

BERNARDON

A DIVISION OF CORE STATES GROUP

ARCHITECTURE

INTERIOR DESIGN

LANDSCAPE ARCHITECTURE

ADDENDUM NO. 03

Project Name: Aston Township Municipal Complex

Project No.: 2301.00-22

Date of Issue: April 18, 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 (five pages)
- B. Project Manual Clarifications (eight pages)
- C. Supplemental Drawings (three sheets)
- D. Sheet Revisions (twenty-six sheets)

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

- Q01: In spec Section 233113-5, it calls for all supply duct and first 10 feet of return duct lined 1". Then in spec section 230713-12 it calls for concealed supply and return mineral fiber blanket 2". Please advise.
- R01: The only duct lining is to be on the 12.5 rooftop unit (RTU 1) for the first ten (10) feet of the return duct. The remaining SA and RA duct is to be wrapped. All OA, and SA ducts are to be wrapped per 230713-12.

Clarifications to the PROJECT MANUAL:

1. Reference to Document 004413 – Form of Proposal: Delete Document 004413 – Form of Proposal in its entirety and replace with Document 004413 – Form of Proposal that is included in its entirety as part of this addendum. If Unit prices or Alternates do not apply to a specific Contract, the bid respondent shall enter “Not applicable”.
2. Reference to Document 004420 – Subcontractor List; page 004420-1; line 24. Reference to “General Contractor’s employment role” shall be replaced with “Prime Contractor’s employment role”. A revised Document 004420 – Subcontractor List is included in its entirety as part of this addendum.



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3. Reference to Document 004445 – RACP Compliance Certificate; page 004445-1; line 22. Bid respondents may modify the year “2023” to “2024”. In the event the bid respondent does not modify the date in their response, it will be understood to be the year 2024.
4. Reference to Section 011000 – Summary; Paragraph 1.7 Owner-Furnished Products: Delete reference to “Owner-Furnished Products” and replace with “Owner-Furnished/ Owner Installed (OFOI) Products”. The Owner will furnish and install the kitchen appliances, high-density storage shelving, and furniture.
5. Reference to Section 012300 – Alternates. Delete Section 012300 – Alternates in its entirety and replace with Section 012300 – Alternates that is included in its entirety as part of this addendum.
6. Reference to Section 077523 – Snow Guards; Paragraph 2.2.A Rail-Type Snow Guards: Remove reference to Basis of Design product listed. Basis of Design Product shall be as follows:
 - a. Basis of Design Product: Alpine SnowGuards; SnowMax Standing Seam Snow Guard System.

Clarifications to the SHEETS:

1. Reference to Sheet A-319 – Wall Sections; drawing 3/A-319 - Wall Section: Refer to Civil sheet 4 of 9 for a narrative description of the 6-inch-thick concrete slab required in the dumpster enclosure and extending out of the enclosure as shown on Civil sheet 4 of 9.
2. Reference to Sheet A-512 – Police Station - Enlarged Plans and Elevations; Drawing 1/A-512: The Weapons Rack Locker (44”x24”x61”) shown on the floor plan and in elevation 6/A-512 is not required and is not in contract (NIC).
3. Reference to Sheet A-512 – Police Station - Enlarged Plans and Elevations; Drawing 12/A-512: Refer to supplemental drawing SD-A04 – Detention Intake 111 – Elevation, included as part of this addendum, for callout reference to the floor-mounted detention bench specified in Section 12550 - Detention Furniture.
4. Reference to Sheet A-513 – Police Station - Enlarged Plans and Elevations; Drawing 9/A-513: Refer to supplemental drawing SD-A05 - Evidence Recording 130 – Elevation, included as part of this addendum, for evidence storage locker requirements.
5. Reference to Sheet A-513 – Police Station - Enlarged Plans and Elevations; Drawing 10/A-513: Supplemental drawing SD-A06 - Evidence Recording 130 – Elevation is included as part of this addendum, and it reflects an adjustment to the fume hood linework. The Fume Hood is a part of the contract, and it is specified in Section 115313 - Laboratory Fume Hoods.



6. Reference to Sheet A-518 – Casework Details: Casework references on sheet A-518 that indicate “hardwood veneer panel” shall comply with the requirements of specification Section 064113 – Wood-Veneer-Faced Architectural Cabinets.
7. Reference to Sheet A-519 – Casework Details: Casework references on sheet A-519 that indicate “hardwood veneer panel” or “flush hardwood veneer panel” shall comply with the requirements of specification Section 064113 – Wood-Veneer-Faced Architectural Cabinets.
8. Reference to Sheet M-001 – Cover Sheet – Mechanical: Sheet M-001 – Cover Sheet – Mechanical is being reissued as part of this addendum. The Drawing List has been updated to reflect revised sheets contained in this addendum.
9. Reference to Sheet M-101 – First Floor Plan – Mechanical Ductwork: Sheet M-101 – First Floor Plan – Mechanical Ductwork is being reissued as part of this addendum.
10. Reference to Sheet M-102 – Second Floor Plan – Mechanical Ductwork: Sheet M-102 – Second Floor Plan – Mechanical Ductwork is being reissued as part of this addendum.
11. Reference to Sheet M-103 – First Floor Plan – Mechanical Piping: In the hallway adjacent to Detention 111, change the reference that currently notes “HP 1.0” to “ERV 1.0”.
12. Reference to Sheet M-104 – Second Floor Plan – Mechanical Piping: In Mechanical 210, change reference to “HP 2.0” to “ERV 2.0”.
13. Reference to Sheet M-105 – Roof Plan – Mechanical: Sheet M-105 – Roof Plan – Mechanical is being reissued as part of this addendum.
14. Reference to Sheet M-301 – Schedules – Mechanical: Sheet M-301 – Schedules – Mechanical is being reissued as part of this addendum.
15. Reference to Sheet M-302 – Schedules – Mechanical: Sheet M-302 – Schedules – Mechanical is being reissued as part of this addendum.
16. Reference to Sheet M-303 – Schedules – Mechanical: Sheet M-303 – Schedules – Mechanical is being reissued as part of this addendum.
17. Reference to Sheet P-001 – Cover Sheet – Plumbing: Sheet P-001 – Cover Sheet – Mechanical is being reissued as part of this addendum. The Drawing List has been updated to reflect revised sheets contained in this addendum.
18. Reference to Sheet P-101 – First Floor Plan – Sanitary: Sheet P-101 – First Floor Plan – Sanitary is being reissued as part of this addendum.



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19. Reference to Sheet P-102 – First Floor Plan – Domestic Water: Sheet P-102 – First Floor Plan – Domestic Water is being reissued as part of this addendum.
20. Reference to Sheet P-103 – Second Floor Plan – Plumbing: Sheet P-103 – Second Floor Plan – Plumbing is being reissued as part of this addendum.
21. Reference to Sheet P-104 – Roof Plan – Plumbing: Sheet P-104 – Roof Plan – Plumbing is being reissued as part of this addendum.
22. Reference to Sheet P-201 – Details – Plumbing: Sheet P-201 – Details – Plumbing is being reissued as part of this addendum. Details were reorganized on the sheet to allow for the elimination of other sheets in the set as noted in this addendum.
23. Reference to Sheet P-202 – Details – Plumbing: Sheet P-202 – Details – Plumbing is being reissued as part of this addendum. Details were reorganized on the sheet to allow for the elimination of other sheets in the set as noted in this addendum.
24. Reference to Sheet P-203 – Details – Plumbing: Delete this sheet in its entirety. Details from this sheet have been reorganized and can be found on Sheet P-201 – Details – Plumbing or Sheet P-202 – Details - Plumbing that are included as part of this addendum.
25. Reference to Sheet P-204 – Details – Plumbing: Delete this sheet in its entirety. Details from this sheet have been reorganized and can be found on Sheet P-201 – Details – Plumbing or Sheet P-202 – Details - Plumbing that are included as part of this addendum.
26. Reference to Sheet P-301 – Schedules – Plumbing: Sheet P-301 – Schedules – Plumbing is being reissued as part of this addendum.
27. Reference to Sheet P-401 – Riser Diagrams - Sanitary: Sheet P-401 – Riser Diagrams - Sanitary is being reissued as part of this addendum.
28. Reference to Sheet P-402 – Riser Diagrams – Domestic Water: Sheet P-402 – Riser Diagrams - Sanitary is being reissued as part of this addendum.
29. 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. In addition, Project Deduct/Add Alternates has been revised. Refer to Section 012300 – Alternates that is attached to this addendum.
30. Reference to Sheet E-101 – First Floor Plan – Lighting: Sheet E-101 – First Floor Plan – Lighting is being reissued as part of this addendum.



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31. Reference to Sheet E-102 – Second Floor Plan – Lighting: Sheet E-102 – Second Floor Plan – Lighting is being reissued as part of this addendum.
32. Reference to Sheet E-103 – First Floor Plan – Power: Sheet E-103 – First Floor Plan – Power is being reissued as part of this addendum.
33. Reference to Sheet E-104 – Second Floor Plan – Power: Sheet E-104 – Second Floor Plan – Power is being reissued as part of this addendum.
34. Reference to Sheet E-105 – Roof Plan – Electrical: Sheet E-105 – Roof Plan – Electrical is being reissued as part of this addendum.
35. Reference to Sheet E-201 – Details – Electrical: Sheet E-201 – Details – Electrical is being reissued as part of this addendum.
36. Reference to Sheet E-203 – Details – Electrical: Sheet E-203 – Details – Electrical is being reissued as part of this addendum.
37. Reference to Sheet E-301 – Schedules – Electrical: Sheet E-301 – Schedules – Electrical is being reissued as part of this addendum.

END OF ADDENDUM NO. 03

DOCUMENT 004113 – FORM OF PROPOSAL

BID PROPOSAL FORM

for

ASTON TOWNSHIP MUNICIPAL COMPLEX

Deliver this Form of Proposal to:

All copies of the Bid, the bid security, and any other documents required to be submitted with the bid shall be submitted through PennBid™ (<https://pennbid.bonfirehub.com>).

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply.

1.2 SUMMARY

- A. Related Sections include the following:

1. Section 012200 “Unit Prices” for the descriptions of unit prices.
2. Section 012300 “Alternates” for the descriptions of alternates.

1.3 CONTRACT NAME

- A. Contract No. Proposed (check contract that applies; if bidding more than one contract, submit separate bid forms for each contract):

☐ Contract 1 – General Construction Contract

☐ Contract 2 – Plumbing Construction Contract

☐ Contract 3 – Mechanical Construction Contract

☐ Contract 4 – Electrical Construction Contract

☐ Contract 5 – Elevator Construction Contract

1 BASE BID

- 2 B. Base Bid: The undersigned Bidder, having carefully examined the Procurement and Contracting
3 Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as
4 prepared by Bernardon and Architect's consultants, having visited the site, and being familiar with all
5 conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and
6 services, including all scheduled allowances, necessary to complete the construction of the above-named
7 project, according to the requirements of the Procurement and Contracting Documents, for the stipulated
8 sum of:

9 Base Bid for _____
10 Contract Name

11 _____ Dollars (\$ _____)

12 1.4 UNIT PRICES

- 13 A. The undersigned Bidder, agree, if awarded the Contract to perform additional work or to delete work at
14 the Unit Prices set forth below or at a negotiated unit price (Unit Prices are for work that is in addition to
15 or is deleted from the base bid work):

- 16 1. Unit Price No.GC-01: Removal of unsatisfactory soil and replacement with satisfactory soil
17 material.

18 \$ _____ per cu. yd.

- 19 2. Unit Price No. GC-02: Miscellaneous and structural steel.

20 \$ _____ per pound

21 1.5 ALTERNATES

- 22 A. Alternate No. GC-01: RACP Compliance Requirements

23 _____ Dollars \$ _____

24 Alternate No. GC-02: Vehicle Shelter

25 _____ Dollars \$ _____

26 Alternate No. GC-03: Scope of Elevator Construction Contract

27 _____ Dollars \$ _____

28 Elevator Subcontractor: _____

29 Manufacturer of Elevator: _____

30 Alternate No. PC-01: RACP Compliance Requirements

31 _____ Dollars \$ _____

32 Alternate No. MC-01: RACP Compliance Requirements

33 _____ Dollars \$ _____

Alternate No. EC-01: RACP Compliance Requirements

Dollars \$ _____

Alternate No. EC-02: Vehicle Shelter

Dollars \$ _____

Alternate No. EC-03: Feeders and Wiring

Dollars \$ _____

Alternate No. EC-04: Fire Alarm Cable

Dollars \$ _____

1.6 AGREEMENT

- A. We, the Undersigned, agree, if awarded the contract for the project, to execute an agreement for the above stated work and compensation on Form of Agreement Between Owner and Contractor, Standard AIA Form A101-2017 Edition.

1.7 STATEMENT

- A. In submitting this bid, it is understood that the right is reserved by the Owner to reject any and/or all bids and waive all informalities therein.

- B. We, the Undersigned, acting through its authorized officers and intending to be legally bound, agree that this bid proposal shall constitute an offer by the Undersigned to enter into a Contract with the acts and things therein provided, which offer shall be irrevocable for sixty (60) calendar days from the date of opening hereof and that the Owner may accept this offer at any time during said period by notifying the Undersigned of the acceptance of said offer.

- C. The following documents are attached and made a condition of this Bid:

- 1.) Bid Bond or certified check or cashier's check (Document 004300).
- 2.) Consent of Surety (Document 004315).
- 3.) Hold Harmless Clause (Document 004320).
- 4.) Subcontractor List (Document 004420).
- 5.) Statement of Non-Collusion (Document 004430).
- 6.) Compliance Requirements (Document 004440).
- 7.) RACP Compliance Requirements (Document 004445).
- 8.) Contractor's Qualification Statement (Document 004460).

- D. We, the Undersigned, acknowledge receipt of the following Addenda:

Addenda Number

Dated

_____	_____
_____	_____
_____	_____
_____	_____

E. The Undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

F. A Bid Bond in the amount of ten percent (10%) of this total must be submitted with your bid. A Performance Bond and a Labor and Materials Bond equaling one hundred percent (100%) of the total award must be provided by the selected Contractor within seven (7) days of the award.

G. Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver Insurance Certificates, required by the Contract Documents.

Company Name:

Submitted by:

Title:

Bidder is (an)

(Individual) (Partnership) (Corporation)

DATE: _____

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 004113

1 DOCUMENT 004420 – SUBCONTRACTOR LIST

- 2 List all subcontractors to be used on this project. BIDDERS MAY REPRODUCE THIS SECTION AS REQUIRED
3 TO PROVIDE A COMPLETE LIST OF SUBCONTRACTORS. Any subcontractor trades not listed below are as-
4 sumed to be performing work as personnel directly on the Prime Contractor's employment role.

<u>Subcontractor Category</u>	<u>Name of Subcontractor</u>	<u>Address (City and State)</u>
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		

5 END OF DOCUMENT 004420

1 SECTION 012300 - ALTERNATES

2 PART 1 - GENERAL

3 1.1 RELATED DOCUMENTS

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

6 1.2 SUMMARY

- 7 A. This Section includes administrative and procedural requirements for alternates.

8 1.3 DEFINITIONS

- 9 A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the
10 Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to
11 accept a corresponding change either in the amount of construction to be completed or in the products,
12 materials, equipment, systems, or installation methods described in the Contract Documents.

- 13 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
14 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to
15 incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

16 1.4 PROCEDURES

- 17 A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the
18 alternate into Project.

- 19 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items
20 incidental to or required for a complete installation whether or not indicated as part of alternate.

- 21 B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the
22 status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later
23 consideration. Include a complete description of negotiated modifications to alternates.

- 24 C. Execute accepted alternates under the same conditions as other work of the Contract.

- 25 D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections
26 referenced in schedule contain requirements for materials necessary to achieve the work described under
27 each alternate.

28 PART 2 - PRODUCTS (Not Used)

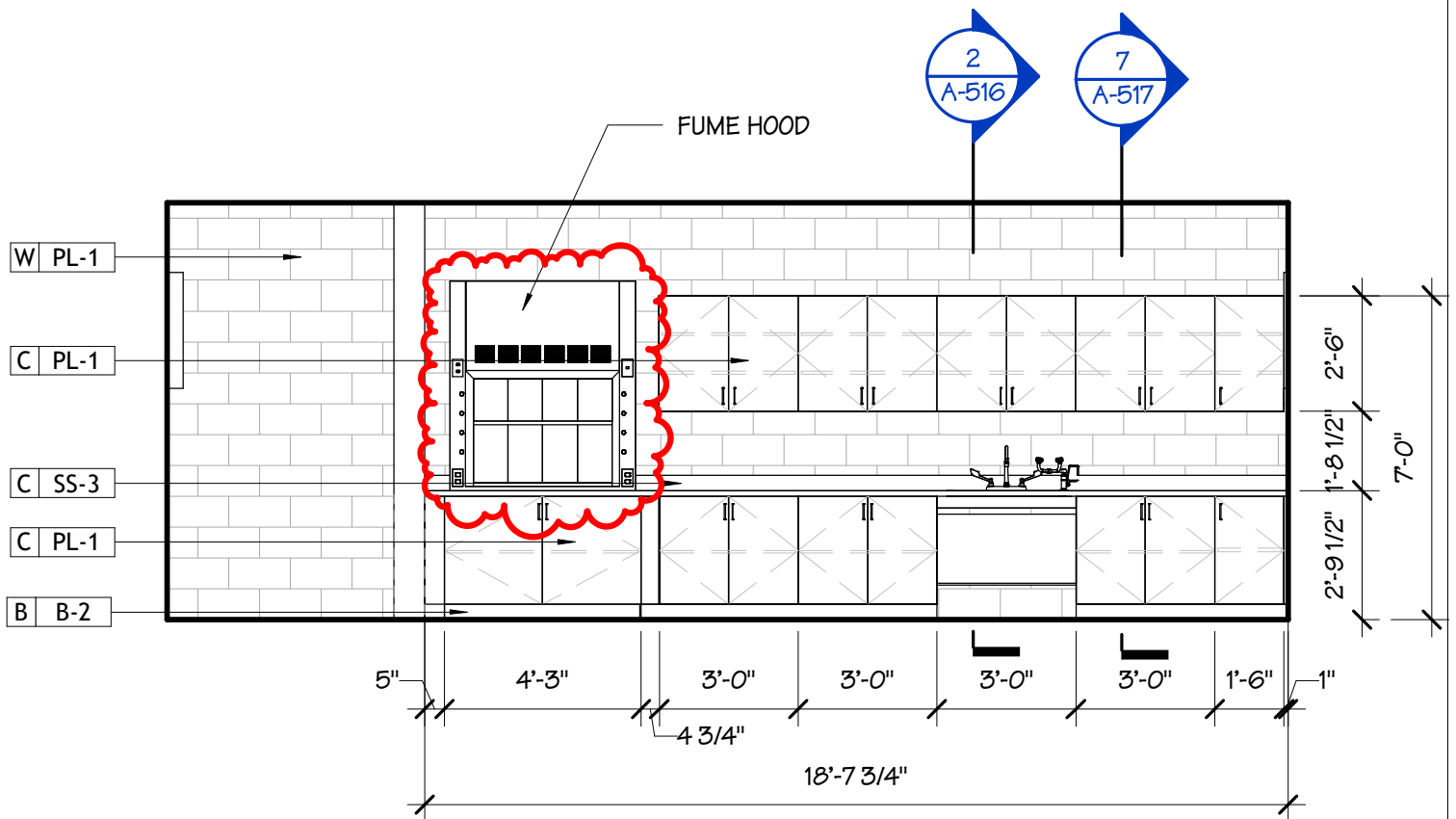
29

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. The Schedule of Alternates shall be as noted on the contract documents and as enumerated on the Bid Form.
- B. Alternate No. GC-01: RACP Compliance Requirements
1. Base Bid: The base bid does not include RACP Compliance Requirements.
 2. Alternate: In addition to requirements of the base bid, provide all Work in accordance with Document 004445 RACP Compliance Requirements.
- C. Alternate No. GC-02: Vehicle Shelter
1. Base Bid: The base bid does not include the Vehicle Shelter.
 2. Alternate: Provide all Work of this contract associated with the Vehicle Shelter.
- D. Alternate No. GC-03: Scope of Elevator Construction Contract
1. Base Bid: The base bid does not include the scope of the elevator.
 2. Alternate: Provide all Work associated with the hydraulic elevator as documented on the drawings and as specified in Section 142400 – Hydraulic Elevators.
- E. Alternate No. PC-01: RACP Compliance Requirements
1. Base Bid: The base bid does not include RACP Compliance Requirements.
 2. Alternate: In addition to requirements of the base bid, provide all Work in accordance with Document 004445 RACP Compliance Requirements.
- F. Alternate No. MC-01: RACP Compliance Requirements
1. Base Bid: The base bid does not include RACP Compliance Requirements.
 2. Alternate: In addition to requirements of the base bid, provide all Work in accordance with Document 004445 RACP Compliance Requirements.
- G. Alternate No. EC-01: RACP Compliance Requirements
1. Base Bid: The base bid does not include RACP Compliance Requirements.
 2. Alternate: In addition to requirements of the base bid, provide all Work in accordance with Document 004445 RACP Compliance Requirements.
- H. Alternate No. EC-02: Vehicle Shelter
1. Base Bid: The base bid does not include the Vehicle Shelter.
 2. Alternate: Provide all Work of this contract associated with the Vehicle Shelter.

- 1 I. Alternate No. EC-03: Feeders and Wiring
- 2 1. Base Bid: The base bid includes copper panelboard feeders and branch circuit wiring methods,
3 100 amps and larger as well as primary cable, transformer coils, busways, and switchboards per
4 Section 260000 – Standard Conditions for Electrical Work.
- 5 2. Alternate: In lieu of Base Bid wiring, provide aluminum wiring for all panelboard feeders and
6 branch circuit wiring methods, 100 amps and larger as well as primary cable, transformer coils,
7 busways, and switchboards.
- 8 J. Alternate No. EC-04: Fire Alarm Cable
- 9 1. Base Bid: The base bid includes fire alarm MC cable per Section 283000 – Fire Alarm and
10 Detection Systems – Addressable - Horn.
- 11 2. Alternate: In lieu of Base Bid MC cable, provide FPLP Plenum Cable.
- 12 END OF SECTION 012300



10

ELEVATION

SCALE 1/4" = 1'-0"

Drawing Title:
Evidence Recording 130 - 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

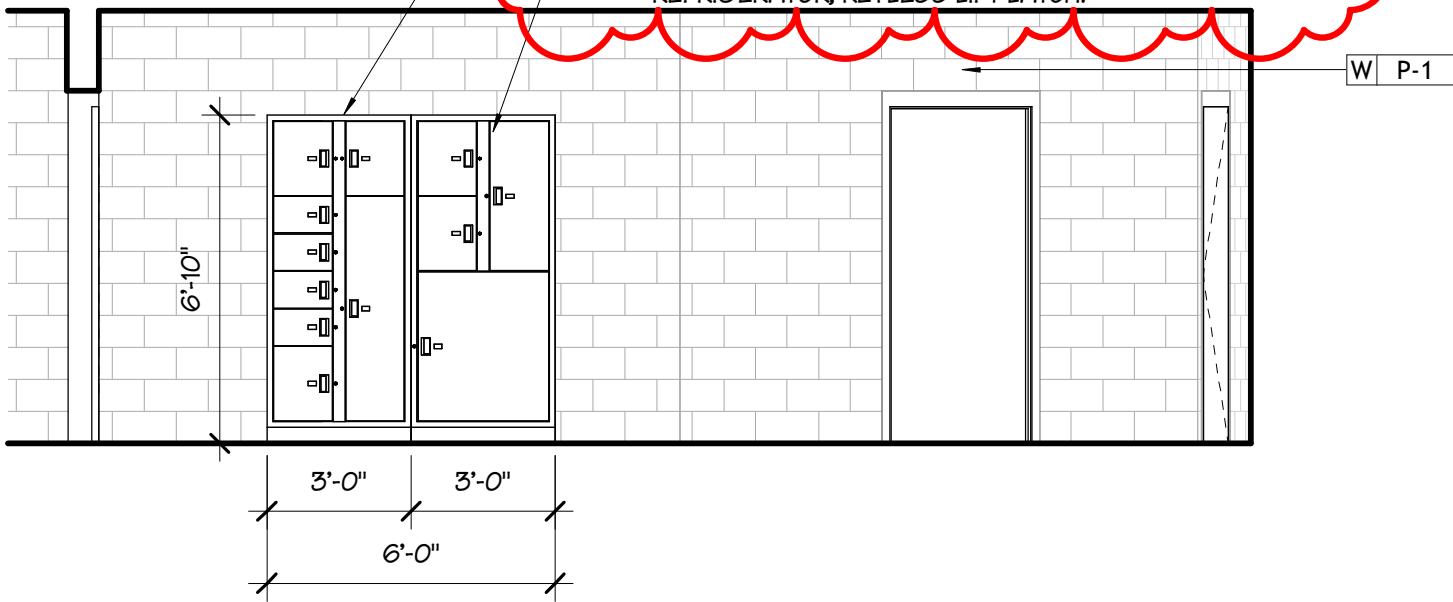
Scale: 1/4" = 1'-0"

Project No: 2301.00-22
Print Date: 04/18/24
Ref/Sheet: 10/A-513

Sheet Number:
SD-A06

BASIS OF DESIGN PRODUCT:
STEELE SOLUTIONS; TIFFIN EVIDENCE LOCKER. PROVIDE
EVIDENCE LOCKER CONFIGURATION 08AD; KEYLESS
LIFT LATCH

BASIS OF DESIGN PRODUCT
STEELE SOLUTIONS; TIFFIN EVIDENCE LOCKER. PROVIDE
REFRIGERATED EVIDENCE LOCKER CONFIGURATION
04AE_R WITH 4-DOOR REGULAR INSERT IN
REFRIGERATOR; KEYLESS LIFT LATCH.



