

# BERNARDON

A DIVISION OF CORE STATES GROUP

ARCHITECTURE

INTERIOR DESIGN

LANDSCAPE ARCHITECTURE

## ADDENDUM NO. 04

Project Name: Aston Township Municipal Complex

Project No.: 2301.00-22

Date of Issue: April 23, 2024

Notice 1: Attach this addendum to the Project Manual for this project. It modifies and becomes part of the Bidding Documents. Work or material not specifically mentioned herein is to be as described in the main body of the Project Manual and as shown on the drawings.

Table of Contents: This Addendum includes the following:

- A. Written Addendum (seven pages)
- B. Project Manual Clarifications (three pages)
- C. Supplemental Drawings (five sheets)
- D. Sheet Revisions (seventeen sheets)

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### Responses (R) to Bidder Questions (Q) posted on PennBid:

Q01: Is the QSC Core 110f an approved alternate to the Biamp TesiraFORTE DAN CI? The Tesira doesn't have enough AEC channels for all (13) mics in the Commissioner's Boardroom.

R01: QSC Core 110f is an approved substitution.

Q02: The security specifications and drawings do not indicate any video/voice intercoms. How does a person walk up to the building request assistance or entry? Is there any interest in adding video/voice intercom(s) at external and internal doors?

R02: The weatherproof phone box at the building entrance will accommodate a phone that will be used for after-hours assistance.

Q03: The security video specification had a general statement to use vandal resistant camera housing. Can the A&E identify the vandal, and weather resistant rating for cameras?

R03: Provide cameras with IK10 vandal and IP66/67 weather rating.

Q04: The sally port seems to have an overhead door for a vehicle. Sally ports are defined as controlled entry ways with interlocking features. Will the security system control the overhead door (OHD) and the swing door into the detention space? Are these doors interlocking?

R04: Provide a card reader at the interior side of the sectional overhead door (113A) to control door operator, door contacts, and a power supply with proper relay boards. Doors 111,



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113A, and 113B shall be interlocking. When the sectional overhead door is open, this would signal to the access control system that the other doors (Door 111 and Door 113A) should not be opened with a valid card until the first door comes closed. Similarly, when any one of the three doors is open, access to the other doors is not permitted.

- Q05: Is the door hardware contractor responsible for the electric locks? The door hardware schedule states that the detention doors are provided by others. Will high security detention grade locks be used in the detention area? Will the detention area locks be compatible with the access control system? Are the detention doors interlocking and controlled by the security system? What is required for fail safe locks in the detention area?
- R05: Electric locks shall be provided as per Division 087100. The detention hollow metal frames and doors shall be provided by the General Contractor.
- Q06: The security specifications states that the security contractor price shall be itemized. Can this be clarified? It seems that the electrical contractor is responsible for a lump sum price including security. If the security contractor is a sub to the electrical contractor, will the electrical contractor be required to itemize the price for the security components including the EC's mark-up and labor.
- R06: Itemization of the security contractors pricing shall be provided upon request post-bid.
- Q07: Is the EC responsible for conduit including horizontal and vertical wire-way, fire wall and exterior wall penetrations, fire stopping, j-boxes, J-hooks, device backboxes, stub-ups, low voltage cable, 120VAC power circuits, security equipment installation, mounting security panel enclosures supplied by the security contractor and security equipment terminations?
- R07: This is the responsibility of the Electrical Contractor (EC).
- Q08: Please confirm all network switches will be provided by owner.
- R08: All IT network switches provided by owner. Any switches required for the AV system as shown on drawings to be provided by AV contractor.

Clarifications to the PROJECT MANUAL:

1. Reference to Document 006011 – Insurance: Delete Document 006011 – Insurance in its entirety and replace with Document 006011 – Insurance that is included in its entirety as part of this addendum.
2. Reference to Section 011200 – Multiple Contract Summary; Paragraph 1.9 Contract 1 – General Construction Contract; page 011200-10; Line 31: Delete “excluding site electric and site lighting”. General Construction Contract includes installation of site lighting pole



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bases as noted in the Responsibility Matrix found in Part 3 – Execution of Section 011200 – Multiple Contract Summary.

3. Reference to Section 011200 – Multiple Contract Summary; Paragraph 1.12 Contract 4 – Electrical Contract; page 011200-15; Line 26 and Line 27: Delete “and raceway and power to support Owner-provided audio/visual systems”. Audio/Visual systems are a part of Contract 4 – Electrical Contract as indicated in the Multiple Contract Summary and contract documents.
4. Reference to Section 011200 – Multiple Contract Summary; Paragraph 1.12 Contract 4 – Electrical Contract; page 011200-15; Line 29: Delete Line 29 that references “a. Uninterruptible power supply system”. An uninterruptible power supply system is not included in the scope of the project.
5. Reference to Section 011200 – Multiple Contract Summary; Paragraph 1.12 Contract 4 – Electrical Contract; page 011200-16; Line 39: Delete reference to foundation/base for site lighting. Foundation/base for site lighting shall be provided by the General Contractor as noted in the Responsibility Matrix found in Part 3 – Execution of Section 011200 – Multiple Contract Summary.
6. Reference to Section 011200 – Multiple Contract Summary; Part 3 – Execution; Responsibility Matrix: Replace bold text that states “Utilities Interior – (5 feet)” with text that reads “Utilities: Building Interior to 5 feet out from Building”.

Clarifications to the SHEETS:

1. Reference to Civil Sheet 3 of 9 – Existing Conditions and Demolition Plan: Civil Sheet 3 of 9 – Existing Conditions and Demolition Plan is being reissued as part of this addendum. Four (4) additional trees are depicted to be removed. The trees are located behind the proposed building.
2. Reference to Civil Sheet 4 of 9 – Grading Plan: Civil Sheet 4 of 9 – Grading Plan is being reissued as part of this addendum. A Construction Staging Area (Construction trailers and limited material storage) has been designated at the existing paved parking area northeast of the proposed building.
3. Reference to Civil Sheet 6 of 9 – Sediment & Erosion Plan: Civil Sheet 6 of 9 – Sediment & Erosion Plan is being reissued as part of this addendum. A Temporary Topsoil/Soil Stockpile Area has been designated behind the proposed building.
4. Reference to Sheet S-201 – Foundation Plan: Sheet S-201 – Foundation Plan is being reissued as part of this addendum. The following clarifications have been made:



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- a. Add slab type S-2 to Foundation/First Floor Plan Notes.
  - b. Added section cuts 15, 16, 16A, 17 and 18 from S-301.
  - c. Revised slab type in garage.
  - d. Added foundation under interior masonry wall.
  - e. Extended site wall at canopy foundation plan.
5. Reference to Sheet S-202 – Second Floor Framing/Low Roof Plan: Sheet S-202 – Second Floor Framing/Low Roof Plan is being reissued as part of this addendum. The following clarifications have been made:
  - a. Added beam labels at canopy by Stair 2.
  - b. Added section cuts at canopy by Vestibule 100.
  - c. Added floor type at Meeting 201.
  - d. Added roof type above and bottom of deck elevations at low roof levels.
  - e. Added lines for RTU support angle frames.
  - f. Added roof section cut above Toilet 158.
  - g. Added “SIM” to section cut 15/S-401 along grid line BB.
6. Reference to Sheet S-203 – High Roof Framing Plan: Sheet S-203 – High Roof Framing Plan is being reissued as part of this addendum. The following clarifications have been made:
  - a. Revised Roof Framing Plan notes.
  - b. Added beam labels above room 221.
7. Reference to Sheet S-301 – Foundation Sections: Sheet S-301 – Foundation Sections is being reissued as part of this addendum. The following clarifications have been made:
  - a. Revision to sections 6, 8, 9, 10, and 13.
  - b. Added sections 15, 16, 16A, 17 and 18.
8. Reference to Sheet S-401 – Framing Sections: Sheet S-401 – Framing Sections is being reissued as part of this addendum. The following clarifications have been made:
  - a. Added dimensions to sections 4, 5, 17 and 18.
  - b. Revised hanger load at sections 11 and 16.
  - c. Revised sections 13, 14, 15, 16, and 20.
  - d. Added section 21.
9. Reference to Sheet S-402 – Framing Sections: Sheet S-402 – Framing Sections is being reissued as part of this addendum. The following clarifications have been made:
  - a. Added dimensions to sections 3, 6 and 7.
  - b. Added bond beam to top of masonry wall at sections 1 and 2.



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- c. Revised screw type at sections 11, 14, 15, 16, 17, 18, and 19.
  - d. Revised reference typical detail at sections 16, 17, 18, and 19.
  - e. Revised sections 3, 4, 7, 8, 9, 12, 13, 14, 18, and 20.
- 10. Reference to Sheet S-403 – Typical Details: Sheet S-403 – Typical Details is being issued as part of this addendum.
- 11. Reference to Sheet S-601 – Typical Details: Sheet S-601 – Typical Details is being reissued as part of this addendum. The following clarifications have been made:
  - a. Revised section label 19 to 18.
- 12. Reference to Sheet S-603 – Typical Cold-Formed Details: Sheet S-603 – Typical Cold Formed Details is being reissued as part of this addendum. The following clarifications have been made:
  - a. Typical details 12 and 13 have been added.
- 13. Reference to Sheet A-101 – First Floor Plan; Drawing 1/A-101 - First Floor Plan: The unreferenced window in Admin 103 and dimensioned as 8'-2" from column line J shall be deleted from the scope. The continuation of partition type 3E shall be provided in its place.
- 14. Reference to Sheet A-102 – Second Floor Plan; Drawing 1/A-102 - Second Floor Plan: Refer to supplemental drawing SD-A07 – Meeting Room 201 – East Elevation that is attached to this addendum for an elevation and section references of the casework that shall be provided in this room.
- 15. Reference to Sheet A-315 – Wall Sections; Drawing 3/A-315 – Wall Section: The sill detail 1/A-621 referenced for window type 7 in Conference 124 is “similar” to the referenced sill detail. The furring at the interior side of the exterior wall is 2-1/2" as referenced on the plans.
- 16. Reference to Sheet A-413 – Police Department Stairs; Drawing 8/A-413 - Section at Railing (typ): Refer to supplemental drawing SD-A08 – Handrail Wall Bracket that is attached to this addendum for additional details and profile of the handrail wall bracket.
- 17. Reference to Sheet A-511 – Detail Lobby Plans and Elevations; Drawing 1/A-511 – Lobby 101 – Police Station Entrance: Revise the window type “B” to read window type “E”. This window is a vision security window.
- 18. Reference to Sheet A-511 – Detail Lobby Plans and Elevations; Drawing 4/A-511 – Lobby 203: In four (4) instances, revise the window type “A” to read window type “C”. These windows are modular sliding transaction windows as detailed.



19. Reference to Sheet A-515 – Township – Enlarged Plans and Elevations; Drawing 2/A-515 - Elevation: Refer to supplemental drawing SD-A09 – Revision to Caucus Room Casework that is attached to this addendum for revisions to the height of the casework in Caucus Room 157.
20. Reference to Sheet A-519 – Casework Details; Drawing 7/A-519 - Transaction Counter Section: Refer to supplemental drawing SD-A10 – Police Transaction Counter Section that is attached to this addendum for partial revisions to drawing 7/A519. SD-A10 includes revisions to the countertop and sill of the transaction window. Jamb detail of this window is similar to the head condition shown.
21. Reference to Sheet A-601 – Doors; Door Schedule: The following adjustments shall be made to the Door Schedule:
  - a. Door 103: Revise frame type to reflect frame type “3” in lieu of frame type “1”.
  - b. Door 115B: Revise frame type to reflect frame type “3” in lieu of frame type “1”.
  - c. Door 120: Revise frame type to reflect frame type “3” in lieu of frame type “1”.
  - d. Door 124: Revise frame type to reflect frame type “3” in lieu of frame type “1”.
  - e. Door 201: Revise frame type to reflect frame type “3” in lieu of frame type “1”.
  - f. Door 201: Revise door type to reflect door type “A” in lieu of door type “B”.
22. Reference to Sheet A-612 – Exterior Storefront Elevations: The following clarifications are being to this sheet:
  - a. Window Type 3: The sill detail associated with this window is 1/A-621.
  - b. Window Types 8, 9, 10, 11, and 17: The sill detail associated with these windows is similar to 1/A-621.
  - c. Window Type 23: The sill detail associated with this window is 3/A-621.
23. Reference to Sheet A-613 – Interior Window and Manufactured Canopies; Drawing 3/A-613 - Transactional Unit Elevations: Refer to supplemental drawing SD-A11 – Vision Security Window Section that is attached to this addendum for a section through the Vision Security Window “E”. The jamb detail at this window is similar to the head condition shown.
24. Reference to Sheet M-001 – Cover Sheet – Mechanical: Sheet M-001 – Cover Sheet – Mechanical is being reissued as part of this addendum. The following clarifications have been made:
  - a. The Drawing List has been updated to reflect revised sheets contained in this addendum.
  - b. Mechanical General Notes 19, 23, 24, 25, and 26 have been deleted.



25. Reference to Sheet M-101 – First Floor Plan – Mechanical Ductwork; Security Grilles note 1: Delete reference to “Detention 211” and replace with “Detention 111”.
26. Reference to Sheet M-202 – Details - Mechanical: Sheet M-202 – Details – Mechanical is being reissued as part of this addendum. The list of Mechanical Symbols and Abbreviations has been added.
27. Reference to Sheet E-001 – Cover Sheet – Electrical: Sheet E-001 – Cover Sheet – Electrical is being reissued as part of this addendum. The Drawing List has been updated to reflect revised sheets contained in this addendum.
28. Reference to Sheet E-201 – Details – Electrical: Sheet E-201 – Details – Electrical is being reissued as part of this addendum. The revisions include modifications to the electrical riser diagram and concrete equipment pad that shall be provided for the emergency generator and transformer pads.
29. Reference to Sheet E-301 – Schedules – Electrical: Sheet E-301 – Schedules – Electrical is being reissued as part of this addendum to provide clarifications to the Luminaire Schedule.
30. Reference to Sheet E-301 – Schedules – Electrical: Sheet E-301 – Schedules – Electrical; Luminaire Schedule: The following fixtures have been found to be equivalent to the specified basis-of-design fixtures:
  - A1 – HE Williams – BP-24-LS/8CS-DIM-UNV
  - A2 – HE Williams – BP-22-LS/8CS-DIM-UNV
  - A3 – HE Williams – V50-ceiling-S24-L81/835-F-VLF-DIM-UNV
  - C1 – HE Williams – 4DR-TL-L20/835-DIM-UNV-O-M-xF-finish-N
  - C2 – HE Williams – V4DR-L20/835-R-W-OF-WH-WET/CC-N
  - C3 – HE Williams – 4DR-TL-L20/835-DIM-UNV-R-W-OF-finish-WET/CC-N
  - F1 – LiteControl – 2L-ceiling-D-4’-BAT-C1-35K9-D063-D01-1C-UNV
  - F2 – Kenall – ES8-48-1L67L35K-DCC-1-DV-2H-PP
  - P1 – LiteControl – 4L-P-ID-LPAD-length-BAT-C1-35K9-I028-D063-D01-1C-UNV-FA1
  - P2 – Beacon – SRT2-85-4K7-5W-UNV-finish
  - M – Beacon – RWL1-48L-15-3K7-3-UNV-color

## DOCUMENT 006011 – INSURANCE

The General Conditions governing this work are the “General Conditions of the Contract for Construction”, AIA Document A201-2017, Electronic Format, a copy of which is bound in this Project Manual.

The following Supplements modify, change, delete from, or add to the General Conditions noted above.

Article 11, Paragraph 11.1 Contractor’s Insurance and Bonds. Add the following clause 11.1.1.1:

11.1.1.1 Liability Insurance shall include all major divisions of coverage and be on a comprehensive basis, including:

- .1 Premises Operations (including X-C/U coverages).
- .2 Independent Contractors’ Protective.
- .3 Products and Completed Operations.
- .4 Personal Injury Liability with Employment Exclusion deleted.
- .5 Contractual, including specified provisions for the Contractor’s obligation under Paragraph 3.18.
- .6 Owned, non-owned, and hired motor vehicles.
- .7 Broad Form Property Damage, including Completed Operations.
- .8 Owner’s and Contractor’s Protective Liability.
- .9 Umbrella Excess Liability.

Article 11, Paragraph 11.1 Contractor’s Insurance and Bonds. Add the following clause 11.1.1.2:

11.1.1.2 If the General Liability coverages are provided by a Commercial General Liability Policy on a claims-made basis, the policy date or Retroactive Date shall predate the Contract; the termination date of the policy or applicable extended reporting period shall be no earlier than the termination date of coverages required to be maintained after final payment, certified in accordance with Sub-paragraph 9.10.2.

Article 11, Paragraph 11.1 Contractor’s Insurance and Bonds. Add the following clause 11.1.1.3:

11.1.1.3 The Insurance required under Sub-paragraph 11.1.1. shall be written for not less than the following limits, or greater if required by law:

1. Worker’s Compensation:

- |     |                       |                                  |
|-----|-----------------------|----------------------------------|
| (a) | State:                | Statutory                        |
| (b) | Applicable Federal:   | Statutory                        |
| (c) | Employer’s Liability: | \$500,000 Per Accident           |
|     |                       | \$500,000 Disease, Policy Limit  |
|     |                       | \$500,000 Disease, Each Employee |

2. Comprehensive or Commercial General Liability (including Premises – Operations; Independent Contractors’ Protective; Products and Completed Operations; Broad Form Property Damage):

- (a) Bodily Injury and Property Damage Combined:
  - \$ 1,000,000 Each Occurrence
  - \$ 2,000,000 Aggregate
- (b) Products and Completed Operations to be maintained for one year after final payment:
  - \$ 1,000,000 Aggregate
- (c) Property Damage Liability Insurance shall provide X, C and U coverage.
- (d) Broad Form Property Damage Coverage shall include Completed Operations.



## 3. Contractual Liability:

## (a) Bodily Injury and Property Damage Combined:

\$ 1,000,000 Each Occurrence

\$ 2,000,000 Aggregate

## 4. Personal Injury with Employment Exclusion deleted:

## 5. Business Auto Liability (including owned, non-owned and hired vehicles):

(a) Bodily Injury: \$ 1,000,000 Each Person

\$ 1,000,000 Each Occurrence

(b) Property Damage: \$ 1,000,000 Each Occurrence

(c) In lieu of (a) and (b) above, Bodily Injury and Property Combined:

\$ 1,000,000 Each Occurrence

## 6. If the General Liability coverages are provided by a Commercial Liability Policy, the:

(a) General Aggregate shall be not less than \$2,000,000 and it shall apply, in total, to this project only.

(b) Fire Damage Limit shall be not less than \$50,000 on any one fire.

(c) Medical expense limit shall be not less than \$5,000 on any one person.

## 7. Umbrella Excess Liability: \$5,000,000 per occurrence/annual aggregate over primary insurance, including Commercial General Liability, Business Auto Liability, and Employer's Liability.

Article 11, Paragraph 11.1 Contractor's Insurance and Bonds. Add the following clause 11.1.1.4:

11.1.1.4 If this insurance is written on the Comprehensive General Liability policy form, ACORD Form 25S will be acceptable. If the ACORD form is utilized, AIA Document G715 shall also be completed in full and submitted.

Article 11, Paragraph 11.1 Contractor's Insurance and Bonds. Add the following clause 11.1.1.5:

11.1.1.5 The Certificate of Insurance shall reference that Endorsement CG2503 "Amendment – Aggregate Limits of Insurance (Per Project)" is a part of the Contractor's Commercial General Liability Policy.

Article 11 Paragraph 11.1 Contractor's Insurance and Bonds. Add the following sub-paragraph 11.1.5:

11.1.5 The Contractor shall purchase insurance from a company having an A.M. Best & Company rating of "A" or better.

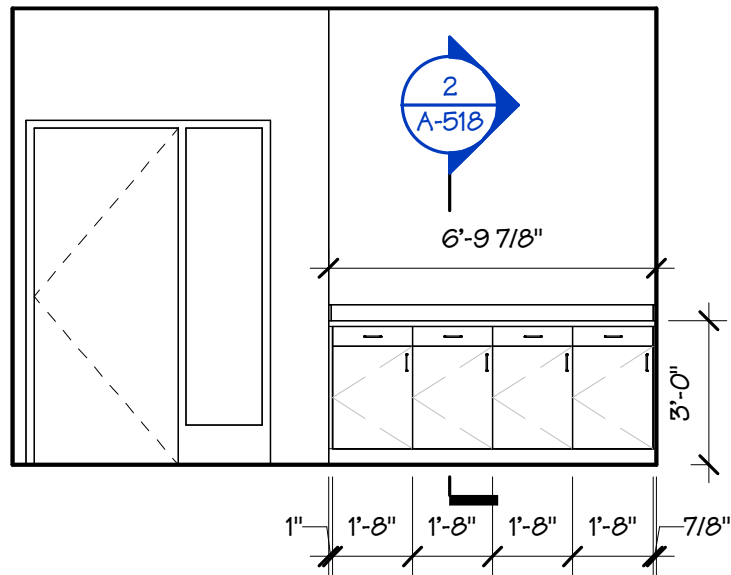
Article 11, Paragraph 11.1 Contractor's Insurance and Bonds. Add the following sub-paragraph 11.1.6:

11.1.6 The Contractor shall make Aston Township jointly and severally as Additional Insureds. He shall provide an endorsement from his insurance carrier (in addition to notation on Certificate required above) to the Owner within two weeks after execution of the Agreement stating that this subparagraph has been complied with. The endorsement shall obligate the insurance carrier to give Aston Township thirty (30) days notice of cancellation of the insurance coverage(s).

1 Article 11, Paragraph 11.1 Contractor's Insurance and Bonds. Add the following sub-paragraph 11.1.7:

2 11.1.7 The Contractor shall provide insurance coverage for portions of the work stored off the site after  
3 written approval of the Owner at the value established in the approval and also for portions of the work  
4 in transit.

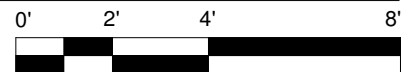
5 END OF DOCUMENT 006011



1

## ELEVATION

SCALE 1/4" = 1'-0"



Drawing Title:

Meeting Room 201 - Elevation

**BERNARDON**  
A CORE STATES GROUP COMPANY

46 East Main Street, Suite 201  
Somerville, New Jersey 08876  
p. 908 699 8800

Project:

**ASTON TOWNSHIP MUNICIPAL  
COMPLEX**

**3264 Concord Road  
Aston, PA 19014**

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

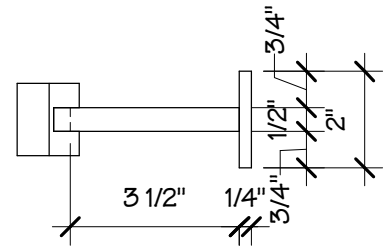
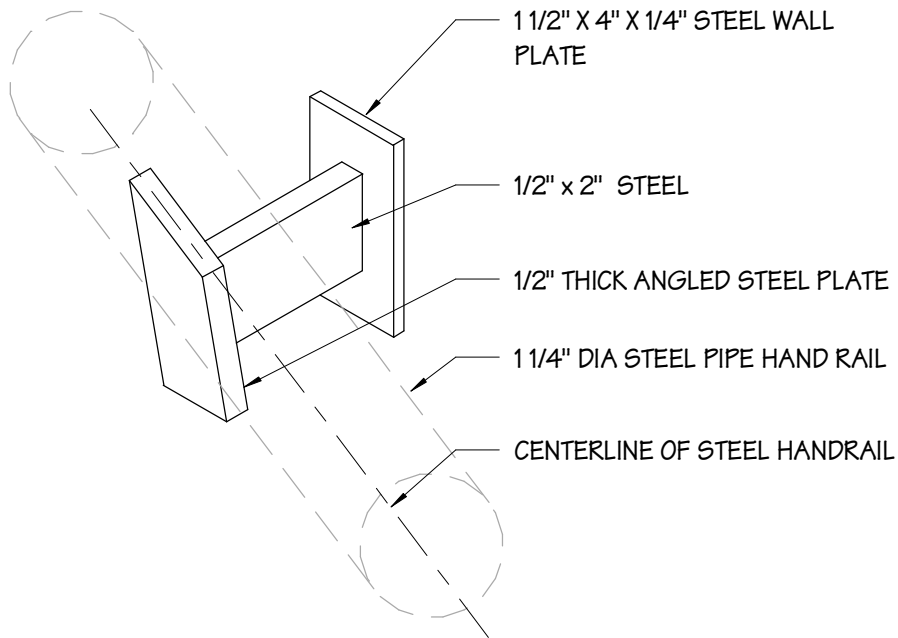
Project No: 2301.00-22

Print Date: 04/23/24

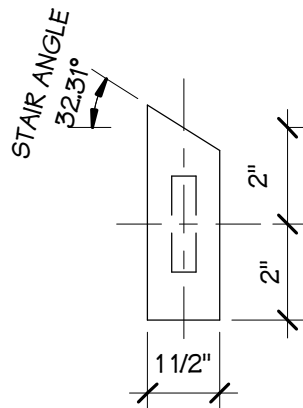
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Sheet Number:

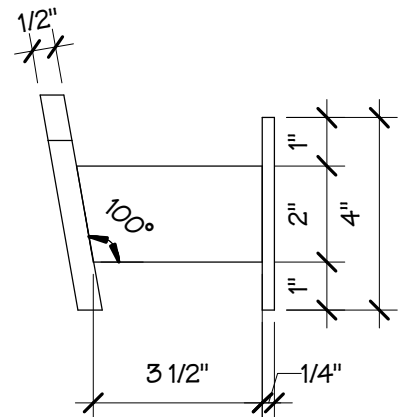
**SD-A07**



TOP



FRONT

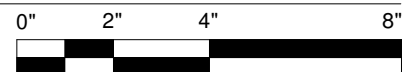


SIDE

1

# HANDRAIL WALL BRACKET

SCALE 3" = 1'-0"



