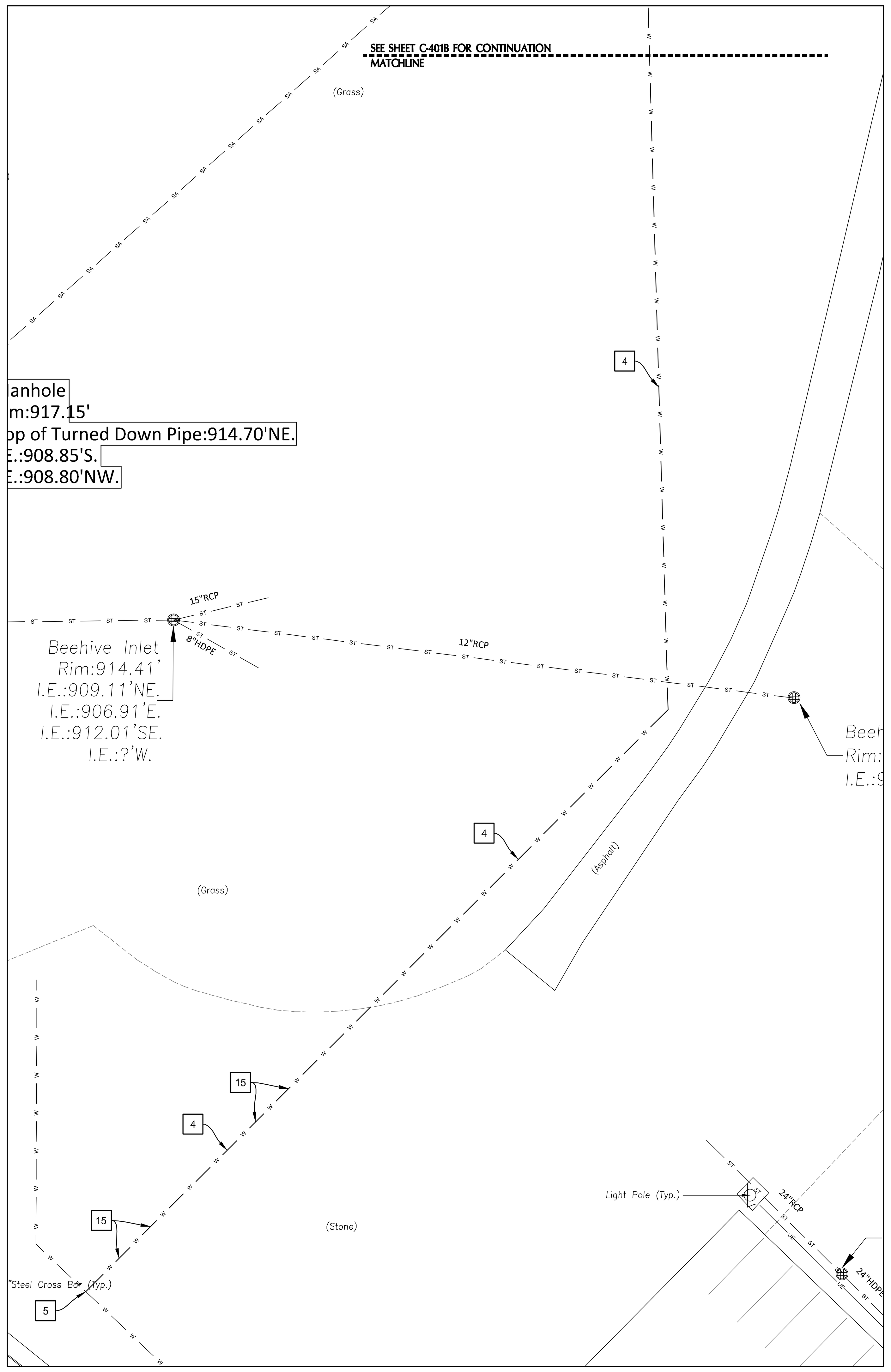
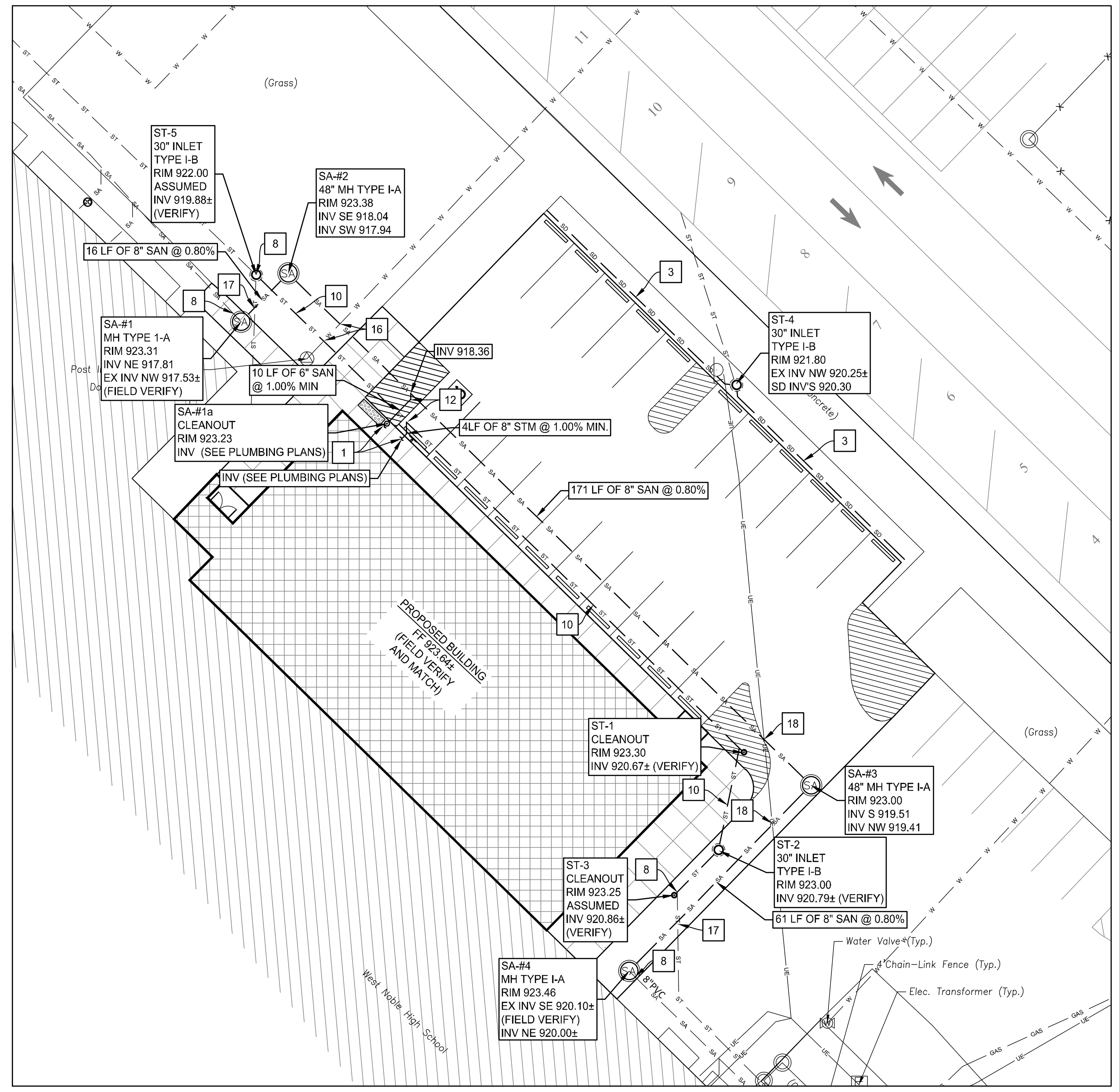


PLAN NORTH

2 Site Utility Plan - Waterline Extension
1" = 20'-0"



PLAN NORTH

1 Site Utility Plan - Gym Addition
1" = 20'-0"

UTILITY NOTES:

1. COORDINATE CONNECTION WITH BUILDING DRAWINGS.
2. 6" DOWNSPOUT DRAIN @ MINIMUM 1.00%. PROVIDE BOOT AND CONNECT TO DOWNSPOUTS. MAINTAIN 3' MINIMUM COVER. SEE BUILDING PLANS FOR EXACT LOCATION.
3. 4" SUBDRAIN PER DETAIL #8/C-600.
4. 4" WATER LINE.
5. WATER CONNECTION, 12" X 4" TAPPING SLEEVE, VALVE & VALVE BOX.
6. 4" GATE VALVE AND VALVE BOX.
7. CONNECT EXISTING SANITARY SEWER TO PROPOSED STRUCTURE. FIELD VERIFY INVERT AND LOCATION.
8. PRIOR TO ORDERING STRUCTURES. FIELD VERIFY DEPTH AND LOCATION OF EXISTING UTILITY. REROUTE LINE AS SHOWN AND MAINTAIN POSITIVE AND CONSTANT SLOPE. NOTIFY ENGINEER AND WAIT FOR INSTRUCTION IF CONFLICT EXISTS. CONNECT EXISTING LINE TO REMAIN TO PROPOSED STRUCTURE.
9. PIPE END SECTION PER DETAIL #1/C-500. (1)
10. REROUTE EXISTING STORM LINE. STORM LINE IS ASSUMED TO BE 10" BUT NEEDS TO BE FIELD VERIFIED PRIOR TO ORDERING MATERIALS. MATCH EXISTING SIZE. FIELD VERIFY START AND END INVERTS ENSURE POSITIVE DRAINAGE OUT OF LINE TO OUTFALL. COORDINATE WITH ENGINEER IF DISCREPANCY.
11. FIELD VERIFY EXISTING DOWNSPOUT CONNECTION. RECONNECT DOWNSPOUT TO REROUTED STORM LINE WITH PROPER FITTINGS. ENSURE POSITIVE DRAINAGE OUT OF LINE TO OUTFALL. COORDINATE WITH ENGINEER IF DISCREPANCY.
12. PROVIDE Y CONNECTION AT TAP LOCATION.
13. TRENCH DRAIN. PROVIDE KLASSIKDRAIN KS100 4" TRENCH DRAIN WITH SLOTTED STEEL GRATE. PROVIDE BOTTOM OUTLET AND CONNECT TO PROPOSED 12" STORM SEWER WITH Y CONNECTION. INSTALL PER MANUFACTURES RECOMMENDATIONS.
14. SEE SITE ELECTRICAL PLANS FOR UNDERGROUND ELECTRIC WORK.
15. REMOVE AND REPLACE STONE AS NECESSARY FOR PROPOSED WATER LINE CONSTRUCTION.
16. PRIOR TO ORDERING STRUCTURES. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND DEPTH OF EXISTING WATER LINE. CONTACT ENGINEER IF CONFLICT EXISTS WITH PROPOSED CONSTRUCTION.
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18. PRIOR TO ORDERING STRUCTURES. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND DEPTH OF EXISTING ELECTRIC LINE. CONTACT ENGINEER IF CONFLICT EXISTS WITH PROPOSED CONSTRUCTION.
19. CONNECT EXISTING STORM LINE TO PROPOSED STRUCTURE WITH WATERTIGHT CONNECTION.

STORM NOTES:

1. SEE SHEET C-400.

WATER NOTES:

1. SEE SHEET C-400.

SANITARY NOTES:

1. SEE SHEET C-400.

PROPOSED LEGEND:

STORM INLET / MANHOLE	STORM SEWER
STORM END SECTION	SUBDRAIN
SANITARY MANHOLE	SANITARY SEWER
CLEANOUT	WATER LINE
SIGN	
HANDICAP SYMBOL PER DETAIL	

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REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	02-21-24

PROJECT NO. 2301108
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Site Utility Plan - Gym Addition

C-401A

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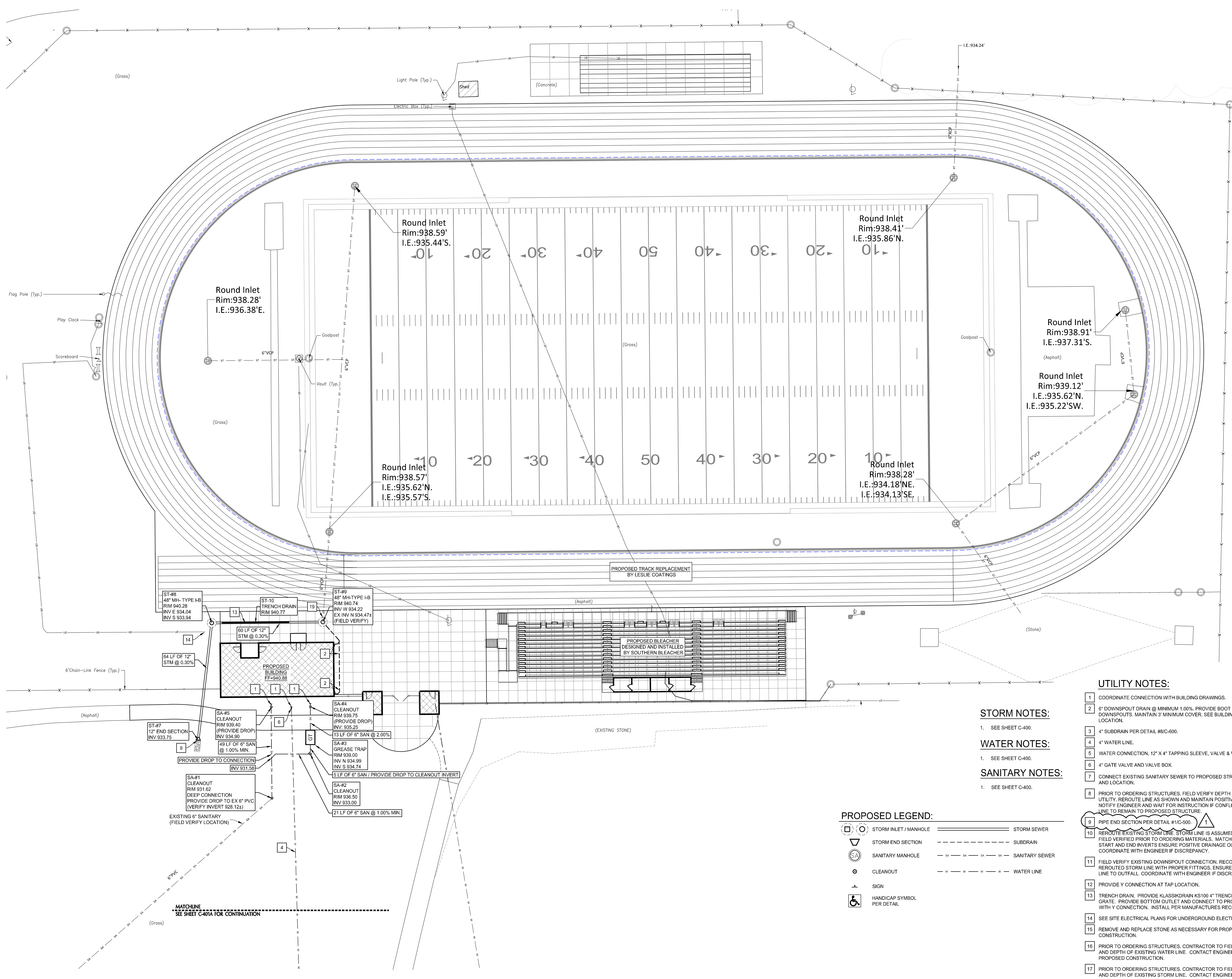

PLAN NORTH

1 Site Utility Plan - Track and Bleachers
1" = 20'-0"

STORM NOTES:

1. SEE SHEET C-400.

WATER NOTES:

1. SEE SHEET C-400.

SANITARY NOTES:

1. SEE SHEET C-400.

PROPOSED LEGEND:

STORM INLET / MANHOLE	STORM SEWER
STORM END SECTION	SUBDRAIN
SANITARY MANHOLE	SANITARY SEWER
CLEANOUT	WATER LINE
SIGN	
HANDICAP SYMBOL PER DETAIL	

UTILITY NOTES:

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19. CONNECT EXISTING STORM LINE TO PROPOSED STRUCTURE WITH WATERTIGHT CONNECTION.

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Ligonier, IN 46767

REVISIONS

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1	ADDENDUM #1	02-21-24

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Site Utility Plan - Track and Bleachers

C-401B

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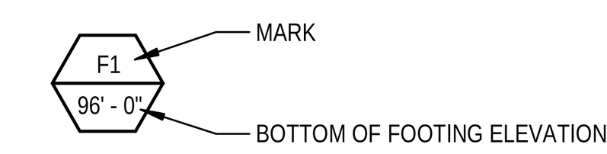
S:\Projects\Projects (6000-6999)\Projects (6000-6049)\6027-West Noble Athletics\Drawings\6027-C-400 Site Utility Plan.dwg

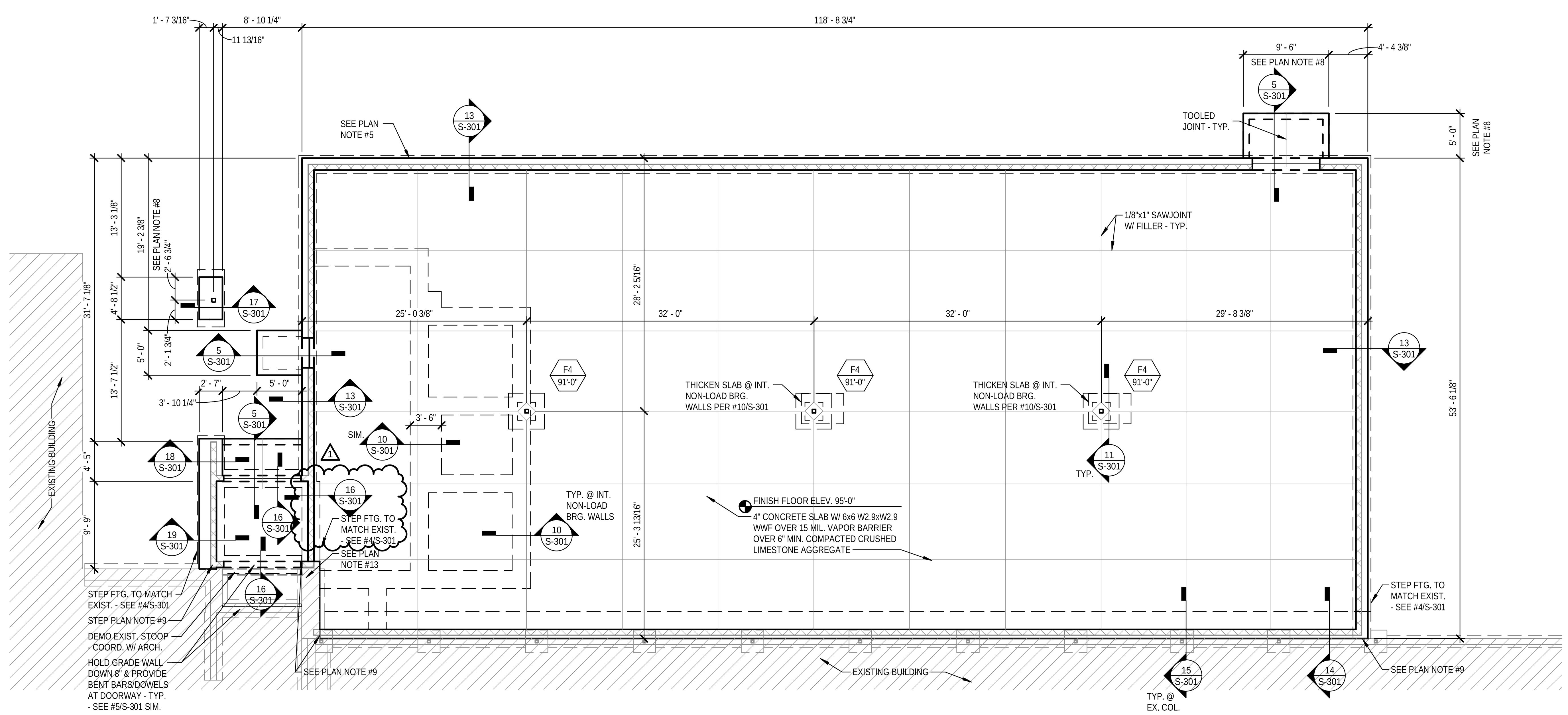
PLAN NOTES THIS SHEET:

1. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS AND WALL CONSTRUCTION INFORMATION.
2. REFER TO ARCHITECTURAL SECTIONS AND DETAILS FOR FOUNDATION INSULATION REQUIREMENTS.
3. NO HORIZONTAL CONSTRUCTION / COLD JOINTS, OTHER THAN THOSE SHOWN IN THE FOUNDATION DETAILS, ARE ALLOWED IN THE FOUNDATION UNLESS APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.
4. COORDINATE REQUIRED PIPE SLEEVES WITH CIVIL, MECHANICAL, ELECTRICAL, PLUMBING DRAWINGS.
5. LOWER FOOTING AS REQD. AT UNDERGROUND UTILITIES PER #4/S-301 (TYP.) THAT WOULD OTHERWISE PASS THROUGH THE FOOTING.
6. FOR PIPES THAT PASS BELOW STRIP FOOTINGS AND THICKENED SLABS, PLACE PIPE IN A PIPE SLEEVE THAT IS 2 SIZES LARGER AND FILL VOIDS BETWEEN PIPE AND SLEEVE WITH A COMPRESSIBLE MATERIAL AS REQUIRED BY THE PLUMBING CODE. SEE CIVIL AND PLUMBING DRAWINGS.
7. SEE S-301 FOR TYPICAL CONSTRUCTION AND CONTROL JOINTS DETAILS IN SLABS ON GRADE.
8. VERIFY ALL STOOP LOCATIONS, DIMENSIONS, AND JOINT PATTERNS WITH CIVIL AND ARCH. LAYOUT PRIOR TO CONCRETE PLACEMENT.
9. WHERE NEW CONCRETE GRADE WALLS AND FOUNDATIONS TERMINATE AT EXISTING FOUNDATIONS, PROVIDE REINFORCING DOWELS INTO EXISTING CONCRETE, UNLESS NOTED OTHERWISE. DOWELS TO MATCH SIZE AND QUANTITY OF HORIZONTAL REINFORCING BARS. EMBED DOWELS 4" INTO EXISTING CONCRETE WITH APPROVED ADHESIVE. PROVIDE STANDARD LAP SPLICES.
10. AT DOORWAY, #4x12" SMOOTH DOWELS @ 18" O.C.. EMBED 4" INTO EXISTING CONCRETE AND GREASE ONE END.
11. COORDINATE CONCRETE FLOOR SLAB FINISH WITH ARCHITECTURAL DRAWINGS.
12. VERIFY ALL SLAB RECESS SIZES, DEPTHS, & LOCATIONS WITH ARCHITECTURAL DRAWINGS.
13. PROVIDE NEW 8" CMU AT EXISTING PRECAST CONCRETE VENEER REMOVAL. SEE ARCHITECTURAL DRAWINGS FOR DEMO EXTENTS. DOWEL VERTICAL REINFORCEMENT INTO EXISTING FOOTING PER #10/S-301 (SIM.).

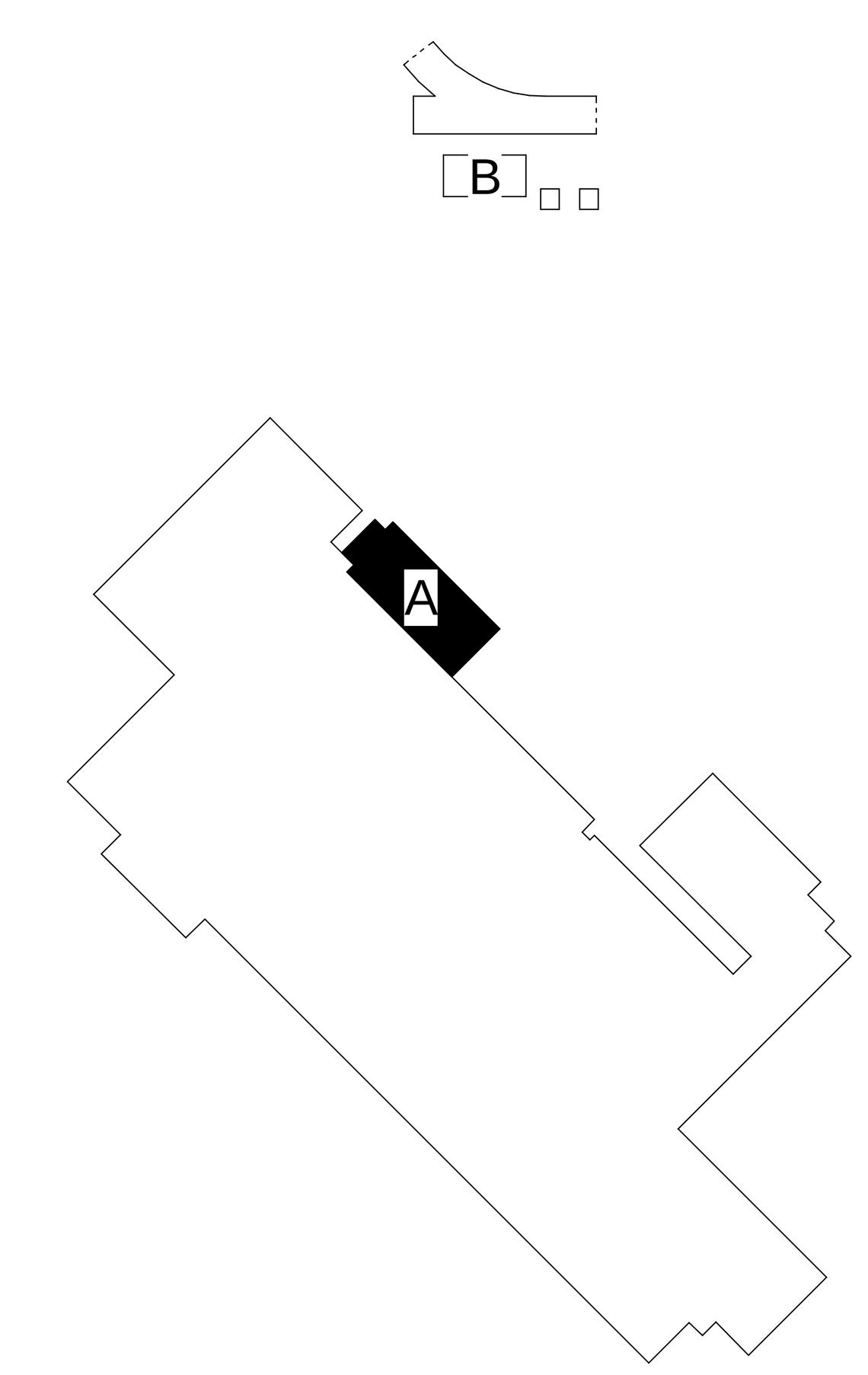
FOOTING SCHEDULE

MARK	SIZE	REINFORCING (BOTTOM U.N.O.)
F4	4'-0" X 4'-0" X 12"	5 - #5 X 3'-6" BARS EACH WAY





1 Foundation Plan - Area A
1/8" = 1'-0"



Keyplan

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S2 ARCHITECTS, LLC dba ELEVATUS ARCHITECTURE

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SEAL

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REVISIONS

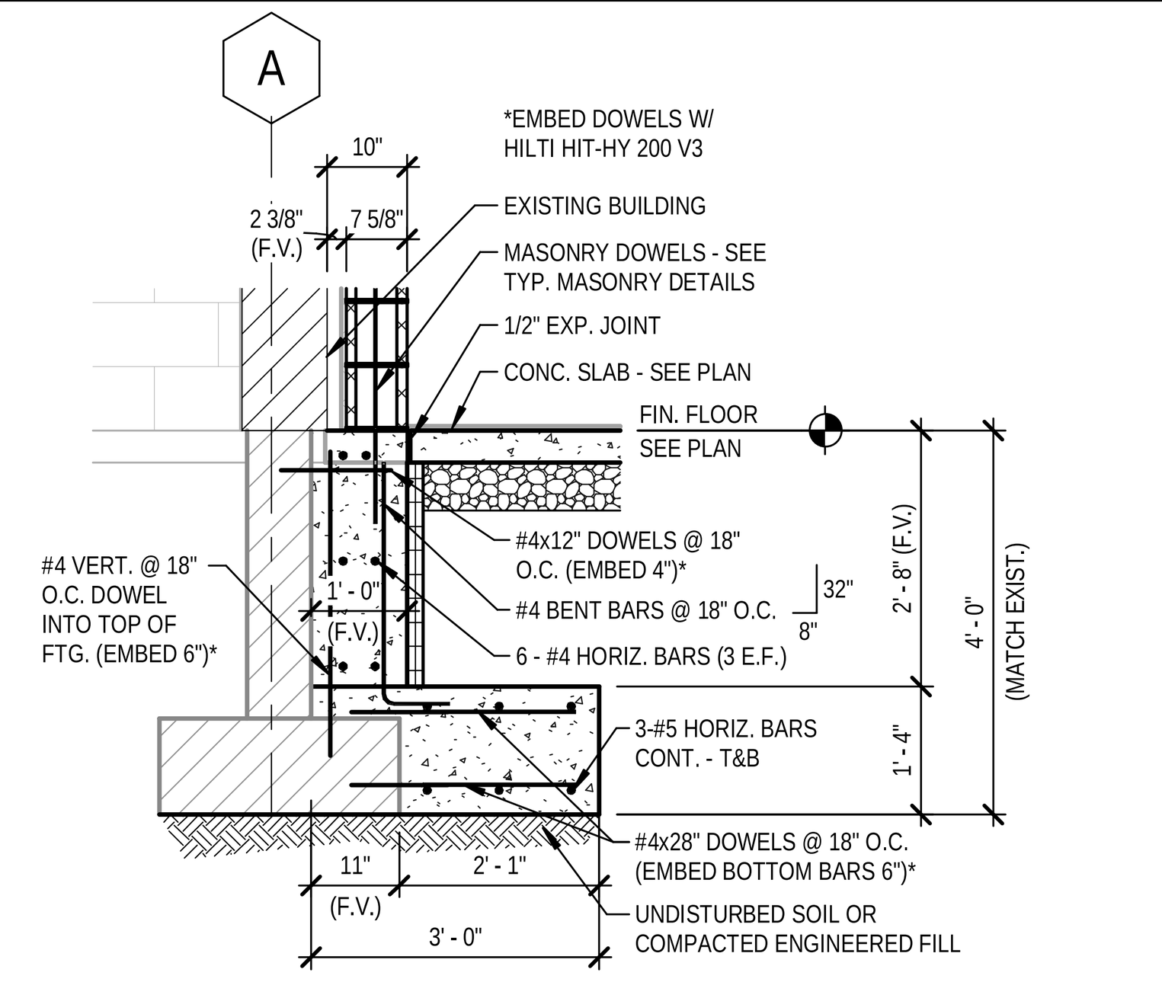
NO.	DESCRIPTION	DATE
1	Addendum 1	02-21-2024

PROJECT NO. 2301108
ISSUE DATE 02-12-2024
SUBMITTAL 100% Construction Documents

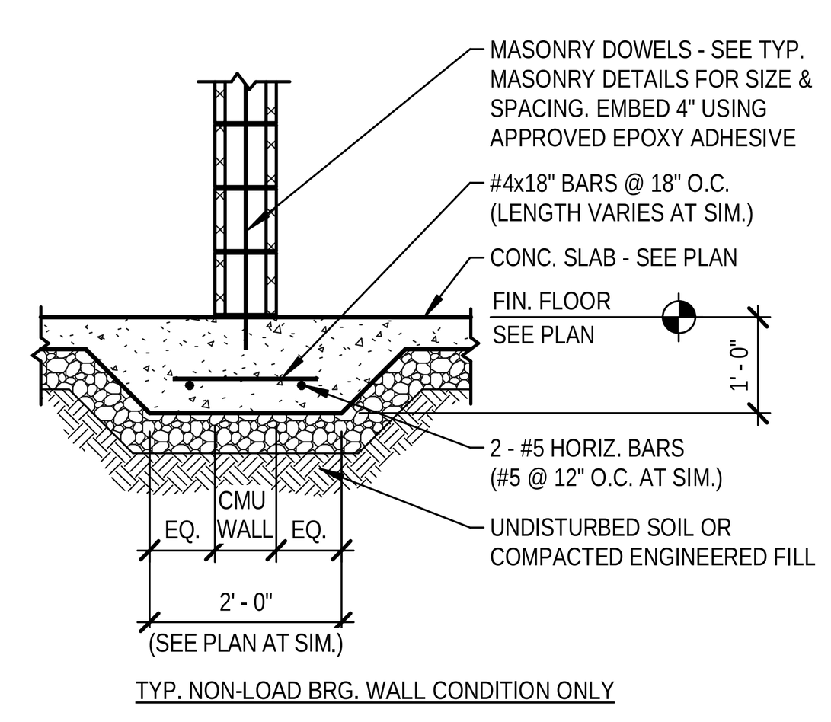
Foundation Plan Area A

S-101A

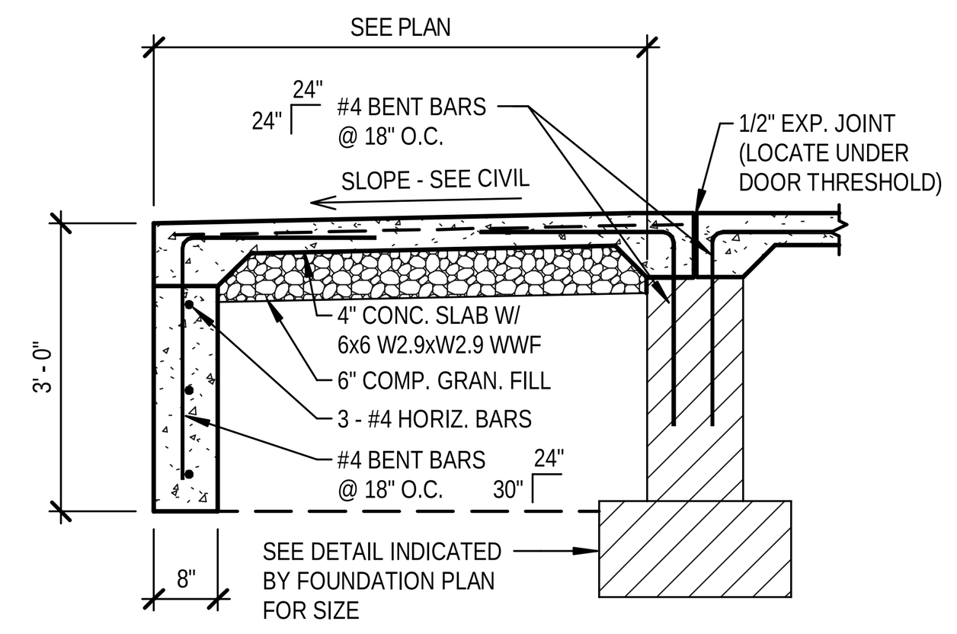
SHEET NOTES:
1. REFER TO ARCHITECTURAL SECTIONS AND DETAILS FOR FOUNDATION INSULATION REQUIREMENTS.



