Pre-Bid Questions

1. Will the answers to these questions be published in an Addendum and become part of the Contract Documents?

   Yes

2. Please advise if sales / use taxes are to be included in the bid? Part 3 in the terms & conditions states that Sauk is exempt from Taxes. If this is correct, will a Tax-exempt certification be provided to the awarded contractor for use to purchase all materials?

   Sauk County is Tax Exempt and provide the winning Bidder with a Tax Exempt certificate when the contract is signed.

3. Please confirm the owner will be contracting, managing and scheduling the Carpet / Flooring and Painting work. Will the Owner require these subcontractors to include the Contractor of this project as Additionally Insured?

   Sauk County will be managing the painting and carpet and flooring with our staff. Furniture moves will also be coordinated through Sauk County.

4. Will the General Contractor need to coordinate with the Flooring removal / Replacement and painting work being done by the owner during the course of this project? Will the General Contractor need to schedule and manage the Owners subs / work?

   No, Sauk County will be managing the painting and carpet and flooring with our staff. Furniture moves will also be coordinated through Sauk County. GC will need to provide a 2-3 week look ahead so Sauk County can coordinate with office/area occupants.

5. Is a building permit expected to be pulled and paid for by the General contractor? If so how does the owners' work relate to the permit?

   Yes, The General Contractor will need to acquire the permit from the City of Baraboo.

6. Are the HVAC bids to be submitted to Sauk County or to the General Contractor for a complete single source bid?

   Yes, Single source bid with the HVAC bid

7. Are the Electrical Bids to be submitted to Sauk County or to the general contractor for a complete single source bid?

   Yes, Single source bid with the electrical bid

8. What is the anticipated award date for this project?

   Anticipated award date is February, 9th, 2026

9. When is the "Notice to Proceed" anticipated to be issued?

   Anticipated Notice to proceed date is February, 16th, 2026

10. When is the anticipated "Start of Construction" for this project?

    Anticipated Construction start would be April/May 2026

11. Current economic conditions have resulted in extended lead times on equipment. How will these extended lead times on necessary equipment be accounted for in the contract?

    i. Will all materials be required to be on site prior to starting the project?

    No

    ii. Will the contract duration be extended to account for long lead time items?

    Yes

12. Is there a specific location for a site construction Trailer / Staging Area? If so can you please advise where it is located?

    If a trailer is needed, it can be staged on the North ramp off 4th Ave. Space within the facility can be used by construction staff for meetings if needed.

13. Will a Construction Fence be required around the staging area and trailer?

    No

14. Structural drawings could not be located in the bid documents, although they are noted on T001. Will the structural drawings be provided in an Addendum?

    See Addendum for clarification.

15. Please double check the entire spec book as the TOC list many sections after 01 79 00 through 23 05 13, but page 94 ends section 01 79 00 and page 95 starts 23 05 13? I am not seeing anything for the sections in between, is there a problem with the document? It looks like Divisions 02, 03, 04, 05, 06, 07, 08, and 09 all appear to be missing, will these specifications be provided?

    See Addendum for clarification.

16. Are there any "poor soils" that will need to be accounted for at the location of the new area well?

    No

17. If "poor soils" are encountered during excavation how will these issues be dealt with, IF encountered?

    This would be addressed as unforeseen conditions in accordance with the AIA Contract documents.

18. Is there a soils report that can be provided for information around the location of the new area well that would also identify contaminated soils if any?

    No

19. Please provide direction on how the project will be phased. Is the plan to start in a certain area and work in one direction or another? What is the intention/flow of how to complete the work throughout the building?

    a. Mech piping work w/ stubs at each floor, then add new AHU in Basement 1st floor, tie into Mech piping and ceiling work, 3rd floor piping and ceiling work, then 2nd floor piping and ceiling work.

b. **2nd floor is very busy and will have to be done in wings let's say (Child Support, Courts, then DA's, then Probate/Clerk of Courts).**

20. Please confirm that we would be allowed to remove the Acoustical ceiling tiles and grid in hallways and rooms completely for HVAC work to proceed as efficiently as possible. This would result in rooms and hallways not having ceilings installed while work is being done. Leaving hallways and rooms being used by staff and public without a temporary or finished ceiling?

    See specification 02 41 00

21. When ceilings are removed, is there an expectation of any temporary measures that will be required by the general contractor? (Ie smoke detectors would be temporarily supported while ceilings are not installed as well as Lights, speakers, etc.) Please confirm this would be acceptable.

    a. **See specification 02 41 00, 3.04, E, 2 "Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service."**
    b. **See specification 26 05 05, 3.02, D. "Provide temporary wiring and connections to maintain existing systems in service during construction."**

22. Please confirm the areas in "grey" or shaded per the Architectural demolition plans are areas where there is no work to occur? There seems to be areas on the 3rd floor that require demolition of existing ductwork per the Mechanical drawings, but the architectural drawings are shaded like there is nothing to be completed? Please confirm what is correct?

    Work shown on the mechanical plans is correct. See Addendum for clarification.

23. Will the general contractor need to make drywall repairs at the removed Fan coil units in preparation for the owner painting? If so what should the contractor anticipate for repairs at each Fan Coil unit?

    Yes, the area where the Fan Coil unit was removed from.

24. In Part 2 of the scope of work, section 3.0 References, what information you are looking for with the required 3 references, size, scope, owner contact etc.?

    References of similar projects like this project, with contact names and information.

25. Is all new equipment to be in hand to begin the work on site? Should we assume you want the contractor to not remove old equipment without new equipment to take its place?

    Yes

26. All work is listed to be substantially completed by November 20, 2026. If new equipment has longer lead times than anticipated by the owner and A/E, will this date be moved due to uncontrollable events?

    Yes

27. Please confirm a crane can be set up on either end of the building for crane lifts as needed. In addition, please confirm the GC would need to coordinate with the city for any road closures that may be needed?

    Yes, GC is to coordinate this with Sauk County staff and City of Baraboo if more space is needed for staging.

28. Will an overall site plan be provided? This would help with planning crane placement as well as locations for a dumpster throughout the project. Is there a specific location where the GC should place a dumpster on site for debris?

    Debris dumpster can be staged on the North ramp off 4th Ave.

29. Can the contractor place a storage container on site for materials to be kept in? If so, where would that be located?

    A small storage container should be placed on the North Ramp off 4th Ave if absolutely needed.

30. Would the dumpster and storage container require a temporary fence around them for security during construction? If so what are the expectations for the fencing?

    No fencing is required by Sauk County

31. Please provide a thickness for the steel plate shown in detail 2/A501?

    See Addendum for clarification.

32. What are the expectations pertaining to the **contractor provided "all-risks" property insurance on a replacement cost basis** (see snippets below)? Is this in addition to the existing property insurance in place? This is a large building built many years ago that will be occupied during construction. In order to include the cost of this insurance in our bid, if the insurance company is willing to provide this insurance, we will need the County's expectations and answers to at least the following details. Also, there will be work by the Owners subcontractors during this project, is the Contractor expected to provide insurance coverage for subcontractors even though there will not be any contractual agreement between the Contractor and Owners sub.'s? Please advise.

    - Details on the existing building including:
        1. Total square footage: **63,000**
        2. Construction Material: **Varies in the building**
        3. Year Built: **1905, 1963, 1979 depending on the section you are working in.**
        4. Current Replacement Cost of the building: **Unsure at this time till Safety Risk responds back**
        5. Explanation of what portion of the building will be structurally affected by the HVAC upgrade: **it was recommended that you state the current value that the property is insured at with your carrier. The drawings indicate what portions of the building are "structurally affected."**

    The clip below is from the Supplementary Conditions. They modify the General Conditions (AIA-A201) Nothing is missing with regards to the articles and paragraphs noted. The cost of this policy has been added to the Alternates on the Bid Form.

> *Delete paragraph 11.2.1 and insert the following:*

11.2.1 The Contractor shall purchase and maintain Property insurance in accordance with 11.2. Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, relieves the Owner of the responsibility to purchase and maintain such insurance. The Contractor shall comply with all obligations of the Owner under 11.2.

11.2 is not included in these spec.'s, only subsections of 11.2.?

The Contractor shall disclose to the Owner the amount of any deductible, and the Contractor shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11.

11.2.1.1 **Causes of Loss.** The insurance shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials.

11.2.1.2 **Specific Required Coverages.** The insurance shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a

11.2.1.5 **Insurance for Existing Structures.** If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Contractor shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in 11.2.1, notwithstanding the undertaking of the Work. The Contractor shall be responsible for all co-insurance penalties.

There is no 12.2.2?

What is the replacement cost of this historic building, is there a recent appraisal that can be provided?

> *Delete paragraph 11.2.2*

> *Delete paragraph 11.2.3*

ARTICLE 15 – CLAIMS AND DISPUTES

Addendum No. 01

Issue Date: 01/22/2026

Sauk County Courthouse HVAC Upgrades

515 Oak Street, Baraboo, WI 53913

Project No. 2025012

BID DATE: * January 29th, 2026 1:00 P.M. *** , THURSDAY,**

This Addendum is issued to modify, explain or correct the original drawings and specifications and is hereby made a part of the Contract Documents. Please attach this Addendum to the Bid Documents in your possession. Insert the number and issue date of this Addendum on the Bid Form.

SPECIFICATIONS

1. Section 00 01 00 – Table of Contents
   a. Revised Table of Contents Issued

2. Section 00 01 12 – Bid Form
   a. Bid Form revised.

3. Section 01 23 00 – Alternates
   a. Work scope for Allowances clarified.

The following Specification Sections have been added to the Project:

1. Section 02 41 00 – Demolition
2. Section 04 20 000 – Unit Masonry
3. Section 05 5000 – Metal Fabrications
4. Section 05 53 05 – Metal Gratings and Floor Plates
5. Section 06 10 00 – Rough Carpentry
6. Section 07 05 53 – Fire & Smoke Assembly Identification
7. Section 07 13 00 – Sheet Waterproofing
8. Section 07 53 23 – Ethylene- Propylene-Diene -Monomer Roofing (EPDM)
9. Section 07 84 00 - Firestopping
10. Section 07 92 00 – Joint Sealants
11. Section 08 91 00 – Louvres
12. Section 09 21 16 – Gypsum Board Assemblies
13. Section 09 51 00 – Acoustical Ceilings
14. Section 09 90 00 – Painting and Coating

DRAWINGS

S001 – STRUCTURAL GENERAL NOTES
1. Add sheet.

S200 – FIRST FLOOR FRAMING
2. Add sheet.

S201 – SECOND FLOOR FRAMING
3. Add sheet.

S202 – THIRD FLOOR FRAMING
4. Add sheet.

S203 – ROOF FRAMING PLAN

5. Add sheet.

S300 – STRUCTURAL DETAILS

6. Add sheet.

A133 – THIRD FLOOR RCP DEMOLITION PLAN

7. Edit “not in scope” area.
8. Add note “Typical to all architectural sheets: Areas in gray are not in architectural scope. Refer to other disciplines for their scope.”

M103 – THIRD FLOOR MECHANICAL DEMOLITION PLAN

9. Add alternate #3 note.

M104 – ROOF MECHANICAL DEMOLITION PLAN

10. Add alternate #3 note.

M202 – SECOND FLOOR MECHANICAL PLAN

11. Add clarification to ductwork elevation.

M203 – THIRD FLOOR MECHANICAL PLAN

12. Add alternate #3 note.

M601 – ENLARGED MECHANICAL PLANS

13. Add alternate #3 note.

Attachments:

Specifications: As indicated above.
Drawings: As indicated above.

END OF ADDENDUM

STRANG, INC.
811 EAST WASHINGTON AVENUE, SUITE 200
MADISON, WI 53703
(608) 276-9200

SECTION 00 01 10 - TABLE OF CONTENTS

PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 00 -- PROCUREMENT AND CONTRACTING REQUIREMENTS

00 01 00 - Project Cover Page
00 01 03 - Project Directory
00 01 10 - Table of Contents
00 41 00 - Bid Form
00 50 00 - Contracting Forms and Supplements
00 73 00 - Supplementary Conditions

SPECIFICATIONS

DIVISION 01 -- GENERAL REQUIREMENTS

01 10 00 - Summary
01 20 00 - Price and Payment Procedures
01 23 00 - Alternates
01 25 00 - Substitution Procedures
01 30 00 - Administrative Requirements
01 40 00 - Quality Requirements
01 42 16 - Definitions
01 50 00 - Temporary Facilities and Controls
01 60 00 - Product Requirements
01 70 00 - Execution and Closeout Requirements
01 71 23 - Field Engineering
01 74 19 - Construction Waste Management and Disposal
01 78 00 - Closeout Submittals
01 79 00 - Demonstration and Training

DIVISION 02 -- EXISTING CONDITIONS

02 41 00 - Demolition

DIVISION 04 -- MASONRY

04 20 00 - Unit Masonry

DIVISION 05 -- METALS

~~05 12 00 - Structural Steel Framing~~
05 50 00 - Metal Fabrications
05 53 05 - Metal Gratings and Floor Plates

DIVISION 06 -- WOOD, PLASTICS, AND COMPOSITES

06 10 00 - Rough Carpentry

DIVISION 07 -- THERMAL AND MOISTURE PROTECTION

07 05 53 - Fire and Smoke Assembly Identification

07 13 00 - Sheet Waterproofing

07 53 23 - Ethylene-Propylene-Diene-Monomer Roofing (EPDM) - Firestone

07 84 00 - Firestopping

07 92 00 - Joint Sealants

DIVISION 08 -- OPENINGS

08 71 00 - Door Hardware

08 91 00 - Louvers

DIVISION 09 -- FINISHES

09 21 16 - Gypsum Board Assemblies

09 51 00 - Acoustical Ceilings

09 90 00 - Painting and Coating

DIVISION 21 -- FIRE SUPPRESSION

21 05 00 - Common Work Results for Fire Suppression

21 05 23 - General-Duty Valves for Water-Based Fire-Suppression Piping

21 05 53 - Identification for Fire Suppression Piping and Equipment

21 11 00 - Facility Fire-Suppression Water-Service Piping

21 12 00 - Fire-Suppression Standpipes

21 13 00 - Fire-Suppression Sprinkler Systems

21 22 00 - Clean-Agent Fire-Extinguishing System

21 30 00 - Fire Pumps

DIVISION 22 -- PLUMBING

22 05 16 - Expansion Fittings and Loops for Plumbing Piping

22 05 17 - Sleeves and Sleeve Seals for Plumbing Piping

22 05 23 - General-Duty Valves for Plumbing Piping

22 05 29 - Hangers and Supports for Plumbing Piping and Equipment

22 05 53 - Identification for Plumbing Piping and Equipment

22 07 19 - Plumbing Piping Insulation

22 10 05 - Plumbing Piping

22 10 06 - Plumbing Piping Specialties

22 15 00 - General-Service Compressed-Air Systems

22 30 00 - Plumbing Equipment

22 60 05 - Gas Systems for Laboratory Facilities

22 66 00 - Chemical-Waste Systems for Laboratory and Healthcare Facilities

DIVISION 23 -- HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

23 05 13 - Common Motor Requirements for HVAC Equipment

23 05 23 - General-Duty Valves for HVAC Piping

23 05 29 - Hangers and Supports for HVAC Piping and Equipment

23 05 53 - Identification for HVAC Piping and Equipment

23 05 93 - Testing, Adjusting, and Balancing for HVAC

23 07 13 - Duct Insulation

23 07 19 - HVAC Piping Insulation

23 09 15 - DDC Points List

23 09 34 - Variable-Frequency Motor Controllers

23 09 54 - Electric Temperature Control Systems

23 09 93 - Sequence of Operations for HVAC Controls

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23 21 14 - Hydronic Specialties

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23 33 00 - Air Duct Accessories

23 34 23 - HVAC Power Ventilators

23 36 00 - Air Terminal Units

23 37 00 - Air Outlets and Inlets

23 73 13 - Modular Indoor Central-Station Air-Handling Units

23 74 16 - Packaged Rooftop Air-Conditioning Units

23 82 00 - Convection Heating and Cooling Units

DIVISION 26 -- ELECTRICAL

26 05 05 - Selective Demolition for Electrical

26 05 19 - Low-Voltage Electrical Power Conductors and Cables

26 05 26 - Grounding and Bonding for Electrical Systems

26 05 29 - Hangers and Supports for Electrical Systems

26 05 33.13 - Conduit for Electrical Systems

26 05 33.16 - Boxes for Electrical Systems

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26 05 83 - Wiring Connections

26 09 16 - Electric Controls and Relays

26 09 23 - Digital Modular Lighting Controls

26 22 00 - Low-Voltage Transformers

26 24 16 - Panelboards

26 27 26 - Wiring Devices

26 28 13 - Fuses

26 28 16.16 - Enclosed Switches

26 36 00 - Transfer Switches

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DIVISION 27 -- COMMUNICATIONS

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27 05 33.13 - Conduit for Communications Systems

27 10 00 - Structured Cabling

DIVISION 28 -- ELECTRONIC SAFETY AND SECURITY

28 46 00 - Fire Detection and Alarm

DIVISION 31 -- EARTHWORK

31 23 16 - Excavation

31 23 23 - Fill

DIVISION 32 -- EXTERIOR IMPROVEMENTS

32 12 16 - Asphalt Paving

END OF SECTION

PART FIVE
PRICING & INFORMATION

PRICING	PRICE
Base Bid	**$**
Alternate 1: Lighting, controls, and ceiling work as indicated in Section 01 23 00 and indicated on Drawings.	**$**
Alternate 2: Lighting, controls, and ceiling work as indicated in Section 01 23 00 and indicated on Drawings.	**$**
Alternate 3: Mechanical and Electrical work work as indicated in Section 01 23 00 and indicated on Drawings.	**$**
Alternate 4: Cost of Builder's Risk insurance as indicated in Section 01 23 00.	**$**

The vendor hereby agrees to provide the services and/or items at the prices quoted, pursuant to the requirements of this document and further agree that when this document is countersigned by an authorized official of Sauk County, a binding contract, as defined herein, shall exist between the vendor and Sauk County.

_____

VENDOR

_____

AUTHORIZED SIGNATURE Date

_____

PRINTED NAME Title

_____

Sauk County Official Date

CONTRACT

See 00 50 00 – Contracting Forms and Supplements for Contract information.

SECTION 01 23 00 - ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Description of Alternates.

1.02 RELATED REQUIREMENTS

A. Document 00 43 23 - Alternates Form: List of Alternates as supplement to Bid Form.

1.03 ACCEPTANCE OF ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.

B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.04 SCHEDULE OF ALTERNATES

A. Alternate No. 1 - ~~[Provide all Work as indicated on Drawings for Alternate No. 1. Work includes, but is not limited to demolition of existing and installation of new lighting, electrical controls, mechanical grills and ceilings]~~Provide all Work as indicated on Drawings for Alternate No. 1. Work includes, but is not limited to demolition of existing and installation of new lighting, electrical controls, and ceilings.

B. Alternate No. 2 - ~~[Provide all Work as indicated on Drawings for Alternate No. 2. Work includes, but is not limited to demolition of existing and installation of new lighting, electrical controls, mechanical grills and ceilings]~~Provide all Work as indicated on Drawings for Alternate No. 2. Work includes, but is not limited to demolition of existing and installation of new lighting, electrical controls, and ceilings.

C. Alternate No. 3 - Provide all work indicated on Drawings for Alternate No. 3.Work includes, but is not limited to work indicated in Mechanical Penthouse:

D. Alternate No. ~~[_____]~~4 - ~~[_____]~~Provide Builders Risk Insurance policy as defined in the Supplementary Conditions and General Conditions.~~:~~. Base Bid is for no Builder's Risk insurance.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 02 41 00 - DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

1.02 DEFINITIONS

A. Remove: Detach or dismantle items from existing construction and dispose of them off site, unless items are indicated to be salvaged or reinstalled.

B. Remove and Salvage: Detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and deliver salvaged items to Owner in ready-for-reuse condition.

C. Remove and Reinstall: Detach or dismantle items from existing construction in a manner to prevent damage. Clean and prepare for reuse and reinstall where indicated.

D. Existing to Remain: Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.03 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.04 FIELD CONDITIONS

A. Hazardous Materials: Hazardous materials are assumed to be present in buildings and structures to be selectively demolished.

1. Lead:
    a. No lead testing is required. Lead is present in existing layers of paint, wood stain on and around existing wood windows. Assume all coated surfaces contain lead. Perform work in accordance with EPA regulations and OSHA "Lead in Construction Standard 29 CFR1926.62".
2. Asbestos:
    a. Past testing has shown that the various materials are asbestos containing material (ACM).
    b. Work of this contract includes testing of existing foundation coatings (waterproofing/dampproffing) at demolition location in compliance with EPA and OSHA regulations.
3. Notify Owner of test results. If friable PACM is detected, Owner will contract for abatement. For non-friable materials, remove materials to sufficientlyinstall new foudnation walls and associated waterproofing and louver.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.

C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

D. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.

1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.

1. Obtain required permits.
2. Comply with applicable requirements of NFPA 241.
3. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
4. Provide, erect, and maintain temporary barriers and security devices.
5. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
7. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
8. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.

9. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Protect existing structures and other elements to remain in place and not removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

D. Hazardous Materials:
   1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.

E. Perform demolition in a manner that maximizes salvage and recycling of materials.
   1. Dismantle existing construction and separate materials.
   2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

F. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.03 EXISTING UTILITIES

A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone. Identify and mark, in same manner as other utilities to remain, utilities to be reconnected.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
   1. Verify construction and utility arrangements are as indicated.

2. Report discrepancies to Architect before disturbing existing installation.
3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Separate areas in which demolition is being conducted from areas that remain occupied.
1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00 .