**Drawing Title:**  
**Handrail Wall Bracket**

**BERNARDON**  
A CORE STATES GROUP COMPANY

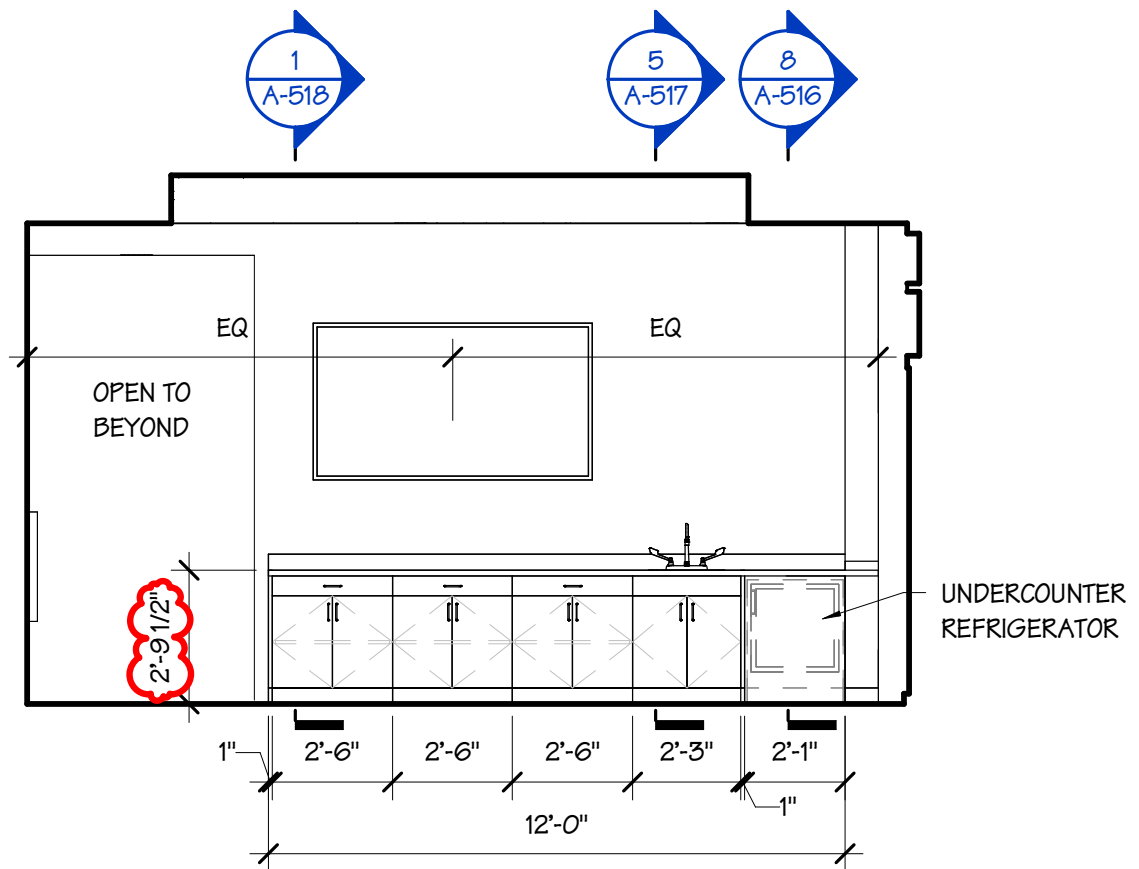
46 East Main Street, Suite 201  
Somerville, New Jersey 08876  
p. 908 699 8800

**Project:**  
**ASTON TOWNSHIP MUNICIPAL  
COMPLEX**  
**3264 Concord Road**  
**Aston, PA 19014**

Scale: 3" = 1'-0"

Project No: 2301.00-22  
Print Date: 04/23/24  
Ref/Sheet: A-413

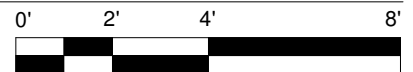
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**SD-A08**



2

## ELEVATION

SCALE 1/4" = 1'-0"



Drawing Title:

Revision to Caucus Room Casework

**BERNARDON**  
A CORE STATES GROUP COMPANY

46 East Main Street, Suite 201  
Somerville, New Jersey 08876  
p. 908 699 8800

Project:

**ASTON TOWNSHIP MUNICIPAL  
COMPLEX**

**3264 Concord Road  
Aston, PA 19014**

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

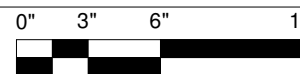
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Print Date: 04/23/24

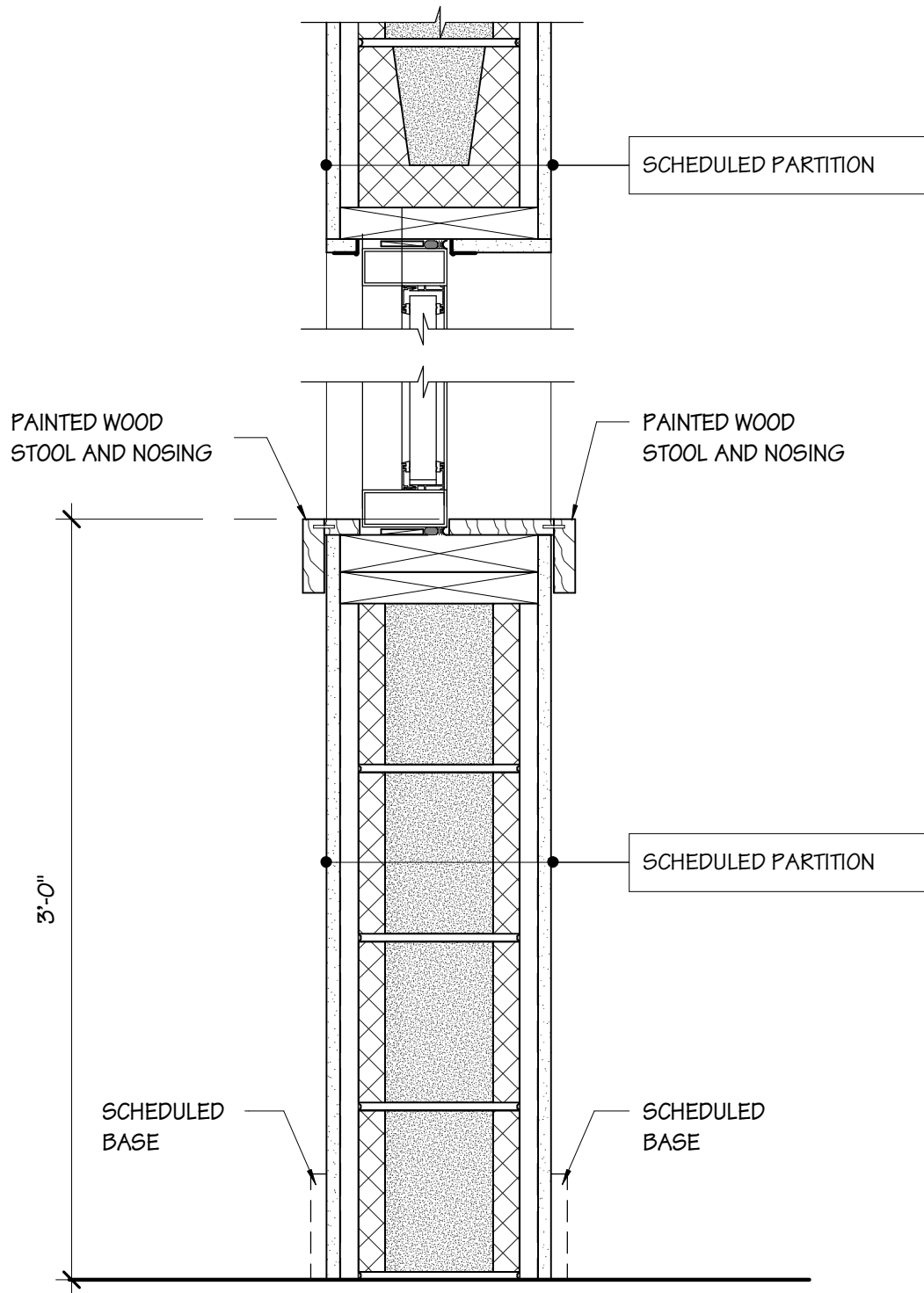
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Sheet Number:

**SD-A09**

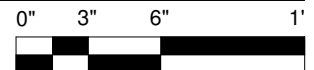


Sheet Number:  
**SD-A10**



# VISION SECURITY WINDOW SECTION

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



Drawing Title:

**Police Vestibule Vision Security Window Section**

**BERNARDON**  
A CORE STATES GROUP COMPANY

46 East Main Street, Suite 201  
Somerville, New Jersey 08876  
p. 908 699 8800

Project:  
**ASTON TOWNSHIP MUNICIPAL  
COMPLEX**  
**3264 Concord Road**  
**Aston, PA 19014**

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

Project No: 2301.00-22  
Print Date: 04/23/24  
Ref/Sheet: 3/A-613

Sheet Number:  
**SD-A11**







AS-BUILT PLANS

The developer shall be responsible for providing as-built plans of all SWM BMPs included in the approved SWM site plan for activities involving proposed impervious surfaces 1,000 square feet or greater and for earth disturbances 5,000 square feet or greater.

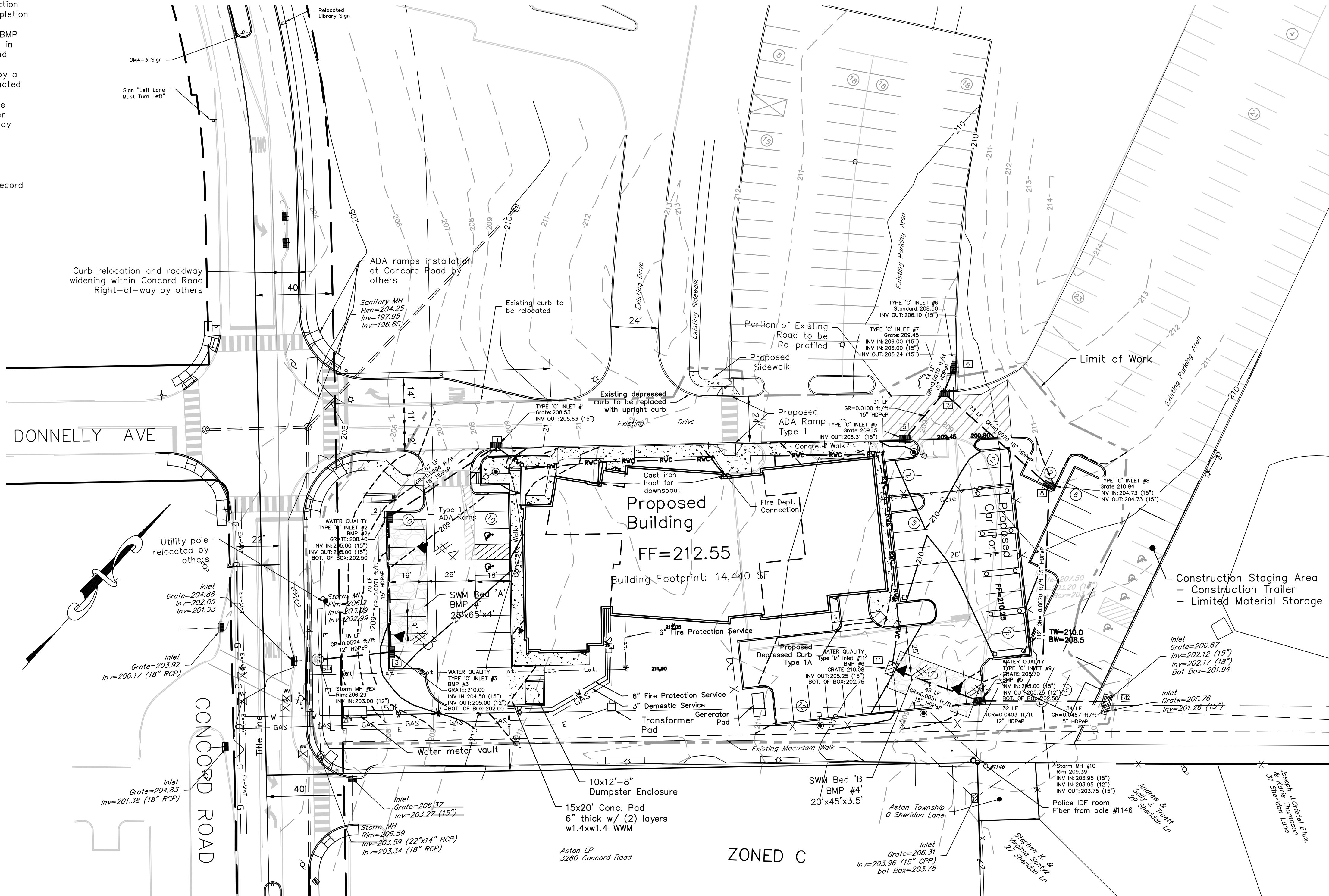
- The as-built plans and all explanation of any discrepancies with the construction plans shall be submitted to the municipality within three months of the completion of construction of the SWM BMPs.
- As-built plans shall show the location and as-built conditions of all SWM BMP structures and include the following information: impervious surfaces included in the approved SWM site plan; topographic contours; and existing, proposed and built impervious surfaces shown in the as-built drawings.
- The as-built submission shall include a certification of completion signed by a design professional verifying that all permanent SWM BMPs have been constructed according to the approved plans and specifications.
- The municipality will review the as-built submission for consistency with the approved SWM site plan as well as actual conditions at the project site. After receipt of the completion certification by the municipality, the municipality may conduct a final inspection.

SWM OPERATIONS and MAINTENANCE AGREEMENT

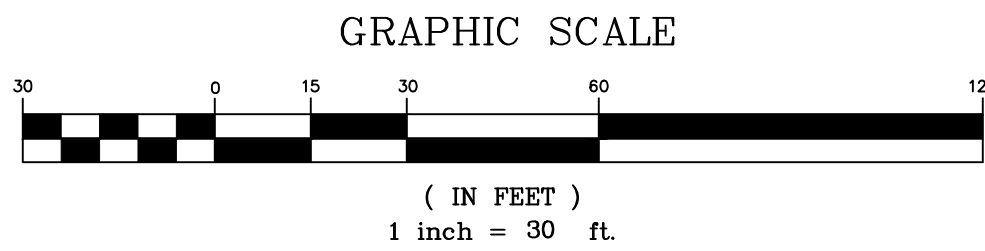
Prior to final approval of the site's SWM site plan, the applicant shall sign and record an operations and maintenance agreement with the municipality covering all stormwater controls and BMPs that are to be privately owned. The maintenance agreement shall be transferred with transfer of ownership in perpetuity.

LEGEND

- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- EXISTING WATER VALVE
- EXISTING DECIDUOUS TREE
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR
- SOIL BOUNDARY LINE
- PROPOSED TYPE "C" INLET
- PROPOSED STORM SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- EXISTING FENCES



- NOTE:
- All piping from roof drain (RWC) shall be 8" SDR-35 PVC pipe.
  - Existing sidewalk along building frontage at Concord Road to be replaced if damaged during construction.



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Note: All locations of existing utilities shown on the plan have been developed from existing utility records and / or above ground examination of the site. Completeness or accuracy of locations and depth of underground utilities or structures cannot be guaranteed. Contractor must verify location and depth of all underground utilities and facilities before start of work, as per PA Act 181 as per the latest amendment of PA Act 287 of 1974, Effective Mar. 29, 2007.

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- NOTE:
- The curb at the southeasterly side of the access drive from Concord Road past the Northerly parking area access shall be reconstructed/replaced.
  - Contractor shall replace curb at the parking area island and return as required to install inlets #6 & #7 and perform the re-profiling of the access drive.

PRELIMINARY/FINAL

GRADING PLAN  
PROPERTY OF  
**ASTON TOWNSHIP  
MUNICIPAL BUILDING**  
ASTON TOWNSHIP  
DELAWARE COUNTY, PA

**G.D. HOUTMAN & SON, INC.**  
CIVIL ENGINEERS—LAND SURVEYORS  
LAND PLANNERS

139 EAST BALTIMORE PIKE  
(610)665-4363

Sheet 4 of 9  
PROJECT  
Aston Municipal Bldg  
DRAWN  
39561  
FILE  
3864







**Consultant:**  
**Baker, Ingram & Assocs**  
**1547 Oregon Pike**  
**Lancaster, PA, 17601**  
**717.290.7400**

Consultant Project No. L14967

**Project:**  
**ASTON TOWNSHIP**  
**MUNICIPAL COMPLEX**  
**3270 Concord Road**  
**Aston, PA 19014**

**Owner:**  
**ASTON TOWNSHIP**  
**2 New Road**  
**Suite 123**  
**Aston, PA 19014**

**Revision/Issue:**  
0 03/29/24 Issued  
1 04/23/24 Revisions

Drawn: JPC  
Reviewed: ITW  
Contact: KLL  
Project Number: 2301.00-22

**Sheet Title:**  
**FOUNDATION PLAN**

**Sheet Number:**

**S-201**



**2**  
**5-201**  
**CANOPY FOUNDATION PLAN**  
1/8" = 1'-0"

FOOTING SCHEDULE		
MARK	SIZE	REINFORCING (EACH WAY - BOT)
F4.0	4'-0" x 4'-0" x 1'-0"	#4#5
F5.0	5'-0" x 5'-0" x 1'-0"	#5#5
F6.0	6'-0" x 6'-0" x 1'-2"	#5#5
F6.0x5.0	6'-0" x 6'-0" x 1'-6"	#7@12"
F7.0	7'-0" x 7'-0" x 1'-6"	#6#6
F8.0	8'-0" x 8'-0" x 1'-6"	#6#7
F9.0	9'-0" x 9'-0" x 1'-10"	#7#7
F10.0	10'-0" x 10'-0" x 2'-0"	#7#7

**FOUNDATION / FIRST FLOOR PLAN NOTES**

- FIRST FLOOR REFERENCE ELEVATION = 0'-0" = DATUM ELEV. OF 212.55'.
- ELEVATIONS ARE NOTED FROM REF EL 0'-0" AS FOLLOWS:  
1'-4" P1 INDICATES TOP OF FOOTING  
-4" P1 INDICATES TOP OF PIER
- FOUNDATION MEMBERS SHALL BE AT THE FOLLOWING ELEVATIONS, UNO:  
PIERS TPIER (0'-0")  
FLOOR SLAB T/SLAB (0'-0")
- FOUNDATION MEMBERS ARE DESIGNATED AS FOLLOWS:  
F# # FOOTING MARK - SEE SCHEDULE  
P# # PIER MARK - SEE FOUNDATION DETAILS  
BP# # COLUMN BASE PLATE - SEE FOUNDATION DETAILS
- SLAB-ON-GRADE TYPE S-1 SHALL BE A 4" SLAB ON GRADE REINF. W/ 6X6 - W2.9XW2.9 WVF ON 4" DRAINAGE FILL & VAPOR BARRIER.  
SLAB-ON-GRADE TYPE S-2 SHALL BE A 5" SLAB ON GRADE REINF. W/ 6X6 - W2.9XW2.9 WVF ON 4" DRAINAGE FILL & VAPOR BARRIER.
- COORDINATE WITH ARCH, MECH, ELEC, AND PLUMB DRAWINGS FOR FLOOR SLOPES, DRAINS, OPENINGS, DEPRESSIONS, ETC., NOT SHOWN ON THIS PLAN, AT ALL TOILETS AND OTHER ROOMS.
- REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT INDICATED.
- UNDER SLAB PLUMBING SHOWN THUS -----, SEE TYP DETAILS FOR STEPPED FOOTINGS @ PLUMBING LINES.
- PROVIDE (2) #4 X 4'-0" DIAGONAL BARS AT ALL RE-ENTRANT SLAB-ON-GRADE CORNERS.
- REFER TO STRUCTURAL NOTES ON S-101.
- REFER TO TYPICAL DETAILS ON S-501 & S-502.



Consultant:  
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Reviewed: ITW  
Contact: KLL  
Project Number: 2301.00-22

Sheet Title:  
**SECOND FLOOR  
FRAMING/LOW  
ROOF PLAN**

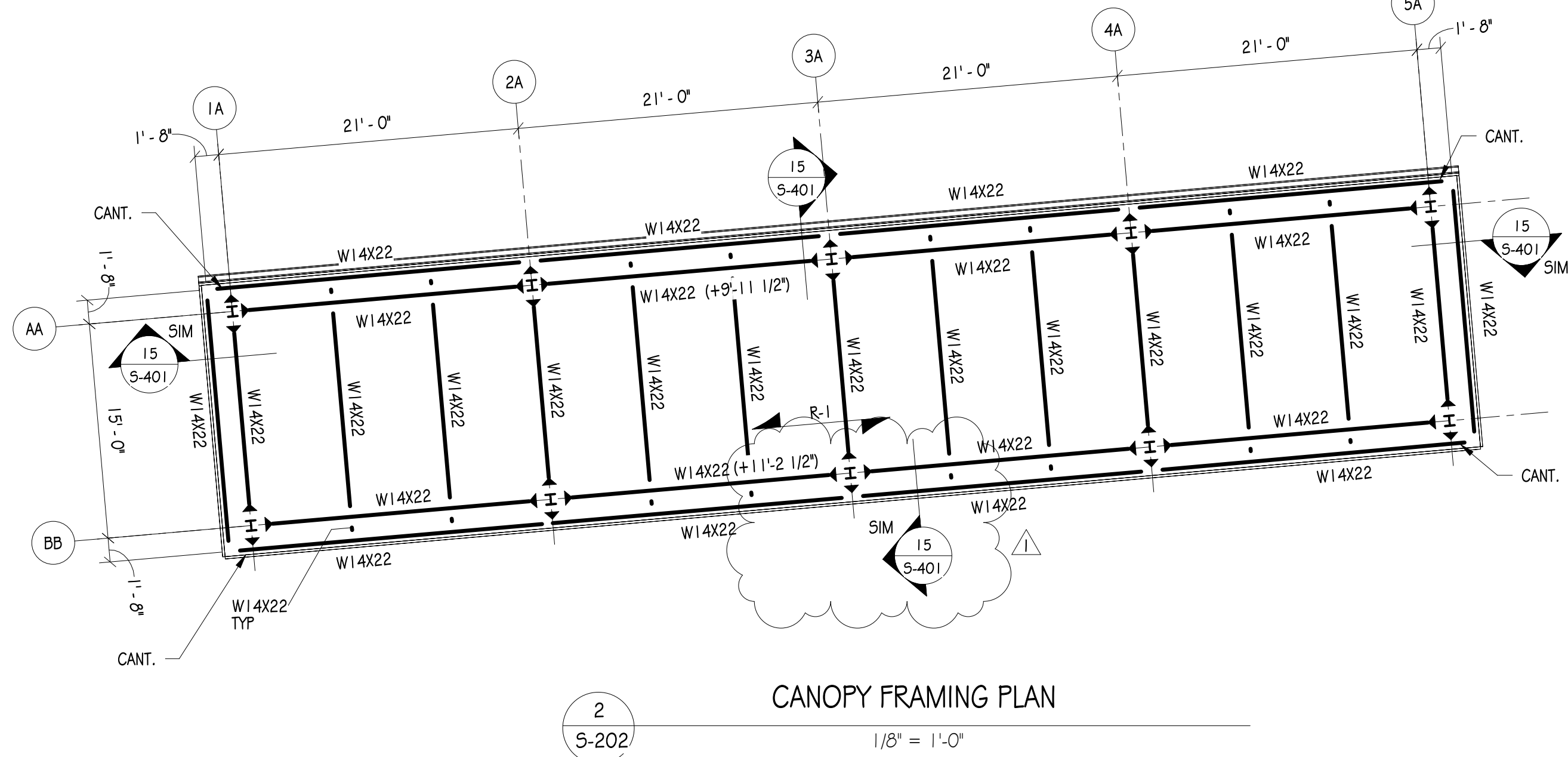
Sheet Number:

**S-202**



SECOND FLOOR FRAMING/LOW ROOF PLAN

1/8" = 1'-0"



CANOPY FRAMING PLAN

1/8" = 1'-0"

**FLOOR FRAMING PLAN NOTES**

1. FLOOR REFERENCE ELEVATION IS (0'-0").
2. ELEVATIONS ARE NOTED AS FOLLOWS, REFERENCED FROM THE REFERENCE ELEVATION:  
(+/-#) INDICATES TOP OF SLAB ELEVATION
3. FLOOR CONSTRUCTION TYPE F-1 SHALL BE 1 1/2" - 20 GA COMPOSITE METAL DECK WITH 3 1/2" NORMAL WEIGHT CONCRETE TOPPING AND 6x6-W2.1 WWF (5" TOTAL FLOOR THICKNESS). (##) INDICATES NUMBER OF UNIFORMLY SPACED 3/4" DIA. X 4" LONG SHEAR STUDS AT COMPOSITE BEAMS.
4. T/C CONCRETE SLAB = (+13'-4") U.N.O.
5. STEEL FRAMED CONCRETE FLOORS SHALL BE POURED TO THEIR SPECIFIED LEVELS, ALLOW FOR ADDITIONAL CONCRETE DURING PLACEMENT TO ACCOUNT FOR THE DEFLECTION IN THE STEEL FRAMING.
6. ROLLED STEEL SHALL BE ASTM A992, UNO.
7. SYMBOL SHOWN THUS  $\overline{\text{PLF}}$  INDICATES BEAM BEARING PLATE - SEE TYPICAL DETAIL.
8. EQUALLY SPACE FLOOR FRAMING MEMBERS, UNO, WITH QUANTITY SHOWN ON PLAN.
9. STEEL BEAMS SHOWN ON PLAN WITHOUT A SIZE DESIGNATION SHALL BE W12x14 UNO.
10. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT INDICATED.
11. PROVIDE UNTELS ACCORDING TO STRUCTURAL NOTES AND UNTEL SCHEDULE.
12. SYMBOL SHOWN THUS  $\blacktriangleleft$  INDICATES MOMENT CONN - SEE TYPICAL DETAILS.
13. REFER TO STRUCTURAL NOTES ON DRAWINGS S-101
14. REFER TO TYPICAL DETAILS ON DRAWING S-601, S-602 & S-603.

**ROOF FRAMING PLAN NOTES**

1. ROOF REFERENCE ELEVATION IS (+25'-4") FROM (0'-0").
2. ELEVATIONS ARE NOTED AS FOLLOWS, REFERENCED FROM THE REFERENCE ELEVATION:  
(+/-#) INDICATES BOTTOM OF DECK ELEVATION FROM (+25'-4")
3. ROOF CONSTRUCTION TYPE R-1 SHALL BE 1 1/2" - 20 GA. TYPE B METAL ROOF DECK
4. ROOF CONSTRUCTION TYPE R-2 SHALL BE 3" - 20 GA. TYPE N METAL ROOF DECK
5. ROLLED STEEL SHALL BE ASTM A992, UNO.
6. SYMBOL SHOWN THUS  $\overline{\text{PLF}}$  INDICATES BEAM BEARING PLATE - SEE TYPICAL DETAIL.
7. ROOF MEMBERS SHALL BE EQUALLY SPACED, UNO WITH QUANTITY AS SHOWN ON PLANS.
8. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT INDICATED.
9. PROVIDE FRAMING AT ROOF EQUIPMENT CURBS AND OPENINGS PER TYPICAL DETAIL.
10. PROVIDE UNTELS ACCORDING TO STRUCTURAL NOTES AND UNTEL SCHEDULE.
11. SYMBOL SHOWN THUS  $\blacktriangleleft$  INDICATES MOMENT CONN - SEE TYPICAL DETAILS.
12. REFER TO STRUCTURAL NOTES ON DRAWINGS S-101
13. REFER TO TYPICAL DETAILS ON DRAWING S-601, S-602 & S-603.