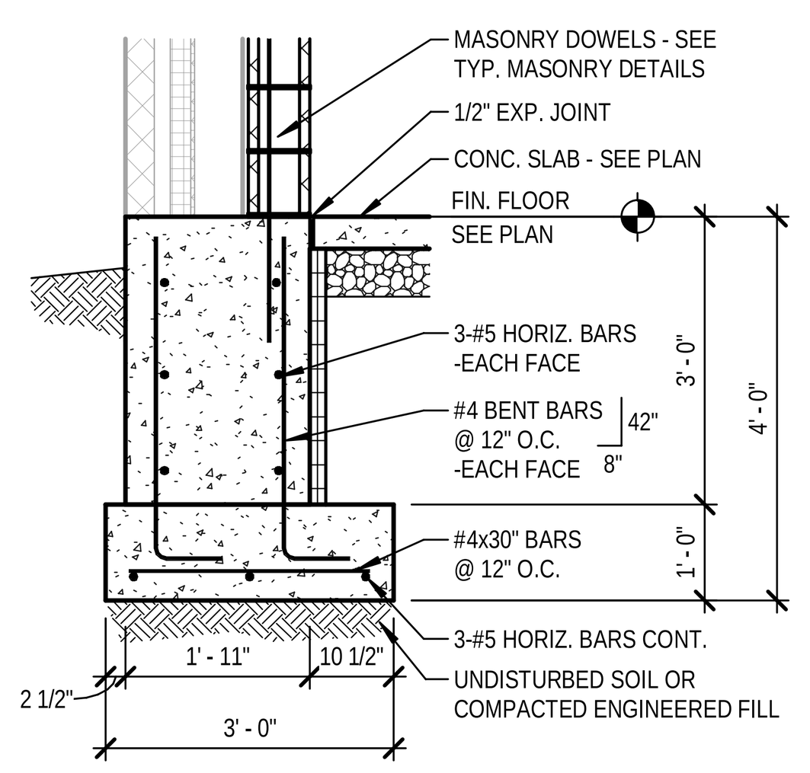
15 Foundation Detail
1/2" = 1'-0"



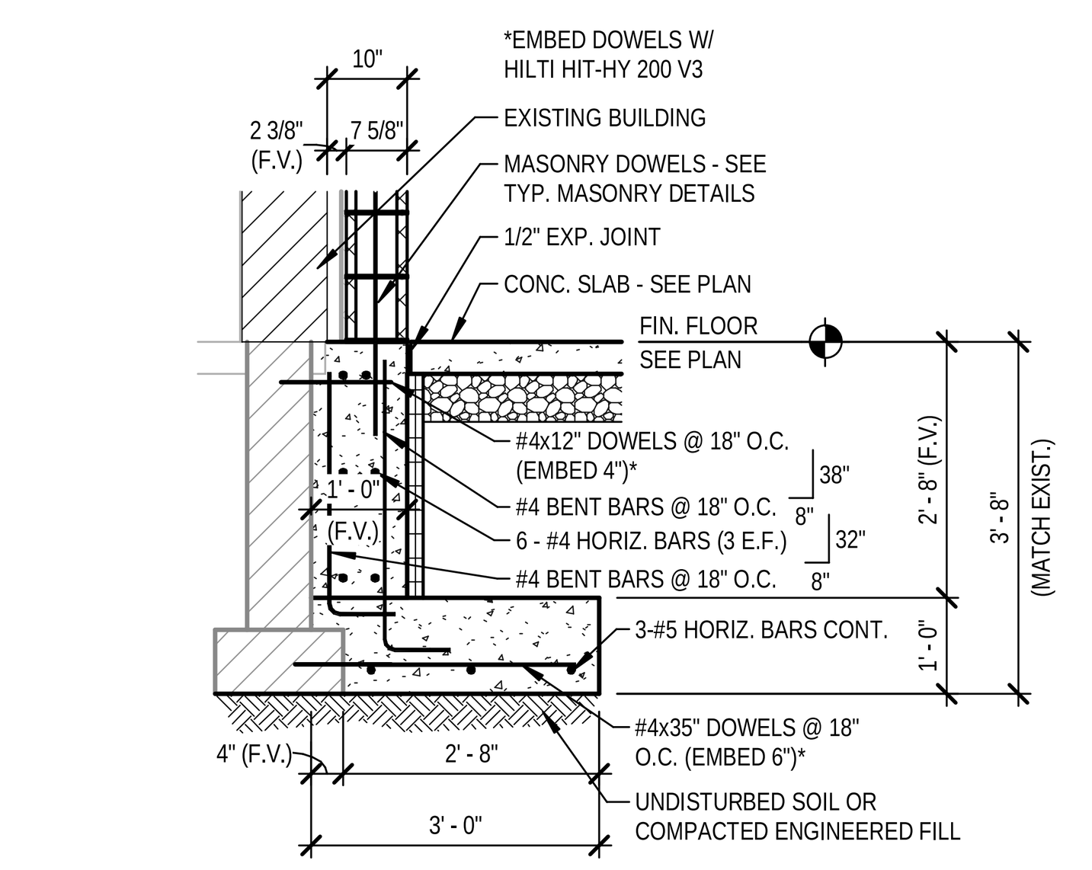
10 Foundation Detail
1/2" = 1'-0"



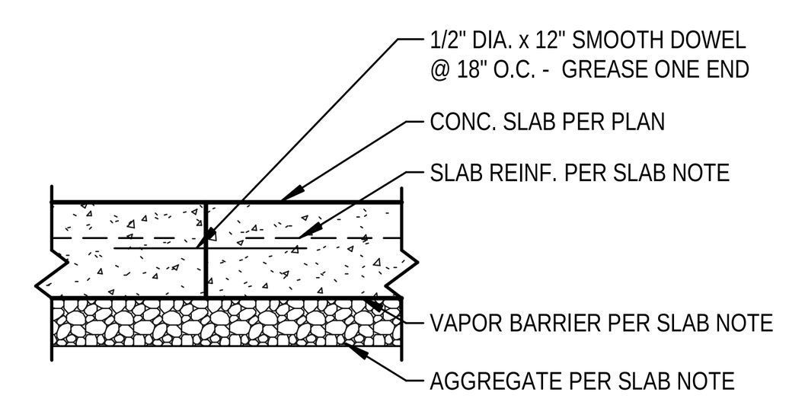
5 Stoop Detail
1/2" = 1'-0"



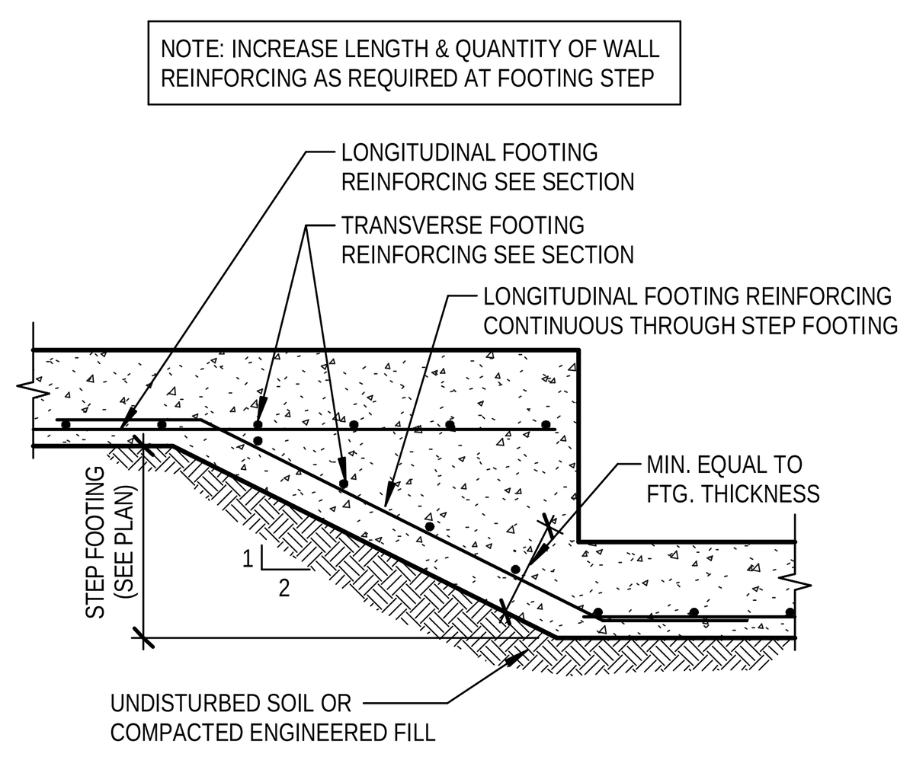
19 Foundation Detail
1/2" = 1'-0"



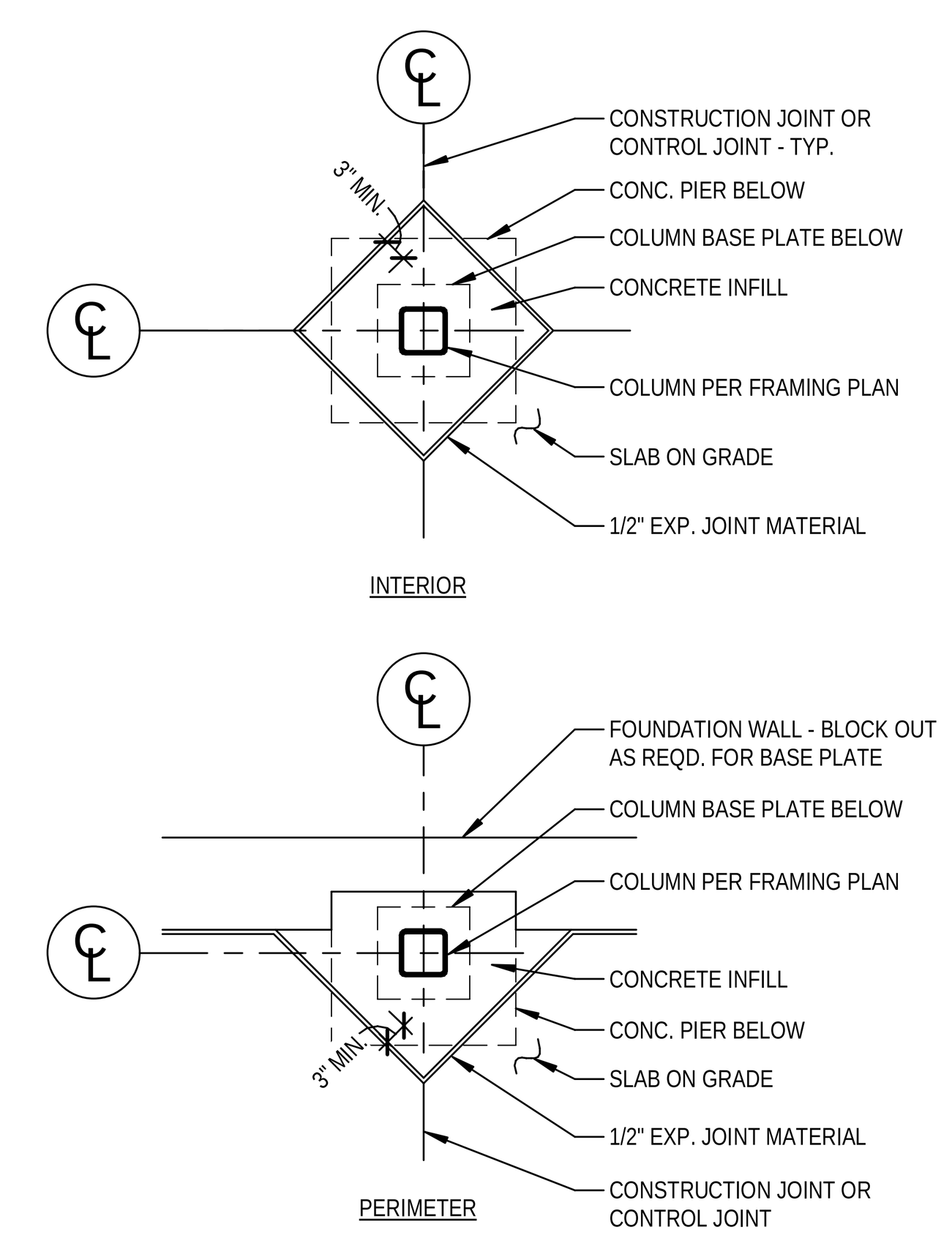
14 Foundation Detail
1/2" = 1'-0"



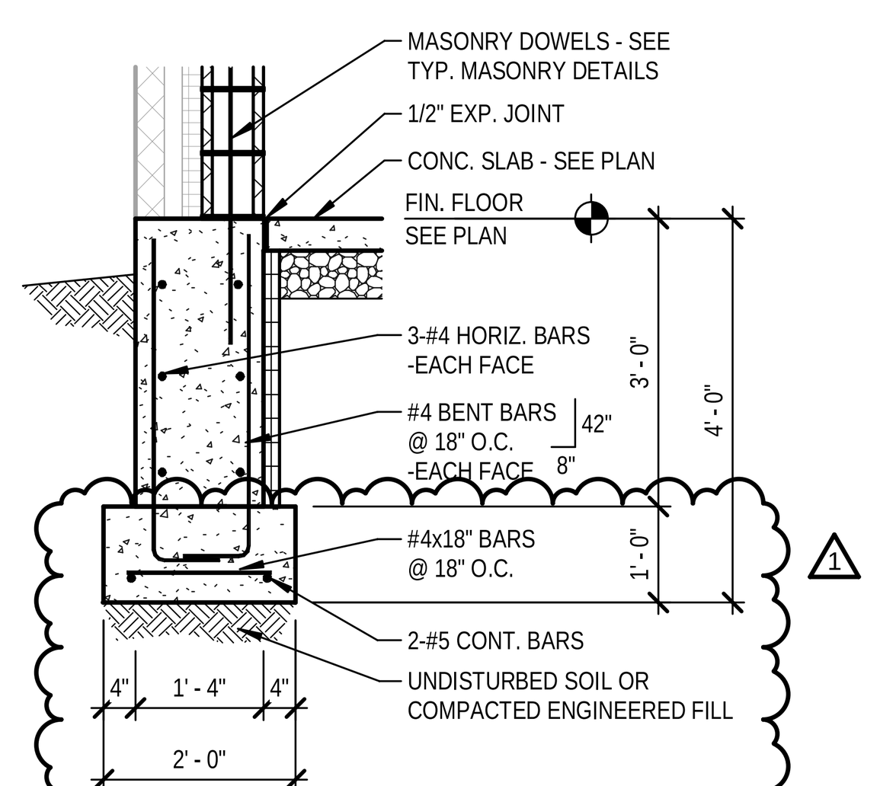
9 Slab Const. Joint Detail
1" = 1'-0"



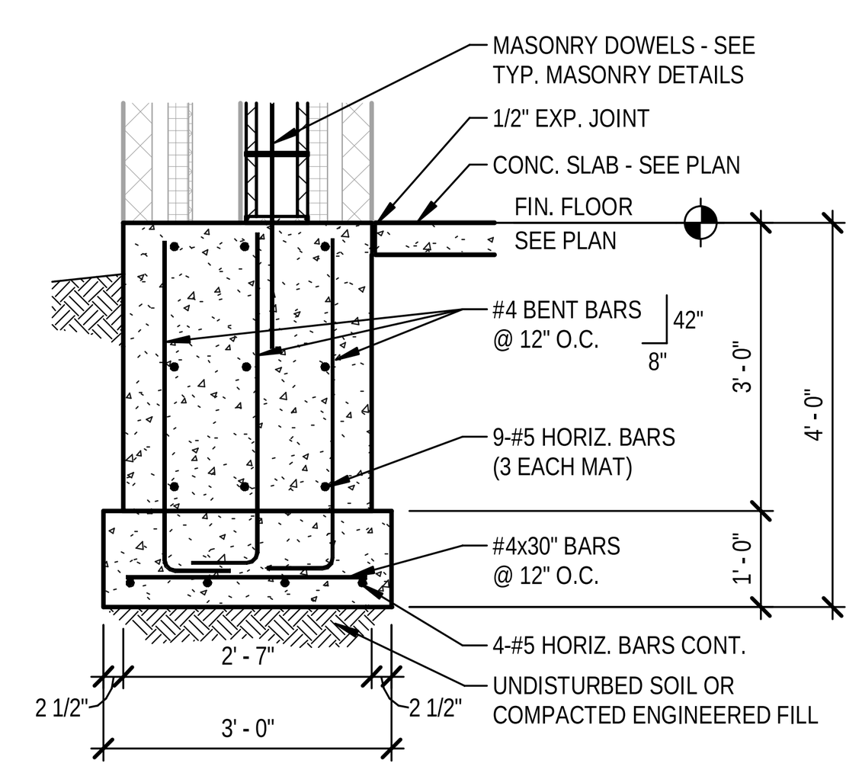
4 Footing Step Detail
1/2" = 1'-0"



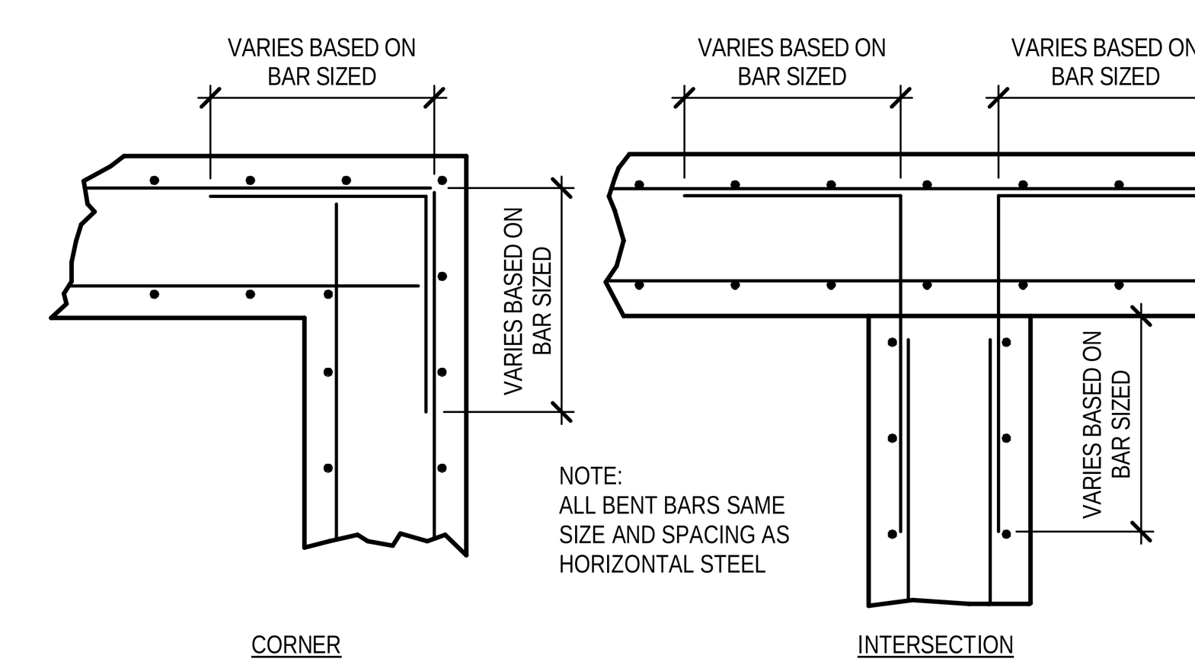
8 Typ. Column Isolation Joint
1/2" = 1'-0"



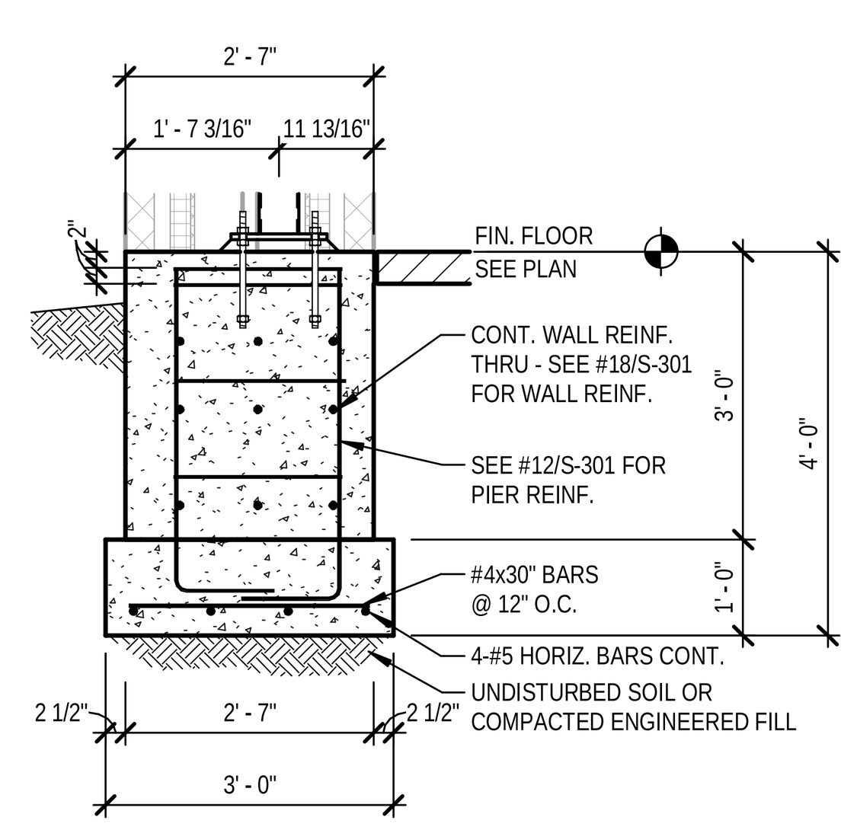
13 Foundation Detail
1/2" = 1'-0"



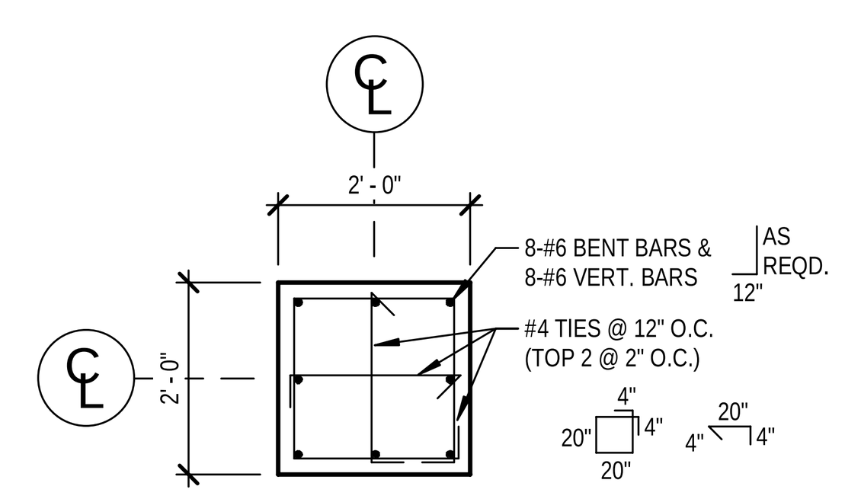
18 Foundation Detail
1/2" = 1'-0"



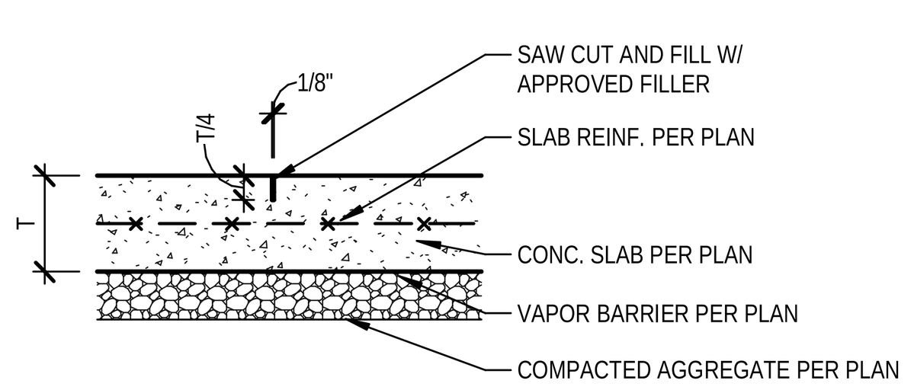
3 Conc. Corner & Intersection
1/2" = 1'-0"



17 Foundation Detail
1/2" = 1'-0"

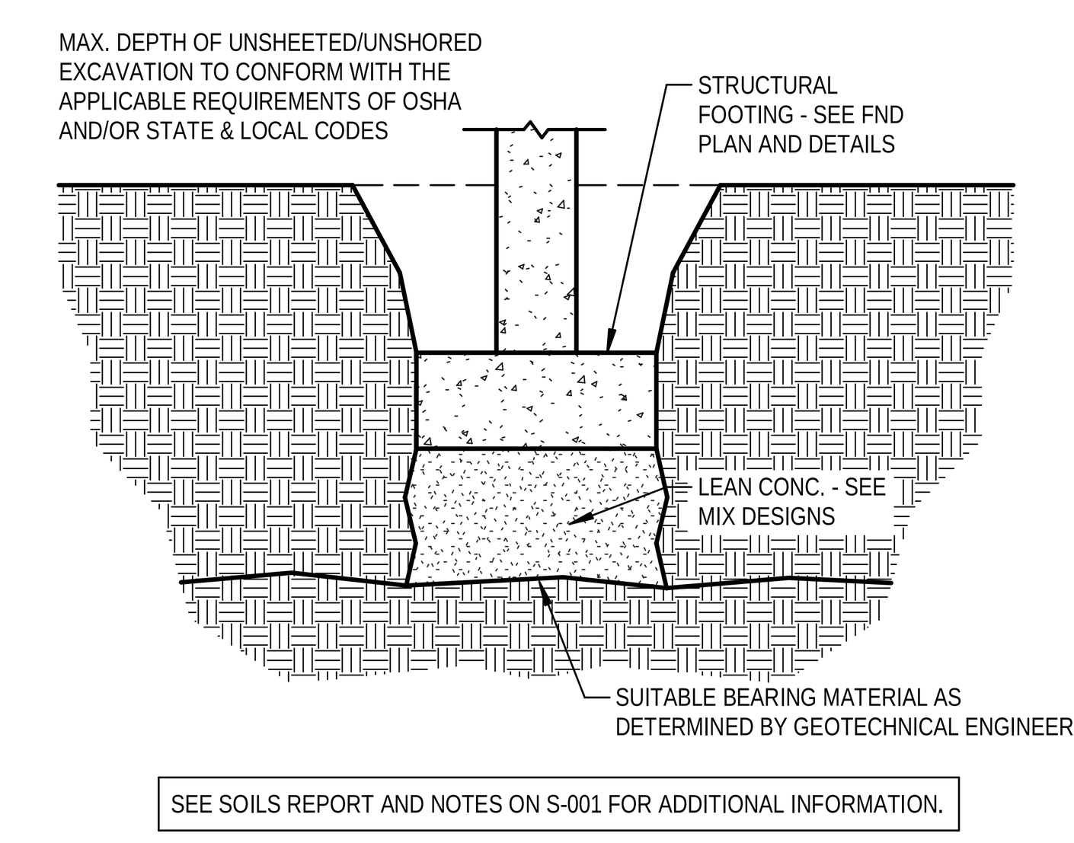


12 Pier Plan
1/2" = 1'-0"

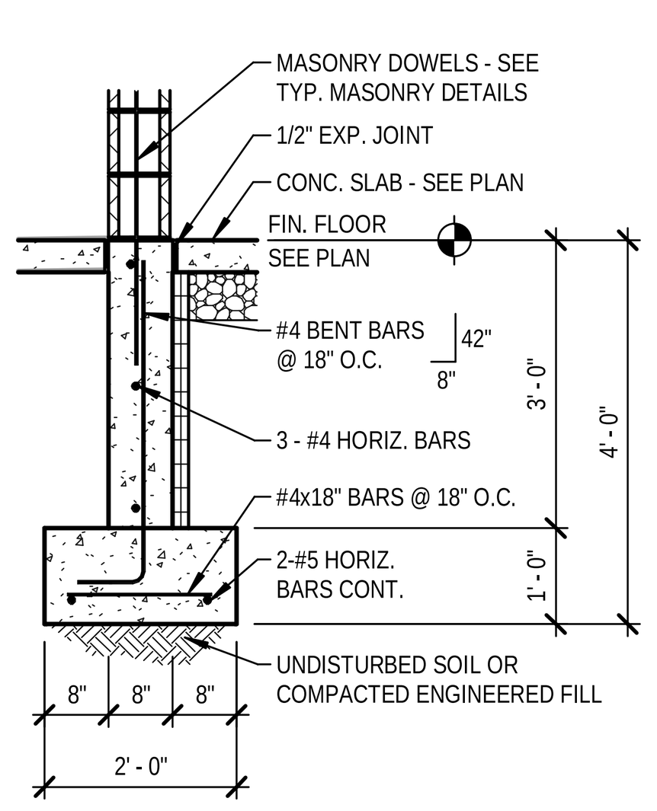


NOTES:
1. UNLESS SHOWN OR NOTED OTHERWISE, PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLABS-ON-GRADE AT A MAXIMUM SPACING OF 36 TIMES THE SLAB THICKNESS, IN INCHES.
2. PROVIDE JOINTS AT ALL COLUMN LOCATIONS.
3. LOCATE JOINTS TO ELIMINATE RE-ENTRANT CORNERS AND TO CREATE SQUARE OR RECTANGULAR SECTIONS WITH MAXIMUM LONG SIDE TO SHORT SIDE RATIO OF 1.5 TO 1.
4. DO NOT STOP CONTROL JOINTS AT PERPENDICULAR CONTROL JOINTS. JOINTS NEED TO CONTINUE THROUGH PERPENDICULAR CONTROL JOINTS AND SHOULD TERMINATE AT CONSTRUCTION JOINTS OR COLUMN BOX OUTS.
5. GENERAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF CONTROL AND CONSTRUCTION JOINTS WITH ARCHITECTURAL FLOOR FINISHES TO ENSURE SLAB JOINTS DO NOT READ THROUGH.
6. UNLESS SPECIFICALLY NOTED ON THE DRAWINGS, CONTROL JOINTS ARE NOT PERMITTED FOR ELEVATED SLABS ON METAL DECK AND ELEVATED CONCRETE SLABS.

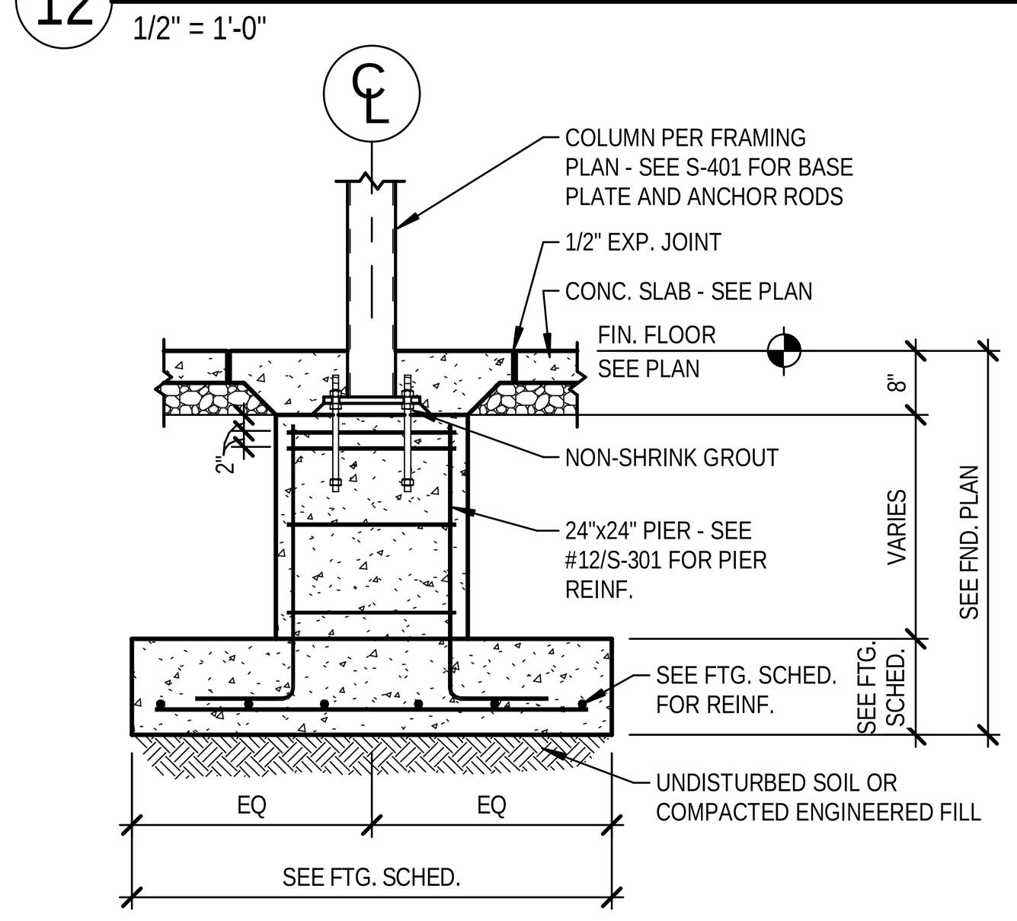
7 Saw Joint (Control Joint) Dtl.
1" = 1'-0"



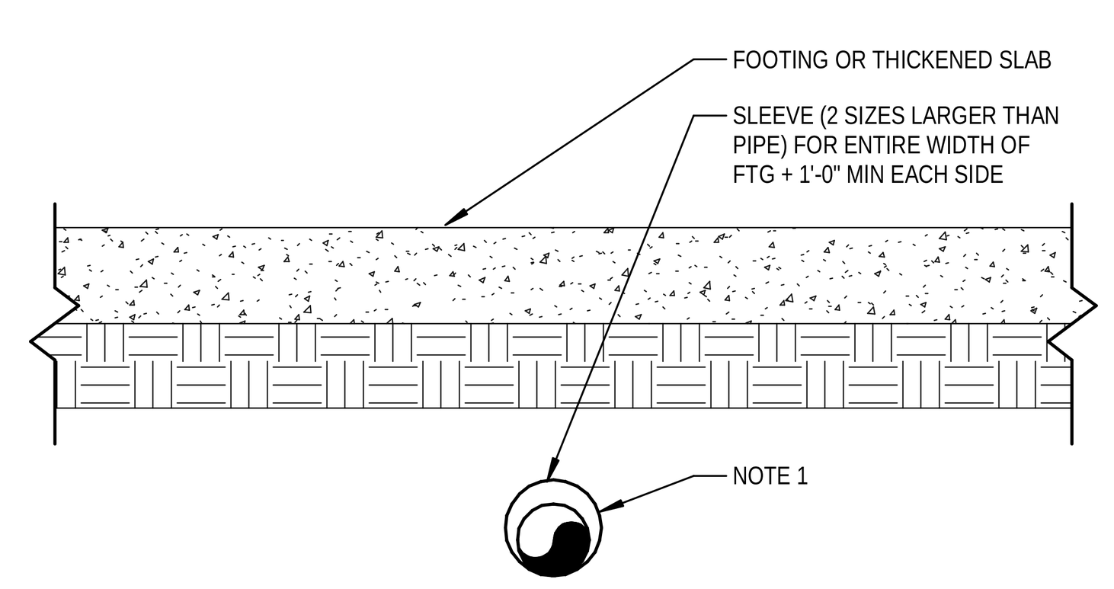
2 Foundation Detail
1/2" = 1'-0"



16 Foundation Detail
1/2" = 1'-0"

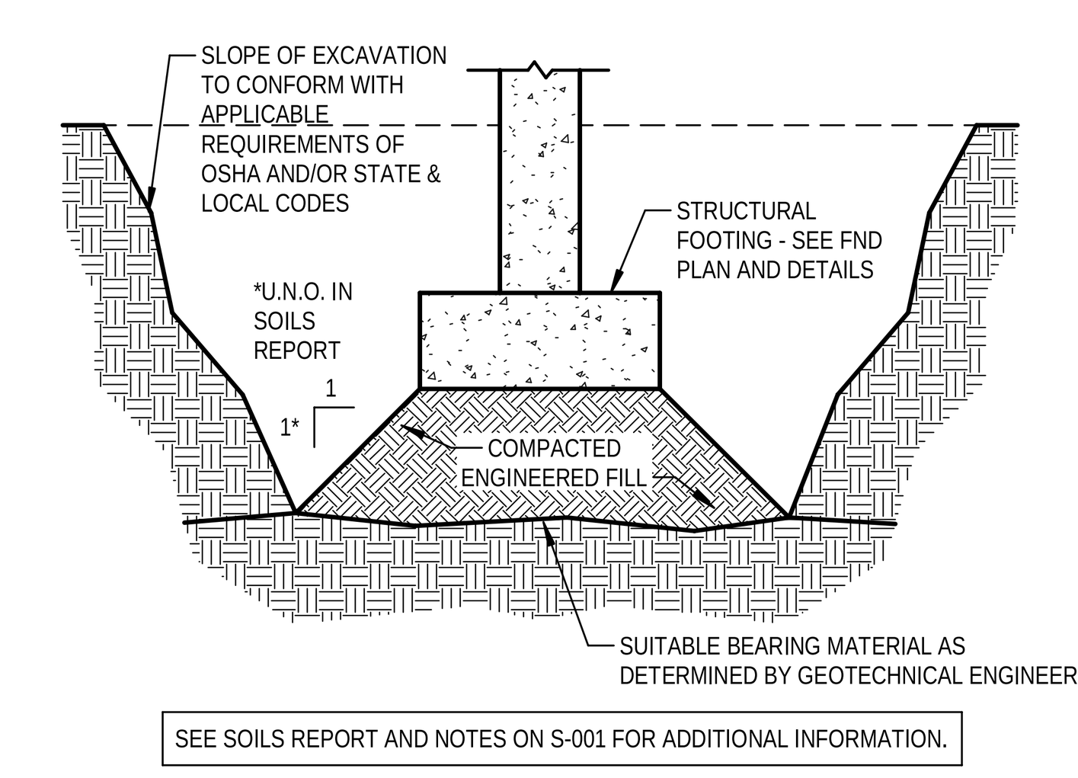


11 Foundation Detail
1/2" = 1'-0"



NOTES:
1. FILL ANNULAR SPACES BETWEEN SLEEVES AND PIPES WITH A COMPRESSIBLE MATERIAL AS REQUIRED BY THE PLUMBING CODE.
2. PIPE MUST BE 90° TO WALL FTG.