9 ELEVATION

SCALE 1/4" = 1'-0"



Drawing Title:
Evidence Recording 130 - Elevation

BERNARDON
A CORE STATES GROUP COMPANY

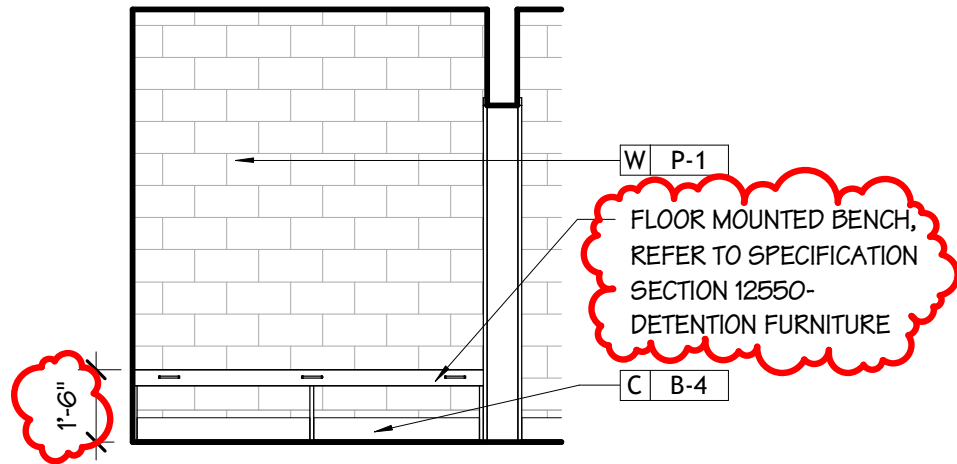
46 East Main Street, Suite 201
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p. 908 699 8800

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

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

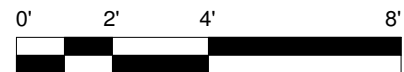
Project No: 2301.00-22
Print Date: 04/18/24
Ref/Sheet: 9/A-513

Sheet Number:
SD-A05



12 ELEVATION

SCALE 1/4" = 1'-0"



Drawing Title:

Detention Intake 111 - 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: 04/18/24
Ref/Sheet: 12/A-512

Sheet Number:
SD-A04

4/18/2024 11:35:55 AM C:\Users\deckin\Documents\Aston Township Municipal Complex-MPE-Revit 23.dgn\cdhMBBW.rvt

ABBREVIATIONS				MECHANICAL GENERAL NOTES		DRAWING LIST																																																																									
AFF	ABOVE FINISHED FLOOR	FPS	FEET PER SECOND	PG	PRESSURE GAUGE	<div><div>Drawing List- Mechanical</div><table><tr><th>NUMBER</th><th>NAME</th><th>Issued Drawings</th><th>Current Revision</th><th>Current Revision Date</th><th>Current Description</th></tr><tr><td>M-001</td><td>COVER SHEET- MECHANICAL</td><td>*</td><td>1</td><td>04/17/24</td><td>Revisions</td></tr><tr><td>M-101</td><td>FIRST FLOOR PLAN- MECHANICAL DUCTWORK</td><td>*</td><td>1</td><td>04/17/24</td><td>Revisions</td></tr><tr><td>M-102</td><td>SECOND FLOOR PLAN- MECHANICAL DUCTWORK</td><td>*</td><td>1</td><td>04/17/24</td><td>Revisions</td></tr><tr><td>M-103</td><td>FIRST FLOOR PLAN- MECHANICAL PIPING</td><td>*</td><td>0</td><td>03/29/24</td><td>Issued</td></tr><tr><td>M-104</td><td>SECOND FLOOR PLAN- MECHANICAL PIPING</td><td>*</td><td>0</td><td>03/29/24</td><td>Issued</td></tr><tr><td>M-105</td><td>ROOF PLAN- MECHANICAL</td><td>*</td><td>1</td><td>04/17/24</td><td>Revisions</td></tr><tr><td>M-201</td><td>DETAILS- MECHANICAL</td><td>*</td><td>0</td><td>03/29/24</td><td>Issued</td></tr><tr><td>M-202</td><td>DETAILS- MECHANICAL</td><td>*</td><td>0</td><td>03/29/24</td><td>Issued</td></tr><tr><td>M-301</td><td>SCHEDULES- MECHANICAL</td><td>*</td><td>1</td><td>04/17/24</td><td>Revisions</td></tr><tr><td>M-302</td><td>SCHEDULES- MECHANICAL</td><td>*</td><td>1</td><td>04/17/24</td><td>Revisions</td></tr><tr><td>M-303</td><td>SCHEDULES- MECHANICAL</td><td>*</td><td>1</td><td>04/17/24</td><td>Revisions</td></tr></table></div>		NUMBER	NAME	Issued Drawings	Current Revision	Current Revision Date	Current Description	M-001	COVER SHEET- MECHANICAL	*	1	04/17/24	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	*	0	03/29/24	Issued	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
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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	*	0	03/29/24	Issued																																																																										
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																																																																										
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	GWH	GAS WATER HEATER	RH	RELATIVE HUMIDITY																																																																										
C/D	CONDENSATE DRAIN	H	ENTHALPY	RM	ROOM																																																																										
CFH	CUBIC FEET PER HOUR	HC	HANDICAP	RPM	REVOLUTIONS PER MINUTE																																																																										
CFM	CUBIC FEET PER MINUTE	HD	HEAD	RR	RETURN AIR REGISTER																																																																										
CLG	CEILING	HP	HORSEPOWER	RWC	RAIN WATER CONDUCTOR																																																																										
CO	CLEANOUT	HR	HOUR	RPZ	REDUCED PRESSURE ZONE BFP																																																																										
CO ₂	CARBON DIOXIDE	HT	HEIGHT	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																																																																										
DTTV	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																																																																										
EWB	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																																																																										

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 MOPP 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 DOORS 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"=1'-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 AND HYDRONIC SYSTEMS) BOTH PRIOR TO DEMOLITION WORK, AND 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 (80%) 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 WIRE/ MOLD/ 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. WATER SYSTEMS START-UP: FILL SYSTEM AND THOROUGHLY FLUSH ALL SEDIMENT, DIRT, PARTICLES, AND ANY OTHER MATERIAL FROM THE SYSTEM. REMOVE ALL AIR FROM THE SYSTEM. THIS WILL REQUIRE SEVERAL BLEEDING SEQUENCES. PROVIDE AIR VENTS AS REQUIRED. CLEAN ALL STRAINERS AFTER A THOROUGH FLUSHING. PROVIDE CHEMICAL TREATMENTS FOR THE FIRST YEAR OF OPERATION INCLUDING ALL NECESSARY TASKS, CHEMICALS, ADDITIVES, AND SERVICE VISITS.

25. THE CONTRACTOR IS TO PROVIDE RADIANT CEILING DAMPERS IN ALL CEILING AIR DEVICES, (DIFFUSERS, GRILLES, REGISTERS, ETC.) AND RECESSED CEILING EXHAUST FANS LOCATED IN A FIRE-RATED CEILING ASSEMBLY. REFER TO ATTACHED DETAILS.

26. THE CONTRACTOR IS TO BE RESPONSIBLE FOR PROVIDING AUXILIARY DEHUMIDIFICATION UNITS IN EACH DWELLING UNIT AND THROUGHOUT THE BUILDING AFTER THE BUILDING IS ENCLOSED, DRYWALL, AND PAINTING IS FINISHED. THE DEHUMIDIFICATION UNITS ARE TO REMAIN IN OPERATION UNTIL UNIT TURN-OVER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DISCHARGE ALL CONDENSATE AND PROVIDE MEANS FOR POWER.

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

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

DRAWING SYMBOLS LIST

A-A

A-A

CROSS-SECTION

X

Y

EQUIPMENT DESIGNATION

X

Y

EQUIPMENT NUMBER

X

Y

EQUIPMENT/RISER DESIGNATION

X

Y

EQUIPMENT/RISER NUMBER

X

X

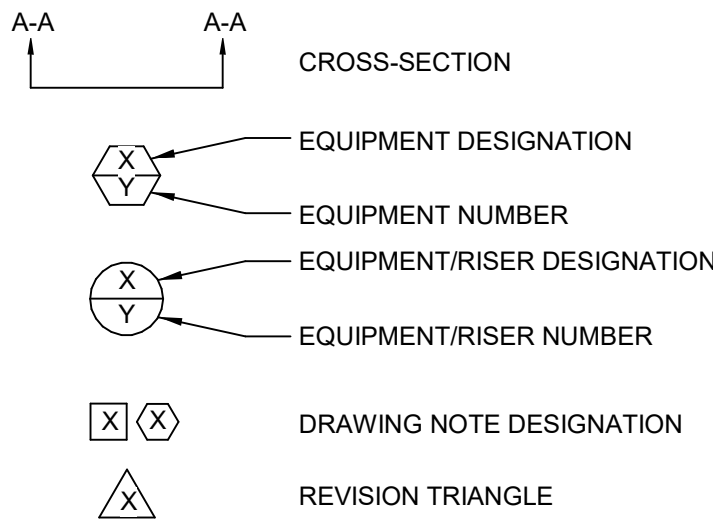
DRAWING NOTE DESIGNATION

△

REVISION TRIANGLE

DESIGN NOTES

DRAWING SYMBOLS LIST



DESIGN NOTES

- 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.
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NOTICE

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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. ANY 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.

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215-641-1158

2023-141

Project:

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Aston, PA 19014

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Revision/Issue:

0 03/29/24 Issued
1 04/17/24 Revisions

Sheet Title:

COVER SHEET- MECHANICAL

Sheet Number:

M-001



REFRIGERANT PIPING GENERAL NOTES:

- ALL SPLIT SYSTEM COOLING UNITS AND HEAT PUMPS WILL REQUIRE STRICT ADHERENCE TO MANUFACTURER'S DATA SHEETS FOR LONG LINESET INSTALLATION.
- CONTRACTOR MUST SUBMIT CALCULATED LINESET LENGTH, ELEVATION, SIZE, AND REFRIGERANT CHARGE VOLUME FOR EACH SYSTEM OR ENGINEER APPROVAL WILL NOT BE GRANTED. PROVIDE DOCUMENTATION THAT EACH SYSTEM WILL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES. SYSTEM DE-RATING, DROP IN PERFORMANCE/CAPACITY, OR LOSS OF EFFICIENCY SHALL NOT BE ACCEPTABLE. PROVIDE WARRANTY FROM MANUFACTURER AS WELL AS ON INSTALLATION.
- ALL LINESETS MUST BE EXTENDED AS STRAIGHT AND DIRECT AS POSSIBLE WITH THE MINIMAL AMOUNT OF ELBOWS POSSIBLE.
- INSTALL OVERSIZED PIPING, ADDITIONAL INSULATION, CRANKCASE HEATERS, HARD START KITS, OIL TRAPS, SUCTION RISERS, THERMAL EXPANSION VALVES, LIQUID LINE SOLENOIDS, AND ADDITIONAL CHARGE WHEREVER REQUIRED.
- CONTRACTOR MUST PROVIDE FACTORY START-UP AND VERIFICATION FOR EVERY SYSTEM INSTALLED.
- EXPOSED REFRIGERANT PIPING, POWER AND CONTROL WIRING EXTENDING FROM THE BUILDING TO THE REMOTE CONDENSING UNITS SHALL BE PROTECTED AND INSULATED WITH SPLIT TYPE INSULATION WITH PVC JACKET AND CEMENTED JOINTS FOR PIPING LARGER THEN 7/8" TUBE WITH 1" INSULATION. ALL PIPING SMALLER SHALL HAVE A JACKETING SYSTEMS BASED ON AIREX E-FLEX GUARD.
- WALL/DOORHOUSE PIPING PENETRATION TO BE SEALED TIGHT AND INSTALLED WITH AIREX PENETRATION KIT. REFER TO DETAIL FOR ADDITIONAL INFORMATION.

MECHANICAL DUCTWORK NOTE:

DUCTWORK DRAWINGS/LAYOUT IS DIAGRAMMATIC. ALL DUCTWORK INSTALLATIONS AND SHEETMETAL SHOP DRAWINGS SHALL BE IN ACCORDANCE WITH MCHUGH ENGINEERING ASSOCIATES DUCTWORK DETAILS AND PER SMACNA STANDARDS.

SECURITY GRILLES

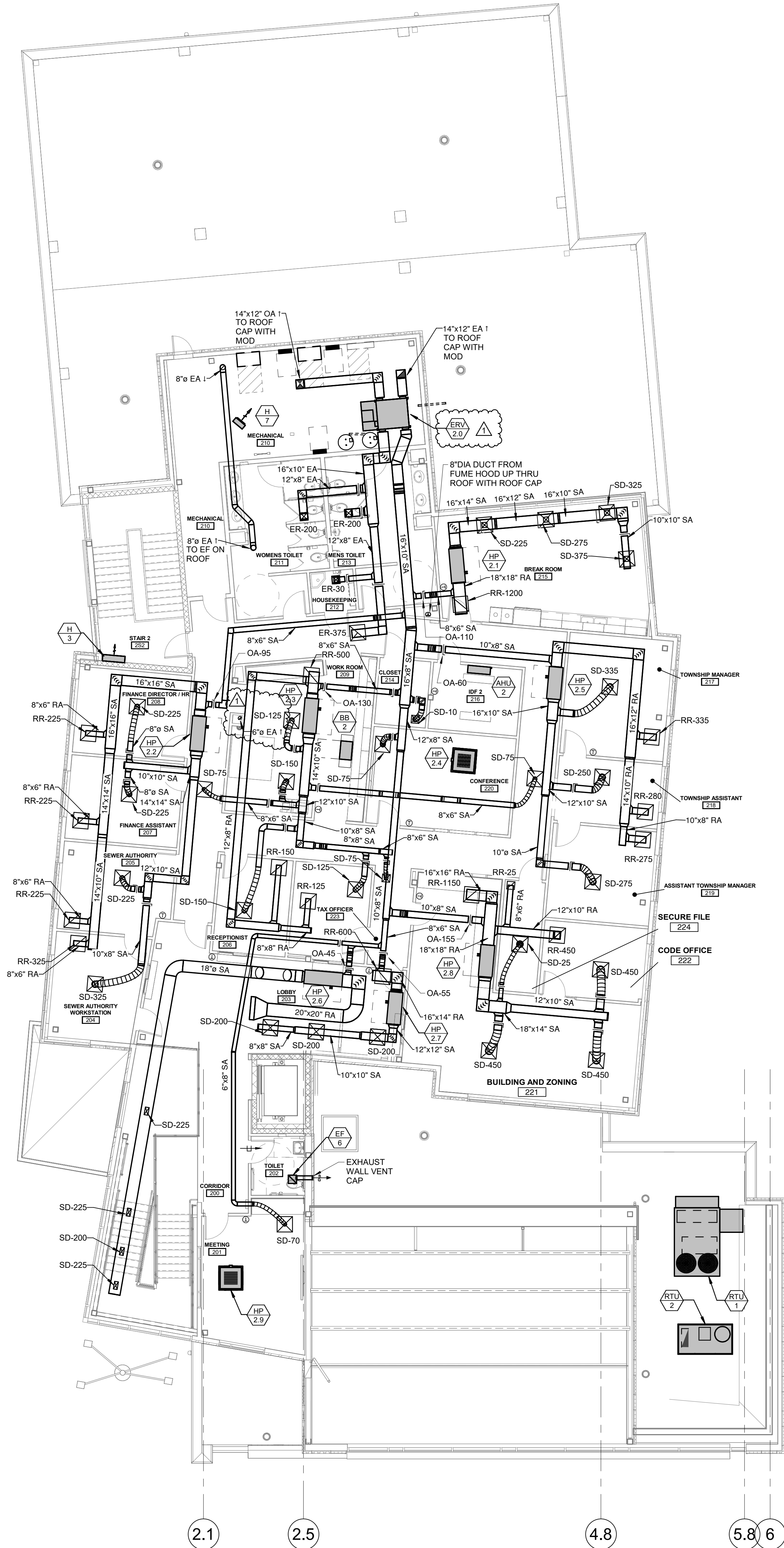
- PROVIDE MEDIUM TO MINIMUM SECURITY AIR DEVICES IN ARMORY 107, GUN STORAGE 132, DETENTION 211.
- PROVIDE MINIMUM SECURITY AIR DEVICES IN EVIDENCE RECORDING 130 AND PROPERTY ROOM 131.

NOTICE

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FIRST FLOOR PLAN - MECHANICAL
1/8" = 1'-0"



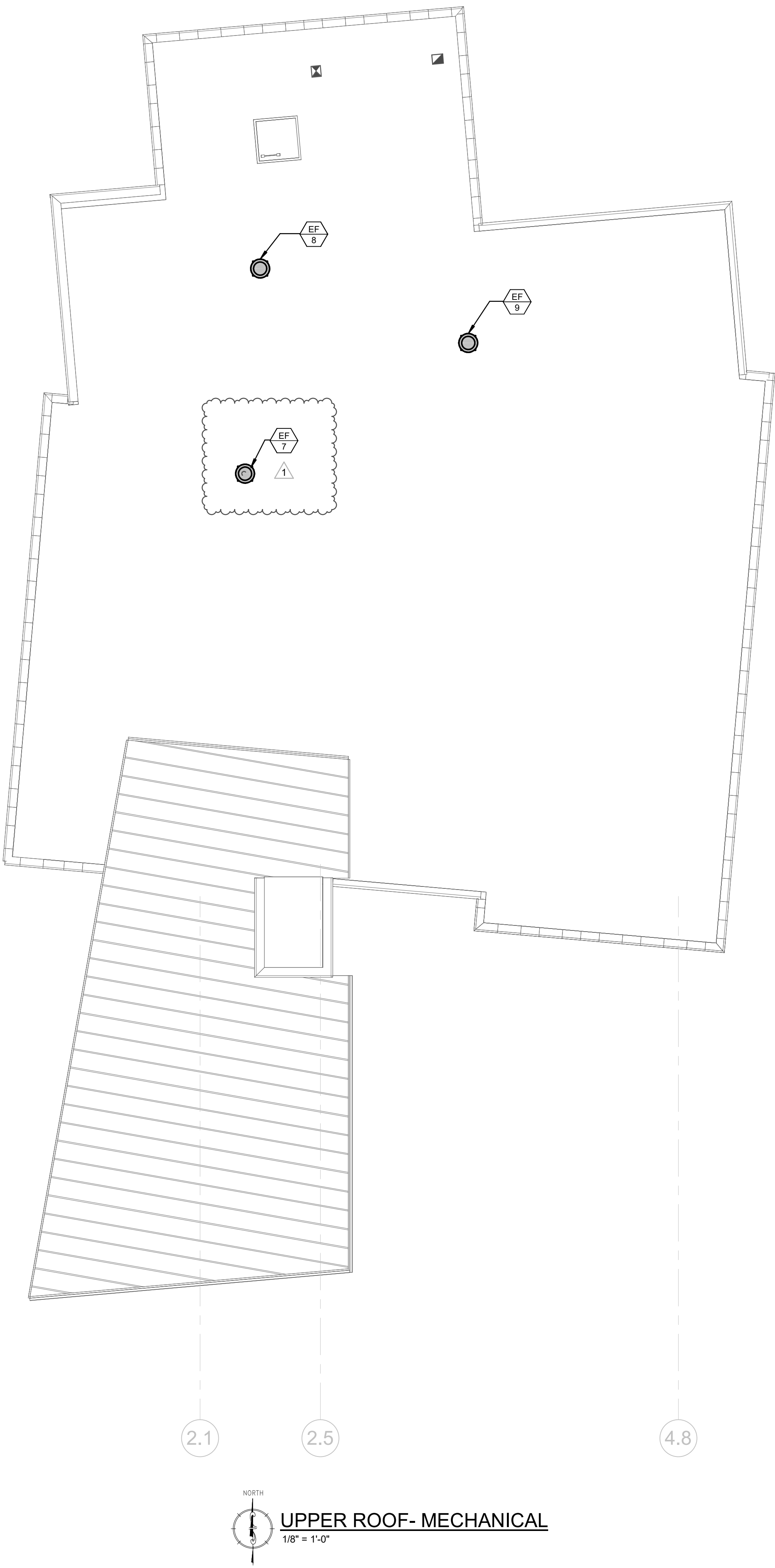
SECOND FLOOR PLAN - MECHANICAL
1/8" = 1'-0"

- SECURITY GRILLES**
1. PROVIDE MEDIUM TO MINIMUM SECURITY AIR DEVICES IN ARMORY 107, GUN STORAGE 132, DETENTION 211.
 2. PROVIDE MINIMUM SECURITY AIR DEVICES IN RECORDING 130 AND PROPERTY ROOM 131.

NOTICE
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MECHANICAL DUCTWORK NOTE:
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- REFRIGERANT PIPING GENERAL NOTES:**
1. ALL SPLIT SYSTEM COOLING UNITS AND HEAT PUMPS WILL REQUIRE STRICT ADHERENCE TO MANUFACTURER'S DATA SHEETS FOR LONG LINESET INSTALLATION.
 2. CONTRACTOR MUST SUBMIT CALCULATED LINESET LENGTH, ELEVATION, SIZE, AND REFRIGERANT CHARGE VOLUME FOR EACH SYSTEM OR ENGINEER APPROVAL WILL NOT BE GRANTED. PROVIDE DOCUMENTATION THAT EACH SYSTEM WILL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES. SYSTEM DE-RATING, DROP IN PERFORMANCE/CAPACITY, OR LOSS OF EFFICIENCY SHALL NOT BE ACCEPTABLE. PROVIDE WARRANTY FROM MANUFACTURER AS WELL AS ON INSTALLATION.
 3. ALL LINESETS MUST BE EXTENDED AS STRAIGHT AND DIRECT AS POSSIBLE WITH THE MINIMAL AMOUNT OF ELBOWS POSSIBLE.
 4. INSTALL OVERSIZED PIPING, ADDITIONAL INSULATION, CRANKCASE HEATERS, HARD START KITS, OIL TRAPS, SUCTION RISERS, THERMAL EXPANSION VALVES, LIQUID LINE SOLENOIDS, AND ADDITIONAL CHARGE WHEREVER REQUIRED.
 5. CONTRACTOR MUST PROVIDE FACTORY START-UP AND VERIFICATION FOR EVERY SYSTEM INSTALLED.
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 7. WALL/DGHOUSE PIPING PENETRATION TO BE SEALED TIGHT AND INSTALLED WITH AIREX PENETRATION KIT. REFER TO DETAIL FOR ADDITIONAL INFORMATION.



NOTICE
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. ANY USE OF THIS INFORMATION WITHOUT THE WRITTEN APPROVAL OF 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.

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ROOF PLAN- MECHANICAL

Sheet Number:
M-105

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ROOFTOP UNIT SCHEDULE (RTU)																																	
TAG	SERVES	CONFIGURATION	NOMINAL TONS	CFM	RETURN AIR CFM	MAX OUTSIDE AIR CFM	FAN EXT S.P.	FAN RPM	WEIGHT (LB)	COOLING								REHEAT				ELECTRIC HEAT				ELECTRICAL					BASIS OF DESIGN	COMMENTS	
										TOTAL MBH	SENSIBLE MBH	OUTSIDE AIR (°F) dB	wB	RET AIR (°F) dB	wB	LEAVING AIR (°F) dB	wB	IEER(I) EER(E)	DISCHARGE (°F) dB	wB	MBH	MOISTURE REMOVAL (LBS/HR)	MBH	KW	TEMP RISE (°F)	LVG AIR (°F)	HP	VOLT	PHASE	MCA			MOCP
1	COMMISSIONERS RM.	PACKAGED ROOFTOP	12.50	5000	4245	755	1.0	2158	2000	148.4	111.1	95.0	78.0	80.0	67.0	58.5	57.2	20.0I	78.2	64.8	36.4	25.7	115.4	45.0	35.6	105.6	3.75	208	3	129	150	LENNOX LCM150U4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
2	CAUCUS RM.	PACKAGED ROOFTOP	3.00	1200	1015	185	1.0	2055	1200	35.8	29.0	95.0	78.0	80.0	67.0	58.1	57.8	15.0E	79.0	64.8	8.6	7.1	19.2	7.5	24.6	94.6	1.5	208	3	26	30	LENNOX LCM036U4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
COMMENTS:																																	
1. MANUFACTURED BY LENNOX, CAUTION ALTERNATE EQUIPMENT CONFIGURATION, WEIGHT, AND SIZE...										2. DIRECT DRIVE PLENUM BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE										3. INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL OR STAGED SCROLL NOT AN APPROVED EQUAL													
4. REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE										5. EC MOTOR CONDENSING FANS										6. FULLY MODULATING HOT GAS REHEAT													
7. SUCTION LINE ACCUMULATOR										8. FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY										9. AVERAGING INTAKE, EVAP AND DISCHARGE TEMP. SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT)													
10. 2" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-13 INSULATION-MINIMUM 20GA EXTERIOR W/ 14GA BASE										11. ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL										12. BAROMETRIC RELIEF DAMPER, MOTORIZED OUTSIDE AIR DAMPER													
13. DOWN DISCHARGE/DOWN RETURN										14. BURGULAR BARS (SA AND RA)										15. COMFORTSENSE 7500 COMMERCIAL 7 DAY PROGRAMMABLE THERMOSTAT WITH AUTO...													