**Consultant:**

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Consultant Project No. L14967

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Drawn: JPC

Reviewed:	ITW
Contact:	KLL
Project Number:	2301.00-22

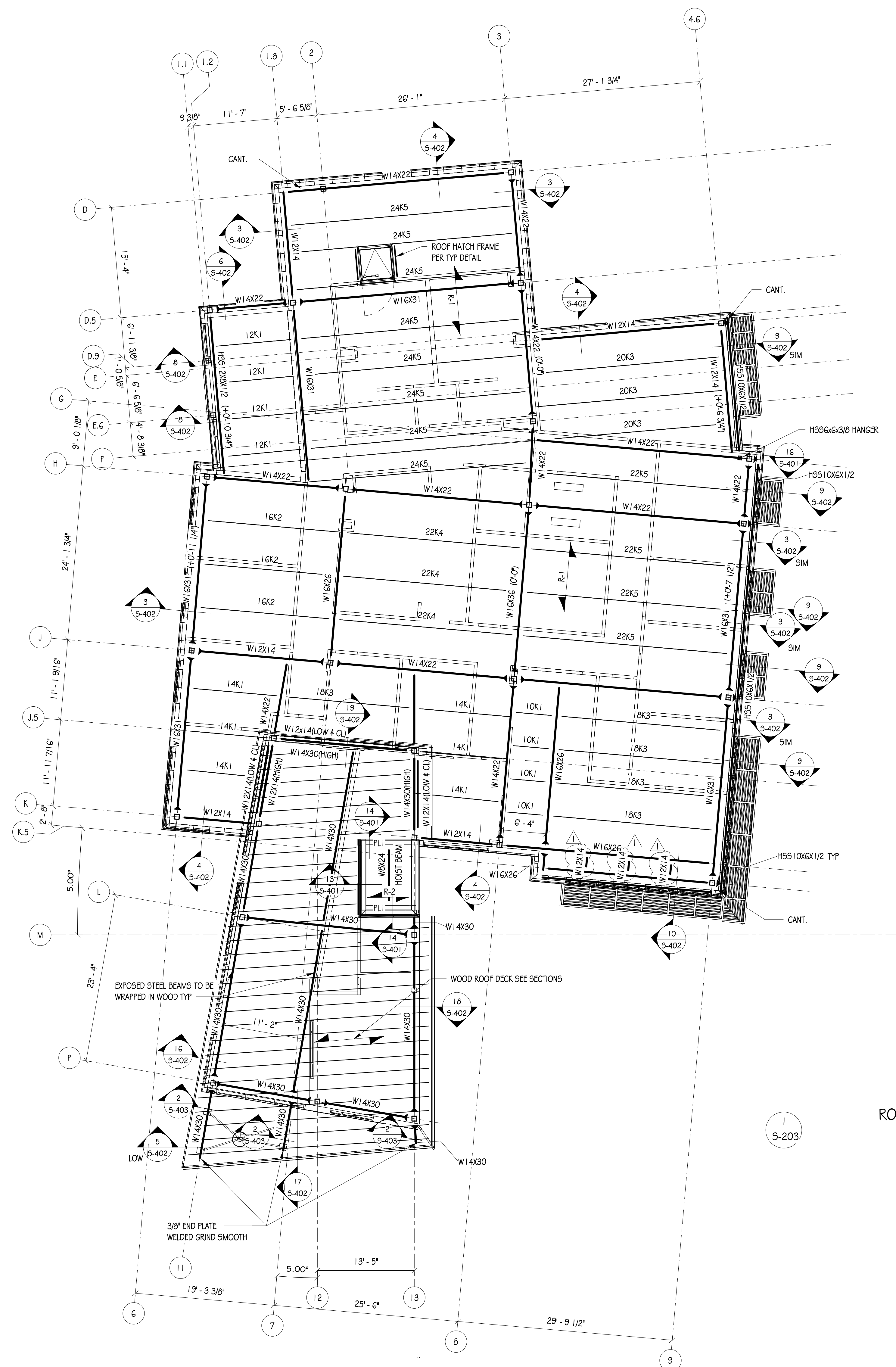
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## HIGH ROOF FRAMING PLAN

Sheet Number:

**S-203**

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ROOF FRAMING PLAN

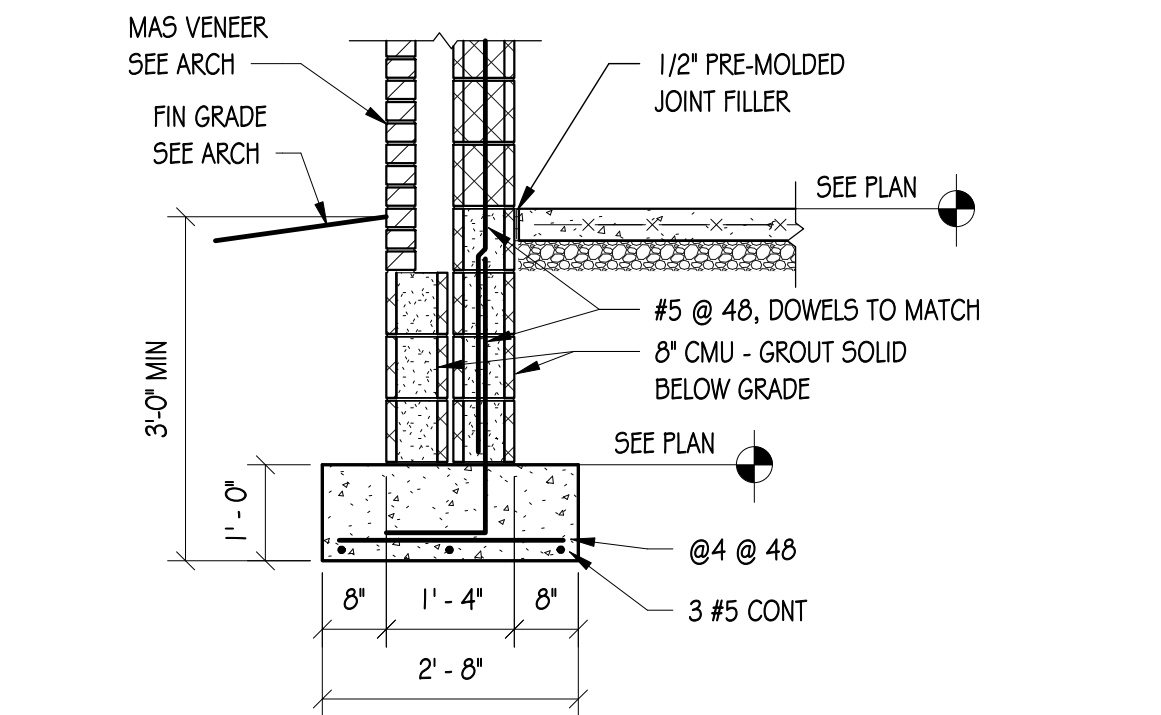
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$$1/8'' = 1'-0''$$

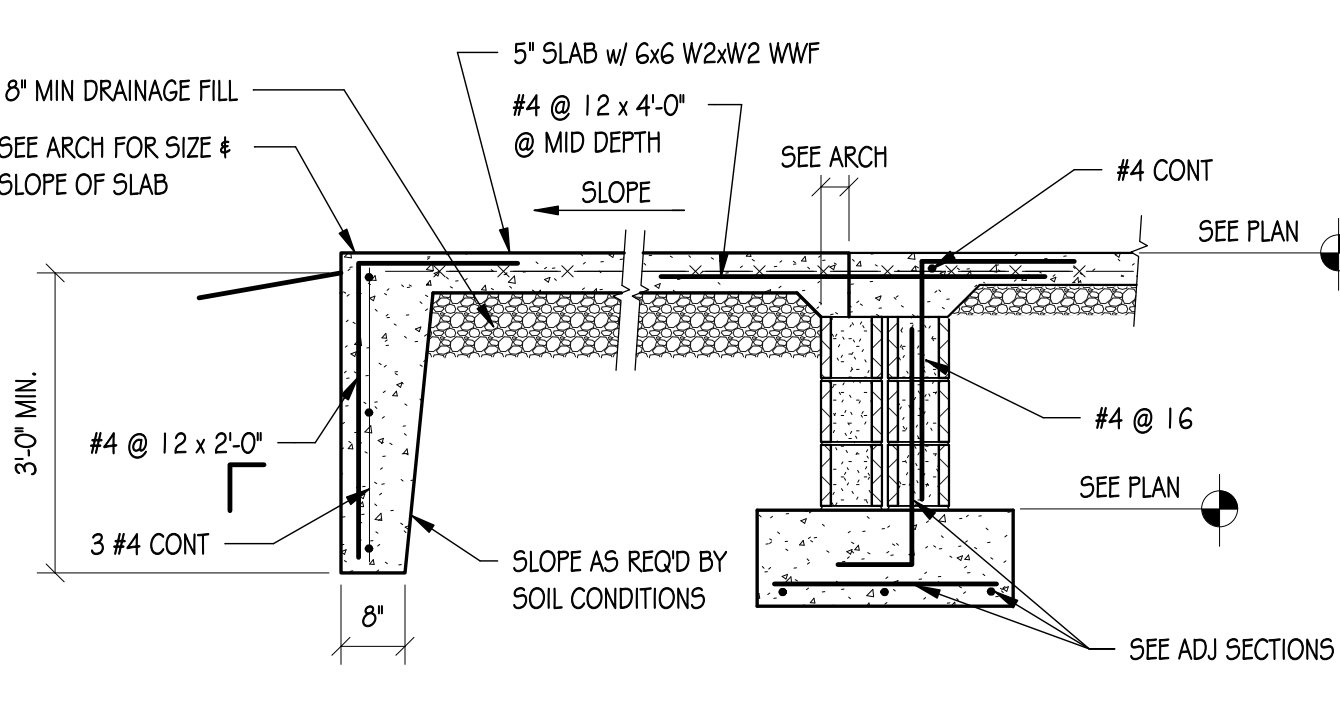
ROOF FRAMING PLAN NOTES

1. ROOF REFERENCE ELEVATION IS +125'-4" FROM (7-0).
2. ELEVATIONS ARE NOTED AS FOLLOWS, REFERENCED FROM THE REFERENCE ELEVATION:  
(R-F) INDICATES BOTTOM OF DECK ELEVATION FROM +125'-4"   
(R-F) R-1 SHALL BE 1' 1/2" - 20 GA. TYPE B METAL ROOF DECK  
R-2 ROOF CONSTRUCTION R-2 SHALL BE 3" - 20 GA. TYPE N METAL ROOF DECK  
3. ROLLED STEEL SHALE BE ASTM A992, 50.  
4. SYMBOL SHOWN FOR PLATES SHALL BE BEARING PLATE - SEE TYPICAL DETAIL.  
5. ROOF MEMBERS SHALL BE EQUALLY SPACED, UNO W/ QUANTITY AS SHOWN ON PLANS.  
6. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT INDICATED.  
7. PROVIDE FRAMING AT ROOF EQUIPMENT CURBS AND OPENINGS PER TYPICAL DETAIL.  
8. PROVIDE UNITS/LETS ACCORDING TO STRUCTURAL NOTES AND UNITS SCHEDULE.  
9. SYMBOL SHOWN FOR UNITS SHALL BE UNITS/LETS - SEE TYPICAL DETAIL.  
10. REFER TO STRUCTURAL NOTES ON DRAWINGS 5-01.  
11. REFER TO TYPICAL DETAILS ON DRAWINGS 5-601, 5-602 & 5-603.

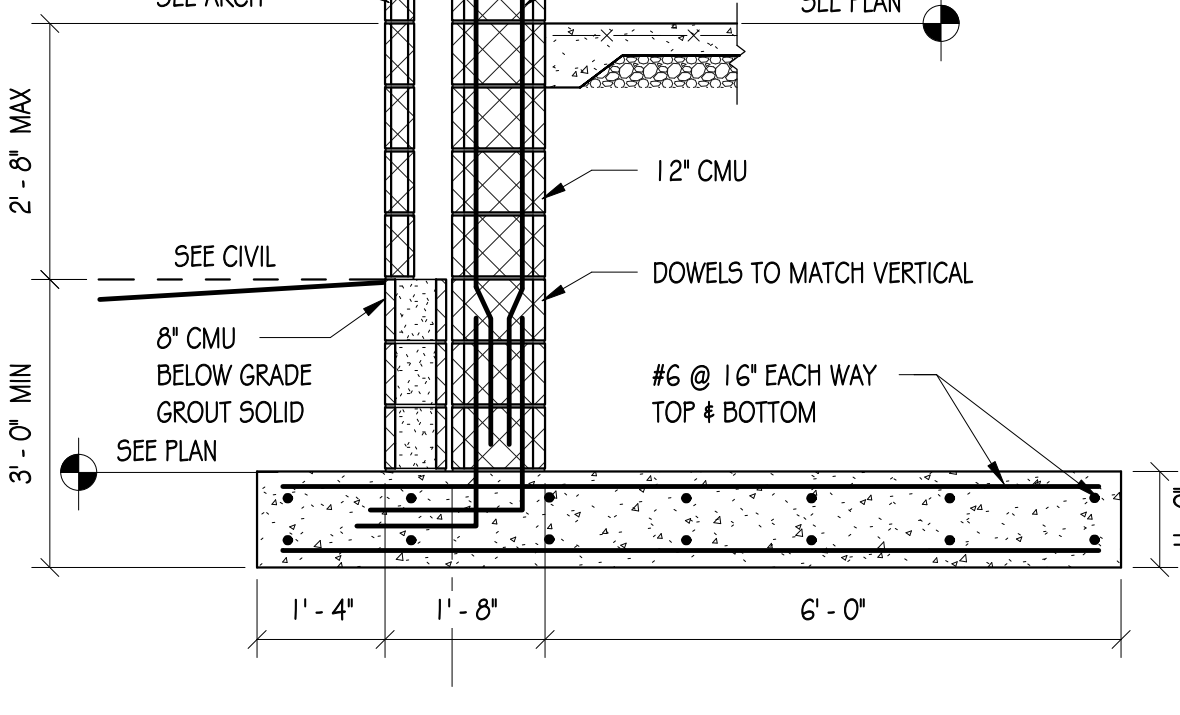




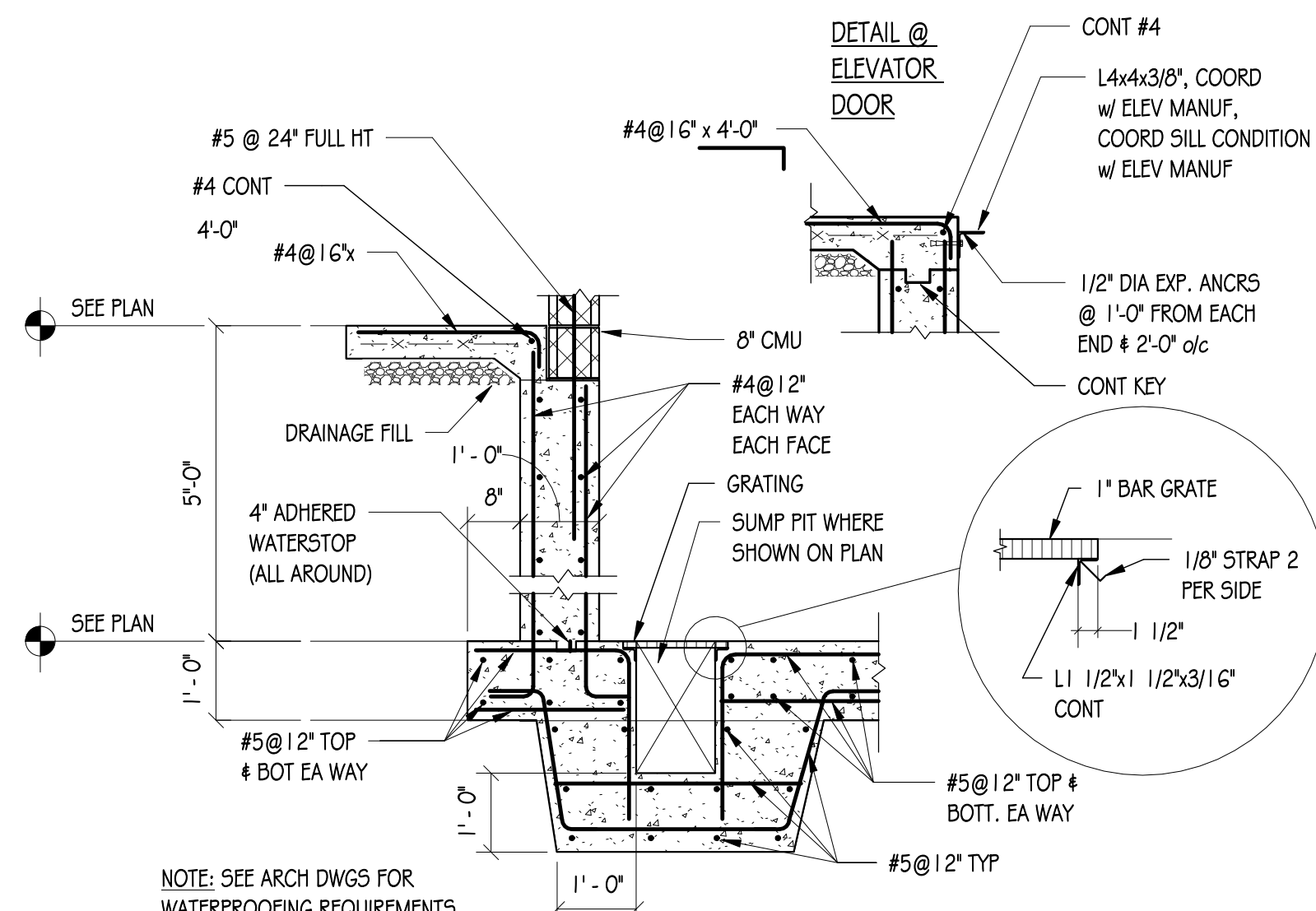
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5-301  
SECTION  
1/2" = 1'-0"



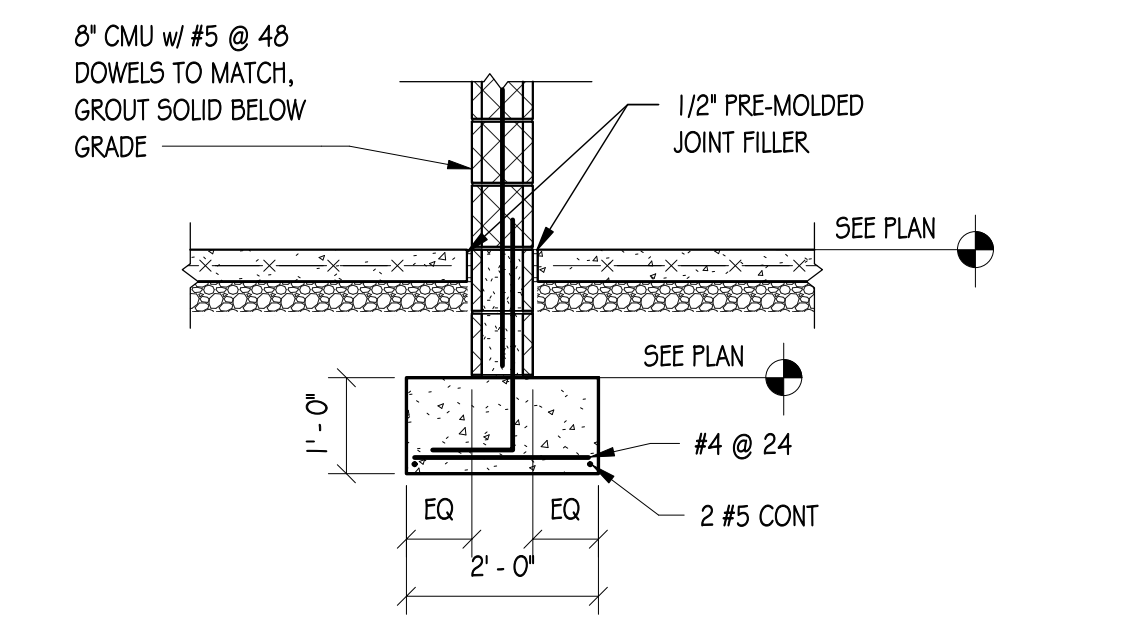
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SECTION  
1/2" = 1'-0"



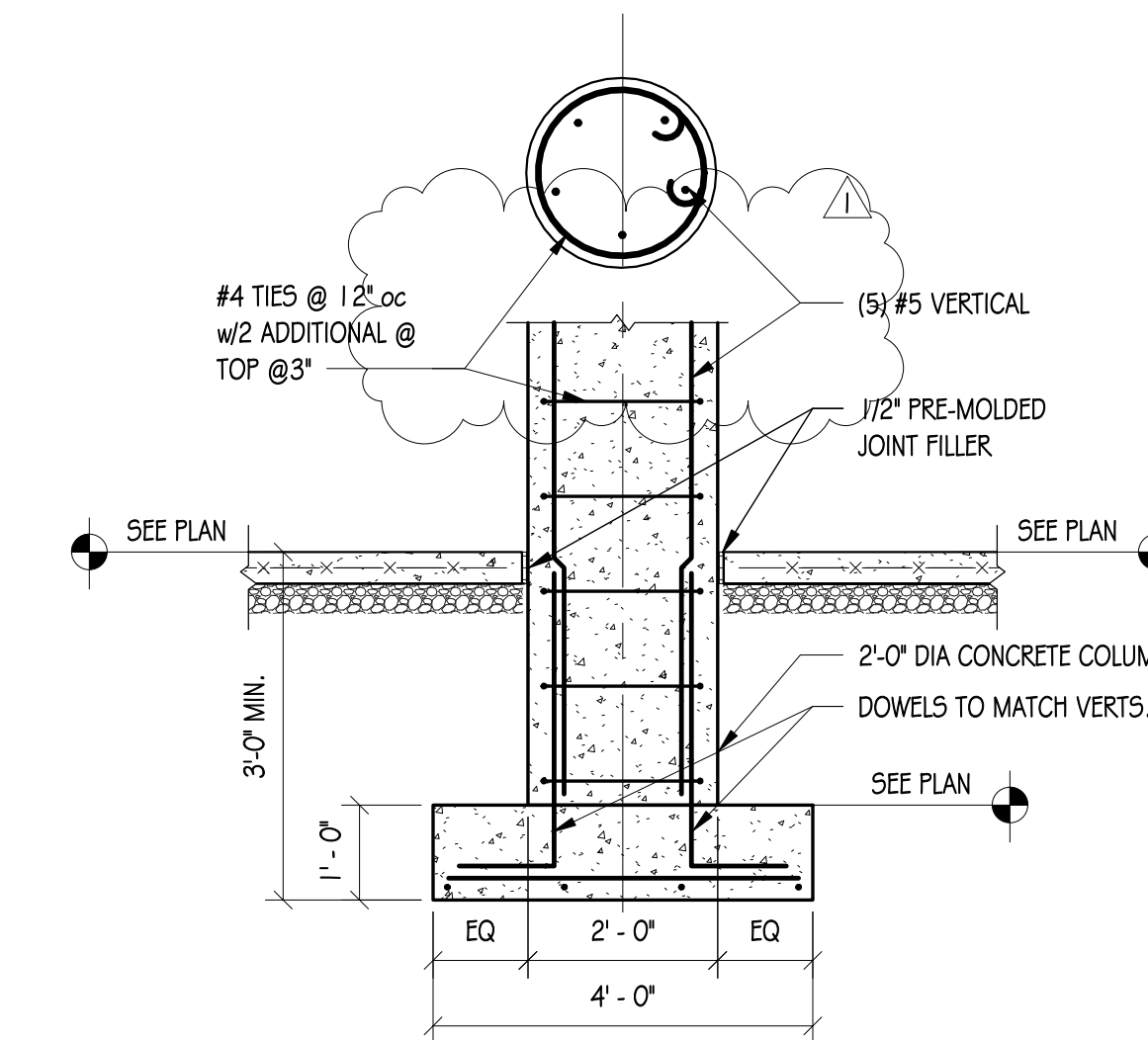
3  
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SECTION  
1/2" = 1'-0"



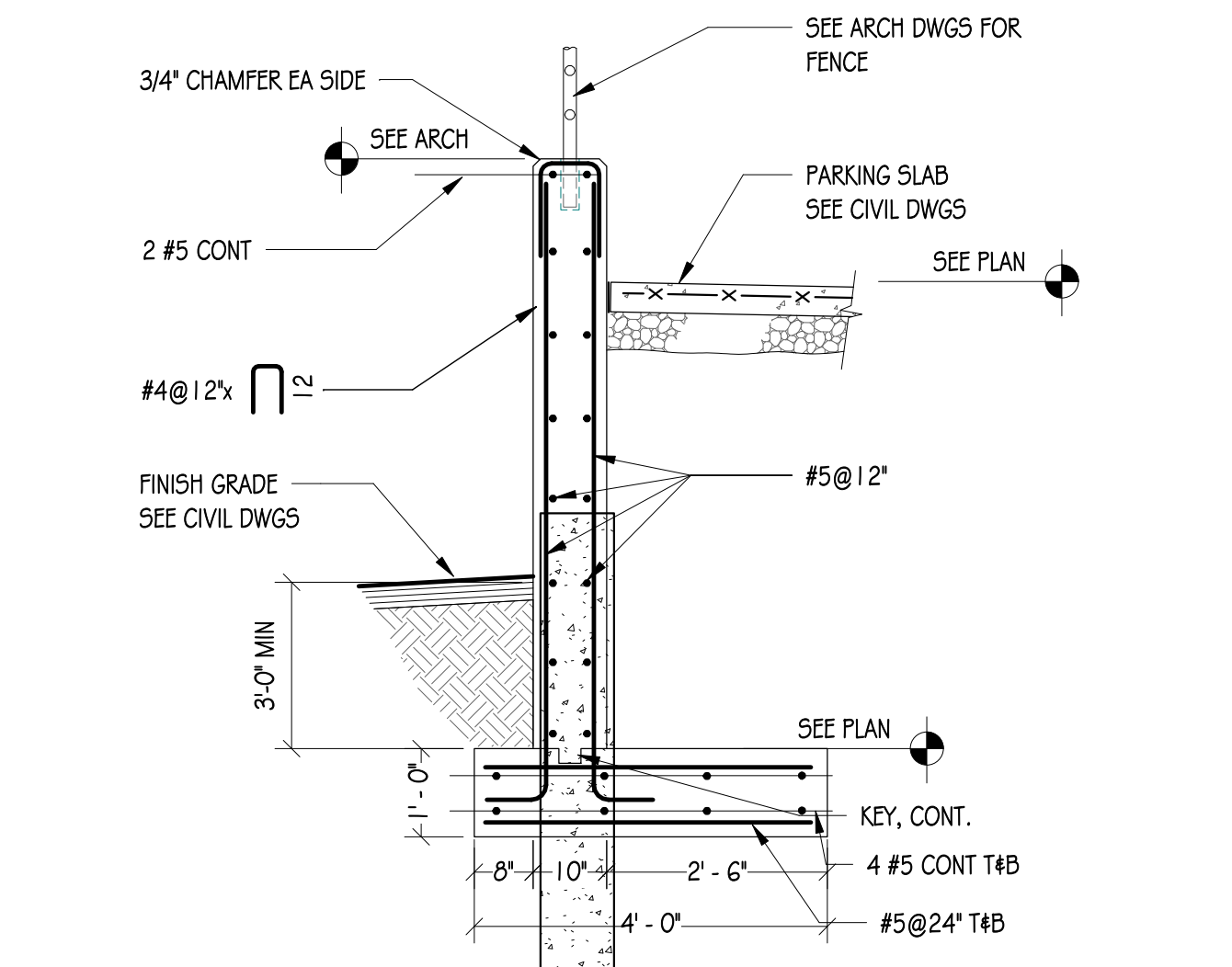
4  
5-301  
SECTION  
1/2" = 1'-0"