C. Maintain weatherproof exterior building enclosure, except for interruptions required for replacement or modifications; prevent water and humidity damage.

D. Remove existing work as indicated and required to accomplish new work.
1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction indicated.
2. Remove items indicated on drawings.

E. Services (Including but not limited to HVAC, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.
2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
3. Verify that abandoned services serve only abandoned facilities before removal.
4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.

F. Hole Coring for Utilities:
1. Use ground-penetrating radar to review reinforcing locations in walls or slabs and position holes so as to avoid cutting of concrete reinforcing if at all possible, or otherwise arrange core locations to cut the minimum necessary. Verify all core sizes with the appropriate trades. 6 inch maximum core holes.

G. Protect existing work to remain.
1. Prevent movement of structure. Provide shoring and bracing as required.
2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
3. Repair adjacent construction and finishes damaged during removal work.
4. Patch to match new work.

3.05 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

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SECTION 04 20 00 - UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete block infill and repair
B. Mortar and grout.
C. Reinforcement and anchorage.
D. Flashings.
E. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 07 92 00 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
C. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
D. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement.
E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
F. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units.
G. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.
H. ASTM C150/C150M - Standard Specification for Portland Cement.
I. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes.
J. ASTM C270 - Standard Specification for Mortar for Unit Masonry.
K. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.
L. ASTM C476 - Standard Specification for Grout for Masonry.
M. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete.
N. ASTM C1714/C1714M - Standard Specification for Preblended Dry Mortar Mix for Unit Masonry.
O. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
P. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing.
Q. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls.
R. BIA Technical Notes No. 46 - Maintenance of Brick Masonry.

S. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.

1.05 DELIVERY, STORAGE, AND HANDLING

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

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. Concrete Block: Comply with referenced standards and as follows:
   1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
   2. Nonloadbearing Units: ASTM C129.
      a. Hollow block, as indicated.
      b. Lightweight.

2.02 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.

B. Hydrated Lime: ASTM C207, Type S.

C. Mortar Aggregate: ASTM C144.

D. Grout Aggregate: ASTM C404.

E. Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C979/C979M.
   1. Color(s): As selected by Architect from manufacturer's full range.

F. Water: Clean and potable.

G. Accelerating Admixture: Nonchloride type for use in cold weather.

H. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
   1. Color: Mineral pigments added as required to produce approved color sample.

I. Packaged Dry Material for Grout for Masonry: Premixed cementitious materials and dried aggregates; capable of producing grout of the specified strength in accordance with ASTM C476 with the addition of water only.

2.03 REINFORCEMENT AND ANCHORAGE

A. Manufacturers:
   1. Hohmann & Barnard, Inc: www.h-b.com/#sle.
   2. Heckmann Building Products, Inc.
   3. WIRE-BOND: www.wirebond.com/#sle.
   4. Or approved equal.

B. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi), deformed billet bars; galvanized.

C. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.

D. Single Wythe Joint Reinforcement: ASTM A951/A951M.
   1. Type: Truss or ladder.
   2. Material: ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to 16 CFR 1201 Class B.
   3. Size: 0.1875 inch side rods with 0.1875 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.

2.04 FLASHINGS

A. Metal Flashing Materials:
   1. Stainless Steel Flashing: ASTM A666/A666M, Type 304, soft temper; 26 gauge, 0.0187 inch thick; finish 2B to 2D.

B. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

2.05 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.

B. Building Paper: ASTM D226/D226M, Type I ("No.15") asphalt felt.

C. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.06 MORTAR AND GROUT MIXING

A. Mortar for Unit Masonry: ASTM C270, using the Property Specification.
   1. Masonry below grade and in contact with earth: Type S.
   2. Exterior, loadbearing masonry: Type S.
   3. Exterior, non-loadbearing masonry: Type N.
   4. Interior, loadbearing masonry: Type S.
   5. Interior, non-loadbearing masonry: Type N.

B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.

C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

D. Admixtures: Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.

E. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

A. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

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

3.04 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:

1. Bond: Running.
2. Coursing: One unit and one mortar joint to equal 8 inches.
3. Mortar Joints: Concave, except strike flush where air barrier coatings are indicated.

3.05 PLACING AND BONDING

A. Lay hollow masonry units with face shell bedding on head and bed joints.

B. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

C. Remove excess mortar and mortar smears as work progresses.

D. Interlock intersections and external corners.

E. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

F. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

G. Cut mortar joints flush where wall tile is scheduled, cement parging is required, resilient base is scheduled, cavity insulation vapor barrier adhesive is applied, or bitumen dampproofing is applied.
H. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.
I. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

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

A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
C. Place continuous joint reinforcement in first and second joint below top of walls.
D. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.
E. Lap joint reinforcement ends minimum 6 inches.
F. Embed ties and anchors in mortar joint and extend into masonry unit a minimum of 1-1/2 inches with at least 5/8 inch mortar cover to the outside face of the anchor.

3.07 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
    1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up flashing ends at least 1 inch, minimum, to form watertight pan at nonmasonry construction.
    2. Seal lapped ends and penetrations of flashing before covering with mortar.
B. Terminate flashing up 8 inches minimum on vertical surface of backing:
C. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. 7.
D. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

3.08 LINTELS

A. Install loose steel lintels over openings.
B. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.

3.09 GROUTED COMPONENTS

A. Reinforce bond beams with 2, No. 5 bars, 1 inch from bottom web.
B. Lap splices minimum 24 bar diameters.
C. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
D. Place and consolidate grout fill without displacing reinforcing.
E. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.

3.10 CONTROL AND EXPANSION JOINTS

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

3.11 BUILT-IN WORK

A. As work progresses, install built-in metal door frames and glazed frames and other items to be built into the work and furnished under other sections.
B. Install built-in items plumb, level, and true to line.
C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
    1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.
D. Do not build into masonry construction organic materials that are subject to deterioration.

3.12 TOLERANCES

A. Maximum Variation from Alignment of Columns: 1/4 inch.
B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/8 inch, plus 1/8 inch.
G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.13 CUTTING AND FITTING

A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.
B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.14 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

3.15 PROTECTION

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

END OF SECTION

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SECTION 05 50 00 - METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated steel items.

B. Bollards

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Placement of metal fabrications in concrete.

1.03 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.

B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

D. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates.

E. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.

F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.

H. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength.

I. AWS D1.1/D1.1M - Structural Welding Code - Steel.

J. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer.

K. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic).

L. SSPC-SP 2 - Hand Tool Cleaning.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.

B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.

C. Plates: ASTM A283/A283M.

D. Pipe: ASTM A53/A53M Grade B Schedule 80, black and hot-dip galvanized finish, as indicated.
E. Slotted Channel Framing: ASTM A653/A653M, Grade 33.
F. Slotted Channel Fittings: ASTM A1011/A1011M.
G. Mechanical Fasteners: Same material as or compatible with materials being fastened; type consistent with design and specified quality level.
H. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.
I. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
J. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
K. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.
B. Fabricate items with joints tightly fitted and secured.
C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
D. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FABRICATED ITEMS

A. Bollards: Steel pipe, concrete filled, crowned cap, as detailed; galvanized finish.
B. Ledge Angles, Shelf Angles, Channels, and Plates Not Attached to Structural Framing: For support of metal decking and masonry; galvanized finish.
C. Lintels: As detailed; galvanized finish.

2.04 FINISHES - STEEL

A. Prime paint steel items.
    1. Exceptions: Galvanize items to be embedded in concrete and items to be embedded in masonry.
    2. Exceptions: Do not prime surfaces in direct contact with concrete, where field welding is required, and items to be covered with sprayed fireproofing.
B. Prepare surfaces to be primed in accordance with SSPC-SP2.
C. Prime Painting: One coat.
D. Galvanizing of Structural Steel Members: Galvanize after fabrication to ASTM A123/A123M requirements. Provide minimum 1.7 oz/sq ft galvanized coating.

E. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.

2.05 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.
B. Maximum Offset Between Faces: 1/16 inch.
C. Maximum Misalignment of Adjacent Members: 1/16 inch.
D. Maximum Bow: 1/8 inch in 48 inches.
E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.
B. Furnish setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.
B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
C. Perform field welding in accordance with AWS D1.1/D1.1M.
D. Obtain approval prior to site cutting or making adjustments not scheduled.
E. After erection, prime welds, abrasions, and surfaces not shop primed , except surfaces to be in contact with concrete.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
B. Maximum Offset From True Alignment: 1/4 inch.
C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

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SECTION 05 53 05 - METAL GRATINGS AND FLOOR PLATES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Formed metal floor, mezzanine, and stair tread gratings.
B. Flat surface floor and stair tread plating.
C. Metal bar gratings over area wells

1.02 REFERENCE STANDARDS

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
C. ASTM A786/A786M - Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates.
D. NAAMM MBG 532 - Heavy Duty Metal Bar Grating Manual.
E. SSPC-SP 2 - Hand Tool Cleaning.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
B. Shop Drawings: Indicate details of component supports, openings, perimeter construction details, and tolerances.

PART 2 PRODUCTS

2.01 MATERIALS

A. Steel Floor Plate: ASTM A786/A786M; manufacturer's standard pattern.

2.02 ACCESSORIES

A. Fasteners and Saddle Clips: Galvanized steel:

2.03 FABRICATION

A. Fabricate grates and plates to accommodate design loads.

2.04 FINISHES

A. Prepare surfaces to be primed in accordance with SSPC-SP 2.
B. Galvanizing for Steel Hardware: ASTM A153/A153M.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install components in accordance with manufacturer's instructions.
B. Place frames in correct position, plumb and level.

C. Set perimeter closure flush with top of grating and surrounding construction.

D. Secure to prevent movement.

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Roof-mounted curbs.
B. Roofing nailers.
C. Preservative treated wood materials.
D. Fire retardant treated wood materials.
E. Communications and electrical room mounting boards.
F. Concealed wood blocking, nailers, and supports.

1.02 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
B. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
C. ASTM D2898 - Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing.
D. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing.
E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
F. AWPA U1 - Use Category System: User Specification for Treated Wood.
G. PS 1 - Structural Plywood.
H. PS 20 - American Softwood Lumber Standard.
I. SPIB (GR) - Standard Grading Rules.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Product Data: Provide technical data on wood preservative materials and sheathing.

1.04 QUALITY ASSURANCE

A. Roofing Wood Nailers: Wood Nailers shall be secured in accordance with FM Global Property Loss Prevention Data Sheet 1-49.

1.05 DELIVERY, STORAGE, AND HANDLING

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

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
   2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

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

2.03 CONSTRUCTION PANELS

A. Wall Sheathing: Plywood, PS 1, Grade C-D, Exposure I.
B. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

2.04 ACCESSORIES

A. Fasteners and Anchors:
   1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
B. Sill Gasket on Top of Foundation Wall: 1/4 inch thick, plate width, closed cell plastic foam from continuous rolls.
C. General Purpose Construction Adhesives: Comply with ASTM C557.

2.05 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
   1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.

2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

B. Fire Retardant Treatment:
   1. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
      a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
      b. Treat exterior rough carpentry items.
      c. Do not use treated wood in direct contact with the ground.
   2. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
      a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
      b. Interior rough carpentry items are to be fire retardant treated.
      c. Do not use treated wood in applications exposed to weather or where the wood may become wet.

C. Preservative Treatment:
   1. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
      a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
      b. Treat lumber in contact with flashing or waterproofing.
      c. Treat lumber in contact with masonry or concrete.
   2. Preservative Pressure Treatment of Plywood Above Grade: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative.
      a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
      b. Treat plywood in contact with flashing or waterproofing.
      c. Treat plywood in contact with masonry or concrete.

PART 3 EXECUTION

3.01 PREPARATION

A. Install sill gasket under sill plate of framed walls bearing on foundations; puncture gasket cleanly to fit tightly around protruding anchor bolts.

3.02 INSTALLATION - GENERAL

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

3.03 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to authorities having jurisdiction may be used in lieu of solid wood blocking.
C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

3.04 ROOF-RELATED CARPENTRY

A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.
B. Provide wood curb at each roof opening except where specifically indicated otherwise; form corners by alternating lapping side members.

3.05 INSTALLATION OF CONSTRUCTION PANELS

A. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using screws.
B. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.

1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
3. Install adjacent boards without gaps.

3.06 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

B. Variation from Plane, Other than Floors: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

END OF SECTION

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SECTION 07 05 53 - FIRE AND SMOKE ASSEMBLY IDENTIFICATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Identification markings for fire and smoke rated partitions, and fire rated walls.

1.02 REFERENCE STANDARDS

A. ICC (IBC) - International Building Code.

1.03 FIELD CONDITIONS

A. Do not install adhered markings when ambient temperature is lower than recommended by label or sign manufacturer.

B. Do not install markings when ambient temperature is lower than recommended by manufacturer.

PART 2 PRODUCTS

2.01 SYSTEM SELECTION

A. At Contractor's option, select signs or painted system.

2.02 MANUFACTURERS

A. Partition Identification Labels:

1. Fire Wall Signs, Inc: www.firewallsigns.com/#sle.
2. Safety Supply Warehouse, Inc: www.safetysupplywarehouse.com/#sle.
3. Or approved equal.

2.03 FIRE AND SMOKE ASSEMBLY IDENTIFICATION

A. Regulatory Requirements: Comply with "Marking and Identification" requirements of "Fire-Resistance Ratings and Fire Tests" chapter of ICC (IBC).

B. Adhered Fire and Smoke Assembly Identification Signs: Printed vinyl sign with factory applied adhesive backing.

C. Applied Fire and Smoke Assembly Identification: Identification markings applied to partition with spray paint and a code compliant stencil. Provide acrylic paint as manufactured by Krylon, Rustoleum, or approved equal.

D. Languages: Provide sign markings in English.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

A. Locate markings as required by ICC (IBC).

B. Install adhered markings in accordance with manufacturer's instructions.

C. Install neatly, with horizontal edges level.

D. Protect from damage until Date of Substantial Completion; repair or replace damaged markings.

END OF SECTION

SECTION 07 13 00 - SHEET WATERPROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Self-adhered modified bituminous sheet membrane.

1.02 REFERENCE STANDARDS

A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension.
B. ASTM D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
C. ASTM D5295/D5295M - Standard Guide for Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems.
D. ASTM D5385/D5385M - Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes.
E. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials.
F. NRCA (WM) - The NRCA Waterproofing Manual.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Product Data: Provide data for membrane, surface conditioner, flexible flashings, joint cover sheet, and joint and crack sealants.
C. Manufacturer's Installation Instructions: Indicate special procedures.
D. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

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

1.05 FIELD CONDITIONS

A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application and until liquid or mastic accessories have cured.

1.06 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
B. Contractor to correct defective Work within period of five years after Date of Substantial Completion; remove and replace materials concealing waterproofing at no extra cost to Owner.

C. Provide five year manufacturer warranty for waterproofing failing to resist penetration of water, except where such failures are the result of structural failures of building. Hairline cracking of concrete due to temperature change or shrinkage is not considered a structural failure.

PART 2 PRODUCTS

2.01 SHEET WATERPROOFING APPLICATIONS

A. Self-Adhered Modified Bituminous Sheet Membrane:
   1. Location: Joints between new and existing concrete walls.
   2. Cover with drainage panel.

2.02 SHEET WATERPROOFING MATERIALS

A. Self-Adhered Modified Bituminous Sheet Membrane:
   1. Thickness: 60 mil, 0.060 inch, minimum.
   2. Tensile Strength:
      a. Film: 5,000 psi, minimum, measured in accordance with ASTM D882 and at grip-separation rate of 2 inches per minute.
      b. Membrane: 325 psi, minimum, measured in accordance with ASTM D412 Method A, using die C and at spindle-separation rate of 2 inches per minute.
   3. Elongation at Break: 300 percent, minimum, measured in accordance with ASTM D412.
   4. Water Vapor Permeance: 0.05 perm, maximum, measured in accordance with ASTM E96/E96M.
   5. Hydrostatic Pressure Resistance: Membrane resists leakage for at least one hour from pressure equivalent to 200 feet head of water applied in accordance with test method ASTM D5385/D5385M.
   6. Adhesives, Sealants, Tapes, and Accessories: As recommended by membrane manufacturer.
   7. Manufacturers:
      a. Carlisle Coatings & Waterproofing Inc: www.carlisleccw.com/#sle.
      b. CETCO, a division of Minerals Technologies Inc: www.mineralstech.com/#sle.
      c. GCP Applied Technologies: www.gcpat.com/#sle.
      d. Henry Company: www.henry.com/#sle.
      e. Tremco Commercial Sealants & Waterproofing.
      f. W.R. Meadows, Inc: www.wrmeadows.com/#sle.

2.03 ACCESSORIES

A. Priming and Seaming Materials: As recommended by membrane manufacturer.
B. Membrane Sealant: As recommended by membrane manufacturer.
C. Sealant for Cracks and Joints In Substrates: Resilient elastomeric joint sealant compatible with substrates and waterproofing materials.

D. Drainage Panel: Drainage layer with geotextile filter fabric on earth side.
   1. Composition: Dimpled polystyrene, polyethylene, or polypropylene core; polypropylene filter fabric.
   2. Thickness: 3/8 inch.
E. Flexible Flashings: Type recommended by membrane manufacturer.
F. Termination Bars: Aluminum; compatible with membrane and adhesives.
G. Adhesives: As recommended by membrane manufacturer.
H. Thinner and Cleaner: As recommended by adhesive manufacturer, compatible with sheet membrane.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions are acceptable prior to starting work.
B. Verify substrate surfaces are durable; free of matter detrimental to adhesion or application of waterproofing system.
C. Verify that items penetrating surfaces to receive waterproofing are securely installed.

3.02 PREPARATION

A. Protect adjacent surfaces from damage not designated to receive waterproofing.
B. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions.
C. Do not apply waterproofing to surfaces unacceptable to membrane manufacturer.
D. Fill nonmoving joints and cracks with a filler compatible with waterproofing materials.
E. Seal moving cracks with sealant and nonrigid filler, using procedures recommended by sealant and waterproofing manufacturers.
F. Surfaces for Adhesive Bonding: Apply surface conditioner at a rate recommended by manufacturer, and protect conditioner from rain or frost until dry.
G. Concrete Surfaces for Adhesive Bonding: Prepare concrete substrate in accordance with ASTM D5295/D5295M.
   1. Remove substances that inhibit adhesion including form release agents, curing compounds admixtures, laitance, moisture, dust, dirt, grease and oil.
   2. Repair surface defects including honeycombs, fins, tie holes, bug holes, sharp offsets, rutted cracks, ragged corners, deviations in surface plane, spalling and delaminations, as described in reference standard.
   3. Remove and replace areas of defective concrete; see Section 03 30 00.
   4. Prepare concrete for adhesive bonded waterproofing using mechanical or chemical methods described in referenced standard.

5. Test concrete surfaces as described in referenced standards, and verify surfaces are ready to receive adhesive bonded waterproofing membrane system.

3.03 INSTALLATION - MEMBRANE

A. Install membrane waterproofing in accordance with manufacturer's instructions and NRCA (WM) applicable requirements.
B. Roll out membrane, and minimize wrinkles and bubbles.
C. Self-Adhering Membrane: Remove release paper layer, and roll out onto substrate with a mechanical roller to provide full contact bond.
D. Overlap edges and ends, minimum 3 inches, seal permanently waterproof by method recommended by manufacturer, and apply uniform bead of sealant to joint edge.
E. Reinforce membrane with multiple thickness of membrane material over joints, whether joints are static or dynamic.
F. Weather lap joints on sloped substrate in direction of drainage, and seal joints and seams.
G. Flexible Flashings: Seal items watertight that penetrate through waterproofing membrane with flexible flashings.
H. Seal membrane and flashings to adjoining surfaces.
    1. Install termination bar along top edges.

3.04 INSTALLATION - DRAINAGE PANEL

A. Place drainage panel directly against membrane, butt joints, place to encourage drainage downward; scribe and cut boards around projections, penetrations, and interruptions.
B. Place protection board directly against drainage panel; butt joints, and scribe and cut boards around projections, penetrations, and interruptions.
C. Adhere drainage panel to substrate with compatible adhesive.

3.05 PROTECTION

A. Do not permit traffic over unprotected or uncovered membrane.

END OF SECTION

SECTION 07 53 23 - ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING (EPDM) - ELEVATE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. EPDM membrane roofing system modifications.

1.02 REFERENCE STANDARDS

A. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane.
B. ASTM D4811/D4811M - Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing.
C. FM 4470 - Approval Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction.
D. NRCA (RM) - The NRCA Roofing Manual.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Product Data:
    1. Provide membrane manufacturer's printed data showing roofing system components comply with specified requirements and with membrane manufacturer's requirements and recommendations for system type specified; include data for each product used in conjunction with roofing membrane, including insulation and fasteners.
    2. Provide documentation showing roofing system is UL classified or FM approved where UL or FM requirements are specified; include data itemizing classified or approved system components.
C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
D. Manufacturer's Instructions: Indicate installation of components; where instructions allow installation options, clearly indicate which option to use.
E. Installer's qualification statement.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of this section with minimum five years of documented experience installing specified system and having the following:
    1. Qualifications to uphold existing Firestone Red Shield EPDM 15 year, 55 mph warranty.
        a. Warranty No. 700371325
        b. Project No. 3418513
        c. Contractor: Long Life, Inc. 40000762.

B. Documents at Project Site: Maintain at project site one copy of manufacturer's installation instructions.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact and legible.
B. Store materials clear of ground and moisture with weather-protective covering.
C. Keep combustible materials away from ignition sources.