DUCTLESS SPLIT SYSTEM AIR HANDLING UNIT SCHEDULE (AHU/AC)																										
AHU TAG	CONFIGURATION	SERVES	NOM TONS	CFM	EXT S.P. (IN.WG)	COOLING (AHU)			INDOOR UNIT (AHU)					OUTDOOR UNIT (AC)					EFFICIENCY		FILTERS		BASIS OF DESIGN		COMMENTS	
						TOTAL MBH	SENS. MBH	dB	VOLTS	PHASE	MCA	MOCP	WEIGHT (LBS)	HEIGHT (IN)	VOLTS	PHASE	MCA	MOCP	WEIGHT (LBS)	HEIGHT (IN)	SEER2(S2) SEER(S)	EER2(E2) EER(E)	TYPE	MANUF.		MODEL
1	WALL MOUNTED DUCTLESS	SERVER/MOBILE 105	3.0	810	NA	36.0	25.2	46.0	(10)	(10)	(10)	(10)	46	14.5	208	1	25.0	31	225	53	19.4 S2	10.8 E2	WASHABLE	TRANE	INDOOR: TPKA0A036 OUTDOOR: TRUYA036	1, 2, 3, 4, 5, 6, 8, 9, 10
2	WALL MOUNTED DUCTLESS	SERVER 216	2.0	705	NA	24.0	18.5	42.0	(10)	(10)	(10)	(10)	46	14.5	208	1	19	26	175	38	21.4 S	12.2 E	WASHABLE	TRANE	INDOOR: TPKA0A0241 OUTDOOR: TRUYA0241	1, 2, 3, 4, 5, 6, 8, 9, 10
NOTE: EQUIPMENT SELLING AGENT/DISTRIBUTOR SHALL HAVE A SERVICE AGENCY THAT IS PART OF THE COMPANY AND COVERS START-UP AND WARRANTY...																										
<u>COMMENTS:</u>																										
1. SINGLE POINT POWER CONNECTION																										
2. DISCONNECT SWITCH																										
3. WALL MOUNTED PROGRAMMABLE 24HR/7 DAY THERMOSTAT. THERMOSTAT SHALL BE WITH UPPER AND LOWER LIMITS THAT ARE PASSWORD PROTECTED. SET UPPER LIMIT TO 78°F IN HEATING AND SET LOWER LIMIT TO 73°F IN COOLING. HARD WIRED WITH DIGITAL OUTPUT.																										
4. EXTEND ALL REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS REGARDING LENGTH, TRAPS, INSULATION, ELEVATION DISTANCE, SIZING, CHARGE, ETC.																										
5. EQUIVALENT BY MITSUBISHI, DAIKIN, LG. MUST MEET ENERGY STAR AND HERS MINIMUM ENERGY...																										
6. PROVIDE VIBRATION ISOLATION ON OUTDOOR UNIT																										
7. x																										
8. LOW AMBIENT KIT																										
9. CONDENSATE PIPING - FURNISH AND INSTALL INTEGRAL CONENSATE LIFT DEVICE POWERED BY UNIT (SAUERMAN/BLUE DIAMOND). IT IS PROHIBITED TO MOUNT CONDENSATE PUMP BELOW UNIT OR BELOW ADA CLEARANCE REQUIREMENT.																										
10. INDOOR UNIT POWERED FROM OUTDOOR UNIT																										

AIR DEVICE SCHEDULE																
TAG	MIN CFM	MAX CFM	TYPE	NECK DIAMETER	CONNECTION SIZE	DEVICE SIZE (LxW)	MAX DEPTH FROM CEILING	TOTAL STATIC PRESSURE (IN. W.C.)	NC	VEL FPM	DAMPER	MATERIAL	FINISH	MANUFACTURER	SERIES	
SD	0	70	SQUARE DIFFUSER STAMPED CONE	4"	6"	12" x 12"	3/8"	0.08	18	800	YES	STEEL	WHITE	TITUS / PRICE	TMS / SMD	
SD	71	105	SQUARE DIFFUSER STAMPED CONE	5"	7"	12" x 12"	3/8"	0.07	21	800	YES	STEEL	WHITE	TITUS / PRICE	TMS / SMD	
SD	106	160	SQUARE DIFFUSER STAMPED CONE	6"	8"	12" x 12"	3/8"	0.07	26	800	YES	STEEL	WHITE	TITUS / PRICE	TMS / SMD	
SD	161	190	SQUARE DIFFUSER STAMPED CONE	7"	10"	12" x 12"	3/8"	0.06	25	700	YES	STEEL	WHITE	TITUS / PRICE	TMS / SMD	
SD	191	280	SQUARE DIFFUSER STAMPED CONE	8"	10"	24" x 24"	3/8"	0.07	21	800	YES	STEEL	WHITE	TITUS / PRICE	TMS / SMD	
SD	281	435	SQUARE DIFFUSER STAMPED CONE	10"	12"	24" x 24"	3/8"	0.07	25	800	YES	STEEL	WHITE	TITUS / PRICE	TMS / SMD	
SD	436	630	SQUARE DIFFUSER STAMPED CONE	12"	14"	24" x 24"	3/8"	0.08	29	800	YES	STEEL	WHITE	TITUS / PRICE	TMS / SMD	
SD	0	61	SQUARE DIFFUSER PLAQUE STYLE	4"	6"	12" x 12"	1/4"	0.1	21	700	YES	STEEL	WHITE	TITUS / PRICE	OMNI / SPD	
SD	61	175	SQUARE DIFFUSER PLAQUE STYLE	8"	10"	12" x 12"	1/4"	0.1	21	500	YES	STEEL	WHITE	TITUS / PRICE	OMNI / SPD	
SD	176	280	SQUARE DIFFUSER PLAQUE STYLE	8"	10"	24" x 24"	1/4"	0.072	17	800	YES	STEEL	WHITE	TITUS / PRICE	OMNI / SPD	
SD	281	380	SQUARE DIFFUSER PLAQUE STYLE	10"	12"	24" x 24"	1/4"	0.08	15	700	YES	STEEL	WHITE	TITUS / PRICE	OMNI / SPD	
SD	381	550	SQUARE DIFFUSER PLAQUE STYLE	12"	14"	24" x 24"	1/4"	0.12	18	700	YES	STEEL	WHITE	TITUS / PRICE	OMNI / SPD	
SD	551	640	SQUARE DIFFUSER PLAQUE STYLE	14"	16"	24" x 24"	1/4"	0.12	14	600	YES	STEEL	WHITE	TITUS / PRICE	OMNI / SPD	
SD	641	735	SQUARE DIFFUSER PLAQUE STYLE	15"	16"	24" x 24"	1/4"	0.13	26	600	YES	STEEL	WHITE	TITUS / PRICE	OMNI / SPD	
SR	0	150	SUPPLY REGISTER	-	10"x5"	8"x6"	1/4"	0.06	11	580	YES	STEEL	WHITE	TITUS / PRICE	300 / 301; 520 / 510	
SR	151	300	SUPPLY REGISTER	-	14"x6"	10"x8"	1/4"	0.075	15	650	YES	STEEL	WHITE	TITUS / PRICE	300 / 301; 520 / 510	
SR	301	600	SUPPLY REGISTER	-	18"x8"	12"x12"	1/4"	0.075	20	670	YES	STEEL	WHITE	TITUS / PRICE	300 / 301; 520 / 510	
SR	601	900	SUPPLY REGISTER	-	22"x10"	18"x12"	1/4"	0.08	22	670	YES	STEEL	WHITE	TITUS / PRICE	300 / 301; 520 / 510	
SR	901	1400	SUPPLY REGISTER	-	36"x10"	18"x18"	1/4"	0.08	22	670	YES	STEEL	WHITE	TITUS / PRICE	300 / 301; 520 / 510	
ER	0	100	EXH / RET REG / GRILLE	-	8"x6"	10"x5"	1/4"	0.1	25	400	YES	STEEL	WHITE	TITUS / PRICE	350 / 530	
ER	101	185	EXH / RET REG / GRILLE	-	10"x8"	14"x6"	1/4"	0.1	27	400	YES	STEEL	WHITE	TITUS / PRICE	350 / 530	
ER	186	270	EXH / RET REG / GRILLE	-	12"x12"	18"x8"	1/4"	0.06	24	300	YES	STEEL	WHITE	TITUS / PRICE	350 / 530	
ER	271	400	EXH / RET REG / GRILLE	-	12"x18"	22"x10"	1/4"	0.06	25	300	YES	STEEL	WHITE	TITUS / PRICE	350 / 530	
ER	401	625	EXH / RET REG / GRILLE	-	18"x18"	36"x10"	1/4"	0.06	27	300	YES	STEEL	WHITE	TITUS / PRICE	350 / 530	
R	0	400	PERFORATED	12"	12"	24"x24"	FLUSH	0.16	22	500	NO	STEEL	WHITE	TITUS / PRICE	PAR / PDDR	
R	401	700	PERFORATED	16"	16"	24"x24"	FLUSH	0.16	24	500	NO	STEEL	WHITE	TITUS / PRICE	PAR / PDDR	
RN	0	400	PERFORATED	12"	12"	24"x24"	FLUSH	0.16	22	500	NO	STEEL	WHITE	TITUS / PRICE	PXP / PFRF	
RN	401	700	PERFORATED	16"	16"	24"x24"	FLUSH	0.16	24	500	NO	STEEL	WHITE	TITUS / PRICE	PXP / PFRF	
<u>COMMENTS:</u>																
1. USE SCHEDULE SIZE UNLESS OTHERWISE NOTED.																
2. USE ALTERNATE SIZE WHEN APPROVED BY ENGINEER.																
3. PROVIDE VOLUME DAMPER AT TRUNK DUCT CONNECTION.																
4. ALL SUPPLY REGISTERS TO BE DOUBLE DEFLECTION TYPE.																
5. ALUMINUM DEVICES ARE TO BE PROVIDED IN MOIST AREAS, I.E. TOILET ROOMS.																
6. FOR LAY-IN CEILING PROVIDE A 2x2 PAN FOR A 12"x12" FACE SIZE DIFFUSERS.																
7. BRANCH DUCT DIAMETER SHALL BE REDUCED AT COLLAR CONNECTIONS TO DIFFUSER.																
8. EACH AIR DEVICE SHALL HAVE A MOUNTING FLANGE SPECIFICALLY SELECTED FOR THE PARTICULAR TYPE OF CEILING FINISH.																

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VRF HEAT RECOVERY BRANCH BOX SCHEDULE (BB)													
TAG	AREA	NUMBER OF PORTS	MAX PORT CAPACITY (MBH)	MAX UNIT CAPACITY (MBH)	ELECTRICAL				WEIGHT (LB)	H x L x W (IN)	BASIS OF DESIGN	MODEL	COMMENTS
					VOLT	PHASE	AMPS	MOCP					
1	1st FLR.	12	54	336	208	1	1.2	20	133	9"x44x21"	TRANE	TCMBM1012	1, 2, 3, 4, 5
2	2nd FLR.	12	54	336	208	1	1.2	20	133	9"x44x21"	TRANE	TCMBM1012	1, 2, 3, 4, 5
COMMENTS:													
1. ELECTRICAL DISCONNECT SWITCH BY E.C.					4. SHUT-OFF VALVES ON ALL PORTS.								
2. MANUFACTURER'S START-UP AND 1 YEAR MANUFACTURER...					5. PROVIDE ACCESS PANEL FOR UNITS INSTALLED ABOVE UNACCESSIBLE CEILINGS.								
3. VIBRATION ISOLATION HANGERS.													

ELECTRIC UNIT HEATER SCHEDULE (H)												
TAG	AREA SERVED	CONFIGURATION	BTUH	KW	CFM	LNPTH X WPTH X HGHT (IN)	ELECTRICAL		CONTROL	BASIS OF DESIGN	MODEL	COMMENTS
							VOLTS	PHASE				
1	VESTIBULE 100	PEDESTAL	5121	1.5	NA	72"x3"x6"	208	1	WALL MNT'D THERMOSTAT	BERKO	CPLAM6	1, 3, 5, 6, 7, 9, 10
2	VESTIBULE 100	PEDESTAL	5121	1.5	NA	72"x3"x6"	208	1	SEE # 1 ABOVE	BERKO	CPLAM6	1, 3, 5, 6, 7, 9, 10
3	STAIR 01	CABINET UNIT HEATER	13656	4.0	250	24"x36"x10"	208	3	INTEGRAL THERMOSTAT	INDEECO	CUI922U04	1, 3, 5, 6, 9
4	SALLYPORT 113	UNIT HEATER	25605	7.5	270	4"x14"x18"	208	3	WALL MNT'D THERMOSTAT	BERKO	HUH724SA	1, 2, 3, 4, 5, 6, 7, 8, 9
5	VESTIBULE ADJ SERGEANTS	WALL MOUNTED, FAN FORCED	13656	4.0	100	4"x14"x18"	208	1	INTEGRAL THERMOSTAT	BERKO	SSH04008	1, 2, 3, 4, 5, 6, 8
6	WATER/SPRINKLER 156	UNIT HEATER	10659	3.1	270	4"x14"x18"	208	1	WALL MNT'D THERMOSTAT	BERKO	HUH524TA	1, 2, 3, 4, 5, 6, 7, 8, 9
7	MECHANICAL 210	UNIT HEATER	17070	5.0	270	4"x14"x18"	208	3	WALL MNT'D THERMOSTAT	BERKO	HUH520SA	1, 2, 3, 4, 5, 6, 7, 8, 9
COMMENTS:												
1. EQUIVALENT MANUFACTURERS: MARKEL, QMARK OR PRIOR APPROVED EQUAL.						2. SUMMER / WINTER SWITCH.						
3. THERMOSTAT SHALL BE TAMPERPROOF.						4. MOUNTING BRACKETS AND HARDWARE.						
5. INTEGRAL DISCONNECT. AND THERMAL CUTOUT						6. FINISH AND COLOR TO BE SELECTED BY ARCHITECT AND OWNER.						
7. EXTRUDED ALUMINUM HOUSING AND GRILLES						8. FULLY RECESSED IN WALL						
9. LINE VOLTAGE THERMOSTAT SHALL BE ALLOWED BUT ALL WIRING SHALL STILL BE INSTALLED (OR SUBBED) BY THE M.C.						10. EXTRUDED ALUMINUM HOUSING AND GRILLES						

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF INDOOR UNIT SCHEDULE																
Tag Reference	Room Name	Peak Fan Airflow (cfm)	M-NET Address	Type	Capacity			Estimated Cooling Coil LAT (°F)	Estimated Heating Coil LAT (°F)	Max Fan ESP Setting 208V/230V (IN WG)	Sound Pressure Per Fan Speed (dBA)	Electrical			Model	Notes / Options
					Cooling Total Capacity (BTU/h)	Cooling Sensible Capacity (BTU/h)	Heating Capacity (BTU/h)					Voltage / Phase	MCA	MOCP		
1.1	Break	585	9	Multi-Position Air Handler	18,345	13,660	20,442	58.1	98.0	0.8	28-32-36	208V/1Ph	3.00	15	PVFY-P18NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
1.2	Detention	400	8	Multi-Position Air Handler	12,128	9,556	13,680	57.5	99.1	0.8	27-31-35	208V/1Ph	3.00	15	PVFY-P12NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
1.3	Central_Toilet	585	4	Multi-Position Air Handler	18,268	13,646	20,333	58.1	98.9	0.8	28-32-36	208V/1Ph	3.00	15	PVFY-P18NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
1.4	SE Patrol Sergeant	1095	2	Multi-Position Air Handler	36,229	25,964	40,294	57.6	102.6	0.8	35-39-43	208V/1Ph	4.13	15	PVFY-P36NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
1.5	corridor_Prop.	585	7	Multi-Position Air Handler	18,114	13,676	20,191	57.9	100.1	0.8	28-32-36	208V/1Ph	3.00	15	PVFY-P18NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
1.6	SE Det	585	3	Multi-Position Air Handler	18,268	13,646	20,300	58.1	99.2	0.8	28-32-36	208V/1Ph	3.00	15	PVFY-P18NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
1.7	NW_Admin	1400	1	Multi-Position Air Handler	48,110	33,919	54,219	57.1	105.0	0.8	35-39-43	208V/1Ph	5.63	15	PVFY-P48NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
1.8	Serg Chief	585	6	Multi-Position Air Handler	18,114	13,676	20,169	57.9	100.3	0.8	28-32-36	208V/1Ph	3.00	15	PVFY-P18NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
1.9	Conf	390	5	Multi-Position Air Handler	12,128	9,556	13,680	57.5	99.1	0.8	27-31-35	208V/1Ph	3.00	15	PVFY-P12NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
2.1	Break	1095	1	Multi-Position Air Handler	36,383	25,891	36,301	57.7	98.7	0.8	35-39-43	208V/1Ph	4.13	15	PVFY-P36NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
2.2	NW Sewer	875	4	Multi-Position Air Handler	30,191	21,801	30,756	56.5	101.2	0.8	32-36-40	208V/1Ph	4.13	15	PVFY-P30NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
2.3	Int Corr_Work	1095	8	Multi-Position Air Handler	36,075	26,036	36,085	57.5	99.7	0.8	35-39-43	208V/1Ph	4.13	15	PVFY-P36NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
2.4	Conf	328	2	Ceiling Cassette (One-Way)	12,128	7,882	12,278	57.3	102.2	-	32-34-36-37	208V/1Ph	0.26	15	PMFY-P12NBMU-...	1,2,4,5,6,7,8,9,10,11,12,13
2.5	SE Off_Manage	875	6	Multi-Position Air Handler	30,191	21,801	30,722	56.5	101.4	0.8	32-36-40	208V/1Ph	4.13	15	PVFY-P30NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
2.6	Stair	875	9	Multi-Position Air Handler	30,063	21,864	30,528	56.4	102.3	0.8	32-36-40	208V/1Ph	4.13	15	PVFY-P30NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
2.7	Lobby	585	5	Multi-Position Air Handler	18,191	13,632	18,219	58.0	96.1	0.8	28-32-36	208V/1Ph	3.00	15	PVFY-P18NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
2.8	Build Zone	1400	7	Multi-Position Air Handler	48,100	33,919	48,662	57.1	101.6	0.8	35-39-43	208V/1Ph	5.63	15	PVFY-P48NAMU-E1	1,2,3,4,5,6,7,8,9,10,11,12,13
2.9	Mtg	460	3	Ceiling-Cassette (Four-Way)	18,191	11,872	18,151	55.6	104.5	-	33-39-43	208V/1Ph	0.50	15	PLFY-P18NFMU-E	1,2,4,5,6,7,8,9,10,11,12,13

- Notes & Options:
1 Manufactured by Mitsubishi, Equivalent by Daikin, LG or prior approved equal.
4 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)
7 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)
10 See outdoor unit schedule for outdoor data, and other factors associated with corrected capacities
13 Integral condensate lift pump - powered from associated indoor unit (refer to plans)
- 2 Full design package must be submitted for approval
5 5 year compressor warranty
8 Manufacturers start-up and 1 year manufacturer warranty
11 Direct drive fan motor
- 3 Merv 11 filter rack for ducted units
6 Disconnect switch by Electrical Contractor
9 Insulated refrigerant lines, Manufacturer to confirm all sizes.
12 Vibration isolation hangers

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF OUTDOOR UNIT SCHEDULE																	
System Tag	Tag Reference	Modules	Nominal Cooling Capacity...	Nominal Heating Capacity...	Cooling Efficiency (I)EER [SEER]	Heating COP @ 47°F [HSPF]	Design Cooling Outdoor Temp DB (°F)	Design Heating Outdoor Temp WB (°F)	Max Pipe Length from BC or 1st...	Corrected Cooling Total Capacity (BTU/h)	Corrected Heating Capacity...	Voltage /...	MCA	RFS	MOCP	Model Number	Notes / Options
1.0	1st floor	HP120, HP120	240,000	270,000	19.6 / 9.85	3.460	93.0	9.0	119.2	237,017.1	261,185.7	208V / 3	66 (2)	70 (2)	110 (2)	PURY-HP240TSNU-A1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
2.0	2nd floor	HP120, HP120	240,000	270,000	19.6 / 9.85	3.460	93.0	9.0	101.5	226,116.8	261,702.2	208V / 3	66 (2)	70 (2)	110 (2)	PURY-HP240TSNU-A1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

- Notes & Options:
1 Manufactured by Mitsubishi, Equivalent by Daikin, LG or prior approved equal.
3 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)
5 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)
7 Efficiency values for EER, IEER, COP are based on AHRI 1230 test method for mixture of ducted & non-ducted indoor units.
9 Disconnect switch by Electrical Contractor
11 Unit must provide full capacity heating down to 5 deg. F
- 2 For systems with multiple modules, refrigerant pipe dimensions indicate total system combined piping downstream of module twinning.
4 Added field charge listed is in addition to factory charge, this must be updated based upon final as-built piping layout.
6 Full design package must be submitted for approval
8 5 year compressor warranty
10 Manufacturers start-up and 1 year manufacturer warranty

EXHAUST FAN SCHEDULE (EF)															
TAG	AREA SERVED	TYPE	DRIVE	AIRFLOW (CFM)	EXT. STATIC PRESSURE (IN. W.C.)	SOUND RATING (SONES)	RPM	TIP Spd. FPM	Watts (W)/HP	Volts	Phase	Max. Height	BASIS OF DESIGN	MODEL	COMMENTS
EF-1	TOILET RM. 158	CEILING	DIRECT	98	0.125	<.03	870	NA	17 W	120	1	12"	GREENHECK	SP-A90	1, 2, 3, 4, 5, 6
EF-2	TOILET RM. 150	CEILING	DIRECT	98	0.125	<.03	870	NA	17 W	120	1	12"	GREENHECK	SP-A90	1, 2, 3, 4, 5, 6
EF-3	TOILET RM. 151	CEILING	DIRECT	98	0.125	<.03	870	NA	17 W	120	1	12"	GREENHECK	SP-A90	1, 2, 3, 4, 5, 6
EF-4	TOILET RM. 112	CEILING	DIRECT	155	0.125	2.5	1050	NA	128 W	120	1	12"	GREENHECK	SP-B150	1, 2, 3, 4, 6, 14
EF-5	SALLYPORT	WALL	DIRECT	350	0.25	7.5	1350		120 W	120	1	18"	GREENHECK	S1-12-436-G	7, 8, 9, 10, 16
EF-6	TOILET RM. 202	CEILING	DIRECT	98	0.125	<.03	870	NA	17 W	120	1	12"	GREENHECK	SP-A90	1, 2, 3, 4, 5, 6
EF-7	PROPERTY 131, CABINETS	ROOFTOP	DIRECT	100 (11)	0.50	4.7	1140	3339	1/4 HP	120	1	24"	GREENHECK	G097	8, 10, 13, 14, 15, 18
EF-8	GUN CLEAN RM. 108	ROOFTOP	DIRECT	350	0.625	6.9	1315	3852	1/4 HP	120	1	24"	GREENHECK	G098	8, 10, 13, 14, 15, 17
EF-9	FUME HOOD, 130	ROOFTOP	DIRECT	654 (12)	0.625	6.9	1670	4891	1/4 HP	120	1	24"	GREENHECK	G098	8, 10, 12, 13, 15, 17
Comments															
1. Equivalent manufacturer by Carnes, Cook, Acme, Penn Ventilation								2. Backdraft damper							
3. Flexible connection								4. Wall cap with birdscreen							
5. Control with light switch with time delay off.								6. Vibration isolating hanger							
7. Wall sleeve with fan guard, bird screen and burgular bars								8. Motor operated backdraft damper							
9. Motor side guard, 45 deg. Weatherhood								10. Birdscreen							
11. Coordinate air volume with cabinet maufacturer, owner								12. Constant air volume, coord with fume hood							
13. 8" High roof curb								14. Continuous operation.							
15. Manual motor starter								16. Thermostat controlled with occupancy sensor and manual override							
17. Vari-green variable speed								18. Wall switch with variable speed controller							
<div>⚠</div>															