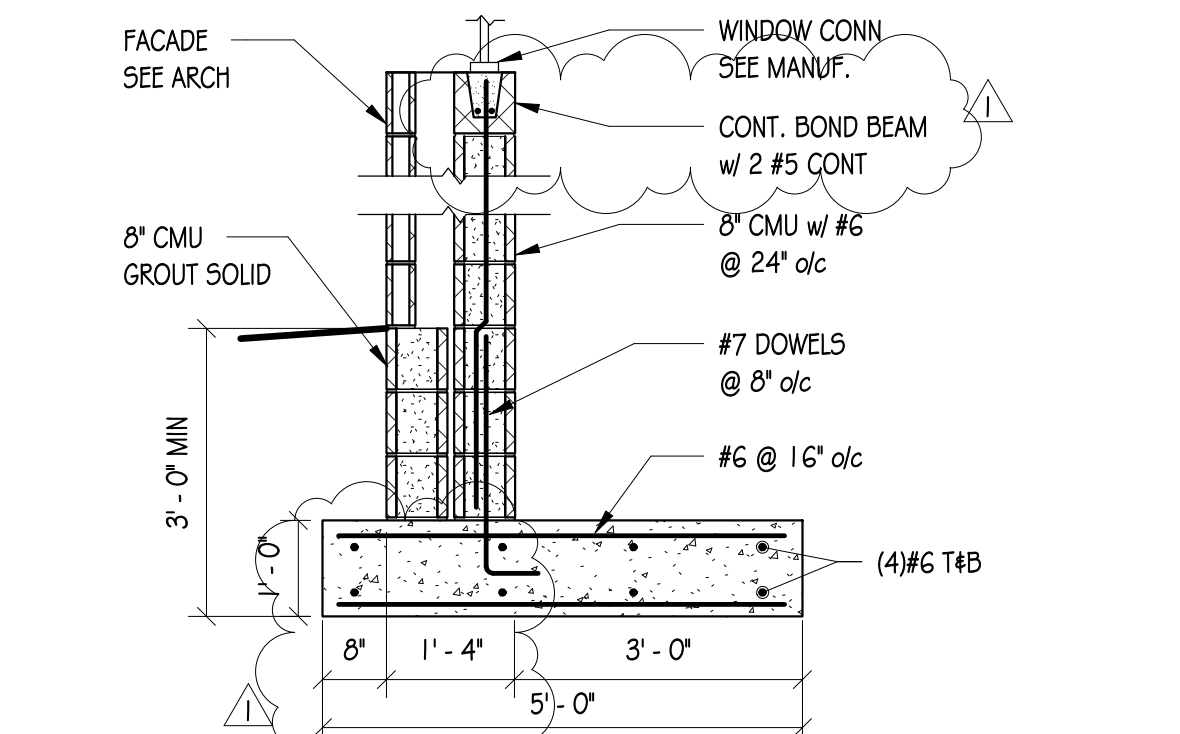
5  
5-301  
SECTION  
1/2" = 1'-0"



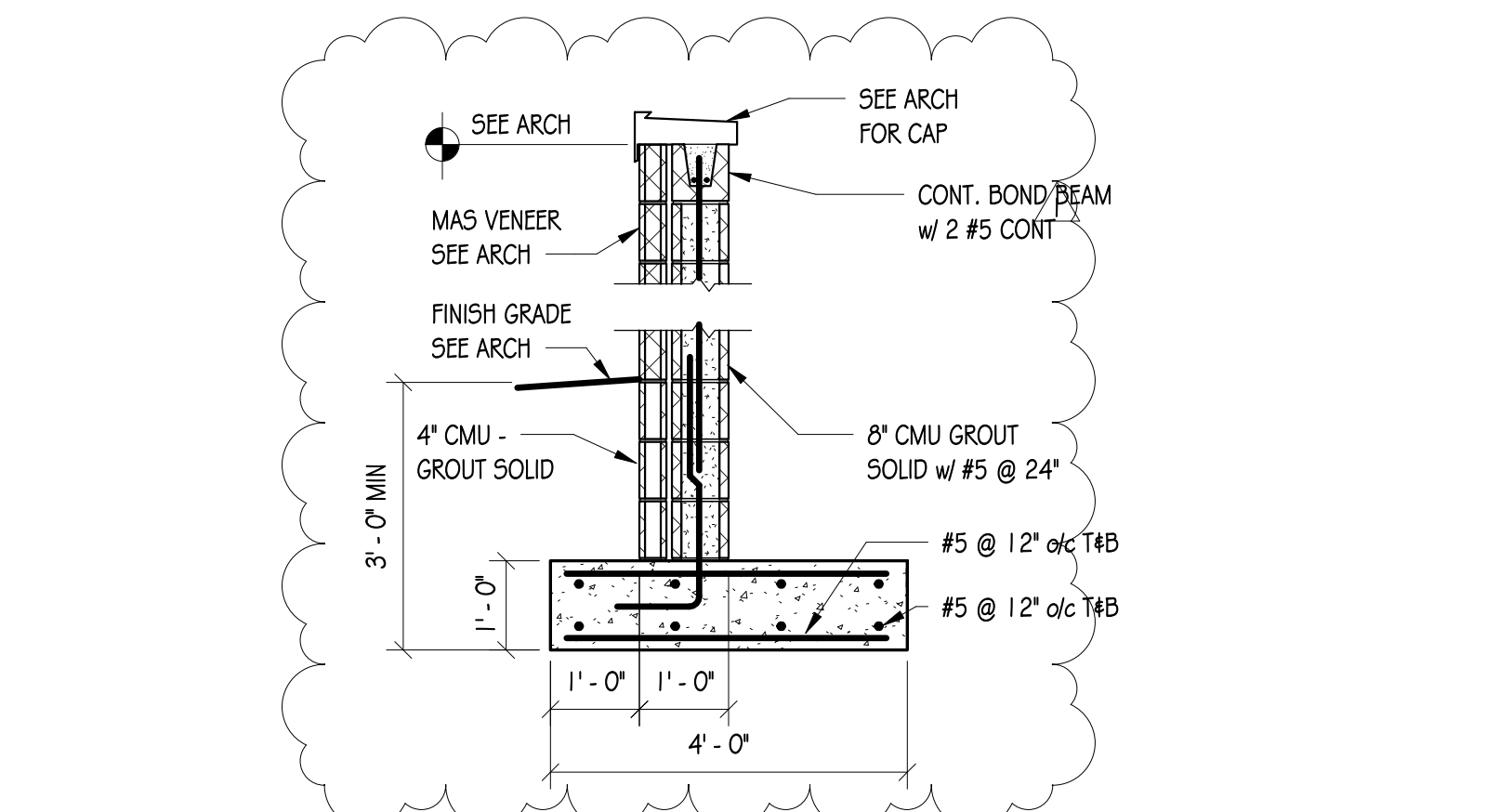
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SECTION  
1/2" = 1'-0"



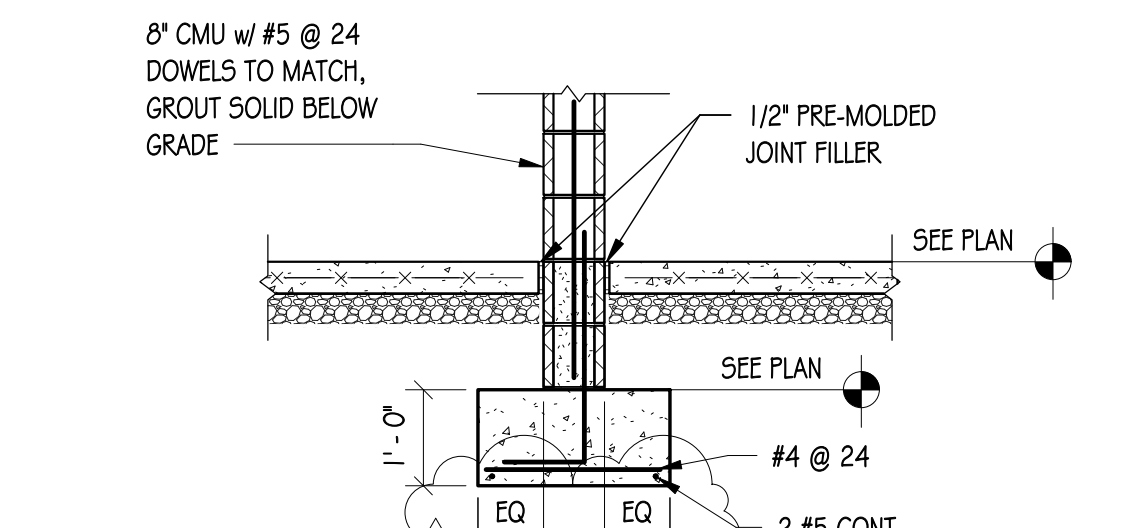
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SECTION  
1/2" = 1'-0"



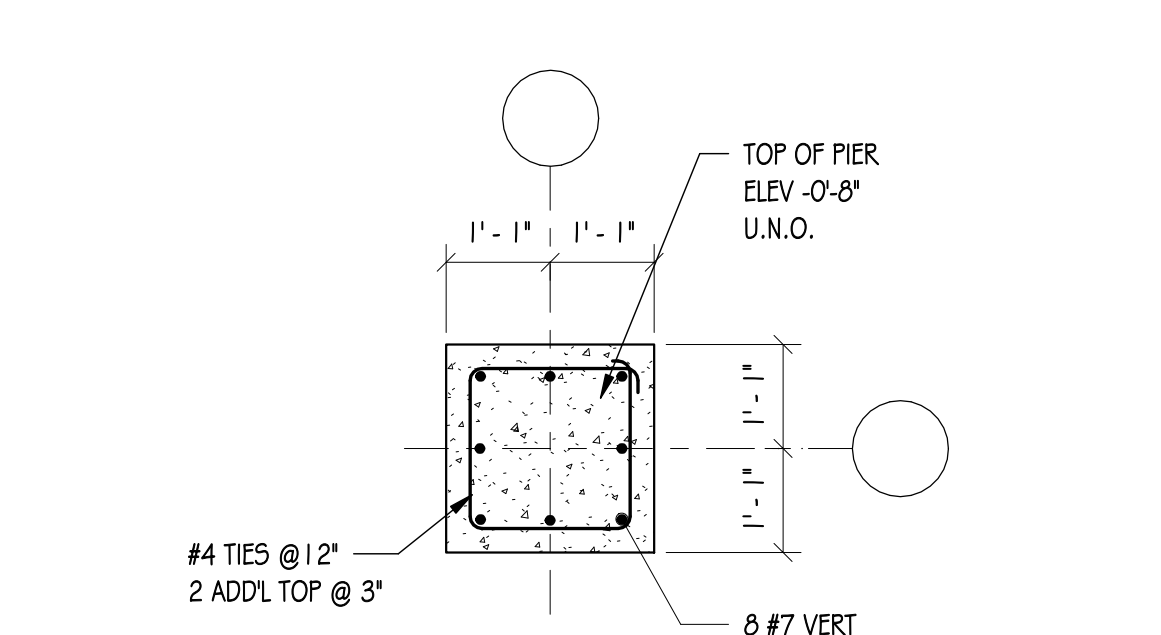
8  
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SECTION  
1/2" = 1'-0"



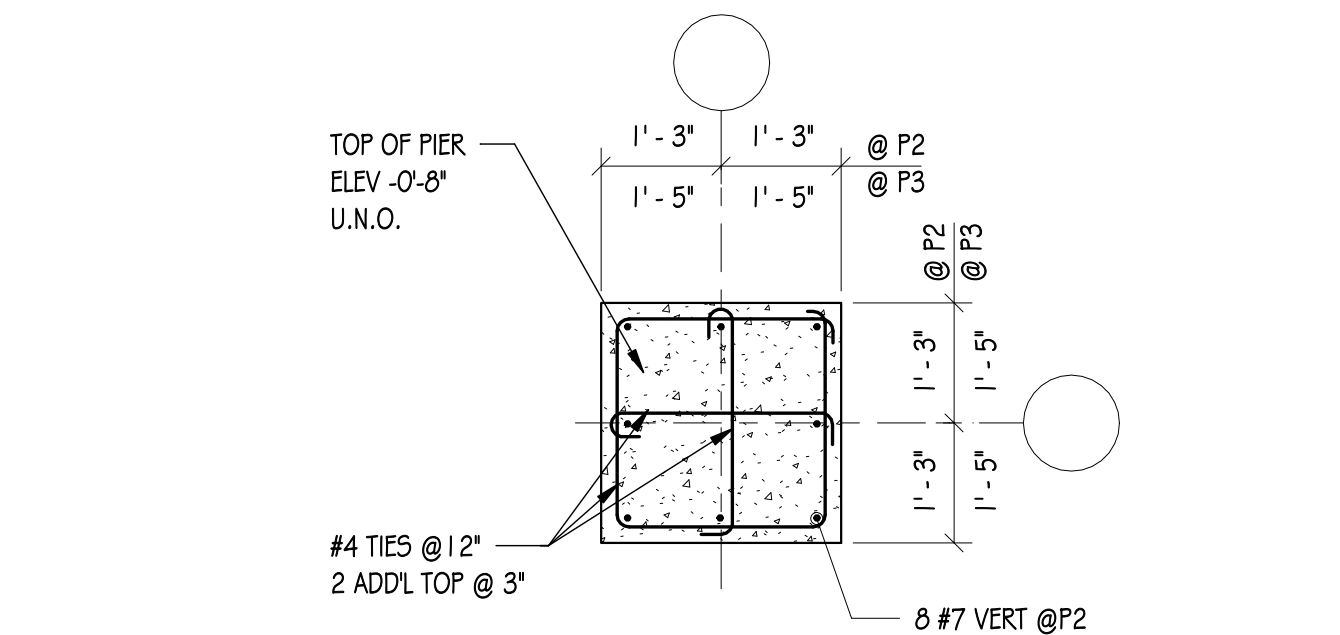
9  
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SECTION @ TRASH ENCLOSURE  
1/2" = 1'-0"



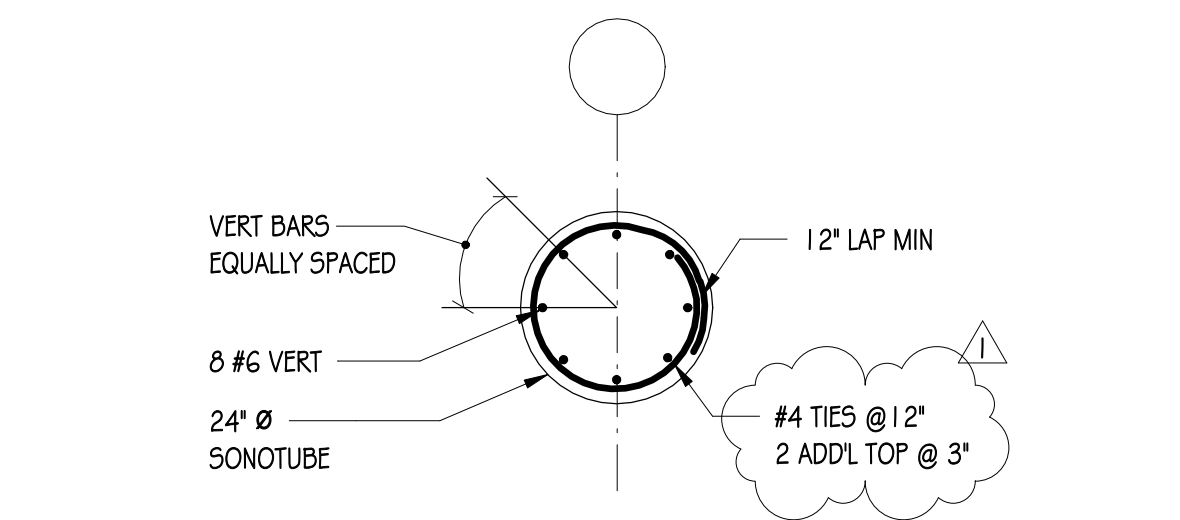
10  
5-301  
SECTION  
1/2" = 1'-0"



11  
5-301  
PIER 'P1'  
1/2" = 1'-0"



12  
5-301  
PIER PLAN 'P2' & 'P3'  
1/2" = 1'-0"



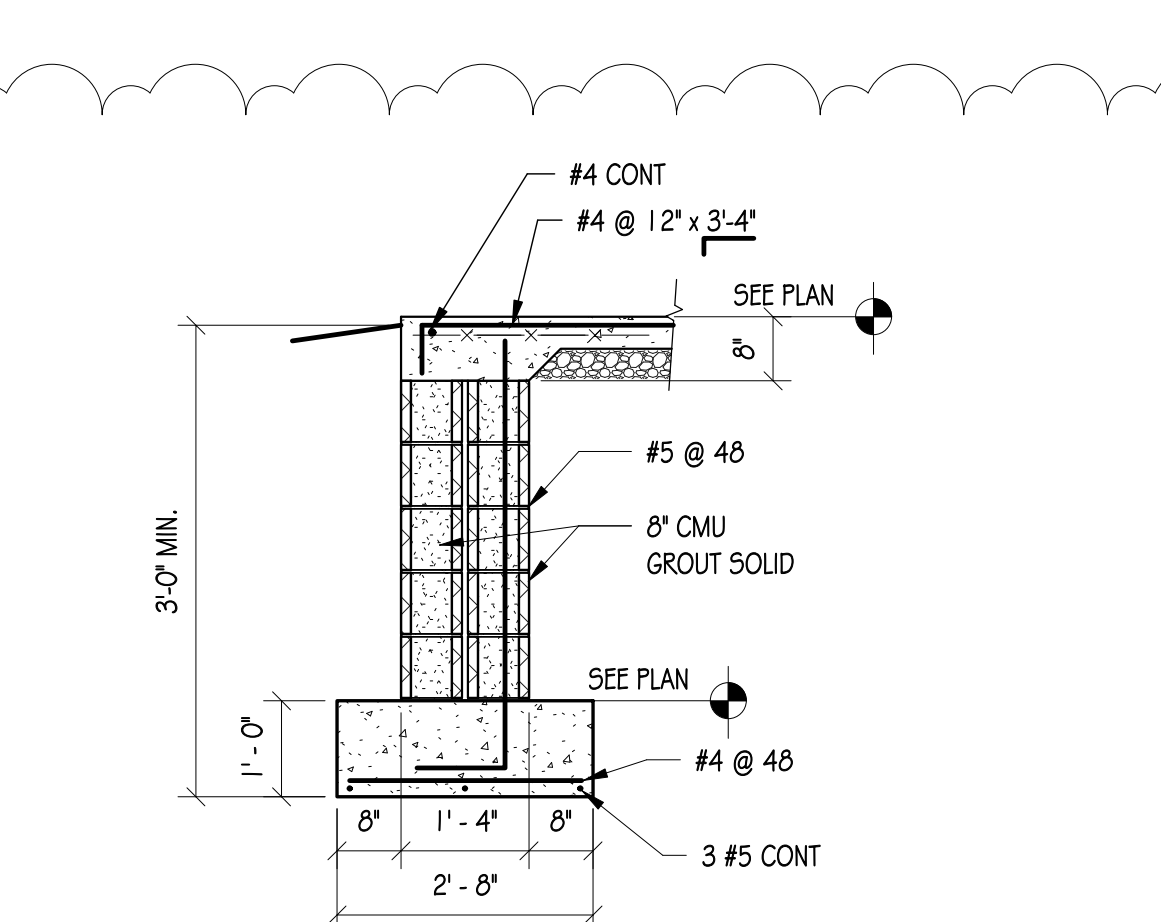
13  
5-301  
PIER 'P4'  
1/2" = 1'-0"

BASE PLATE DETAILING SCHEDULE					
ANCR ROD DIA.	EMBEDMENT (GRADE 36)	BASE PL HOLE DIA.	EDGE DISTANCE	PL WASHER DIA.	PL WASHER THICKNESS
3/4"	9"	1 5/16"	1 1/2"	2"	1/2"
1"	12"	1 13/16"	2"	2 5/8"	1/2"

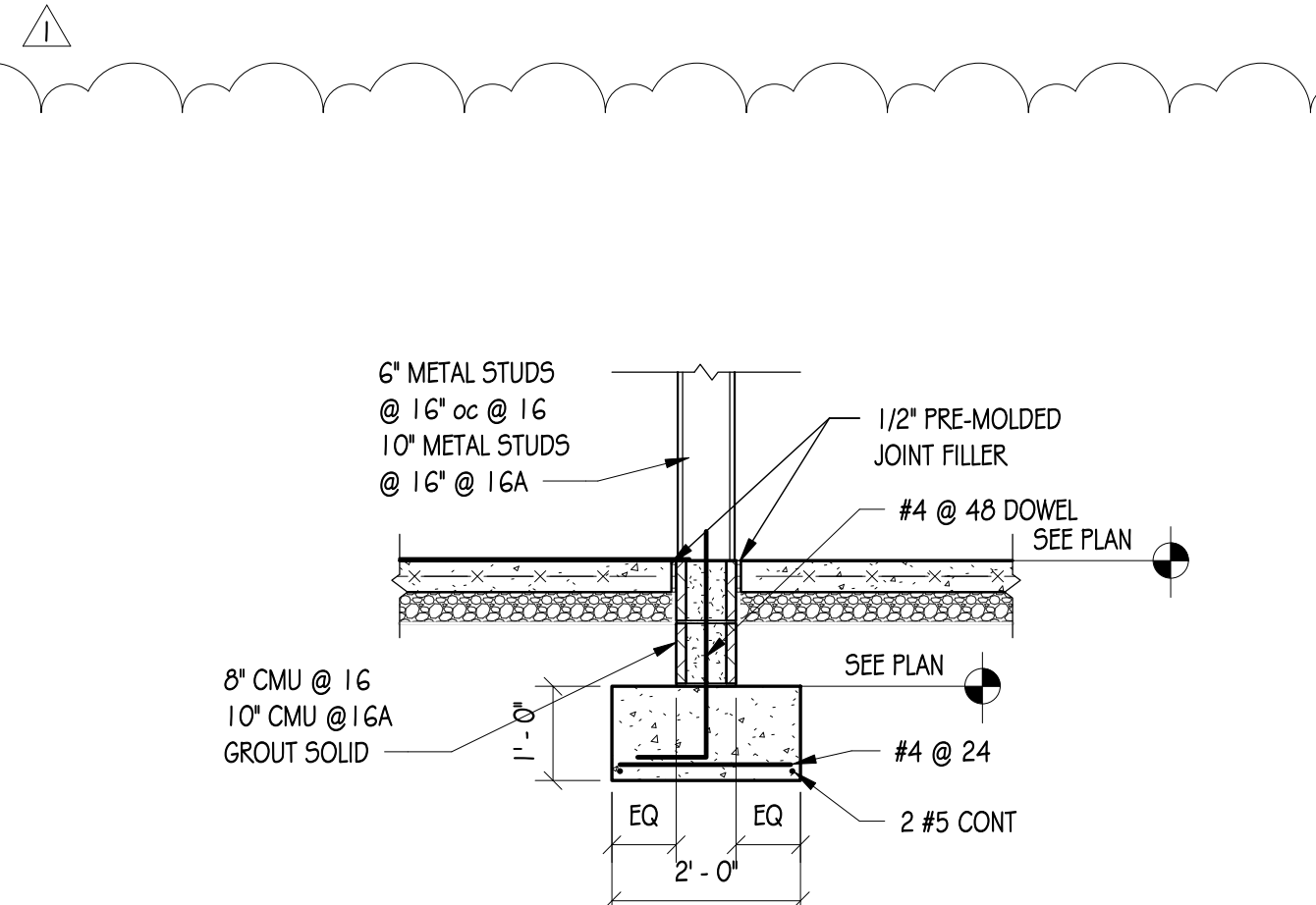
NOTE: FOR HIGH STRENGTH ANCHOR RODS, INCREASE EMBEDMENT BY 50%.