1.06 FIELD CONDITIONS

A. Do not apply roofing membrane during unsuitable weather or when ambient conditions conflict with manufacturer's installation instructions.
B. Schedule applications so no partially completed sections of roof are left exposed at end of workday.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Membrane Roofing System:
   1. Elevate (Formerly Firestone Building Products Company, LLC.) : www.holcimelevate.com/#sle.
B. Insulation: Same manufacturer as roof membrane.
C. Metal Roof Edging: Same manufacturer as roof membrane.
D. Substitutions: Not permitted.
E. Source Limitations: Furnish products produced by single manufacturer.

2.02 EPDM MEMBRANE ROOFING SYSTEM

A. Description: EPDM single-ply membrane.
   1. Provide assembly having Underwriters Laboratories, Inc. (UL) Class B fire hazard classification.
B. Components, from Top of Roof Down:
   1. Membrane: Thickness as specified below.

2.03 MEMBRANE MATERIALS

A. Roofing and Flashing Membrane: Cured synthetic single-ply membrane composed of EPDM with the following properties:
   1. Reinforcement: Polyester weft-inserted scrim; membrane complying with ASTM D4637/D4637M, Type II.
   2. Membrane and Flashing Color: Black.
   3. Thickness: 60 mils, 0.06 inch
   4. Nominal Thickness Tolerance: Plus/minus 10 percent.

5. Products: Match existing.

B. Flashing Membrane: Self-curing, nonreinforced membrane composed of nonvulcanized EPDM rubber, complying with ASTM D4811/D4811M, Type II, with the following properties:
   1. Thickness: 55 mils, 0.055 inch.
   2. Product: Elevate; RubberGard EPDM FormFlash.

C. Self-Adhesive Flashing Membrane: Semi-cured 45-mil, 0.045-inch EPDM membrane laminated to 35-mil, 0.035-inch EPDM tape adhesive.
   1. Product: Elevate; QuickSeam Flashing.

D. Self-Adhesive Lap Splice Tape: 35 mil EPDM based, formulated for compatibility with EPDM membrane and high-solids primer.
   1. Product: Elevate; QuickSeam Splice Tape.

E. Splice Adhesive: Manufacturer's recommended synthetic polymer-based, formulated for compatibility with EPDM membrane and metal surfaces.

F. Bonding Adhesive: Manufacturer's recommended bonding adhesive, formulated for compatibility with EPDM membrane and other substrate materials, including masonry, wood, and insulation facings.

G. Lap Sealant: Manufacturer's recommended lap sealant formulated for compatibility with primers and flashings.

H. AP Sealant: Manufacturer's recommended single-component, polyurethane, nonsag, moisture-curing sealant.

I. Seam Edge Treatment: Manufacturer's recommended EPDM rubber-based sealant, formulated for sealing exposed membrane edges at seams.

J. Pourable Sealer: Manufacturer's recommended two-part polyurethane, two-color for reliable mixing.

K. Water Block Seal: Manufacturer's recommended butyl rubber sealant for use between two surfaces, not exposed.

L. Metal Plates and Strips Used for Fastening Membrane and Insulation: Steel with galvalume coating; comply with FM 4470 criteria for corrosion resistance.

M. Termination Bars: Aluminum bars with integral caulk ledge; 1.3 inches wide by 0.1 inch thick.
   1. Product: Elevate; Termination Bar.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine roof deck to determine deck is sufficiently rigid to support installers and mechanical equipment so deflection will not strain or rupture roof components or deform deck.

B. Verify surfaces and site conditions are ready to receive work. Correct defects in substrate before commencing with roofing work.

C. Examine roof substrate to verify adequate slope to drains.

D. Verify specifications and drawing details are workable and not in conflict with roofing manufacturer's recommendations and instructions; start of work constitutes acceptable project conditions and requirements.

3.02 INSTALLATION - GENERAL

A. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for specified roofing system. Where manufacturer provides no instructions or recommendations, follow NRCA (RM) written requirements and industry standards. Comply with federal, state, and local regulations.

B. Obtain relevant instructions and maintain copies at project site for duration of installation period.

C. Provide temporary closures to ensure moisture does not damage completed roofing. Use flashings, terminations, and temporary closures to provide watertight installation.

3.03 INSTALLATION - SINGLE-PLY MEMBRANE

A. Lay out membrane pieces so field and flashing splices are installed to shed water.

B. Install membrane without wrinkles and without gaps or fishmouths in seams; bond and test seams and laps in accordance with membrane manufacturer's instructions and details.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Inspection by Manufacturer: Provide final inspection of roofing system by technical representative employed by roofing system manufacturer to inspect installation for warranty purposes, not a sales person.

C. Perform corrections necessary for issuance of warranty.

3.05 CLEANING

A. Clean contaminants generated by roofing work from building and surrounding areas, including bitumen, adhesives, sealants, and coatings.

B. Remove leftover materials, trash, debris, and equipment from project site and surrounding areas.

3.06 PROTECTION

A. Where construction traffic continues over finished roof panels, provide durable protection and replace or repair damaged roofing to original condition.

END OF SECTION

SECTION 07 84 00 - FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

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

1.02 REFERENCE STANDARDS

A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems.
C. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems.
D. ASTM E2837 - Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies.
E. ITS (DIR) - Directory of Listed Products.
F. FM (AG) - FM Approval Guide.
G. SCAQMD 1168 - Adhesive and Sealant Applications.
H. UL 1479 - Standard for Fire Tests of Penetration Firestops.
I. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems.
J. UL (DIR) - Online Certifications Directory.
K. UL (FRD) - Fire Resistance Directory.

1.03 COORDINATION

A. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.
B. Coordinate sizing of sleeves, openings, core-drilled holes or cut openings to accommodate through-penetration firestop systems.
C. Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.
D. Coordinate gypsum barrier construction prior to installing penetrating items and firestop to ensuring barrier integrity and continuity.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Product Data: Provide data on product characteristics, performance ratings, and limitations.
C. System Drawings: Submit documentation from a qualified third-party testing agency that is applicable to each firestopping system configuration for construction, joint opening width and/or penetrating items.

1.05 QUALITY ASSURANCE

A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
   1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.
   2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
   3. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section and:
   1. Trained by manufacturer.

1.06 FIELD CONDITIONS

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

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

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Firestopping Manufacturers:
   1. 3M Fire Protection Products: www.3m.com/firestop/#sle.
   2. A/D Fire Protection Systems Inc: www.adfire.com/#sle.
   3. Hilti, Inc: www.us.hilti.com/#sle.
   4. RectorSeal, a CSW Industrials Company: www.rectorseal.com/firestop-solutions/#sle.
   5. Specified Technologies Inc: www.stifirestop.com/#sle.
   6. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.

2.02 MATERIALS

A. Firestopping Materials: Any materials meeting requirements.

B. Obtain firestopping systems for each type of penetration or joint opening and construction condition indicated from a single manufacturer.

C. Volatile Organic Compound (VOC) Content: Provide products having VOC content lower than that required by SCAQMD 1168.

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

2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS

A. Head-of-Wall (HW) Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non-Rated Horizontal Assemblies: Use system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of wall assembly.
   1. Movement: Provide systems that have been tested to show movement capability as indicated.

B. Floor-to-Floor (FF), Floor-to-Wall (FW), Head-of-Wall (HW), and Wall-to-Wall (WW) Joints, Except Perimeter, Where Both Are Fire-Rated: Use system that has been tested according to ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.
   1. Movement: Provide systems that have been tested to show movement capability as indicated.
   2. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

C. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
   1. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

2.04 FIRESTOPPING SYSTEMS

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

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.
B. Remove incompatible materials that could adversely affect bond.
C. Install backing materials to prevent liquid material from leakage.

3.03 INSTALLATION

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

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

C. Install labeling required by code.

3.04 FIELD QUALITY CONTROL

A. Repair or replace penetration firestopping and joints at locations where inspection results indicate firestopping or joints do not meet specified requirements.

3.05 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.06 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

END OF SECTION

SECTION 07 92 00 - JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants.
B. Self-leveling pourable joint sealants.
C. Joint backings and accessories.

1.02 REFERENCE STANDARDS

A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer.
B. ASTM C834 - Standard Specification for Latex Sealants.
C. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
E. ASTM C1193 - Standard Guide for Use of Joint Sealants.
F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants.
G. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants.
H. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness.
I. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
J. SCAQMD 1168 - Adhesive and Sealant Applications.
K. UL 263 - Standard for Fire Tests of Building Construction and Materials.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
    1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
    2. List of backing materials approved for use with the specific product.
    3. Backing material recommended by sealant manufacturer.
    4. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
    5. Substrates the product should not be used on.
C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

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

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience and approved by manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Sealants:
   1. Bostik Inc: www.bostik-us.com/#sle.
   2. Dow Chemical Company: consumer.dow.com/en-us/industry/ind-building-construction.html/#sle.
   3. Hilti, Inc: www.us.hilti.com/#sle.
   4. Master Builders Solutions by BASF: www.master-builders-solutions.basf.us/en-us/#sle.
   5. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com/#sle.
   6. Pecora Corporation: www.pecora.com/#sle.
   7. Sika Corporation: www.usa-sika.com/#sle.
   8. Specified Technologies Inc: www.stifirestop.com/#sle.
   9. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.

2.02 JOINT SEALANT APPLICATIONS

A. Scope:
   1. Exterior Joints:
      a. Seal the following joints:
         1) Joints between doors, windows, and other frames or adjacent construction.
         2) Joints between different exposed materials.
   2. Interior Joints:
      a. Seal the following joints:
         1) Joints between door frames, window frames, and other frames and adjacent construction.
         2) In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, and piping penetrations.

3) In sound-rated wall and ceiling assemblies, seal joints between wall assemblies and ceiling assemblies; between wall assemblies and other construction; between ceiling assemblies and other construction.

3. Do Not Seal:
   a. Intentional weep holes in masonry.
   b. Joints indicated to be covered with expansion joint cover assemblies.
   c. Joints where sealant is specified to be furnished and installed by manufacturer of product to be sealed.
   d. Joints where sealant installation is specified in other sections.

B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.

C. Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.
   1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant.
   2. Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; white.
   3. In Sound-Rated Assemblies: Acrylic emulsion latex sealant.
   4. Narrow Control Joints in Interior Concrete Slabs: Self-leveling polyurethane sealant.
   5. Other Floor Joints: Self-leveling polyurethane traffic-grade sealant.

D. Interior Wet Areas: Bathrooms, restrooms, and kitchens; fixtures in wet areas include plumbing fixtures, countertops, cabinets, and other similar items.

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

2.03 JOINT SEALANTS - GENERAL

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

2.04 NONSAG JOINT SEALANTS

A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus and minus 50 percent, minimum.
   2. Nonstaining to Porous Stone: Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248.
   3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
   4. Hardness Range: 15 to 35, Shore A, when tested in accordance with ASTM C661.
   5. Color: To be selected by Architect from manufacturer's full range.

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

C. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus and minus 35 percent, minimum.
   2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
   3. Color: To be selected by Architect from manufacturer's full range.

D. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
   1. Color: Standard colors matching finished surfaces, Type OP (opaque).
   2. Grade: ASTM C834; Grade 32 Degrees F (0 Degrees C).

E. Acrylic Latex Sealant: ASTM C834; for use as acoustical sealant and in firestopping systems for expansion joints and through penetrations.
   1. Color: Standard colors matching finished surfaces.
   2. Fire Rated System: Complies with UL 263 and ASTM E119 with UL fire resistance classifications.

2.05 SELF-LEVELING JOINT SEALANTS

A. Self-Leveling Polyurethane Sealant for Horizontal Expansion Joints: ASTM C920, Grade P, Uses T, M, and O; multicomponent; explicitly approved by manufacturer for horizontal expansion joints.
   1. Movement Capability: Plus and minus 25 percent, minimum.
   2. Hardness Range: 30 to 35, Shore A, when tested in accordance with ASTM C661.
   3. Color: To be selected by Architect from manufacturer's full range.

B. Rigid Self-Leveling Polyurethane Joint Filler: Two part, low viscosity, fast setting; intended for cracks and control joints not subject to significant movement.
   1. Hardness Range: Greater than 100, Shore A, and 50 to 80, Shore D, when tested in accordance with ASTM C661.

C. Semi-Rigid Self-Leveling Epoxy Joint Filler: Epoxy or epoxy/polyurethane copolymer; intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
   1. Composition: Multicomponent, 100 percent solids by weight.
   2. Durometer Hardness: Minimum of 85 for Type A or 35 for Type D, after seven days when tested in accordance with ASTM D2240.
   3. Color: To be selected by Architect from manufacturer's standard colors.
   4. Joint Width, Minimum: 1/8 inch.

2.06 ACCESSORIES

A. Sealant Backing Materials, General: Materials placed in joint before applying sealants; assists sealant performance and service life by developing optimum sealant profile and preventing three-sided adhesion; type and size recommended by sealant manufacturer for compatibility with sealant, substrate, and application.

B. Sealant Backing Rod, Closed-Cell Type:
   1. Cylindrical flexible sealant backings complying with ASTM C1330 Type C.
   2. Size: 25 to 50 percent larger in diameter than joint width.

C. Sealant Backing Rod, Bi-Cellular Type:
   1. Cylindrical flexible sealant backings complying with ASTM C1330 Type B.
   2. Size: 25 to 50 percent larger in diameter than joint width.

D. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

E. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

F. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.

G. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in an inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Provide joint sealant installations complying with ASTM C1193.

C. Install acoustical sealant application work in accordance with ASTM C919.

D. Measure joint dimensions and size joint backers to achieve the following:

1. Width/depth ratio of 2:1.
2. Neck dimension no greater than 1/3 of the joint width.
3. Surface bond area on each side not less than 75 percent of joint width.

E. Install bond breaker backing tape where backer rod cannot be used.

F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

I. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

END OF SECTION

SECTION 08 91 00 - LOUVERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Louvers, frames, and accessories.

1.02 RELATED REQUIREMENTS

A. Section 23 31 00 - HVAC Ductwork: Ductwork attachment to louversand blank-off panels.

1.03 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
B. AMCA 500-L - Laboratory Methods of Testing Louvers for Rating.
C. AMCA 511 - Certified Ratings Program Product Rating Manual for Air Control Devices.
D. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Product Data: Provide data describing design characteristics, maximum recommended air velocity, design free area, materials and finishes.
C. Shop Drawings: Indicate louver layout plan and elevations, opening and clearance dimensions, and tolerances; head, jamb and sill details; blade configuration, screens, blank-off areas required, and frames.
D. Samples: Submit two samples 2 by 2 inches in size illustrating finish and color of exterior and interior surfaces.
E. Test Reports: Independent agency reports showing compliance with specified performance criteria.

1.05 QUALITY ASSURANCE

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

1.06 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
B. Provide five year manufacturer's warranty against distortion, metal degradation, and connection failures of louver components.
    1. Finish: Include ten year coverage against degradation of exterior finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Louvers:
   1. Airolite Company, LLC: www.airolite.com/#sle.
   2. American Warming and Ventilating: www.awv.com/#sle.
   3. Construction Specialties, Inc: www.c-sgroup.com/#sle.
   4. Greenheck.
   5. Industrial Louvers, Inc: www.industriallouvers.com/#sle.
   6. Ruskin: www.ruskin.com/#sle.
   7. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 LOUVERS

A. Louvers: Factory fabricated and assembled, complete with frame, mullions, and accessories; AMCA Certified in accordance with AMCA 511.
   1. Wind Load Resistance: Design to resist positive and negative wind load of 25 psf without damage or permanent deformation.
   2. Intake Louvers: Design to allow maximum of 0.01 oz/sq ft water penetration at calculated intake design velocity based on design air flow and actual free area, when tested in accordance with AMCA 500-L.
   3. Drainable Blades: Continuous rain stop at front or rear of blade aligned with vertical gutter recessed into both jambs of frame.

B. Stationary Louvers: Horizontal blade, extruded aluminum construction, with intermediate mullions matching frame.
   1. Free Area: 50 percent, minimum.
   2. Pressure Drop: 0.061 inches of water gauge maximum per square foot of free area at velocity of 1250 fpm, when tested in accordance with AMCA 500-L, test unit size 48 inch by 48 inch.
   3. Blades: Drainable.
   4. Frame: 6 inches deep, channel profile; corner joints mitered and, with continuous recessed caulking channel each side.
   5. Aluminum Thickness: Frame 12 gauge, 0.0808 inch minimum; blades 12 gauge, 0.0808 inch minimum.
   6. Aluminum Finish: Class I natural anodized; finish welded units after fabrication.

2.03 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M).

B. Stainless Steel: ASTM A666/A666M, Type 304, soft temper, smooth surface, No. 4 brushed finish.

2.04 FINISHES

A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.

2.05 ACCESSORIES

A. Blank-Off Panels: Specified in Section 23 31 00.
B. Insect Screen: 18 x 16 size aluminum mesh.
C. Fasteners and Anchors: Stainless steel.
D. Extended Sill Flashings: Of same material as louver frame, formed to required shape, single length in one piece per location.
E. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 INSTALLATION

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

3.03 CLEANING

A. Strip protective finish coverings.

END OF SECTION

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SECTION 09 21 16 - GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal stud wall framing.
B. Metal channel ceiling framing.
C. Acoustic insulation.
D. Gypsum wallboard.
E. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood blocking product and execution requirements.

1.03 REFERENCE STANDARDS

A. AISI S201 - North American Standard for Cold-Formed Steel Framing - Product Data.
B. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing.
C. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing.
D. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
F. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.
G. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories.
H. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
I. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
J. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
K. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
L. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
M. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
N. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.

O. ASTM C1178/C1178M - Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel.
P. ASTM C1396/C1396M - Standard Specification for Gypsum Board.
Q. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
R. GA-216 - Application and Finishing of Gypsum Panel Products.
S. GA-226 - Application of Gypsum Board to Form Curved Surfaces.
T. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Product Data:
    1. Provide data on metal framing, gypsum board, accessories, and joint finishing system.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.
B. Store metal products to prevent corrosion, under cover and above grade.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.
    1. See PART 3 for finishing requirements.

2.02 METAL FRAMING MATERIALS

A. Material and Product Requirements Criteria: AISI S201.
B. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S220 or equivalent.
    1. Structural Grade: As required to meet design criteria.
    2. Corrosion Protection Coating Designation: G40, or equivalent in accordance with AISI S220.
C. Non-structural Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
    1. Studs: "C" shaped.
    2. Runners: U shaped, sized to match studs.
    3. Ceiling Channels: C-shaped.
    4. Flexible Track: Flexible framing consisting of adjustable leg straps and pivoting, hinged track brackets designed to provide curved framing assemblies of varying radii.

5. Furring Members: Hat-shaped sections, minimum depth of 7/8 inch.
6. Furring Members: U-shaped sections, minimum depth of 3/4 inch.
7. Furring Members: Zee-shaped sections, minimum depth of 1 inch.
8. Resilient Furring Channels: Single or double leg configuration; 1/2 inch channel depth.

D. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short.

E. Non-structural Framing Accessories:
1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
2. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
a. Materials: ASTM A36/A36M formed sheet steel support member with factory-welded ASTM A1003/A1003M steel plate base.
3. Framing Connectors: ASTM A653/A653M G90 galvanized steel clips; secures cold rolled channel to wall studs for lateral bracing.

F. Grid Suspension Systems: Steel grid system of main tees and support bars connected to structure using hanging wire.
1. Products:
a. CertainTeed Corporation; Quickspan Locking Drywall Grid System: www.certainteed.com/ceilings-and-walls/#sle.
b. USG Corporation; Drywall Suspension System: www.usg.com/#sle.
c. Armstrong World Industries, Inc.; Drywall Grid System.

2.03 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
1. CertainTeed Corporation: www.certainteed.com/#sle.
2. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
3. National Gypsum Company: www.nationalgypsum.com/#sle.
4. USG Corporation: www.usg.com/#sle.

B. GWB - Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
a. Mold-resistant board is required whenever board is being installed before the building is enclosed and conditioned.
b. Mold resistant board is required in toilet and shower rooms.
3. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
4. Thickness:

a. Vertical Surfaces: 5/8 inch.
b. Ceilings: 5/8 inch.

C. Backing Board For Wet Areas:
1. Application: Substrate behind tile.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
3. Glass Mat Faced Board: Coated glass mat water-resistant gypsum backing panel as defined in ASTM C1178/C1178M.
a. Fire-Resistance-Rated Type: Type X core, thickness 5/8 inch.
b. Products:
1) CertainTeed Corporation; 5/8" GlasRoc Tile Backer Type X: www.certainteed.com/#sle.
2) Georgia-Pacific Gypsum; DensShield Tile Backer: www.gpgypsum.com/#sle.
3) Gold Bond Building Products, LLC provided by National Gypsum Company; Gold Bond eXP Fire-Shield Tile Backer: www.goldbondbuilding.com/#sle.
4) USG Corporation; Durock Brand Glass-Mat Tile Backerboard 5/8 in. (15.9 mm): www.usg.com/#sle.

D. Exterior Sheathing Board: See Section 06 10 00.

2.04 GYPSUM BOARD ACCESSORIES

A. Acoustic Insulation: ASTM C665; preformed mineral-fiber, friction fit type, unfaced; thickness 3-1/2 inch.

B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
1. Products:
a. Franklin International, Inc; Titebond Acoustical Smoke & Sound Sealant: www.titebond.com/#sle.
b. Specified Technologies Inc; Smoke N Sound Acoustical Sealant: www.stifirestop.com/#sle.