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ENERGY RECOVERY VENTILATOR SCHEDULE (ERV)												
NO.	LOCATION	SUPPLY CFM	EXHAUST CFM	E.S.P	EFFICIENCY	VOLTAGE/ PHASE	MCA/MOCP	WATTS	WEIGHT (LBS)	BASIS OF DESIGN		COMMENTS
										MANUFACTURER	MODEL	
1	1ST FLR, REAR CORRIDOR	1035	1035	1	64% WINTER 52% SUMMER	208/1	10.4/15	850	255	mitsubishi	LGH-F1200	1,2,3,4,5,6,7,8
2	2ND FLR MECHANICAL 210	795	795	1	63% WINTER 50% SUMMER	208/1	10.1/15	440	225	mitsubishi	LGH-F940	1,2,3,4,5,6,7,8
<div>COMMENTS:</div> <div><div>1. SINGLE POINT POWER CONNECTION.</div><div>2. DISCONNECT SWITCH PROVIDED BY THE ELECTRICAL CONTRACTOR.</div><div>3. CONDENSATE DRAIN TO NEAREST INDIRECT WASTE OUTLET</div><div>4. MOTOR OPERATED OUTSIDE AIR AND EXHAUST AIR DAMPER</div><div>5. MERV 14 FILTER.</div><div>6. PROVIDE MOUNTING ACCESSORIES AND HARDWARE.</div><div>7. SUBSTITUTIONS MUST BE APPROVED PRIOR TO INSTALLATION.</div><div>8. SELF-EXTINGUISHING URETHANE FOAM INSULATION</div></div> <div>⚠</div>												

International Mechanical Code 2018 Section 403 Calculations																
						Clg Ez = 1.0...				Based on IMC 2018			Used in "Ventilation ERU" tab.			
VRF IDU	Room #	Room Name	Occupancy Lookup	International Mechanical Code Occupancy Category	Area (S.F.)	Breathing Zone OA Flow - "Vbz"...	Zone Air Distribution Effectiveness - "Ez"	Zone Outdoor Air Flow - "Voz" ...	System Ventilation Efficiency - "Ev"	OA Air Intake Flow - "Vot" ...	OA Air Intake Flow - "Vot" ...	Min. Exhaust Required (CFM/S....	Min. Exhaust Required (CFM)	Design Exhaust Air (CFM)	Design OA Flow (CFM) ~ Vot Rounded	
1.8	122	Chief Room	42	Office Space	206	17	0.8	22	1.0	22	25	0.0	0	0	25	
	120	Sergeant	42	Office Space	176	16	0.8	19	1.0	19	20	0.0	0	0	20	
Total Area =					384					Total O...	45		Total...	0	60	
1.9	124	Conference	35	Conference / Meeting	412	73	0.8	91	1.0	91	95	0.0	0	0	95	
Total Area =					384					Total O...	95		Total...	0	95	
1.7	143	Corridor	49	Corridors	146	9	0.8	11	1.0	11	15	0.0	0	0	15	
	106	Quartermaster	42	Office Space	105	11	0.8	14	1.0	14	15	0.0	0	0	15	
	107	Armory	69	Storage Rooms	182	22	0.8	27	1.0	27	30	0.0	0	0	30	
	108	Weapons cleaning	42	Office Space	125	8	0.8	9	1.0	9	10	0.0	0	80	10	
	103	Admin	42	Office Space	382	38	0.8	47	1.0	47	50	0.0	0	0	50	
	104	Secure Files	69	Storage Rooms	274	33	0.8	41	1.0	41	45	0.0	0	0	45	
	140	Corridor	49	Corridors	407	24	0.8	31	1.0	31	35	0.0	0	150	35	
	144.1	Corridor	49	Corridors	188	11	0.8	14	1.0	14	15	0.0	0	0	15	
Total Area =					1809					Total O...	215		Total...	230	215	
1.6	121	Supply	69	Storage Rooms	30	4	0.8	4	1.0	15	15	0.0	0	0	15	
	119	Storage	69	Storage Rooms	33	4	0.8	5	1.0	5	5	0.0	0	0	5	
	118	Detectives	42	Office Space	456	57	0.8	72	1.0	72	75	0.0	0	0	75	
Total Area =					489					Total O...	95		Total...	0	80	
1.5	102	Vestibule	49	Corridors	67	4	0.8	5	1.0	5	10	0.0	0	0	10	
	126	Compliant Room	42	Office Space	133	23	0.8	29	1.0	29	30	0.0	0	0	30	
	125	Interview Room	42	Office Space	177	21	0.8	26	1.0	26	30	0.0	0	0	30	
	144	Corridor	49	Corridors	439	26	0.8	33	1.0	33	35	0.0	0	0	35	
	131	Property Room	69	Storage Rooms	499	60	0.8	75	1.0	75	75	0.0	0	0	75	
	132	ACT 79 GUN Storage	69	Storage Rooms	81	10	0.8	12	1.0	12	15	0.0	0	0	15	
	130	Evidence Recording	69	Storage Rooms	221	27	0.8	33	1.0	33	35	0.0	0	0	35	
Total Area =					1617					Total O...	230		Total...	0	230	
1.4	115	Sergeants	42	Office Space	348	41	0.8	51	1.0	51	55	0.0	0	0	55	
	117	Patrol Storage	69	Storage Rooms	154	18	0.8	23	1.0	23	25	0.0	0	0	25	
	116	Patrol	42	Office Space	523	56	0.8	70	1.0	70	75	0.0	0	0	75	
Total Area =					1025					Total O...	155		Total...	0	155	
1.1	109	Breakroom	4	Day Room	414	75	0.8	94	1.0	94	95	0.0	0	0	95	
Total Area =					414					Total O...	95		Total...	0	95	
1.2	110	Flex	42	Office Space	304	33	0.8	42	1.0	42	45	0.0	0	0	45	
	111	Detention	42	Office Space	164	15	0.8	19	1.0	19	20	0.0	0	0	20	
	112	Toilet	59	Toilet rooms - public	83	0	0.8	0	1.0	0	0	50 / 70	0	50	0	
Total Area =					551					Total O...	65		Total...	50	65	
1.3	142	Corridors	49	Corridors	491	29	0.8	37	1.0	37	40	0.0	0	0	40	
	127	Toilet Room(M)	59	Toilet rooms - public	593	0	0.8	0	1.0	0	0	50 / 70	200	200	0	
	129	Toilet Room(W)	59	Toilet rooms - public	405	0	0.8	0	1.0	0	0	50 / 70	200	200	0	
Total Area =					1489					Total O...	40		Total...	400	40	
RTU-1	153	Commission Room	35	Conference / Meeting	1540	512	0.8	641	1.0	641	645	0.0	0	0	645	
	152	Corridor	49	Corridors	289	17	0.8	22	1.0	22	25	0.0	0	0	25	
	101	Lobby/ Stairs	41	Main Entry Lobby	653	39	0.8	49	1.0	49	50	0.0	0	0	50	
	111	Chairs	69	Storage Rooms	126	15	0.8	19	1.0	19	20	0.0	0	0	20	
	155	AV Monitor	69	Storage Rooms	67	8	0.8	10	1.0	10	15	0.0	0	0	15	
Total Area =					2675					Total O...	755		Total...	0	755	
2.9	201	Meeting Room	35	Conference / Meeting	242	55	0.8	68	1.0	68	70	0.0	0	0	70	
Total Area =					242					Total O...	70		Total...	0	70	
2.6	200	Corr/ stairs Upper	49	Corridors	543	33	0.8	41	1.0	41	45	0.0	0	0	45	
	Total Area =					785				Total O...	45		Total...	0	115	
2.7	203	Lobby	41	Main Entry Lobby	440	41	0.8	52	1.0	52	55	0.0	0	0	55	
Total Area =					983					Total O...	55		Total...	0	100	
RTU-2	157	Caucus Room	35	Conference / Meeting	570	144	0.8	180	1.0	180	185	0.0	0	0	185	
	Total Area =					570				Total O...	185		Total...	0	185	
	205	Sewer authority	42	Office Space	190	16	0.8	21	1.0	21	25	0.0	0	0	25	
2.2	204	Sewer workstation	42	Office Space	161	20	0.8	25	1.0	25	25	0.0	0	0	25	
	207	Finance Assistant	42	Office Space	173	15	0.8	19	1.0	19	20	0.0	0	0	20	
	208	Finance Director/ HR	42	Office Space	185	16	0.8	20	1.0	20	25	0.0	0	0	25	
Total Area =					709					Total O...	95		Total...	0	95	
2.5	217	Township Manager	42	Office Space	210	18	0.8	22	1.0	22	25	0.0	0	0	25	
	218	Township Assistant	42	Office Space	112	12	0.8	15	1.0	15	15	0.0	0	0	15	
	215	Assistant Township...	42	Office Space	164	15	0.8	19	1.0	19	20	0.0	0	0	20	
Total Area =					486					Total O...	60		Total...	0	60	
2.8	224	Secure Files	69	Storage Rooms	66	8	0.8	10	1.0	10	10	0.0	0	0	10	
	222	Code Office	42	Office Space	129	43	0.8	53	1.0	53	55	0.0	0	0	55	
	216	Building and Zone	42	Office Space	551	68	0.8	85	1.0	85	90	0.0	0	0	90	
Total Area =					680					Total O...	155		Total...	0	145	
2.4	222	Conference	35	Conference / Meeting	282	57	0.8	71	1.0	71	75	0.0	0	0	75	
Total Area =					282					Total O...	75		Total...	0	75	
2.1	212	Breakroom	4	Day Room	416	85	0.8	106	1.0	106	110	0.0	0	0	110	
Total Area =					416					Total O...	110		Total...	0	110	
2.3	223	Tax Office	42	Office Space	123	12	0.8	15	1.0	15	20	0.0	0	0	20	
	206	Building Receptionist	42	Office Space	118	12	0.8	15	1.0	15	20	0.0	0	0	20	
	209	Work Room/ Corridor	42	Office Space	360	32	0.8	40	1.0	40	40	0.0	0	0	40	
Total Area =					628					Total O...	47		Total...	0	50	
x	113	Sally Port	45	Garages, common for...	618	0	0.8	0	1.0	0	0	0.8	0.30cfm/sf	125	0	
x	210	Elec/Mech	61	Mechanical / Electrical Rm.	581	0	0.8	0	1.0	0	0	0.0	0	0	0	
x	145	Mech/ Water/ Sprinkler	61	Mechanical / Electrical Rm.	122	0	0.8	0	1.0	0	0	0.0	0	2	0	
Total Area =					1321					Total O...	0		Total...	127	0	
x	212	Housekeeping	59	Toilet rooms - public	30	0	0.8	0	1.0	0	0	50 / 70	1cfm/sf	30	0	
x	213	Men's Toilet	59	Toilet rooms - public	253	0	0.8	0	1.0	0	0	50 / 70	200	200	0	
x	211	Women's Toilet	59	Toilet rooms - public	265	0	0.8	0	1.0	0	0	50 / 70	200	200	0	
x	202	Toilet Room	59	Toilet rooms - public	53	0	0.8	0	1.0	0	0	50 / 70	50	50	0	
Total Area =					601					Total O...	0		Total...	480	0	
x	128	Housekeeping	59	Toilet rooms - public	30	0	0.8	0	1.0	0	0	50 / 70	1cfm/sf	30	0	
x	123	Toilet Room	59	Toilet rooms - public	51	0	0.8	0	1.0	0	0	50 / 70	50	50	0	
x	158	Toilet	59	Toilet rooms - public	64	0	0.8	0	1.0	0	0	50 / 70	50	50	0	
x	150	Toilet	59	Toilet rooms - public	50	0	0.8	0	1.0	0	0	50 / 70	50	50	0	
x	151	Toilet	59	Toilet rooms - public	50	0	0.8	0	1.0	0	0	50 / 70	50	50	0	
Total Area =					245					Total O...	0		Total...	230	0	

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Project:
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MUNICIPAL COMPLEX
3264 Concord Road
Aston, PA 19014

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Revision/Issue:
0 03/29/24 Issued
1 04/17/24 Revisions

Sheet Title:

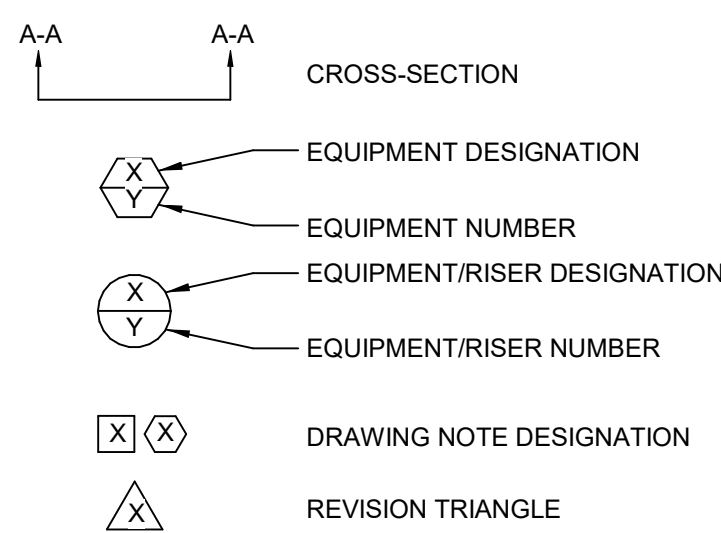
**COVER SHEET-
PLUMBING**

Sheet Number:

P-001

Drawing List- Plumbing					
NUMBER	NAME	Issued Drawings	Current Revision	Current Revision Date	Current Description
P-001	COVER SHEET- PLUMBING	•	1	04/17/24	Revisions
P-101	FIRST FLOOR PLAN- SANITARY	•	1	04/17/24	Revisions
P-102	FIRST FLOOR PLAN- DOMESTIC WATER	•	1	04/17/24	Revisions
P-103	SECOND FLOOR PLAN- PLUMBING	•	1	04/17/24	Revisions
P-104	ROOF PLAN- PLUMBING	•	1	04/17/24	Revisions
P-201	DETAILS- PLUMBING	•	1	04/17/24	Revisions
P-202	DETAILS- PLUMBING	•	1	04/17/24	Revisions
P-301	SCHEDULES- PLUMBING	•	1	04/17/24	Revisions
P-401	RISER DIAGRAMS- SANITARY	•	1	04/17/24	Revisions
P-402	RISER DIAGRAMS- DOMESTIC WATER	•	1	04/17/24	Revisions
P-403	RISER DIAGRAMS- STORM WATER	•	0	03/29/24	Issued

DRAWING SYMBOLS



SPRINKLER NOTE:

SPRINKLER NOTE

1. SPRINKLER CONTRACTOR SHALL DESIGN, FURNISH, AND INSTALL A SPRINKLER SYSTEM THROUGHOUT THE BUILDING IN ACCORDANCE WITH NFPA-13.
2. SPRINKLER SYSTEM SHALL BE DESIGNED PER NFPA-13 LIGHT HAZARD OCCUPANCY EXCEPT WHERE DICTATED BY NFPA-13 TO BE ORDINARY HAZARD.
3. PROVIDE FM200 AND DOUBLE INTERLOCK PREACTION SYSTEMS FOR EVIDENCE AREA.
4. PROVIDE DRY SPRINKLER HEADS IN AREAS SUBJECT TO FREEZING.
5. ALL WET SPRINKLER PIPING SHALL BE LOCATED WITHIN BUILDING.
6. SPRINKLER SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE SUBMITTED FOR APPROVAL TO THE LOCAL FIRE MARSHAL (AUTHORITY HAVING JURISDICTION).
7. SPRINKLER HEADS IN AREAS WITH UNFINISHED CEILINGS SHALL BE STANDARD BRASS UPRIGHT TYPE.
8. SPRINKLER HEADS IN FINISHED PUBLIC AREAS SHALL BE CONCEALED TYPE.
9. SPRINKLER HEADS IN AREAS WITHOUT A CEILING SHALL BE PENDANT TYPE.

NOTICE

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.

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2023-141

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Revision/Issue:
0 03/29/24 Issued
1 04/17/24 Revisions

Drawn: PR
Reviewed: -
Contact: JK
Project Number: 2301.00-22

Sheet Title:
**FIRST FLOOR PLAN-
SANITARY**

Sheet Number:
P-101

GENERAL PLUMBING NOTES:

- COORDINATE ALL BELOW GRADE PLUMBING PIPING WITH FOUNDATION ELEVATIONS AND SITE UTILITY INVERTS. VERIFY EXISTING ELEVATIONS AND INVERTS PRIOR TO CONSTRUCTION.
- PROVIDE WATER HAMMER ARRESTORS IN CONFORMANCE WITH PDI AND LOCAL ORDINANCES AT FLUSH VALVES, LAUNDRY WASHING MACHINES(COMMERCIAL AND RESIDENTIAL), SOLENOIDS, FAST CLOSING VALVES, ETC.
- DO NOT ROUTE PLUMBING PIPING THROUGH ELECTRICAL ROOMS, ELECTRICAL CLOSETS, OR DATA COMMUNICATION CENTERS.
- DO NOT ROUTE PLUMBING PIPING THROUGH ELEVATOR SHAFT UNLESS PIPING IS DEDICATED TO SHAFT. DO NOT ROUTE PLUMBING PIPING THROUGH UTILITY CHASES UNLESS CHASE IS DEDICATED FOR PLUMBING SERVICES.
- PROVIDE SHUT OFF VALVES CLOSE TO MAINS ON EACH BRANCH AND RISER SERVING PLUMBING FIXTURES, CASEWORK OR EQUIPMENT. PROVIDE SHUT OFF VALVES ON EACH WATER SUPPLY TO PLUMBING FIXTURES THAT DO NOT HAVE SUPPLY STOPS. PROVIDE ACCESS PANELS FOR ALL VALVES.
- COORDINATE LOCATIONS OF FLOOR DRAINS WITH ARCHITECTURAL PLANS.
- PROVIDE CLEANOUTS AT THE BASE OF ALL RAINWATER CONDUCTORS AND SANITARY WASTE STACKS, AT EVERY CHANGE IN DIRECTION AND 50'-0" ON CENTER FOR STRAIGHT LENGTHS.
- PROVIDE VENT LIMITERS ON ALL NATURAL GAS PRESSURE REGULATORS.
- THE CONTRACTOR SHALL PROVIDE BALANCING VALVES ON ALL BRANCHES OF THE DOMESTIC HOT WATER RETURN SYSTEM, BALANCE THE SYSTEM, AND PROVIDE BALANCING REPORT TO THE OWNER/ENGINEER FOR RECORD. ALL HOT WATER BALANCING VALVES SHALL BE SET TO 1 GPM UNLESS OTHERWISE NOTED.
- PROVIDE LOW POINT DRAIN VALVES WITH HOSE CONNECTIONS ON EACH FLOOR. LOCATE WHERE SERVICE MAINS CONNECT TO RISERS IN VALVE CLOSETS OR JANITOR'S CLOSETS. PROVIDE BLUE AND RED CEILING MARKERS ON DROP CIELINGS.
- REFER TO DOMESTIC WATER AND SANITARY RISER DIAGRAMS FOR ADDITIONAL PIPE SIZE INFORMATION.
- REFER TO STORM WATER RISER DIAGRAMS FOR ADDITIONAL PIPE SIZE INFORMATION.
- REFER TO NATURAL GAS RISER DIAGRAMS FOR ADDITIONAL PIPE SIZE INFORMATION.

PLUMBING KEYNOTES

- P1 REFER TO CIVIL PLANS FOR CONTINUATION.
P7 PROVIDE CAP ON 4" SANITARY FOR FUTURE CONNECTION.
P8 SAND AND OIL INTERCEPTOR. REFER TO DETAIL.
P10 ELEVATOR SUMP PUMP CONTROL MODULE.
P11 ELEVATOR SUMP PUMP. REFER TO DETAIL FOR ADDITIONAL INFORMATION.

NOTED THUS



1 FIRST FLOOR PLAN - SANITARY/STORM
1/8" = 1'-0"

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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

Revision/Issue:
0 03/29/24 Issued
1 04/17/24 Revisions

Drawn: PR
Reviewed: -
Contact: JK
Project Number: 2301.00-22

Sheet Title:
FIRST FLOOR PLAN- DOMESTIC WATER

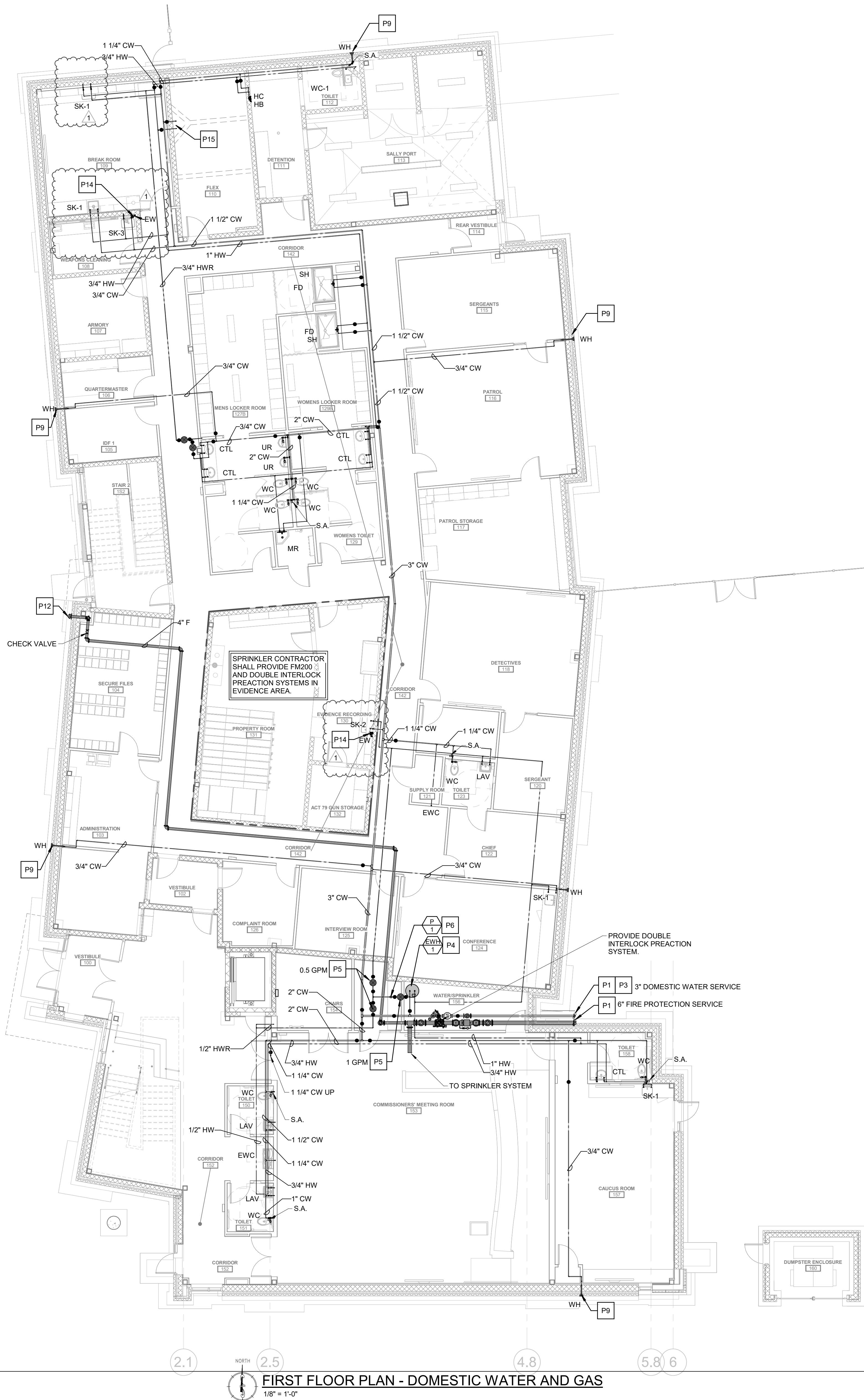
Sheet Number:
P-102

GENERAL PLUMBING NOTES:

- COORDINATE ALL BELOW GRADE PLUMBING PIPING WITH FOUNDATION ELEVATIONS AND SITE UTILITY INVERTS. VERIFY EXISTING ELEVATIONS AND INVERTS PRIOR TO CONSTRUCTION.
- PROVIDE WATER HAMMER ARRESTORS IN CONFORMANCE WITH PDI AND LOCAL ORDINANCES AT FLUSH VALVES, LAUNDRY WASHING MACHINES(COMMERCIAL AND RESIDENTIAL), SOLENOIDS, FAST CLOSING VALVES, ETC.
- DO NOT ROUTE PLUMBING PIPING THROUGH ELECTRICAL ROOMS, ELECTRICAL CLOSETS, OR DATA COMMUNICATION CENTERS.
- DO NOT ROUTE PLUMBING PIPING THROUGH ELEVATOR SHAFT UNLESS PIPING IS DEDICATED TO SHAFT. DO NOT ROUTE PLUMBING PIPING THROUGH UTILITY CHASES UNLESS CHASE IS DEDICATED FOR PLUMBING SERVICES.
- PROVIDE SHUT OFF VALVES CLOSE TO MAINS ON EACH BRANCH AND RISER SERVING PLUMBING FIXTURES, CASEWORK OR EQUIPMENT. PROVIDE SHUT OFF VALVES ON EACH WATER SUPPLY TO PLUMBING FIXTURES THAT DO NOT HAVE SUPPLY STOPS. PROVIDE ACCESS PANELS FOR ALL VALVES.
- COORDINATE LOCATIONS OF FLOOR DRAINS WITH ARCHITECTURAL PLANS.
- PROVIDE CLEANOUTS AT THE BASE OF ALL RAINWATER CONDUCTORS AND SANITARY WASTE STACKS, AT EVERY CHANGE IN DIRECTION AND 50'-0" ON CENTER FOR STRAIGHT LENGTHS.
- PROVIDE VENT LIMITERS ON ALL NATURAL GAS PRESSURE REGULATORS.
- THE CONTRACTOR SHALL PROVIDE BALANCING VALVES ON ALL BRANCHES OF THE DOMESTIC HOT WATER RETURN SYSTEM, BALANCE THE SYSTEM, AND PROVIDE BALANCING REPORT TO THE OWNER/ENGINEER FOR RECORD. ALL HOT WATER BALANCING VALVES SHALL BE SET TO 1 GPM UNLESS OTHERWISE NOTED.
- PROVIDE LOW POINT DRAIN VALVES WITH HOSE CONNECTIONS ON EACH FLOOR. LOCATE WHERE SERVICE MAINS CONNECT TO RISERS IN VALVE CLOSETS OR JANITOR'S CLOSETS. PROVIDE BLUE AND RED CEILING MARKERS ON DROP CIELINGS.
- REFER TO DOMESTIC WATER AND SANITARY RISER DIAGRAMS FOR ADDITIONAL PIPE SIZE INFORMATION.
- REFER TO STORM WATER RISER DIAGRAMS FOR ADDITIONAL PIPE SIZE INFORMATION.
- REFER TO NATURAL GAS RISER DIAGRAMS FOR ADDITIONAL PIPE SIZE INFORMATION.