BASE PLATE SCHEDULE				
MARK	SIZE	THICKNESS	ANCR ROD DIA.	
BP1	14" x 14"	3/4"	3/4"	
BP2	14" x 14"	1"	3/4"	
BP3	16" x 16"	1 1/4"	1"	

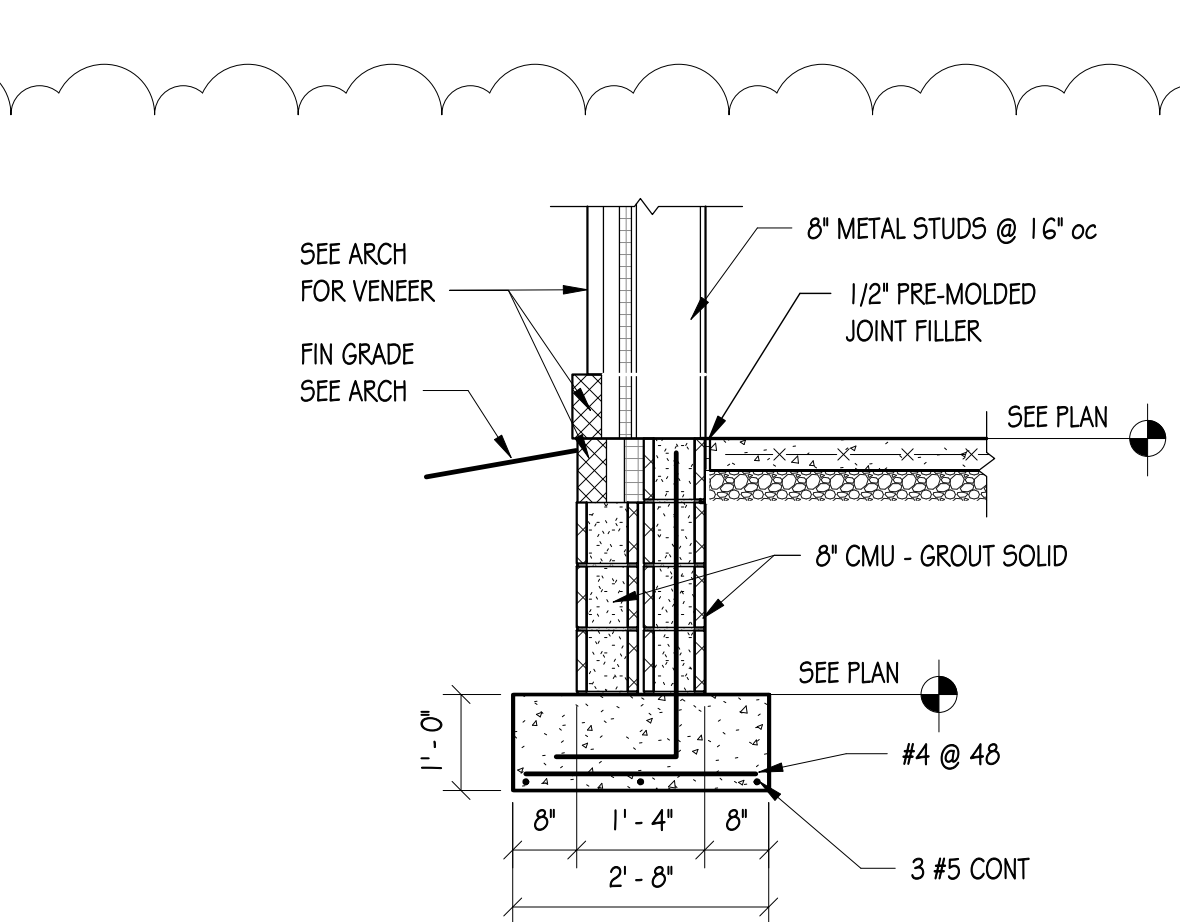
14  
5-301  
BASEPLATES HSS  
1/2" = 1'-0"



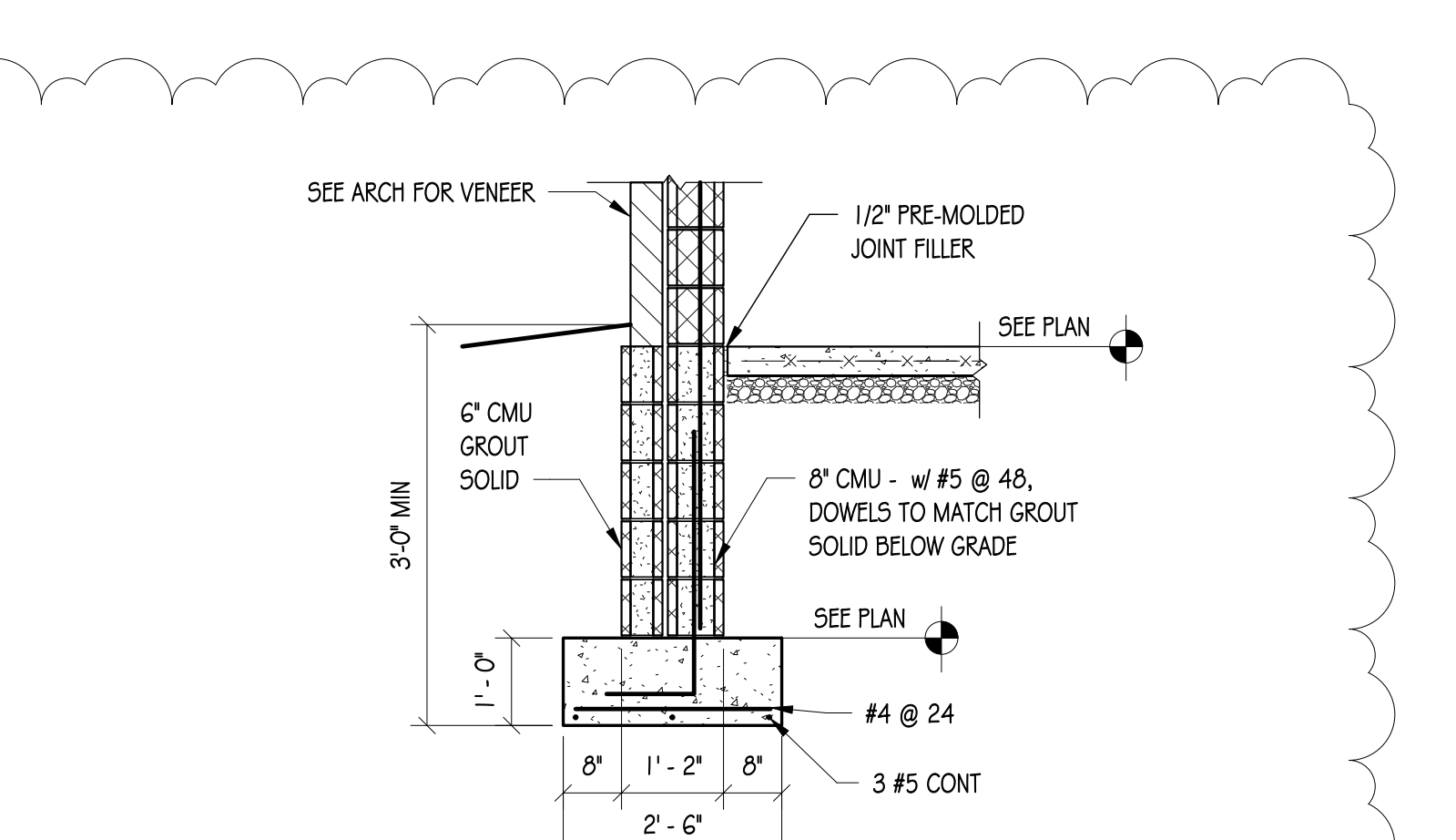
15  
5-301  
SECTION  
1/2" = 1'-0"



16  
5-301  
SECTION  
1/2" = 1'-0"



17  
5-301  
SECTION  
1/2" = 1'-0"



18  
5-301  
SECTION  
1/2" = 1'-0"



**Consultant:**  
**Baker, Ingram & Assocs**  
**1547 Oregon Pike**  
**Lancaster, PA, 17601**  
**717.290.7400**

Consultant Project No. L14967

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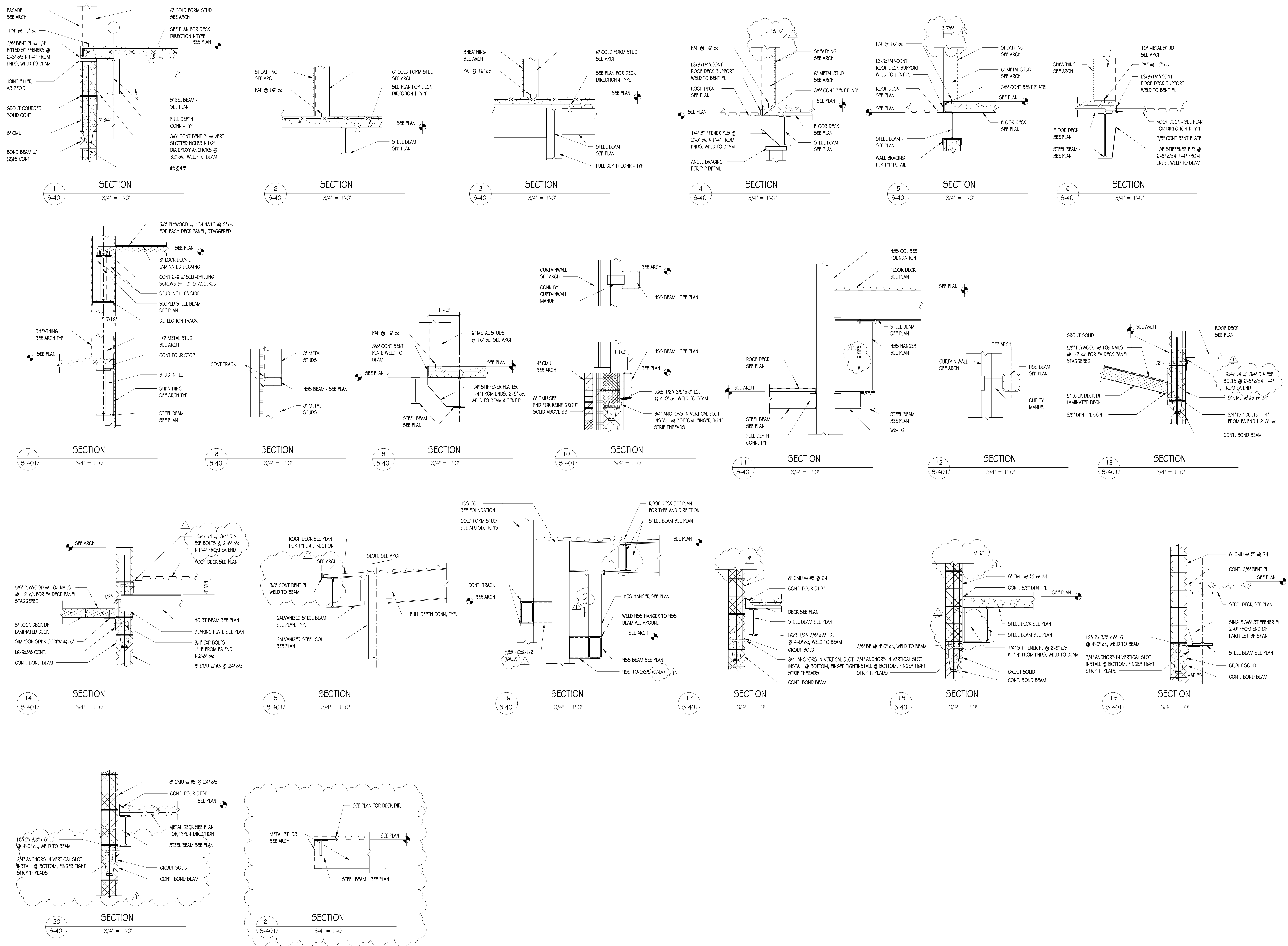
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Reviewed: ITW  
Contact: KLL  
Project Number: 2301.00-22

**Sheet Title:**  
**FRAMING**  
**SECTIONS**

**Sheet Number:**

**S-401**

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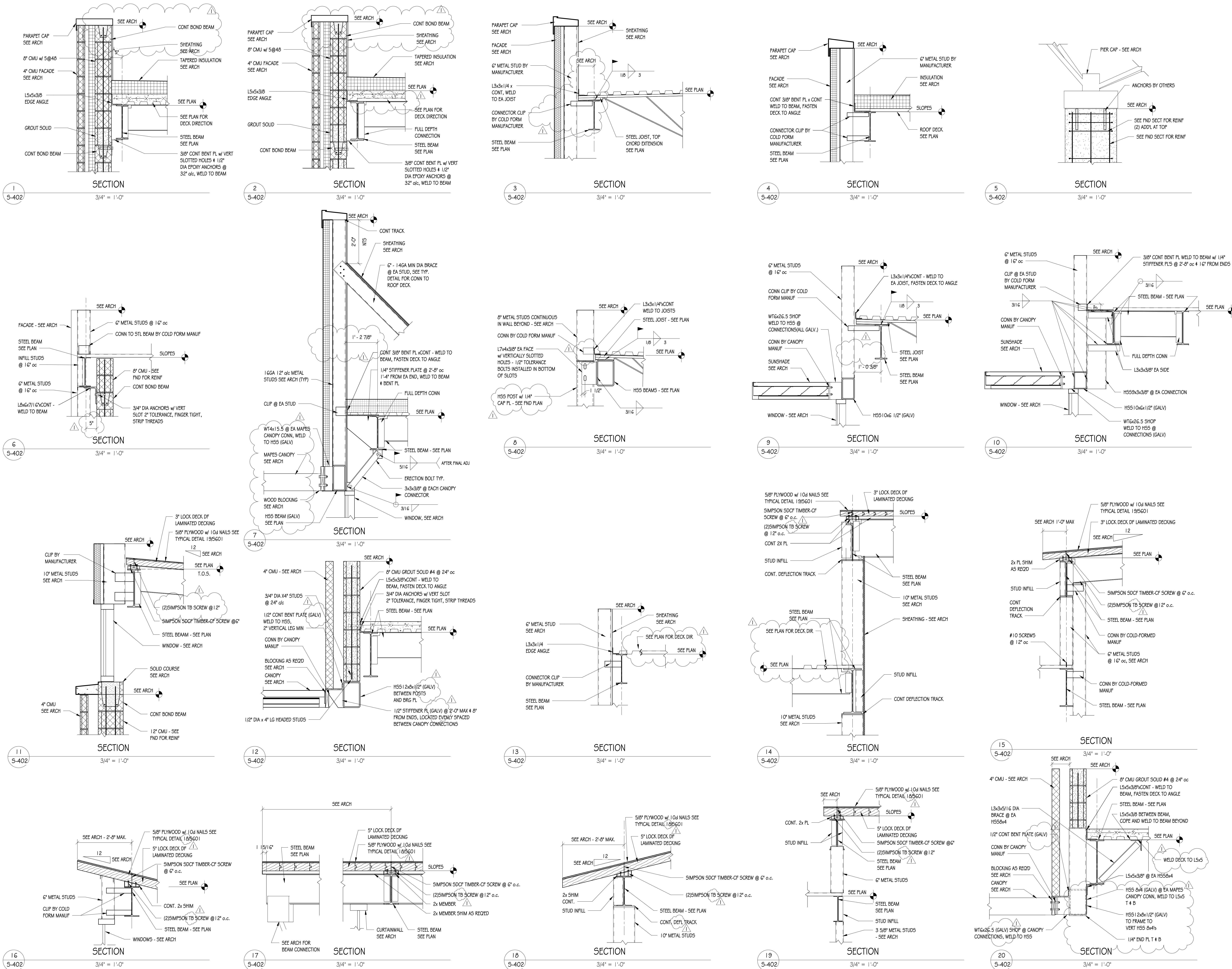
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Project Number: 2301.00-22

**Sheet Title:**

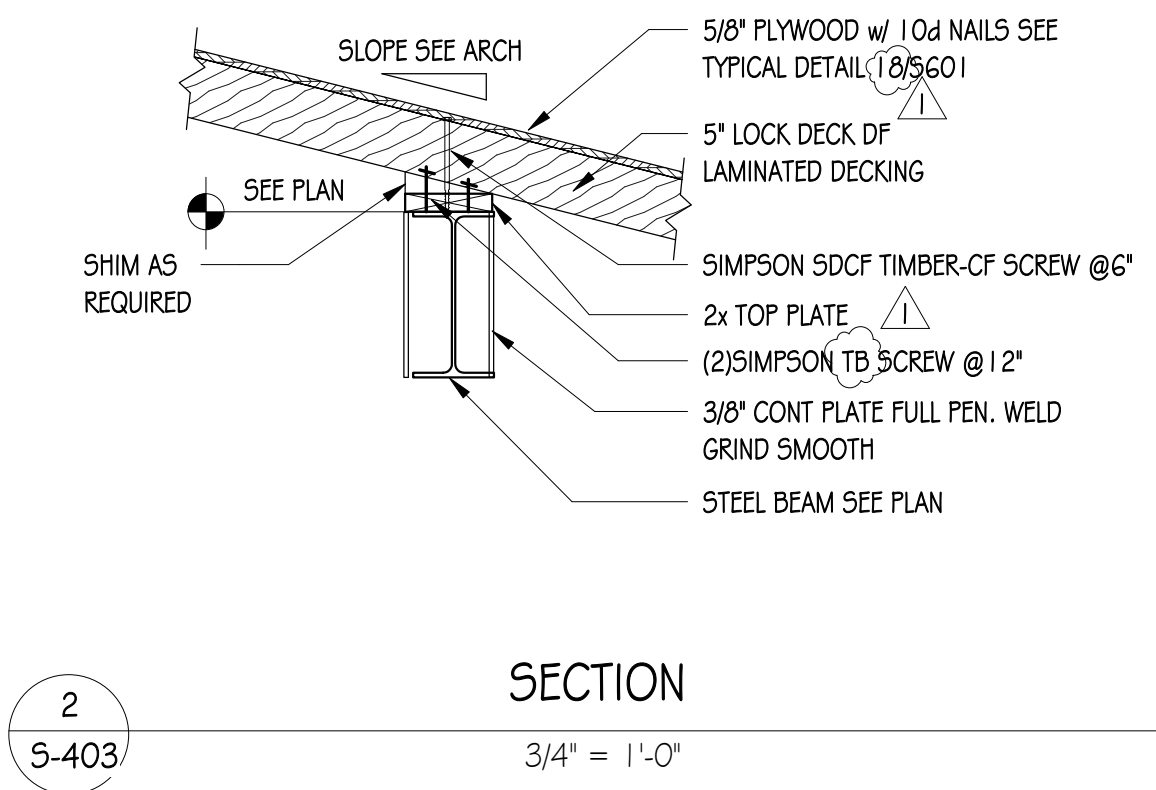
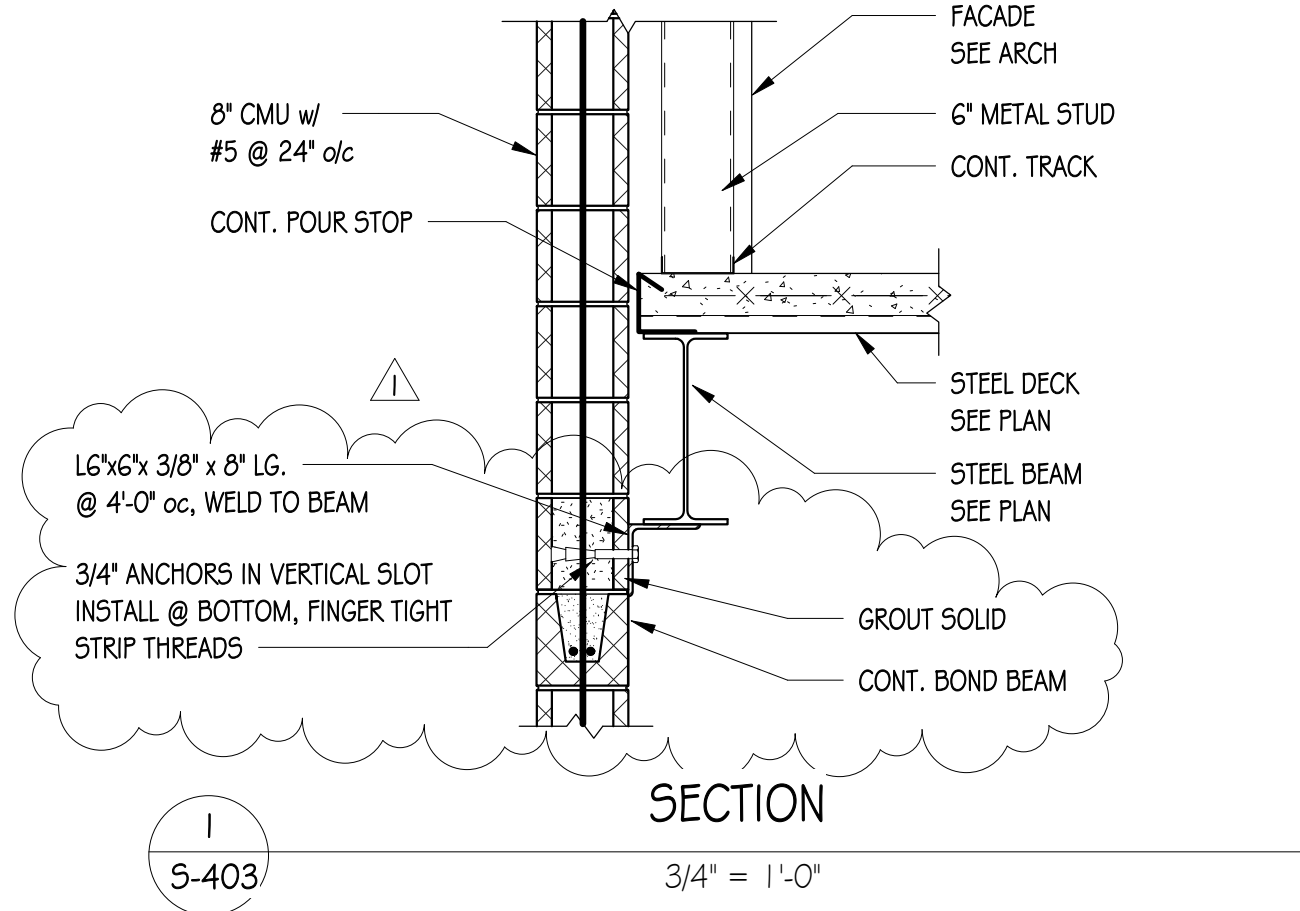
**FRAMING  
SECTIONS**

**Sheet Number:**

**S-402**







**Consultant:**  
**Baker, Ingram & Assocs**  
**1547 Oregon Pike**  
**Lancaster, PA, 17601**  
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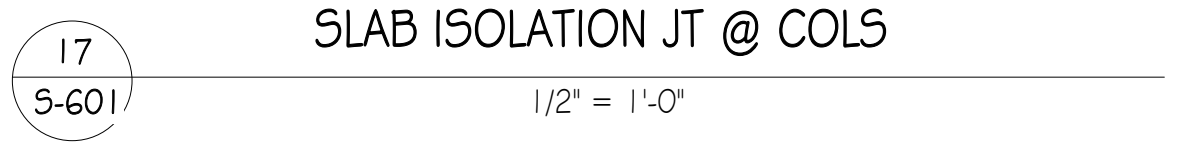
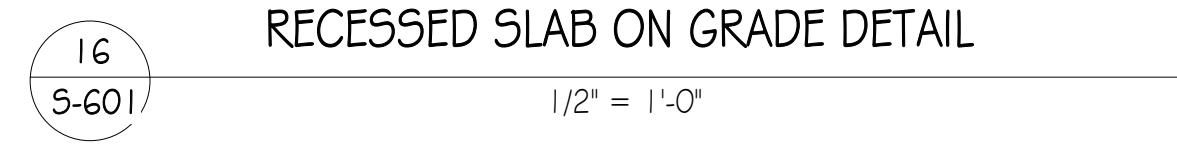
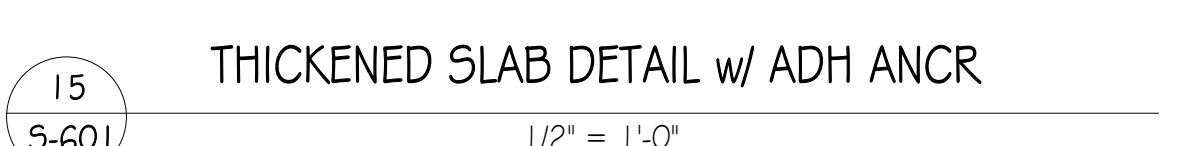
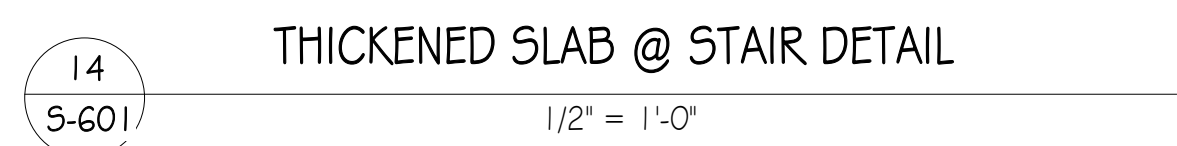
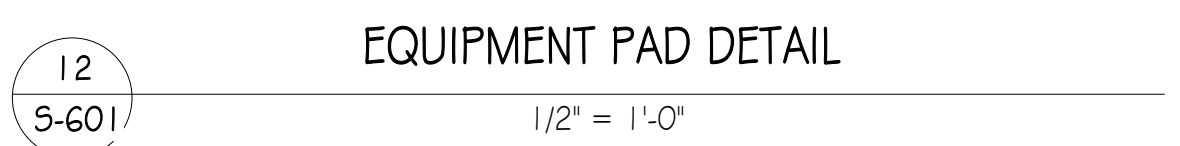
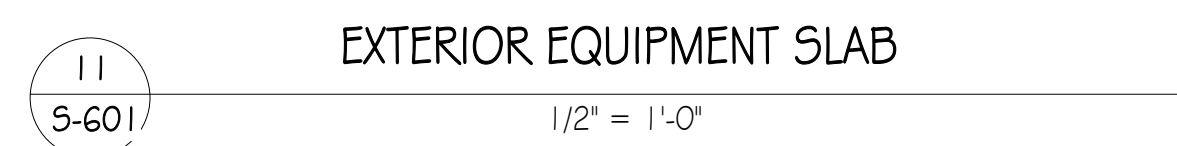
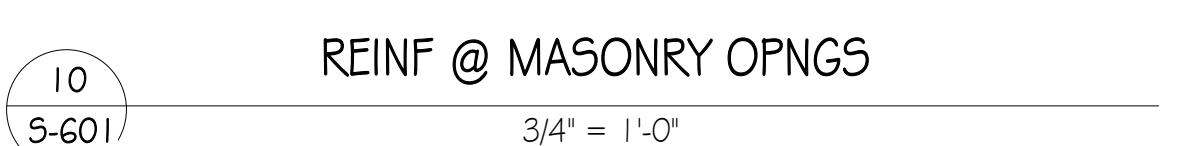
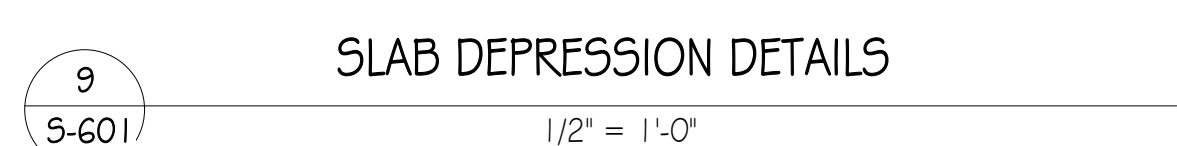
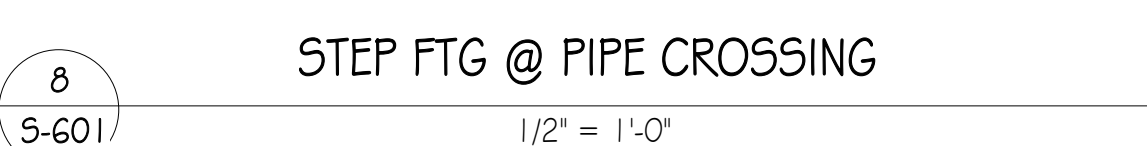
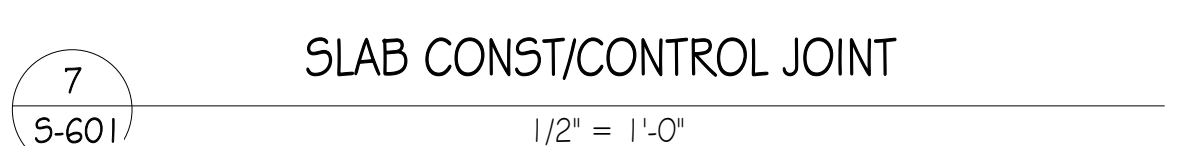
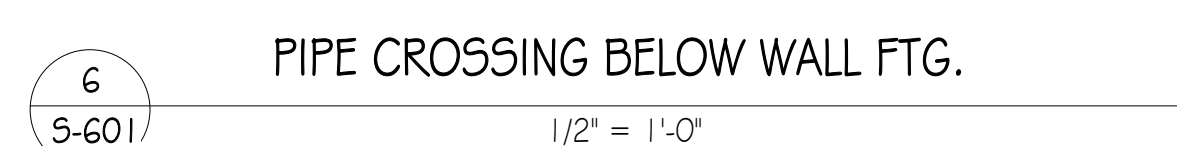
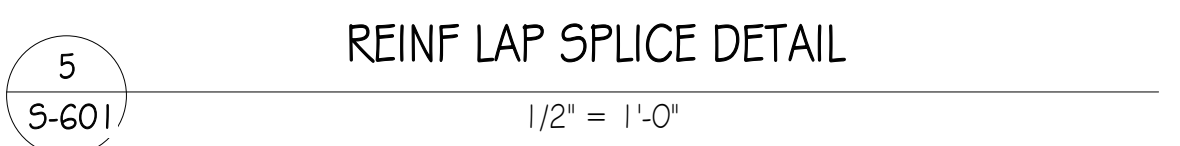
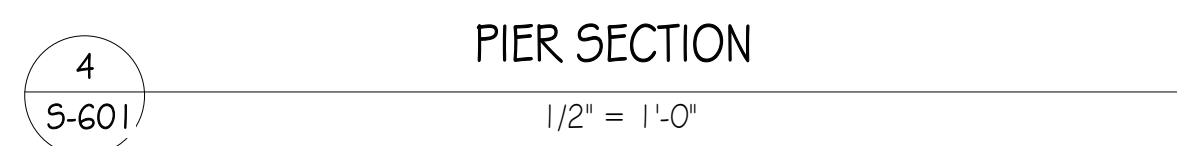
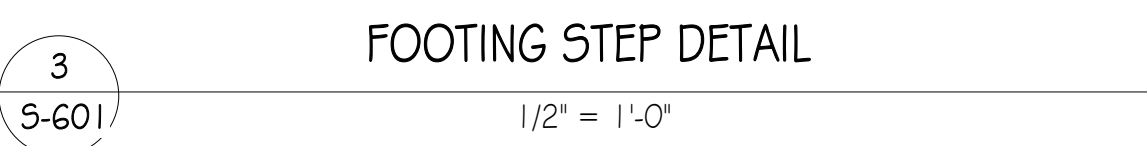
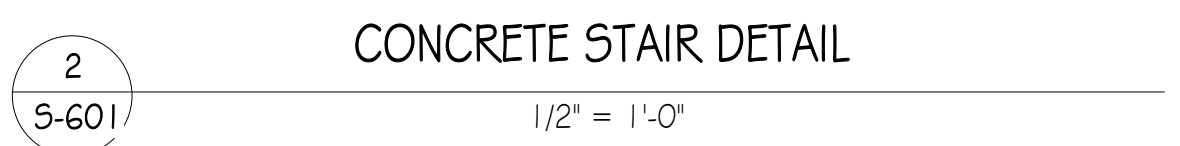
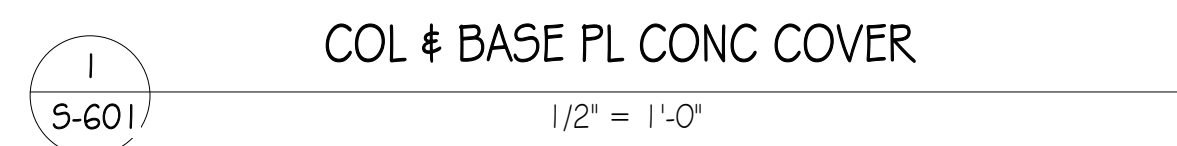
**Revision/Issue:**  
0 04/23/24 Issued