C. Sound Barrier Mullion Trim Cap (Partition Gap Closure): Extruded aluminum trim for maintaining sound barriers at intersections between gypsum walls and glazing assemblies.
1. STC: 55.
2. Gasket Thickness: 1/2 inch.
3. Finish: Match glazing assembly framing finish.
4. Products:
a. Mull-It-Over Products, Inc; Mull-It-Over Series: mullitoverproducts.com/#sle.
b. Gordon, Inc.; Mullion Mate Series.

D. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, unless noted otherwise.

1. Corner Beads: Standard profile, for 90 degree outside corners.
   a. Products:
      1) CertainTeed Corporation; No-Coat Drywall Corner: www.certainteed.com/#sle.
      2) ClarkDietrich; Strait-Flex OS-300: www.clarkdietrich.com/#sle.
      3) Trim-Tex, Inc; Corner Bead: www.trim-tex.com/#sle.
2. L-Trim with Tear-Away Strip: Sized to fit 5/8 inch thick gypsum wallboard.
3. Expansion Control Joints:
   a. Fire-Resistance Rated: 1 or 2 hour as indicated when joint system tested in accordance with UL 2079.
   b. Type: V-shaped PVC with tear away fins.
   c. Products:
      1) Phillips Manufacturing Co; 093 Expansion Control Joint: www.phillipsmfg.com/#sle.
      2) Trim-Tex, Inc; Fire Rated 093V Expansion Bead: www.trim-tex.com/#sle.
      3) Or approved equal.

E. Decorative Metal Trim:
   1. Material: Extruded aluminum alloy 6063-T5 temper.
   2. Finish: Anodized, clear, unless indicated ot.
   3. Type: Profile as selected from manufacturer's standard range.

F. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
   1. Paper Tape: 2 inch wide, creased paper tape for joints and corners.
   2. Joint Compound: Drying type, vinyl-based, ready-mixed.

G. Finishing Compound: Surface coat and primer, takes the place of skim coating.

H. High Build Drywall Surfacer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.

I. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.

J. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

K. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C1007AISI S220 and manufacturer's instructions.
B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
   1. Laterally brace entire suspension system.
C. Studs: Space studs at 16 inches on center.
   1. Extend partition framing to structure where indicated and to ceiling in other locations.
   2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
   3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
   4. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
E. Standard Wall Furring: Install at concrete and masonry walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.
F. Blocking: Install wood blocking or mechanically fastened steel sheet blocking for support of:
   1. Framed openings.
   2. Wall-mounted cabinets.
   3. Plumbing fixtures.
   4. Toilet partitions.
   5. Toilet accessories.
   6. Wall-mounted door hardware.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
B. Acoustic Sealant: Install in accordance with manufacturer's instructions.

1. Place one bead continuously on substrate before installation of perimeter framing members.
2. Place continuous bead at perimeter of each layer of gypsum board.
3. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

C. Sound Barrier Mullion Trim Cap Installation: Install in accordance with manufacturer's instructions for installation of fire-rated mullion trim caps.

3.04 BOARD INSTALLATION

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

B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

C. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

D. Installation on Metal Framing: Use screws for attachment of gypsum board except face layer of nonrated double-layer assemblies, which may be installed by means of adhesive lamination.

E. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

A. Expansion Control Joints: Place expansion control joints consistent with lines of building spaces and as follows:
   1. Not more than 30 feet apart on walls and ceilings over 50 feet long.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

D. Decorative Trim: Install at locations shown on drawings and in accordance with manufacturer's instructions.

3.06 JOINT TREATMENT

A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.

B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish, dry erase coatings, and other areas specifically indicated.
   2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   3. Level 3: Walls to receive textured wall finish.
   4. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.

5. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.

C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch.
   2. Taping, filling, and sanding are not required at base layer of double-layer applications.

D. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

3.07 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09 51 00 - ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.
B. Acoustical units.
C. Removal and replacement of existing systems.

1.02 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
B. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
C. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
D. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Product Data: Provide data on suspension system components and acoustical units.
C. Samples: Submit two samples 3 by 4 inch in size illustrating material and finish of acoustical units.
D. Samples: Submit two samples each, 6 inches long, of suspension system main runner, cross runner, and perimeter molding.
E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
    1. See Section 01 60 00 - Product Requirements, for additional provisions.
    2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.05 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acoustic Tiles/Panels/Grid:
   1. CertainTeed Corporation: www.certainteed.com/#sle.
      a. Plan note #3: New 2 x 2 Certainteed Cashmere 15/16" reveal edge (tegular) tile, white. Grid is 15/16" exposed tee suspended system in white.
      b. Plan Note #5: New 2 x 2 Certainteed Adagio 15/16" reveal edge (tegular) tile, white. Grid is 15/16" exposed tee suspension system in white.:
   2. No product substitutions will be allowed.

2.02 ACOUSTICAL UNITS

A. Acoustical Panels: As indicated on Drawings:
   1. Products: As indicated on Interior Finish Schedule.

2.03 SUSPENSION SYSTEM(S)

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, clips, and splices as required.
   1. Materials:
      a. Steel Grid: ASTM A653/A653M, G30 coating, unless otherwise indicated.
      b. Aluminum Grid: Aluminum sheet, ASTM B209/B209M.

B. Exposed Suspension System: Hot-dipped galvanized steel grid and cap.
   1. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
   2. Finish: Baked enamel.
   3. Color: White.

C. Exposed Suspension System: Aluminum grid and cap.
   1. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
   2. Finish: Baked enamel.
   3. Color: White

2.04 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.

C. Hold-Down Clips: Manufacturer's standard clips to suit application.

D. Perimeter Moldings: Same metal and finish as grid.
   1. Size: As required for installation conditions.

2. Angle Molding: L-shaped, for mounting at same elevation as face of grid.
3. Shadow Molding: Shaped to create a perimeter reveal.
4. Acoustical Sealant For Perimeter Moldings: Non-hardening, non-skinning, for use in conjunction with suspended ceiling system.

E. Metal Edge Trim for Suspension Systems: Steel or extruded aluminum; provide attachment clips, splice plates, and preformed corner pieces for complete trim system.
1. Finish: Baked enamel.
2. Color: White.

F. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

A. Install after major above-ceiling work is complete.
B. Coordinate the location of hangers with other work.
C. Remove and salvage ceiling components as indicated.

3.03 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M and manufacturer's instructions and as supplemented in this section.
B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
C. Do not hang system from roof deck.
D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
1. Install in bed of acoustical sealant.
2. Use longest practical lengths.
3. Miter corners.

E. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

I. Do not eccentrically load system or induce rotation of runners.

3.04 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

E. Cutting Acoustical Units:

1. Cut to fit irregular grid and perimeter edge trim.
2. Make field cut edges of same profile as factory edges.
3. Double cut and field paint exposed reveal edges.

F. Where round obstructions occur, provide preformed closures to match perimeter molding.

G. Install hold-down clips on panels within 20 ft of an exterior door.

3.05 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.06 CLEANING

A. Clean surfaces.

B. Replace damaged or abraded components.

END OF SECTION

SECTION 09 90 00 - PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.
B. Interior painting and coating systems.
C. Exterior painting and coating systems.
D. Scope:
    1. Finish surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
        a. Exterior:
            1) Concrete: Non-vehicular floors, patios, porches, steps, and platforms.
            2) Metal: Aluminum, galvanized.
            3) Metal, Miscellaneous: Iron, ornamental iron, structural iron and steel, ferrous metal.
        b. Interior:
            1) Concrete, Walls and Ceilings: Poured concrete, precast concrete, unglazed brick, cement board, tilt-up, cast-in-place concrete, and plaster.
            2) Masonry CMU: Concrete, split face, scored, smooth, high density, low density, and fluted.
            3) Metal: Aluminum and galvanized.
            4) Metal, Galvanized: Ceilings and ductwork.
            5) Drywall: Walls, ceilings, gypsum board, and similar items.

1.02 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency.
B. SSPC-SP 1 - Solvent Cleaning.
C. SSPC-SP 2 - Hand Tool Cleaning.
D. SSPC-SP 6 - Commercial Blast Cleaning.
E. SSPC-SP 13 - Surface Preparation of Concrete.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Product Data: Provide complete list of products to be used, with the following information for each:

1. Product characteristics.
2. Surface preparation instructions and recommendations.
3. Primer requirements and finish specification.
4. Storage and handling requirements and recommendations.
5. Application methods.
6. Clean-up information.

C. Samples: Submit four paper draw down samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.

D. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 60 00 - Product Requirements for additional provisions.
2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
3. Label each container with color in addition to manufacturer's label.

1.04 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years experience and approved by manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, product name, product code, color designation, VOC content, batch date, environmental handling, surface preparation, application, and use instructions.

C. Paint Materials: Store at a minimum of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

A. Do not apply materials when environmental conditions are outside the ranges required by manufacturer.

B. Follow manufacturer's recommended procedures for producing the best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design Products: Subject to compliance with requirements, provide Sherwin-Williams Company (The) products indicated; www.sherwin-williams.com/#sle.

B. Comparable Products: Products of approved manufacturers will be considered in accordance with 01 60 00 - Product Requirements, and the following:

1. Products are approved by manufacturer in writing for application specified.
2. Products that meet or exceed performance and physical characteristics of basis of design products.
3. Other Acceptable Manufacturers:
    a. Benjamin Moore.
    b. Diamond Vogel Paints.
    c. Hallman Lindsay.
    d. PPG Paints.

2.02 PAINTINGS AND COATINGS

A. General:

1. Provide factory-mixed coatings unless otherwise indicated.
2. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application.
3. Do not reduce, thin, or dilute coatings or add materials to coatings unless specifically indicated in manufacturer's instructions.

B. Volatile Organic Compound (VOC) Content:

1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
    a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
    b. Ozone Transport Commission (OTC) Phase II Model Rule, Architectural and Industrial Maintenance Coatings; www.otcair.org.
    c. Architectural coatings VOC limits of State in which the project is located.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site, or other method acceptable to authorities having jurisdiction.

C. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

2.03 PAINT SYSTEMS - EXTERIOR

A. Concrete: Curb paint. (Traffic Marking Paint)

1. Marking Paint: In accordance with AASHTO MP 24
    a. Color: Yellow

B. Metal: Aluminum, galvanized.
    1. Latex Systems:
        a. Semi-Gloss Finish:
            1) 1st and 2nd Coats: Sherwin-Williams Pro Industrial Acrylic Semi-Gloss, B66-650 Series: www.sherwin-williams.com/#sle.
                a) 2 to 4 mils dry per coat.

C. Metal, Miscellaneous: Iron, ornamental iron, structural iron and steel, ferrous metal.
    1. Latex Systems:
        a. Semi-Gloss Finish:
            1) 1st Coat: Sherwin-Williams Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series: www.sherwin-williams.com/#sle.
                a) 5 to 10 mils wet, 1.8 to 3.6 mils dry per coat.
            2) 2nd and 3rd Coat: Sherwin-Williams Pro Industrial Acrylic Semi-Gloss, B66-650 Series: www.sherwin-williams.com/#sle.
                a) 2 to 4 mils dry per coat.

2.04 PAINT SYSTEMS - INTERIOR

A. Concrete, Walls an: Poured concrete, precast concrete, unglazed brick, cement board, tilt-up, cast-in-place concrete, and plaster.
    1. Latex Systems:
        a. Eg-Shel Finish:
            1) 1st Coat: Sherwin-Williams Loxon Concrete and Masonry Primer Sealer, LX02W50 Series: www.sherwin-williams.com/#sle.
                a) 8 mils wet, 3.2 mils dry per coat.
            2) 2nd and 3rd Coat: Sherwin-Williams ProMar 200 Zero VOC Eg-Shel, B20-2600 Series: www.sherwin-williams.com/#sle.
                a) 4 mils wet, 1.7 mils dry per coat.

B. Masonry CMU: Concrete, split face, scored, smooth, high density, low density, and fluted.
    1. Latex Systems:
        a. Eg-Shel/Satin Finish:
            1) 1st Coat: Sherwin-Williams PrepRite Block Filler, B25W25: www.sherwin-williams.com/#sle.
                a) 75 to 125 sq ft/gal.

2) 2nd and 3rd Coat: Sherwin-Williams ProMar 200 Zero VOC Eg-Shel, B20-2600 Series: www.sherwin-williams.com/#sle.

a) 4 mils wet, 1.7 mils dry per coat.

C. Metal: Aluminum and galvanized.

1. Alkyd Systems, Water Based:

a. Semi-Gloss Finish:

1) 1st Coat: Sherwin-Williams Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series: www.sherwin-williams.com/#sle.

a) 5 mils wet, 2 mils dry per coat.

2) 2nd and 3rd Coat: Sherwin-Williams Pro Industrial Water Based Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series: www.sherwin-williams.com/#sle.

a) 4 to 5 mils wet, 1.4 to 1.7 mils dry per coat.

D. Metal, Galvanized: Ceilings and ductwork.

1. Dryfall Waterborne Topcoats:

a. Flat Finish:

1) 1st and 2nd Coat: Sherwin-Williams Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series: www.sherwin-williams.com/#sle.

a) 6 mils wet, 1.7 mils dry per coat.

E. Drywall: Walls, ceilings, gypsum board, and similar items.

1. Latex Systems:

a. Eg-Shel Finish: Walls.

1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600: www.sherwin-williams.com/#sle.

a) 4 mils wet, 1.5 mils dry per coat.

2) 2nd and 3rd Coat: Sherwin-Williams ProMar 200 Zero VOC Eg-Shel, B20-2600 Series: www.sherwin-williams.com/#sle.

a) 4 mils wet, 1.7 mils dry per coat.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

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

C. Remove mildew from impervious surfaces by scrubbing with solution of water and bleach. Rinse with clean water and allow surface to dry.

D. Concrete:

1. Remove release agents, curing compounds, efflorescence, and chalk.
2. Fill bug holes, air pockets, and other voids with cement patching compound.
3. Prepare concrete according to SSPC-SP 13.

E. Masonry: Remove efflorescence and chalk.

F. Gypsum Board: Fill minor defects with filler compound; sand smooth and remove dust prior to painting.

G. Aluminum: Remove surface contamination and oil; wash with solvent according to SSPC-SP 1.

H. Galvanized Surfaces:

1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
2. Prepare surface according to SSPC-SP 2.

I. Ferrous Metal:

1. Solvent clean according to SSPC-SP 1.
2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Prime bare steel surfaces.
3. Remove rust, loose mill scale, and other foreign substances using methods recommended by paint manufacturer and blast cleaning according to SSPC-SP 6. Protect from corrosion until coated.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's written instructions.

C. Apply coatings at spread rate required to achieve manufacturer's recommended dry film thickness.

D. Regardless of number of coats specified, apply additional coats until complete hide is achieved.

3.04 PRIMING

A. Apply primer to all surfaces unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

B. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to top coat manufacturers.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
B. Clean surfaces immediately of overspray, splatter, and excess material.
C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

3.06 PROTECTION

A. Protect finished coatings from damage until completion of project.
B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

DESIGN CRITERIA

1. BUILDING CODE - INTERNATIONAL BUILDING CODE (IBC) 2015 / ASCE7-10
2. FLOOR LIVE LOADS

OFFICES	50 PSF
PARTITIONS	15 PSF
CORRIDORS	100 PSF
PUBLIC AREAS	100 PSF
STORAGE (LIGHT)	125 PSF
STAIRS	100 PSF

3. SNOW LOADS

GROUND SNOW, Pg	35 PSF
EXPOSURE FACTOR, Ce	1.0
TEMPERATURE FACTOR, Ct	1.0
SLOPED ROOF FACTOR, Cs	1.0
IMPORTANCE FACTOR, Is	1.1
FLAT ROOF SNOW, Pf	27 PSF
SLOPED ROOF SNOW, Ps	27 PSF

SLIDING & DRIFTING SNOW, IN ADDITION TO FLAT ROOF SNOW, SEE PLANS
UNBALANCED SNOW PER ASCE 7

GENERAL REQUIREMENTS

1. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INCLUDE THE METHOD OF CONSTRUCTION. CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO: BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, TEMPORARY STRUCTURES, AND PARTIALLY COMPLETED WORK. OBSERVATION VISITS TO THE SITE BY STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
2. GENERAL CONTRACTOR TO DISTRIBUTE ALL SHEETS IN THE SET TO SUBCONTRACTORS.
3. THE ARCHITECT AND/OR ENGINEER OF RECORD SHALL NOT HAVE CONTROL OVER OR BE IN CHARGE OF, AND SHALL NOT BE RESPONSIBLE IN ANY WAY FOR CONSTRUCTION MEANS, METHODS TECHNIQUES, SEQUENCES, OR PROCEDURES, OR FOR SAFETY OR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH ANY CONSTRUCTION ACTIVITIES, SINCE THESE ARE SOLELY THE CONTRACTOR'S RESPONSIBILITY.
4. SUBMITTALS PREPARED BY SUBCONTRACTORS SHALL BE REVIEWED BY CONTRACTOR PRIOR TO SUBMITTING TO ARCHITECT/ENGINEER.
5. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS AT THE JOB SITE. ANY DISCREPANCIES BETWEEN THE CONDITIONS FOUND AND THOSE INDICATED IN THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
6. SEE DOCUMENTS FROM OTHER DISCIPLINES FOR FLOOR, WALL, AND ROOF OPENINGS, TRENCHES, PITS, PIPE SLEEVES, EQUIPMENT PADS, METAL PAN STAIRS, MISCELLANEOUS IRON, ETC.
7. DO NOT PLACE PIPES, DUCTS, CHASES, ETC. IN STRUCTURAL BEAM AND COLUMN MEMBERS. DO NOT CUT ANY STRUCTURAL MEMBER FOR PIPES, DUCTS, ETC., UNLESS NOTED OTHERWISE. NOTIFY STRUCTURAL ENGINEER WHEN DOCUMENTS BY OTHER DISCIPLINES SHOW OPENINGS, POCKETS, ETC. NOT INDICATED IN THE STRUCTURAL DRAWINGS BUT ARE LOCATED IN THE STRUCTURAL MEMBERS. CONTRACTOR SHALL OBTAIN APPROVAL FROM STRUCTURAL ENGINEER FOR INSTALLATION OF SUCH PIPES, DUCTS, CHASES, ETC.
8. DETAILS LABELED "TYPICAL" ON THE STRUCTURAL DRAWINGS APPLY TO ALL SITUATIONS OCCURRING ON PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE LOCATIONS SPECIFICALLY INDICATED. WHERE A DETAIL IS NOT INDICATED, THE DETAIL SHALL BE THE SAME AS FOR OTHER SIMILAR CONDITIONS.
9. DELEGATED DESIGNED ELEMENTS SHALL BE DESIGNED BY LICENSED PROFESSIONAL ENGINEERS REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED. GENERAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, DESIGN LOAD DATA, SUPPORT REACTIONS, AND CERTIFICATION THAT ELEMENTS ARE DESIGNED FOR LOADS SPECIFIED IN THE CONTRACT DOCUMENTS OR IN THE BUILDING CODE. ALLOW MINIMUM 10 BUSINESS DAYS FOR REVIEW BY EOR. ALL DOCUMENTS NOTED SHALL BE SEALED BY THE LICENSED ENGINEER. CRITERIA INDICATED ARE NOT SUFFICIENT. SUBMIT A WRITTEN REQUEST FOR ADDITIONAL INFORMATION TO THE ARCHITECT. THE FOLLOWING ELEMENTS AND THEIR CONNECTIONS SHALL BE CONTRACTOR DESIGNED:
   A. STRUCTURAL STEEL CONNECTIONS NOT DETAILED OR SHOWN ON THE DRAWINGS
   B. TEMPORARY SHORING DURING CONSTRUCTION

EXISTING CONSTRUCTION

1. ALL EXISTING FRAMING SHOWN ON THESE DRAWINGS IS BASED ON AVAILABLE DOCUMENTATION & FIELD OBSERVATION TO DATE. CONTRACTOR SHALL FIELD VERIFY ALL SIZES, DIMENSIONS, ELEVATIONS AND CONFIGURATIONS OF EXISTING STRUCTURAL ELEMENTS (COLUMNS, BEAMS, WALLS, ETC.) AS NECESSARY TO PROPERLY INSTALL ALL NEW STRUCTURAL ELEMENTS AS SHOWN. COORDINATE DIFFERENCES BETWEEN FIELD CONDITIONS AND STRUCTURAL DRAWINGS WITH STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH WORK, AND PROCUREMENT/FABRICATION OF MATERIALS.
2. REMOVE AND REPLACE AND/OR MODIFY ALL EXISTING CONSTRUCTION (ARCHITECTURAL, STRUCTURAL, ELECTRICAL, AND MECHANICAL) AS REQUIRED IN ORDER TO PLACE NEW STRUCTURAL WORK SHOWN ON THE CONSTRUCTION DOCUMENTS. DO NOT MODIFY STRUCTURAL COMPONENTS UNLESS DETAILED ON THE CONSTRUCTION DOCUMENTS.
3. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND CONSTRUCTION (MEANS & METHODS OF CONSTRUCTION). THIS INCLUDES, BUT IS NOT LIMITED TO: SHORING, UNDERPINNING, TEMPORARY BRACING, ETC. CONTRACTOR SHALL DESIGN AND PROVIDE ALL SHORING DESIGN, MATERIALS AND FABRICATION REQUIRED TO SUPPORT EXISTING CONSTRUCTION AND NEW CONSTRUCTION AS REQUIRED TO BUILD THIS PROJECT.