PLUMBING KEYNOTES

- NOTED THUS
- P1 REFER TO CIVIL PLANS FOR CONTINUATION.
P3 THE SPRINKLER SERVICE LINE SHALL NOT BE INSTALLED UNTIL ALL FLOW/PRESSURE CALCULATIONS FOR THE SPRINKLER SYSTEM ARE HYDRAULICALLY VERIFIED BY THE SPRINKLER CONTRACTOR. THE LINE SIZE MAY INCREASE(OR DECREASE) AS A RESULT OF SUCH CALCULATIONS.
P4 ELECTRICAL WATER HEATER. REFER TO DETAIL.
P5 PROVIDE HOT WATER BALANCING VALVE AND SHUTOFF VALVE.
P6 HOT WATER RECIRCULATION PUMP. REFER TO DETAIL.
P9 PROVIDE ACCESS PANEL FOR WALL HYDRANT SHUT OFF VALVE.
P12 FIRE DEPARTMENT CONNECTION. SPRINKLER CONTRACTOR TO COORDINATE FINAL LOCATION WITH FIRE MARSHALL PRIOR TO INSTALLATION.
P14 PROVIDE GUARDIAN G1848 ANSI-COMPLIANT WALL MOUNTED EYEWASH AT SINK. COORDINATE SPECIFIC MODEL AND MOUNTING OPTION WITH ARCHITECT PRIOR TO ORDERING.
P15 PROVIDE G6020 THERMOSTATIC MIXING VALVE FOR EYEWASH. PROVIDE CAP ON 1" COLD WATER AND 1/2" HOT WATER FOR FUTURE CONNECTION.



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PLUMBING KEYNOTES

- P13 OVERFLOW DISCHARGE NOZZLE. COORDINATE DISCHARGE ELEVATION WITH ARCHITECTURAL PLANS. REFER TO DETAIL.

NOTED THUS

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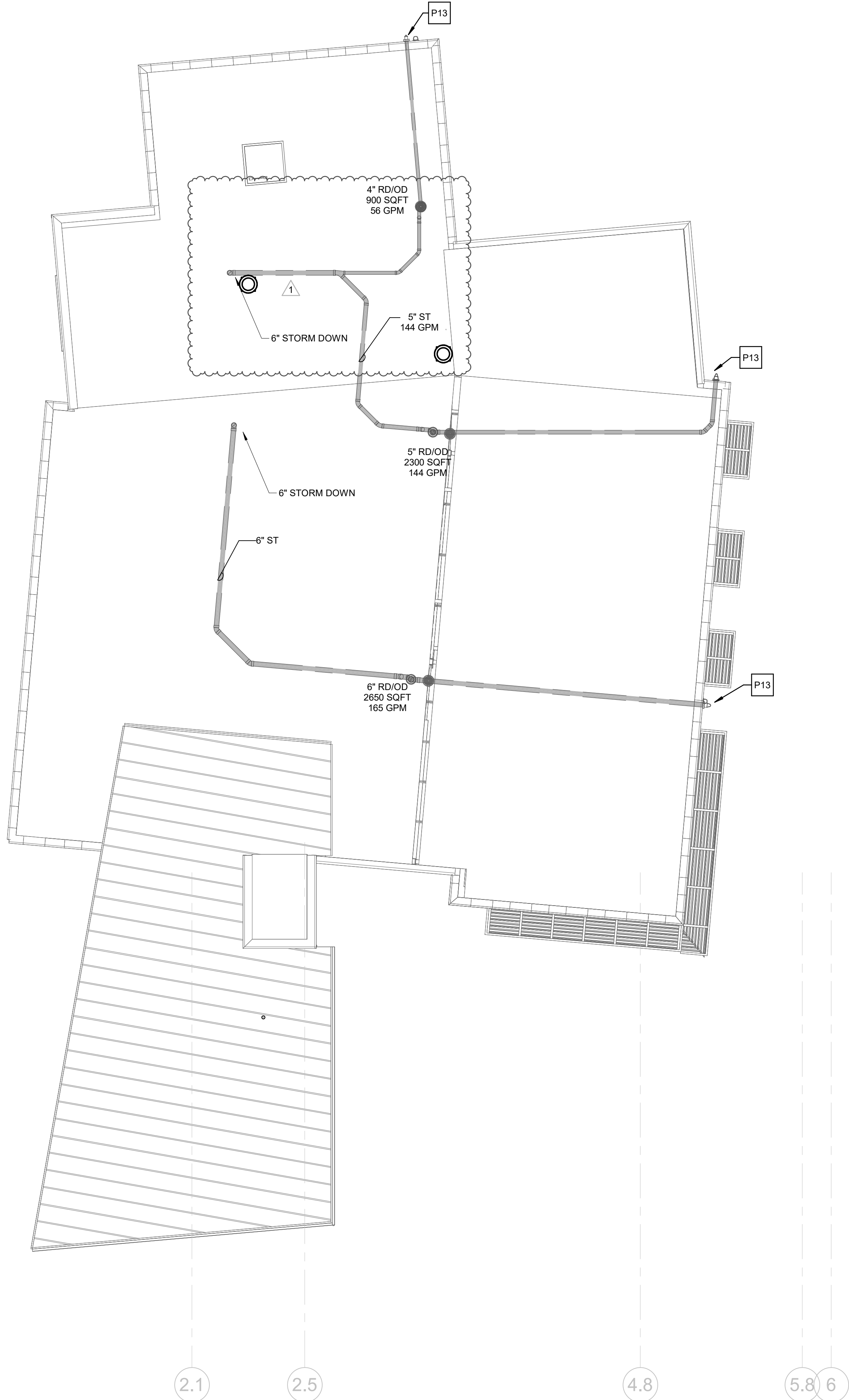
Sheet Title:

SECOND FLOOR
PLAN- PLUMBING

Sheet Number:

P-103

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1 ROOF PLAN - PLUMBING
1/8" = 1'-0"

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PLUMBING ROOF NOTES

- COORDINATE LOCATIONS OF ROOF DRAINS WITH ARCHITECTURAL PLANS.
- ALL VENTS THROUGH THE ROOF SHALL BE A MINIMUM OF 10' FROM OUTSIDE AIR INTAKES.
- ALL VENTS THROUGH THE ROOF SHALL BE A MINIMUM OF 6' FROM PARAPET OR ADJOINING BUILDING.
- THE ROOF VENTS SHALL BE TERMINATED NOT LESS THAN 2' ABOVE THE ROOF. WHERE A ROOF IS TO BE USED FOR ASSEMBLY OR AS A PROMENADE, OBSERVATION DECK, SUNBATHING DECK, OR SIMILAR PURPOSES, OPEN VENT PIPES SHALL TERMINATE NOT LESS THAN 7' ABOVE THE ROOF.

PLUMBING KEYNOTES

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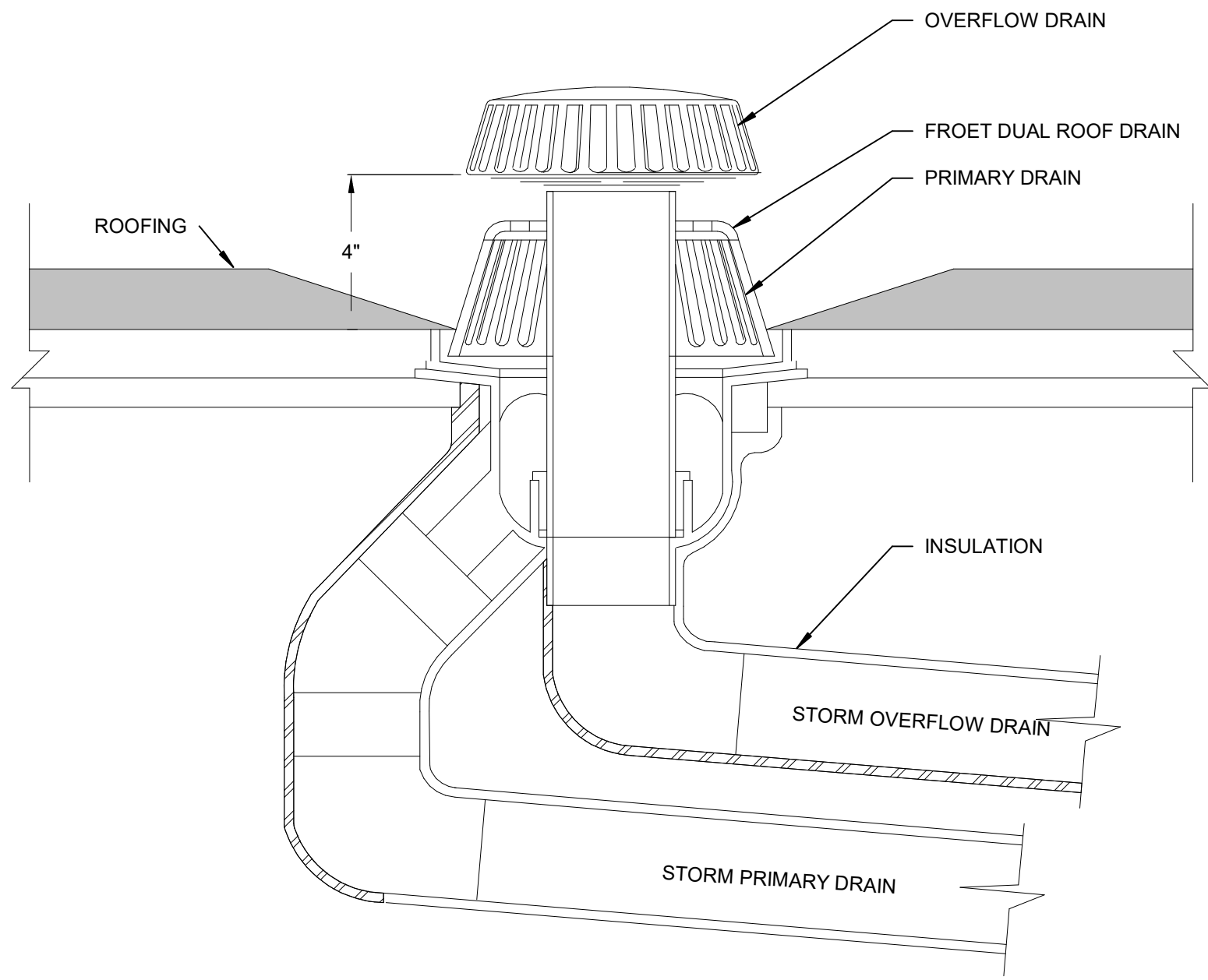
Project Number: 2301.00-22

Sheet Title:

ROOF PLAN-
PLUMBING

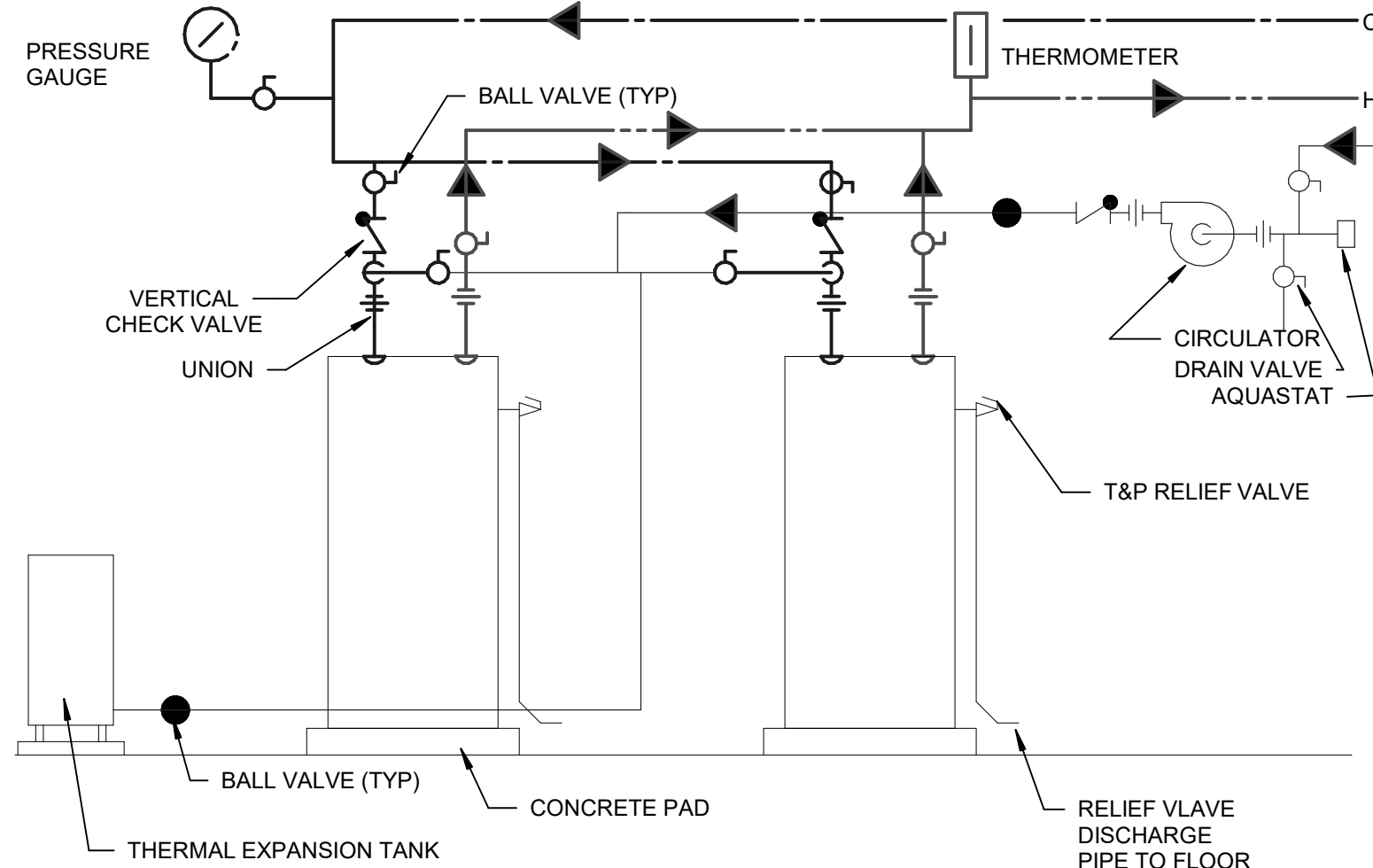
Sheet Number:

P-104



ROOF DRAIN DETAIL

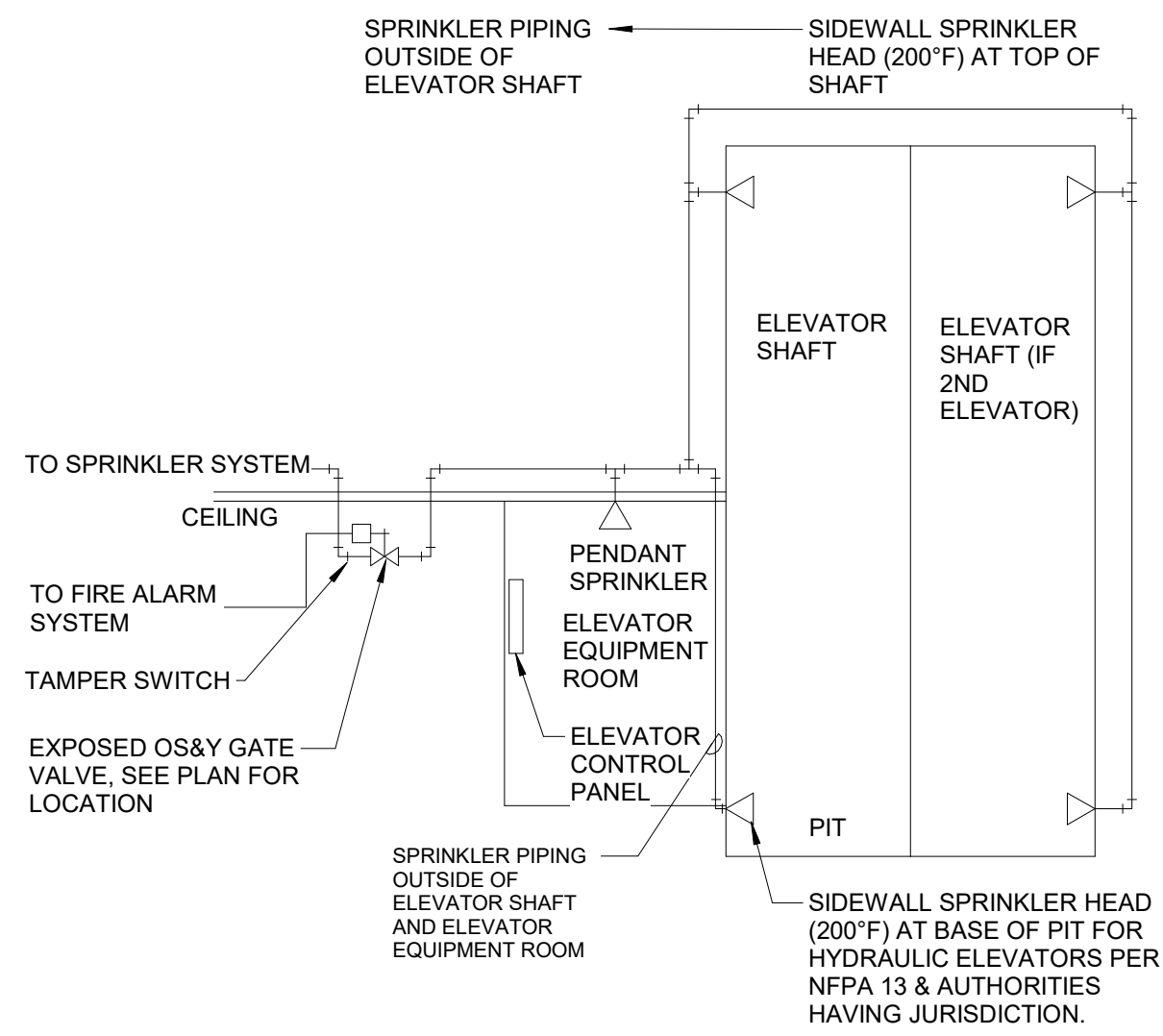
NOT TO SCALE



WATER HEATER CONNECTION DETAIL

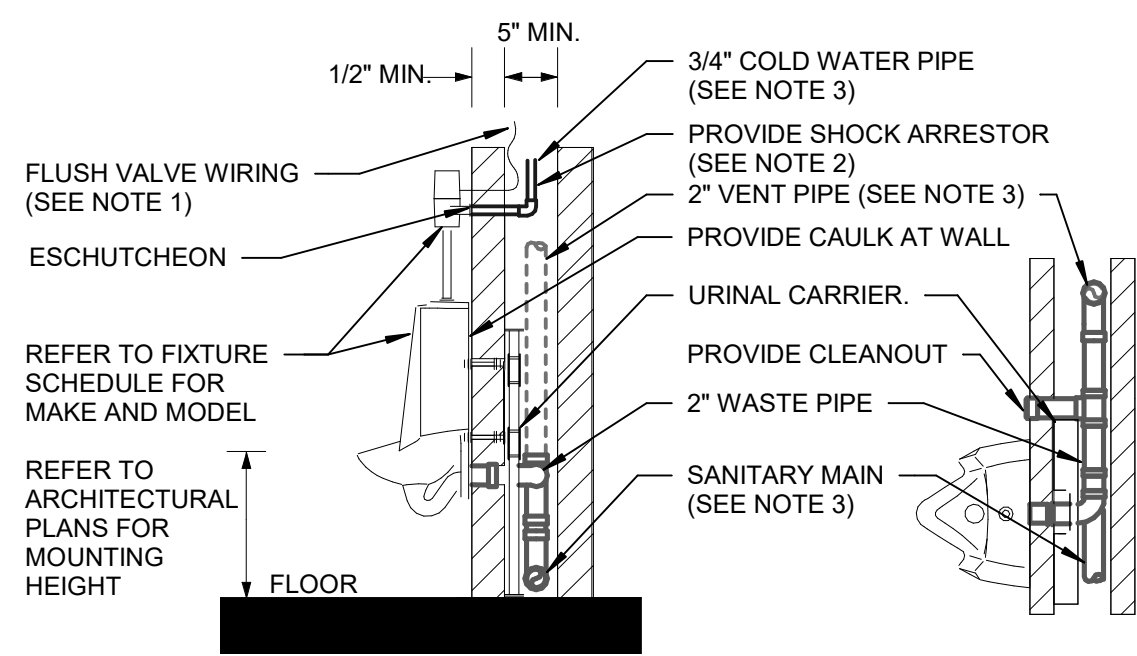
NOT TO SCALE

NOTE:
BRANCH PIPE RUNS AND FITTINGS FROM
MAIN TO EACH HEATER TO BE IDENTICAL.



ELEVATOR SPRINKLER PIPING DIAGRAM

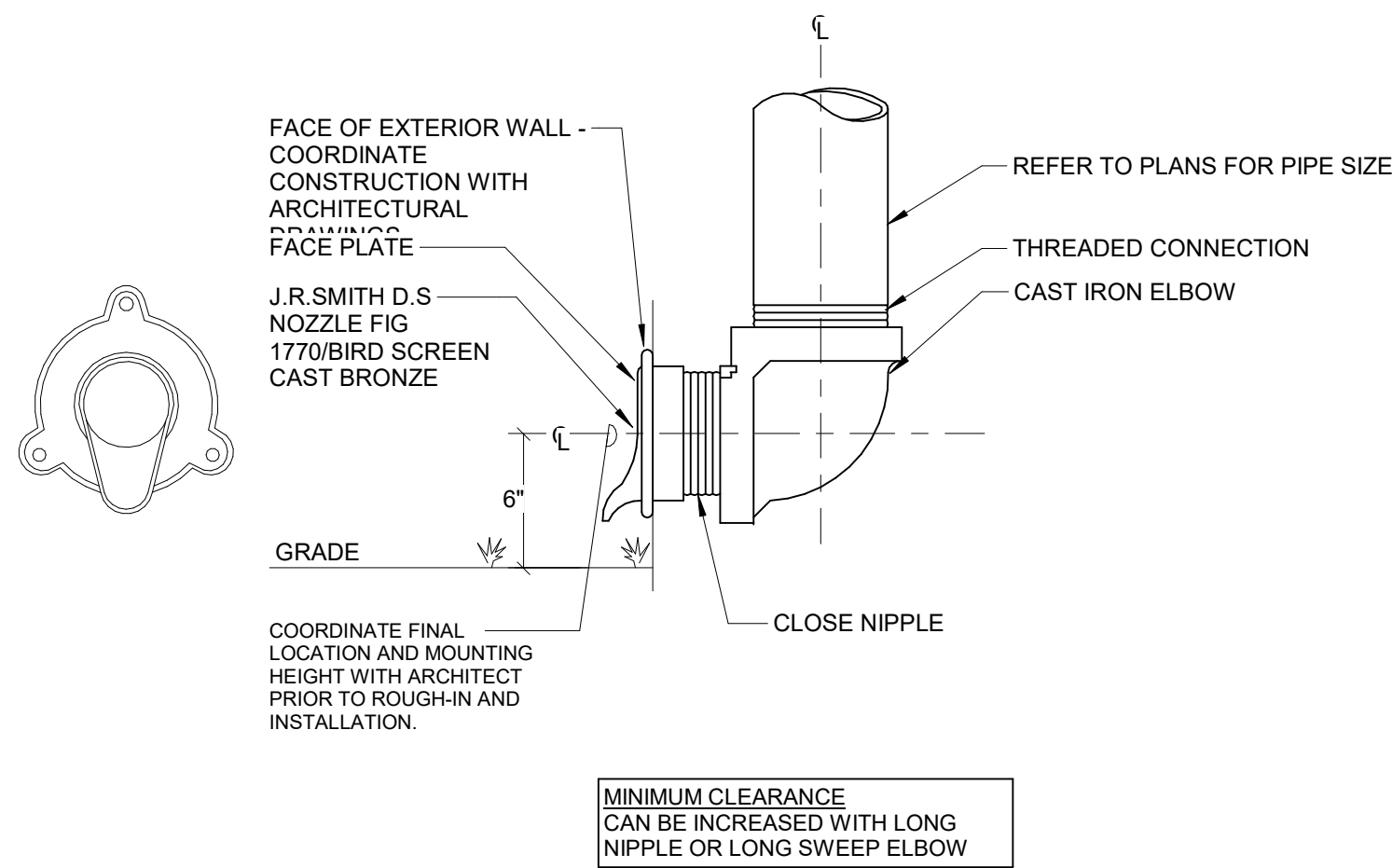
NO SCALE



WALL HUNG URINAL DETAIL

SCALE: NONE

- NOTES:
- COORDINATE ELECTRICAL CONNECTIONS WITH ELECTRICAL CONTRACTOR FOR HARDWIRED FLUSH VALVES.
 - REFER TO DOMESTIC WATER RISER DIAGRAM FOR SHOCK ARRESTOR LOCATIONS.
 - REFER TO FLOOR PLANS FOR CONTINUATION OF PIPING.
 - PROVIDE CLEANOUT FOR URINAL.
 - COORDINATE FINAL CHASE SIZE WITH ARCHITECT.
 - MOUNTING HEIGHT FOR ADA URINALS SHALL BE A MAXIMUM OF 17".
 - REFER TO SPECIFICATIONS FOR APPROVED MANUFACTURERS FOR URINAL CARRIERS.