6 Foundation Detail
1 1/2" = 1'-0"



1 Foundation Detail
1/2" = 1'-0"

SLAB ON GRADE FLATNESS / LEVELNESS SCHEDULE

SLAB CLASSIFICATION	OVERALL FF	OVERALL FL	MIN LOCAL FF	MIN LOCAL FL
CONVENTIONAL	20	15	15	10
MODERATELY FLAT	25	20	17	15
FLAT	35	25	24	17
VERY FLAT	45	35	30	24
SUPER FLAT	50	50	35	35

FLOOR TYPE / LOCATION	SLAB CLASSIFICATION
FLOORS WITH THICK-SET TILE	CONVENTIONAL
EXPOSED UTILITY/MECHANICAL AREAS (U.N.O.)	MODERATELY FLAT
FLOORS WITH CARPET OR VCT FINISH (U.N.O.)	MODERATELY FLAT
FLOORS WITH THIN-SET FLOORING	FLAT
TILE >16" LONG DIMENSION	VERY FLAT
FLOORS WITH POLISHED CONCRETE FINISH	SUPER FLAT

NOTES:
1. GENERAL CONTRACTOR SHALL REVIEW ALL FLOOR FINISH REQUIREMENTS FOR THE PROJECT AND PROVIDE CONCRETE SLAB SURFACE FINISHES IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFIED FLOOR FINISH MATERIALS. WHERE TOLERANCES FOR THE FLOOR FINISH MATERIALS DIFFER FROM THIS SCHEDULE, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.

CONCRETE REINFORCING BAR LAP SPLICE LENGTHS (NOTE 1)

STRUCTURE: ELEMENT	STRUCTURE: BARS (NOTE 2)	MIN. COVER	MIN. SPACING (NOTE 3)	#3	#4	#5	#6	#7	#8	#9	#10	#11
COLUMN FOOTINGS	HORIZ. BARS	NOTE 7	NA	DO NOT SPLICE BARS (U.N.O. ON PLANS)								
WALL FOOTINGS (NOTE 4)	TRANSVERSE BARS	NOTE 7	NA	DO NOT SPLICE BARS (U.N.O. ON PLANS)								
	LONGITUDINAL BARS	NOTE 7	6"	17"	23"	28"	34"	49"	56"	69"	85"	102"
FOUNDATION WALLS (NOTE 5)	HORIZ. BARS	NOTE 7	6"	15"	20"	24"	29"	42"	48"	60"	74"	89"
	VERTICAL BARS	NOTE 7	6"	12"	15"	19"	22"	33"	37"	46"	57"	68"
PIERS	VERTICAL BARS	2"	4"	12"	15"	19"	22"	37"	47"	70"	79"	87"
SLAB ON GRADE	HORIZ. BARS	1"	3"	12"	15"	22"	31"	50"	62"	NA	NA	NA

NOTES:
1. TABULATED VALUES ASSUME:
   - CONCRETE COMPRESSIVE STRENGTH AS SPECIFIED IN THE CONCRETE DESIGN MIX SCHEDULE.
   - NORMAL-WEIGHT CONCRETE.
   - UNCOATED REINFORCEMENT CONFORMING TO ASTM A615 GRADE 60.
2. TOP BARS REFER TO HORIZ. LAP SPLICES OF BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW.
3. IN ADDITION, MINIMUM CLEAR SPACING BETWEEN ANY BARS SHALL NOT BE LESS 1".
4. LAP SPLICES ARE BASED ON AN ASSUMED CLEAR COVER OF 2" ABOVE A TOP REINFORCING MAT.
5. PERIMETER FOUNDATION WALLS RETAINING LESS THAN 12" OF SOIL.
6. ALL SPLICES ARE TO BE CONTACT SPLICES.
7. BAR CLEAR COVER IS ASSUMED TO BE 1 1/2" FOR #5 AND SMALLER AND 2" FOR #6 AND LARGER.

CONCRETE COVER

LOCATION	MIN . COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO EARTH OR WEATHER	
NO. 6 THROUGH NO. 18 BARS	2"
NO. 5 BAR, W31 OR D31 WIRE, AND SMALLER	1 1/2"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	
SLABS, WALLS AND JOISTS	3/4"
BEAMS, COLUMNS (COVER TO TIES OR STIRRUPS)	1 1/2"

CONCRETE DESIGN MIX REQUIREMENTS[1]

LOCATION	28 DAY COMP. STRENGTH	TARGET SLUMP[2]	MAX. W/C RATIO	EXPOSURE CATEGORIES & CLASSES[3]: F	S	W	C	AIR CONTENT	FINISH
FOOTINGS	3500 PSI	4" (+/- 1")	0.55	F1	S0	W0	C0	5% +/- 1.5%	SCREED
WALLS / PIERS	4500 PSI	3" (+/- 1")	0.45	F2	S0	W0	C0	6% +/- 1.5%	HAND RUBBED EXPOSED SURFACES
EXTERIOR CONC. WORK	4500 PSI	3" (+/- 1")	0.45	F3	S0	W0	C0	6% +/- 1.5%	BROOM - NON SKID
LEAN CONCRETE	2000 PSI	5" (+/- 1 1/2")	0.60	F0	S0	W0	C0	AS NEEDED	SCREED
INTERIOR SLAB-ON-GRADE	4000 PSI	3" (+/- 1")	0.45	F0	S0	W0	C0	AS NEEDED	STEEL TROWEL[4]

NOTES:
1. ALL CONCRETE MIXES ARE NORMAL WEIGHT UNLESS NOTED OTHERWISE.
2. TARGET SLUMP IS THE CONCRETE SLUMP WITHOUT ANY ADMIXTURES INCLUDED. TARGET SLUMP MAY BE INCREASED BY USING ADMIXTURES. REFER TO THE CONCRETE SPECIFICATION FOR ADDITIONAL INFORMATION.
3. EXPOSURE CRITERIA FOR MIX SUPPLIER'S USE.
4. GENERAL CONTRACTOR SHALL REVIEW ALL FLOOR FINISH REQUIREMENTS FOR THE PROJECT AND PROVIDE CONCRETE SLAB SURFACE FINISHES IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFIED FLOOR FINISH MATERIALS.

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2/12/2024

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West Noble High School Renovation and Addition
5050 US-33,
Ligonier, IN, 46767

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	02-21-2024

PROJECT NO. 2301108
ISSUE DATE 02-12-2024
SUBMITTAL 100% Construction Documents

Foundation Details

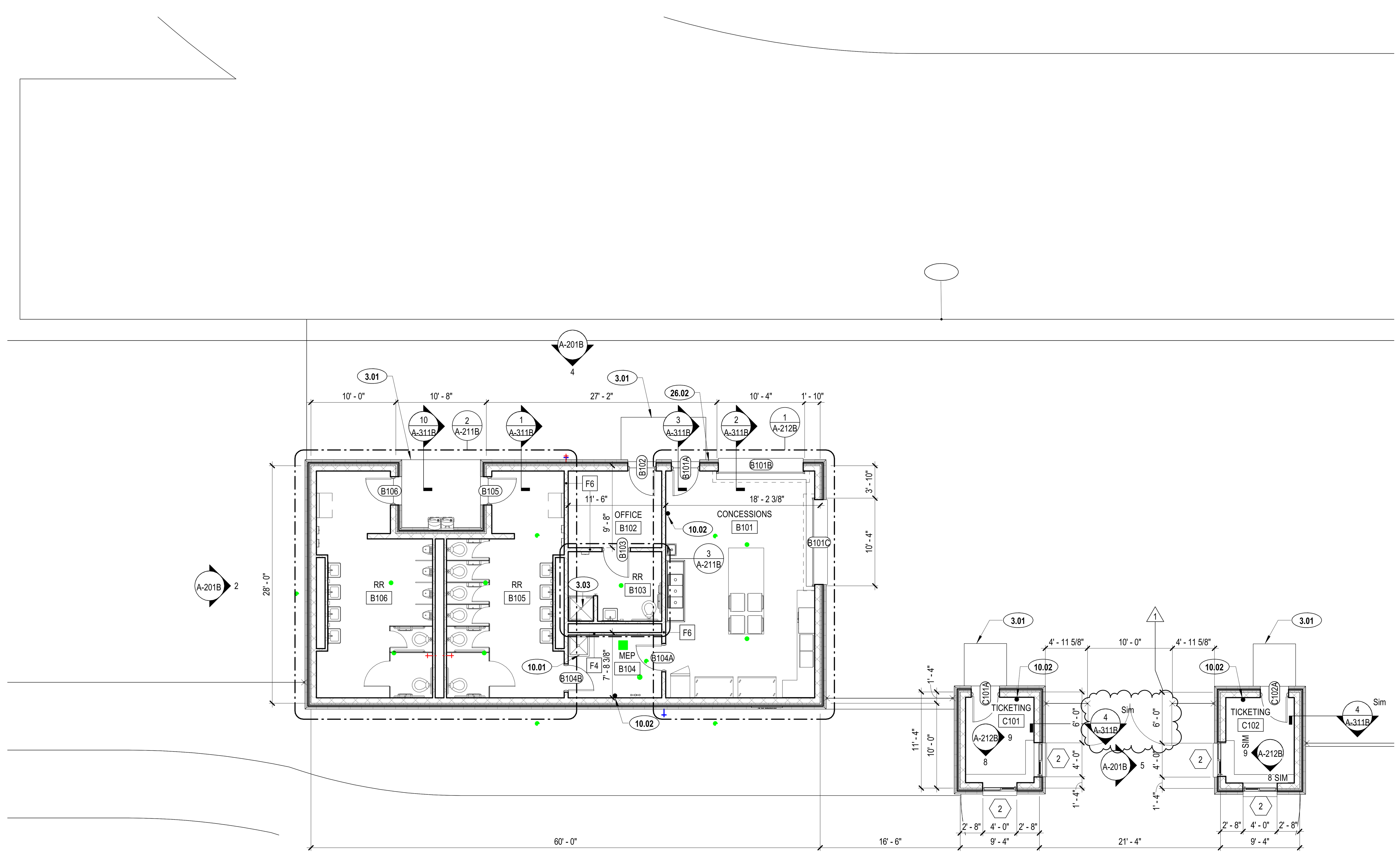
S-301

FLOOR PLAN GENERAL NOTES

1. GENERAL CONTRACTOR SHALL TAKE RESPONSIBILITY FOR COORDINATING REQUIRED WORK WITH ALL TRADES BASED UPON A COMPLETE SET OF CONSTRUCTION DOCUMENTS.
2. EACH CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AND OBTAIN ALL MEASUREMENTS REQUIRED FOR PROPER EXECUTION OF WORK. WHEN VERIFICATION OF EXISTING DIMENSIONS IS REQUIRED, THE CONTRACTOR REQUIRING SAID VERIFICATION FOR THE CONSTRUCTION OR FABRICATION OF HIS MATERIAL SHALL BE THE CONTRACTOR RESPONSIBLE FOR THE PROCUREMENT OF THE FIELD INFORMATION.
3. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED MEASUREMENTS. DO NOT SCALE DRAWINGS.
4. DETAILED DRAWINGS AND LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALL SCALE DRAWINGS.
5. UNLESS NOTED OTHERWISE, PLAN DIMENSIONS ARE TAKEN FROM FACE OF STUD, CMU, CONCRETE OR EXISTING FINISH TO FACE OF STUD, CMU OR CONCRETE.
6. REPAIR ALL SURFACES DAMAGED BY RENOVATION AND NEW CONSTRUCTION TO MATCH EXISTING ADJACENT OR CONTIGUOUS FINISH.
7. GENERAL CONTRACTOR TO PATCH ALL CONCRETE SLAB MECH/ELEC PENETRATIONS. PATCH SLAB FLUSH WITH EXISTING SLAB AND PROVIDE #4 DOWELS INTO EXISTING SLAB AS REQUIRED.
8. ALL CUTTING AND PATCHING AS A RESULT OF NEW CONSTRUCTION OR DEMOLITION SHALL BE PERFORMED IN A WORKMANLIKE MANNER, AND SHALL MATCH IN COLOR, SHAPE, SIZE AND TEXTURE ADJACENT AND/OR CONTIGUOUS FINISHED SURFACES.
9. WHERE PATCHING, REPAIRING OR INFILLING EXISTING MASONRY EXPOSED TO VIEW, "TOOTH-IN" NEW MASONRY TO ADJACENT EXISTING MASONRY TO REMAIN.
10. PATCH ALL CRACKS AND RESEAL JOINTS IN EXISTING SUBSTRATES SCHEDULED TO RECEIVE NEW FINISHES.
11. PROVIDE ALL BLOCKING NECESSARY FOR THE ATTACHMENT OF MISCELLANEOUS EQUIPMENT INCLUDING BUT NOT LIMITED TO CASEWORK, MILLWORK, TOILET ACCESSORIES, GRAB BARS, HANDRAILS, DOOR HARDWARE, ELECTRICAL DEVICES AND LABORATORY EQUIPMENT.
12. ALL INTERIOR WOOD BLOCKING SHALL BE FIRE-TREATED. ALL EXTERIOR WOOD BLOCKING SHALL BE PRESSURE TREATED.
13. PROVIDE FIRE-BLOCKING AND DRAFT-STOPPING IN COMBUSTIBLE CONCEALED WALLS AT 10'-0" O.C. MAX. HORIZONTALLY & VERTICALLY.
14. DOORS NOT OTHERWISE DIMENSIONED SHALL BE 8" FROM FACE OF ADJACENT CMU OR CONCRETE WALL TO ROUGH DOOR OPENING, AND 4" FROM FACE OF ADJACENT STUD WALL TO ROUGH DOOR OPENING.
15. THE TRANSITION OF DIFFERENT FLOORING MATERIALS AT A DOORWAY SHALL OCCUR AT THE CENTERLINE OF DOOR UNLESS NOTED OTHERWISE.
16. ALL WALL SURFACES, DOOR FRAMES, BULKHEADS AND CEILINGS SHALL RECEIVE PAINT WHEN PAINT IS INDICATED ON THE FINISH SCHEDULE OR FINISH PLANS. PAINT SURFACES BEHIND MOVABLE EQUIPMENT AND FURNITURE SAME AS SIMILAR EXPOSED SURFACES. PAINT SURFACES BEHIND PERMANENTLY FIXED EQUIPMENT OR FURNITURE WITH PRIME COAT ONLY BEFORE FINAL INSTALLATION OF EQUIPMENT. PAINT ALL MECHANICAL AND ELECTRICAL EQUIPMENT EXPOSED IN FINISHED SPACES UNLESS NOTED OTHERWISE.
17. FOR CONSTRUCTION DETAILS NOT SHOWN, USE THE PRODUCT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND STANDARD DETAILS, IN STRICT ACCORDANCE WITH THE PROJECT SPECIFICATION REQUIREMENTS AND DESIGN INTENT.
18. PROVIDE FIRE EXTINGUISHERS (FE) AND FIRE EXTINGUISHER CABINETS (FEC) AS INDICATED ON THE PLANS. PROVIDE TYPE AND SIZE AS SPECIFIED. MOUNT AT 42" AFF TO TOP OF FE AND 48" AFF TO TOP OF FEC.
19. REFER TO LIFE SAFETY PLANS FOR RATED PARTITIONS AND ASSEMBLIES.
20. UNLESS NOTED OTHERWISE, NEW WALLS TO BE 3 5/8" METAL STUDS @ 16" O.C. WITH (1) LAYER OF 5/8" TYPE "X" GYPSUM BOARD EACH SIDE. EXTEND STUD AND GYPSUM BOARD TO MINIMUM 6" ABOVE FINISHED CEILING. SEAL AS REQUIRED FOR WALL RATINGS INDICATED.
21. THE DEMOLITION AND CONSTRUCTION OF THE BUILDINGS WILL BE DEFINED WITH THE OWNER IN PHASES ACCORDING TO THE SCHOOL CALENDAR AND THE FOOTBALL SEASON CALENDAR.

FLOOR PLAN NOTES

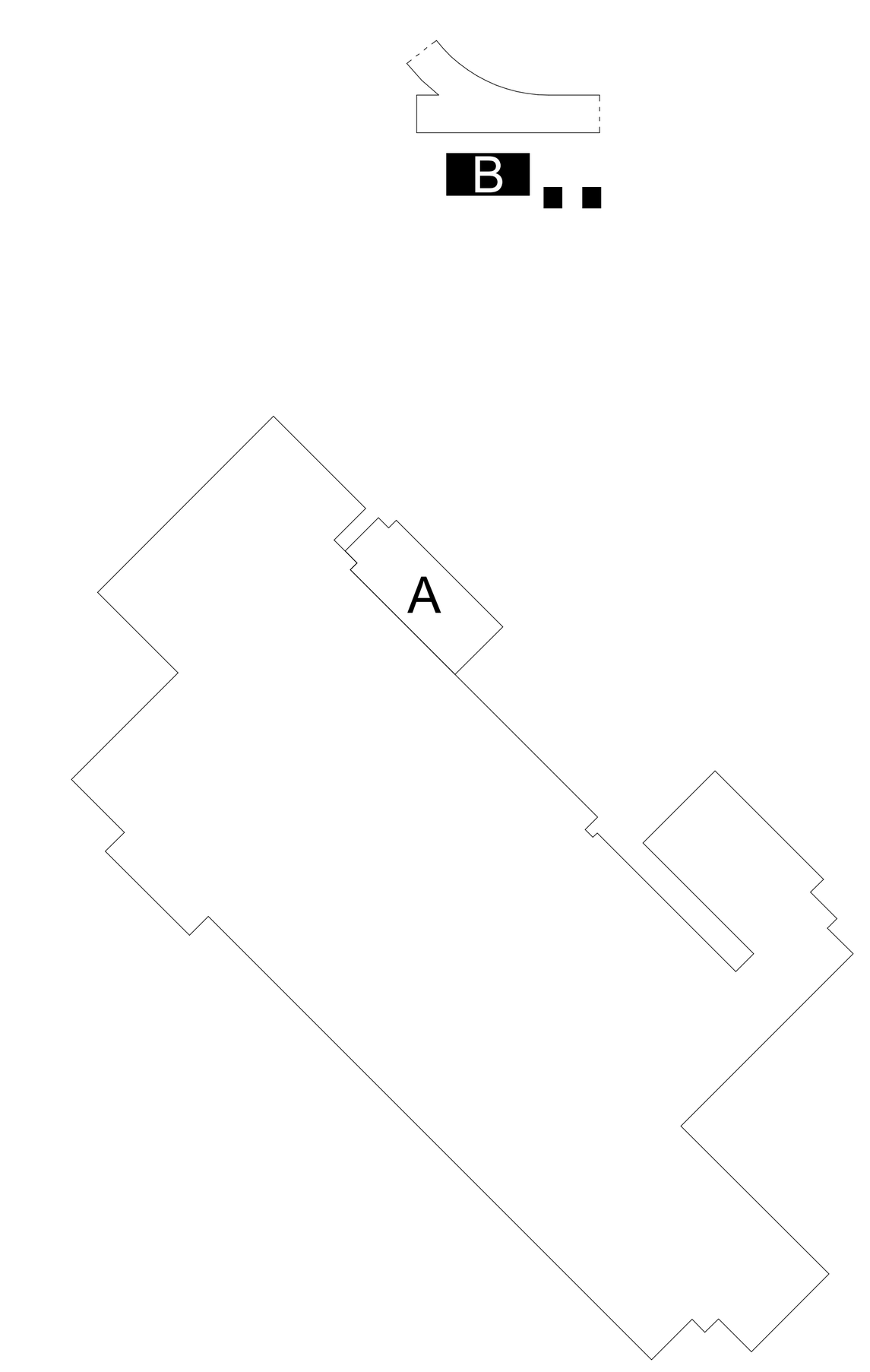
TAG	DESCRIPTION
DIV 3 - CONCRETE	
3.01	ADA COMPLIANT CONCRETE STOOP. COORDINATE WITH CIVIL AND STRUCTURAL DOCUMENTS
3.03	RECESSED CONCRETE FLOOR. SEE STRUCTURAL DOCUMENTS, FOUNDATION PLAN.
DIV 10 - SPECIALTIES	
10.01	UTILITY SHELF. SEE TOILET ACCESSORIES SCHEDULE. PROVIDE 36" HIGH PLASTIC SHEET WALL PROTECTION AT MOP SINK BELOW.
10.02	BRACKET MOUNTED 10-LB CLASS ABC FIRE EXTINGISHER - SEE SPECIFICATIONS
DIV 26 - ELECTRICAL	
26.02	CARD ACCESS READER - SEE ELECTRICAL



PLAN NORTH

1 First Floor Architectural Plan - Area B

1/8" = 1'-0"



PLAN NORTH

Keyplan

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CORY D. MILLER
REGISTERED
No. 10100148
STATE OF INDIANA
ARCHITECT

WEST NOBLE CHARGERS

West Noble High School Renovation and Addition

5050 US-33,
Ligonier, IN, 46767

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	2/21/2024

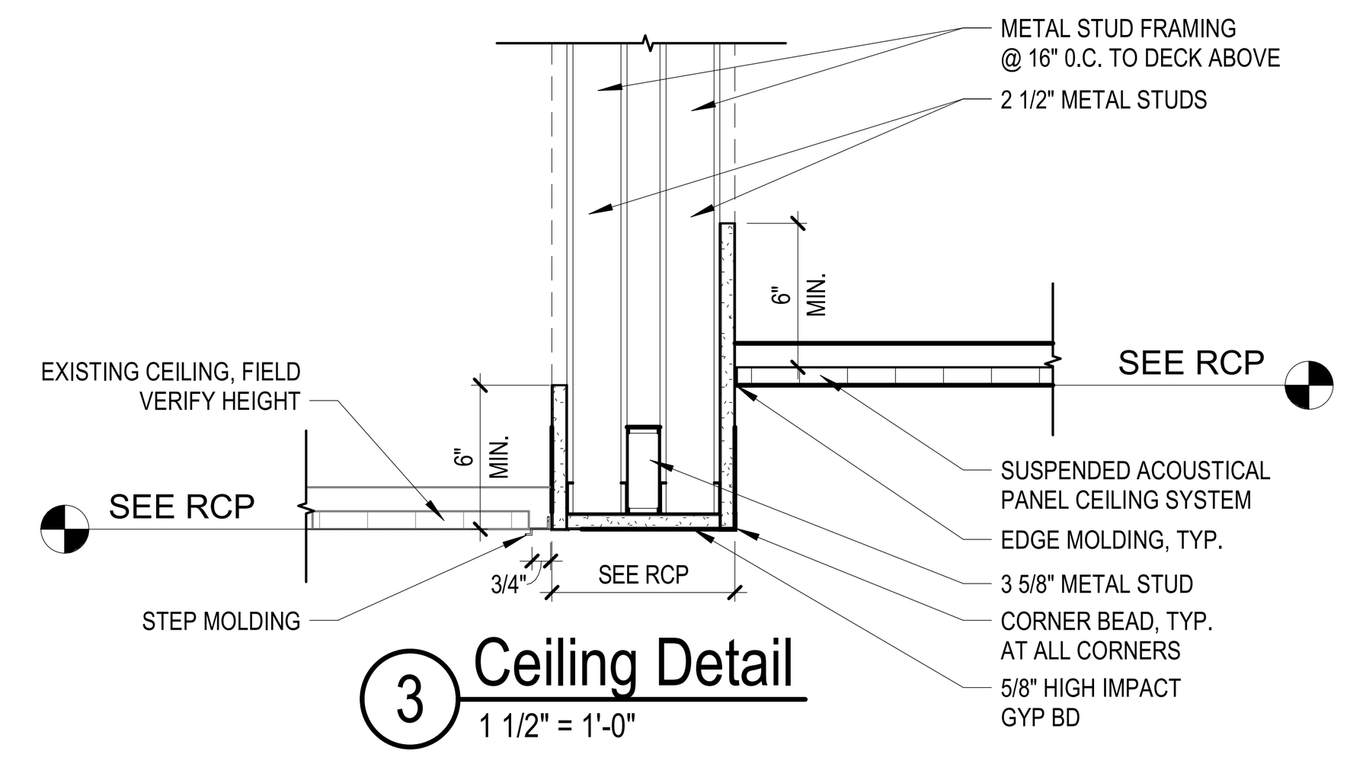
PROJECT NO. 2301108

ISSUE DATE 02-12-2024

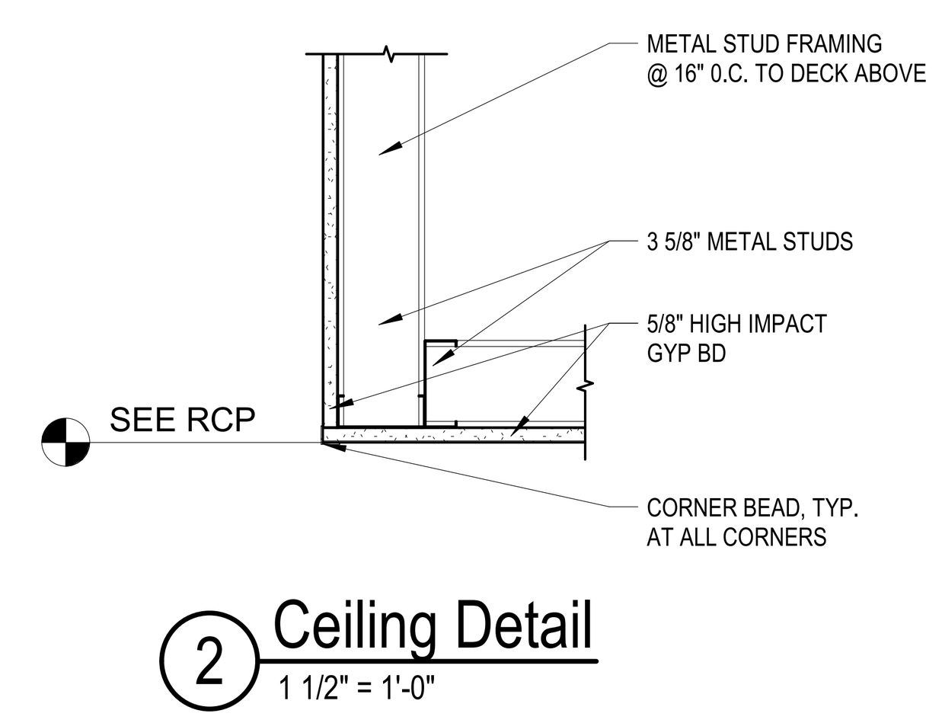
SUBMITTAL 100% Construction Documents

Architectural Plan - First Floor Area B

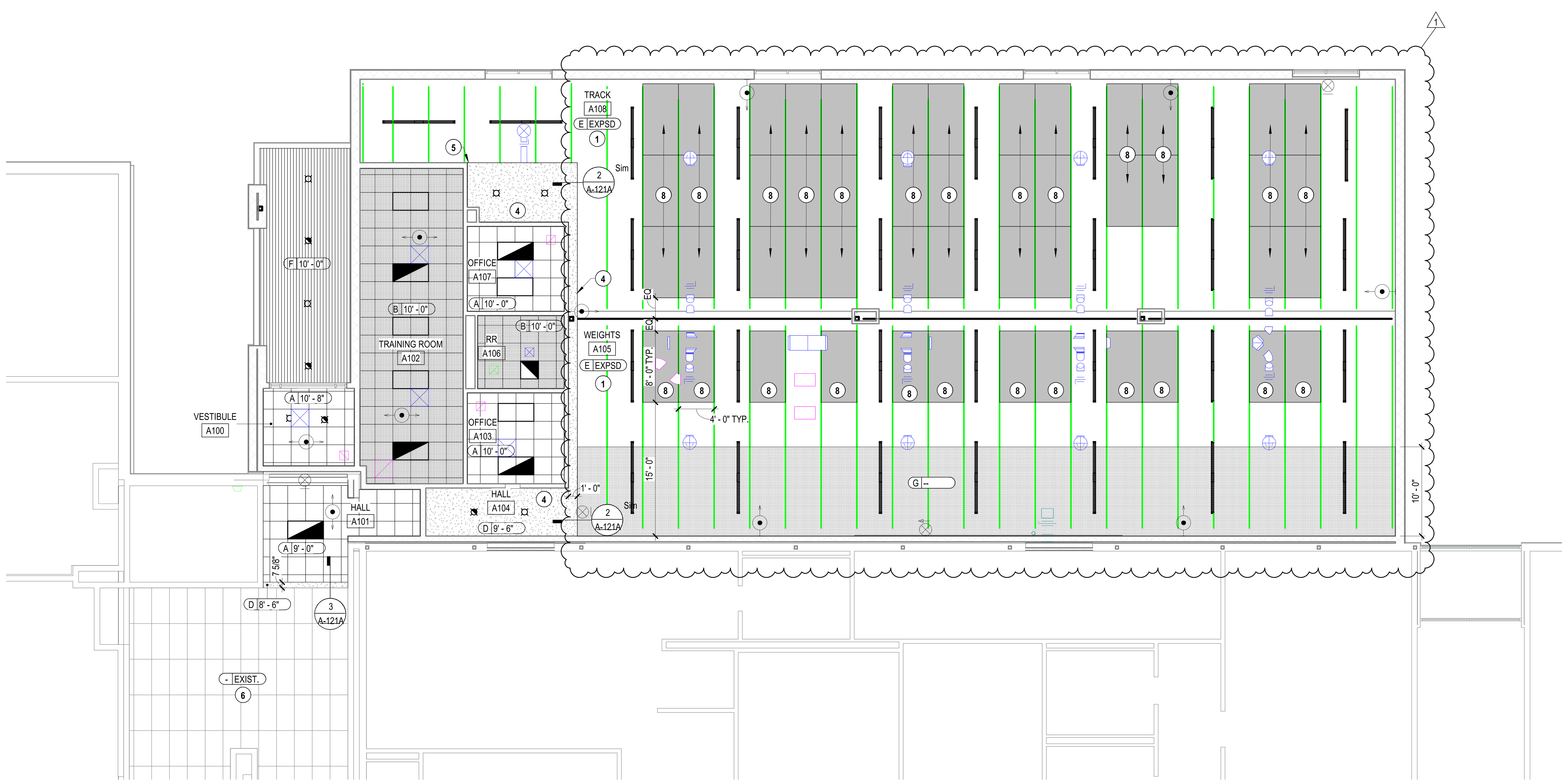
A-111B



3 Ceiling Detail
1 1/2" = 1'-0"



2 Ceiling Detail
1 1/2" = 1'-0"



PLAN NORTH
1 First Floor Reflected Ceiling Plan - Area A
1/8" = 1'-0"

REFLECTED CEILING PLAN LEGEND AND GENERAL NOTES

CEILING MATERIAL LEGEND

TYPE	DESCRIPTION
A APC-1	24" x 24" ACOUSTICAL CEILING SYSTEM W/ SUSPENDED GRID. SEE FINISH LEGEND AND SPECIFICATIONS FOR TYPE.
B APC-2	24" x 24" WASHABLE ACOUSTICAL CEILING SYSTEM W/ SUSPENDED GRID. SEE FINISH LEGEND AND SPECIFICATIONS FOR TYPE.
D	GYPSUM BOARD CEILING, (PAINT U.N.O)
E	EXPOSED TO STRUCTURE
F	PREFINISHED METAL SOFFIT
G	SPRAY-APPLIED FIRE PROTECTION, SEE LIFE SAFETY PLANS FOR MORE INFORMATION.