Drawn: JPC  
Reviewed: ITW  
Contact: KLL  
Project Number: 2301.00-22

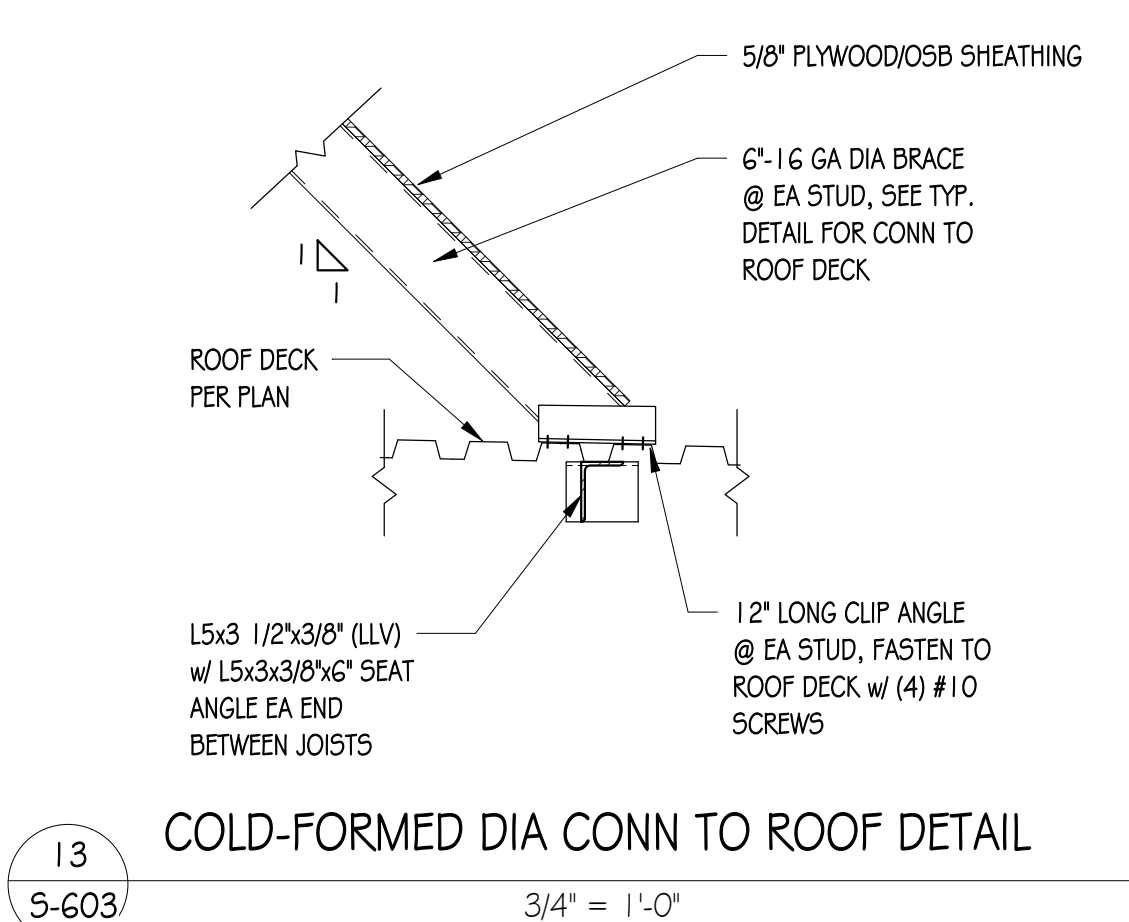
**Sheet Title:**  
**FRAMING**  
**SECTIONS**

**Sheet Number:**  
**S-403**











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ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	FPS	FEET PER SECOND	PG	PRESSURE GAUGE
AHU	AIR HANDLING UNIT	FS	FLOW SWITCH	PH	PHASE-ELECTRICAL
AMP	AMPERE	FT	FEET	PLBG	PLUMBING
APPROX	APPROXIMATE	GA	GAUGE	PRV	PRESSURE REDUCING VALVE
AVG	AVERAGE	GAL	GALLONS	PSI	POUNDS PER SQUARE INCH
B.O.P	BOTTOM OF PIPE	GALV	GALVANIZED	PVC	POLYVINYL CHLORIDE PIPE
BFP	BACKFLOW PREVENTION DEVICE	GPD	GALLONS PER DAY	QT	QUART
BFV	BUTTERFLY VALVE	GPH	GALLONS PER HOUR	RA	RETURN AIR
BHP	BRAKE HORSEPOWER	GPM	GALLONS PER MINUTE	RD	ROOF DRAIN
BTU	BRITISH THERMAL UNIT	GR	GRAINS OF MOISTURE	REQ	REQUIRED
CA	COMPRESSED AIR	GRD	GROUND	RG	RETURN AIR GRILLE
C TO C	CENTER TO CENTER	H	ENTHALPY	RH	RELATIVE HUMIDITY
C/D	CONDENSATE DRAIN	HC	HANDICAP	RM	ROOM
CFH	CUBIC FEET PER HOUR	HD	HEAD	RPM	REVOLUTIONS PER MINUTE
CFM	CUBIC FEET PER MINUTE	HP	HORSEPOWER	RR	RETURN AIR REGISTER
CG	CEILING	HR	HOUR	RWC	RAIN WATER CONDUCTOR
CLC	CLEANOUT	HT	HEIGHT	RPZ	REDUCED PRESSURE ZONE BFP
CO <sub>2</sub>	CARBON DIOXIDE	HTR	HEATER	SAN	SANITARY WASTE
COND	CONDENSATE	HVAC	HEATING VENTILATION AIR CONDITIONING	SCH	SCHEDULE
CR	CONDENSER RETURN	HW	HOT WATER (DOMESTIC)	SD	SUPPLY AIR DIFFUSER
CS	CONDENSER SUPPLY	HZ	FREQUENCY-ELECTRICAL	SF	SQUARE FEET
CONT	CONTINUED	ID	INSIDE DIAMETER	SPEC	SPECIFICATION
CPVC	CHLORINATED POLYVINYL CHLORIDE	ID	INDIRECT DRAIN	SPR	SPRINKLER
CW	COLD WATER (DOMESTIC)	IE	INVERT ELEVATION	SQ	SQUARE
DB	DRY BULB	IW	INDIRECT WASTE	SR	SUPPLY AIR REGISTER
DEG	DEGREE	KW	KILOWATT	SS	STAINLESS STEEL
DIA	DIAMETER	KWH	KILOWATT HOUR	STD	STANDARD
DN	DOWN	LAT	LEAVING AIR TEMPERATURE	STL	STEEL
DTV	DOUBLE THICK TURNING VANES	LBS	POUNDS	STR	STRAINER
DWG	DRAWING	LF	LINEAR FEET	STRUC	STRUCTURAL
(E)	EXISTING	LL	LOW LEVEL	SUCT	SUCTION
EA	EXHAUST AIR	LWT	LEAVING WATER TEMPERATURE	T&P	TEMPERATURE & PRESSURE RELIEF VALVE
EAT	ENTERING AIR TEMPERATURE	MAU	MAKE-UP AIR UNIT	TEMP	TEMPERATURE
(ED)	EXISTING TO BE DEMOLISHED	MAX	MAXIMUM	THERM	THERMOMETER
(ER)	EXISTING TO BE RELOCATED	MECH	MECHANICAL	T.O.P	TOP OF PIPE
EL	ELEVATION	MFR	MANUFACTURER	TP	TRAP PRIMER
ELEC	ELECTRICAL	MIN	MINIMUM	TYP	TYPICAL
EQ	EQUAL	MISC	MISCELLANEOUS	UL	UNDERWRITER'S LABORATORY
EQUIP	EQUIPMENT	MOD	MOTOR OPERATED DAMPER	UTIL	UTILITY
ESP	EXTERNAL STATIC PRESSURE	MPCR	MEDIUM PRESSURE CONDENSATE RETURN	VAV	VARIABLE AIR VOLUME
EVAP	EVAPORATOR	(N)	NEW	VD	VOLUME DAMPER
EWH	ELECTRIC WATER HEATER	NA	NOT APPLICABLE	VEL	VELOCITY
EWT	ENTERING WATER TEMPERATURE	NC	NOISE CRITERIA	VERT	VERTICAL
EXT	EXTERIOR	N.C.	NORMALLY CLOSED	VFD	VARIABLE FREQUENCY DRIVE
*F	DEGREE FAHRENHEIT	NIC	NOT IN CONTRACT	VOL	VOLUME
FD	FLOOR DRAIN	N.O.	NORMALLY OPEN	VTR	VENT THROUGH ROOF
FIN	FINISH	NO.	NUMBER	W/	WITH
FF	FINISHED FLOOR	NTS	NOT TO SCALE	WB	WET BULB TEMPERATURE
FLR	FLOOR	OA	OUTSIDE AIR	WH	WALL HYDRANT
FO	FUEL OIL	OD	OUTSIDE DIAMETER	WP	WEATHERPROOF
FPM	FEET PER MINUTE	OED	OPEN END DUCT	W/O	WITHOUT

MECHANICAL GENERAL NOTES

1. ALL WORK IS TO BE IN COMPLIANCE WITH THE 2018 INTERNATIONAL MECHANICAL CODE OR LOCAL CODE HAVING JURISDICTION. NOT ALL CODE REQUIREMENTS HAVE BEEN DESCRIBED IN THIS SPECIFICATION OR INDICATED ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE CODES AND INSTALL THE WORK IN ACCORDANCE WITH CODES.

2. OBTAIN AND PAY FOR BUILDING PERMITS, INSPECTIONS, CONNECTION CHARGES, AND FEES.

3. THE CONTRACTOR IS TO SURVEY AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID SUBMISSION AND BECOME AWARE OF ALL CONDITIONS WHICH MAY IMPACT THE REQUIRED WORK. CONTRACTOR IS TO INCLUDE ALL ASSOCIATED COSTS (MATERIALS/ LABOR) DETERMINED TO BE REQUIRED DURING SITE INSPECTIONS. CONTRACTOR'S BID SUBMISSION IS TO BE CONSIDERED PROOF THAT THIS REQUIREMENT HAS BEEN MET.

4. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE TAKEN AS A WHOLE. IF A CONFLICT OR CONTRADICTION EXISTS BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE MORE STRINGENT WILL APPLY. THE ARCHITECT'S AND ENGINEER'S INTERPRETATION OF THE DOCUMENTS ARE TO BE BINDING UPON THE CONTRACTOR.

5. ALL WORK IS TO BE COORDINATED WITH, AND APPROVED BY THE OWNER PRIOR TO ANY SHUT-DOWNS. ALL REQUESTS ARE TO BE SUBMITTED, IN WRITING, TO THE OWNER 24, TO 48 HOURS PRIOR TO REQUESTED DELETIONS.

6. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO PURCHASING EQUIPMENT. VERIFY ALL VOLTAGE AND AMPERE REQUIREMENTS FOR FEEDERS, AND MOCIP DEVICES.

7. ALL EXTERIOR WALL/ ROOF PENETRATIONS ARE TO BE SEALED, AIR, AND WATER-TIGHT. ALL PIPING PASSING THROUGH WALL, OR FLOOR PENETRATIONS IS TO HAVE SLEEVES. ALL WALL, OR FLOOR-RATED PENETRATIONS ARE TO BE SEALED WITH FIRE-RATED SEALANT FORMED IN PLACE (BY 3M OR HILT).

8. PROVIDE ALL ACCESS PANELS FOR ALL VALVES, DAMPERS, DEVICES, CONTROLLERS, ETC., WHICH MAY REQUIRE SERVICE. ALL ACCESS PANELS ARE BE 16 GAUGE STEEL FRAME, 20 GAUGE HINGED DOOR, LOCKABLE, AND FIRE-RATED (WHEN INSTALLED IN RATED WALLS, FLOORS, "B" LABEL, 1-1/2 HOURS), FINISH AS SELECTED BY THE ARCHITECT.

9. SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT TO BE REVIEWED BY THE ENGINEER PRIOR TO ORDERING. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH ELECTRICAL CONTRACTOR, AND PHYSICAL DIMENSIONS PRIOR TO SHOP DRAWING SUBMISSION.

10. SUBMIT SHOP DRAWINGS OF ALL SHEET METAL FOR REVIEW. DRAWINGS ARE TO BE NOT LESS THAN 1/4"x1'-0" SCALE AND ARE TO INDICATE ALL STEEL, PIPING, CONDUIT WIRING METHODS, LIGHTING FIXTURES, SPRINKLER, EQUIPMENT, AND ARCHITECTURAL FEATURES. DUCTWORK IS TO BE INDICATED DOUBLE-LINE. INDICATE DETAIL OF FIRE DAMPER. SHEET METAL SHOP DRAWING WILL BE UTILIZED FOR CONTRACTOR'S COORDINATION DRAWINGS AND IS TO BE SUBMITTED FOR REVIEW, AND APPROVAL PRIOR TO INSTALLATION. IF SHEET METAL SHOP DRAWINGS ARE NOT SUBMITTED, OR IF THE CONTRACTOR INSTALLS THE DUCTWORK WITHOUT PRIOR APPROVALS, THE CONTRACTOR IS TO ASSUME ALL RESPONSIBILITIES AND FIELD COORDINATION, AND PAY ALL ASSOCIATED COSTS ASSOCIATED WITH DUCTWORK INSTALLATION DEFICIENCIES, AND FIELD COORDINATION ISSUES.

11. ALL DUCTWORK IS TO COMPLY WITH NFPA PAMPHLET 90 A. ALL DUCTWORK SEAMS ARE TO BE SEALED WITH DUCT SEALANT. ALL NEW DUCTWORK SECTIONS AND FITTINGS TO BE INSTALLED ON THE PROJECT ARE TO BE COVERED, AND SEALED FROM DUST, DIRT, DEBRIS.

12. PROVIDE THIRD-PARTY TEST, BALANCE, AND ADJUST REPORT FOR ALL AIR SYSTEMS AT THE COMPLETION OF THE WORK. BALANCE AIR QUANTITIES AND FLOW RATES TO VALUES AS INDICATED ON THE DRAWINGS. SET DAMPER AND VALVE POSITIONS. ALLOW FOR ONE SHEAVE CHANGE PER EACH (50%) OF THE HVAC SYSTEMS. PROVIDE ONE SPEED TAP ADJUSTMENT FOR DIRECT DRIVE SYSTEMS PER EACH (100%) OF THE HVAC SYSTEMS. PROVIDE TOTAL AND STATIC PRESSURE READINGS, TRAVERSE AT FAN INLETS, AND OUTLETS. READ PUMP PRESSURE, AMPERAGE, GPMs, RPMs AND IDENTIFY OPERATING POINT ON THE IMPELLER CURVE. T.B.A. CONTRACTOR IS TO BE INDEPENDENT, AND AABC/ NEBB CERTIFIED.

13. ALL WORK IS TO BE CONCEALED, UNLESS OTHERWISE INDICATED.

14. NO PVC PIPING IS PERMITTED IN RETURN AIR PLENUMS.

15. ALL THREE PHASE STARTER EQUIPMENT IS TO BE PROVIDED BY THE MECHANICAL CONTRACTOR AND IS TO BE MAGNETIC, ACROSS-THE-LINE WITH AUXILIARY CONTACTS. ALL SINGLE PHASE STARTER EQUIPMENT IS TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

16. PROVIDE CONDENSATE DRAIN TO ACCEPTABLE CODE APPROVED DISCHARGE POINT. 1-1/2" PVC (COPPER). ALL CONDENSATE PIPING IS TO HAVE 1/2" FIBERGLASS INSULATION WITH VAPOR BARRIER. PROVIDE CONDENSATE PUMP(S) WITH DISCHARGE CHECK VALVE(S) IF GRAVITY FLOW IS NOT OBTAINABLE. SUBMIT SHOP DRAWING FOR REVIEW AND APPROVAL AND COORDINATE ELECTRICAL WORK WITH THE ELECTRICAL CONTRACTOR.

17. PROVIDE FIRE DAMPERS IN ALL RATED WALL/ FLOOR/ SHAFT ASSEMBLIES WHERE INDICATED ON THE ARCHITECTURAL PLANS. FIRE DAMPERS ARE TO BE INSTALLED IN ACCORDANCE WITH THE UL LISTING FOR THE DAMPER AND AS DETAILED AS ON THE DRAWINGS, AND DETAILS. THE DAMPERS ARE TO BE SET IN A STEEL SLEEVE, AND ARE TO BE PROVIDED WITH BREAKAWAY CONNECTIONS. DAMPERS ARE TO BE 1-1/2 HOUR RATED. PROVIDE SMOKE DAMPERS IN ALL SMOKE-RATED WALLS/ PARTITIONS PER THE ARCHITECTURAL PLANS. COORDINATE ALL LOCATIONS AND POWER REQUIREMENTS WITH ELECTRICAL, AND FIRE ALARM CONTRACTORS.

18. PROVIDE INSULATED PREFABRICATED ROOF CURB FOR ROOF-MOUNTED EQUIPMENT, DUCTWORK, AND PIPING AS MANUFACTURED BY THE ROOF-MOUNTED EQUIPMENT MANUFACTURER. ALL DUCT/ PIPING ROOF PENETRATIONS ARE TO HAVE ROOF CURBS. ALL ROOF CURBS ARE TO BE SECURED TO THE ROOF AND COORDINATED WITH THE OWNER'S ROOFING CONTRACTOR.

19.

20. ALL FINISHES RELATED TO MECHANICAL EQUIPMENT, TERMINAL EQUIPMENT, AIR DEVICES, PERIMETER HEATERS, LOUVERS, ACCESS PANELS, EXPOSED WIREMOLD/ RACEWAYS, ETC. ARE TO BE COORDINATED AND SELECTED BY THE ARCHITECT/ OWNER/ ENGINEER PRIOR TO SHOP DRAWING SUBMISSION, ORDERING, AND INSTALLATION.

21. FINAL LOCATIONS OF ALL THERMOSTATS, ACCESS PANELS, SPACE SENSORS, DETECTION DEVICES, ETC. IN FINISHED SPACES ARE TO BE COORDINATED AND APPROVED BY THE ARCHITECT/ OWNER PRIOR TO ROUGH-IN AND INSTALLATION.

22. PROVIDE NEW MERV 11 FILTERS FOR ALL NEW AND EXISTING HVAC EQUIPMENT. CONTRACTOR IS TO PROVIDE ONE SPARE SET OF MERV 11 FILTERS FOR EACH HVAC SYSTEM AND TURN OVER TO THE OWNER.

23.

24.

25.

26.

27. THE CONTRACTOR IS TO PROVIDE MANUFACTURER'S START-UP OF ALL EQUIPMENT, AND SYSTEMS.

28. PROPERLY INSTRUCT OWNER'S PERSONNEL IN THE OPERATION AND MAINTENANCE OF ALL SYSTEMS AND EQUIPMENT. PROVIDE THREE INSTRUCTION AND MAINTENANCE MANUALS. SUBMIT MANUALS FOR REVIEW PRIOR TO OPERATING INSTRUCTION.

29. COORDINATE LOCATIONS AND ROUGH-IN REQUIREMENTS WITH ALL TRADES PRIOR TO INSTALLATION.

30. IF THE CONTRACTOR ELECTS TO SUBMIT ALTERNATE EQUIPMENT, MANUFACTURERS, SYSTEMS, METHODS, OR MATERIALS NOT SPECIALLY IDENTIFIED IN THE DRAWINGS AND SPECIFICATIONS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE WORK WITH OTHER TRADES AND PAY FOR ANY ADDITIONAL COSTS ASSOCIATED WITH THE SUBSTITUTION OR CHANGE.

31. PROVIDE ONE SET OF ELECTRONIC AS-BUILT DRAWINGS AT COMPLETION OF WORK. SUBMIT TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL.

PROJECT DEDUCT/ADD ALTERNATES

REFER TO FLOOR PLANS

CONTRACTOR NOTES

DRAWING LIST

Drawing List- Mechanical

NUMBER	NAME	Issued Drawings	Current Revision	Current Revision Date	Current Description
M-001	COVER SHEET- MECHANICAL	*	2	04/23/24	Revisions
M-101	FIRST FLOOR PLAN- MECHANICAL DUCTWORK		1	04/17/24	Revisions
M-102	SECOND FLOOR PLAN- MECHANICAL DUCTWORK		1	04/17/24	Revisions
M-103	FIRST FLOOR PLAN- MECHANICAL PIPING		0	03/29/24	Issued
M-104	SECOND FLOOR PLAN- MECHANICAL PIPING		0	03/29/24	Issued
M-105	ROOF PLAN- MECHANICAL		1	04/17/24	Revisions
M-201	DETAILS- MECHANICAL		0	03/29/24	Issued
M-202	DETAILS- MECHANICAL	*	1	04/23/24	Revisions
M-301	SCHEDULES- MECHANICAL		1	04/17/24	Revisions
M-302	SCHEDULES- MECHANICAL		1	04/17/24	Revisions
M-303	SCHEDULES- MECHANICAL		1	04/17/24	Revisions

1

2

DRAWING SYMBOLS LIST

A-A

A-A

CROSS-SECTION

EQUIPMENT DESIGNATION

EQUIPMENT NUMBER

EQUIPMENT/RISER DESIGNATION

EQUIPMENT/RISER NUMBER

DRAWING NOTE DESIGNATION

REVISION TRIANGLE

DESIGN NOTES

1. DESIGN CONDITIONS

SIZING, DESIGN AND PERFORMANCE OF THE HEATING AND COOLING SYSTEMS ARE BASED ON THE FOLLOWING DESIGN CHARACTERISTICS. MODIFICATION OF ANY OF THESE CHARACTERISTICS MAY ADVERSELY AFFECT THE HEATING AND COOLING PERFORMANCE AND LEVEL OF COMFORT TO THE BUILDING OCCUPANTS.