CONCRETE

CODES & STANDARDS:	
ACI 301	*SPECIFICATIONS FOR CONCRETE CONSTRUCTION*
ACI 305	*GUIDE TO HOT WEATHER CONCRETING*
ACI 306	*GUIDE TO COLD WEATHER CONCRETING*
ACI 318	*BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE*

MATERIALS (28 DAY COMPRESSIVE STRENGTH):	
FOOTINGS	f'c=3,000 PSI
INTERIOR SLAB ON GRADE	f'c=4,000 PSI
EXTERIOR SLAB ON GRADE (EXCLUDING SIDEWALKS)	f'c=5,000 PSI
FOUNDATION WALLS / GRADE BEAMS / PIERS	f'c=4,500 PSI
BEAMS / COLUMNS	f'c=4,000 PSI
CONCRETE ON METAL DECK	f'c=4,000 PSI
CONCRETE TOPPING	f'c=4,000 PSI

1. CONCRETE MIX DESIGN (INCLUDING AGGREGATE SIZE, WATER CEMENT RATIO, AIR ENTRAINMENT, ADMIXTURES, SLUMP AND HISTORY OF BREAK TESTS) SHALL BE SUBMITTED TO THE EOR FOR APPROVAL PRIOR TO THE COMMENCEMENT OF ANY WORK. CONCRETE SHALL BE NORMAL WEIGHT UNO.
2. MAXIMUM WATER/CEMENT RATIO PERMITTED SHALL BE 0.55 FOR FOOTINGS, 0.50 FOR INTERIOR SLABS ON GRADE, 0.45 FOR BELOW GRADE CONCRETE AND 0.40 FOR CONCRETE EXPOSED TO WATER AND DEICING CHEMICALS.
3. CONCRETE WHICH WILL BE EXPOSED TO THE WEATHER (INCLUDING FOUNDATION WALLS) SHALL HAVE AIR-ENTRAINING ADMIXTURE AS REQUIRED TO PROVIDE 6% ± 1% AIR ENTRAINMENT.
4. MAXIMUM AGGREGATE SIZE SHALL BE 3/4" FOR SLABS ON GRADE, WALLS, BEAMS & COLUMNS, 1" FOR FOOTINGS AND 3/8" FOR TOPPING SLABS. NORMAL WEIGHT AGGREGATE TO CONFORM TO ASTM C33, LIGHTWEIGHT AGGREGATE TO CONFORM TO ASTM C330.
5. CONCRETE SHALL BE EVALUATED ACCORDING TO METHOD 1 OR METHOD 2 AS DESCRIBED IN ACI 301. THE RESULTS OF THESE ANALYSES SHALL BE SUBMITTED TO THE EOR FOR APPROVAL PRIOR TO ANY WORK.
6. THE CONTRACTOR SHALL MAKE PROVISIONS TO ALLOW AN INDEPENDENT TESTING AGENCY TO CAST 4 TEST CYLINDERS FOR EACH 50 CUBIC YARDS OF CONCRETE PLACED, OR FOR ANY DAY'S OPERATION. THE TESTING AGENCY SHALL BE RESPONSIBLE FOR CASTING AND CURING SPECIMENS IN COMPLIANCE TO ASTM C31 AND CASTING TESTING SPECIMENS IN COMPLIANCE TO ASTM C39.
7. DRAWINGS SHOWING THE LOCATION OF CONSTRUCTION JOINTS, CONTROL JOINTS, AND PLACING SEQUENCE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THE PREPARATION OF REINFORCING SHOP DRAWINGS. MAXIMUM POUR LENGTHS OF WALLS TO BE 40'-0" AND A MINIMUM OF 4'-0" AWAY FROM INTERSECTIONS AND CORNERS.
8. GROUT USED TO SET PLATES SHALL BE NON-SHRINK AND NON-METALLIC.
9. THE CONTRACTOR SHALL USE SMOOTH FORMS FOR EXPOSED CONCRETE SURFACES. BOARD FORMS MAY BE USED FOR UNEXPOSED CONCRETE SURFACES. EARTH FORMS ARE FORBIDDEN.
10. PROVIDE COMPACTED GRANULAR FILL UNDER ALL SLABS ON GRADE, SEE CONCRETE SLAB ON GRADE SCHEDULE.
11. VAPOR BARRIER TO BE AS INDICATED ON TYPICAL SLAB JOINT DETAIL, LAP MINIMUM 6" AND TAPE ALL SEAMS. VERIFY ADDITIONAL REQUIREMENTS WITH ARCHITECTURAL SPECIFICATIONS.
12. FLOOR FLATNESS AND LEVELNESS OF SLAB ON GRADE CONCRETE SHALL HAVE THE FOLLOWING TOLERANCES, AS RECOGNIZED BY THE MOST CURRENT VERSION OF ASTM E 1155 AND ACI 302.1. SEE SPECIFICATION FOR FURTHER REQUIREMENTS (F(F) SPECIFIED OVERALL VALUE (SOV) OF 50, MINIMUM LOCALIZED VALUE (MLV) OF 25 AND F(L) SPECIFIED OVERALL VALUE (SOV) OF 33, MINIMUM LOCALIZED VALVE (MLV) OF 17).

CONCRETE REINFORCING

CODES & STANDARDS:	
ACI 315	*GUIDE TO PRESENTING REINFORCING STEEL DESIGN DETAILS*
ACI 318	*BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE*
MSP2	*CRSI MANUAL OF STANDARD PRACTICE*
AWS D1.4	*STRUCTURAL WELDING CODE - REINFORCING STEEL*
WRI	*WELDED WIRE FABRIC MANUAL OF STANDARD PRACTICE*

MATERIALS:		
REINFORCING BARS	ASTM A615 Gr 60	Fy=60 KSI
WELDED WIRE FABRIC	ASTM A185	
MACRO FIBER REINFORCING	ASTM C1116 Type III	
WELDABLE REINFORCING BARS	ASTM A706	Fy=60 KSI

1. THE REINFORCEMENT FABRICATOR SHALL PROVIDE AND SCHEDULE ON SHOP DRAWINGS ALL REQUIRED REINFORCING STEEL AND NECESSARY ACCESSORIES TO HOLD REINFORCEMENT SECURELY IN PLACE AT THE CORRECT LOCATIONS.
2. THE REQUIRED CLEARANCE FOR REINFORCEMENT (UNO) SHALL BE 3" FOR CONCRETE PLACED DIRECTLY AGAINST EARTH, 2" (#6 & LARGER) AND 1 1/2" (#5 & SMALLER) FOR CONCRETE EXPOSED TO EARTH OR WEATHER, 1 1/2" (# 14 & LARGER) AND 3/4" (#11 & SMALLER) FOR CONCRETE NOT EXPOSED TO EARTH OR WEATHER.
3. THE CONTRACTOR SHALL REFER TO TYPICAL DETAILS SHOWN ON THE CONTRACT DRAWINGS FOR ADDITIONAL REINFORCING REQUIREMENTS.
4. WHERE REINFORCEMENT IS REQUIRED IN SECTIONS, REINFORCEMENT IS CONSIDERED TYPICAL WHEREVER THE SECTION APPLIES.
5. WELDED WIRE FABRIC SHALL HAVE A MINIMUM OF 6" LAP AND BE TIED TOGETHER.
6. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF COMPLETION OF REINFORCEMENT INSTALLATION AND ALLOW AT LEAST 24 HOURS BEFORE SCHEDULED CONCRETE PLACEMENT FOR THE ARCHITECT TO INSPECT REINFORCEMENT.
7. MACRO FIBER TO BE 1-1/2" MINIMUM LENGTH, WHERE INDICATED IN CONCRETE SLAB ON GRADE OR METAL DECK SCHEDULE. .

REINFORCED MASONRY

CODES:	
ACI 530.1/ASCE 6/TMS 602	*SPECIFICATION FOR MASONRY STRUCTURES*
ACI 530/ASCE 5/TMS 402	*BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES*

MATERIALS:		
CONCRETE MASONRY BLOCK	ASTM C-90	2,000 PSI
TYPE M/S MORTAR	ASTM C270	
GROUT (28 DAY STRENGTH)	ASTM C476	2,000 PSI
REINFORCING BARS	ASTM A615 Gr 60	Fy=60 KSI

1. THE REQUIRED MINIMUM 28 DAY COMPRESSIVE STRENGTH OF THE COMBINATION OF CONCRETE BLOCK, GROUT AND MORTAR ON THE NET AREA OF THE CONSTRUCTION (f'm) SHALL BE A MINIMUM OF 2,000 PSI.
2. ALL CONCRETE BLOCK MASONRY UNITS SHALL BE NORMAL WEIGHT.
3. ALL CONCRETE BLOCK MASONRY UNITS SHALL BE LAID IN RUNNING BOND, UNO.
4. MASONRY BLOCK CELLS CONTAINING VERTICAL REINFORCING SHALL BE GROUTED SOLID. FILLING CELLS WITH MORTAR IS UNACCEPTABLE.
5. ALL BOND BEAMS TO BE GROUTED SOLID.
6. THE BASE OF EACH CELL IN WHICH REINFORCING BAR IS PLACED MUST HAVE A CLEAN OUT HOLE.
7. VERTICAL REINFORCING BARS SHALL BE LAPPED PER SCHEDULE. MECHANICAL SPLICES MAY BE USED IN LIEU OF LAP SPLICES.
8. PROVIDE CONTINUOUS REINFORCED BOND-BEAMS IN ALL REINFORCED MASONRY WALLS AT THE TOP, AND AS REQUIRED IN THE CONTRACT DRAWINGS. BOND-BEAMS AT THE TOP OF THE WALL SHALL BE CONTINUOUS AT MASONRY CONTROL JOINTS. ALL OTHER BOND-BEAMS SHALL NOT BE CONTINUOUS AT MASONRY CONTROL JOINTS. BOND-BEAM REINFORCING SHALL EXTEND INTO AND BE CONTINUOUS WITH ALL INTERSECTING BOND-BEAMS.
9. REINFORCED MASONRY WALLS SHALL HAVE #9 GAUGE (LADDER TYPE) HORIZONTAL REINFORCING AT SPACING AS NOTED ON CONTRACT DRAWINGS, BUT AT A MAXIMUM OF 16" O.C. VERTICALLY.
10. FILL CORES OF MASONRY UNDER ALL BEARING PLATES. THE MINIMUM WIDTH SHALL BE 3 TIMES THE BEARING PLATE LENGTH FOR THREE COURSES BELOW BEARING, UNO.
11. BRACE ALL MASONRY WALLS DURING CONSTRUCTION AS REQUIRED TO RESIST WIND AND OTHER TEMPORARY LOADS UNTIL FINAL STRUCTURAL MEMBERS ARE INSTALLED.
12. PROVIDE BAR POSITIONERS ON ALL REINFORCING TO HOLD AND MAINTAIN PROPER REBAR LOCATIONS AND COVER DURING GROUTING.

STRUCTURAL STEEL

CODES & STANDARDS:	
AISC 360	*SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS*
AISC	*CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES*
AWS D1.1	*STRUCTURAL WELDING CODE - STEEL*
AISC	*STRUCTURAL STEEL DETAILING MANUAL*

MATERIALS:		
HOT ROLLED W & WT SHAPES	ASTM A992	Fy=50 KSI
ANGLES, CHANNELS & PLATES	ASTM A36	Fy=36 KSI
S + M SHAPES	ASTM A36	Fy=36 KSI
HP SHAPES	ASTM A572 Gr 50	Fy=50 KSI
STEEL PIPE	ASTM A53 Gr B	Fy=35 KSI
RECTANGULAR HSS	ASTM A500 Gr C	Fy=50 KSI
ROUND HSS	ASTM A500 Gr C	Fy=46 KSI
HIGH STRENGTH BOLTS	ASTM A325	
HEAVY HEX NUTS	ASTM A563	
HARDENED STEEL WASHERS	ASTM A436	
ANCHOR RODS	ASTM F1554 Gr 36	Fy=36 KSI
THREADED RODS	ASTM A36	Fy=36 KSI
HEADED STUD ANCHORS	ASTM A108	

1. PROVIDE 2 MIL THICKNESS RED OR GRAY OXIDE PRIMER ON ALL STEEL SURFACES (UNO).
2. ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED PER ASTM A123 AND FASTENERS HOT DIPPED GALVANIZED PER ASTM A153.
3. ANCHOR RODS SHALL BE PRESET WITH TEMPLATES.
4. COLUMN BASE PLATES SHALL BE GROUTED UNDER WITH NON-SHRINK, NON-METALLIC GROUT.
5. CONNECTIONS MAY BE BOLTED OR WELDED AT THE FABRICATORS OPTION, BOLTED CONNECTIONS SHALL BE A MINIMUM BOLT DIAMETER OF 3/4" (UNO), HIGH STRENGTH BOLTS IN SINGLE OR DOUBLE SHEAR (UNO) AND SIMPLE SHEAR CONNECTIONS SHALL BE CAPABLE OF END ROTATION PER AISC REQUIREMENTS FOR UNRESTRAINED MEMBERS.
6. THE MINIMUM FILLET WELD SIZE SHALL NOT BE LESS THAN 3/16" (UNO).
7. ALL WELDS SHALL USE WELD METAL CONFORMING TO E70XX AND CONFORMING TO AWS WELDING PROCEDURES AND STANDARDS.
8. ALL WELDS SHALL BE MADE BY A LICENSED STRUCTURAL WELDER IN THE STATE AND AREAS OF THE BUILDING WHERE STRUCTURAL WELDING WILL OCCUR IN THE POSITION IN WHICH THE WELD IS TO BE MADE.
9. THE ERECTION OF ANY STRUCTURAL STEEL MEMBERS SHALL NOT COMMENCE UNTIL ALL SUPPORTING CONCRETE/MASONRY ELEMENTS HAVE ATTAINED AT LEAST 75% OF THEIR INTENDED MINIMUM COMPRESSIVE STRENGTH.
10. THE CONTRACTOR SHALL PROVIDE TEMPORARY ERECTION BRACING AND SUPPORTS AS REQUIRED FOR THE SAFE ERECTION OF ALL STEEL. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL PERMANENT BRACING HAS BEEN INSTALLED AND FLOOR SLAB CONCRETE HAS ATTAINED 75% OF ITS REQUIRED STRENGTH.
11. STRUCTURAL STEEL SHALL BE TRUE AND PLUMB BEFORE FINAL BOLTING OR WELDING OF CONNECTIONS.
12. THE CONTRACTOR SHALL NOT MODIFY OR CUT ANY STRUCTURAL STEEL WITHOUT WRITTEN APPROVAL FROM THE EOR.
13. THE CONTRACTOR SHALL FIELD TOUCH UP ALL ABRASIONS, BURNS, AND SIMILAR DEFECTS IN PAINT OF STRUCTURAL STEEL.
14. PROVIDE 1/4" CLOSURE/END PLATES FOR ALL OPEN ENDS OF HSS & PIPE MEMBERS.
15. CONTRACTOR SHALL INCLUDE IN PROPOSAL COST TO FURNISH, DELIVER, FABRICATE AND ERECT 1.0 TONS OF STRUCTURAL STEEL IN ADDITION TO THAT SPECIFIED IN THE CONSTRUCTION DOCUMENTS. ANY UNUSED MATERIAL SHALL BE CREDITED TO THE OWNER AT THE END OF THE PROJECT.

STEEL DECK AND SHEAR CONNECTORS

CODES:	
AISC	*SPECIFICATION FOR DESIGN, FABRICATION AND ERECTION OF STEEL FOR BUILDINGS*
AISI	*SPECIFICATION FOR THE DESIGN OF LIGHT GAUGE COLD FORMED STEEL STRUCTURAL MEMBERS*
AWS D1.3	*STRUCTURAL WELDING CODE - SHEET METAL*
SDI	*CODE OF PRACTICE*

MATERIALS:		
ROOF DECK - PAINTED	ASTM A611 Gr C	Fy=33 KSI
ROOF DECK - GALVANIZED	ASTM A446 Gr A	Fy=33 KSI
NONCOMPOSITE DECK - PAINTED	ASTM A446 Gr E	Fy=50 KSI
COMPOSITE DECK - GALVANIZED	ASTM A446 Gr 1	Fy=50 KSI
GALVANIZING	ASTM A525 CLASS G60 MIN	

1. PRIMER PAINT SHALL BE SHOP APPLIED OVER CLEAN AND PHOSPHATIZED STEEL.
2. STEEL DECK SHALL EXTEND OVER THREE OR MORE SPANS WHENEVER POSSIBLE. MINIMUM BEARING AT ENDS SHALL BE 1 1/2".
3. STEEL DECK SHALL BE FASTENED AS SHOWN ON THE PLANS.
4. IF STEEL DECK IS TO BE FASTENED WITH THE USE OF WELDS, USE 16 GA. WELD WASHERS AT ALL THICKNESS LESS THAN 22 GA. WELDS SHALL NOT BE USED AT SIDE LAP FASTENERS AND DECK SHALL BE WELDED TO SUPPORTS WITH HOBART 1139 WIRE (IRON POWER RODS) OR AN APPROVED EQUAL.
5. SHEAR CONNECTORS, NUMBER INDICATED ON THE FRAMING PLANS AT EACH BEAM BY (X) SHALL BE EQUALLY SPACED OVER THE LENGTH OF THE BEAM STARTING AS NEAR AS POSSIBLE TO THE BEAM SUPPORTS. WHERE STEEL DECK CORRUGATIONS DO NOT ALLOW FOR AN EVEN SPACING, THE SPACING SHALL BE VARIED SO THAT THE HIGHEST DENSITY OF CONNECTORS OCCURS NEAREST THE SUPPORT.

STEEL STAIRS, LADDERS, HANDRAILS AND GUARD RAILS

1. ENGINEERED STEEL STAIR SYSTEM: STRINGERS, HEADERS, LANDINGS, RAILINGS, GUARD RAILS AND CONNECTIONS TO THIS STRUCTURE SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE LOCATION OF THIS BUILDING. PROVIDE SIGNED & SEALED STRUCTURAL CALCULATIONS WITH SHOP DRAWING SUBMITTAL.
2. THE CONFIGURATION OF THE STEEL STAIR SYSTEM SHALL BE AS SHOWN ON THE ARCHITECTURAL DRAWINGS.
3. THE LOADS REQUIRED FOR THE DESIGN OF THE STEEL STAIR SYSTEM SHALL BE AS INDICATED ON THE "DESIGN LOADS" SECTION OF THESE NOTES.
4. THE SHOP DRAWINGS SHALL INDICATE LOADS IMPOSED ON THE BUILDING STRUCTURE BY THE STAIR STRUCTURE.

POST- INSTALLED ANCHORS

1. THE DIAMETER, EMBEDMENT LENGTH AND TYPE OF ADHESIVE ANCHORS AND SCREW ANCHORS SHALL BE AS SPECIFIED ON THE DRAWINGS.
2. THE SUBSTITUTION OF OTHER MANUFACTURER'S SIMILAR PRODUCTS IS ALLOWED, PROVIDED THAT THE SIZE IS EQUAL TO, AND CAPACITY IN SHEAR AND UPLIFT ARE EQUAL TO OR GREATER THAN WHAT IS SPECIFIED ON THE DRAWINGS. THE COST OF REDESIGN OF SUCH SUBSTITUTIONS SHALL BE BORE BY THE CONTRACTOR.
3. INSTALLATION OF ANCHORS SHALL STRICTLY FOLLOW ALL MANUFACTURER'S WRITTEN INSTRUCTIONS AND SPECIFICATIONS. ALL DRILL HOLE PREPARATIONS SHALL BE FOLLOWED.
4. NO LOAD SHALL BE APPLIED TO ADHESIVE ANCHORS PRIOR TO THE FULL CURE TIME AS SPECIFIED BY THE MANUFACTURER.
5. TESTING OF 10% OF ALL INSTALLED ANCHORS IS REQUIRED. TESTED ANCHORS SHALL MEET THE MANUFACTURERS PROOF LOAD REQUIREMENTS AND/OR INSTALLATION TORQUE REQUIREMENTS. MALFUNCTIONING FASTENERS SHALL BE REPLACED.
6. ALL ADHESIVE ANCHOR INSTALLATIONS IN THE HORIZONTAL TO VERTICALLY OVERHEAD ORIENTATION SHALL BE CONDUCTED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER AS CERTIFIED BY ACI PER 318-11 9.2.2 OR AC1 318-14 17.8.2.2 OR ACI 318-19 17.2.3. OR APPROVED EQUIVALENT. CURRENT AAI CERTIFICATE MUST BE SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO COMMENCEMENT OF ANY ADHESIVE ANCHOR INSTALLATIONS.
7. ADHESIVE ANCHORS IN CRACKED AND UNCRACKED CONCRETE SHALL BE DEWALT PURE 220+ (ICC-ES ESR 5144) OR SIMPSON SET 3G OR HILTI RE 500 V3.
8. SCREW ANCHORS IN CRACKED AND UNCRACKED CONCRETE SHALL BE DEWALT SCREW-BOLT+ (ICC-ES ESR 4042) OR SIMPSON TITEN HD OR HILTI KWIK KH-EZ / KWIK.