FIXTURE LEGEND

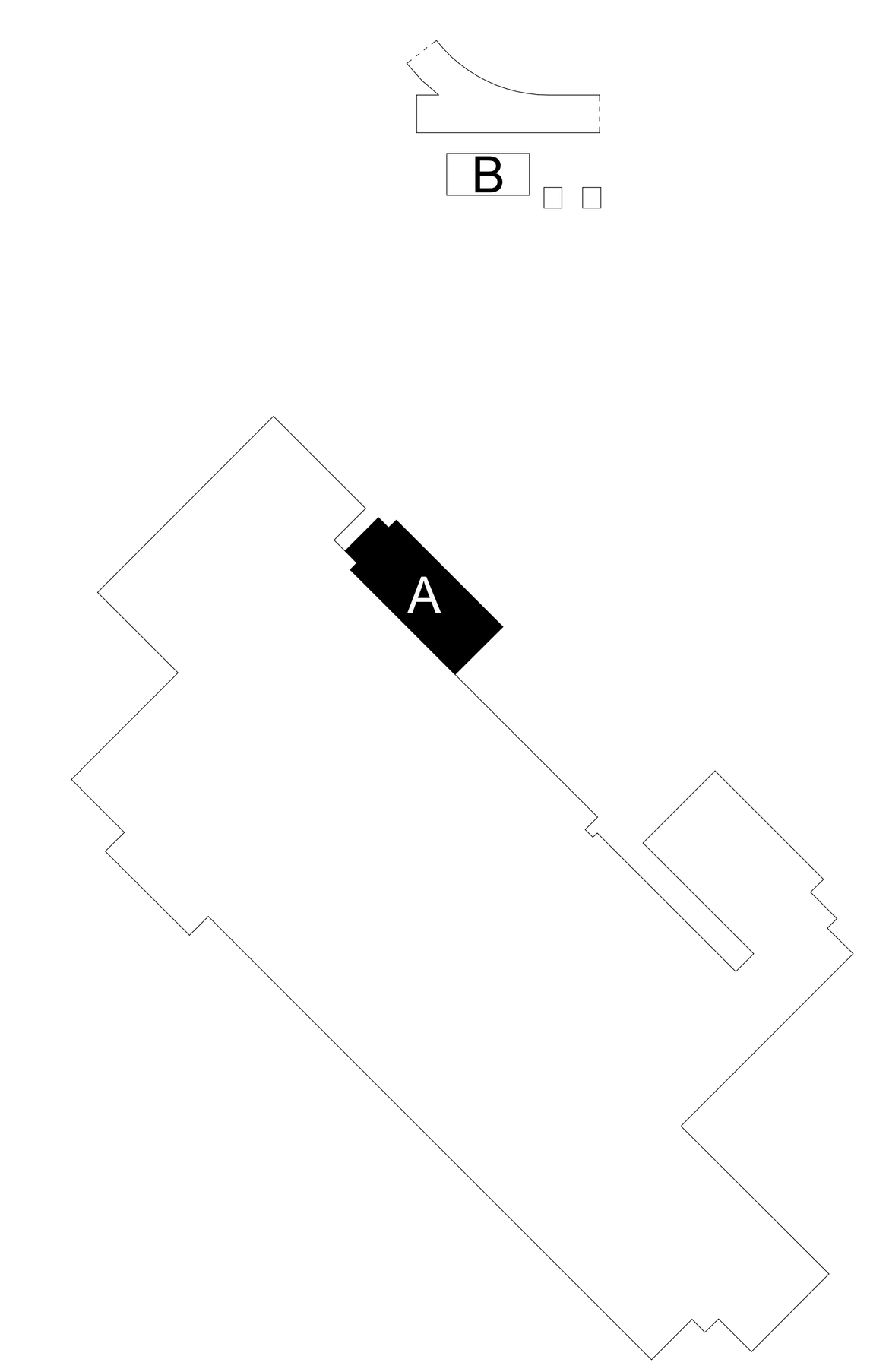
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	2'x2 LIGHT FIXTURE. SEE ELECTRICAL FOR TYPE.		SUPPLY GRILLE. SEE MECHANICAL FOR TYPE.
	2'x4' LIGHT FIXTURE. SEE ELECTRICAL FOR TYPE.		RETURN GRILLE. SEE MECHANICAL FOR TYPE.
	RECESSED DOWNLIGHT. SEE ELECTRICAL FOR TYPE.		EXHAUST GRILLE. SEE MECHANICAL FOR TYPE.
	LINEAR PENDANT FIXTURE. SEE ELECTRICAL FOR TYPE.		CEILING MOUNTED EXIT SIGN. SEE MECHANICAL FOR TYPE.
	LINEAR PENDANT FIXTURE. SEE ELECTRICAL FOR TYPE.		OCCUPANCY SENSOR. SEE MECHANICAL FOR TYPE.

CEILING GENERAL NOTES

1. ALL CEILING HEIGHTS ARE TO THE FINISHED FACE OF THE CEILING PLANE.
2. ALL DIMENSIONS ARE TO THE CENTERLINE OF DEVICE, TYPICAL.
3. ALIGN DEVICES AS INDICATED WITH CENTERLINES.
4. ALL SOFFITS/CASED OPENINGS TO ALIGN WITH THE FINISHED FACE OF ADJACENT WALLS, UNLESS NOTED OTHERWISE.
5. ALL DEVICES TO BE CENTERED IN CEILING TILES WHERE APPLICABLE, UNLESS NOTED OTHERWISE.
6. SEE CONSULTANT DOCUMENTS FOR THE LOCATIONS OF ALL WALL MOUNTED DEVICES. COORDINATE ALIGNMENT OF WALL DEVICES WITH EACH OTHER AND CEILING DEVICES WHERE POSSIBLE.
7. PROVIDE ADDITIONAL FRAMING AND SUPPORT ON ALL SIDES OF LIGHT FIXTURES, GRILLES, ETC. MOUNTED IN SUSPENDED GYPSUM BOARD CEILINGS & BULKHEADS.
8. REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL REQUIRED ACCESS PANELS.
9. ARCHITECTURAL REFLECTED CEILING PLANS DO NOT INDICATE ALL DEVICES IN THE CEILING/PROJECT. REFER TO ENGINEERING DOCUMENTS FOR ADDITIONAL DEVICES.
10. FIXTURES AND CEILING DEVICES IN ALL EXISTING ROOMS/AREAS TO REMAIN AS IS UNLESS NOTED OTHERWISE.
11. WHERE GYPSUM BOARD ABUTS CMU OR CONCRETE CONSTRUCTION, PROVIDE CONTINUOUS "J" MOLD AND SEALANT AT JOINT.
12. PROVIDE CONTROL JOINTS IN GYPSUM BOARD CEILINGS AND BULKHEADS WHERE INDICATED OR MAX. 30'-0" O.C. WHERE NOT INDICATED. COORDINATE LOCATION WITH ARCHITECT IF PLAN LOCATIONS EXCEED SPACING RECOMMENDATIONS OF MANUFACTURER OR INDUSTRY STANDARD.
13. C.J. = CONTROL JOINT. DO NOT BRIDGE BUILDING EXPANSION AND CONTROL JOINTS WITH FRAMING OR FURRING MEMBERS. INDEPENDENTLY FRAME BOTH SIDES OF JOINTS.
14. GYPSUM BOARD CEILINGS AND BULKHEADS TO BE PAINTED P-5, UNLESS NOTED OTHERWISE.

1 CEILING PLAN NOTES

TAG	DESCRIPTION
1	EXPOSED STRUCTURE, MECHANICAL, AND DECK TO BE PAINTED P-4.
2	PROVIDE 24"x24" ACCESS PANEL IN GYPSUM BOARD CEILING.
3	EXPOSED CEILING NOT TO BE PAINTED.
4	PAINT UNDERSIDE AND ALL FACES OF BULKHEAD P-3.
5	ALIGN BULKHEAD WITH FACE OF ADJACENT WALL.
6	FILED VERIFY EXISTING CEILING HEIGHT.
7	~~ATTACH GYPSUM BOARD CEILING TO BOTTOM OF TRUSSES.~~
8	(AT-1) 4' x 8' ACOUSTICAL PANEL TREATMENT TO BE FULLY ADHERED TO SURFACE OF EXPOSED DECK. SEE FINISH LEGEND AND SPECIFICATIONS FOR INFORMATION.



PLAN NORTH
Keyplan

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REVISIONS

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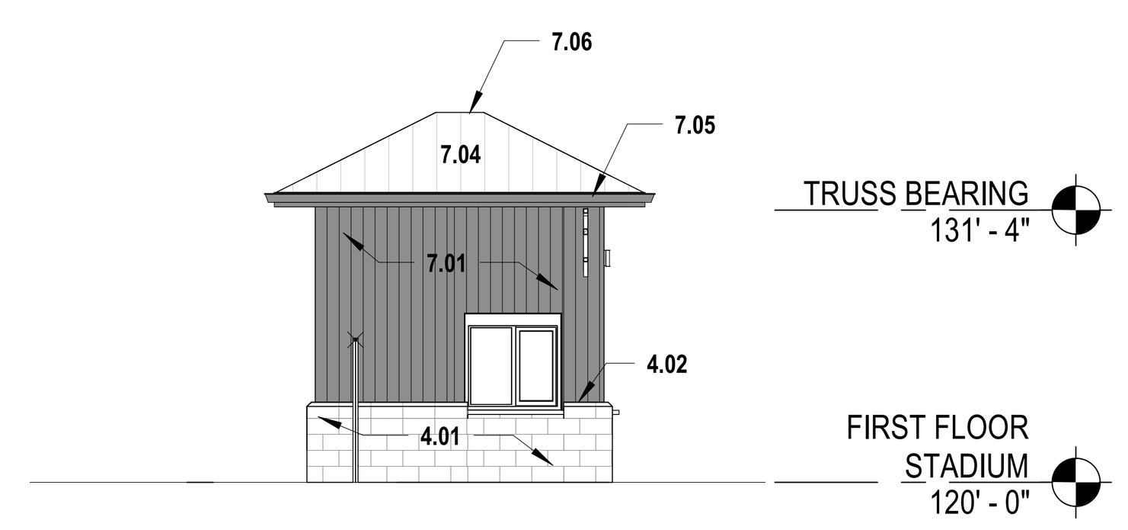
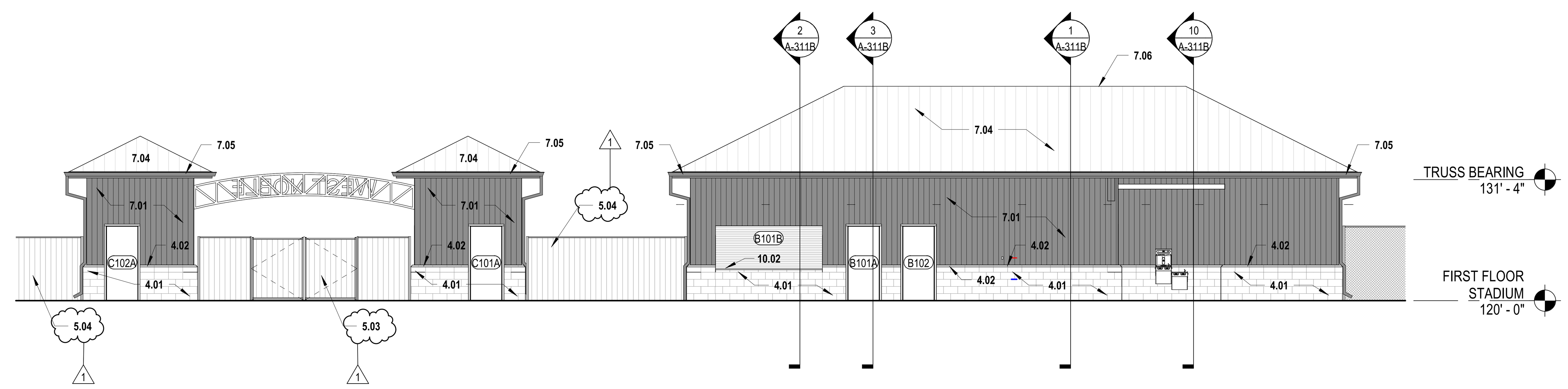
Reflected Ceiling Plan - First Floor Area A

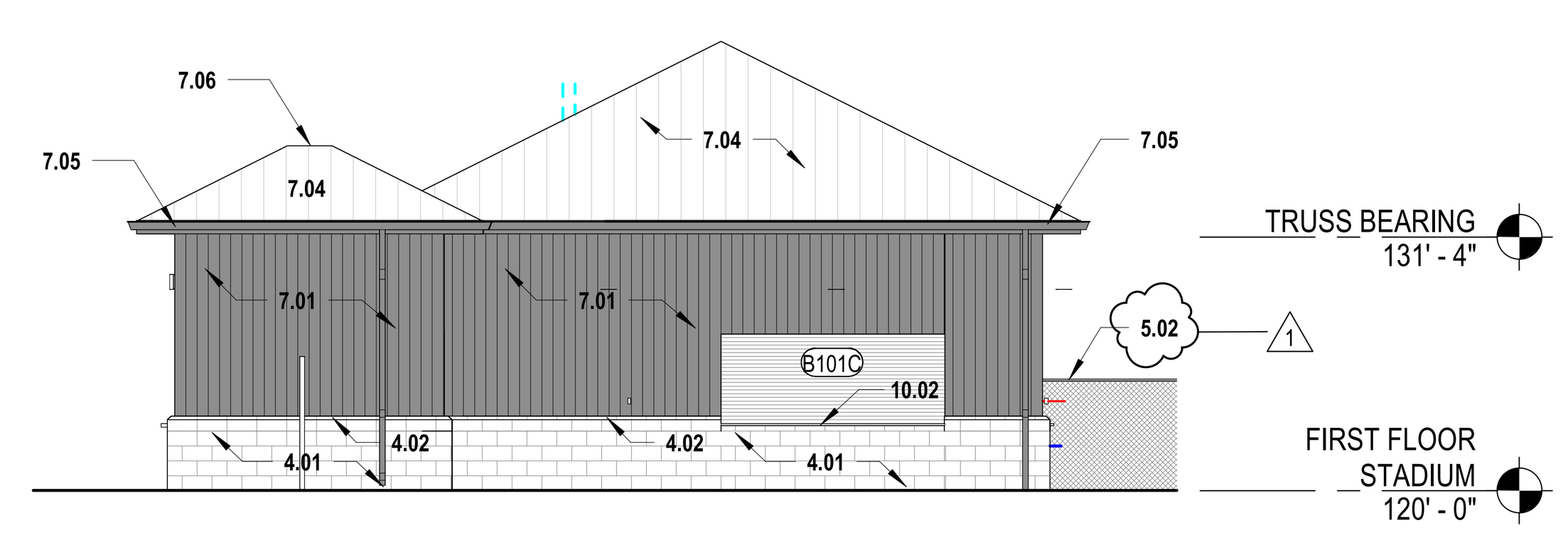
A-121A



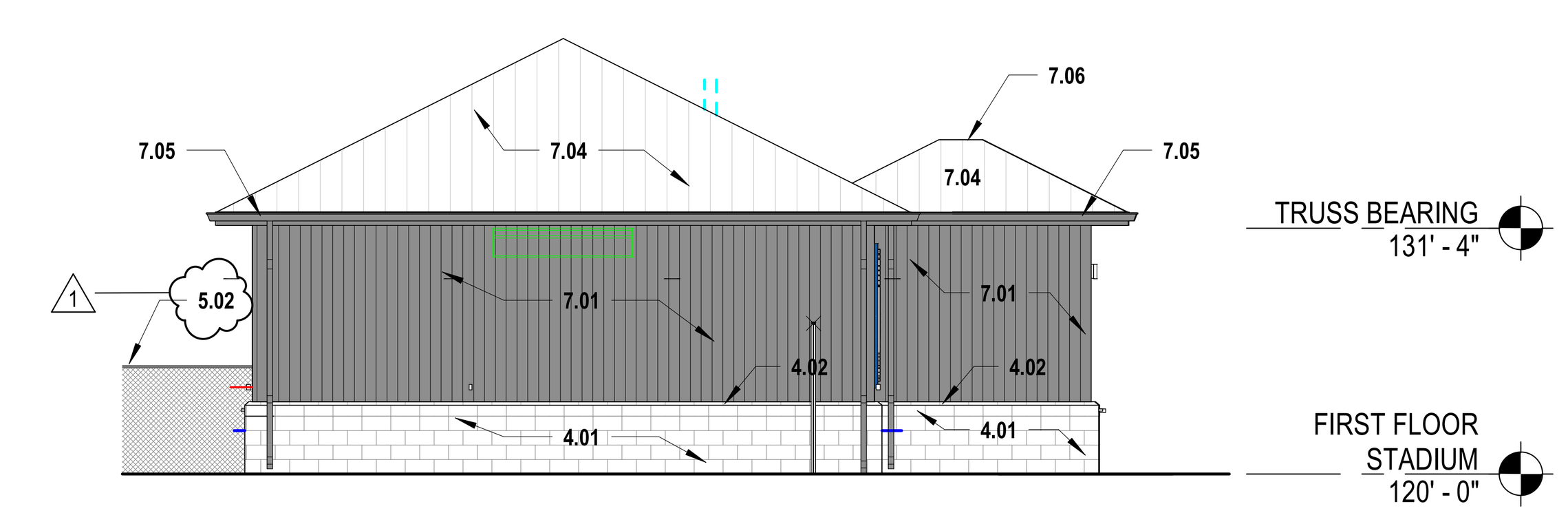
5 Building Elevation - West - Area B
1/8" = 1'-0"



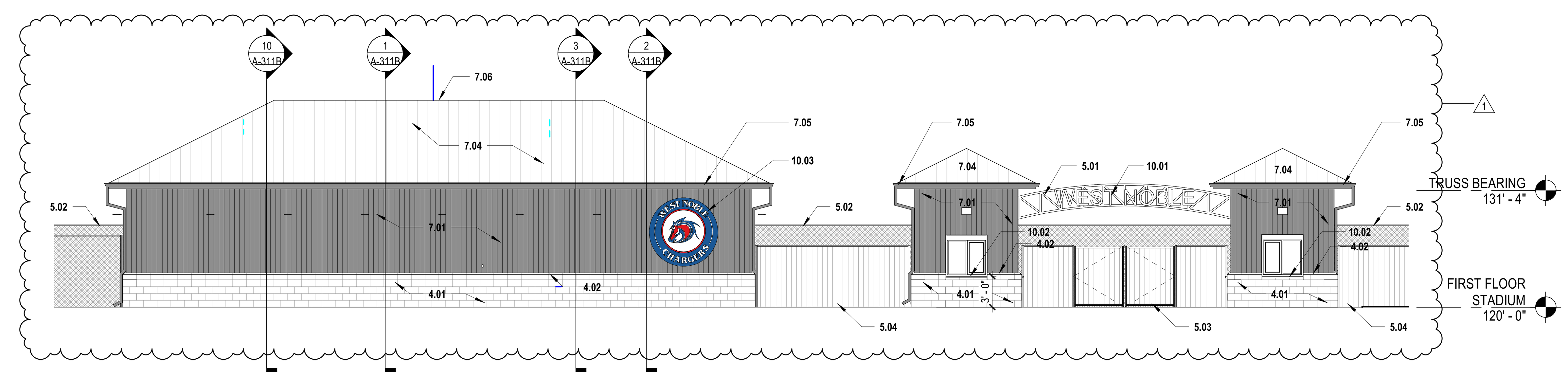
4 Building Elevation - North - Area B
1/8" = 1'-0"



3 Building Elevation - East - Area B
1/8" = 1'-0"



2 Building Elevation - West - Area B
1/8" = 1'-0"



1 Building Elevation - South - Area B
1/8" = 1'-0"

ELEVATION NOTES

TAG	DESCRIPTION
DIV 4 - MASONRY	
4.01	SPLITFACE CMU VENNER. COLOR "STORMY" - TRY COUNTY
4.02	SOLID CHAMFERED 4" CMU.
DIV 5 - METALS	
5.01	GALVANIZED STEEL TRUSS TO SUPPORT THE LIGHTED SIGN. DRAWING REPRESENTS CONCEPT. SHOP DRAWING SUBMITTAL TO INCLUDE DETAISL, CONNECTION, AND MATERIALS FOR AESTHETIC APPROVAL BY ARCHITECT AND OWNER.
5.02	CHAINLINK FENCE.
5.03	DECORATIVE FENCE GATE - SEE DETAIL.
5.04	DECORATIVE FENCE - SEE DETAIL.
DIV 7 - THERMAL AND MOISTURE PROTECTION	
7.01	PREFINISHED CONCELEAD FASTENER METAL SIDING PANEL PAC-CLAD COLOR MUSKET GRAY.
7.04	PREFINISHED METAL ROOF
7.05	ALUMINUM DOWNSPOTS & GUTTERS.
7.06	ROOF RIDGE VENT
DIV 10 - SPECIALTIES	
10.01	ELECTRIFIED/LIGHTED BUILDING SIGNAGE MOUNTED (INDIVIDUAL LETTERS) TO TRUSS. DRAWING REPRESENTS CONCEPT. SHOP DRAWINGS SUBMITTAL TO INCLUDE DETAILS, CONNECTION, FONT, SPACING, AND COLOR FOR FINAL REVIEW BY ARCHITECT AND OWNER.
10.02	STAINLESS STEEL COUNTERTOP
10.03	ELECTRIFIED/LIGHTED BUILDING SIGNAGE MOUNTED. DRAWING REPRESENTS CONCEPT. SHOP DRAWINGS SUBMITTAL TO INCLUDE DETAILS, CONNECTION, FONT, SPACING, AND COLOR FOR FINAL REVIEW BY ARCHITECT AND OWNER.

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SEAL

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REVISIONS

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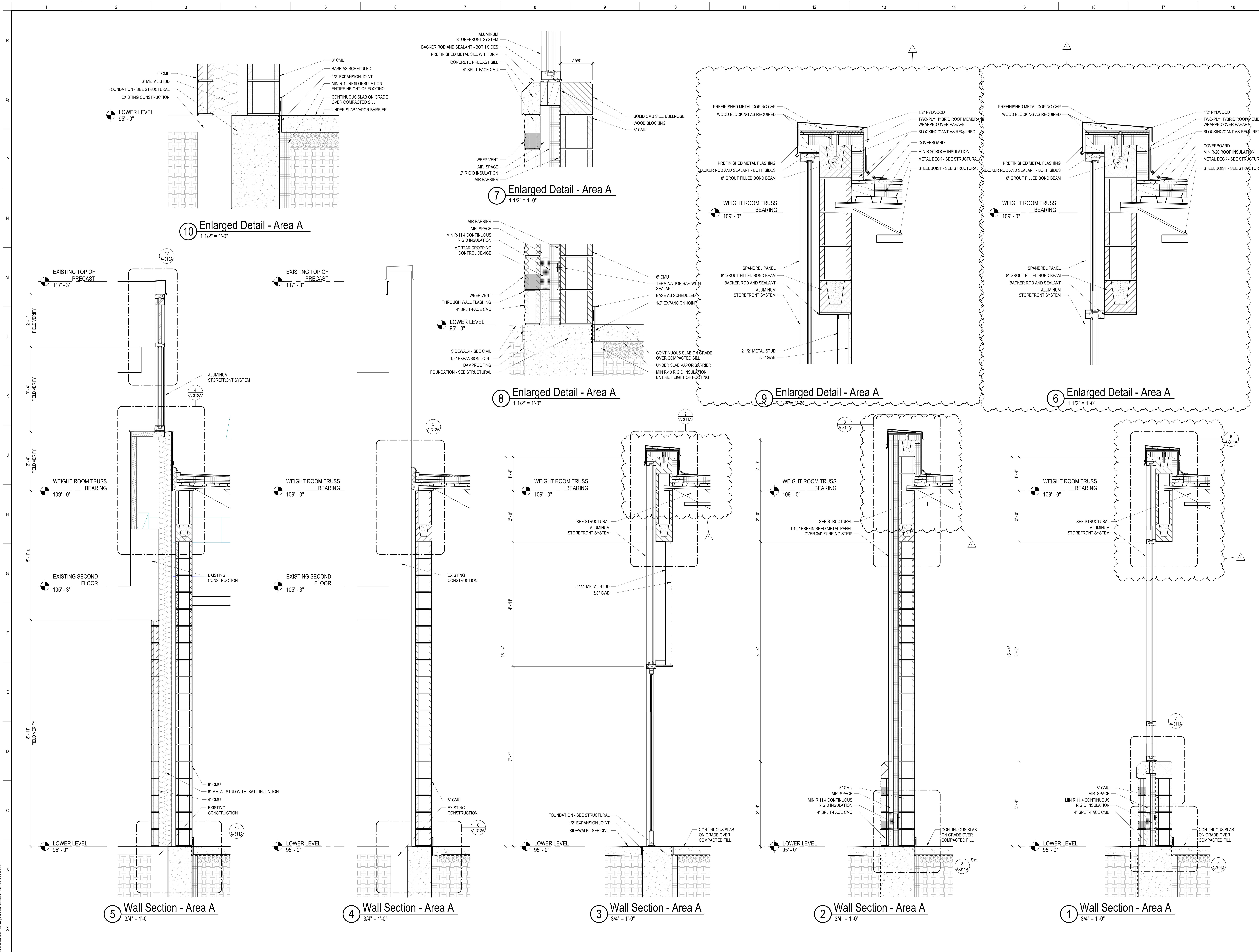
ISSUE DATE 02-12-2024
SUBMITTAL 100% Construction Documents

Building Elevations - Area B

A-201B



4" CMU
6" METAL STUD
FOUNDATION - SEE STRUCTURAL
EXISTING CONSTRUCTION
8" CMU
BASE AS SCHEDULED
1/2" EXPANSION JOINT
MIN R-10 RIGID INSULATION ENTIRE HEIGHT OF FOOTING
CONTINUOUS SLAB ON GRADE OVER COMPACTED SILL
UNDER SLAB VAPOR BARRIER
LOWER LEVEL 95' - 0"
10 Enlarged Detail - Area A
1 1/2" = 1'-0"
ALUMINUM STOREFRONT SYSTEM
BACKER ROD AND SEALANT - BOTH SIDES
PREFINISHED METAL SILL WITH DRIP
CONCRETE PRECAST SILL
4" SPLIT-FACE CMU
7 5/8"
SOLID CMU SILL, BULLNOSE
WOOD BLOCKING
8" CMU
WEEP VENT
AIR SPACE
2" RIGID INSULATION
AIR BARRIER
7 Enlarged Detail - Area A
1 1/2" = 1'-0"
AIR BARRIER
AIR SPACE
MIN R-11.4 CONTINUOUS RIGID INSULATION
MORTAR DROPPING CONTROL DEVICE
WEEP VENT
THROUGH WALL FLASHING
4" SPLIT-FACE CMU
8" CMU
TERMINATION BAR WITH SEALANT
BASE AS SCHEDULED
1/2" EXPANSION JOINT
LOWER LEVEL 95' - 0"
SIDEWALK - SEE CIVIL
1/2" EXPANSION JOINT
DAMPPROOFING
FOUNDATION - SEE STRUCTURAL
CONTINUOUS SLAB ON GRADE OVER COMPACTED SILL
UNDER SLAB VAPOR BARRIER
MIN R-10 RIGID INSULATION ENTIRE HEIGHT OF FOOTING
8 Enlarged Detail - Area A
1 1/2" = 1'-0"
PREFINISHED METAL COPING CAP
WOOD BLOCKING AS REQUIRED
1/2" PYLWOOD
TWO-PLY HYBRID ROOF MEMBRANE WRAPPED OVER PARAPET
BLOCKING/CANT AS REQUIRED
COVERBOARD
MIN R-20 ROOF INSULATION
METAL DECK - SEE STRUCTURAL
STEEL JOIST - SEE STRUCTURAL
PREFINISHED METAL FLASHING
BACKER ROD AND SEALANT - BOTH SIDES
8" GROUT FILLED BOND BEAM
WEIGHT ROOM TRUSS BEARING 109' - 0"
SPANDREL PANEL
8" GROUT FILLED BOND BEAM
BACKER ROD AND SEALANT
ALUMINUM STOREFRONT SYSTEM
2 1/2" METAL STUD
5/8" GWB
9 Enlarged Detail - Area A
1 1/2" = 1'-0"
6 Enlarged Detail - Area A
1 1/2" = 1'-0"
EXISTING TOP OF PRECAST 117' - 3"
WEIGHT ROOM TRUSS BEARING 109' - 0"
EXISTING SECOND FLOOR 105' - 3"
LOWER LEVEL 95' - 0"
2' - 1" FIELD VERIFY
3' - 4" FIELD VERIFY
2' - 4" FIELD VERIFY
5' - 1" ±
8' - 11" FIELD VERIFY
ALUMINUM STOREFRONT SYSTEM
EXISTING CONSTRUCTION
8" CMU
6" METAL STUD WITH BATT INSULATION
4" CMU
EXISTING CONSTRUCTION
5 Wall Section - Area A
3/4" = 1'-0"
EXISTING CONSTRUCTION
8" CMU
EXISTING CONSTRUCTION
4 Wall Section - Area A
3/4" = 1'-0"
SEE STRUCTURAL
ALUMINUM STOREFRONT SYSTEM
2 1/2" METAL STUD
5/8" GWB
FOUNDATION - SEE STRUCTURAL
1/2" EXPANSION JOINT
SIDEWALK - SEE CIVIL
CONTINUOUS SLAB ON GRADE OVER COMPACTED FILL
15' - 4"
3 Wall Section - Area A
3/4" = 1'-0"
SEE STRUCTURAL
1 1/2" PREFINISHED METAL PANEL OVER 3/4" FURRING STRIP
8" CMU
AIR SPACE
MIN R 11.4 CONTINUOUS RIGID INSULATION
4" SPLIT-FACE CMU
CONTINUOUS SLAB ON GRADE OVER COMPACTED FILL
Sim
2 Wall Section - Area A
3/4" = 1'-0"
SEE STRUCTURAL
ALUMINUM STOREFRONT SYSTEM
8" CMU
AIR SPACE
MIN R 11.4 CONTINUOUS RIGID INSULATION
4" SPLIT-FACE CMU
CONTINUOUS SLAB ON GRADE OVER COMPACTED FILL
1 Wall Section - Area A
3/4" = 1'-0"

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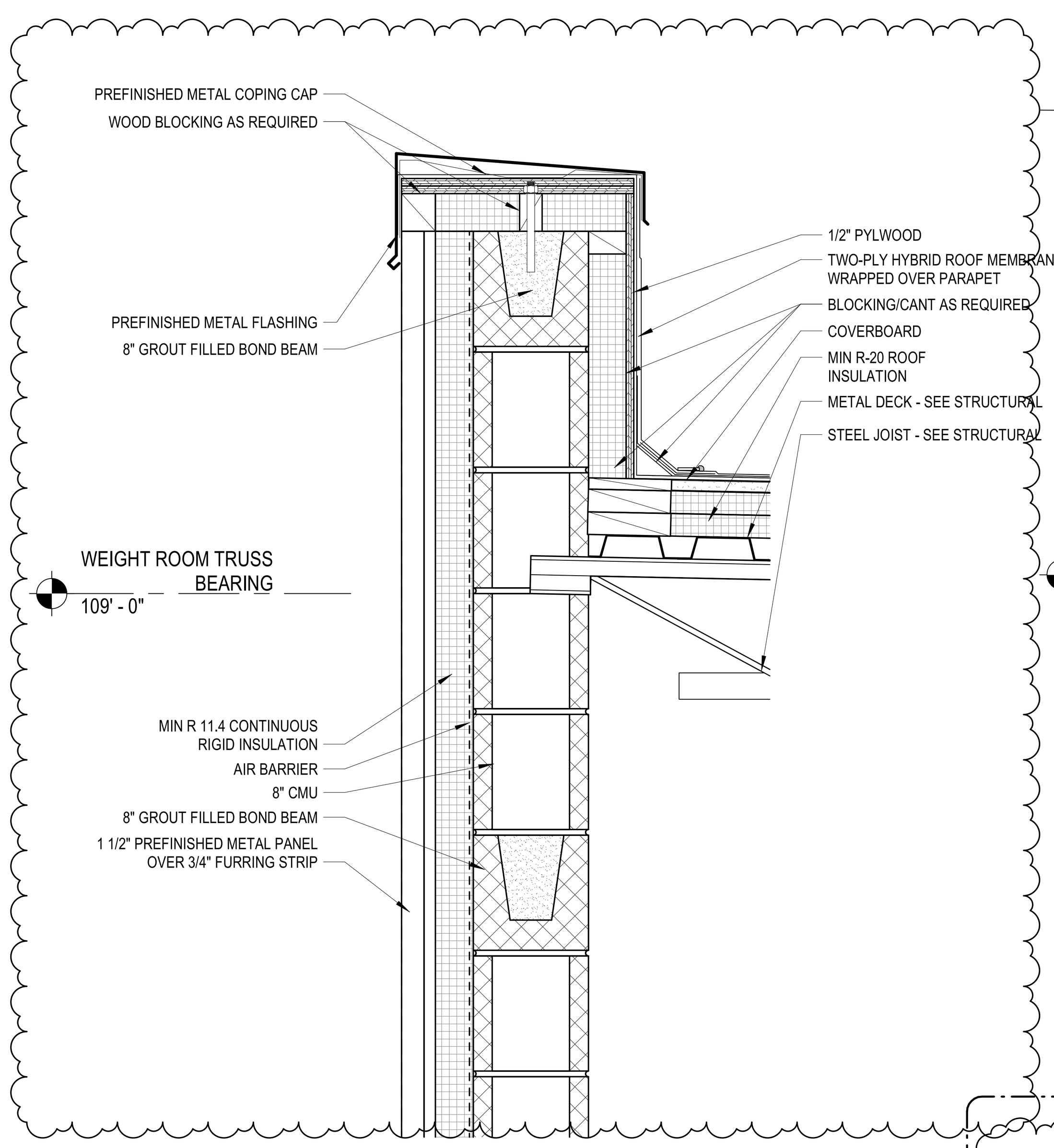
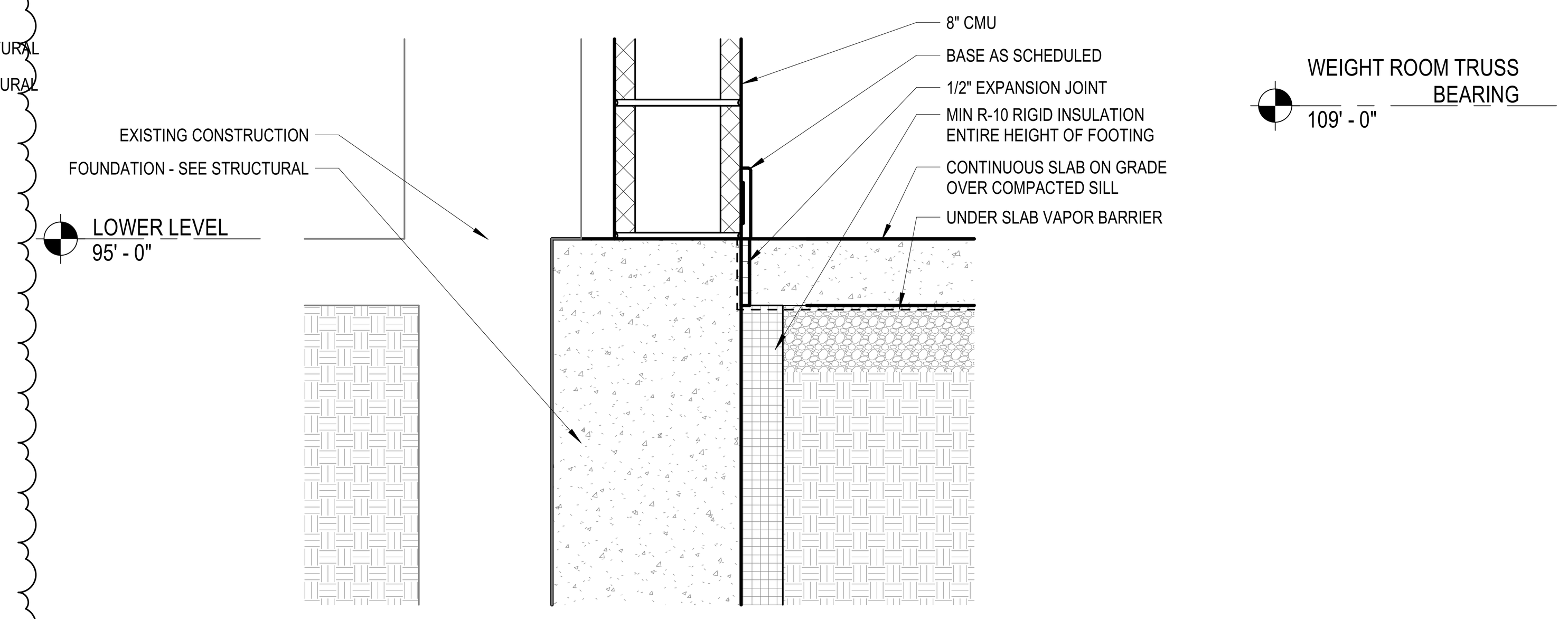
100% Construction Documents