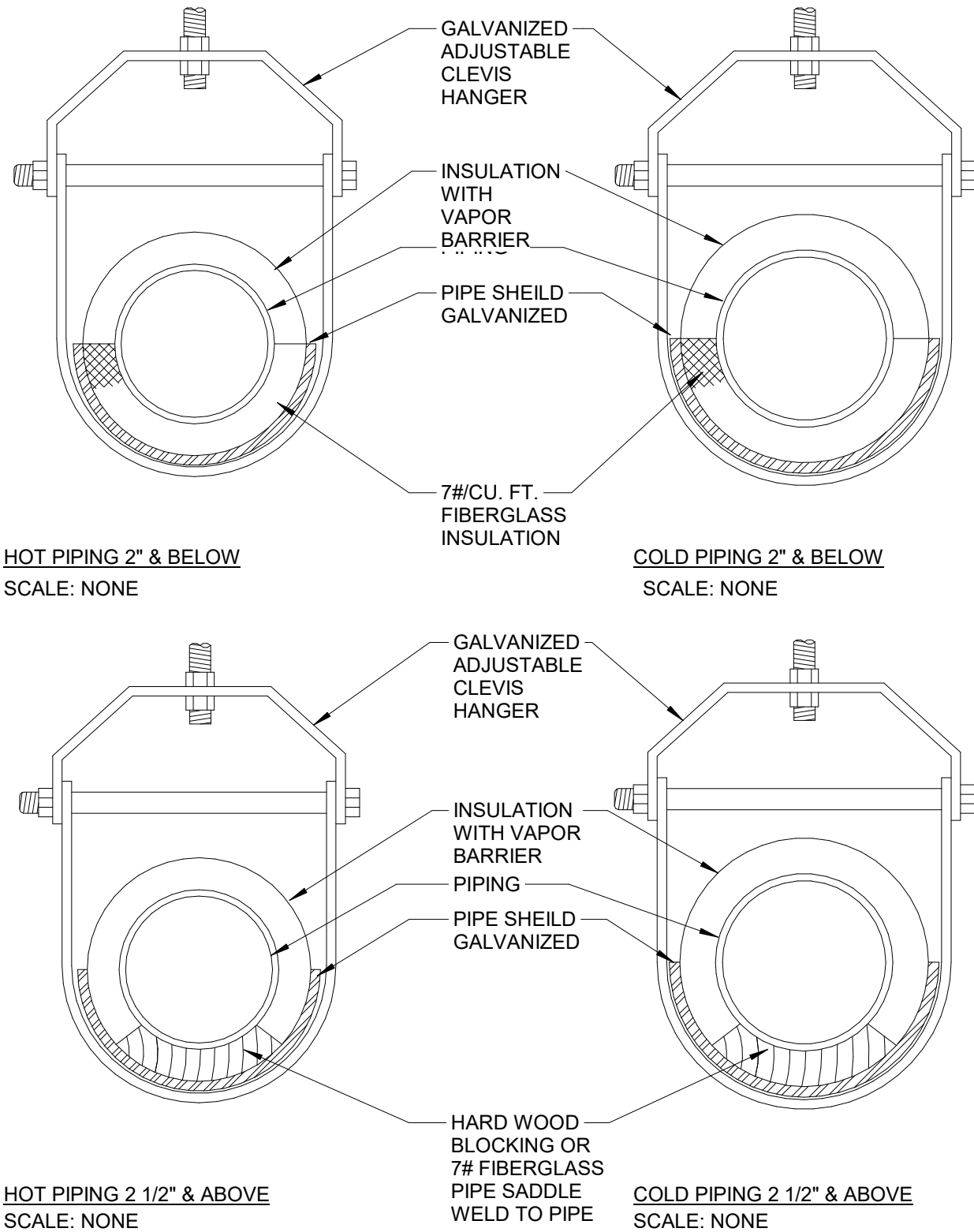
OVERFLOW DISCHARGE NOZZLE DETAIL

SCALE: NONE

- NOTE:
- CONTRACTOR TO REFER TO DRAWINGS AND SPECIFICATIONS FOR PIPING.
 - CONTRACTOR TO COORDINATE FINISH WITH ARCHITECT.

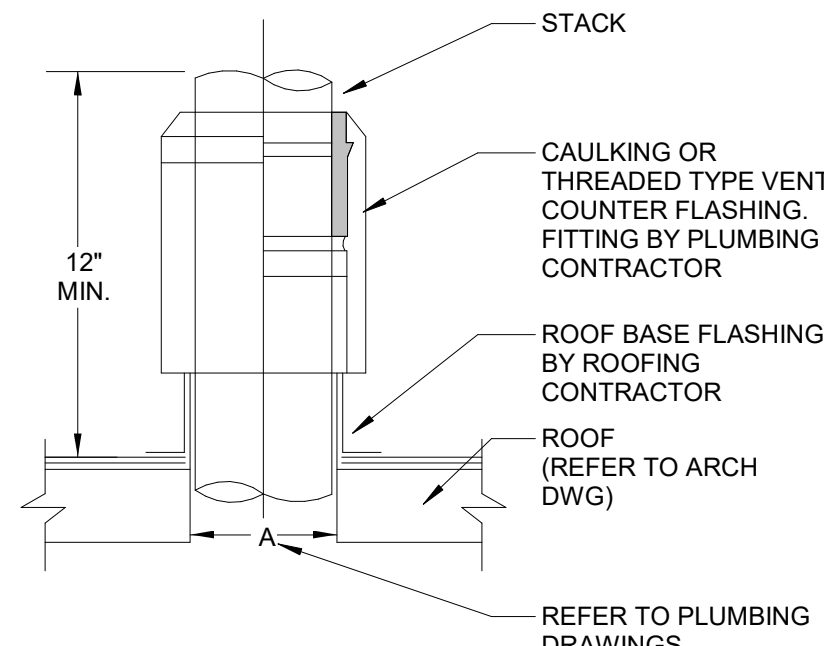
PD208 - OVERFLOW DISCHARGE NOZZLE DETAIL

NOT TO SCALE



PIPE HANGER DETAILS

SCALE: NONE

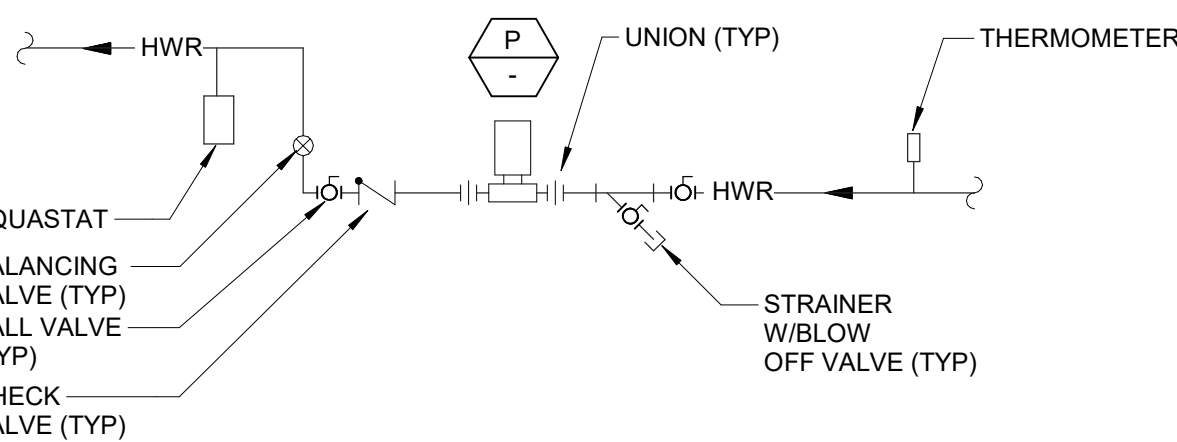


ROOF VENT DETAIL

SCALE: NONE

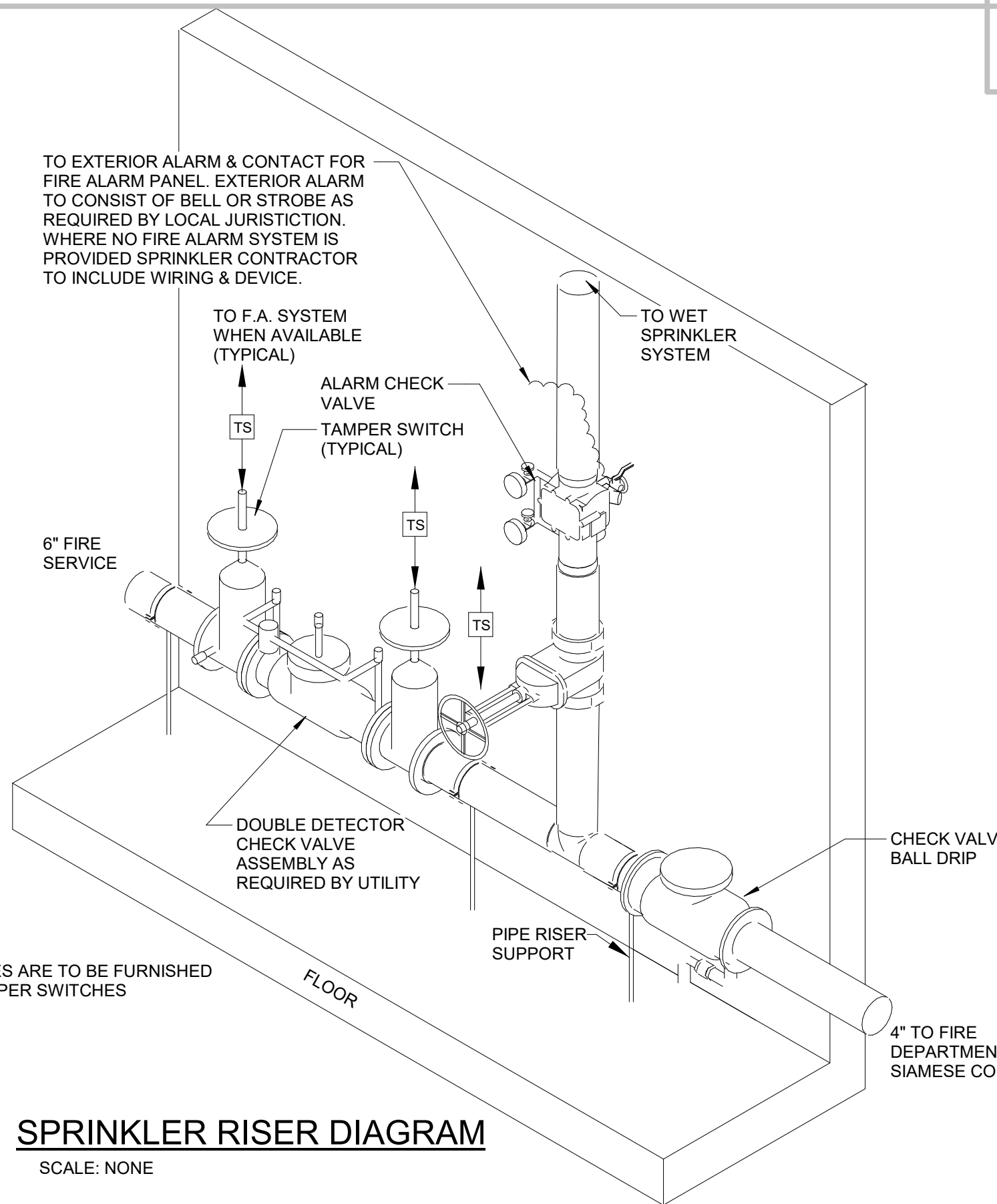
- NOTES:
- FITTING IS OF THE COUPLING TYPE THAT PERMITS STACK EXTENSION TO THE DESIRED HEIGHT. COUNTER FLASHING FITTING: J.R. SMITH FIG. 1740C OR 1750T.

REORGANIZED DETAILS TO ELIMINATE
SHEETS P-203 AND P-204



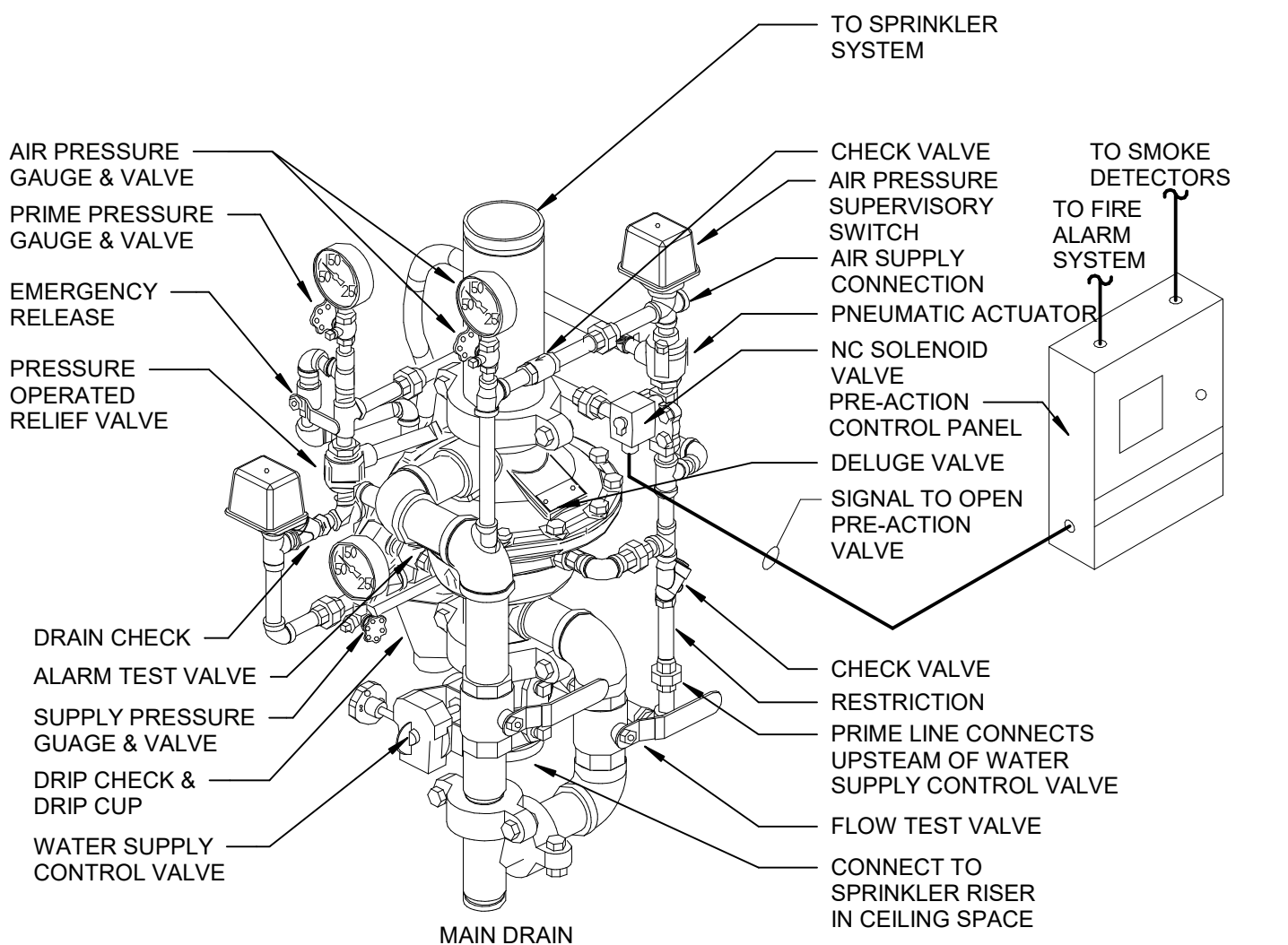
DOMESTIC HOT WATER RETURN PUMP DETAIL

SCALE: NONE



SPRINKLER RISER DIAGRAM

SCALE: NONE

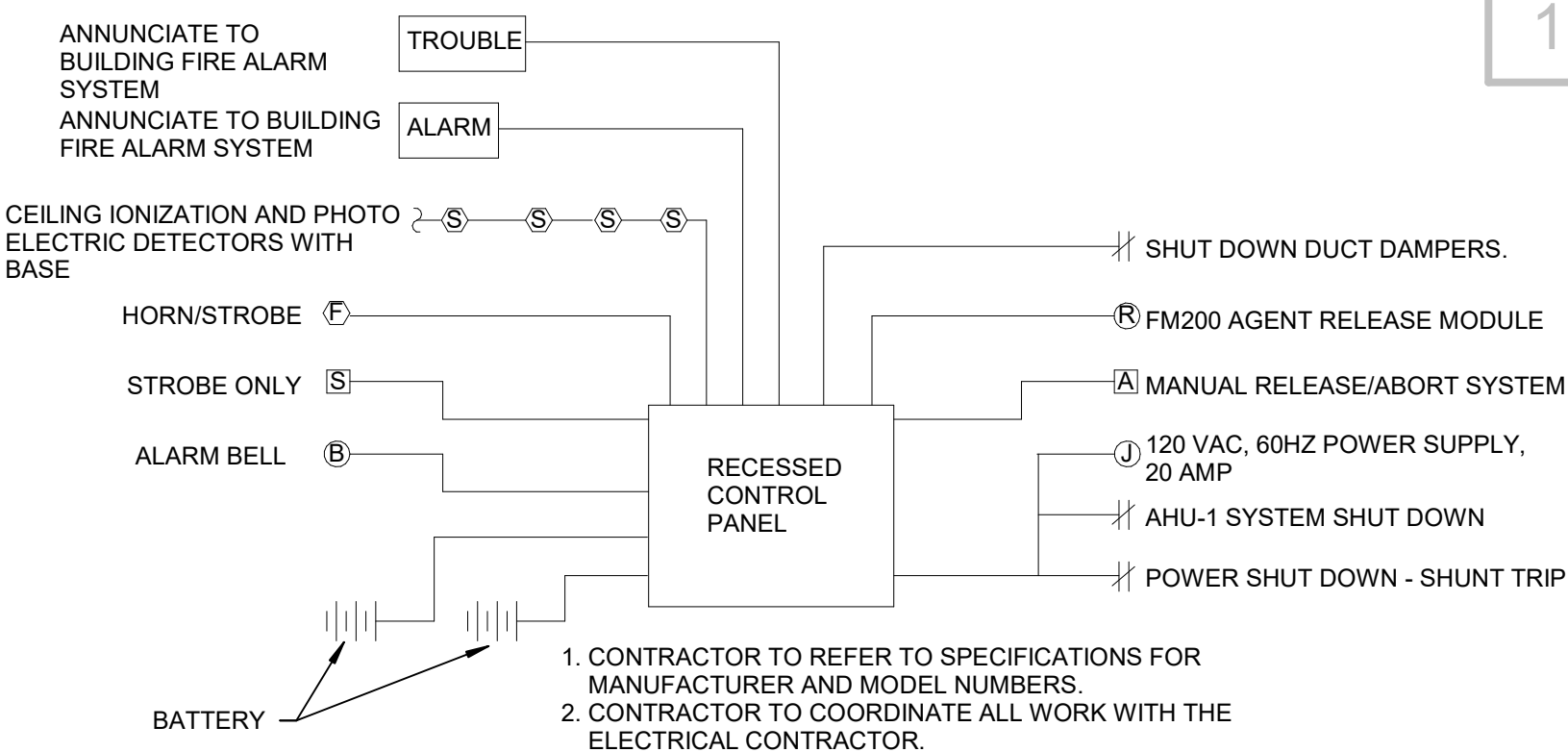


NOTES:

- DOUBLE INTERLOCK PRE-ACTION SYSTEMS SHALL MAINTAIN A MINIMUM SUPERVISING AIR OR NITROGEN PRESSURE OF 7 PSI.
- AIR OR NITROGEN SUPERVISING PRESSURE FOR PRE-ACTION SYSTEMS SHALL BE INSTALLED IN CONFORMANCE WITH THE DRY PIPE SYSTEM AIR PRESSURE AND SUPPLY RULES.
- ALL DEVICES ARE TO BE U.L. LISTED & FIRE MARSHALL APPROVED.
- BASED ON VIKING MODEL G-400P DOUBLE INTERLOCK PREACTION W/ELCTRIC/PNEUMATIC RELEASE.
- CONTRACTOR TO COORDINATE ELECTRICAL CONNECTIONS WITH ELECTRICAL CONTRACTOR.
- FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR WIRING AND PROGRAMMING CONTROLLER.

DOUBLE INTERLOCK PRE-ACTION SYSTEM DETAIL

NOT TO SCALE



FM200 SEQUENCE OF OPERATION

1ST ALARM: ACTIVATION OF ANY SYSTEM DETECTOR WILL CAUSE THE "ALARM" LED ON THE PANEL TO FLASH, CAUSE THE PIEZO ON THE PANEL TO "CHIRP" ACTIVATE THE ALARM BELL AND CAUSE THE FOLLOWING:

- ANNUNCIATE TO BLDG. FIRE ALARM

2ND ALARM: ACTIVATION OF A SECOND SMOKE DETECTOR WILL CAUSE THE PRE-DISCHARGE LED ON THE PANEL TO FLASH, CAUSE THE PIEZO ON THE PANEL TO "CHIRP". THE DISCHARGE STROBE WILL ACTIVATE. THE FM200 WILL BE DISCHARGED, AND THE FOLLOWING WILL OCCUR:

- SHUTDOWN AIR DIST. SYSTEM

DISCHARGE: UPON EXPIRATION OF THE 30 SECOND TIME DELAY, THE RELEASE LED ON THE PANEL WILL FLASH, THE PIEZO WILL CONTINUE TO "CHIRP". THE DISCHARGE STROBE WILL ACTIVATE. THE FM200 WILL BE DISCHARGED, AND THE FOLLOWING WILL OCCUR:

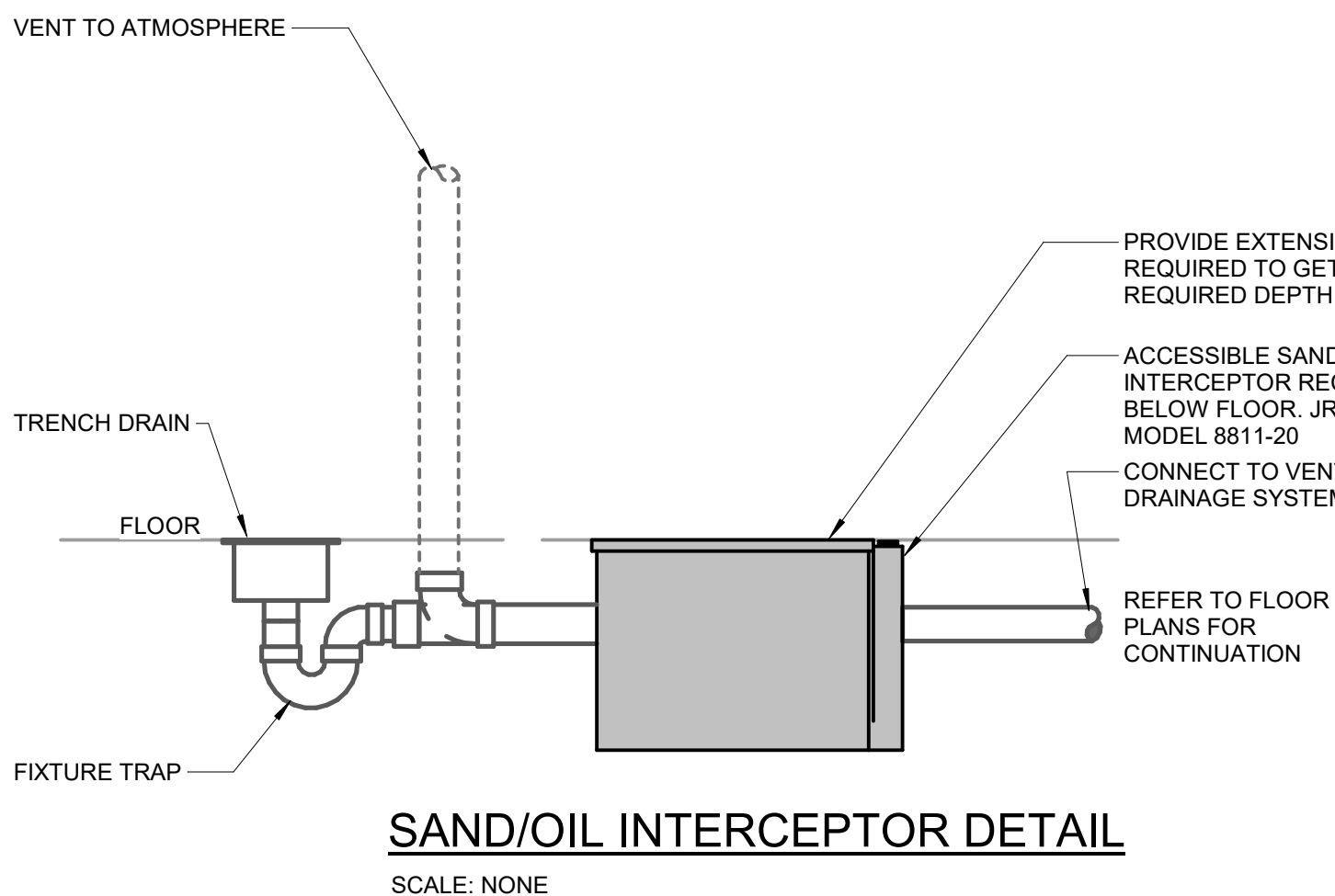
- SHUTDOWN POWER

MAN. REL. ACTIVATION OF A MANUAL RELEASE STATION WILL ACTIVATE THE AUDIO/VISUAL DEVICES STATION; AND INITIATE ALL SYSTEM FUNCTIONS, INCLUDING IMMEDIATE FM200 DISCHARGE.