WEATHER STATION LOCATIONS - PHILADELPHIA, PA  
HEATING DEGREE DAYS = 4589

OUTDOOR:  
WINTER DRY BULB 14°F  
SUMMER DRY BULB 90°F  
SUMMER WET BULB 74°F  
INDOOR:  
WINTER DRY BULB 70°F  
SUMMER DRY BULB 75°F

BERNARDON

ARCHITECTURE  
INTERIOR DESIGN  
LANDSCAPE ARCHITECTURE

A CORE STATES GROUP COMPANY

10 North High Street, Suite 310  
West Chester, Pennsylvania 19380  
p. 610 444 2900

www.bernardon.com

Consultant:

McHUGH ENGINEERING ASSOCIATES, INC.  
136 Poplar Street  
Ambler, PA 19002  
215-641-1158  
2023-141

Project:

ASTON TOWNSHIP MUNICIPAL COMPLEX  
3264 Concord Road  
Aston, PA 19014

Owner:

ASTON TOWNSHIP  
2 New Road  
Suite 123  
Aston, PA 19014

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0 03/29/24 Issued  
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Sheet Title:

COVER SHEET- MECHANICAL

Sheet Number:

M-001

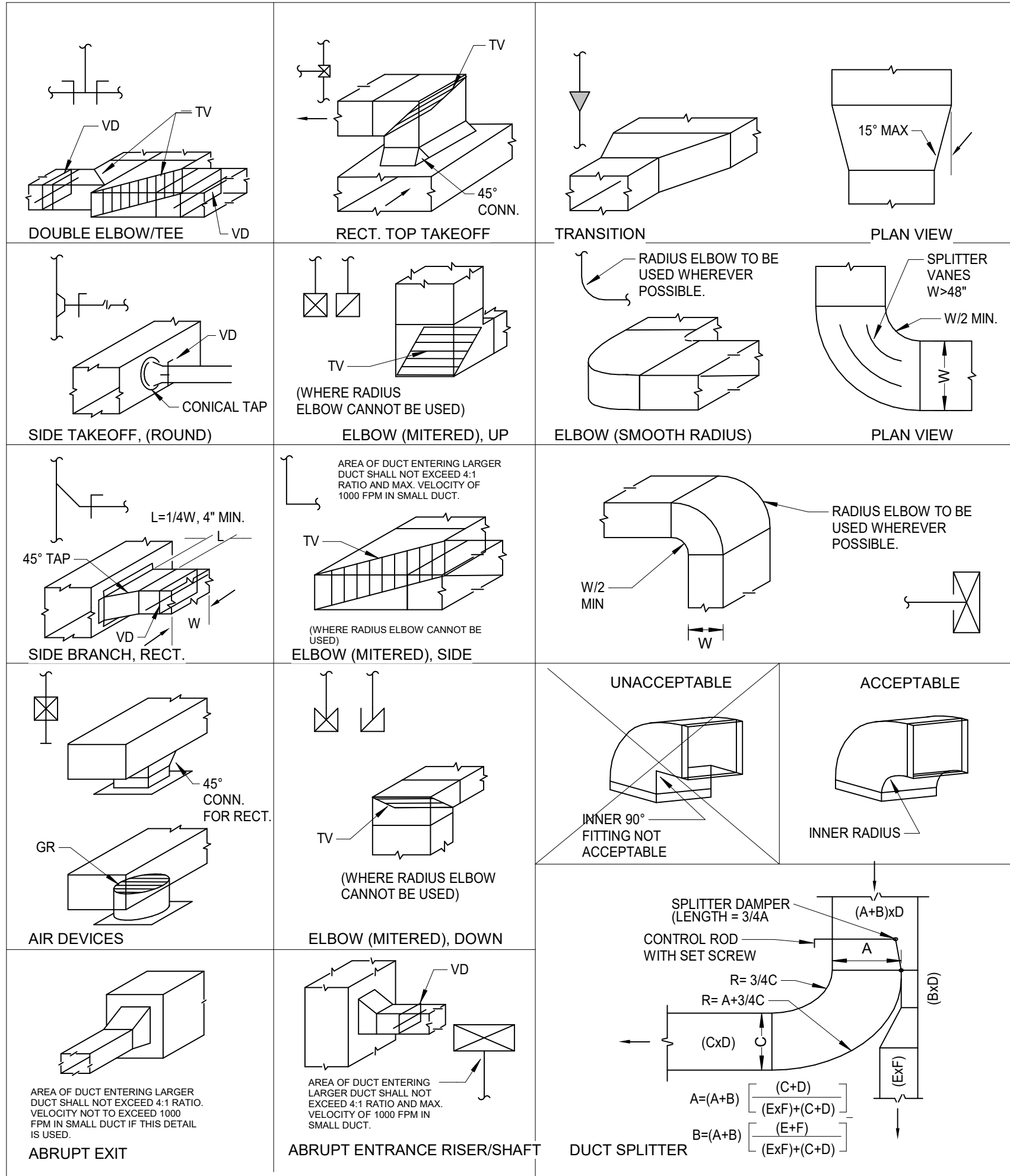
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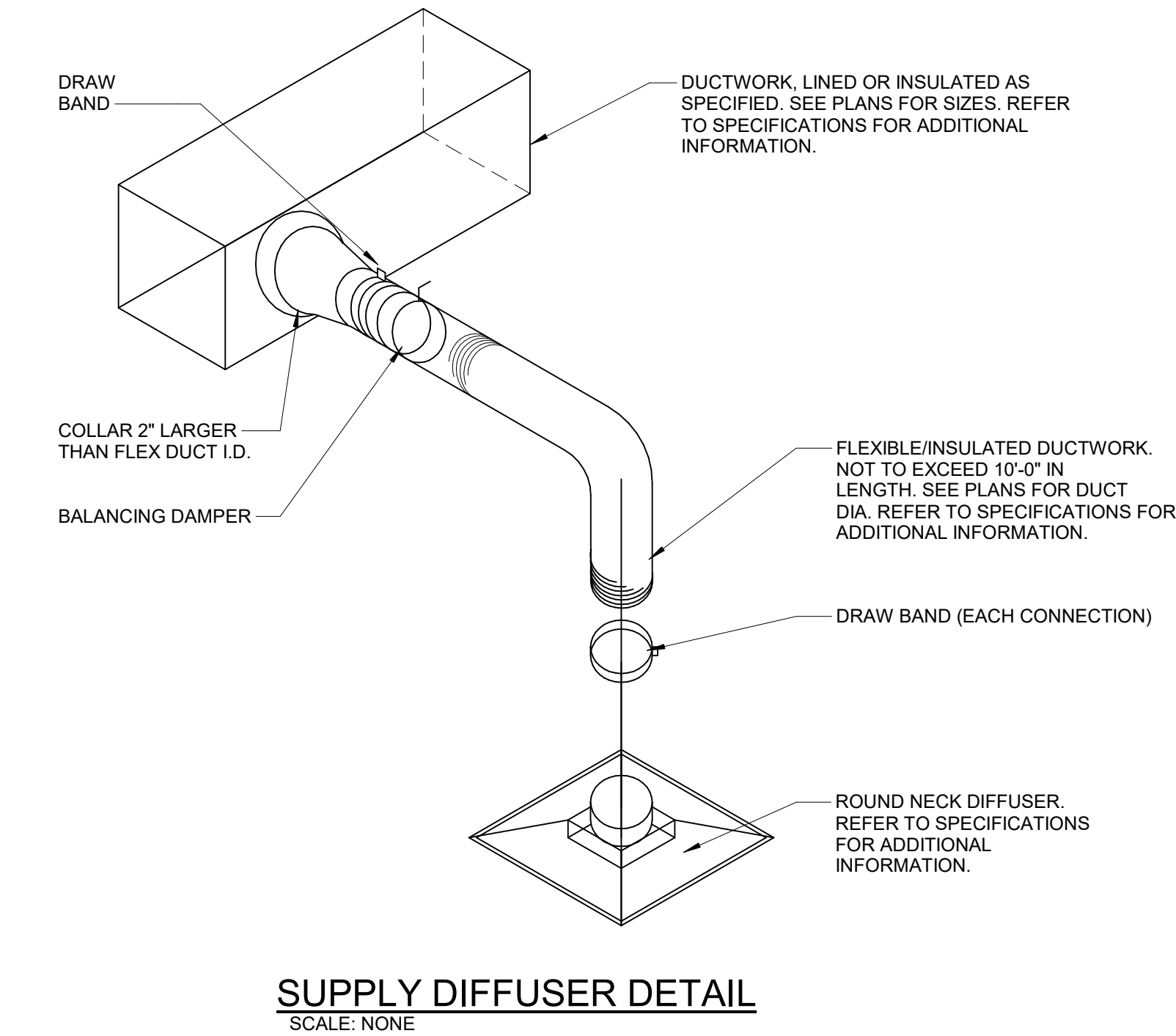
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- MECHANICAL SYMBOLS AND ABBREVIATIONS**
- NEW DUCTWORK
  - EXISTING DUCTWORK
  - DUCTWORK TO BE DEMOLISHED
  - FLEXIBLE DUCTWORK
  - COMPRESSED AIR
  - REFRIGERANT LIQUID
  - REFRIGERANT SUCTION
  - HEAT HOT WATER SUPPLY
  - HEAT HOT WATER RETURN
  - CONDENSER SUPPLY
  - CONDENSER RETURN
  - A/C UNIT DRAIN
  - SUPPLY DIFFUSER
  - SUPPLY DIFFUSER W/ROUND DUCT CONNECTION
  - RETURN REGISTER/GRILLE
  - EXHAUST REGISTER/GRILLE
  - SPIN IN TAP W/DAMPER
  - SPIN IN TAP W/DAMPER BOTTOM TAKEOFF
  - SPIN IN TAP W/DAMPER TOP TAKEOFF
  - TAKEOFF W/DAMPER
  - FLEXIBLE CONNECTION
  - TRANSITION FROM RIGID DUCT TO ROUND FLEXIBLE DUCT
  - DUCT REDUCER
  - FUSIBLE LINK FIRE DAMPER
  - COMBINATION FIRE/SMOKE DAMPER
  - SMOKE DAMPER
  - CONSTANT AIRFLOW REGULATOR
  - CARBON DIOXIDE SENSOR
  - THERMOSTHEIGHT 54" STANDARD HEIGHT 48" HANDICAP
  - VOLUME DAMPER
  - 1" DOOR UNDERCUT
  - CONTINUATION/BREAK
  - BACKDRAFT DAMPER
  - PIPE DOWN
  - PIPE UP
  - MOTOR OPERATED DAMPER
  - GATE VALVE
  - FLANGED VALVE
  - RELIEF VALVE
  - ANGLE VALVE
  - RELIEF VALVE
  - CHECK VALVE
  - BUTTERFLY VALVE
  - BALL VALVE
  - STRAINER W/ BLOW OFF VALVE
  - BALANCING VALVE
  - 2-WAY CONTROL VALVE
  - 3-WAY CONTROL VALVE
  - UNION
  - PIPE REDUCER
  - PIPE INCREASER
  - PIPE FLEXIBLE CONNECTION
  - DOUBLE THICK TURN VANES
  - EXHAUST AIR
  - OUTSIDE AIR
  - RETURN AIR
  - RETURN AIR GRILLE
  - RETURN AIR REGISTER
  - SUPPLY AIR
  - SUPPLY AIR DIFFUSER
  - SUPPLY AIR REGISTER
  - NEW

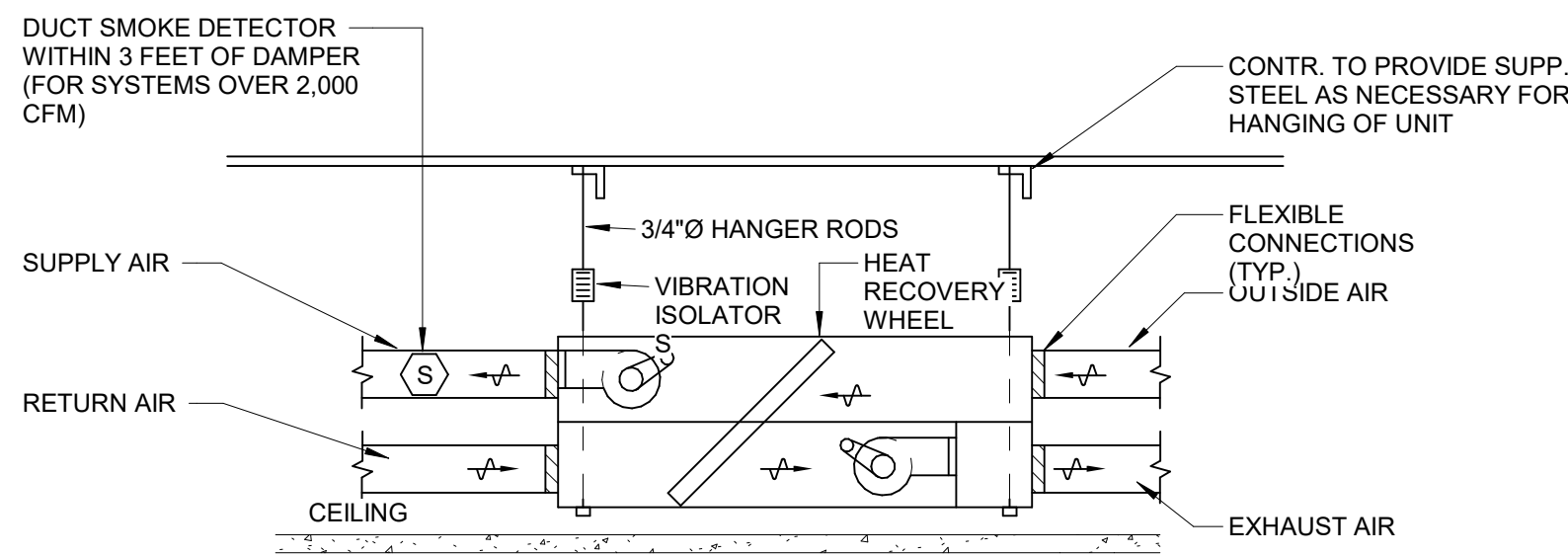


**DUCTWORK DETAIL**  
SCALE: NONE

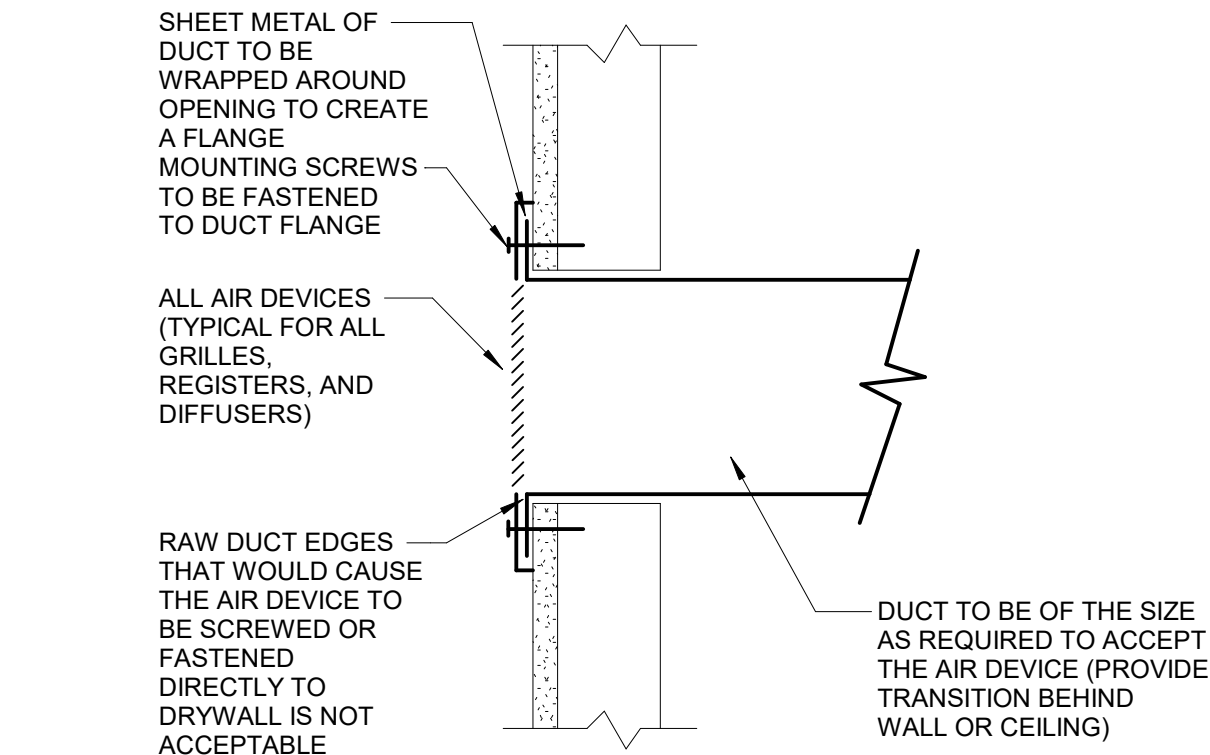
- ABBREVIATIONS:**
- GR EQUALIZING GRID
  - TV TURNING VANES
  - VD VOLUME DAMPER
  - AT AIR TURN OR EXTRACTOR



**SUPPLY DIFFUSER DETAIL**  
SCALE: NONE

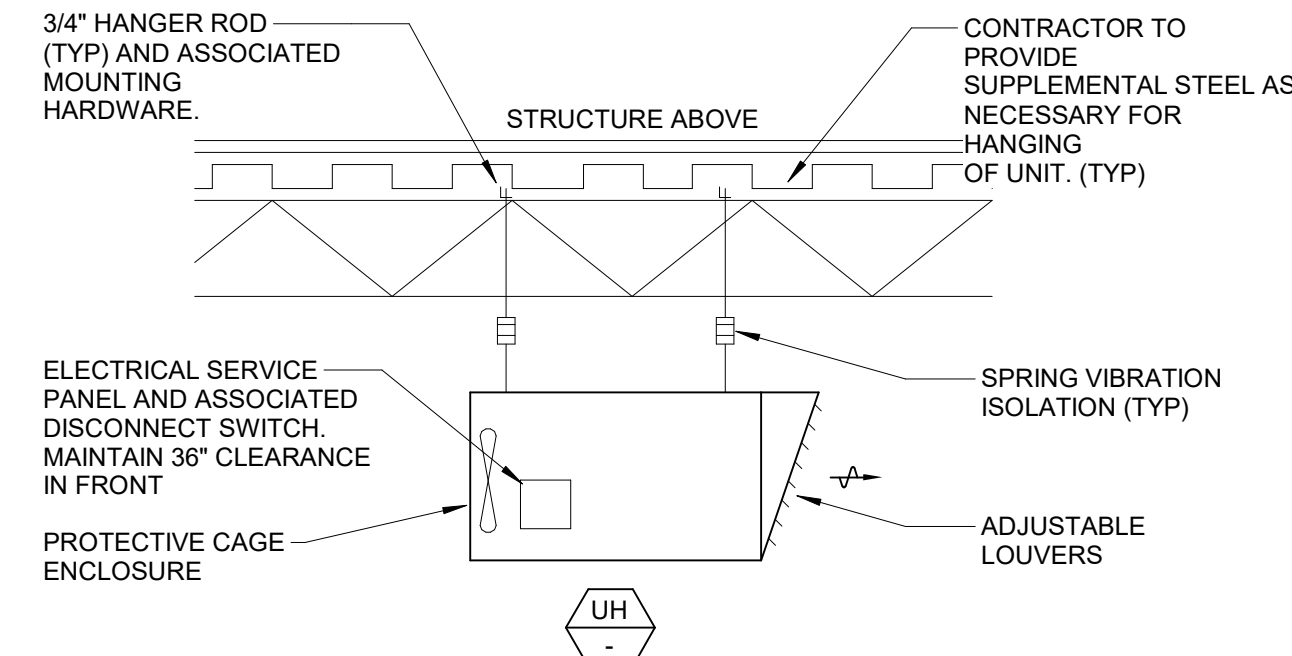


**HEAT RECOVERY UNIT DETAIL**  
SCALE: NONE



**AIR DEVICE MOUNTING DETAIL**  
SCALE: NONE

- NOTE:**
1. APPLIES TO ALL AIR DEVICES MOUNTED TO WALLS OR CEILINGS.



**SUSPENDED ELECTRIC UNIT HEATER DETAIL**  
SCALE: NONE

- NOTES:**
1. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR BUILDING STRUCTURE DETAILS.