Wall Sections - Area A

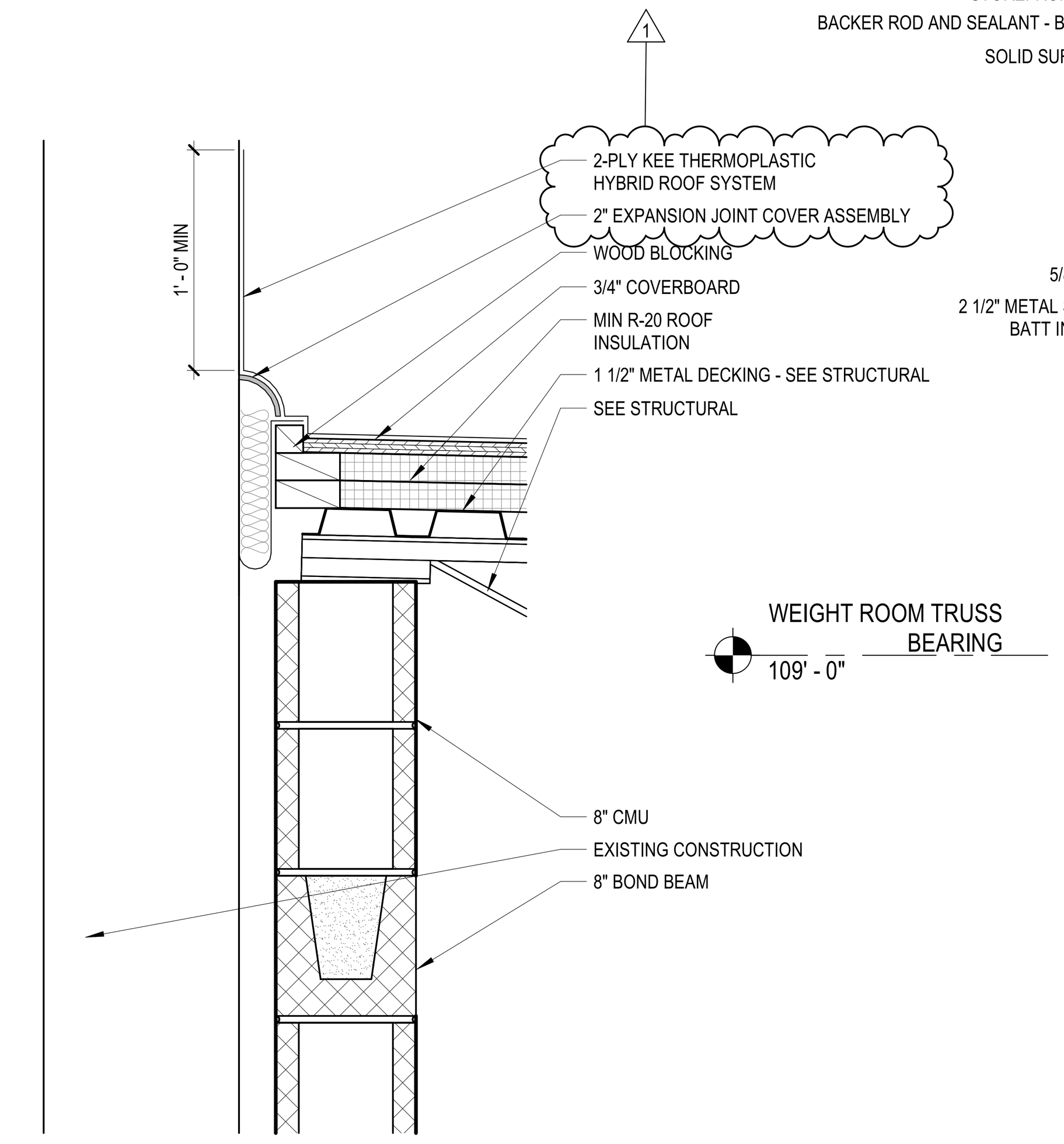
A-311A



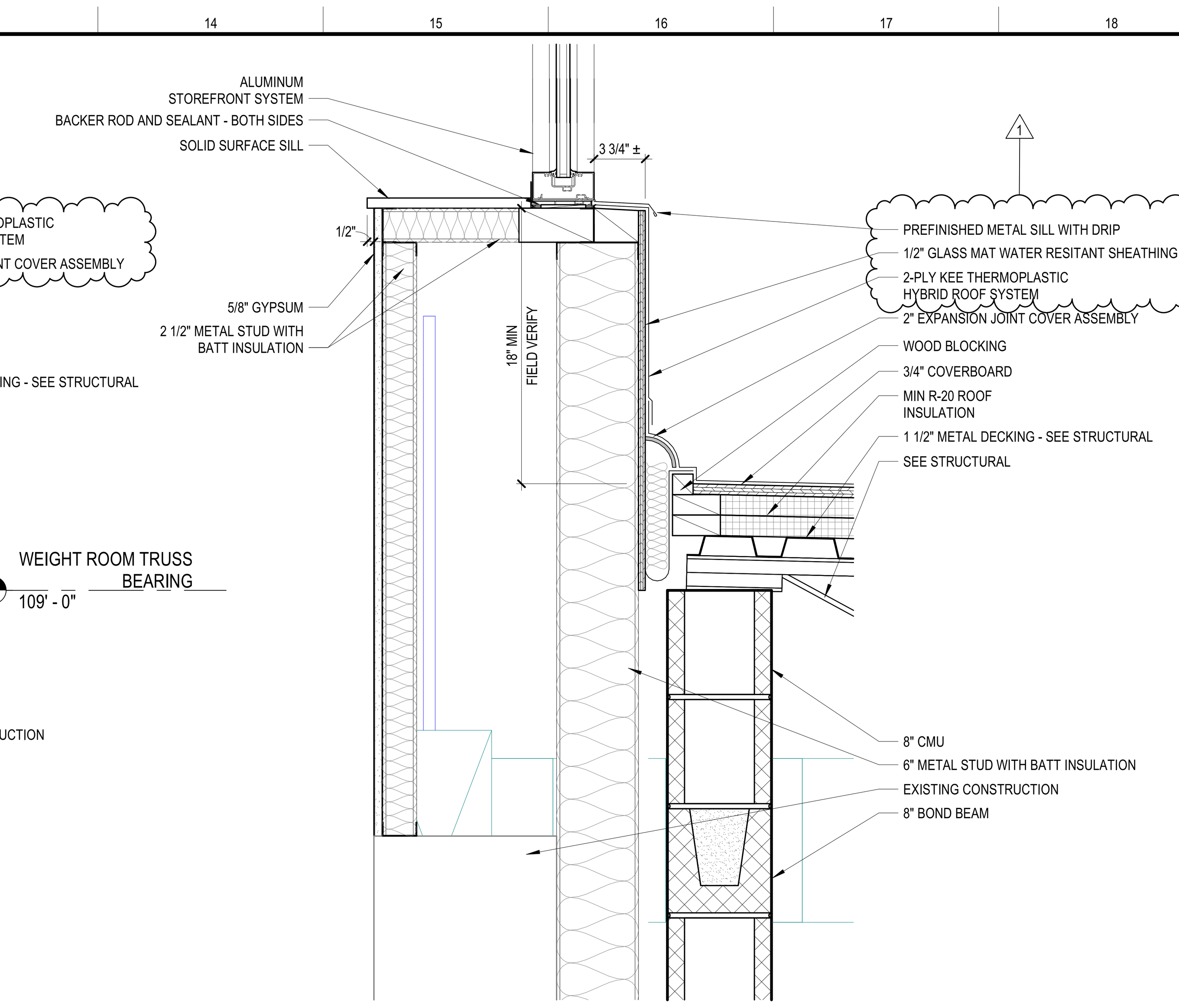
3 Enlarged Detail - Area A
1 1/2" = 1'-0"



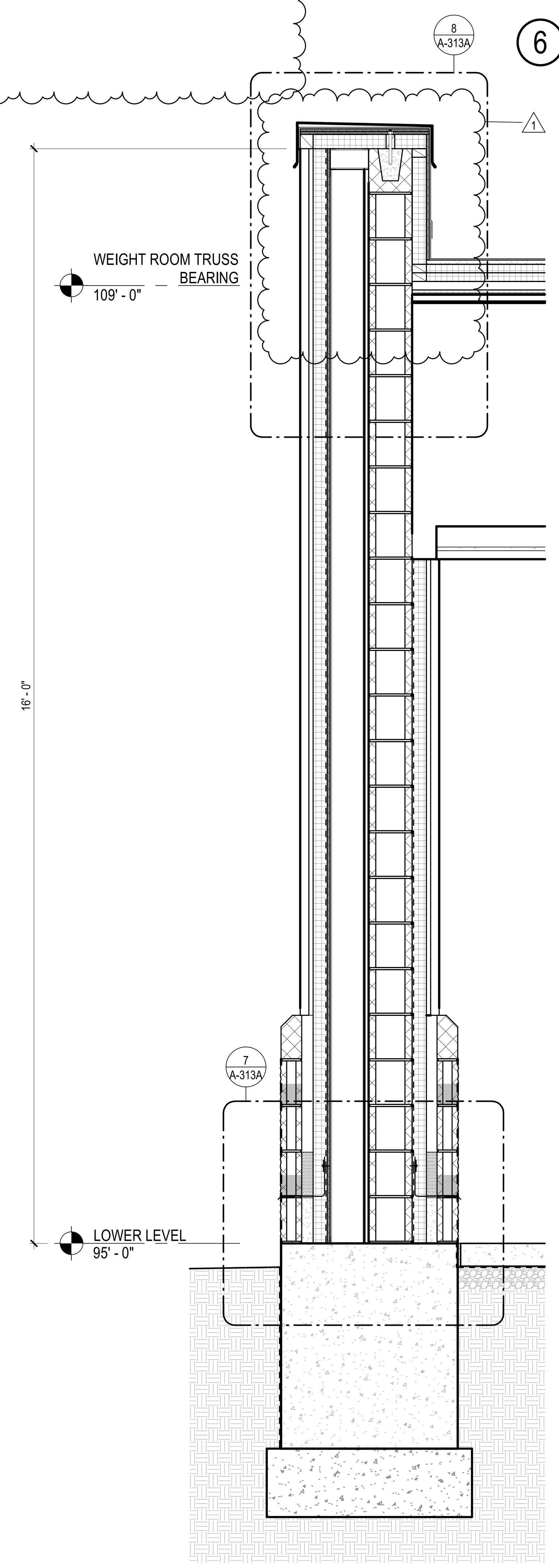
6 Enlarged Detail - Area A
1 1/2" = 1'-0"



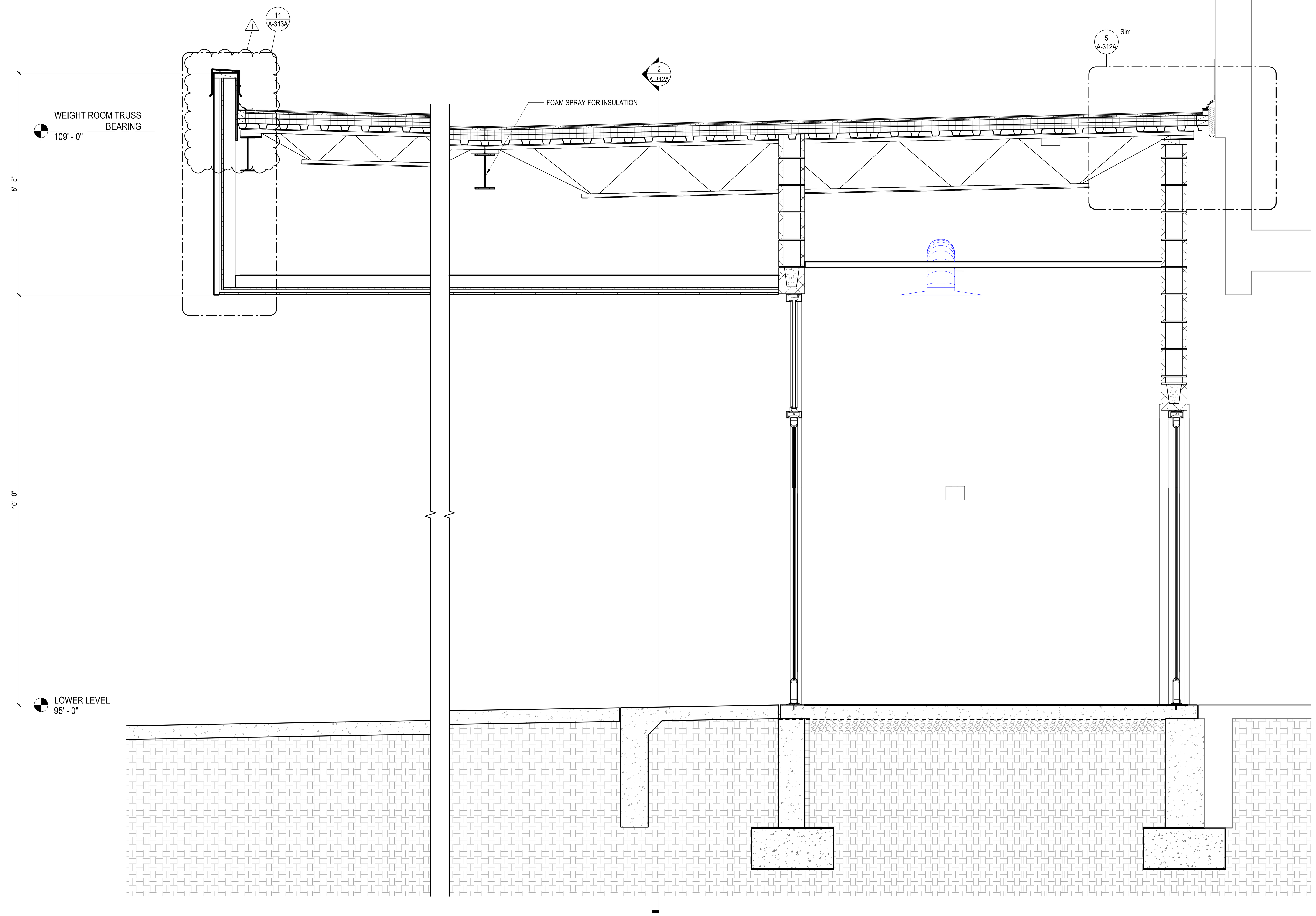
5 Enlarged Detail - Area A
1 1/2" = 1'-0"



4 Enlarged Detail - Area A
1 1/2" = 1'-0"



2 Wall Section - Area A
3/4" = 1'-0"



1 Wall Section - Area A
3/4" = 1'-0"

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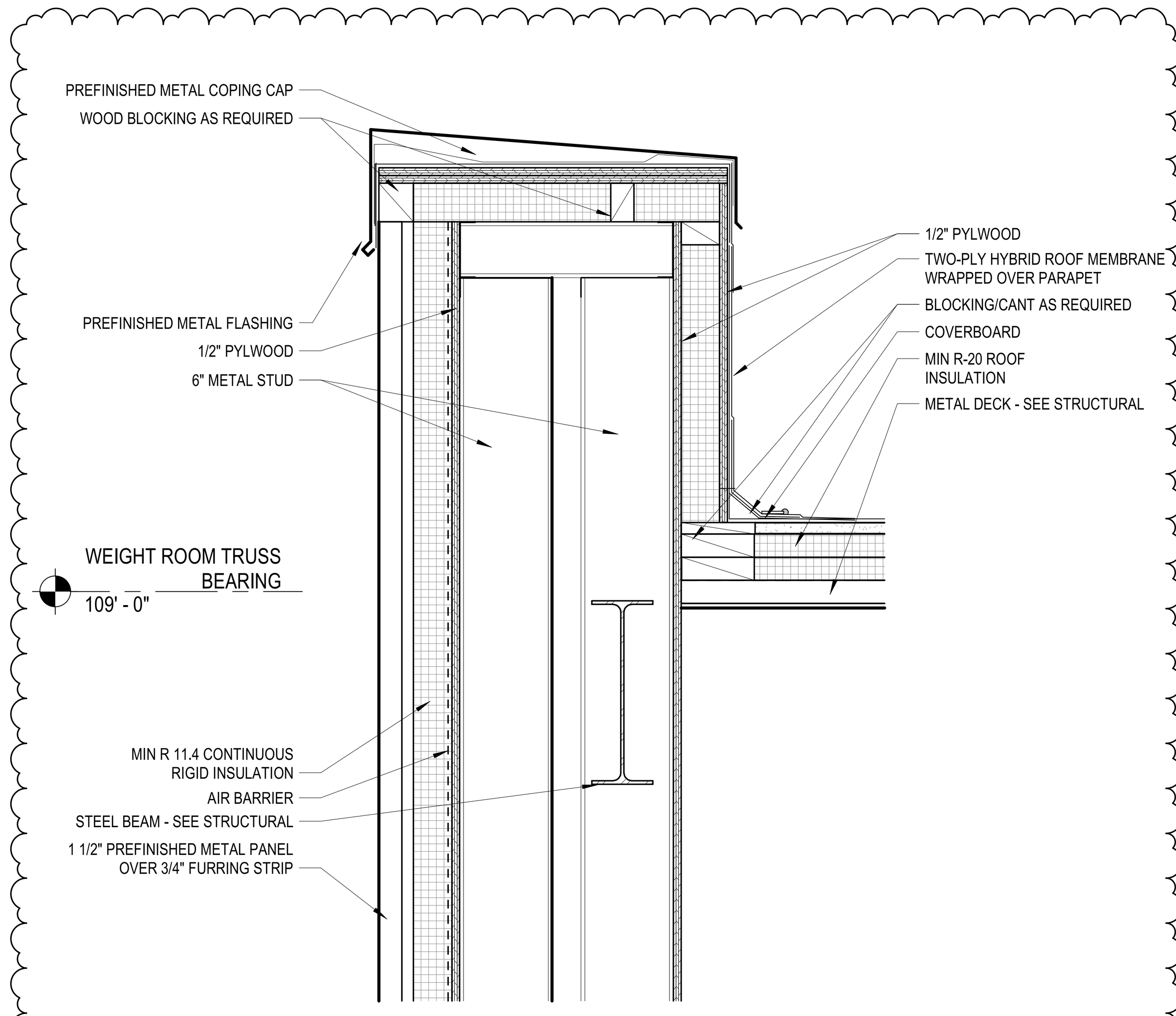
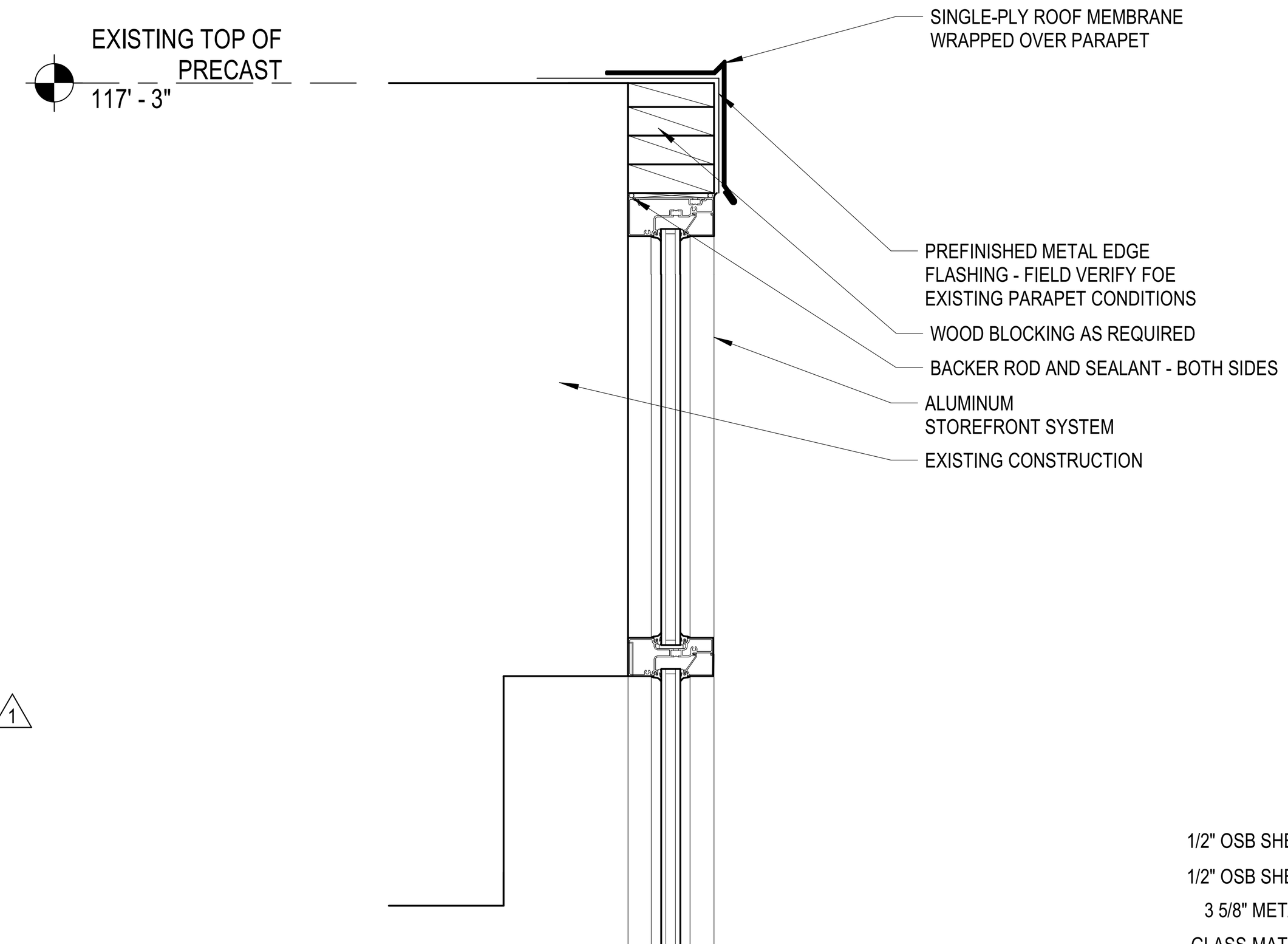
Wall Sections - Area A

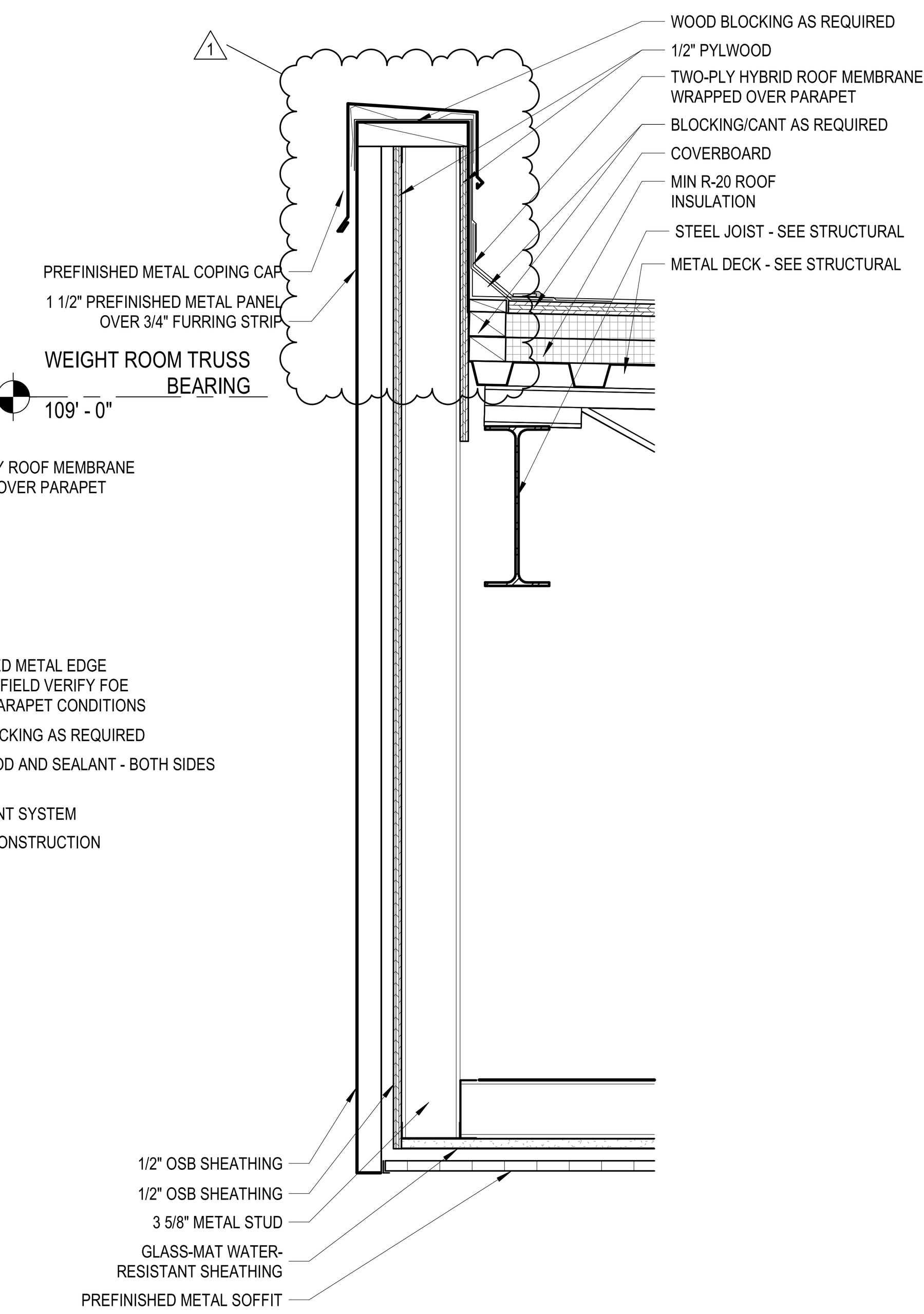
A-312A


PREFINISHED METAL COPING CAP
WOOD BLOCKING AS REQUIRED
PREFINISHED METAL FLASHING
1/2" PYLWOOD
6" METAL STUD
1/2" PYLWOOD
TWO-PLY HYBRID ROOF MEMBRANE WRAPPED OVER PARAPET
BLOCKING/CANT AS REQUIRED
COVERBOARD
MIN R-20 ROOF INSULATION
METAL DECK - SEE STRUCTURAL
WEIGHT ROOM TRUSS BEARING
109' - 0"
MIN R 11.4 CONTINUOUS RIGID INSULATION
AIR BARRIER
STEEL BEAM - SEE STRUCTURAL
1 1/2" PREFINISHED METAL PANEL OVER 3/4" FURRING STRIP

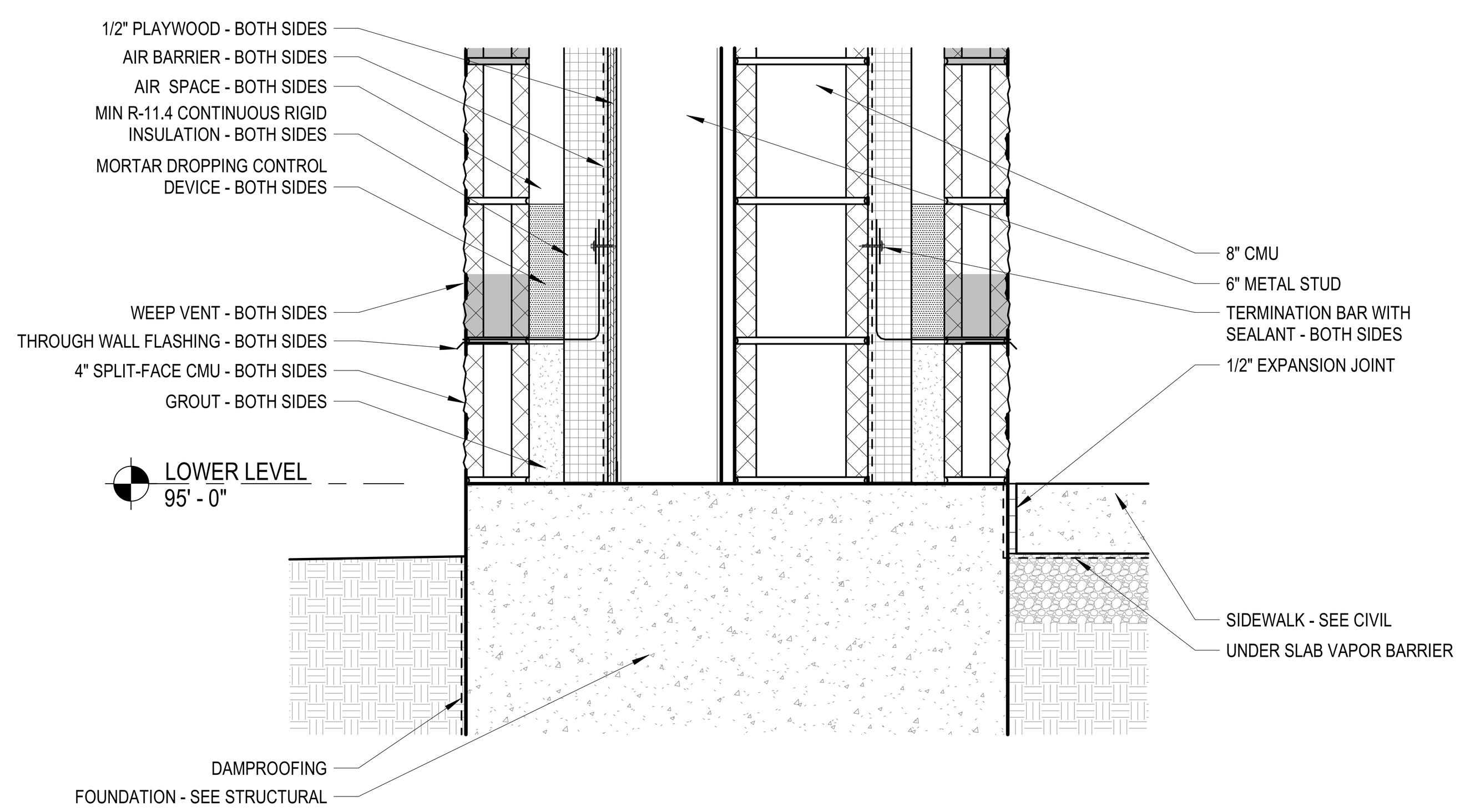
9 Enlarged Detail - Area A
1 1/2" = 1'-0"


EXISTING TOP OF PRECAST
117' - 3"
SINGLE-PLY ROOF MEMBRANE WRAPPED OVER PARAPET
PREFINISHED METAL EDGE FLASHING - FIELD VERIFY FOE EXISTING PARAPET CONDITIONS
WOOD BLOCKING AS REQUIRED
BACKER ROD AND SEALANT - BOTH SIDES
ALUMINUM STOREFRONT SYSTEM
EXISTING CONSTRUCTION

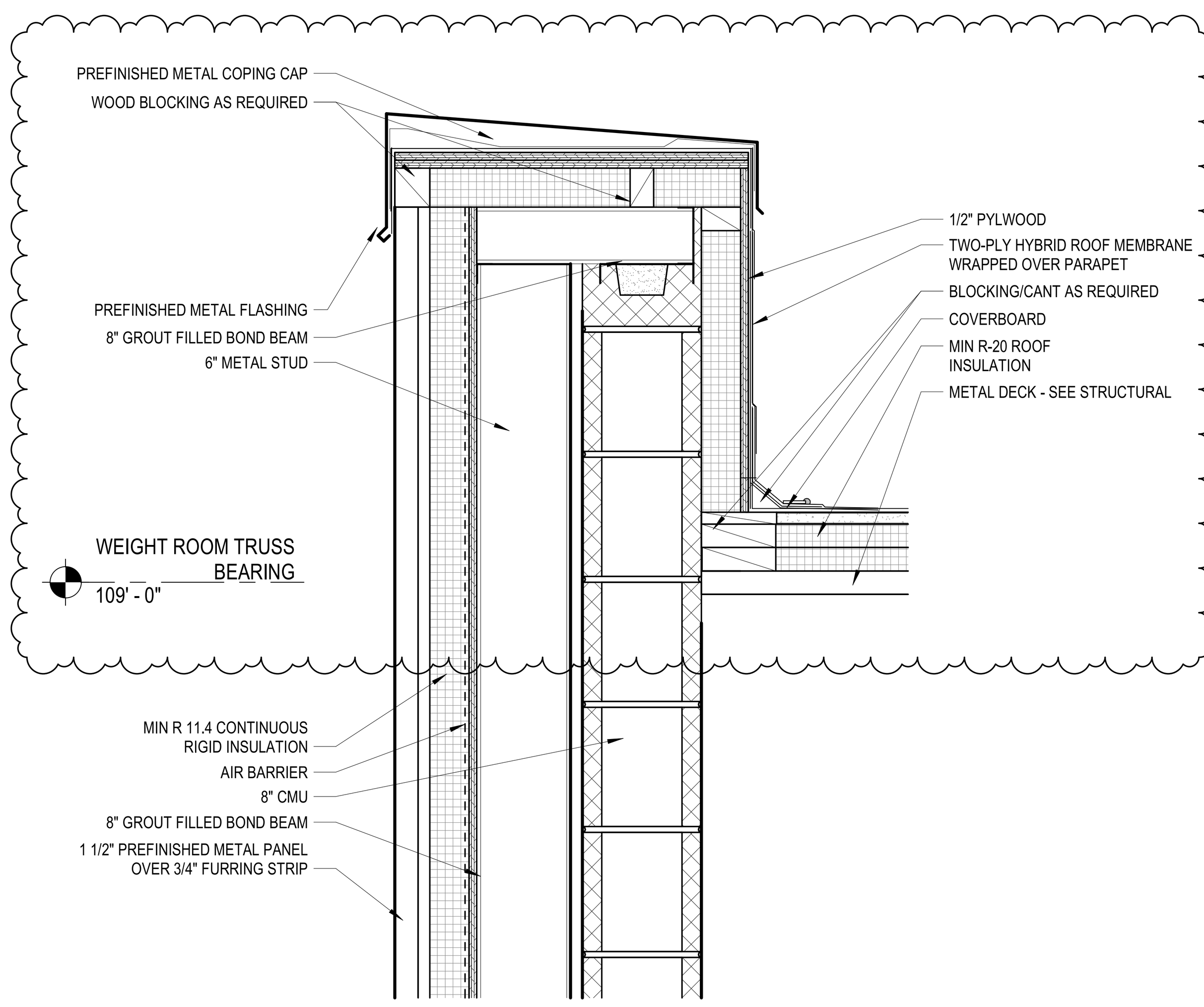
12 Enlarged Detail - Area A
1 1/2" = 1'-0"