TROUBLE CONDITION: A TROUBLE CONDITION WILL ILLUMINATE THE YELLOW "TROUBLE" LAMP ON THE PANEL, AND ANNUNCIATE TO BLDG. FIRE ALARM.

FM200 RISER DIAGRAM

NOT TO SCALE



SAND/OIL INTERCEPTOR DETAIL

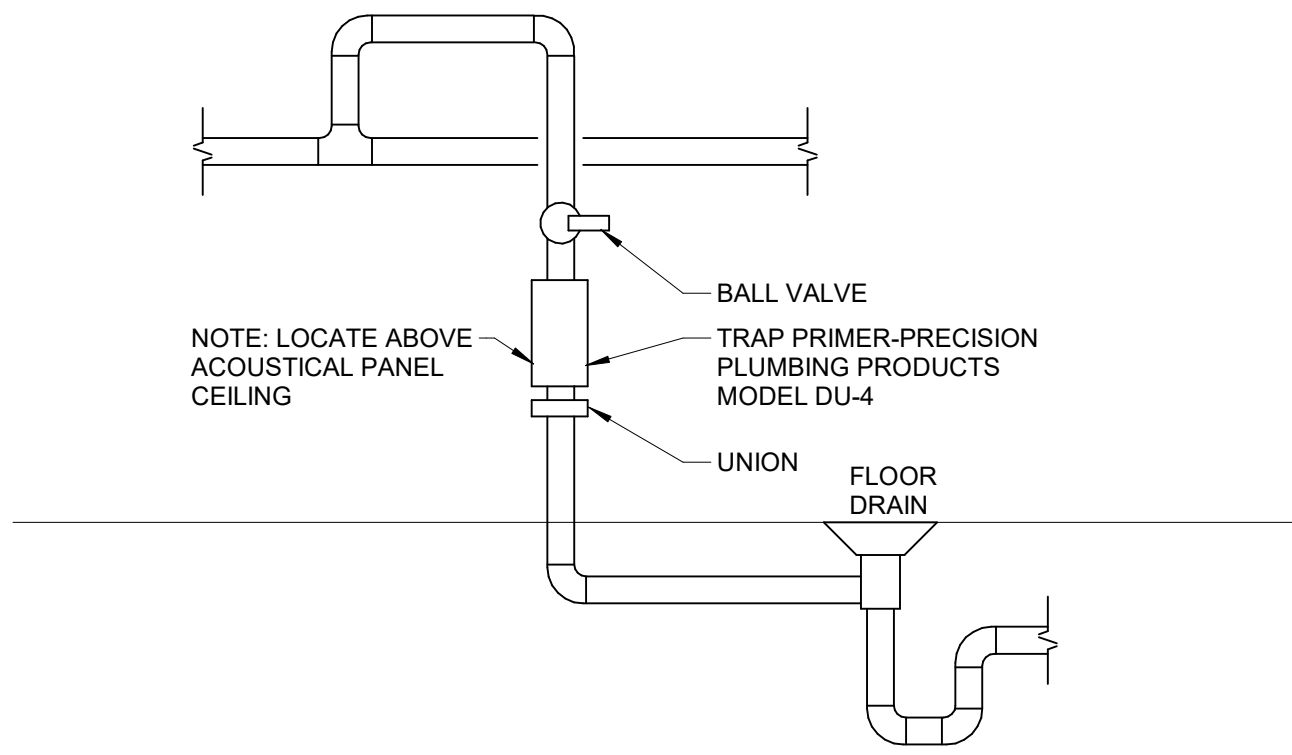
SCALE: NONE

NOTICE

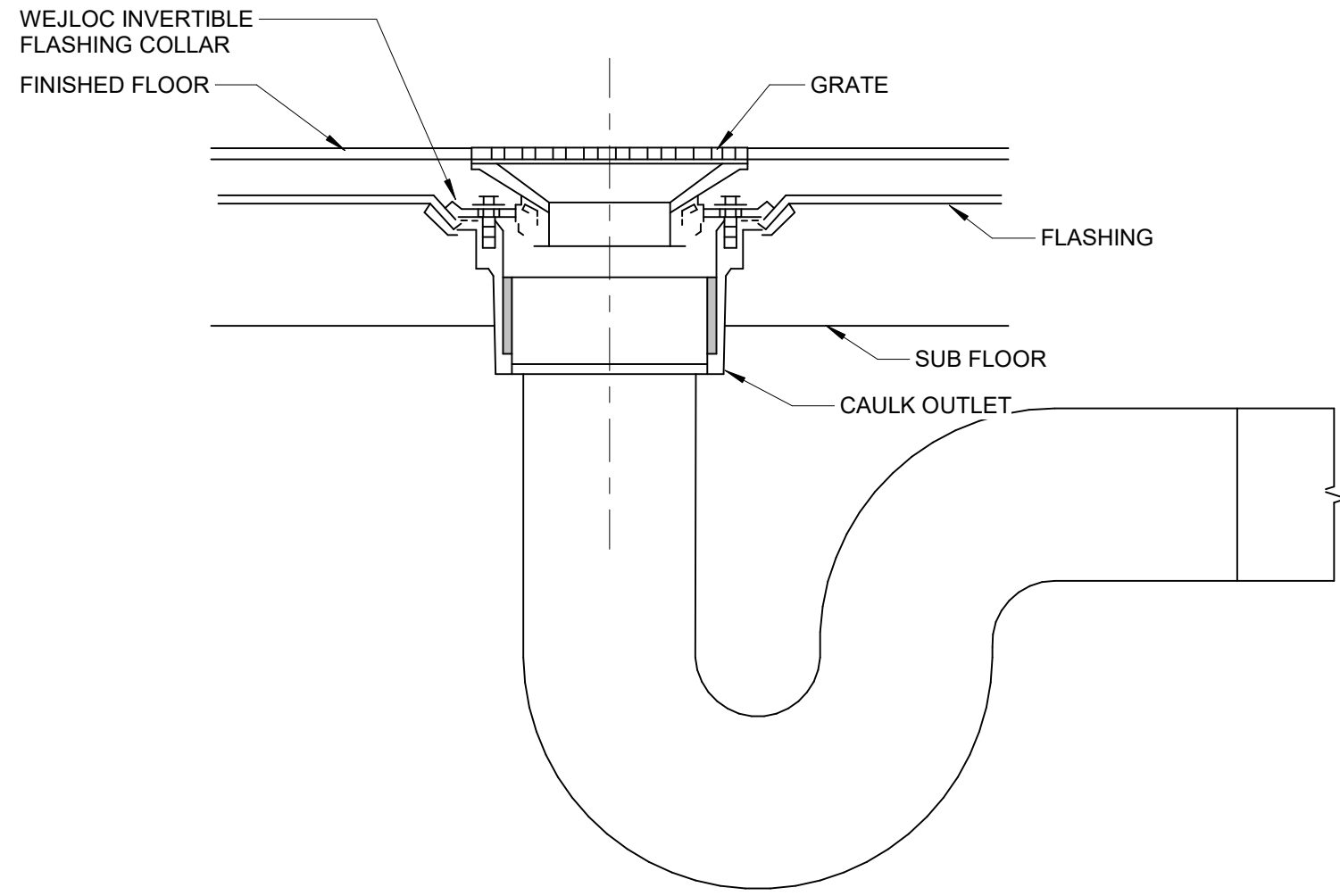
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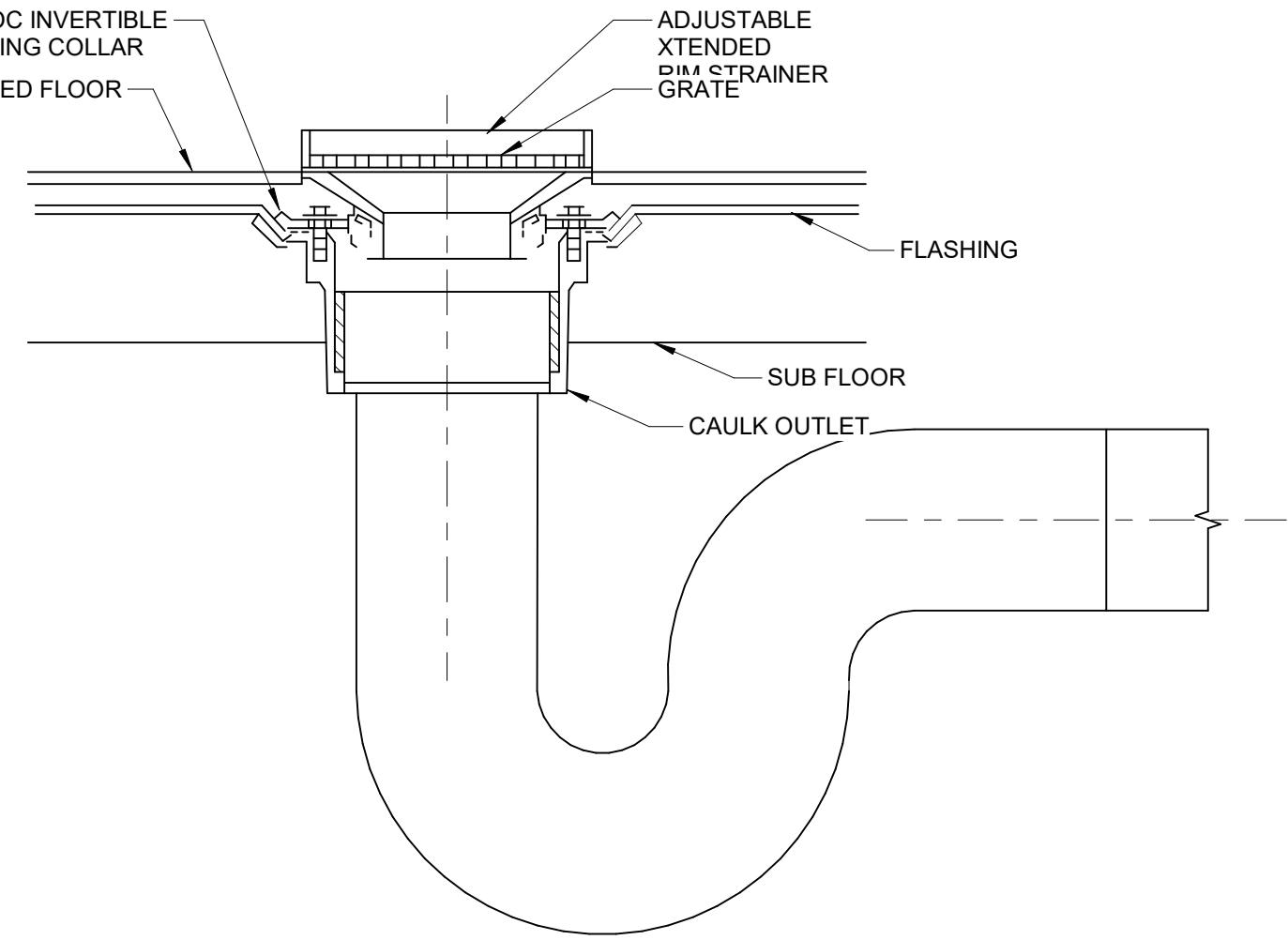


TRAP PRIMER DETAIL (TP-1)
SCALE: NONE



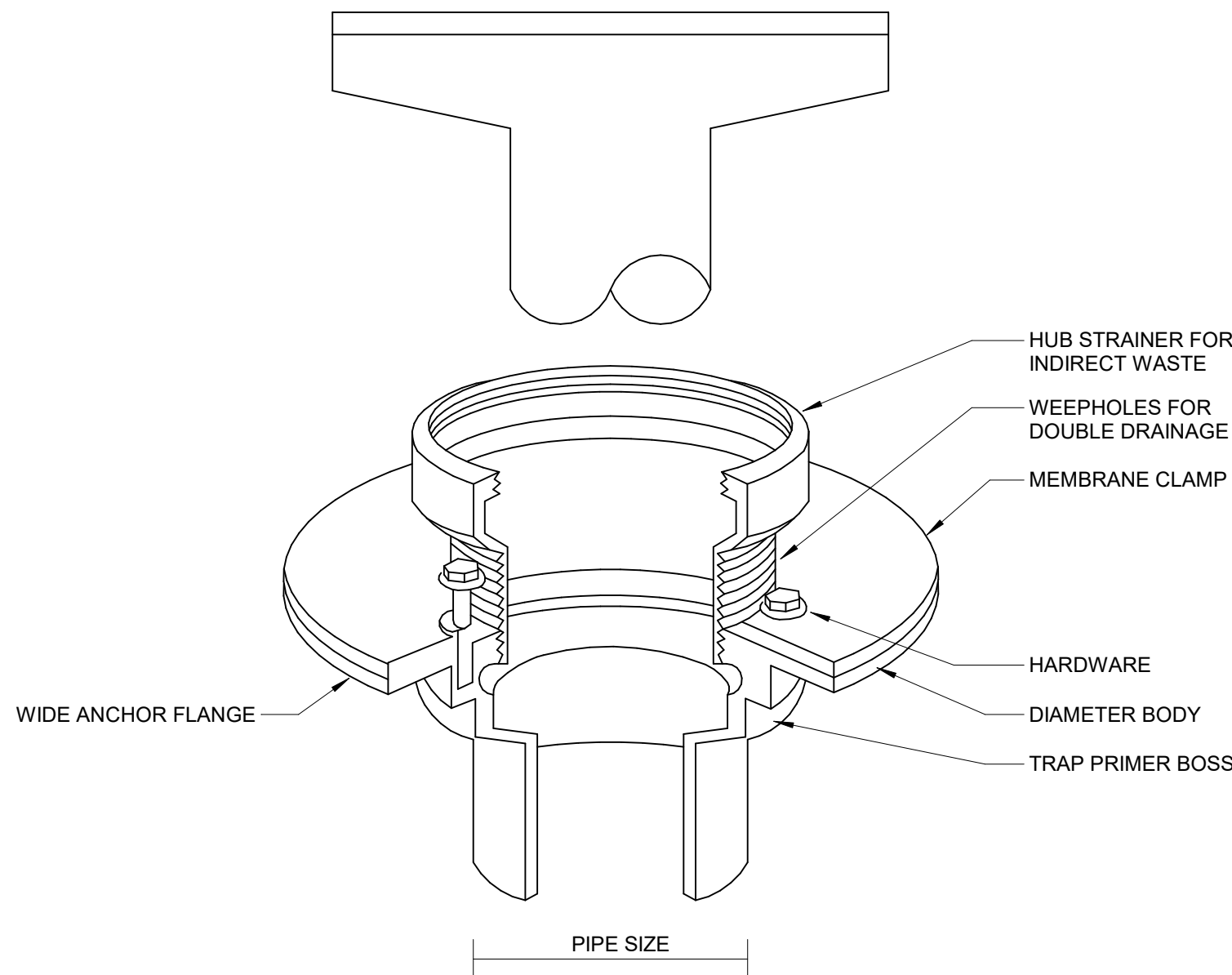
FLOOR DRAIN DETAIL
SCALE: NONE

- NOTE:
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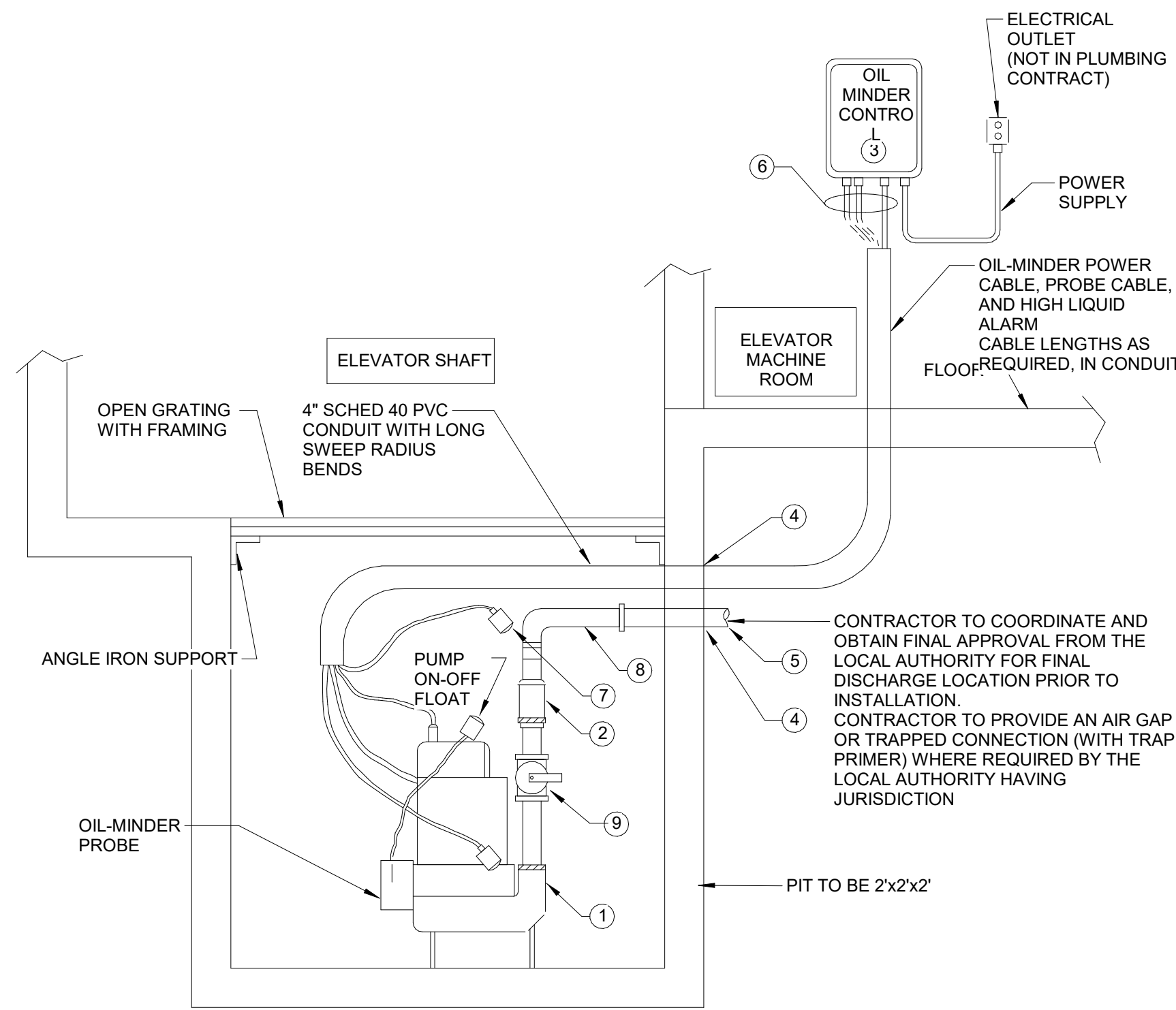


MECHANICAL ROOM FLOOR DRAIN DETAIL
SCALE: NONE

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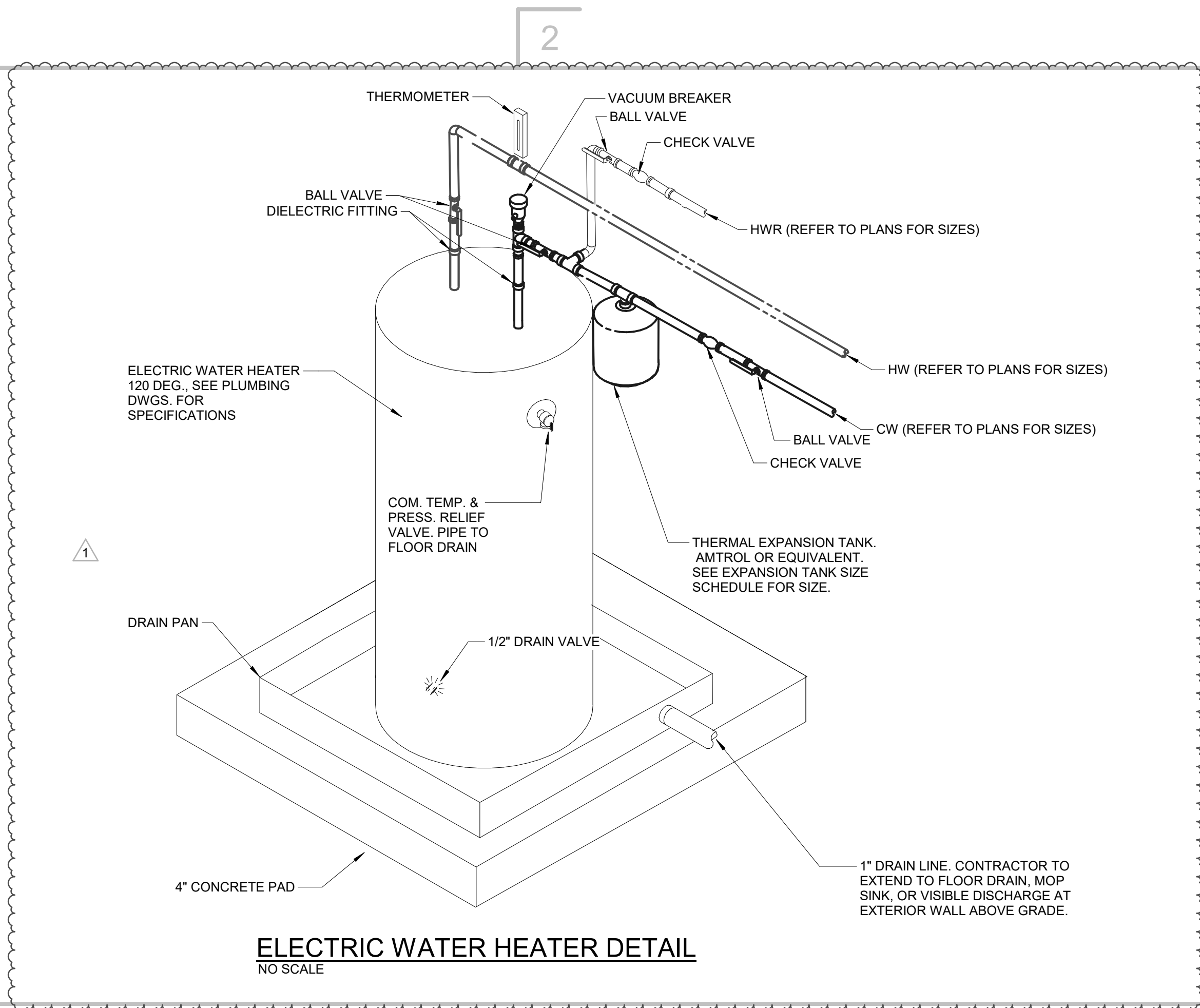
HUB DRAIN DETAIL
SCALE: NONE