LINTEL SCHEDULE

MARK	LINTEL	JAMB REINF	LINTEL TYPE	REMARKS
L1	8" BOND BEAM W/ (2)-#5 CONT	(1) #5	B	
L2	16" BOND BEAM W/ (2)-#5 CONT	(1) #5	B	
L3	24" BOND BEAM W/ (2)-#5 CONT	(2) #5	B	
L4	W8X10 W/ 3/8" BOTTOM PL	(1) #5	A	
L5	W8X24 W/ 3/8" BOTTOM PL	(1) #5	21/S300	
L6	(2) W8x10 W/ 3/8" BOTTOM PL	N/A	21/S300	

STRUCTURAL SHEET INDEX

Sheet Number	Sheet Name
S001	STRUCTURAL GENERAL NOTES
S200	FIRST FLOOR FRAMING PLAN
S201	SECOND FLOOR FRAMING PLAN
S202	THIRD FLOOR FRAMING PLAN
S203	ROOF FRAMING PLAN
S300	STRUCTURAL DETAILS

STRANG

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN

MADISON, WI | WAUKESHA, WI

CORE4 engineering
N70W5185 Columbia Road
Cedarburg, WI 53012 | 262.236.9372
C4E Project #: 25057

WISCONSIN
BRIAN R. HESS
E-45312-6
RICHFIELD
WISCONSIN
PROFESSIONAL ENGINEER

PERMIT SET

REVISIONS		
No.	DESCRIPTION	DATE

KEYPLAN (NOT TO SCALE)

DRAWING SET CD
DATE 06/27/2025
PROJECT NO. 2025012

PROJECT TITLE

SAUK COUNTY COURTHOUSE

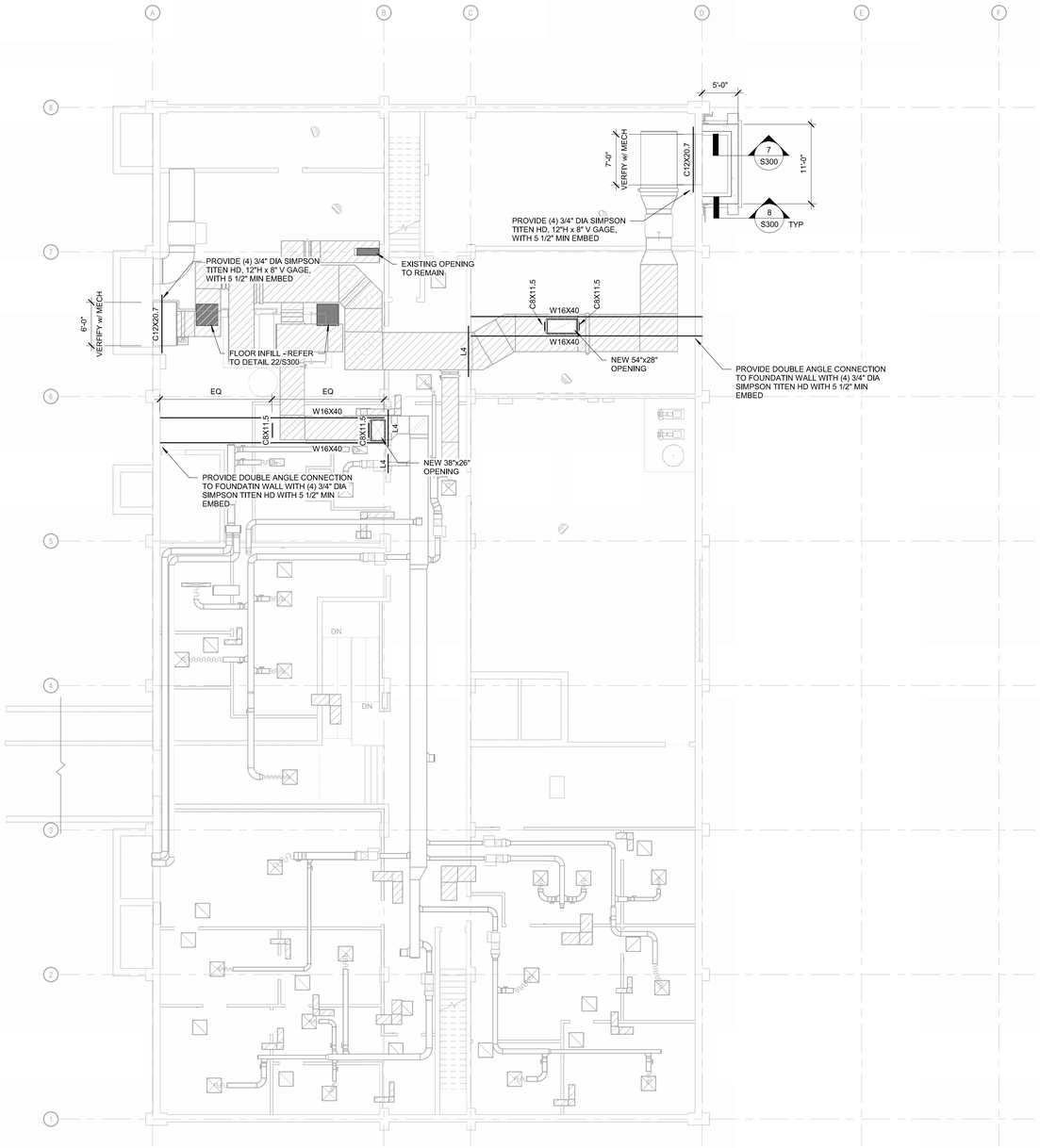
515 Oak St,
Baraboo, WI 53913

SHEET NAME

STRUCTURAL GENERAL NOTES

SHEET NO.

S001



1 S200 FIRST FLOOR FRAMING PLAN

SCALE: 1/8" = 1'-0"

FLOOR FRAMING PLAN NOTES:

1. SEE SHEET S001 FOR STRUCTURAL GENERAL NOTES.
2. SEE SHEET S300 FOR TYPICAL STEEL SECTIONS AND DETAILS.
3. COORDINATE FINAL SIZE AND LOCATION OF OPENINGS AND EQUIPMENT WITH MECHANICAL CONTRACTORS.
4. GENERAL CONTRACTOR TO PROVIDE ALL SHORING REQUIRED FOR EXISTING BUILDING AND/OR NEW BUILDING. SEE GENERAL REQUIREMENTS NOTE 1 AND EXISTING CONSTRUCTION NOTE 3 FOR ADDITIONAL INFORMATION.
5. ALL UNTAGGED GRAY FRAMING MEMBERS ARE EXISTING TO REMAIN, UNO.

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C4E Project #: 25057

PERMIT SET

No.	DESCRIPTION	DATE
1	REVISIONS	

KEYPLAN (NOT TO SCALE)

DRAWING SET	PERMIT SET
DATE	08/28/2025
PROJECT NO.	2025012

PROJECT TITLE

SAUK COUNTY COURTHOUSE

515 Oak St,
Baraboo, WI 53913

SHEET NAME

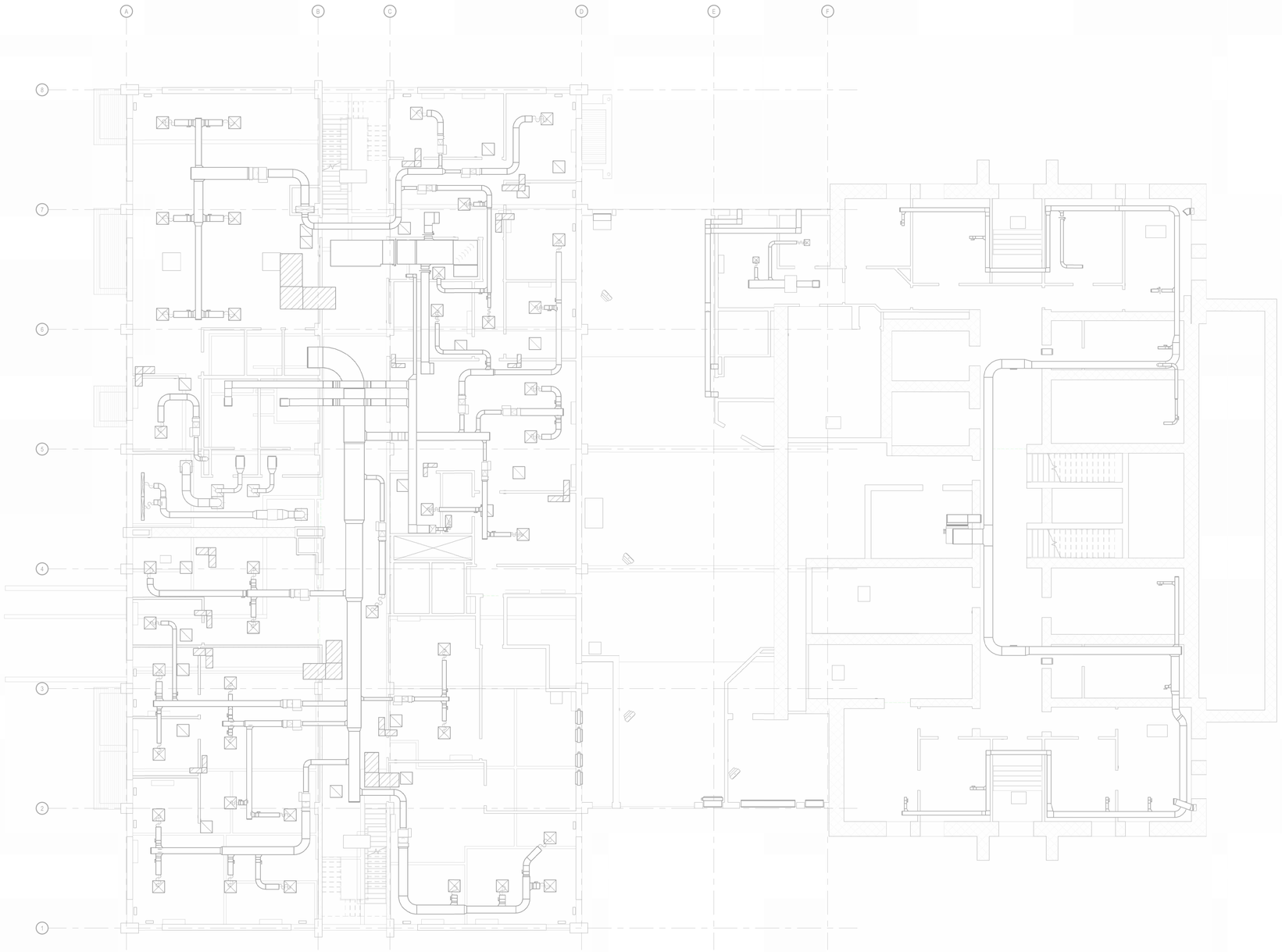
FIRST FLOOR FRAMING PLAN

SHEET NO.

S200

FLOOR FRAMING PLAN NOTES:

1. SEE SHEET S001 FOR STRUCTURAL GENERAL NOTES.
2. SEE SHEET S300 FOR TYPICAL STEEL SECTIONS AND DETAILS.
3. COORDINATE FINAL SIZE AND LOCATION OF OPENINGS AND EQUIPMENT WITH MECHANICAL CONTRACTORS.
4. GENERAL CONTRACTOR TO PROVIDE ALL SHORING REQUIRED FOR EXISTING BUILDING AND/OR NEW BUILDING. SEE GENERAL REQUIREMENTS NOTE 1 AND EXISTING CONSTRUCTION NOTE 3 FOR ADDITIONAL INFORMATION.
5. ALL UNTAGGED GRAY FRAMING MEMBERS ARE EXISTING TO REMAIN, UNO.



1 S201 SECOND FLOOR FRAMING PLAN

SCALE: 1/8" = 1'-0"

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PERMIT SET

REVISIONS		
No.	DESCRIPTION	DATE

KEYPLAN (NOT TO SCALE)

DRAWING SET	PERMIT SET
DATE	08/28/2025
PROJECT NO.	2025012

PROJECT TITLE

SAUK COUNTY COURTHOUSE

515 Oak St.
Baraboo, WI 53913

SHEET NAME

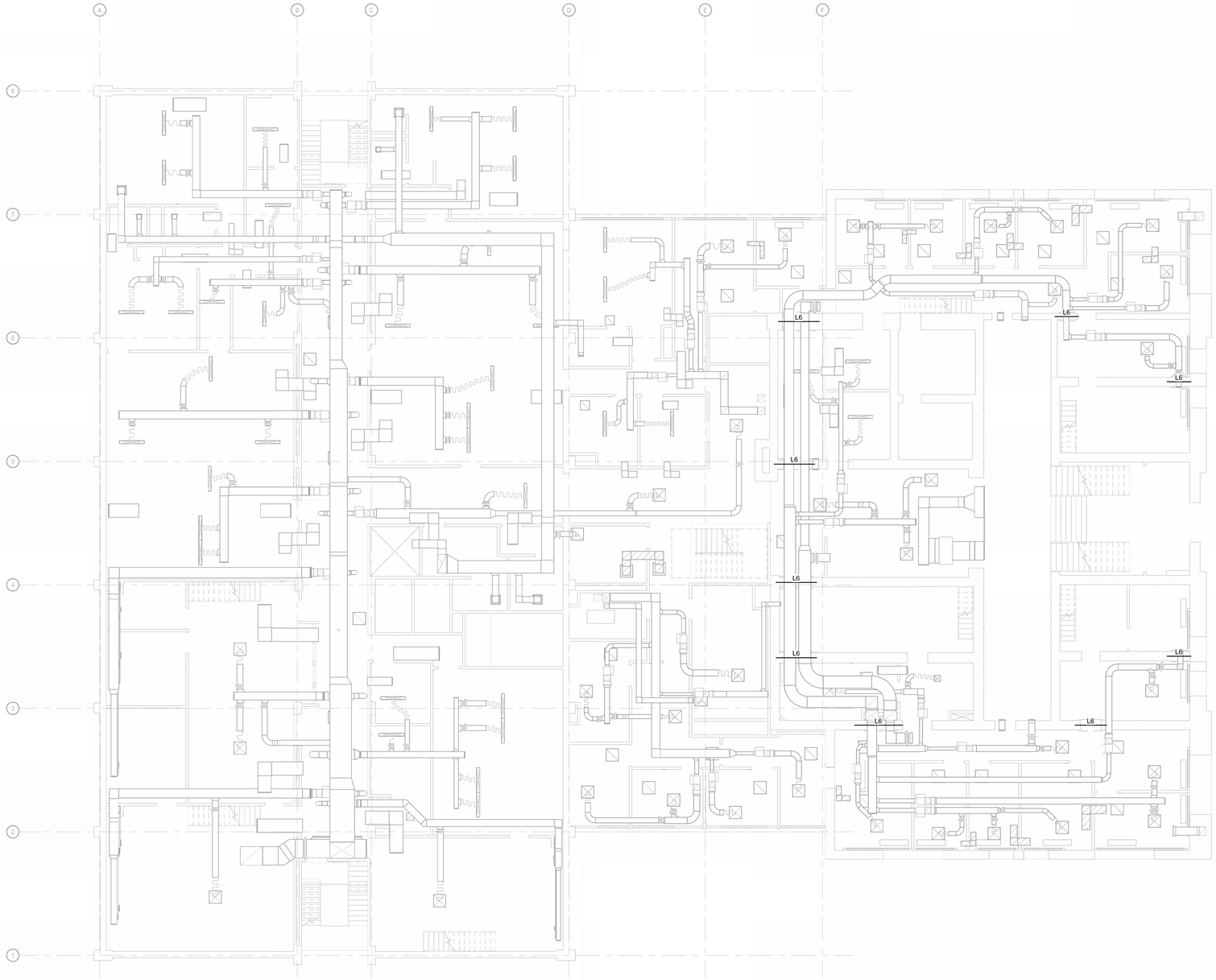
SECOND FLOOR FRAMING PLAN

SHEET NO.

S201

FLOOR FRAMING PLAN NOTES:

1. SEE SHEET S001 FOR STRUCTURAL GENERAL NOTES.
2. SEE SHEET S300 FOR TYPICAL STEEL SECTIONS AND DETAILS.
3. COORDINATE FINAL SIZE AND LOCATION OF OPENINGS AND EQUIPMENT WITH MECHANICAL CONTRACTORS.
4. GENERAL CONTRACTOR TO PROVIDE ALL SHORING REQUIRED FOR EXISTING BUILDING AND/OR NEW BUILDING. SEE GENERAL REQUIREMENTS NOTE 1 AND EXISTING CONSTRUCTION NOTE 3 FOR ADDITIONAL INFORMATION.
5. ALL UNTAGGED GRAY FRAMING MEMBERS ARE EXISTING TO REMAIN, UNO.



1 S202 THIRD FLOOR FRAMING PLAN

SCALE: 1/8" = 1'-0"

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CORE4 engineering

N70W5185 Columbia Road
Cedarburg, WI 53012 | 262.236.9372
C4E Project #: 25057

PERMIT SET

No.	REVISIONS DESCRIPTION	DATE

KEYPLAN (NOT TO SCALE)

DRAWING SET	PERMIT SET
DATE	08/28/2025
PROJECT NO.	2025012

PROJECT TITLE

SAUK COUNTY
COURTHOUSE

515 Oak St.
Baraboo, WI 53913

SHEET NAME

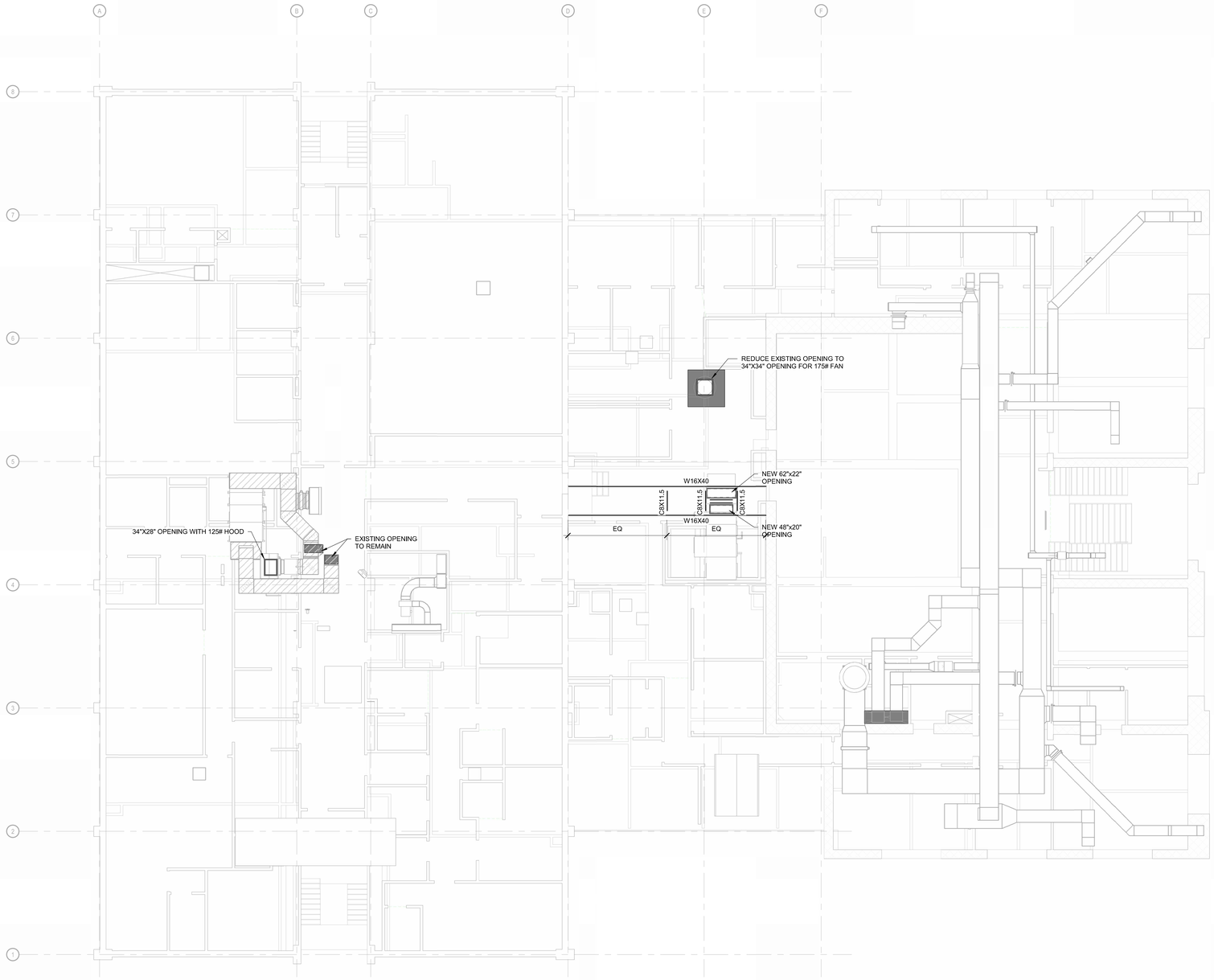
THIRD FLOOR
FRAMING PLAN

SHEET NO.

S202

ROOF PLAN NOTES:

1. SEE SHEET S001 FOR STRUCTURAL GENERAL NOTES .
2. SEE SHEET S300 FOR TYPICAL STEEL SECTIONS AND DETAILS.
3. COORDINATE FINAL SIZE AND LOCATION OF OPENINGS AND EQUIPMENT WITH MECHANICAL CONTRACTORS.
4. GENERAL CONTRACTOR TO PROVIDE ALL SHORING REQUIRED FOR EXISTING BUILDING AND/OR NEW BUILDING. SEE GENERAL REQUIREMENTS NOTE 1 AND EXISTING CONSTRUCTION NOTE 3 FOR ADDITIONAL INFORMATION.
5. ALL UNTAGGED GRAY FRAMING MEMBERS ARE EXISTING TO REMAIN, UNO.



1 S203 ROOF FRAMING PLAN

SCALE: 1/8" = 1'-0"

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MADISON, WI | WAUKESHA, WI

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C4E Project #: 25057

PERMIT SET

No.	DESCRIPTION	DATE
8	REVISIONS	

KEYPLAN (NOT TO SCALE)

DRAWING SET	PERMIT SET
DATE	08/28/2025
PROJECT NO.	2025012

PROJECT TITLE

SAUK COUNTY COURTHOUSE

515 Oak St,
Baraboo, WI 53913

SHEET NAME

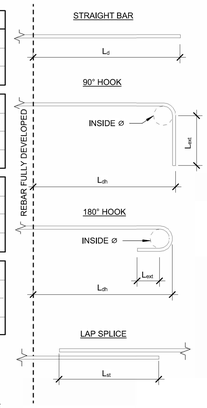
ROOF FRAMING PLAN

SHEET NO.