WOOD BLOCKING AS REQUIRED
1/2" PYLWOOD
TWO-PLY HYBRID ROOF MEMBRANE WRAPPED OVER PARAPET
BLOCKING/CANT AS REQUIRED
COVERBOARD
MIN R-20 ROOF INSULATION
STEEL JOIST - SEE STRUCTURAL
METAL DECK - SEE STRUCTURAL
PREFINISHED METAL COPING CAP
1 1/2" PREFINISHED METAL PANEL OVER 3/4" FURRING STRIP
WEIGHT ROOM TRUSS BEARING
109' - 0"
1/2" OSB SHEATHING
1/2" OSB SHEATHING
3 5/8" METAL STUD
GLASS-MAT WATER-RESISTANT SHEATHING
PREFINISHED METAL SOFFIT

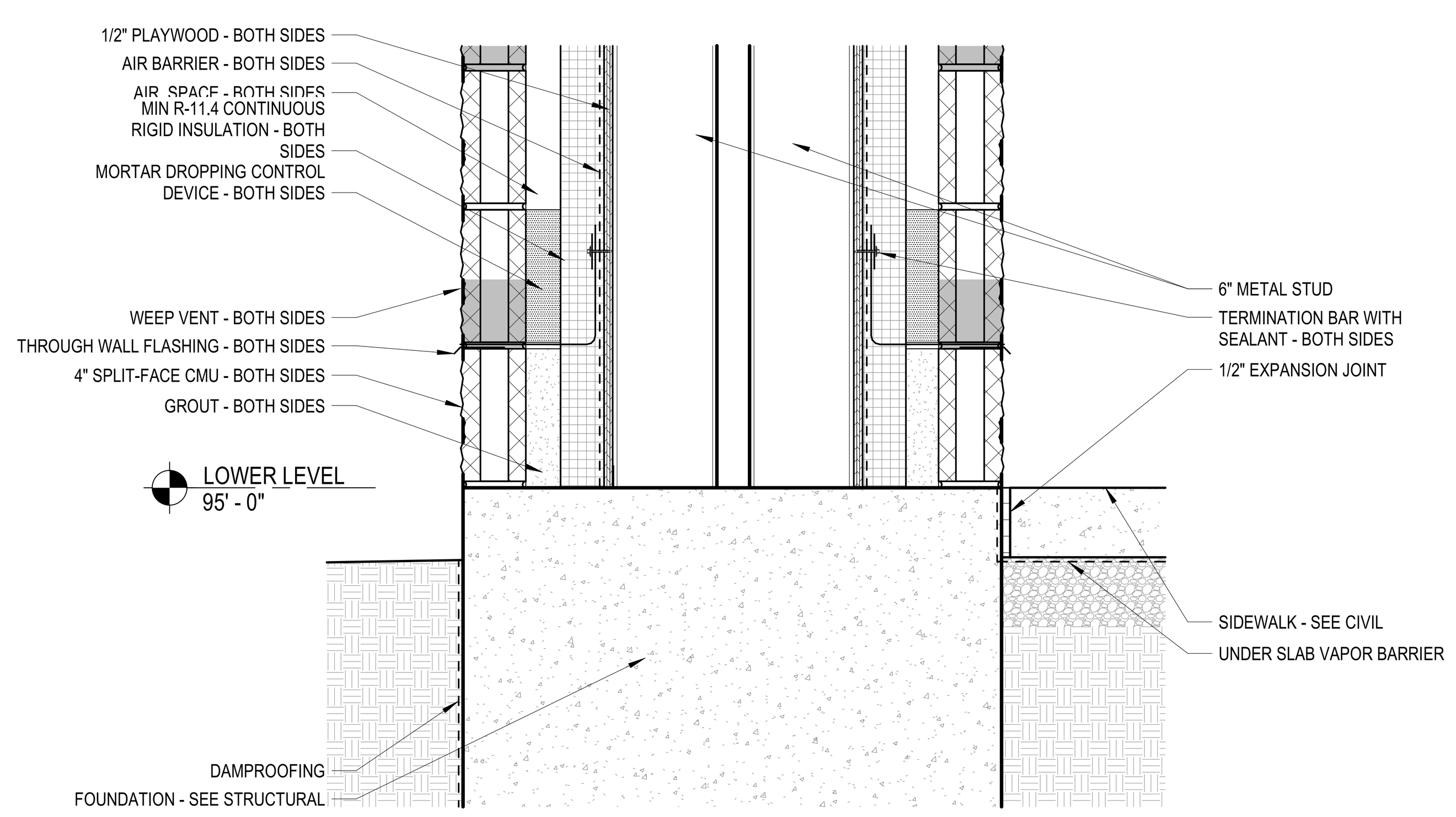
11 Enlarged Detail - Area A
1 1/2" = 1'-0"


1/2" PLAYWOOD - BOTH SIDES
AIR BARRIER - BOTH SIDES
AIR SPACE - BOTH SIDES
MIN R-11.4 CONTINUOUS RIGID INSULATION - BOTH SIDES
MORTAR DROPPING CONTROL DEVICE - BOTH SIDES
WEEP VENT - BOTH SIDES
THROUGH WALL FLASHING - BOTH SIDES
4" SPLIT-FACE CMU - BOTH SIDES
GROUT - BOTH SIDES
LOWER LEVEL
95' - 0"
DAMPROOFING
FOUNDATION - SEE STRUCTURAL
8" CMU
6" METAL STUD
TERMINATION BAR WITH SEALANT - BOTH SIDES
1/2" EXPANSION JOINT
SIDEWALK - SEE CIVIL
UNDER SLAB VAPOR BARRIER

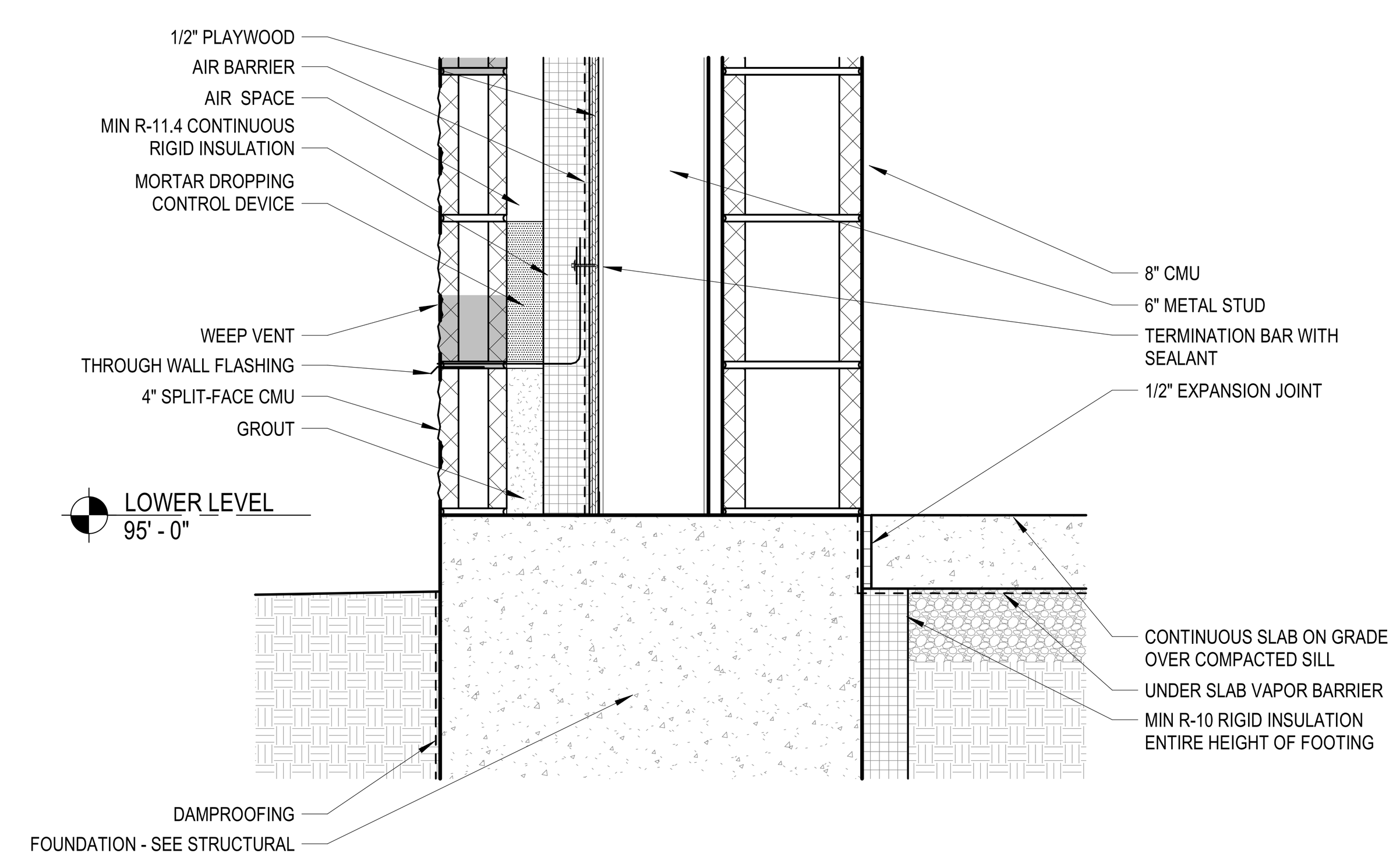
7 Enlarged Detail - Area A
1 1/2" = 1'-0"


PREFINISHED METAL COPING CAP
WOOD BLOCKING AS REQUIRED
PREFINISHED METAL FLASHING
8" GROUT FILLED BOND BEAM
6" METAL STUD
1/2" PYLWOOD
TWO-PLY HYBRID ROOF MEMBRANE WRAPPED OVER PARAPET
BLOCKING/CANT AS REQUIRED
COVERBOARD
MIN R-20 ROOF INSULATION
METAL DECK - SEE STRUCTURAL
WEIGHT ROOM TRUSS BEARING
109' - 0"
MIN R 11.4 CONTINUOUS RIGID INSULATION
AIR BARRIER
8" CMU
8" GROUT FILLED BOND BEAM
1 1/2" PREFINISHED METAL PANEL OVER 3/4" FURRING STRIP

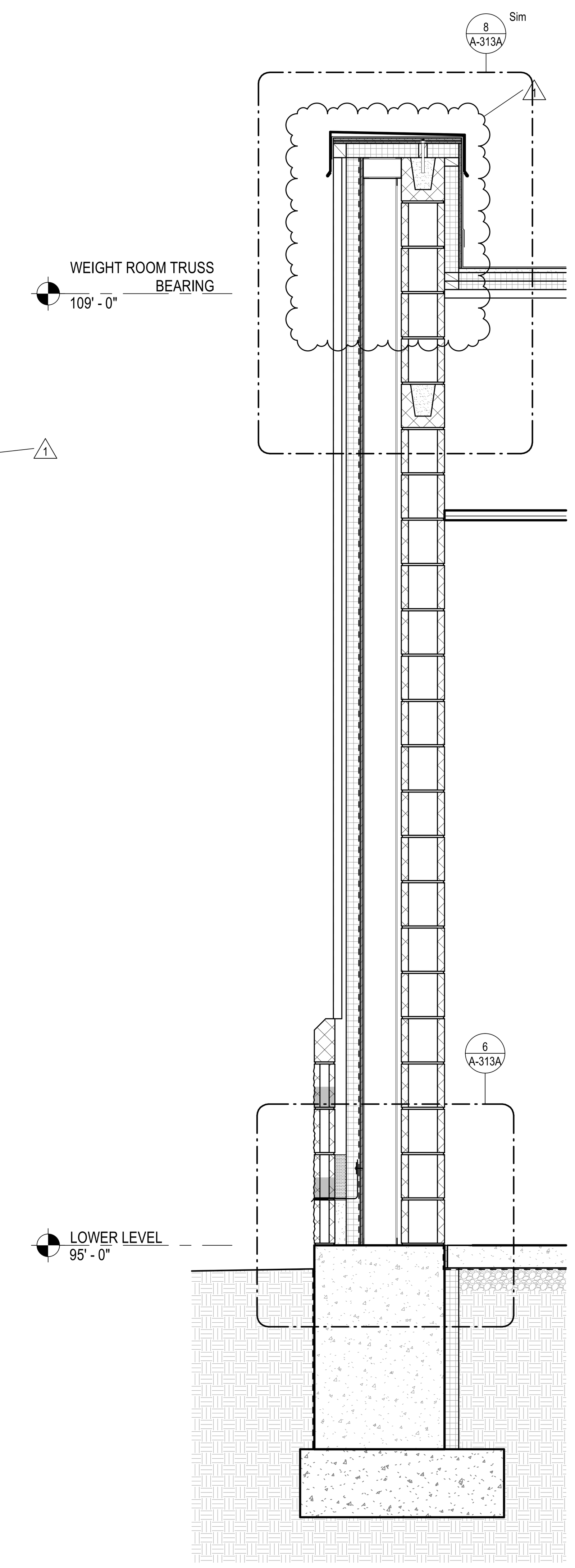
8 Enlarged Detail - Area A
1 1/2" = 1'-0"


1/2" PLAYWOOD - BOTH SIDES
AIR BARRIER - BOTH SIDES
AIR SPACE - BOTH SIDES
MIN R-11.4 CONTINUOUS RIGID INSULATION - BOTH SIDES
MORTAR DROPPING CONTROL DEVICE - BOTH SIDES
WEEP VENT - BOTH SIDES
THROUGH WALL FLASHING - BOTH SIDES
4" SPLIT-FACE CMU - BOTH SIDES
GROUT - BOTH SIDES
LOWER LEVEL
95' - 0"
DAMPROOFING
FOUNDATION - SEE STRUCTURAL
6" METAL STUD
TERMINATION BAR WITH SEALANT - BOTH SIDES
1/2" EXPANSION JOINT
SIDEWALK - SEE CIVIL
UNDER SLAB VAPOR BARRIER

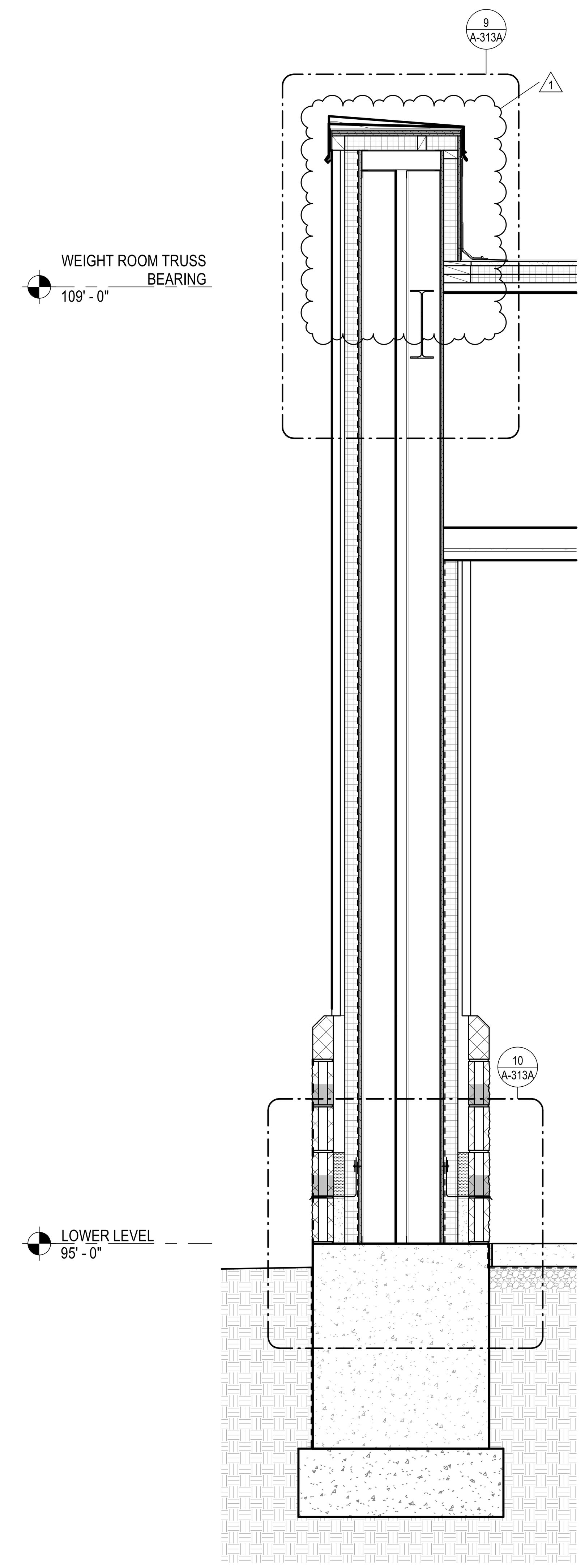
10 Enlarged Detail - Area A
1 1/2" = 1'-0"


1/2" PLAYWOOD
AIR BARRIER
AIR SPACE
MIN R-11.4 CONTINUOUS RIGID INSULATION
MORTAR DROPPING CONTROL DEVICE
WEEP VENT
THROUGH WALL FLASHING
4" SPLIT-FACE CMU
GROUT
LOWER LEVEL
95' - 0"
DAMPROOFING
FOUNDATION - SEE STRUCTURAL
8" CMU
6" METAL STUD
TERMINATION BAR WITH SEALANT
1/2" EXPANSION JOINT
CONTINUOUS SLAB ON GRADE OVER COMPACTED SILL
UNDER SLAB VAPOR BARRIER
MIN R-10 RIGID INSULATION ENTIRE HEIGHT OF FOOTING

6 Enlarged Detail - Area A
1 1/2" = 1'-0"



2 Wall Section - Area A
3/4" = 1'-0"



1 Wall Section - Area A
3/4" = 1'-0"

ELEVATUS ARCHITECTURE

111 E. Wayne Street, Suite 555, Fort Wayne, IN 46802
260 424-9080 ElevatusArchitecture.com

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SEAL

CORY D. MILLER
REGISTERED
No. 10100148
STATE OF INDIANA
ARCHITECT

West Noble High School Renovation and Addition
5050 US-33, Ligonier, IN, 46767

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	2/21/2024

PROJECT NO.	ISSUE DATE
2301108	02-12-2024

SUBMITTAL
100% Construction Documents

Wall Sections - Area A

A-313A

ROOM FINISH SCHEDULE

Room Number	Room Name	Floor	Base	Wall: North	Wall: East	Wall: South	Wall: West	Ceiling	Comments
LOWER LEVEL									
A100	VESTIBULE	CPT-2	RB-1	P-1	P-1	P-1	P-1	APC-1	
A101	HALL	CPT-2	RB-1	P-1	P-1	P-1	P-1	APC-1	
A102	TRAINING ROOM	EPX-1	EPX-1	P-1	P-1, P-2, P-3	P-1	P-1	APC-1	
A103	OFFICE	CPT-1	RB-1	P-1, P-2, P-3	P-1	P-1	P-1	APC-1	
A104	HALL	CPT-1	RB-1	P-1	P-1	P-1, P-3	P-1	P-3	
A105	WEIGHTS	SC-1	RB-1	--	P-1, P-2, P-3, P-4	P-1, P-2, P-3, P-4	P-1	EXPSD, P-3	
A106	RR	EPX-1	EPX-1	P-1	P-1	P-1	P-1	APC-2	
A107	OFFICE	CPT-1	RB-1	P-1	P-1	P-1, P-2, P-3	P-1	APC-1	
A108	TRACK	SC-1	RB-1	P-1, P-2, P-4	P-1, P-2, P-3, P-4	P-1, P-4	P-1, P-4	EXPSD	
FIRST FLOOR STADIUM									
B101	CONCESSIONS	EPX-2	EPX-2	P-1	P-1	P-1	P-1	APC-2	
B102	OFFICE	EPX-2	EPX-2	P-1	P-1	P-1	P-1	APC-1	
B103	RR	EPX-2	EPX-2	P-1	P-1	P-1, P-2	P-1	APC-2	
B104	MEP	EPX-2	EPX-2	P-1	P-1	P-1	P-1	EXPSD	
B105	RR	EPX-1	EPX-1	P-1	P-1, P-2, P-3	P-1	P-1	APC-2	
B106	RR	EPX-1	EPX-1	P-1	P-1	P-1	P-1, P-2, P-3	APC-2	
C101	TICKETING	EPX-2	EPX-2	P-1	P-1	P-1	P-1	APC-1	
C102	TICKETING	EPX-2	EPX-2	P-1	P-1	P-1	P-1	APC-1	

FINISH LEGEND

(03 35 00) CONCRETE FLOOR SEALERS

SC-1 MFG: MASTER BUILDER SOLUTIONS
TYPE: MASTERKURE CC 160WB
NOTE: WATERBORNE ACRYLIC-BASED LIQUID POLYMER CURING, SEALING, AND DUSTING COMPOUND FLOOR SEALER.
SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
CONTROL JOINTS AS REQUIRED FOR STRUCTURAL - POLYMER COLOR DOVETAIL GRAY

(06 41 10) MILLWORK/CASEWORK

PL-1 MFG: WILSONART
TYPE: PLASTIC LAMINATE
COLOR: D25-60 ATLANTIS
FINISH: MATTE FINISH

SS-1 MFG: WILSONART
TYPE: SOLID SURFACE
COLOR: 9249SS METRO CONCRETE

STS-1 TYPE: STAINLESS STEEL COUNTER TOPS
NOTE: SEE SPECIFICATIONS FOR MORE INFORMATION.

(08 14 16) WOOD DOORS

D-1 MFG: MASONITE ARCHITECTURAL
SERIES: ASPIRO
SPECIES: RED OAK
CUT: PLAIN SLICE
STAIN COLOR: COCOA BEAN

(09 51 13) ACOUSTICAL PANEL CEILINGS

APC-1 MFG: ARMSTRONG CEILING SOLUTIONS
STYLE: SCHOOL ZONE FINE FISSURED
EDGE STYLE: SQUARE LAY-IN
SIZE: 24" X 24" X 3/4"
GRID: PRELUDE 15/16"
TILE/GRID COLOR: WHITE
TEXTURE: SMOOTH

APC-2 MFG: ARMSTRONG CEILING SOLUTIONS
STYLE: CERAMAGUARD FINE FISSURED
EDGE STYLE: SQUARE LAY-IN
SIZE: 24" X 24" X 5/8"
GRID: PRELUDE 15/16"
TILE/GRID COLOR: WHITE
TEXTURE: SMOOTH

AT-1 **ALTERNATE #3**
MFG: AUTEX ACOUSTICS
TYPE: ACOUSTICAL PANEL
STYLE: QUIETSPACE PANEL
SIZE: 48" X 96" X 1"
COLOR: NUDE GREY
INSTALLATION: FULLY ADHERE TO SUBSTRATE. REFER TO MANUFACTURERS INSTRUCTIONS.

(09 65 19) RESILIENT BASE AND ACCESSORIES

RB-1 MFG: TARKETT
TYPE: RUBBER WALL BASE
STYLE: TIGHTLOCK RESILIENT
COLOR: 63 BURNT UMBER
SIZE: 4 3/8" H
THICKNESS: 0.25"

(09 65 66) RESILIENT ATHLETIC FLOORING

RBT-1 **ALTERNATE #1**
MFG: ECORE
TYPE: RECYCLED ROLLED RUBBER
COLLECTION: PERFORMANCE RALLY
THICKNESS: 14.5 MM
COLOR: GRIPPIN GRAY 20
INSTALLATION: REFER TO MANUFACTURERS INSTRUCTIONS.

RBT-2 **ALTERNATE #1**
MFG: ECORE
TYPE: RECYCLED ROLLED RUBBER
COLLECTION: PERFORMANCE BEAST PLUS
THICKNESS: 14.5 MM
COLOR: STEEL APPEAL 2
NOTE: INCLUDE IMPACT ZONES
CRASH THICKNESS: 14.5 MM
CRASH COLOR: BLACK
INSTALLATION: REFER TO MANUFACTURERS INSTRUCTIONS.

(09 67 23) RESINOUS FLOORING

EPX-1 MFG: SHERWIN WILLIAMS
TYPE: EPOXY
SERIES: RESUFLOR DECO FLAKE BC
CHIP SIZE: 1/4"
COLOR: CELESTIAL
BASE: 4" COVE

EPX-2 MFG: SHERWIN WILLIAMS
TYPE: EPOXY
SERIES: RESUFLOR TOPFLOOR HB WITH 20/40 SAND
COLOR: #54 STEEL GRAY
BASE: 4" COVE

(09 68 13) TILE CARPETING

CPT-1 MFG: J + J FLOORING GROUP
COLLECTION: KINETEX
PATTERN: UMBRA II PLANK
COLOR: ECLIPSE 1766
SIZE: 18" X 36"
THICKNESS: 0.205"
INSTALL: ASHLAR

CPT-2 MFG: PATCRAFT
COLLECTION: WALK FORWARD
PATTERN: CONNECTING
COLOR: PATHWAY 00580
SIZE: 24" X 24"
THICKNESS: 0.292"
INSTALL: QUARTER TURN

(09 91 00) PAINTING

P-1 MFG: PPG PORTER PAINTS
COLOR: PEREGRINE 0993-1
(FIELD WALLS)

P-2 MFG: PPG PORTER PAINTS
COLOR: SUDDENLY SAPPHIRE 1242-7
(ACCENT)

P-3 MFG: PPG PORTER PAINTS
COLOR: CALYPSO BERRY 1185-7
(ACCENT)

P-4 MFG: PPG PORTER PAINTS
COLOR: BLACK WIDOW 0997-7
(DOOR FRAMES, EXPOSED CEILINGS, & ACCENT)

P-5 MFG: SHERWIN WILLIAMS
COLOR: SW7757 HIGH REFLECTIVE WHITE
(ACCENT & CEILINGS)

(10 21 13.17) PHENOLIC TOILET COMPARTMENTS

TP-1 MFG: BRADLEY CORP.
TYPE: OVERHEAD-BRACED RESTROOM PARTITIONS
COLLECTION: PHENOLIC PRIVACY PARTITION - SERIES 400 - SENTINEL
COLOR: FASHION GREY (D381)

(12 21 13) HORIZONTAL LOUVER BLINDS

LB-1 MFG: SWFCONTRACT
TYPE: HORIZONTAL WINDOW BLINDS
STYLE: 2" HERITAGE ALUMINUM BLINDS
FINISH: ALUMINUM 034
NOTE: SEE SPECIFICATIONS FOR MORE INFORMATION.

(32 52 00) SYNTHETIC TURF

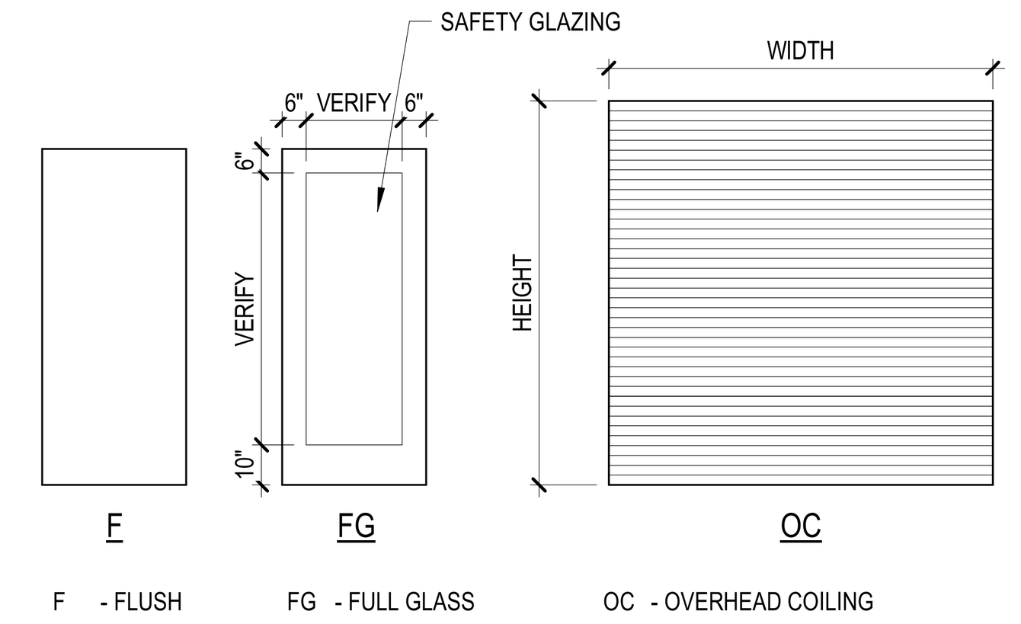
TRF-1 **ALTERNATE #2**
MFG: ECORE
TYPE: ARTIFICIAL TURF
COLLECTION: RAGE TURF RALLY
THICKNESS: 24MM
COLOR: GREEN
INSTALLATION: REFER TO MANUFACTURES INSTRUCTIONS.

FINISH GENERAL NOTES

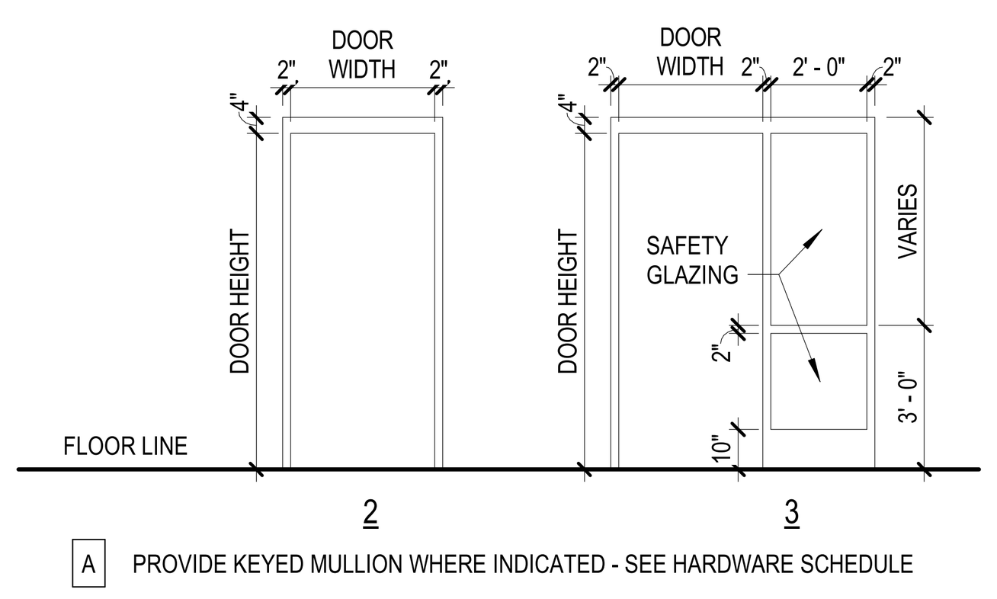
1. SCHEDULED MATERIALS AND FINISHES SHALL NOT BE ORDERED OR INSTALLED BEFORE THE CONTRACTOR'S PHYSICAL SAMPLE SUBMITTALS HAVE BEEN APPROVED AS CALLED FOR IN THE SPECIFICATIONS.
2. FLOORING CONTRACTOR TO PROVIDE AND INSTALL APPROPRIATE VINYL OR METAL TRANSITIONS AND REDUCERS BETWEEN VARYING FLOORING MATERIALS.
3. FLOOR FINISH TRANSITIONS SHALL BE CENTERED BELOW DOORS IN THE CLOSED POSITION, UNLESS NOTED OTHERWISE.
4. CONCRETE SLAB TO REMAIN PROTECTED AND COVERED. REFER TO SPECIFICATIONS.
5. DOORS TO BE MASONITE, COCOA BEAN
6. HOLLOW METAL FRAMES TO BE PAINTED P-4, UNLESS NOTED OTHERWISE.
7. CASEWORK TO BE PL-1, UNLESS NOTED OTHERWISE.
8. COUNTERTOPS TO BE SS-1, UNLESS NOTED OTHERWISE.
9. GYPSUM BOARD CEILINGS TO BE PAINTED P-5, UNLESS NOTED OTHERWISE.
10. EXPOSED CEILINGS TO BE PAINTED P-4, UNLESS NOTED OTHERWISE.

(1) FINISH PLAN NOTES

TAG	DESCRIPTION
1	ECORE IMPACT ZONE TO BE FLUSH INLAID. SIZE TO BE 5' X 2'.
2	ECORE INLAID RUBBER LOGO TO BE MIDNIGHT BLUE 1407. VERIFY LOGO SIZE AND DIMENSIONS WITH OWNER.
3	ECORE INLAID RUBBER LOGO TO BE BRIGHT RED 1806. VERIFY LOGO SIZE AND DIMENSIONS WITH OWNER.
4	REFER TO INTERIOR ELEVATIONS FOR PAINT DESIGNATIONS.
5	FINISH RAW EDGE OF EXISTING FLOORING WITH METAL TRANSITION PIECE.
6	WALL TO BE PAINTED (P-4) FROM A.F.F. TO 3'-4" A.F.F. AND PAINT (P-1) FROM 3'-4" A.F.F. TO DECK ABOVE.



Door Leaf Types
Not To Scale



Door Frame Types
Not To Scale

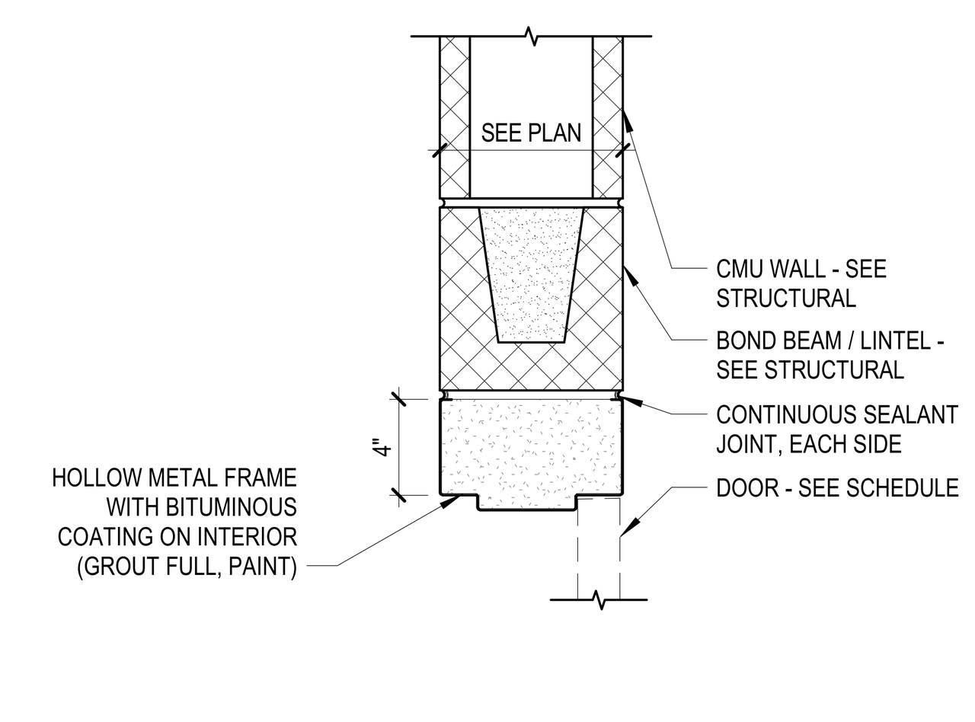
DOOR SCHEDULE NOTES

AL - ALUMINUM (CLEAR ANODIZED)
GHM - GALVANIZED HOLLOW METAL (HPC)
HM - HOLLOW METAL (PAINT)
HPC - HIGH-PERFORMANCE COATING
SMOKE - DOOR TO RECEIVE SMOKE SEALS
WD - SOLID CORE WOOD (STAIN)
ST - STAINLESS STEEL

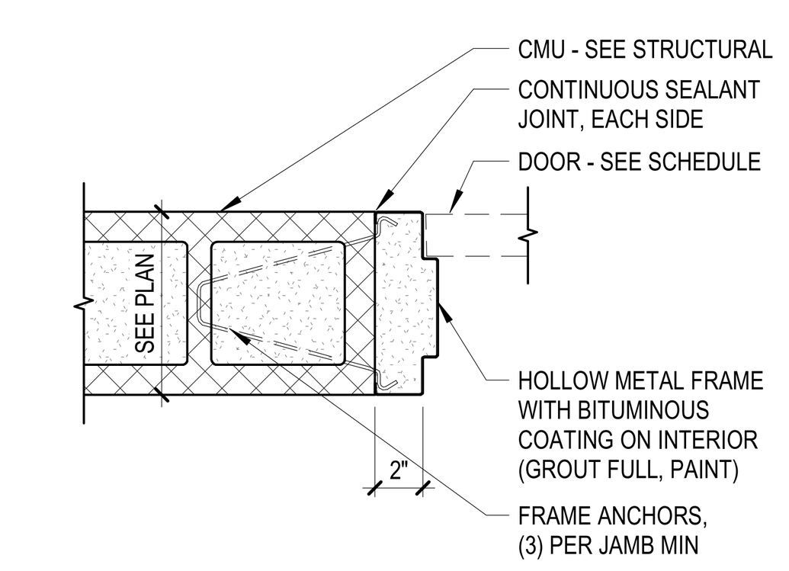
DOOR NOTES
1. EXTERIOR DOORS TO BE INSULATED / THERMALLY-BROKEN.
2. EXTERIOR GLAZING TO BE INSULATED UNITS.
3. ALL GLAZING TO BE CLEAR U.N.O.
4. SIZES PROVIDED ARE MASONRY ROUGH OPENINGS +3/8".
5. FIELD VERIFY DOOR SIZES FOR THIS OPENING.