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2023-141

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**Owner:**

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1 04/23/24 Revisions

**Sheet Title:**

**DETAILS-  
MECHANICAL**

**Sheet Number:**

**M-202**



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ABBREVIATIONS				GENERAL NOTES
ABS	ABSOLUTE	MECH	MECHANICAL	<div>1. ALL WORK IS TO CONFORM WITH THE 2017 NATIONAL ELECTRICAL CODE AND ALL APPLICABLE CODES. REGULATIONS AND STANDARDS. NOT ALL CODE REQUIREMENTS HAVE BEEN DESCRIBED IN THIS SPECIFICATION OR INDICATED ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE CODES AND INSTALL THE WORK IN ACCORDANCE WITH CODES.</div> <div>2. OBTAIN AND PAY FOR ALL BUILDING PERMITS, INSPECTIONS, CONNECTION CHARGES, AND FEES.</div> <div>3. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SUPERVISION NECESSARY TO INSTALL COMPLETE OPERATING ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING ALL SITE WORK ON THE SITE AND WITHIN THE PROPOSED CONSTRUCTION AREAS TO ACCOMPLISH THE REQUIRED WORK.</div> <div>4. THE CONTRACTOR IS TO BE RESPONSIBLE FOR COORDINATION OF ALL WORK ASSOCIATED WITH THE ELECTRIC UTILITY COMPANY. MAKE ALL ARRANGEMENTS IN A TIMELY FASHION FOR CONNECTION OF THE ELECTRICAL SERVICE.</div> <div>5. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE TAKEN AS A WHOLE. IF A CONFLICT OR CONTRADICTION EXISTS BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE MORE STRINGENT WILL APPLY. THE ARCHITECT'S AND ENGINEER'S INTERPRETATION OF THE DOCUMENTS ARE TO BE BINDING UPON THE CONTRACTOR.</div> <div>6. PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT FOR REVIEW PRIOR TO ORDERING. COORDINATE ALL PHYSICAL DIMENSIONS PRIOR TO SHOP DRAWING SUBMISSION.</div> <div>7. IF THE CONTRACTOR ELECTS TO SUBMIT ALTERNATE EQUIPMENT, MANUFACTURERS, SYSTEMS, METHODS, OR MATERIALS NOT SPECIALLY IDENTIFIED IN THE DRAWINGS AND SPECIFICATIONS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE WORK WITH OTHER TRADES AND PAY FOR ANY ADDITIONAL COSTS ASSOCIATED WITH THE SUBSTITUTION OR CHANGE.</div> <div>8. THE CONTRACTOR IS TO SURVEY AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID SUBMISSION AND BECOME AWARE OF ALL CONDITIONS WHICH MAY IMPACT THE REQUIRED WORK. CONTRACTOR IS TO INCLUDE ALL ASSOCIATED COSTS (MATERIALS/ LABOR) DETERMINED TO BE REQUIRED DURING SITE INSPECTIONS. CONTRACTOR'S BID SUBMISSION IS TO BE CONSIDERED PROOF THAT THIS REQUIREMENT HAS BEEN MET.</div> <div>9. FINAL LOCATIONS OF ALL DEVICES IN FINISHED SPACES ARE TO BE COORDINATED, AND APPROVED BY THE ARCHITECT/ OWNER PRIOR TO ROUGH-IN AND INSTALLATION.</div> <div>10. COORDINATE LOCATIONS AND ROUGH-IN REQUIREMENTS WITH ALL TRADES PRIOR TO INSTALLATION.</div> <div>11. PROVIDE 3/8" = 1'-0" SCALE DRAWINGS OF THE MAIN ELECTRICAL ROOM INDICATING ALL ELECTRICAL, MECHANICAL, PLUMBING, TELEPHONE, SECURITY, FIRE ALARM, AND LIFE SAFETY EQUIPMENT TO BE INSTALLED WITHIN THIS ROOM. ALL EXACT DIMENSIONS OF EQUIPMENT, PADS, ETC., ARE TO BE INDICATED. PROVIDE TWO CROSS-SECTIONS AT IMPORTANT POINTS. OBTAIN INFORMATION FROM OTHER SUB-CONTRACTORS AS NEEDED, AND APPROPRIATE. SUBMIT THE ABOVE FOR REVIEW, AND APPROVAL ALONG WITH ELECTRICAL EQUIPMENT SUBMITTALS. EQUIPMENT WILL NOT BE APPROVED PRIOR TO REVIEW OF THIS DRAWING.</div> <div>12. PROVIDE ADDRESSABLE FIRE ALARM SYSTEM WITH BATTERY BACKUP, HORN STROBES, MANUAL PULL STATIONS, DETECTORS, STROBES, DUCT DETECTORS, REMOTE ANNUNCIATOR, ELEVATOR CONTROLS (FOR RECALL AND DE-ENERGIZING), TELEPHONE AUTO DIALER, FIRE-FIGHTER PHONES, AND ALL ASSOCIATED CONTROLS, AND APPURTENANCES.</div> <div>13. PROVIDE POWER TO HVAC AND PLUMBING EQUIPMENT AS REQUIRED FOR COMPLETE, OPERATIONAL SYSTEMS.</div> <div>14. PROVIDE LIGHTING THROUGH-OUT, WITH EXTERIOR LIGHTING AT ALL EGRESS DOORS.</div> <div>15. THE CONTRACTOR IS TO BE RESPONSIBLE FOR SELECTING PARTICULAR MOUNTING ARRANGEMENTS OF FIXTURES TO SUIT THE CONSTRUCTION, OR CEILING TYPE. THE CONTRACTOR OR HIS AGENT IS TO REVIEW ALL ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS TO VERIFY ALL CEILING TYPES PRIOR TO PREPARING SHOP DRAWINGS FOR SUBMISSION. IT IS NOT TO BE UNDERSTOOD THAT THE LIGHTING FIXTURE SCHEDULE ACCOUNTS FOR THE MOUNTING TYPES. CEILING TYPES ARE FREQUENTLY CHANGED AFTER THE SCHEDULE HAS BEEN COMPLETED.</div> <div>16. FIXTURES AND DEVICES RECESSED IN A FIRE-RATED CEILING ARE TO BE PROVIDED WITH A FIRE-RATED ENCLOSURE THAT MAINTAINS THE FIRE-RATING OF THE CEILING SYSTEM. THE INSTALLATION OF THE ENCLOSURE IS TO MEET THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION, WHERE APPLICABLE, FIXTURES AND DEVICES ARE TO BE RATED FOR INSULATION CONTACT (IC) FOR HIGH-TEMPERATURE OPERATION.</div> <div>17. ALL ROOMS ARE TO BE PROVIDED WITH LIGHTING CONTROLS. PROVIDE MANUAL SWITCH(ES) AND APPROPRIATE, CODE-REQUIRED LIGHTING CONTROL DEVICES, WIRING METHODS, AND COMPONENTS.</div> <div>18. PROVIDE EGRESS AND EMERGENCY LIGHTING AS REQUIRED BY CODE IN ALL SPACES TO MEET REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. ALLOW FOR TEN ADDITIONAL FIXTURES TO BE INSTALLED WHERE DIRECTED BY THE AUTHORITY HAVING JURISDICTION.</div> <div>19. PROVIDE GROUNDING SYSTEM FOR FACILITY IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.</div> <div>20. PROVIDE ROOF PENETRATIONS FOR ALL ASSOCIATED ELECTRICAL WORK.</div> <div>21. ALL DEVICES ARE TO BE INSTALLED SQUARE, LEVEL, PLUMB, AND TRUE.</div> <div>22. SWITCH PLATES AND OUTLET BACKBOXES ARE NOT TO BE INSTALLED BACK-TO-BACK IN ADJACENT ROOMS. BACKBOX LOCATIONS ARE TO BE OFFSET A MINIMUM OF 0'-3" TO REDUCE NOISE TRANSFER. THIS APPLIES TO RECEPTACLES, LIGHTING FIXTURES, TV OUTLETS, TELEPHONE OUTLETS, AND DATA OUTLETS.</div> <div>23. ALL DEVICES LOCATED ON OPPOSING SIDES OF A FIRE-RATED WALL ASSEMBLY ARE TO BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 2'-0".</div> <div>24. GROUND FAULT CIRCUIT INTERRUPTERS ARE TO BE PROVIDED FOR ALL OUTDOOR RECEPTACLE CIRCUITS. RECEPTACLE CIRCUITS WITHIN TOILET AND BATHROOMS, AREAS IN CLOSE PROXIMITY TO WATER, AND WHEREVER ELSE INDICATED ON THE DRAWINGS OR AS REQUIRED BY CODE. WHILE-IN-USE TYPE COVERS ARE TO BE USED FOR ALL EXTERIOR LOCATIONS.</div> <div>25. PROVIDE CODE REQUIRED SIGNAGE (I.E., NEC 110.34, NEC 700.8, AND 695.4 B3).</div> <div>26. PROVIDE THIRD-PARTY CERTIFICATION OF ALL PACKAGED SYSTEMS BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) IN ACCORDANCE WITH OSHA FEDERAL REGULATIONS 29CFR1910.303 AND .399 AS WELL AS PAMPHLET #70 AND NATIONAL ELECTRICAL CODE ARTICLE 90-7.</div> <div>27. ALL EQUIPMENT PANELS, CONTROLS, SAFETY SWITCHES, AND DEVICES ARE TO BE PROVIDED WITH PERMANENT BLACK LAMINATED MICARTA WITH 3/8" CORE LABELS WITH 3/8" LETTERS. THIS ALSO APPLIES TO ALL CONTROLLERS, REMOTE START/ STOP PUSHBUTTONS, EQUIPMENT CABINETS, AND WHERE DIRECTED BY THE ARCHITECT AND ENGINEER, THIS REQUIREMENT DOES NOT APPLY TO INDIVIDUAL ROOM THERMOSTATS, AND LOCAL LIGHTING CONTROL DEVICES.</div> <div>28. ALL THREE PHASE STARTER EQUIPMENT IS TO BE PROVIDED BY THE MECHANICAL CONTRACTOR AND IS TO BE MAGNETIC, ACROSS-THE-LINE WITH AUXILIARY CONTACTS. ALL SINGLE PHASE STARTER EQUIPMENT IS TO BE PROVIDED BY ELECTRICAL CONTRACTOR.</div> <div>29. ALL WORK IS TO BE CONCEALED, UNLESS OTHERWISE INDICATED.</div> <div>30. ALL EXPOSED INTERIOR WIRING, PANEL FEEDERS, HOME RUNS, AND EQUIPMENT FEEDERS ARE TO BE INSTALLED IN EMT (ELECTRICAL METALLIC TUBING). ALL EMT IS TO BE SECURELY FASTENED AT INTERVALS NOT EXCEEDING 10'-0" AND WITHIN 3'-0" OF ALL BOXES. NOTE: "EXPOSED" INDICATES ALL WIRING METHODS NOT INSTALLED WITHIN WALLS, ABOVE SUSPENDED CEILINGS, OR WITHIN A PRE-MANUFACTURED RACEWAY. ANY EXPOSED RACEWAY IN A FINISHED SPACE IS TO BE COORDINATED WITH THE ARCHITECT/ ENGINEER PRIOR TO INSTALLATION.</div> <div>31. ALL CONCEALED BRANCH CIRCUIT WIRING METHODS INSTALLED ABOVE SUSPENDED CEILINGS, AND IN STUD PARTITIONS IS TO BE MC (METAL CLAD) CABLE. MC CABLE IS TO BE SECURELY FASTENED AT INTERVALS NOT EXCEEDING 4'-6", AND WITHIN 1'-0" OF ALL BOXES AND/OR FITTINGS.</div> <div>32. PROPERLY INSTRUCT OWNER'S PERSONNEL IN THE OPERATION AND MAINTENANCE OF ALL SYSTEMS AND EQUIPMENT. PROVIDE THREE INSTRUCTION AND MAINTENANCE MANUALS. SUBMIT MANUALS FOR REVIEW PRIOR TO OPERATING INSTRUCTION.</div> <div>33. PROVIDE ONE SET OF ELECTRONIC AS-BUILT DRAWINGS AT COMPLETION OF WORK. SUBMIT TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL.</div>
AC	ALTERNATING CURRENT	MCC	MOTOR CONTROL CENTER	
AFF	ABOVE FINISHED FLOOR	MCM	THOUSAND CIRCULAR MILLS	
AHU	AIR HANDLING UNIT	MFR	MANUFACTURER	
AMP, A	AMPERE	MH	MANHOLE, MOUNTING HEIGHT	
APP	APPROVED	MIN	MINIMUM	
APPROX	APPROXIMATE	MISC	MISCELLANEOUS	
ATS	AUTOMATIC TRANSFER SWITCH	MLO	MAIN LUG ONLY	
AVG	AVERAGE	MOD	MOTOR OPERATED DAMPER	
BLDG	BUILDING	MTD	MOUNTED	
C	CONDUIT	(N)	NEW	
CB	CIRCUIT BREAKER	NA	NOT APPLICABLE	
COL	COLUMN	N.C.	NORMALLY CLOSED	
CONN	CONNECTION	NEUT.	NEUTRAL	
CONT	CONTINUED	NIC	NOT IN CONTRACT	
CONTR	CONTRACTOR	NL	NIGHT LIGHT	
DB	DECIBEL	N.O.	NORMALLY OPEN	
DEG	DEGREE	NO.	NUMBER	
DIA	DIAMETER	NTS	NOT TO SCALE	
DN	DOWN	OD	OUTSIDE DIAMETER	
DT	DOUBLE THROW	OH	OVERHEAD	
DWG	DRAWING	OHD	OVERHEAD DOOR	
(E)	EXISTING	%	PERCENT	
E.C.	ELECTRICAL CONTRACTOR	PB	PUSH BUTTON	
EF	EXHAUST FAN	PH	PHASE-ELECTRICAL	
EL	ELEVATION	PNL	PANEL	
ELEC	ELECTRICAL	PVC	POLYVINYL CHLORIDE PIPE	
EQ	EQUAL	(R)	REMOVE EXISTING	
EQUIP	EQUIPMENT	(RE)	RELOCATE EXISTING	
EW	ELECTRIC WATER COOLER	R&D	RESEARCH & DEVELOPMENT	
EWH	ELECTRIC WATER HEATER	REQ	REQUIRED	
EXT	EXTERIOR	RM	ROOM	
*F	DEGREE FAHRENHEIT	SCH	SCHEDULE	
FACP	FIRE ALARM CONTROL PANEL	SF	SQUARE FEET	
FBO	FURNISHED BY OTHERS	SPD	SURGE PROTECTION DEVICE	
FD	FLOOR DRAIN	SPEC	SPECIFICATION	
FDC	FIRE DEPARTMENT CONNECTION	SQ	SQUARE	
FHC	FIRE HOSE CABINET	SS	SAFETY SWITCH	
FIN	FINISH	ST	SINGLE THROW	
FF	FINISHED FLOOR	STD	STANDARD	
FLR	FLOOR	STL	STEEL	
FT	FEET	STRUC	STRUCTURAL	
FU,F	FUSED	SW	SWITCH	
GALV	GALVANIZED	SWBD	SWITCHBOARD	
GFCI	GROUND-FAULT CURRENT- INTERRUPTER	SWGR	SWITCHGEAR	
GRD, GND	GROUND	TEMP	TEMPERATURE	
GWH	GAS WATER HEATER	TEL	TELEPHONE	
HC	HANDICAP	THERM	THERMOMETER	
HP	HORSEPOWER	TYP	TYPICAL	
HR	HOOR	UG	UNDERGROUND	
HT	HEIGHT	UH	UNIT HEATER	
HTR	HEATER	U.O.N.	UNDERWRITER'S LABORATORY	
HV	HIGH VOLTAGE	U.O.N.	UNLESS OTHERWISE NOTED	
HVAC	HEATING VENTILATION AIR CONDITIONING	UTIL	UTILITY	
HZ	FREQUENCY-ELECTRICAL	V	VOLTS	
ID	INSIDE DIAMETER	VB	VACUUM BREAKER	
ID	INDIRECT DRAIN	VERT	VERTICAL	
JB	JUNCTION BOX	VFD	VARIABLE FREQUENCY DRIVE	
KV	KILOVOLTS	VIF	VERIFY IN FIELD	
KVA	KILOVOLT AMPERE	VPC	VIA PHOTOCCELL	
KW	KILOWATT	VTC	VIA TIME CLOCK	
KWH	KILOWATT HOUR	W	WIRE	
LF	LINEAR FEET	W/	WITH	
LV	LOW VOLTAGE	WP	WEATHERPROOF	
MAU	MAKE-UP AIR UNIT	W/O	WITHOUT	
MAX	MAXIMUM	XFMR	TRANSFORMER	
MCB	MAIN CIRCUIT BREAKER	YR	YEAR	

PROJECT DEDUCT/ ADD ALTERNATES	
ADD ALTERNATE:	
DEDUCT ALTERNATES:	
1. ALL PANELBOARD FEEDERS AND BRANCH CIRCUIT WIRING METHODS, 100 AMPS AND LARGER AS WELL AS PRIMARY CABLE, TRANSFORMER COILS, BUSWAYS AND SWITCHBOARDS ARE TO BE ALUMINUM IN LIEU OF COPPER PER SPECIFICATION SECTION 26 00 00.	
2. ALL FIRE ALARM WIRING IS TO BE FPLP PLENUM RATED FIRE ALARM CABLE IN LIEU OF FIRE ALARM MC CABLE PER SPECIFICATION SECTION 28 30 00.	

# DRAWING LIST

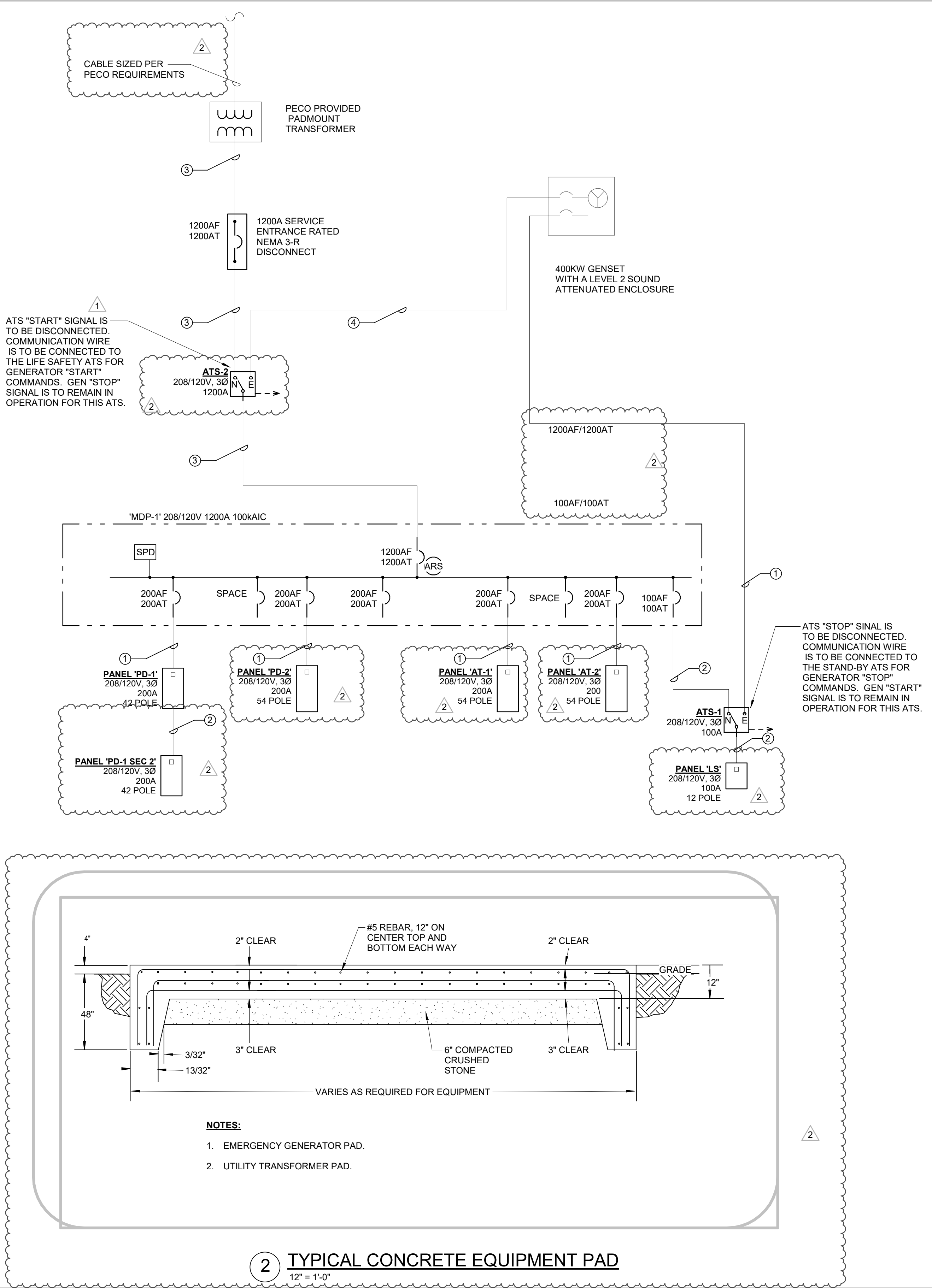
Drawing List- Electrical					
NUMBER	NAME	Issued Drawings	Current Revision	Current Revision Date	Current Description
E-001	COVER SHEET- ELECTRICAL	•	2	04/23/24	Revisions
E-101	FIRST FLOOR PLAN- LIGHTING		1	04/17/24	Revisions
E-102	SECOND FLOOR PLAN- LIGHTING		1	04/17/24	Revisions
E-103	FIRST FLOOR PLAN- POWER		1	04/17/24	Revisions
E-104	SECOND FLOOR PLAN- POWER		1	04/17/24	Revisions
E-105	ROOF PLAN- ELECTRICAL		1	04/17/24	Revisions
E-201	DETAILS- ELECTRICAL	•	2	04/23/24	Revisions
E-202	DETAILS- ELECTRICAL		0	03/29/24	Issued
E-203	DETAILS- ELECTRICAL		1	04/17/24	Revisions
E-301	SCHEDULES- ELECTRICAL	•	2	04/23/24	Revisions

## ELECTRICAL SYMBOLS AND ABBREVIATIONS

S	SINGLE-POLE WALLBOX SWITCH	TV	TELEVISION OUTLET:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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2  
1  
3  
4

3 TYPICAL SURFACE MOUNTED LIGHTING/APPLIANCE PANELBOARD INSTALLATION DETAIL  
12" = 1'-0"



THE SCHEDULES AND DRAWINGS REPRESENT ONLY CERTAIN REQUIREMENTS OF THE PROJECT. THERE ARE ADDITIONAL REQUIREMENTS IN THE SPECIFICATIONS BOOKLET WHICH THE CONTRACTOR IS BOUND TO PROVIDE. A SUPPLIER OR CONTRACTOR'S PRICING, WHICH IS BASED ONLY ON DRAWINGS OR SCHEDULES, MAY LEAVE IMPORTANT COSTS UNACCOUNTED FOR WHICH WILL ULTIMATELY BE THE CONTRACTOR OR SUPPLIER'S RESPONSIBILITY TO PROVIDE.

THE DELIVERY OF THIS DRAWING SHOULD NOT BE CONSTRUED TO PROVIDE AN EXPRESS WARRANTY OR GUARANTEE TO ANYONE THAT ALL THE DIMENSIONS AND DETAILS ARE EXACT OR TO INDICATE THAT THE USE OF THIS DRAWING IMPLIES THE REVIEW AND APPROVAL BY THE DESIGN PROFESSIONAL OF ANY FUTURE USE. A USE OF THIS INFORMATION WITHOUT THE WRITTEN APPROVAL BY THE DESIGN PROFESSIONAL IS AT THE SOLE RISK AND LIABILITY OF THE USER. THE DESIGN PROFESSIONAL RESERVES THE RIGHT TO REMOVE OUR PROFESSIONAL SEAL AND/OR TITLE BLOCK.



**AT-2**

**A.I.C. Rating:**  
**Mains Type:**  
**Mains Rating:**  
**MCB Rating:** 1200 A

**ENCLOSURE**

**NEMA:** Type

**MOUNTING:** SURF

**WIDTH:** 20"

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
HVAC	624 VA	100.00%	624 VA	
LIGHTING	8538 VA	125.00%	10663 VA	Total Conn. Load: 288972 VA
Other	50430 VA	100.00%	50430 VA	Total Est. Demand: 271221 VA
REFRIGERATOR	4500 VA	75.00%	3375 VA	Total Conn. Current: 802 A
RECEPTACLE	47520 VA	60.52%	28760 VA	Total Est. Demand Current: 753 A

**ENCLOSURE**  
**NEMA:** Type  
**MOUNTING:** SURF  
**WIDTH:** 20"

PANEL LABEL: PD-2

A.I.C.

SERVED VIA MDP

208/120 Wye VOLT

3

Ø 4

WIRE

MAINS: 200 A

MCB

LUGS: M.L.O

TOP

BOTTOM:

ENCLOSURE

NEMA: \_\_\_\_\_

Type 1

Mounting SURFACE

WIDTH: 20"

OKT	TRIP	POLE	LOAD TYPE	DESCRIPTION/LOCATION	WATT	A	B	C	WATT	DESCRIPTION/LOCATION	LOAD TYPE	POLE	TRIP	OKT
1	20 A	1	LIGHTING	SALLYPORT LIGHTING	475				1382	PATROL LIGHTING	LIGHTING	1	20 A	2
3	20 A	1	LIGHTING	LOCKER ROOM LIGHTING	80				555	ARMORY LIGHTING	LIGHTING	1	20 A	4
5	20 A	1	LIGHTING	ADMIN/LAB LIGHTING	350				400	COMPLANT LIGHTING	LIGHTING	1	20 A	6
7	20 A	1	REF/CEPTE	ADMIN 103 COPIER	180				720	SEAGENTS 115 REPT - 1	REF/CEPTE	1	20 A	8
9	20 A	1	REF/CEPTE	SEAGENTS 115 REPT - 2	720				900	BREAK ROOM 109 FRIDGE	REFRIGERATOR	1	20 A	10
11	20 A	1	REF/CEPTE	BREAKROOM 109 COUNTER 1	900				900	WEAPON CLEANING REPT	REF/CEPTE	1	20 A	12
13	20 A	1	REF/CEPTE	BREAKROOM 109 COUNTER 2	900				1080	TOILET 127 129 REPT	REF/CEPTE	1	20 A	14
15	20 A	1	REF/CEPTE	CORR 142 REPT	1620				180	TOILET 127 REPT	REF/CEPTE	1	20 A	16
17	20 A	1	REF/CEPTE	CHEF/PAK REPT	900				720	DEFECTIVES REPT	REF/CEPTE	1	20 A	18
19	20 A	1	POWER PATROL	PATROL REPT	1420				360	LOCKER ROOM 127, 129 REPT	REF/CEPTE	1	20 A	20
21	30 A	3	Other SALLY	Port 113	EH-4				7500	EH-5	Other REAR	2	20 A	22
23	25 A	2	Other	DEFECTIVES 118	HP-16				624	859	VESTIBULE 114	2	20 A	24
25	17 A	2	Other	DEFECTIVES 118	HP-13				624	859	Other PATROL 116	2	15 A	26
31	15 A	2	Other CORRIDOR	HP-1.6	624				624	HP-1.2	Other FLEX 110	2	15 A	30
33	35 A	2	Other	142	HP-1.3				624		SPARE	1	20 A	34
35	35 A	2	Other	HP-1.1					624		SPARE	1	20 A	36
37	35 A	2	Other						624	HP-1.5	Other EVIDENCE	2	15 A	38
39	20 A	1	SPARE								RECORDING 130	40		40
41	20 A	1	SPARE						500	PATROL WIREMOL	EQUIPMENT	1	20 A	42
43	20 A	1	REF/CEPTE	HOUSEKEEPING REPT	180				500	MENS LOCKER 1-1	EQUIPMENT	1	20 A	44
45	20 A	1	EQUIPMENT	MENS LOCKER 1-2	500				500	MENS LOCKER 1-3	EQUIPMENT	1	20 A	46
47	20 A	1	EQUIPMENT	MENS LOCKER 2-1	500				500	MENS LOCKER 2-2	EQUIPMENT	1	20 A	48
49	20 A	1	EQUIPMENT	MENS LOCKER 2-3	500				500	WOMENS LOCKER 1-1	EQUIPMENT	1	20 A	50
51	20 A	1	EQUIPMENT	WOMENS LOCKER 1-2	500				500	WOMENS LOCKER 1-3	EQUIPMENT	1	20 A	52
53	20 A	1	REFRIGERAT	EVIDENCE FRIDGE 1	900				900	EVIDENCE FRIDGE 2	REFRIGERAT	1	20 A	54
					TOTAL WATTS	35791 VA				TOTAL AMPS 88 A				

PANEL SCHEDULE

PD-1

PANEL LABEL: PD-1

A.I.C.

SERVING VOA PD-1

208/120 Wye VOLT

MINS: 200 A

LUMBS: MLO

TOP

BOTTOM:

ENCLOSURE

NEMA Type 1

WIDTH: 20"

CKT	TRIP	POLE	LOAD TYPE	DESCRIPTION LOCATION	WATT	A	B	C	WATT	DESCRIPTION LOCATION	LOAD TYPE	POLE	TRIP	CKT	
1	20 A	1	LIGHTING	MEETING ROOM LIGHTING	1200				1200	CAUCUS ROOM REPT	RECEPTACLE	1	20 A	1	
3	35 A	1	Other VOA	EW-11	540				540	TOILET 150, 151, 158	RECEPTACLE	1	20 A	3	
5		1	MONITOR 155						1440	MEETING ROOM DISPLAY	RECEPTACLE	1	20 A	5	
9	20 A	1	RECEPTACLE	SPRINKLER ROOM/FLOOR	720				360	CORR 152 REPT	RECEPTACLE	1	20 A	9	
9	20 A	1	RECEPTACLE	WATER COOLER	180				1080	CONF 142 REPT	POWER	1	20 A	10	
11	20 A	1	RECEPTACLE	ADMIN-103	720					EH-1	OTHER VESTIBULE 100	2	20 A	12	
13		2		EH-2	1500									14	
15	20 A	2	ADMINISTRATIVE											16	
17		1	EQUIPMENT	GATE OPERATOR					4000	EH-3	OTHER STAIR 2 152	3	20 A	18	
19	20 A	1	EQUIPMENT	COMMISSIONER'S ROOM DOOR-1	1200									20	
21	20 A	1	EQUIPMENT	COMMISSIONER'S ROOM DOOR-2	1200				624	HP-1-8	Other CHIEF 122	2	15 A	24	
23	15 A	1	Other INTERVIEW ROOM 125	HP-1-9	73									26	
25	20 A	1	RECEPTACLE	PARKING CANOPY REPT-2	1200				1200	PARKING CANOPY REPT-1	RECEPTACLE	1	20 A	28	
27	20 A	1	RECEPTACLE	PARKING CANOPY REPT-3	1200				1200	PARKING CANOPY REPT-3	RECEPTACLE	1	20 A	30	
31	20 A	1	RECEPTACLE	PARKING CANOPY REPT-6	1200				1200	PARKING CANOPY REPT-7	RECEPTACLE	1	20 A	32	
33	20 A	1	RECEPTACLE	PARKING CANOPY REPT-8	1200									34	
35	20 A	1	EQUIPMENT	EVIDENCE WIREMOLD 1	500				250	BB-1	Other CORRIDOR 142	2	20 A	36	
37	20 A	1	EQUIPMENT	EVIDENCE WIREMOLD 2	500									38	
39	20 A	1	EQUIPMENT	PROPERTY WIREMOLD	500				113612	PD1-SEC 2	PD-1 SEC 2	3	100 A	40	
41	20 A	1	REFRIGERATOR	CONF 124 REPT	900									42	
TOTAL WATTS										148390 VA		TOTAL AMPS 412 A			

PANEL LABEL: LS

A.I.C.

SERVED VIA ATS-1

208/120 Wye VOLT

3 Ø 4 WIRE

MAINS: 100 A

MCB:

LUGS:

TOP

BOTTOM:

ENCLOSURE

NEMA: Type 1

MOUNTING SURFACE

WIDTH: 27"

CKT	TRIP	POLE	LOAD TYPE	DESCRIPTION/ LOCATION	WATT	A	B	C	WATT	DESCRIPTION/ LOCATION	LOAD TYPE	POLE	TRIP	CKT
1	20 A	1	LIGHTING	AT-EM LIGHTING	760	1025				PD-EM LIGHTING	LIGHTING	1	20 A	2
3	20 A	1	LIGHTING	STAR 02Z LIGHTING	--	--				SPARE	SPARE	1	20 A	4
5	20 A	1	SPARE		--	--				SPARE	SPARE	1	20 A	6
7	20 A	1	SPARE		--	--				SPARE	SPARE	1	20 A	8
					9								10	
					11								12	
					TOTAL WATTS		1985 VA				TOTAL AMPS		5 A	

## PD-2

**ENCLOSURE**  
**NEMA:** Type  
**MOUNTING:** SURF  
**WIDTH:** 20"

ON/ LOCATION	WATT	A	B	C
RT LIGHTING	475			

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