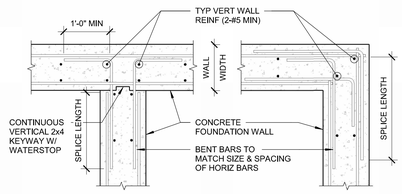
S203

BAR SIZE		#3	#4	#5	#6	#7	#8	#9	#10	#11
INSIDE BEND ⌀		2.25"	3	3.75	4.5	5.25	6	9.0	10.2	11.3
L_{ext} - 90° HOOK		4.5"	6	7.5	9	10.5	12	13.5	15.2	16.8
L_{ext} - 180° HOOK		2.5"	2.5	2.5	3	3.5	4	4.5	5.1	5.6
3000 PSI	L_d	16.4	21.9	27.4	32.9	47.9	54.8	1.8	69.6	77.2
	L_{dh}	8.2	11.0	13.7	16.4	19.2	21.9	24.7	27.8	30.9
	L_{st} TOP BARS	28	38	47	56	81	93	105	118	131
	L_{st} OTHERS	22	29	36	43	63	72	81	91	101
4000 & 4500 PSI	L_d	14.2	19.0	23.7	28.5	41.5	47.4	53.5	60.2	66.9
	L_{dh}	7.1	9.5	11.9	14.2	16.6	19.0	21.4	24.1	26.8
	L_{st} TOP BARS	25	33	41	49	71	81	91	102	114
	L_{st} OTHERS	19	25	31	37	54	62	70	79	87
5000 PSI	L_d	12.7	17.0	21.2	25.5	37.1	42.4	47.9	53.9	59.8
	L_{dh}	6.4	8.5	10.6	12.7	14.9	17.0	19.1	21.6	23.9
	L_{st} TOP BARS	22	29	36	43	63	72	81	92	102
	L_{st} OTHERS	17	23	28	34	49	56	63	70	78

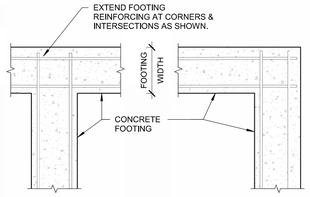
NOTE:
1. TABLULATED VALUED ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL WEIGHT CONCRETE.
2. TENSION LAP SPLICE LENGTHS ARE CALCULATED PER ACI 318-14. LENGTHS ARE IN INCHES.
3. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.
4. SPLICE COVERS IN THIS SCHEDULE ARE BASED ON CLEAR COVER AT LEAST 1.0 BAR ⌀ AND CLEAR SPACING AT LEAST 2.0 BAR ⌀.



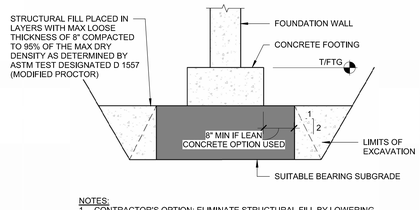
1 S300 REINFORCING STEEL TYPICAL DEVELOPMENT LENGTHS & LAP SPLICES
SCALE: NTS



2 S300 TYPICAL WALL REINFORCING
SCALE: NTS

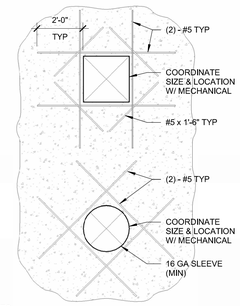


3 S300 TYPICAL FOOTING REINFORCING
SCALE: NTS



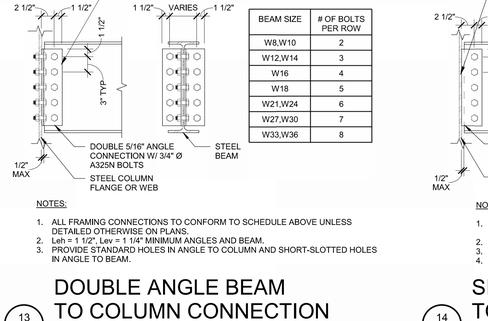
NOTES:
1. CONTRACTOR'S OPTION: ELIMINATE STRUCTURAL FILL BY LOWERING DESIGNED FOOTING ELEVATION SO THAT FOOTING RESTS DIRECTLY ON SUITABLE BEARING SUBGRADE, PROVIDE LEAN CONCRETE (f'c = 500 PSI MIN) UNDER THE FOOTING AS SHOWN HATCHED ABOVE, OR INCREASE FOOTING THICKNESS TO REACH SUITABLE BEARING SUBGRADE.
2. THIS DETAIL APPLIES ONLY AT THOSE LOCATIONS WHERE GEOTECH ENGINEER DEEMS SOILS AT DESIGNED FOOTING ELEVATIONS ARE INADEQUATE FOR FOOTING SUPPORT. WHERE THIS WORK IS REQUIRED, CONTRACTOR WILL BE COMPENSATED ON A PRE-ESTABLISHED UNIT COST AGREED UPON BY THE CONTRACTOR, ARCHITECT/ENGINEER, AND OWNER.

4 S300 TYPICAL OVER EXCAVATION DETAIL
SCALE: NTS

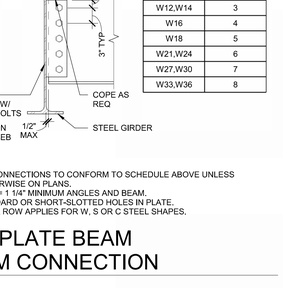


NOTES:
1. APPLIES TO 24" (MAX) OPENINGS THROUGH FOUNDATION WALL.
2. TOP OF OPENING TO BE 24" (MIN) FROM TOP OF WALL.
3. REINFORCING LAYERS TO MATCH FOUNDATION WALL.
4. USE 90° STANDARD HOOK AT CORNERS AND ENDS OF WALL.

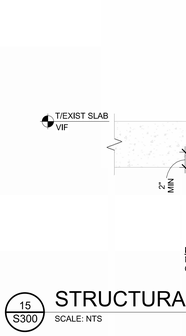
5 S300 TYPICAL CONCRETE WALL PENETRATION
SCALE: NTS



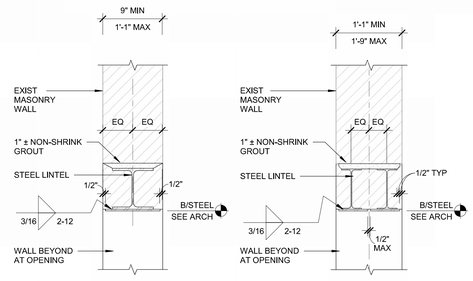
6 S300 TYPICAL EXISTING FOUNDATION INTERSECTION
SCALE: NTS



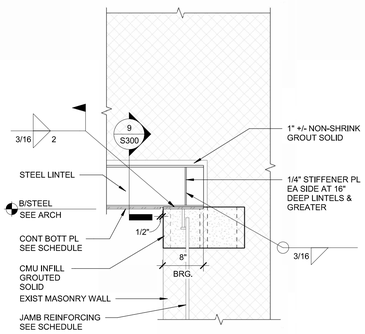
7 S300 SECTION
SCALE: NTS



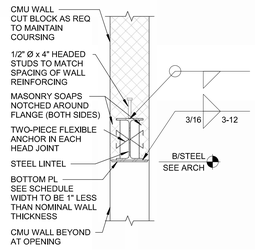
8 S300 TYPICAL BOLLARD
SCALE: NTS



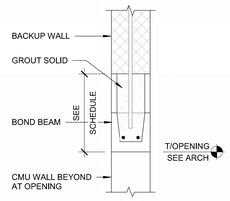
9 S300 STEEL LINTEL
SCALE: NTS



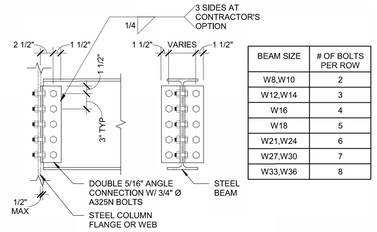
10 S300 STEEL LINTEL BEARING DETAIL EXISTING MASONRY WALL
SCALE: NTS



A S300 LINTEL TYPE A
SCALE: NTS



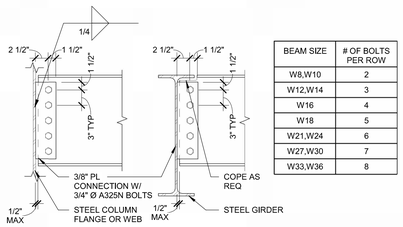
B S300 LINTEL TYPE B
SCALE: NTS



BEAM SIZE	# OF BOLTS PER ROW
W8,W10	2
W12,W14	3
W16	4
W18	5
W21,W24	6
W27,W30	7
W33,W36	8

NOTES:
1. ALL FRAMING CONNECTIONS TO CONFORM TO SCHEDULE ABOVE UNLESS DETAILED OTHERWISE ON PLANS.
2. Leh = 1 1/2", Lev = 1 1/4" MINIMUM ANGLES AND BEAM.
3. PROVIDE STANDARD HOLES IN ANGLE TO COLUMN AND SHORT-SLOTTED HOLES IN ANGLE TO BEAM.

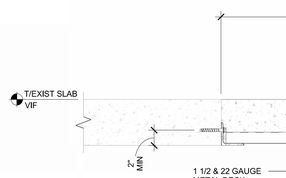
13 S300 DOUBLE ANGLE BEAM TO COLUMN CONNECTION
SCALE: NTS



BEAM SIZE	# OF BOLTS PER ROW
W8,W10	2
W12,W14	3
W16	4
W18	5
W21,W24	6
W27,W30	7
W33,W36	8

NOTES:
1. ALL FRAMING CONNECTIONS TO CONFORM TO SCHEDULE ABOVE UNLESS DETAILED OTHERWISE ON PLANS.
2. Leh = 1 1/2", Lev = 1 1/4" MINIMUM ANGLES AND BEAM.
3. PROVIDE STANDARD OR SHORT-SLOTTED HOLES IN PLATE.
4. # OF BOLTS PER ROW APPLIES FOR W, S OR C STEEL SHAPES.

14 S300 SINGLE PLATE BEAM TO BEAM CONNECTION
SCALE: NTS



NOTE:
NON-COMPOSITE DECK: PROVIDE MANUFACTURE RECOMMENDED REINFORCING
COMPOSTIE DECK: REINFORCING NOT REQUIRE

15 S300 STRUCTURAL CONCRETE SLAB OPENING INFILL DETAIL
SCALE: NTS

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ENGINEERING
INTERIOR DESIGN

MADISON, WI | WAUKESHA, WI

CORE4 engineering
N70W5185 Columbia Road
Cedarburg, WI 53012 | 262.236.9372
C4E Project #: 25057

PERMIT SET

No.	DESCRIPTION	DATE
	REVISIONS	

KEYPLAN (NOT TO SCALE)

DRAWING SET	PERMIT SET
DATE	08/28/2025
PROJECT NO.	2025012

PROJECT TITLE

SAUK COUNTY COURTHOUSE

515 Oak St,
Baraboo, WI 53913

SHEET NAME

STRUCTURAL DETAILS

SHEET NO.

S300

CEILING PLAN MATERIAL LEGEND

GYPSUM BOARD CEILING	2'x2' SQUARE RECESSED DOWNLIGHT. HALF SHADING INDICATES LUMINAIRE ON EMERGENCY LIGHTING. MEDIAL LINES INDICATE ORIENTATION.	2'x2' SQUARE RECESSED DOWNLIGHT. HALF SHADING INDICATES LUMINAIRE ON EMERGENCY LIGHTING. MEDIAL LINES INDICATE ORIENTATION.
2' x 2' ACOUSTICAL CEILING PANELS	2'x2' SQUARE RECESSED DOWNLIGHT. HALF SHADING INDICATES LUMINAIRE ON EMERGENCY LIGHTING. MEDIAL LINES INDICATE ORIENTATION.	2'x2' SQUARE RECESSED DOWNLIGHT. HALF SHADING INDICATES LUMINAIRE ON EMERGENCY LIGHTING. MEDIAL LINES INDICATE ORIENTATION.
2' x 4' ACOUSTICAL CEILING PANELS	ROUND RECESSED DOWNLIGHT. SHADING INDICATES LUMINAIRE ON EMERGENCY LIGHTING.	2'x2' DIFFUSER
EXIT LIGHT	SQUARE RECESSED DOWNLIGHT. SHADING INDICATES LUMINAIRE ON EMERGENCY LIGHTING.	LINEAR DIFFUSER

SPECIFIC DEMOLITION CEILING PLAN NOTES

1 REMOVE ACP CEILING. REFER TO MECHANICAL AND/OR ELECTRICAL FOR FURTHER INFORMATION.

GENERAL DEMOLITION CEILING PLAN NOTES

1 MAINTAIN CONTINUOUS UTILITY TO ALL SPACES IN THE BUILDING. COORDINATE DISRUPTIONS IN SERVICE WITH OWNER.
2 PROTECT IN PLACE DURING ENTIRE CONSTRUCTION PROCESS: ALL FLOORING, SURFACES AND ITEMS TO REMAIN.
3 COORDINATE THE AVAILABILITY OF AREAS REQUIRING DEMOLITION WITH OWNER. SEQUENCE WORK ACCORDINGLY AND COORDINATE W/ ALL TRADES.
4 EXISTING CONSTRUCTION TO REMAIN IS SHOWN SCREENED. CONSTRUCTION AND EQUIPMENT TO BE REMOVED IS SHOWN WITH DASHED LINES.
5 PATCH, PREPARE, REPAIR AND / OR RESTORE SURFACES SCHEDULED TO REMAIN INTACT THAT ARE DAMAGED AS A RESULT OF DEMOLITION WORK.
6 VISIT THE SITE PRIOR TO SUBMITTING A BID TO BECOME FAMILIAR WITH EXISTING CONDITIONS.
7 DEMOLITION PLANS NOT NECESSARILY INCLUSIVE OF ALL ITEMS NEEDING REMOVAL. COORDINATE WITH ALL OTHER DRAWINGS AND FIELD VERIFY EXISTING CONDITIONS.
8 COORDINATE DEMOLITION DIMENSIONS ON THIS PLAN WITH OTHER DRAWINGS AND EXISTING CONDITIONS.
9 REFER TO HVAC AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION AND MODIFICATIONS REQUIRED FOR HVAC AND ELECTRICAL SYSTEMS.

N

1 A133

THIRD FLOOR RCP DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

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INTERIOR DESIGN

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BIDDING AND CONSTRUCTION

REVISIONS		
No.	DESCRIPTION	DATE
1	AD-01	01/22/2026

KEYPLAN (NOT TO SCALE)

DRAWING SET	CD SET
DATE	10/31/2025
PROJECT NO.	2025012

PROJECT TITLE

SAUK COUNTY COURTHOUSE HVAC UPGRADES

515 OAK ST.
BARABOO, WI 53913

SHEET NAME

THIRD FLOOR RCP DEMOLITION PLAN

SHEET NO.

A133

GENERAL MECHANICAL DEMOLITION NOTES

1 BOLD TEXT AND LINEWORK INDICATES SCOPE OF DEMOLITION.

2 DEMOLITION INCLUDES REMOVAL OF ALL CONTROL WIRING, VENTS, PIPING, HANGERS, SUPPORTS, AND ACCESSORIES ASSOCIATED WITH THE EQUIPMENT SHOWN TO BE REMOVED. CAP ABANDONED SERVICES BACK AT THE MAIN UNLESS NOTED OTHERWISE.

3 COORDINATE PATCHING OF OPENINGS REMAINING IN ROOF, WALLS, AND FLOORS WITH THE GENERAL CONTRACTOR UNLESS NOTED OTHERWISE.

SPECIFIC MECHANICAL DEMOLITION PLAN NOTES

101 REMOVE EXISTING DUCTWORK AND HANGERS TO POINT INDICATED.

104 REMOVE EXISTING VARIABLE AIR VOLUME BOX, ASSOCIATED DUCTWORK, PIPING, CONTROLS, PNEUMATIC TUBING, HANGERS, AND SUPPORTS.

105 EXISTING BOOSTER COIL TO REMAIN. REMOVE ASSOCIATED VALVING, CONTROLS, PNEUMATIC TUBING, AND HANGERS.

110 REMOVE EXISTING GRILLE AND ASSOCIATED DUCTWORK.

114 REMOVE EXISTING VARIABLE AIR VOLUME BOX, ASSOCIATED DUCTWORK, CONTROLS, PNEUMATIC TUBING, HANGERS, AND SUPPORTS.

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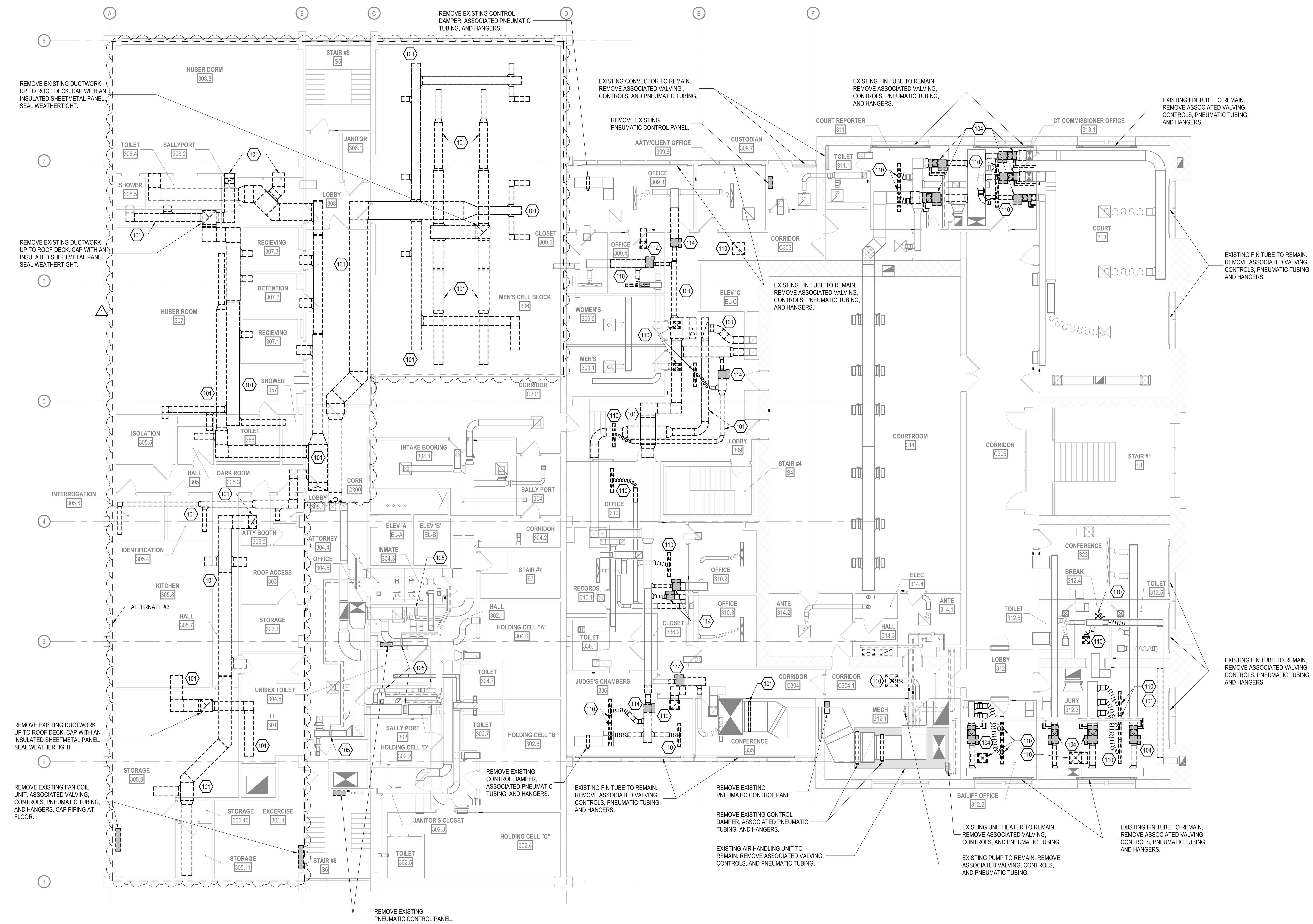

THIRD FLOOR MECHANICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

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DRAWING SET	CD SET
DATE	10/31/2025
PROJECT NO.	2025012

PROJECT TITLE

SAUK COUNTY COURTHOUSE HVAC UPGRADES

515 Oak St,
Baraboo, WI 53913

SHEET NAME

THIRD FLOOR MECHANICAL DEMOLITION PLAN

SHEET NO.

M103

GENERAL MECHANICAL DEMOLITION NOTES

1 BOLD TEXT AND LINEWORK INDICATES SCOPE OF DEMOLITION.

2 DEMOLITION INCLUDES REMOVAL OF ALL CONTROL WIRING, VENTS, PIPING, HANGERS, SUPPORTS, AND ACCESSORIES ASSOCIATED WITH THE EQUIPMENT SHOWN TO BE REMOVED. CAP ABANDONED SERVICES BACK AT THE MAIN UNLESS NOTED OTHERWISE.

3 COORDINATE PATCHING OF OPENINGS REMAINING IN ROOF, WALLS, AND FLOORS WITH THE GENERAL CONTRACTOR UNLESS NOTED OTHERWISE.