DOOR SCHEDULE - NEW

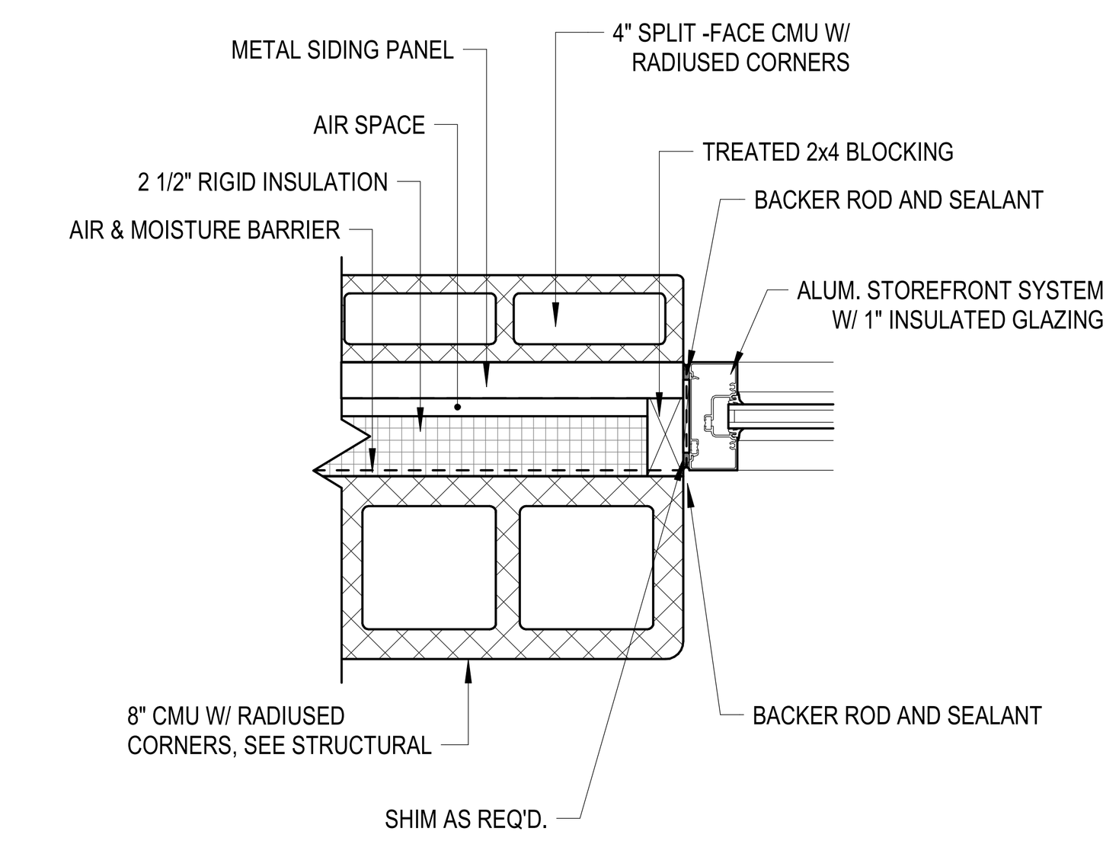
Door Number	Leaf Size: Opening Width	Leaf 1 Width	Leaf 2 Width	Height	Thickness	Leaf General: Leaf Type	Leaf Material	Glass: Glass Type	Frame General: Material	Frame Details: Sill	Jamb	Head (1)	Fire Rating	Comments
LOWER LEVEL														
A100A	6' - 0"	3' - 0"	3' - 0"	7' - 0"	1 3/4"	FG	AL	G-1	AL	---	---	---	---	
A100B	6' - 0"	3' - 0"	3' - 0"	7' - 0"	1 3/4"	FG	GHM	---	GHM	---	5/A-311B	6/A-311B	90min	
A102A	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	WD	---	HM	---	3/A-601	2/A-601	90min	
A102B	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	GHM	---	GHM	---	5/A-311B	6/A-311B	---	
A103	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	WD		HM	---	3/A-601	2/A-601		
A104	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	WD	---	HM	---	3/A-601	2/A-601	90min	
A106	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	WD	---	HM	---	3/A-601	2/A-601	---	
A107	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	WD	---	HM	---	3/A-601	2/A-601	---	
A108	5' - 10"	2' - 11"	2' - 11"	7' - 0"	1 3/4"	FG	AL	G-1	AL	---	---	6/A-311A	---	
A109	5' - 4 5/8"	2' - 8 5/16"	2' - 8 5/16"	7' - 0"	1 3/4"	FG	AL	G-1	AL	---	---	---	---	NOTE #5
A110	5' - 4 5/8"	2' - 8 5/16"	2' - 8 5/16"	7' - 0"	1 3/4"	FG	AL	G-1	AL	---	---	---	---	NOTE #5
FIRST FLOOR STADIUM														
B101A	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	GHM	---	GHM	---	5/A-311B	6/A-311B	---	
B101B	10' - 0"			4' - 0"	1 3/4"	CLG	AL	---	AL	8/A-311B	---	9/A-311B	---	NOTE #4
B101C	10' - 0"			4' - 0"	1 3/4"	CLG	AL	---	AL	8/A-311B	---	9/A-311B	---	NOTE #4
B102	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	GHM	---	GHM	---	5/A-311B	6/A-311B	---	
B103	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	HM	---	HM	---	3/A-601	2/A-601	---	
B104A	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	HM	---	HM	---	3/A-601	2/A-601	---	
B104B	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	HM	---	HM	---	3/A-601	2/A-601	---	
B105	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	GHM	---	GHM	---	5/A-311B	6/A-311B	---	
B106	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	GHM	---	GHM	---	5/A-311B	6/A-311B	---	
C101A	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	GHM	---	GHM	---	5/A-311B	6/A-311B	---	
C102A	3' - 0"	3' - 0"		7' - 0"	1 3/4"	F	GHM	---	GHM	---	5/A-311B	6/A-311B	---	



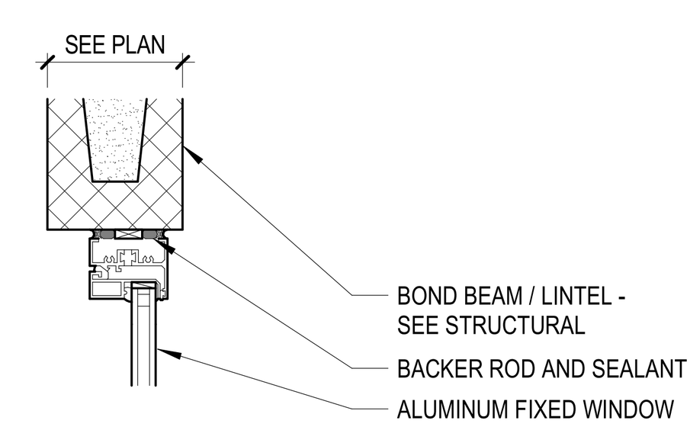
4 Int. Head Dtl. - HM Frame @ CMU
1 1/2" = 1'-0"



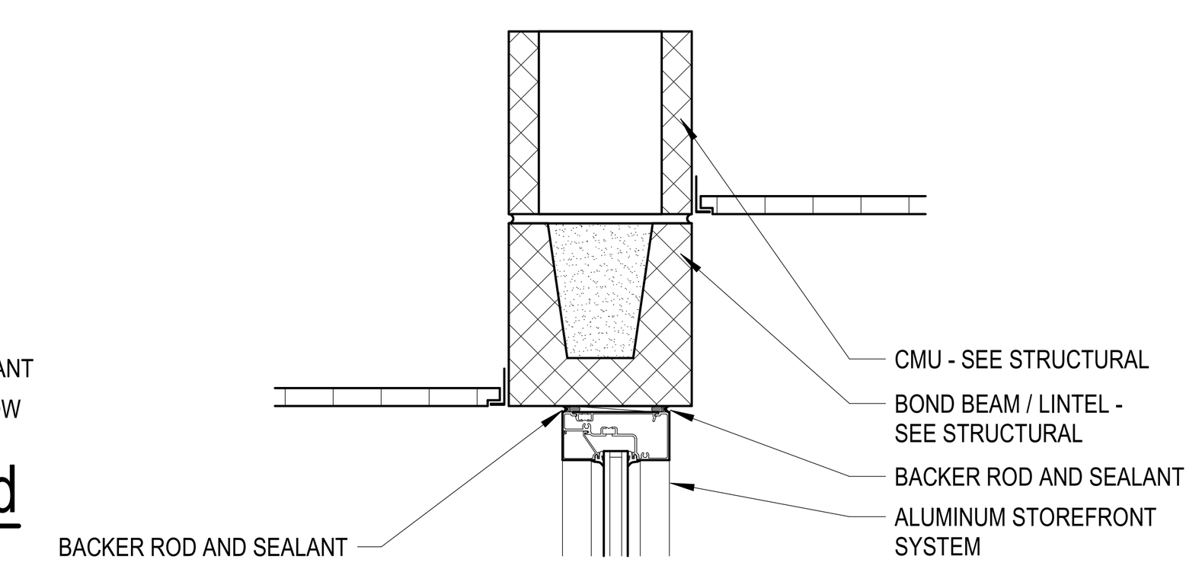
3 Int. Jamb Dtl. - HM Frame @ CMU
1 1/2" = 1'-0"



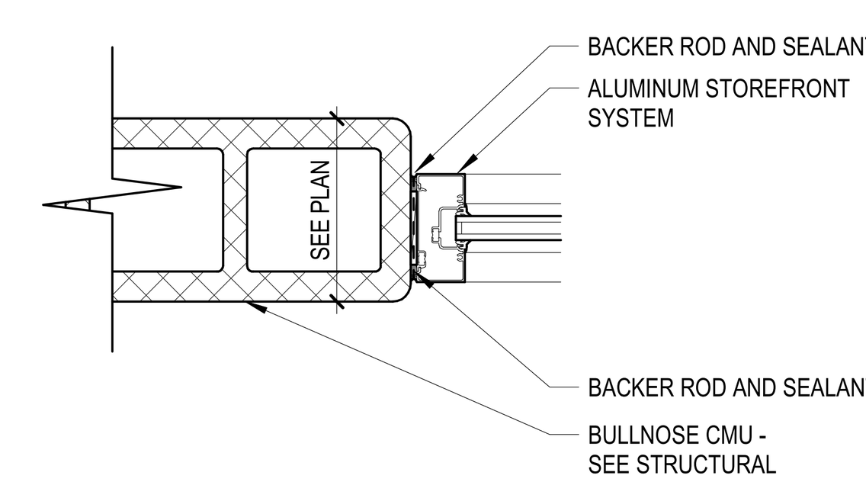
5 Ext. Jamb Dtl. - Storefront @ CMU
1 1/2" = 1'-0"



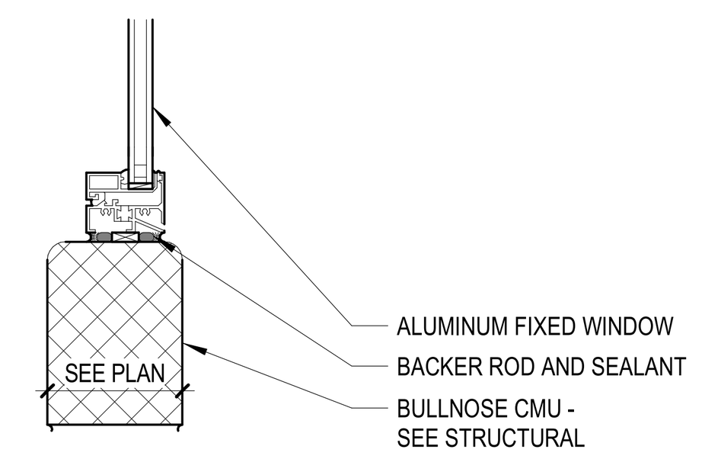
8 Enlarged Detail - AL Fixed Window Head
1 1/2" = 1'-0"



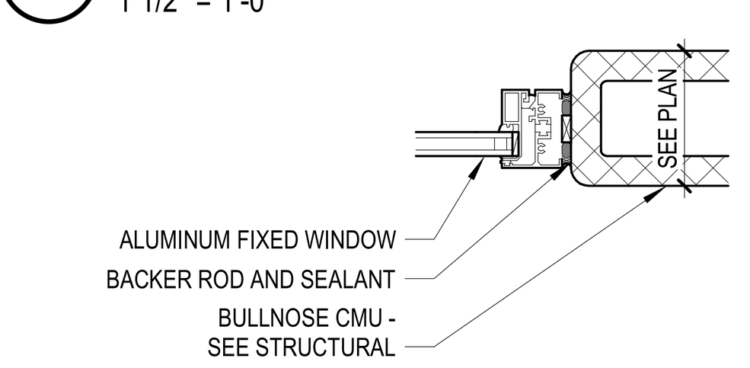
6 Int. Head Dtl. - Storefront @ CMU
1 1/2" = 1'-0"



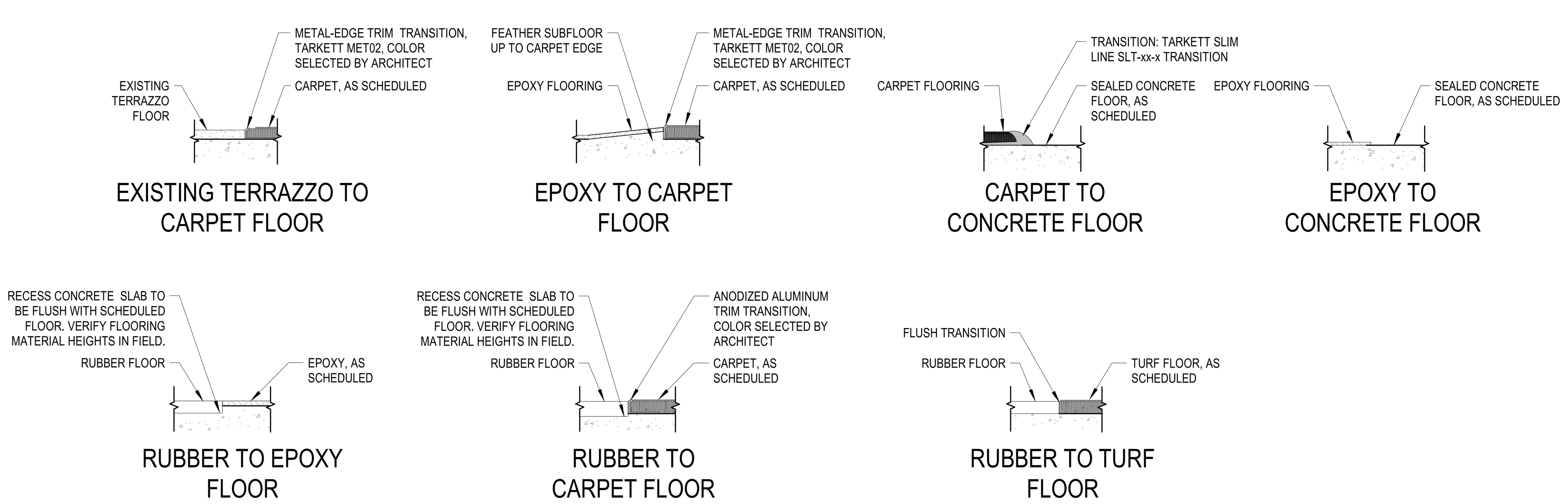
7 Int. Jamb Dtl. - Storefront @ CMU
1 1/2" = 1'-0"



10 Enlarged Detail - AL Fixed Window Sill
1 1/2" = 1'-0"



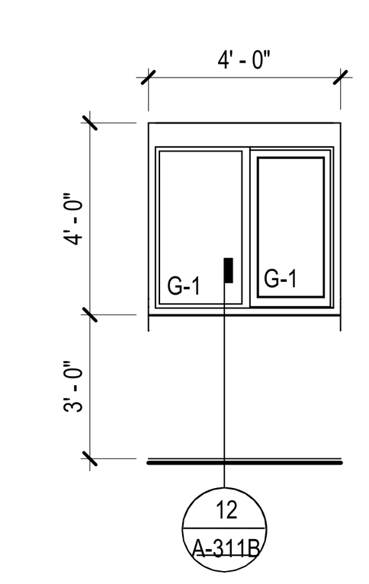
9 Enlarged Detail - AL Fixed Window Jamb
1 1/2" = 1'-0"



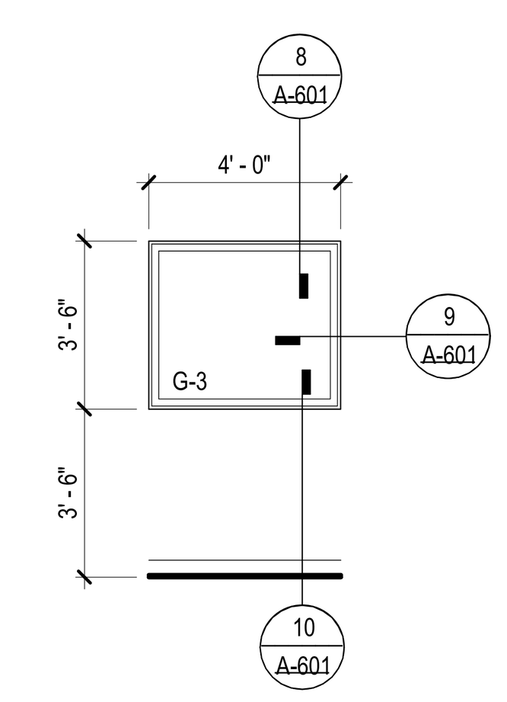
Flooring Transitions
Not To Scale

GLAZING LEGEND

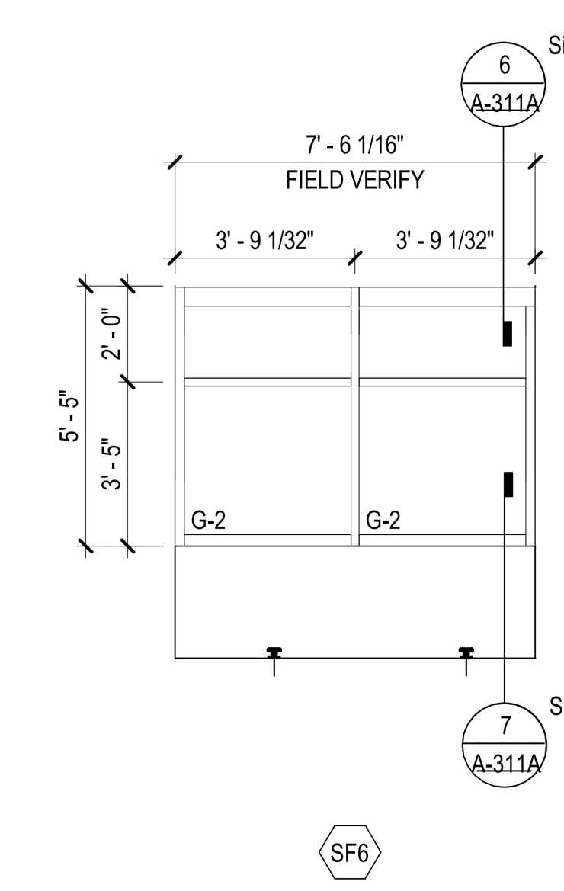
G-1 INSULATED GLASS CLEAR
G-2 INSULATED GLASS TINTED
G-3 1/4" CLEAR TEMPERED

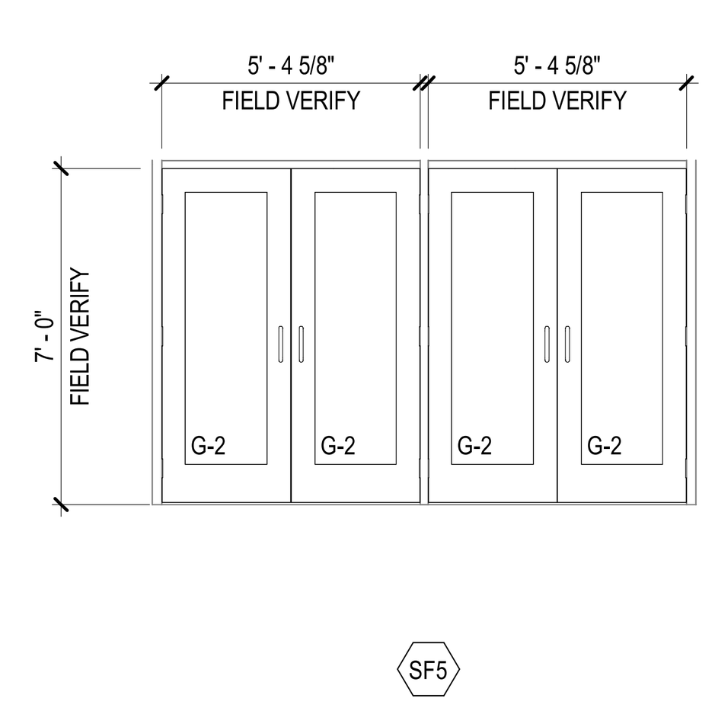


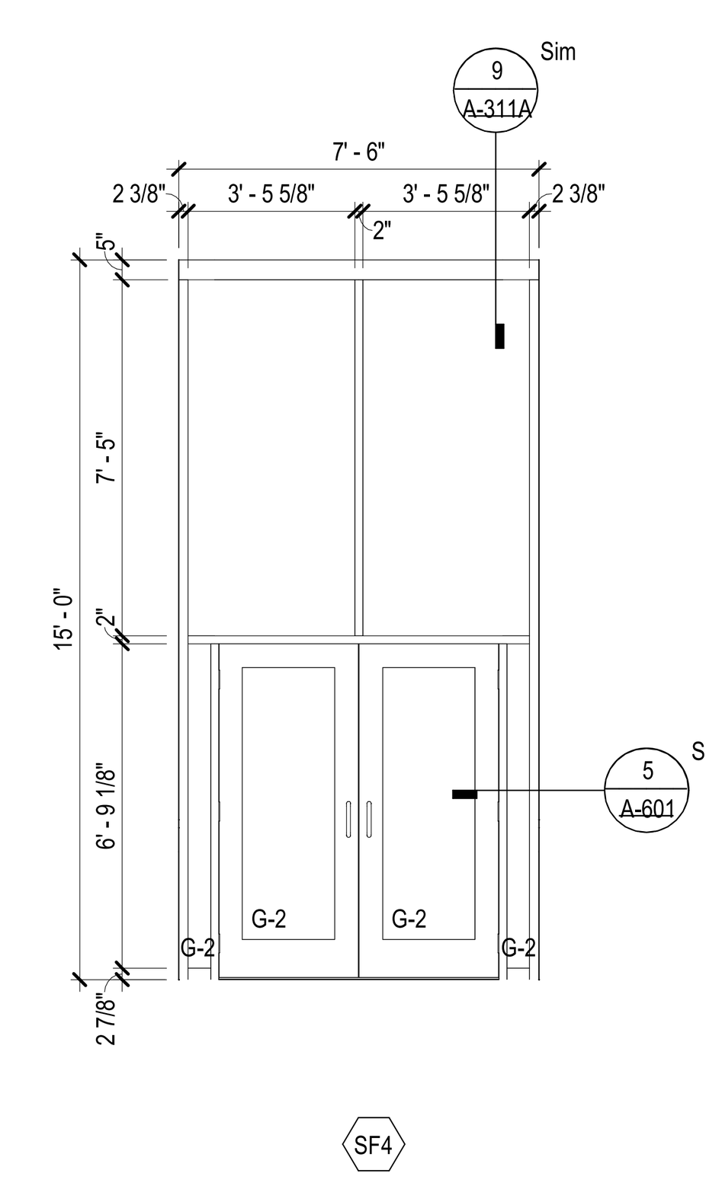
2 Transaction Window
1/4" = 1'-0"

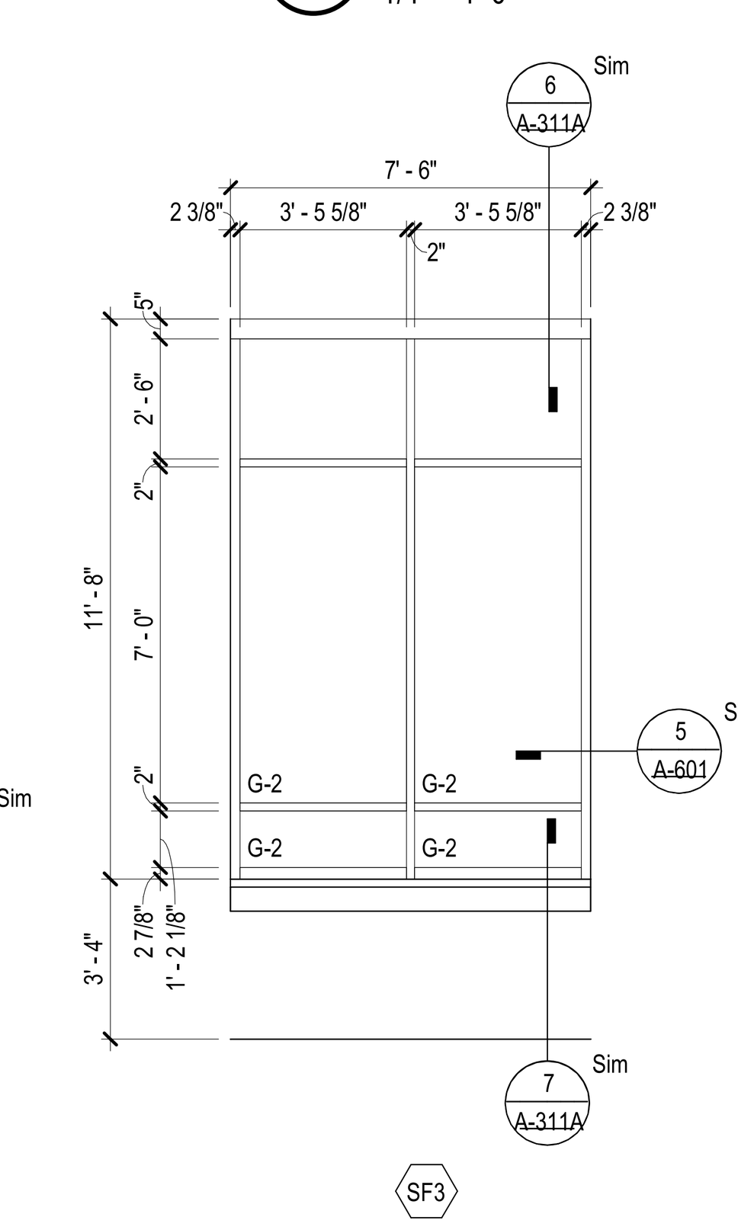


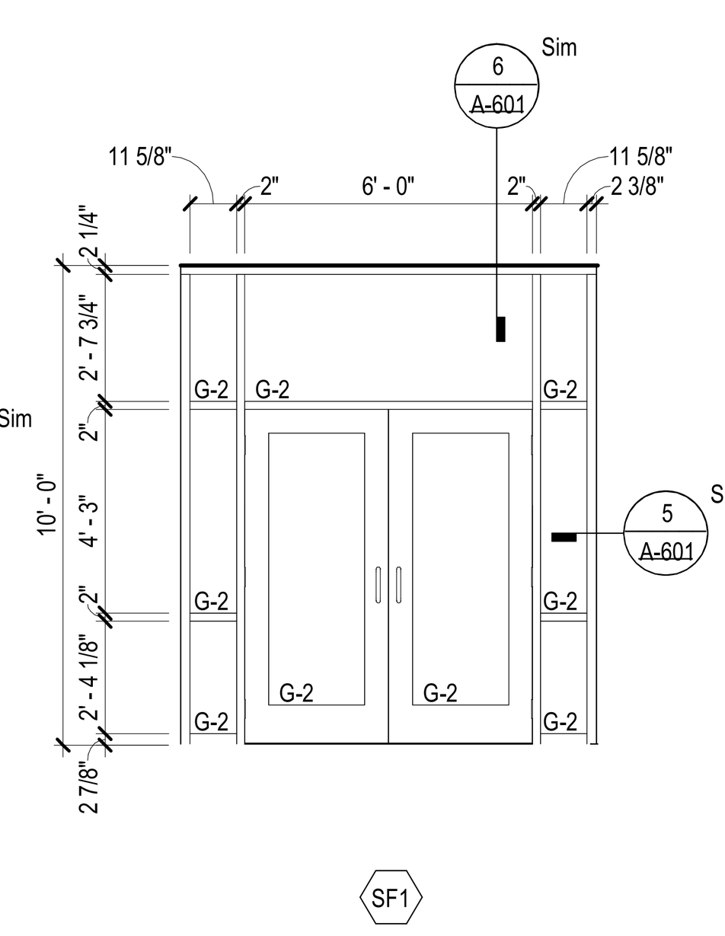
1 Fixed Window
1/4" = 1'-0"











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No. 10100148
STATE OF INDIANA
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WEST NOBLE CHARGERS

West Noble High School Renovation and Addition
5050 US-33,
Ligonier, IN, 46767

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	2/21/2024

PROJECT NO. 2301108
ISSUE DATE 02-12-2024
SUBMITTAL 100% Construction Documents

Architectural Schedules & Diagrams

OCCUPANCY SENSOR SCHEDULE

SYMBOL	MANUFACTURER	MOUNT	COVERAGE REMARKS
OS1 (x)	SENSOR SWITCH #CM-PDT-9	CEILING	DUAL TECHNOLOGY; ISOLATED RELAY; SMALL MOTION: 12ft
OS2 (x)	SENSOR SWITCH #CM-PDT-10	CEILING	DUAL TECHNOLOGY; ISOLATED RELAY; LRG MOTION: 24ft
OS (x)	SENSOR SWITCH #WV-PDT-KIT	WALL	DUAL TECHNOLOGY; WALL MOUNT; SMALL MOTION: 40ft - LRG MOTION: 70ft; ISOLATED RELAY
$OS (x)	SENSOR SWITCH #WSX-PDT	WALL	AUTOMATIC SWITCH-DUAL TECHNOLOGY SWITCH BUTTON; 180°; SMALL MOTION: 20ft - LRG MOTION: 36ft

GENERAL SENSOR NOTES:

ALL SENSORS SHALL HAVE TIME DELAY AND SENSITIVITY ADJUSTMENT CAPABILITIES.

ONE POWER PACK IS REQUIRED FOR EVERY SENSOR.

CEILING MOUNTED OCCUPANCY SENSORS SHOULD BE LOCATED A MINIMUM OF SIX FEET FROM HVAC SUPPLY/RETURN VENTS.

OCCUPANCY SENSORS MOUNTED OVER A DOOR MUST BE PLACED ONE FOOT INSIDE THE THRESHOLD.

CONTRACTOR SHALL FIELD VERIFY ALL CEILING HEIGHTS WITH SPECIFIED OCCUPANCY SENSOR AND BRING ANY DISCREPANCIES TO ENGINEERS ATTENTION.

ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL SENSITIVITY AND TIME DELAY SETTINGS.

EQUAL MANUFACTURER'S:

SENSOR SWITCH IS THE BASIS OF DESIGN CRITERIA UNDER PARAMETERS LISTED.

ACCEPTED MANUFACTURER'S: GREENGATE, HUBBELL, LUTRON, LEVITON, AND WATT STOPPER, UNLESS NOTED OTHERWISE.

ACCEPTED MANUFACTURER'S SHALL MEET OR EXCEED DESIGN PARAMETERS. IF PARAMETERS CAN NOT BE MATCHED, PROVIDE DETAILED SUBMITTALS FOR ENGINEERING REVIEW AND APPROVAL INDICATING NUMBER OF ADDITIONAL SENSORS REQUIRED TO MEET PARAMETERS WITH A 30% OVERLAP OF COVERAGE. ANY ADDITIONAL SENSORS REQUIRED TO MEET PARAMETERS ALONG WITH ANY REQUIRED HARDWARE, WIRING, ACCESSORIES AND LABOR SHALL BE AT THE EXPENSE OF THE EQUIPMENT SUPPLIER.

PACKAGE SHALL BE SUPPLIED BY SINGLE MANUFACTURER CAPABLE OF MEETING 100% OF SPECIFICATION.