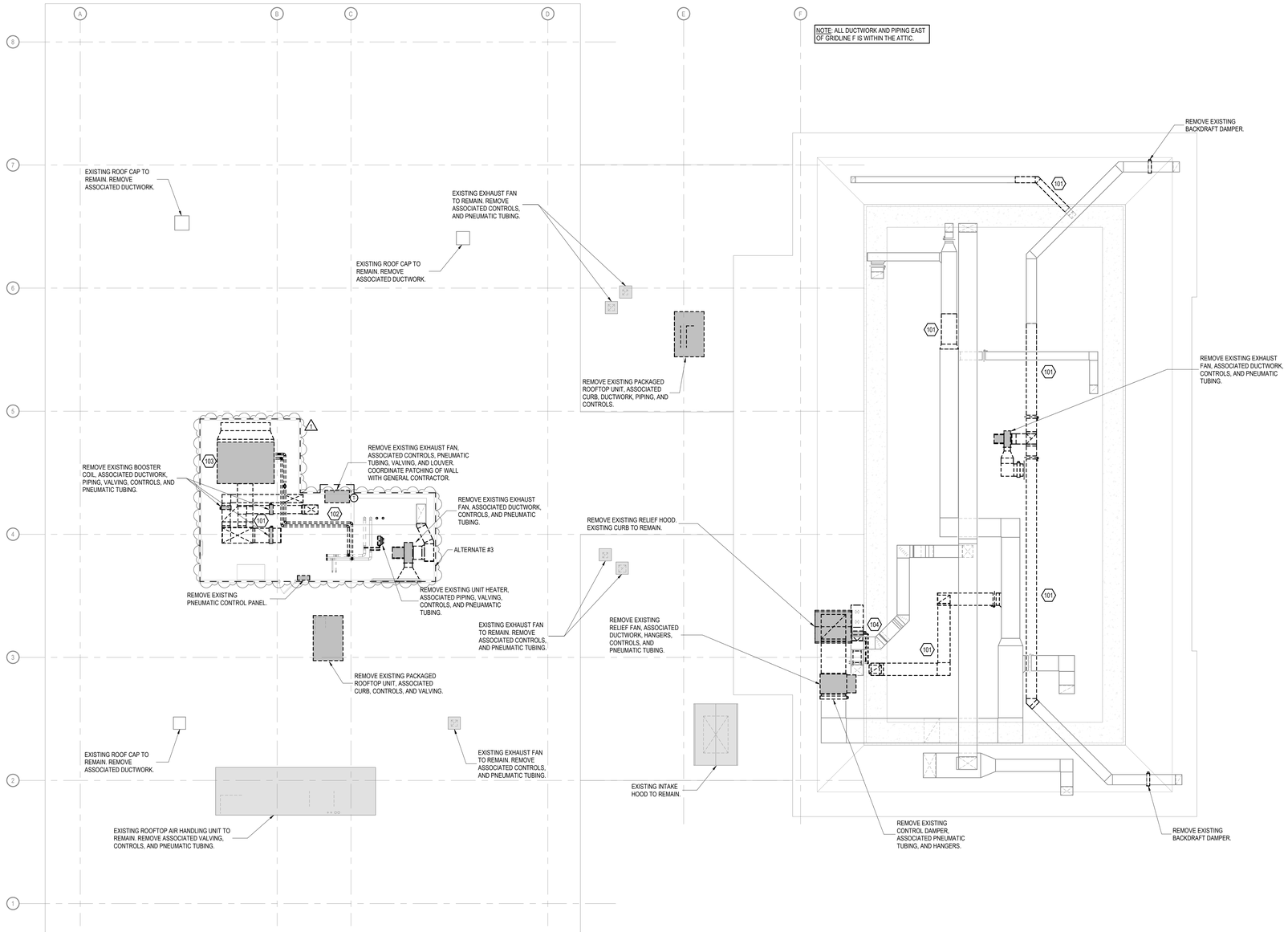
(#) SPECIFIC MECHANICAL DEMOLITION PLAN NOTES

101 REMOVE EXISTING DUCTWORK AND HANGERS TO POINT INDICATED.

102 REMOVE EXISTING PIPING AND HANGERS TO POINT INDICATED.

103 REMOVE EXISTING AIR HANDLING UNIT, ASSOCIATED DUCTWORK, PIPING, CONTROLS, PNEUMATIC TUBING, INLINE PUMP, SUPPORTS, AND HANGERS.

104 REMOVE EXISTING VARIABLE AIR VOLUME BOX, ASSOCIATED DUCTWORK, PIPING, CONTROLS, PNEUMATIC TUBING, HANGERS, AND SUPPORTS.



N

1 M104

PENTHOUSE AND ROOF MECHANICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

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No.	DESCRIPTION	DATE
1	ADD #01	01/22/2026

PROJECT TITLE

SAUK COUNTY COURTHOUSE HVAC UPGRADES

515 Oak St,
Baraboo, WI 53913

SHEET NAME

ROOF MECHANICAL DEMOLITION PLAN

SHEET NO.

M104

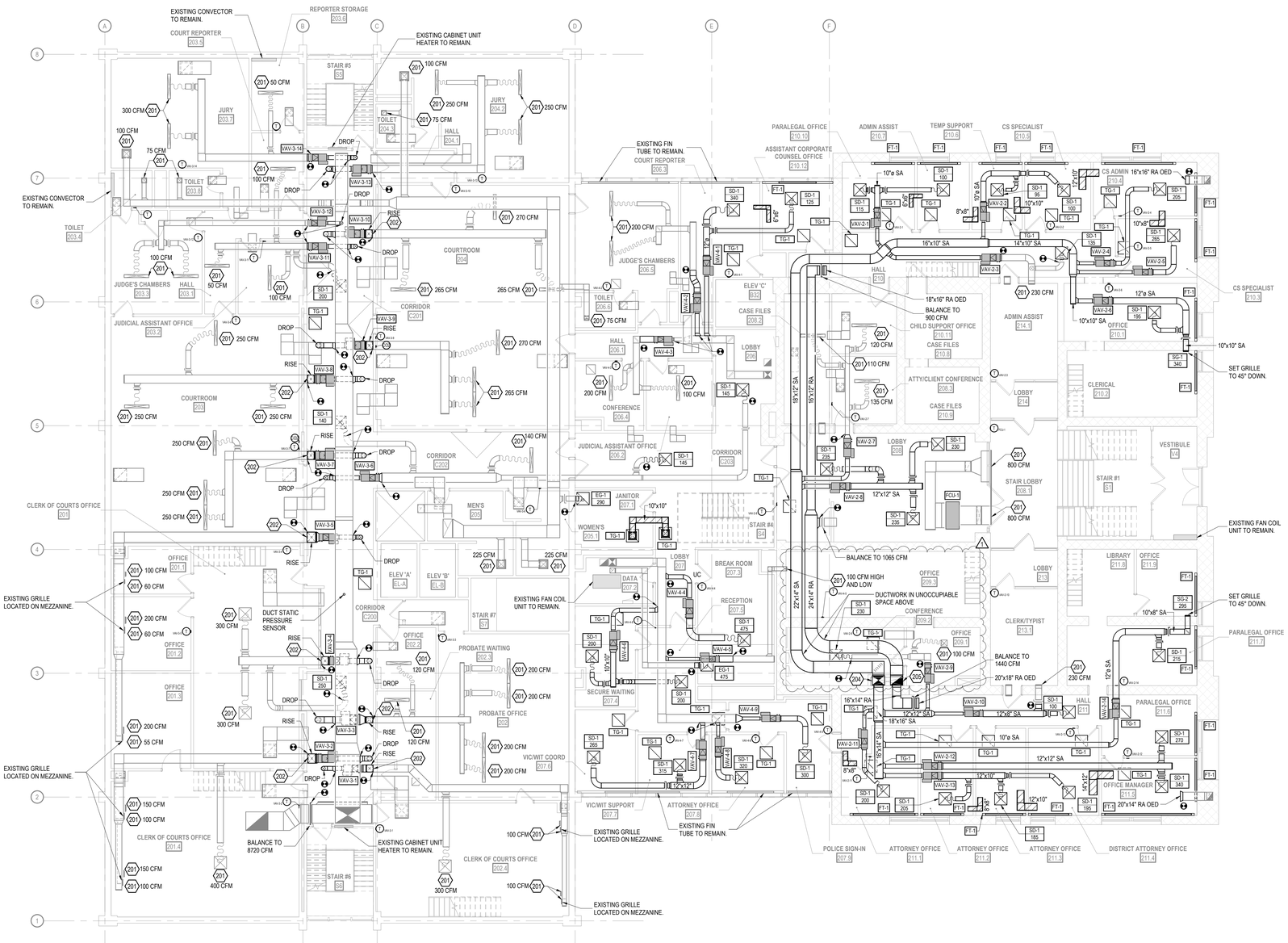
SPECIFIC MECHANICAL PLAN NOTES

201 BALANCE EXISTING DIFFUSER, REGISTER, OR GRILLE TO CFM INDICATED.

202 THE VAV BOX DISCHARGE AIR DUCT DIMENSIONS SHALL MATCH THE EXISTING DUCT SIZE. VERIFY EXACT CONDITIONS AT SITE.

204 24"x18" SA DOWN FROM ABOVE.

205 24"x18" RA UP TO ABOVE.



N

1 M202

SECOND FLOOR MECHANICAL DUCT PLAN

SCALE: 1/8" = 1'-0"

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PROJECT TITLE

SAUK COUNTY COURTHOUSE HVAC UPGRADES

515 Oak St,
Baraboo, WI 53913

SHEET NAME

SECOND FLOOR MECHANICAL PLAN

SHEET NO.

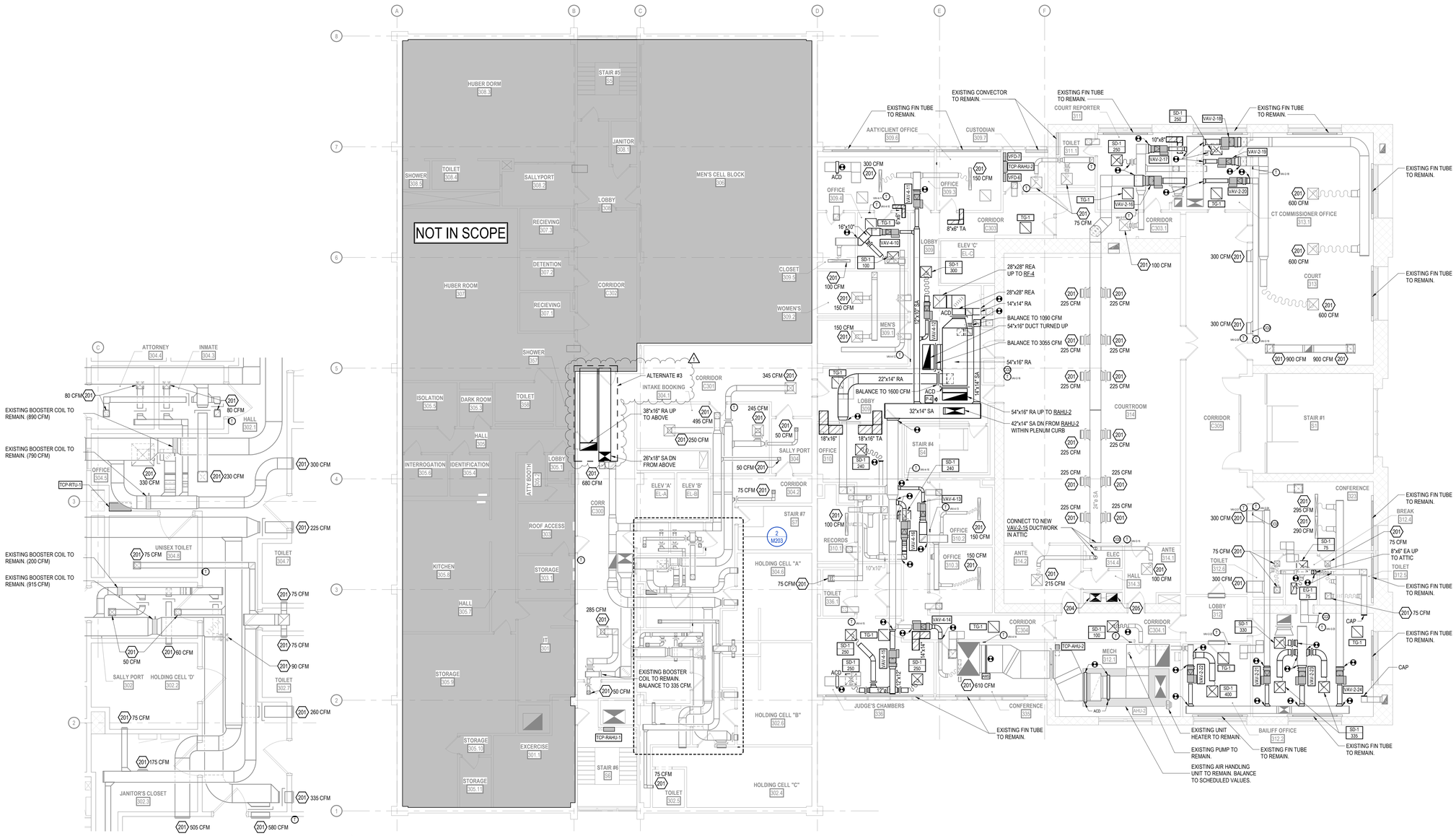
M202

SPECIFIC MECHANICAL PLAN NOTES

201 BALANCE EXISTING DIFFUSER, REGISTER, OR GRILLE TO CFM INDICATED.

204 24"x18" SA DOWN FROM ABOVE.

205 24"x18" RA UP TO ABOVE.



2 M203 **ENLARGED PARTIAL DUCT PLAN**
SCALE: 1/4" = 1'-0"

N 1 M203 **THIRD FLOOR MECHANICAL DUCT PLAN**
SCALE: 1/8" = 1'-0"

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PROJECT NO.	2025012

PROJECT TITLE

SAUK COUNTY COURTHOUSE HVAC UPGRADES

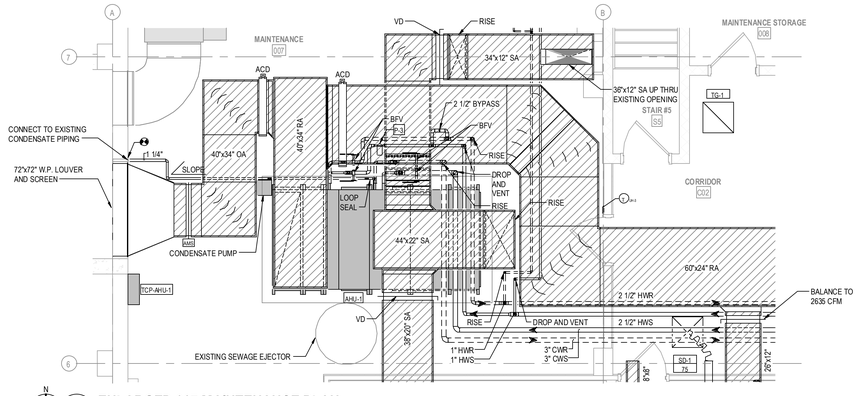
515 Oak St.
Baraboo, WI 53913

SHEET NAME

THIRD FLOOR MECHANICAL PLAN

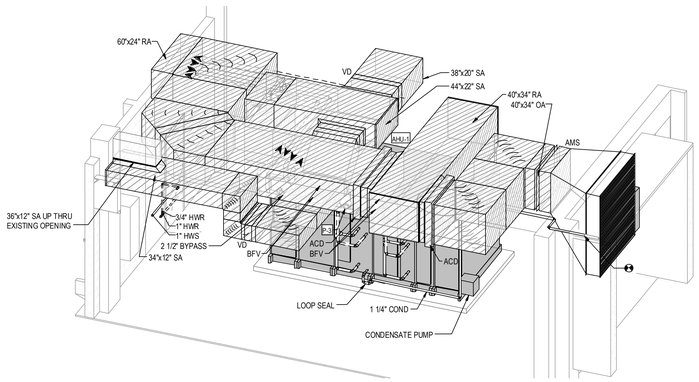
SHEET NO.

M203



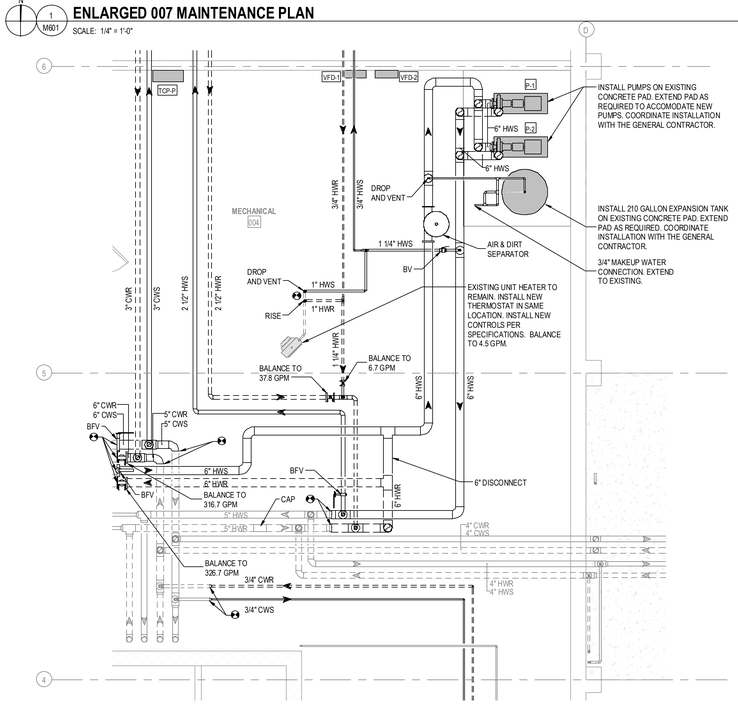
N 1 M601 **ENLARGED 007 MAINTENANCE PLAN**

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



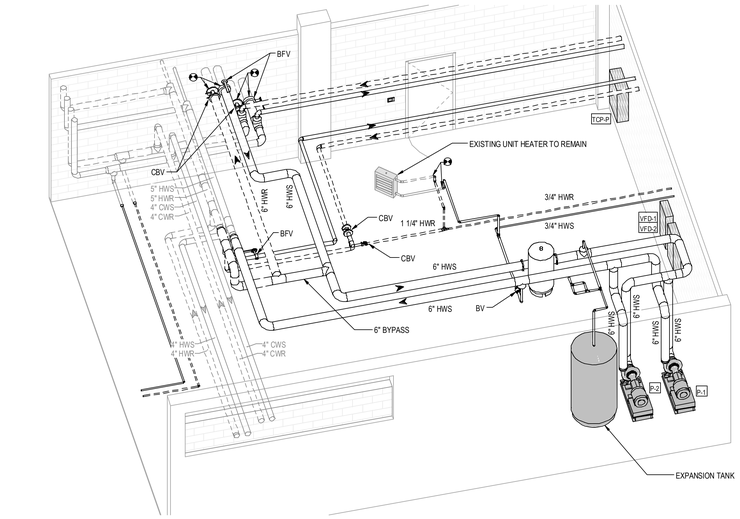
4 M601 **007 MAINTENANCE ISOMETRIC VIEW**

SCALE:



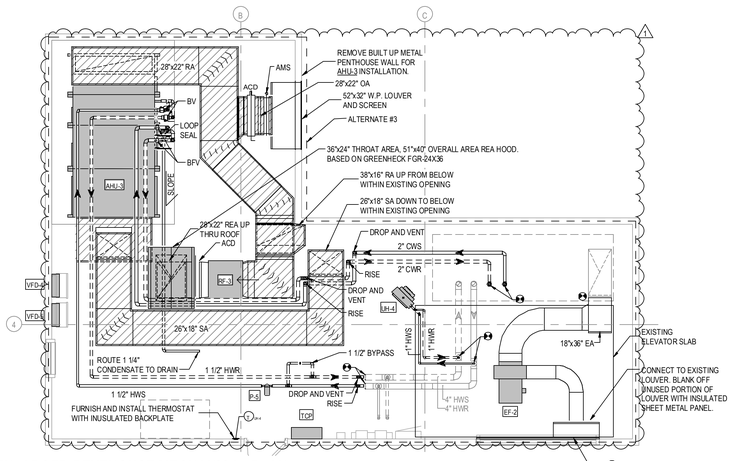
N 2 M601 **ENLARGED 004 MECHANICAL PLAN**

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



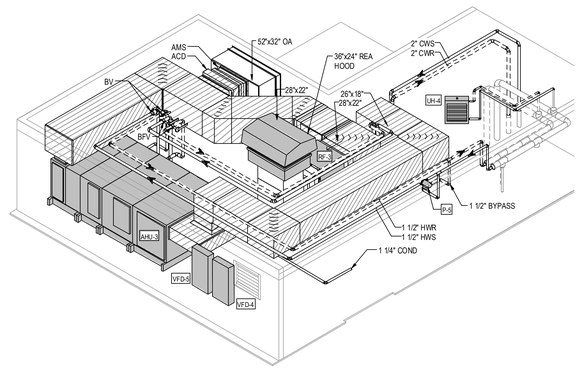
5 M601 **004 MECHANICAL ISOMETRIC VIEW**

SCALE:



N 3 M601 **ENLARGED PENTHOUSE MECHANICAL PLAN**

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



6 M601 **PENTHOUSE ISOMETRIC VIEW**

SCALE:

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REVISIONS

No.	DESCRIPTION	DATE
1	ADD #01	01/22/2026

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PROJECT NO.	2025012

PROJECT TITLE

SAUK COUNTY COURTHOUSE HVAC UPGRADES

515 Oak St,
Baraboo, WI 53913

SHEET NAME

ENLARGED MECHANICAL PLANS

SHEET NO.

M601