EXTRA MATERIALS:

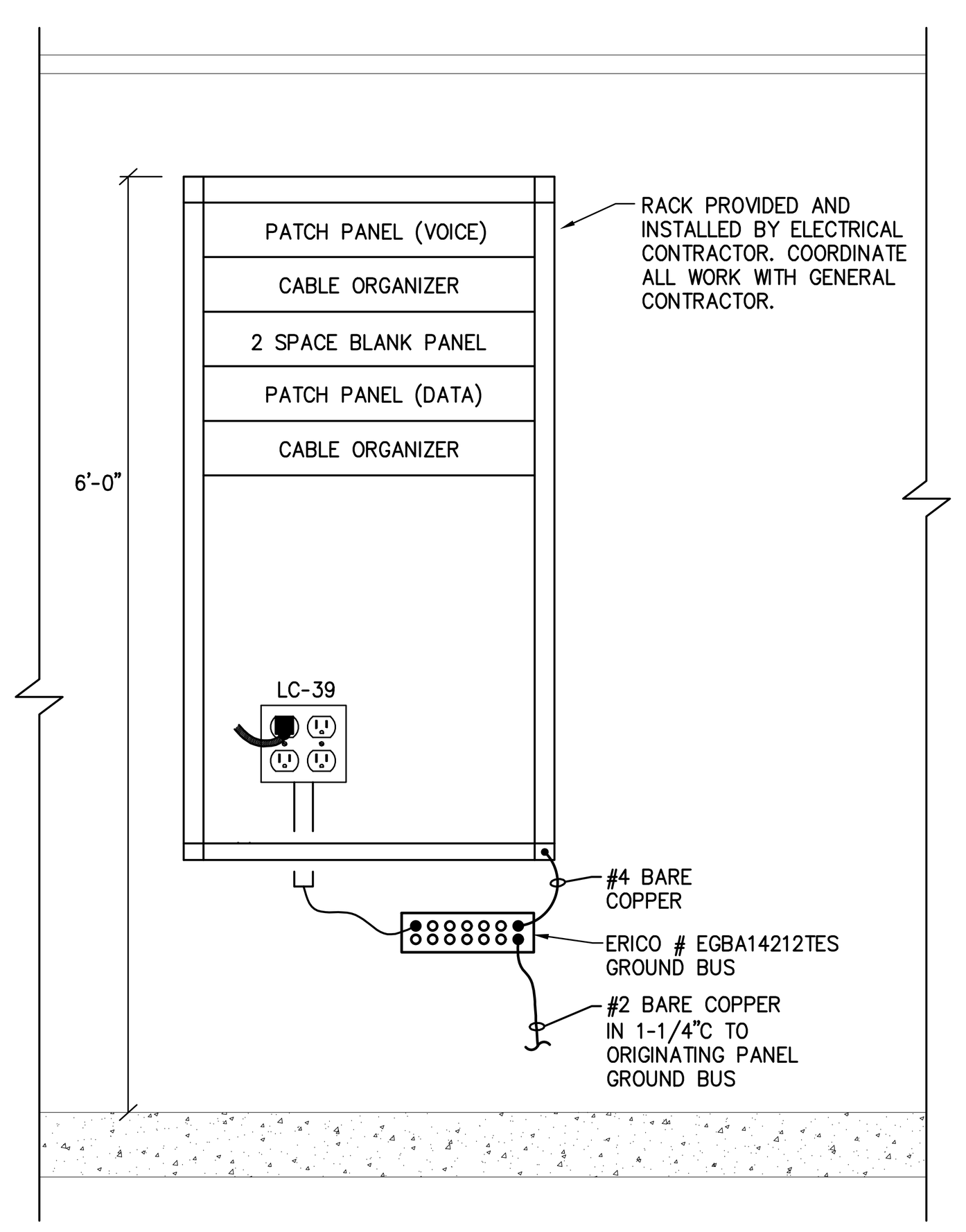
ELECTRICAL CONTRACTOR SHALL PROVIDE MATERIAL AND LABOR AS REQUIRED FOR THE COMPLETE INSTALLATION OF (2) ADDITIONAL OCCUPANCY SENSORS AND ASSOCIATED POWER PACKS OF EACH TYPE TO BE LOCATED BY THE ENGINEER DURING CONSTRUCTION.

LUMINAIRE SCHEDULE

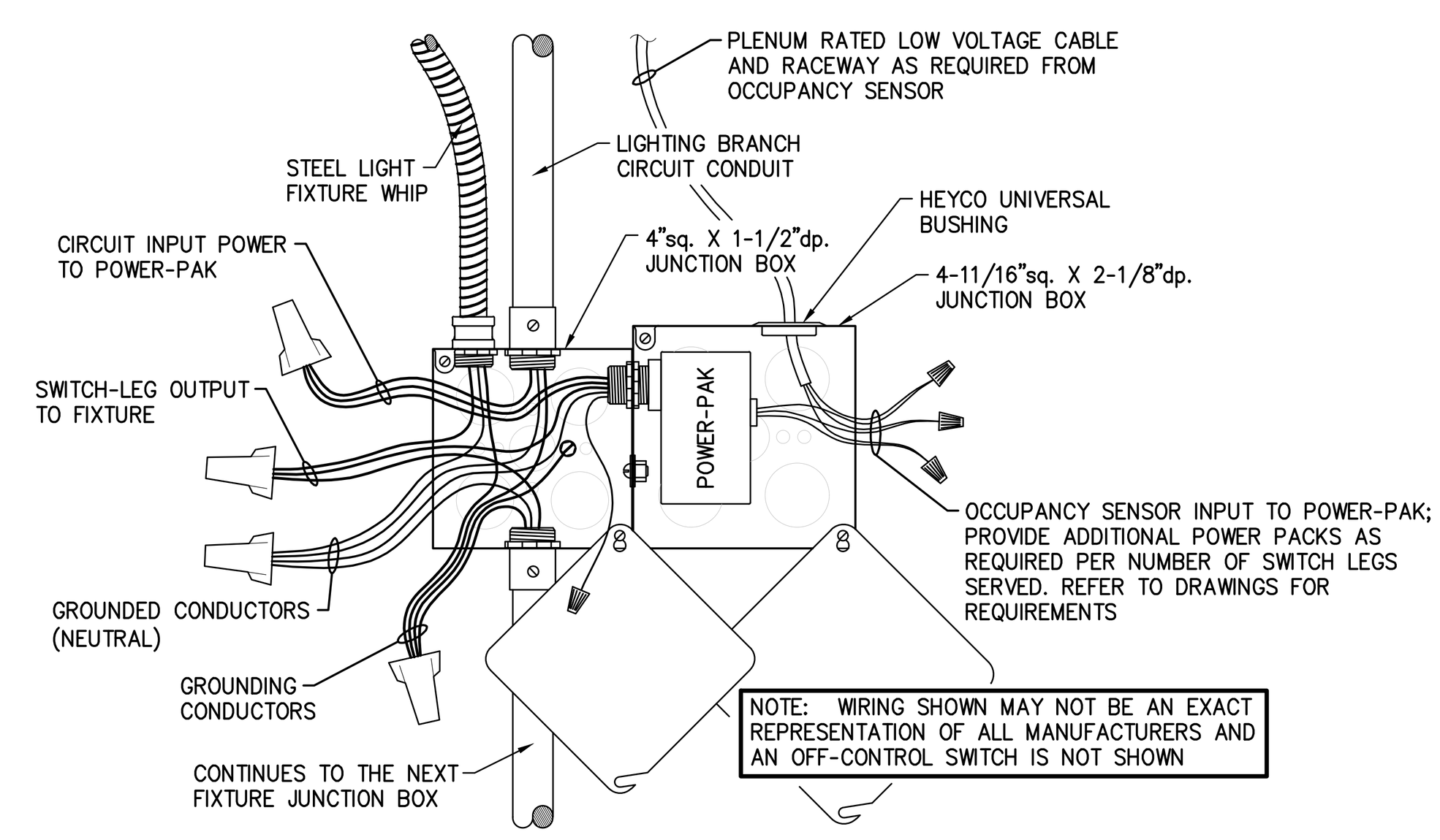
TYPE	MANUFACTURER'S CATALOG NUMBER	MOUNT	LED		VOLTAGE	INPUT WATTS	REMARKS
			LUMENS	COLOR			
L01	LITHONIA #LL8 10000LM 80CRI 35K CPD MIN10 ZT MVOLT WH ZAC120 ZACFP120 METALUX, COLUMBIA	SUSPENDED	9786	3500k	120/277	79	CONTRACTOR SHALL PROVIDE AND INSTALL COMPATABLE SWITCHING AND CABLING REQUIRED FOR 0 10V DIMMING, DIMMING DOWN TO 10%
L01E	SAME AS L01 EXCEPT WITH IE10WCP BATTERY PACK; TERMINATE TO LINE SIDE OF CIRCUIT SUCH THAT UPON LOSS OF POWER, LAMPS ENERGIZE. BATTERY PACK SHALL BE FACTORY INSTALLED.						
L02	LITHONIA #2BLT4 48L SDSM MVOLT GZ1 LP840 METALUX, COLUMBIA	GRID	5039	4000k	120/277	38	CONTRACTOR SHALL PROVIDE AND INSTALL COMPATABLE SWITCHING AND CABLING REQUIRED FOR 0 10V DIMMING, DIMMING DOWN TO 10%
L02E	SAME AS L02 EXCEPT WITH EL14LSD BATTERY PACK; TERMINATE TO LINE SIDE OF CIRCUIT SUCH THAT UPON LOSS OF POWER, LAMPS ENERGIZE. BATTERY PACK SHALL BE FACTORY INSTALLED.						
L03	LITHONIA #2BLT4 60L SDSM MVOLT GZ1 LP840 METALUX, COLUMBIA	GRID	6083	4000k	120/277	46	CONTRACTOR SHALL PROVIDE AND INSTALL COMPATABLE SWITCHING AND CABLING REQUIRED FOR 0 10V DIMMING, DIMMING DOWN TO 10%
L03E	SAME AS L03 EXCEPT WITH EL14LSD BATTERY PACK; TERMINATE TO LINE SIDE OF CIRCUIT SUCH THAT UPON LOSS OF POWER, LAMPS ENERGIZE. BATTERY PACK SHALL BE FACTORY INSTALLED.						
L04	LITHONIA #2BLT2 40L SDSM MVOLT GZ1 LP840 METALUX, COLUMBIA	GRID	4034	4000k	120/277	31	CONTRACTOR SHALL PROVIDE AND INSTALL COMPATABLE SWITCHING AND CABLING REQUIRED FOR 0 10V DIMMING, DIMMING DOWN TO 10%
L04E	SAME AS L04 EXCEPT WITH EL14LSD BATTERY PACK; TERMINATE TO LINE SIDE OF CIRCUIT SUCH THAT UPON LOSS OF POWER, LAMPS ENERGIZE. BATTERY PACK SHALL BE FACTORY INSTALLED.						
L05	LITHONIA #FMVTSL-24IN-MVOLT-30K-90CRI-BN METALUX, COLUMBIA	WALL	1302	3000k	120	18	-
L06	LITHONIA #LDN6 30/07 L06 AR LSS TRW MVOLT GZ1 ELRSD HALO, LIGHTOLIER	CANOPY	758	3000k	120/277	9	CONTRACTOR SHALL PROVIDE AND INSTALL COMPATABLE SWITCHING AND CABLING REQUIRED FOR 0 10V DIMMING, DIMMING DOWN TO 10% -
L06E	SAME AS L06 EXCEPT WITH ELRSD BATTERY PACK; TERMINATE TO LINE SIDE OF CIRCUIT SUCH THAT UPON LOSS OF POWER, LAMPS ENERGIZE. BATTERY PACK SHALL BE FACTORY INSTALLED.						
L07	LITHONIA #LDN6 30/15 L06 AR LSS TRW MVOLT GZ1 ELRSD HALO, LIGHTOLIER	CANOPY	758	3000k	120/277	9	CONTRACTOR SHALL PROVIDE AND INSTALL COMPATABLE SWITCHING AND CABLING REQUIRED FOR 0 10V DIMMING, DIMMING DOWN TO 10% -
L07E	SAME AS L06 EXCEPT WITH ELRSD BATTERY PACK; TERMINATE TO LINE SIDE OF CIRCUIT SUCH THAT UPON LOSS OF POWER, LAMPS ENERGIZE. BATTERY PACK SHALL BE FACTORY INSTALLED.						
L08	LITHONIA #CLX L48 5000LM SEF _ FDL _ MVOLT EZ1 40K 80CRI ZACVHM100 METALUX, COLUMBIA	SUSPENDED	5000	4000k	120/277	32	
L08E	SAME AS L08 EXCEPT WITH E10WLCP BATTERY PACK; TERMINATE TO LINE SIDE OF CIRCUIT SUCH THAT UPON LOSS OF POWER, LAMPS ENERGIZE. BATTERY PACK SHALL BE FACTORY INSTALLED.						
L09	LITHONIA #2GTL 4 72L FN A12125 MVOLT EZ1 LP840 METALUX, COLUMBIA	GRID	6083	4000k	120/277	65	
L09E	SAME AS L09 EXCEPT WITH EL14L BATTERY PACK; TERMINATE TO LINE SIDE OF CIRCUIT SUCH THAT UPON LOSS OF POWER, LAMPS ENERGIZE. BATTERY PACK SHALL BE FACTORY INSTALLED.						
L10	LITHONIA #LDN4 30/20 L06 AR LSS xxx MVOLT GZ1 ELRSD HALO, LIGHTOLIER	CANOPY	2006	3000k	120/277	22	CONTRACTOR SHALL PROVIDE AND INSTALL COMPATABLE SWITCHING AND CABLING REQUIRED FOR 0 10V DIMMING, DIMMING DOWN TO 10% -
L10E	SAME AS L10 EXCEPT WITH ELRSD BATTERY PACK; TERMINATE TO LINE SIDE OF CIRCUIT SUCH THAT UPON LOSS OF POWER, LAMPS ENERGIZE. BATTERY PACK SHALL BE FACTORY INSTALLED.						
L11	TIVOLI - FLEX 120 #FLX120 28 30 120 W/ PVC MOUNT CLIPS #FLX120-CLIP-01 DURATAPE, JUNO	EXTERIOR SURFACE	460/FT	3000K	120	6/FT	CONTRACTOR SHALL PROVIDE AND INSTALL HARDWARE AND ACCESSORIES TO SUPPORT TAPE TO UNDERSIDE OF THE 21' ARCHWAY. REFER TO PLANS FOR ADDITIONAL INFORMATION.
W01	LITHONIA #WDGE2 LED P1 30K 80CRI T2M MVOLT SRM DDBXD McGRAW EDISON, KIM	WALL	1200	3000K	120/277	11	
W01E	SAME AS W01 EXCEPT WITH E20WC BATTERY PACK; TERMINATE TO LINE SIDE OF CIRCUIT SUCH THAT UPON LOSS OF POWER, LAMPS ENERGIZE. BATTERY PACK SHALL BE FACTORY INSTALLED.						
W02	BEGA #24088 K3 BLK McGRAW EDISON, KIM	WALL	316	3000K	120/277	9	
W03	NOT USED						
P01	NOT USED	-	-	-	-	-	
P02	LITHONIA #RAD1LED P3 30K SYM MVOLT RPA DDBXD McGRAW EDISON, BEACON	POLE	7382	3000K	120/277	54	PROVIDE WITH 12' ROUND STRAIGHT ALUMINUM POLE, FINISH COLOR BY ARCHITECT. CONTRACTOR SHALL PROVIDE SEPARATE FUSE IN HAND BOX OF THE POLE BASE.

THESE REMARKS APPLY TO ALL LUMINAIRE TYPES:

- LUMINAIRES HAVE BEEN SPECIFIED ON A PERFORMANCE BASIS.
- LUMINAIRES LISTED ARE APPROVED, EQUALS MUST BE SUBMITTED FOR APPROVAL PRIOR TO BID.
  - LUMINAIRE SHALL BE COMPARABLE IN APERTURE SIZE
  - LED'S SHALL HAVE THE SAME KELVIN TEMPERATURE
  - LUMINAIRE SHALL MEET OR EXCEED THE LUMEN OUTPUT OF SPECIFIED LUMINAIRE
  - LUMINAIRE SHALL NOT EXCEED THE WATTAGE BY MORE THAN 10%
  - PROVIDED SUBMITTAL SHALL INCLUDE INFORMATION ON LM-79/LM-80 TESTING, NUMBER OF LED'S AND ENGINES, DRIVER INFORMATION (INCLUDING DRIVE CURRENT), SYSTEM WATTAGE, AND WARRANTY INFORMATION
  - ANY APPROVED LUMINAIRES SHALL BE LISTED DURING THE ADDENDA PROCESS. NO VERBAL APPROVALS SHALL BE GIVEN OR ACKNOWLEDGED.
- REFER TO FLOOR PLAN FOR SINGLE OR DUAL SWITCHING REQUIREMENTS
- LISTED EMERGENCY BATTERY PACKS/TRANSFER DEVICES SHALL BE FACTORY MOUNTED WITHIN LUMINAIRE AND TERMINATED AS REQUIRED
- TEST SWITCHES FOR EM FIXTURES WHICH ARE NOT INTEGRAL TO THE FIXTURES SHALL BE MOUNTED VISIBLY ADJACENT TO THE FIXTURE.
- UNLESS SPECIFICALLY NOTED, LED DRIVERS SHALL BE INTERNAL TO THE FIXTURE, NOT REMOTE
- FIXTURES SHALL BE SUPPLIED WITH FACTORY INSTALLED WHIPS.
- ADDITIONAL EXITS AND EMERGENCY LIGHTING MAY BE REQUIRED PENDING AHJ REVIEW, ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ADDITIONAL FIXTURES AS REQUIRED.
- MATERIAL ALLOWANCES LISTED ARE ONLY FOR THE COST OF THE LUMINAIRE OR LUMINAIRE COMBINATION AS NOTED.
- BASE BID SHALL INCLUDE ALL HARDWARE, CONDUIT, WIRE AND LABOR NEEDED FOR A COMPLETE AND FUNCTIONAL INSTALLATION OF ALL LUMINAIRES.
- ELECTRICAL CONTRACTOR SHALL MOUNT ALL SURFACE MOUNTED EXIT LIGHTS 6 INCHES ABOVE DOOR HEADER.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE TO VERIFY EXISTING EXIT SIGN COLOR IN EXISTING BUILDING, AND ENSURE THAT ANY EXIT SIGNS THAT ARE ADDED/REPLACED IN THE BUILDING SHALL MATCH EXISTING EXIT SIGN COLOR.



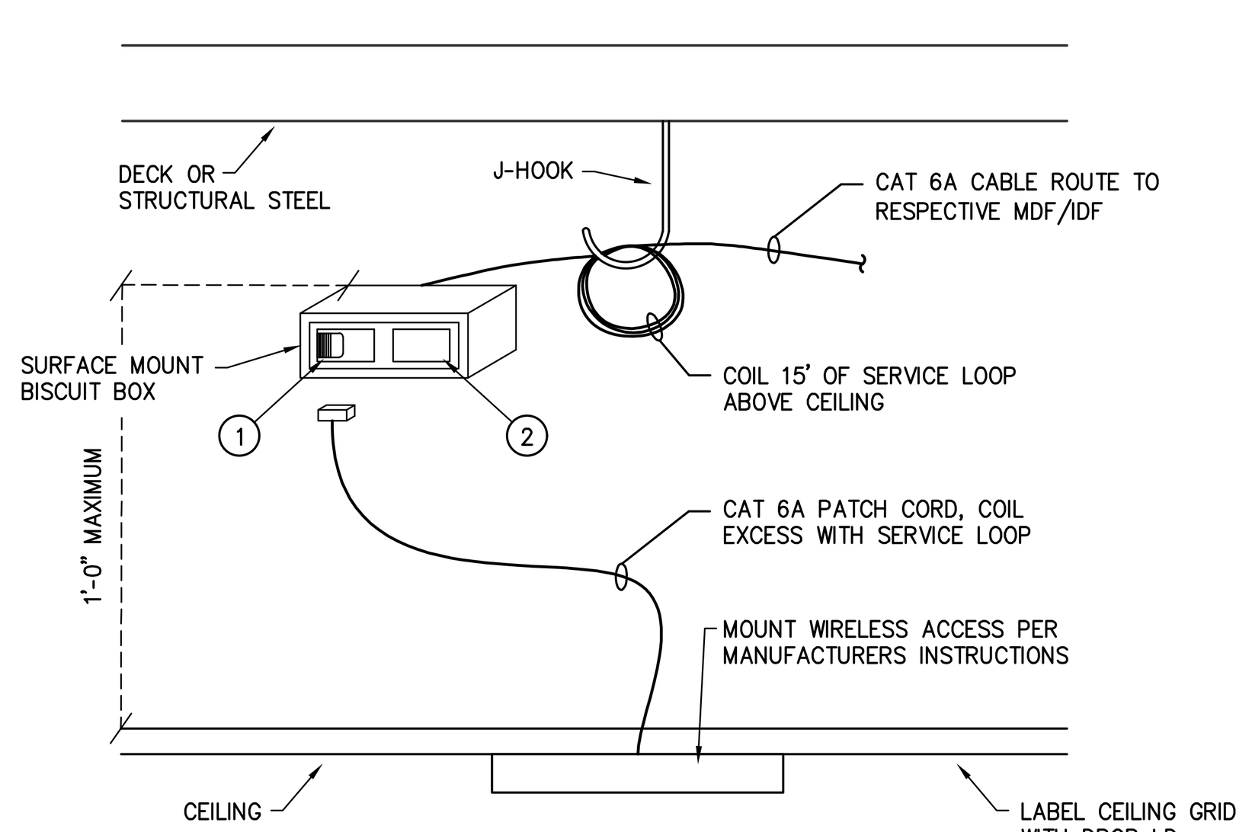
7 IDF ELEVATION
NOT TO SCALE



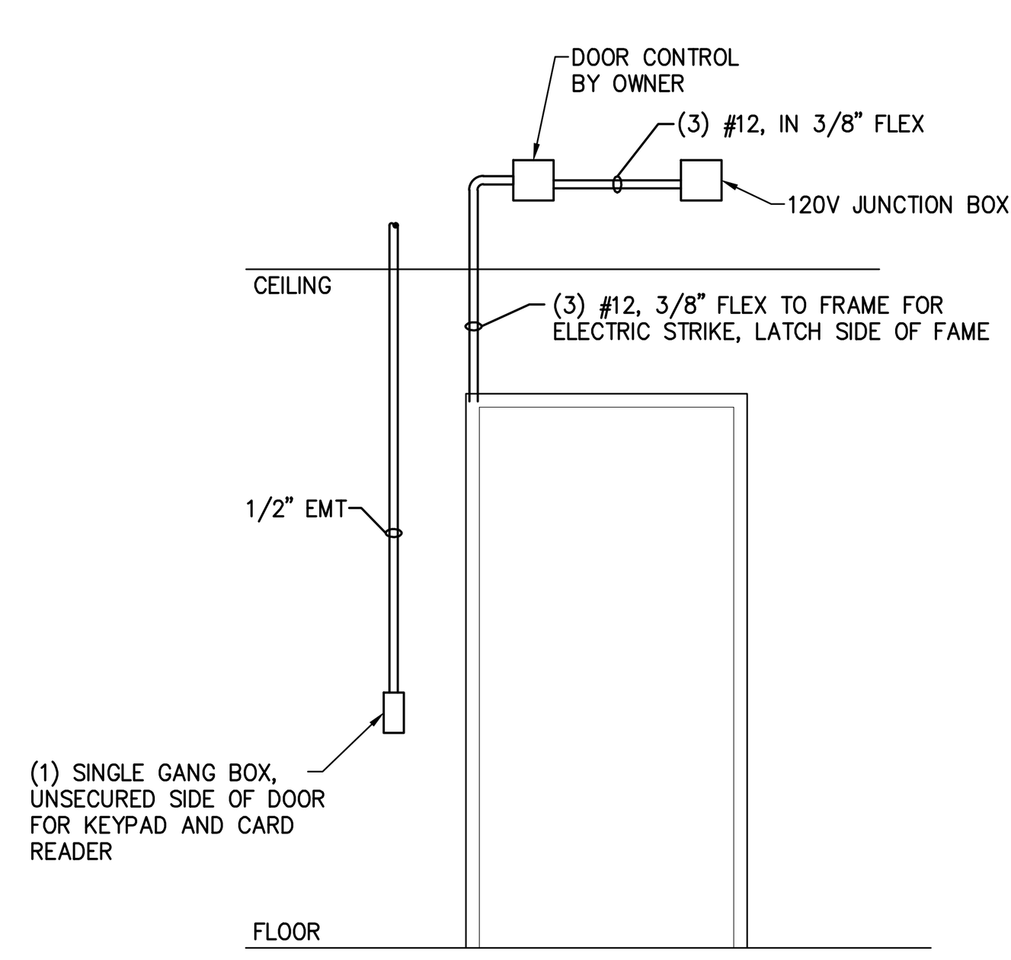
4 OCCUPANCY SENSOR POWER-PAK MOUNTING DETAIL
NOT TO SCALE

DETAIL NOTES

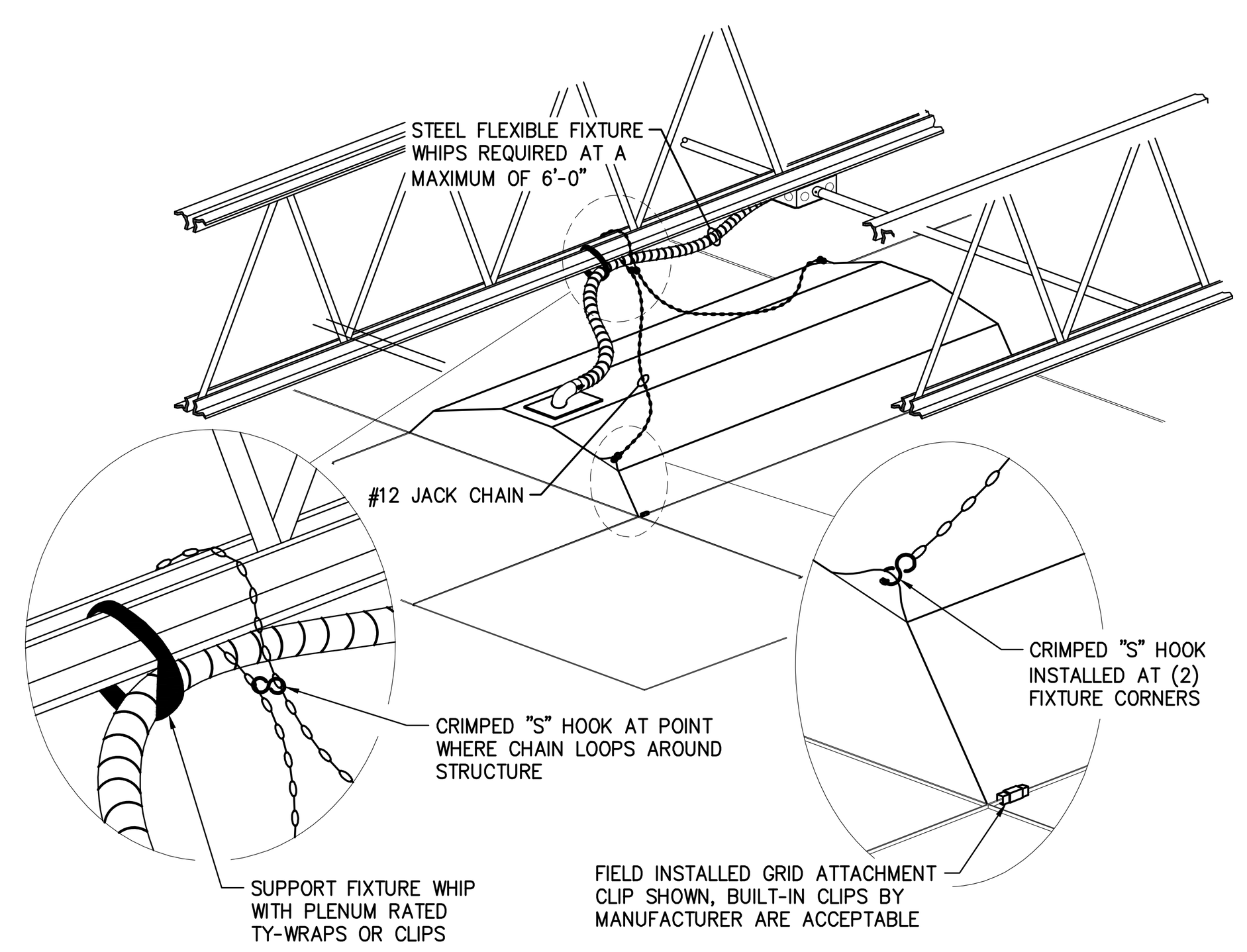
1. CAT. 6A OUTLET, ROUTE CAT 6A CABLE TO RESPECTIVE MDF/IDF.
2. BLANK.



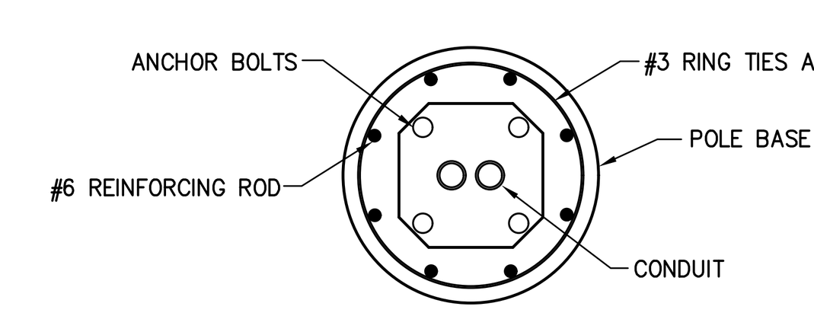
8 WAP WIRELESS ACCESS POINT CEILING MOUNT DETAIL
NOT TO SCALE — TYPICAL ALL LOCATIONS



5 DOOR SECURITY ROUGH-IN FOR DOOR CONTROL
NOT TO SCALE

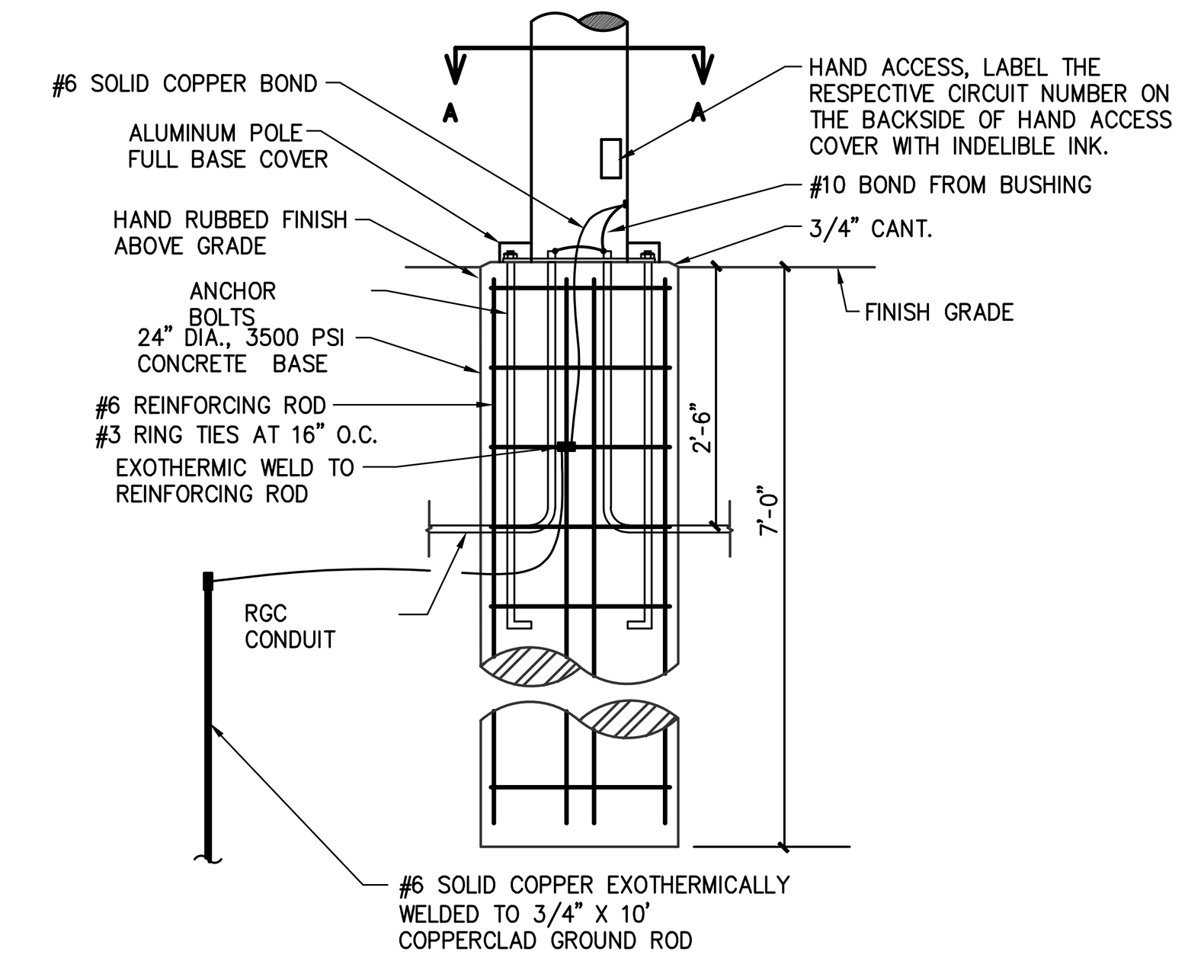


3 LAY-IN FIXTURE INSTALLATION
NOT TO SCALE



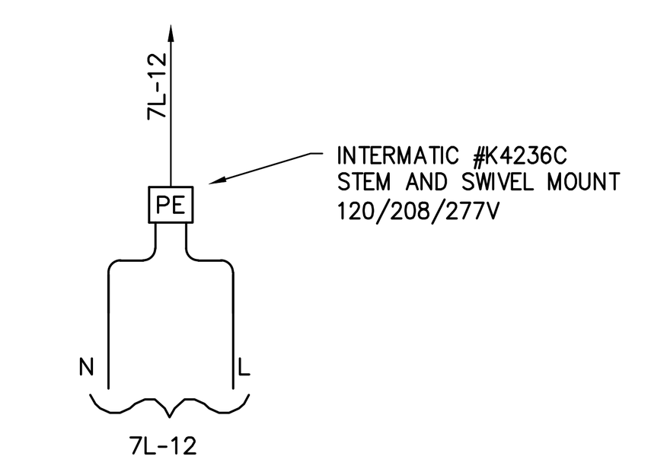
SECTION "A-A"

POLE BASE SHALL BE SET BACK FROM THE EDGE OF PAVEMENT TO THE EDGE OF THE CONCRETE BASE 3', UNLESS OTHERWISE NOTED.

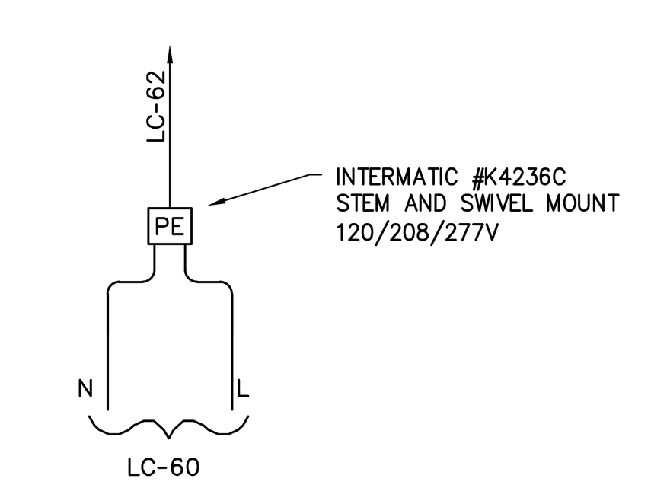


CONTRACTOR SHALL COORDINATE POLE BASE LOCATIONS WITH GENERAL CONTRACTOR, ARCHITECT, AND ALL TRADES PRIOR TO INSTALLATION OF POLE BASE(S)

2 POLE BASE DETAIL
NOT TO SCALE



6 EXTERIOR LIGHTING DIAGRAM
NOT TO SCALE



1 EXTERIOR LIGHTING DIAGRAM
NOT TO SCALE

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SEAL

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Ligonier, IN, 46767

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	02.21.24

PROJECT NO. 2301108 (232707)
ISSUE DATE 02-12-2024
SUBMITTAL
100% Construction Documents

ELECTRICAL SCHEDULES

E-601