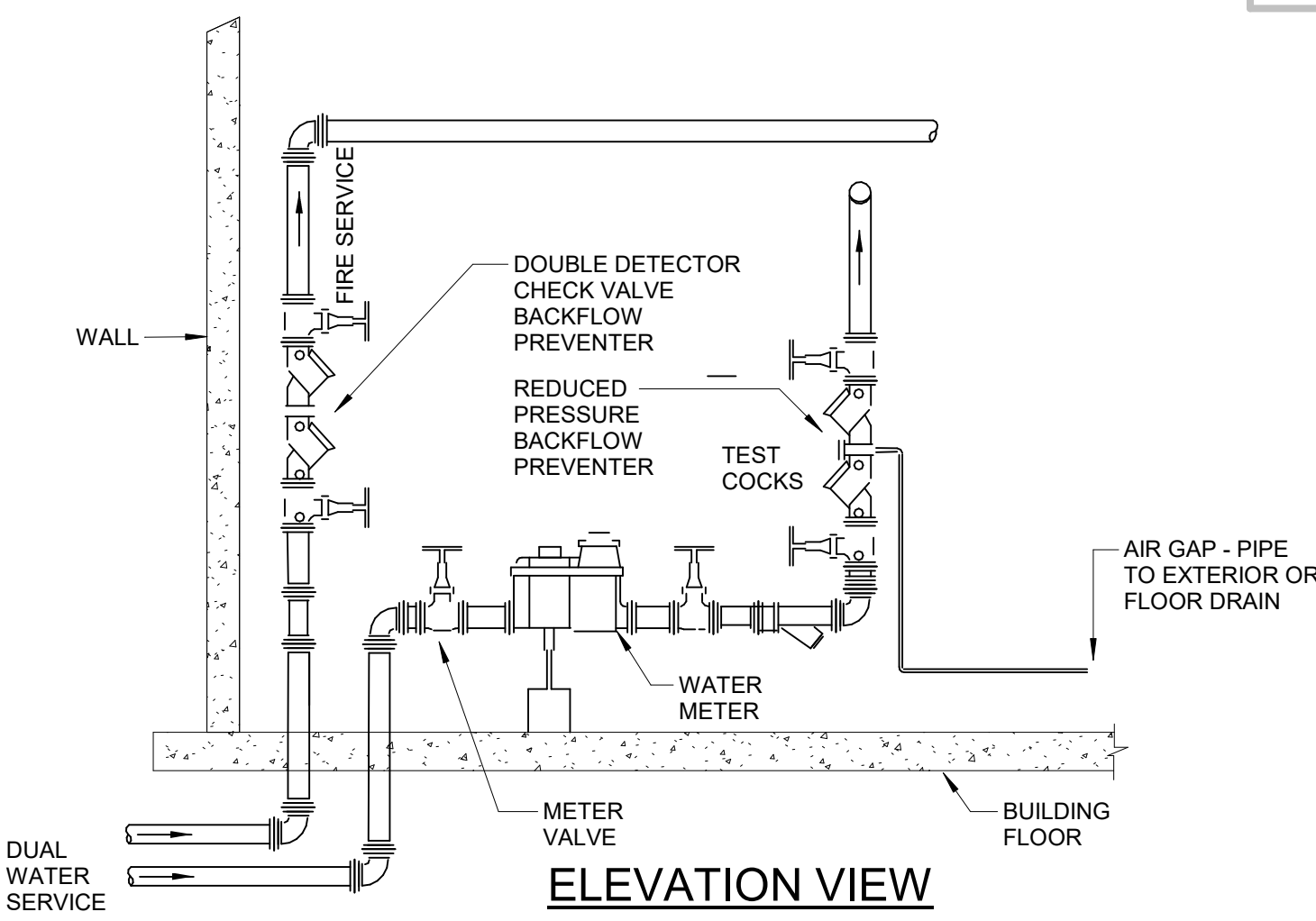
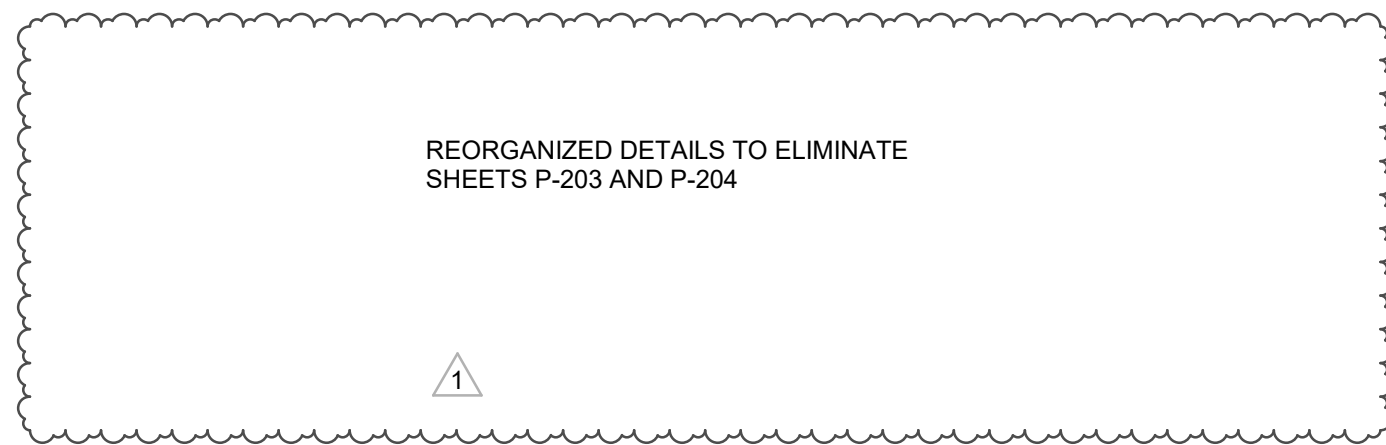
SUMP PUMP DIAGRAM-HYDRAULIC ELEVATOR DIAGRAM
SCALE: NO SCALE

- STANCOR MODEL SE-50 SUBMERSIBLE EFFLUENT PUMP .5HP, 115 VOLT, 3600 RPM, 2" DISCHARGE CONNECTION, 50 GPM AT 20 FT. HEAD.
- STANCOR CHECK VALVE.
- STANCOR OIL-MINDER 115V, 1 PHASE CONTROL SYSTEM WITH OPTIONAL BUILT-IN AUDIBLE AND VISUAL ALARM WHEN PUMP DOES NOT RUN DUE TO OIL IN PIT OR HIGH LIQUID CONDITION. PROVIDE SILENCING BUTTON FOR AUDIBLE ALARM BUILT INTO PANEL. PANEL SHALL HAVE ADDITIONAL CONTACT FOR REMOTE ALARM LOCATION.
- WATERTIGHT SLEEVE
- ALL BURIED PUMP PRESSURE DISCHARGE PIPING SHALL BE PROTECTED WITH TAPECOAT CT CORROSION PROTECTION TAPE.
- OIL MINDER POWER CABLE, PROBE CABLE, AND HIGH LIQUID ALARM CABLE
- HIGH LIQUID ALARM FLOAT WITH CLAMP DEVICE TO MOUNT TO PUMP DISCHARGE PIPING
- PROVIDE UNION AND SHUT-OFF IN DISCHARGE

- NOTES:
- PROVIDE A MINIMUM OF 5 FT. EXTRA OF EACH CABLE (SLACK) ROLLED AND CLAMPED TO THE DISCHARGE PIPE TO ALLOW FOR THE REMOVAL OF THE PUMP FROM THE PIT.
 - ITEMS 1,2,3,7 ARE STANCOR PRODUCTS WHICH ARE TO BE PURCHASED & INSTALLED BY THE CONTRACTOR.
 - TANCOR INC. (203)268-7513
 - EQUIVALENTS BY SOULDS' CENTRIPRO' PUMP, ZOELLER PUMP CO.
 - COORDINATE WORK WITH ELECTRICAL CONTRACTOR.



ELECTRIC WATER HEATER DETAIL
NO SCALE



WATER SERVICE DETAIL
SCALE: NONE

- NOTES:
- BACKFLOW PREVENTERS TO BE SET A MINIMUM OF 12" FROM FLOOR TO THE LOWEST PART OF DEVICE AND A MAXIMUM OF 5'-0" FROM THE FLOOR TO THE TOP OF DEVICE. AND 12" FROM ANY WALL.
 - CONTRACTOR TO PROVIDE PRESSURE REDUCING VALVE IF PRESSURE EXCEEDS 80 PSI.
 - CONTRACTOR TO COORDINATE INSTALLATION REQUIREMENTS WITH LOCAL UTILITY COMPANY.

DIMENSION	PIPE SIZE				
	3"	4"	6"	8"	10"
E	2'-1/2"	2'-5 1/2"	3'-1"	4'-5 1/2"	5'-8 3/4"
G	1'-6"	2'-6"	2'-6"	3'-6"	2'-6"
H	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"

Consultant:

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215-641-1158

2023-141

Project:

ASTON TOWNSHIP MUNICIPAL COMPLEX
3264 Concord Road
Aston, PA 19014

Owner:

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Suite 123
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Sheet Title:

**DETAILS-
PLUMBING**

Sheet Number:

P-202

NOTICE

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PLUMBING FIXTURE SCHEDULE

1. ALL FIXTURES AND TRIM TO BE LEAD FREE 2. ALL HANDICAP FIXTURES TO BE INSTALLED ADA COMPLIANT WITH OFFSET WASTE WHERE REQUIRED AND INCLUDING UNDERFIXTURE PROTECTIVE KIT. 3. REFER TO SPECIFICATION FOR ADDITIONAL FIXTURE REQUIREMENTS AND ALTERNATE MFR.'S. 4. ALL TRIM TO BE CHROME PLATED CAST BRASS. 5. LAVATORIES IN PUBLIC TOILETS TO BE FURNISHED WITH GRID STRAINERS. FIXTURES IN PRIVATE TOILETS AND LOCKER ROOMS SHALL BE FURNISHED WITH POP-UP DRAINS. 6. TRAPS FOR LAV./SINKS SHALL BE SEMI-CAST BRASS/17 GAUGE WASTE 1 1/4"x1 1/2" OR 1 1/2" DEPENDING ON FIXTURE OUTLET. 7. ALL FIXTURES TO BE FURNISHED WITH INDIVIDUAL FIXTURE STOP VALVES. IN PUBLIC AREAS VALVES SHALL BE LOOSE KEY TYPE. 8. ALL WALL HUNG FIXTURES TO BE PROVIDED WITH SUITABLE FLOOR MOUNTED SUPPORTS. 9. WALL HUNG WATER CLOSETS SHALL BE PROVIDED WITH COMBINATION CARRIER WITH HORIZONTAL OR VERTICAL FITTING TO SUIT PIPING ARRANGEMENT. 10. VENTS NOTED ARE FOR INDIVIDUAL FIXTURE VENTS ONLY. 11. WATER CLOSETS LOCATED IN PUBLIC AREAS SHALL BE PROVIDED WITH OPEN FRONT SEATS. 12. COORDINATE WITH ARCHITECT FOR BLOCKING REQUIREMENTS.																			
BASIS OF DESIGN (APPROVED MFR.'S ARE LISTED IN SPECIFICATIONS)																			
TAG	DESCRIPTION	MANUFACTURER	MODEL NO.	FAUCET OR FLUSH VALVE	CARRIER OR SUPPORT	SENSOR OPERATED	COLOR/FINISH	FLOW (GPF)	MAP	ROUGH IN				FIXTURE UNITS			MEA NOTES:		
CTL	COUNTER-TOP LAVATORY	KOHLER	CAXTON K-2210	DELTA 500-DST	COUNTER-TOP	-	WHITE	0.5 GPM	-	CW 1/2"	HW 1/2"	SAN 1 1/4"	SWV 1 1/4"	CW .5	HW .5	DFU 1	WATERSENSE LABELED.		
EW	EYE WASH	GUARDIAN	G1848	-	WALL MOUNTED	-	-	-	-	-	-	-	-	-	-	-	ANSI-COMPLIANT WALL MOUNTED EYEWASH AT SINK. COORDINATE SPECIFIC MODEL AND MOUNTING OPTION WITH ARCHITECT PRIOR TO ORDERING. PROVIDE G6020 THERMOSTATIC MIXING VALVE FOR EYEWASH.		
EWC	ELECTRIC WATER COOLER	ELKAY	EZSTL8WSLK	-	WALL MOUNTED	-	LIGHT GRAY	8 GPH	-	-	1/2"	-	1 1/4"	1 1/4"	-	-	-	B1 LEVEL WATER COOLER, ELKAY EZH20 BOTTLE FILLING STATION, FLEXIGUARD SAFETY BUBBLER, 115 V, 60 HZ, 6A, ADA COMPLIANT.	
FD	FLOOR DRAIN	J.R. SMITH	2010	-	-	-	-	-	-	-	-	-	3"	2"	-	-	-	PROVIDE TRAP PRIMER. REFER TO SPEC SECTION 22 13 00 FOR MORE INFORMATION.	
FD-1	FLOOR DRAIN	J.R. SMITH	2530	-	-	-	-	-	-	-	-	-	4"	2"	-	-	-	BALL FLOAT BACKWATER VALVE. PROVIDE TRAP PRIMER. REFER TO SPEC SECTION 22 13 00 FOR MORE INFORMATION.	
FD-2	FUNNEL DRAIN	-	-	-	-	-	-	-	-	-	-	-	4"	2"	-	-	-	PROVIDE TRAP PRIMER.	
HC HB	HOT AND COLD HOSE BIBB	ACORN ENGINEERING	8145	-	WALL MOUNTED	-	STAINLESS STEEL	-	-	-	3/4"	3/4"	-	-	-	-	-	LOCKABLE HOT AND COLD HOSE BIBB. VACUUM BREAKER.	
LAV	LAVATORY HANDICAPPED	AMERICAN STANDARD	LUCERNE 0355.912	MOEN COMMERCIAL M-BITION 8432	WALL MOUNTED	-	WHITE	0.5 GPM	-	1/2"	1/2"	1 1/4"	1 1/4"	1.5	1.5	1	-	VITREOUS CHINA, ADA COMPLIANT, WATERSENSE LABELED.	
MR	MOP RECEPTOR	FIAT	TSB-1610	FIAT 830-AA	FLOOR MOUNTED	-	TERRAZZO	1.5 GPM	-	1/2"	1/2"	3"	2"	-	-	-	-	CORNER MOP RECEPTOR, 24"x24"x12", 832-AA HOSE AND BRACKETS, 833-AA SILICONE SEALANT, & BUMPER GUARD	
RD/OD	ROOF DRAIN OVERFLOW DRAIN	FROET	100	-	-	-	-	-	-	-	-	2" 3/4" 4" 6" 6" 8"	-	-	-	-	-	DUAL DRAIN DESIGN, 5" HIGH PRIMARY STRAINER, 6" HIGH OVERFLOW INLET, CAST IRON BODY.	
SH	SHOWER HANDICAPPED	FREEDOM	APF8233BF875	MOEN 8342SP15	FLOOR MOUNTED	-	WHITE	1.5 GPM	-	1/2"	1/2"	2"	2"	-	-	-	-	62"x32.75"x78.625" ONE-PIECE SHOWER, TEXTURED FLOOR. ADA COMPLIANT, WATERSENSE LABELED.	
SK	KITCHEN SINK HANDICAPPED	ELKAY	LUSTERONE LRAD292255	DELTA 100-DST	DROP-IN	-	STAINLESS STEEL	1.5 GPM	-	1/2"	1/2"	1 1/2"	1 1/2"	-	-	-	-	29"x22"x5-1/2", 18 GAUGE 304 STAINLESS STEEL, EQUAL DOUBLE BOWL, REAR CENTER DRAIN, SINGLE LEVER FAUCET, ADA COMPLIANT.	
SK-1	KITCHEN SINK HANDICAPPED	ELKAY	LUSTERONE LRAD252240	DELTA 100-DST	DROP-IN	-	STAINLESS STEEL	1.5 GPM	-	1/2"	1/2"	1 1/2"	1 1/2"	-	-	-	-	25"x22"x4", 18 GAUGE 304 STAINLESS STEEL, SINGLE BOWL, REAR CENTER DRAIN, ADA COMPLIANT.	
SK-2	KITCHEN SINK	ELKAY	CROSSTOWN ECTS833221BG	ELKAY LKEC2031	DROP-IN/ UNDERMOUNT	-	STAINLESS STEEL	1.5 GPM	-	1/2"	1/2"	1 1/2"	1 1/2"	-	-	-	-	33"x22"x9", 18 GAUGE 304 STAINLESS STEEL, DOUBLE BOWL, REAR CENTER DRAIN, PROVIDE ELKAY PART #8490022 FOR DROP-IN INSTALLATION.	
SK-3	KITCHEN SINK HANDICAPPED	ELKAY	LUSTERONE LRAD221955	ELKAY LK024238HC	DROP-IN	-	STAINLESS STEEL	1.5 GPM	-	1/2"	1/2"	1 1/2"	1 1/2"	-	-	-	-	22"x19-1/2"x5-1/2", 18 GAUGE 304 STAINLESS STEEL, SINGLE BOWL, REAR CENTER DRAIN, ADA COMPLIANT.	
UR	URINAL HANDICAPPED	AMERICAN STANDARD	TRIMBROOK 6561.017	SLOAN ROYAL 180 ESS	WALL MOUNTED	-	WHITE	1.0 GPF	-	1"	-	2"	2"	-	-	-	-	VITREOUS CHINA, ADA COMPLIANT (REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHT).	
WC	WATER CLOSET HANDICAPPED	AMERICAN STANDARD	MADERA FLOWISE 3401.001	SLOAN ROYAL 111 ESS	FLOOR MOUNTED	-	WHITE	1.28 GPF	-	1"	1/2"	3"	2"	10	-	4	-	VITREOUS CHINA, 16-1/2" HEIGHT FLOOR MOUNTED FLUSH VALVE, ELONGATED BOWL, EVERCLEAN SURFACE, ADA COMPLIANT. PROVIDE TOILET SEAT.	
WC-1	COMBINATION FIXTURE	ACORN	1432AL	ACORN	FLOOR MOUNTED	-	STAINLESS STEEL	1.28 GPF	-	1"	1/2"	3"	2"	11.5	1.5	5	-	LOW CONSUMPTION FLUSHING RIM, INTEGRAL STRAINER, WASHOUT FLUSH ACTION.	
WH	WALL HYDRANT	J.R. SMITH	5509QT	-	-	-	-	-	-	-	3/4"	-	-	-	-	-	-	1/4 TURN NON-FREEZE WALL HYDRANT, INTEGRAL VACUUM BREAKER, 20 GAUGE STAINLESS STEEL BOX, OPERATING KEY LOCK.	

WATER HEATER SCHEDULE

TAG	LOCATION	TYPE	MANUFACTURER	MODEL NO.	GALLON STORAGE	ENERGY FACTOR	THERMAL EFFICIENCY	RECOVERY 90°F RISE	BTU INPUT	ELECTRICAL			NOTES:	
EW-H-1	WATER ROOM	ELECTRIC	BRADFORD WHITE	LE230S3-3	30	-	-	21 GAL	-	WATTS 4500	VOLTS -	PHASE -	18" JACKET DIAMETER, COORDINATE CONNECTION WITH ELECTRICAL CONTRACTOR.	
EW-H-2	MECHANICAL(210)	ELECTRIC	BRADFORD WHITE	LE256T3-3	55	-	-	25 GAL	-	5500	-	-	23" JACKET DIAMETER, COORDINATE CONNECTION WITH ELECTRICAL CONTRACTOR.	
EW-H-3	MECHANICAL(210)	ELECTRIC	BRADFORD WHITE	LE256T3-3	55	-	-	25 GAL	-	5500	-	-	23" JACKET DIAMETER, COORDINATE CONNECTION WITH ELECTRICAL CONTRACTOR.	

PLUMBING PUMP SCHEDULE

SYMBOL	TYPE	MANUFACTURER	MODEL	CONFIGURATION	GPM	HEAD	HP	HEADER SIZE	WATTS	ELECTRICAL		NOTES:	
P-1	HOT WATER RECIRCULATION PUMP	TACO	0015E3	INLINE	4	12 FT	-	-	44	115	1	HIGH EFFICIENCY CIRCULATOR. SET TO LOWEST MODE REQUIRED TO BALANCE SYSTEM. REFER TO DETAIL.	
P-2	HOT WATER RECIRCULATION PUMP	TACO	0015E3	INLINE	4	12 FT	-	-	44	115	1	HIGH EFFICIENCY CIRCULATOR. SET TO LOWEST MODE REQUIRED TO BALANCE SYSTEM. REFER TO DETAIL.	
ESP-1	SUMP PUMP	STANCOR	SE-50	-	50	22	0.5	-	-	-	-	1	

EXPANSION TANK SIZE SCHEDULE

WATER HEATER GALLONS	EXTROL SIZE GALLONS		DIAMETER	HEIGHT	CONN. SIZE
	TOTAL	ACCEPTANCE			
1 TO 50	2	0.9	8"	12 1/2"	3/4"
51 TO 100	4.4	2.4	11"	15"	3/4"
100 TO 199	8.6	8.6	11"	24 3/4"	3/4"
200 AND OVER	11.3	14	15 3/8"	23 7/8"	1"

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215-641-1158
2023-141

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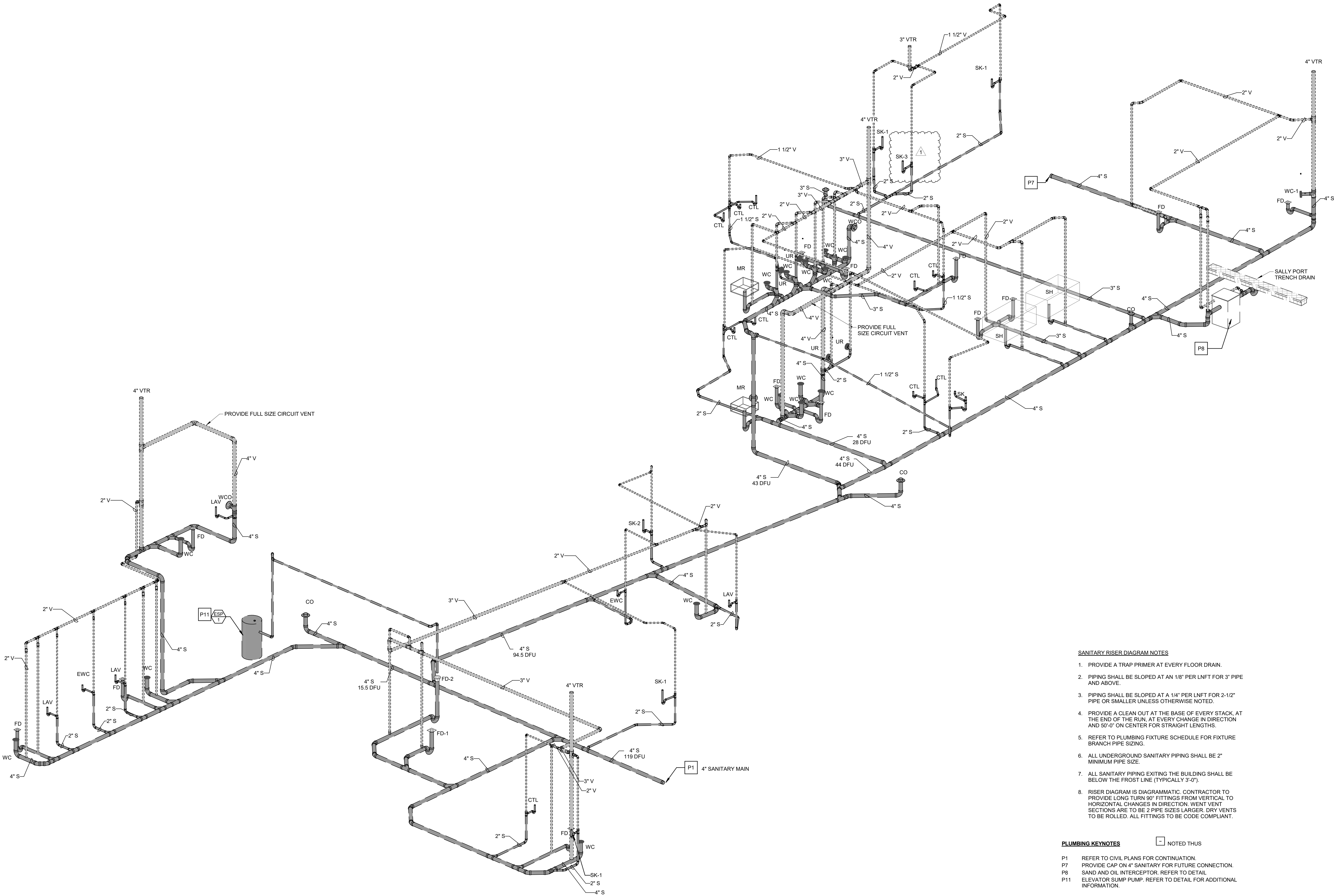
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**RISER DIAGRAMS-
SANITARY**

Sheet Number:
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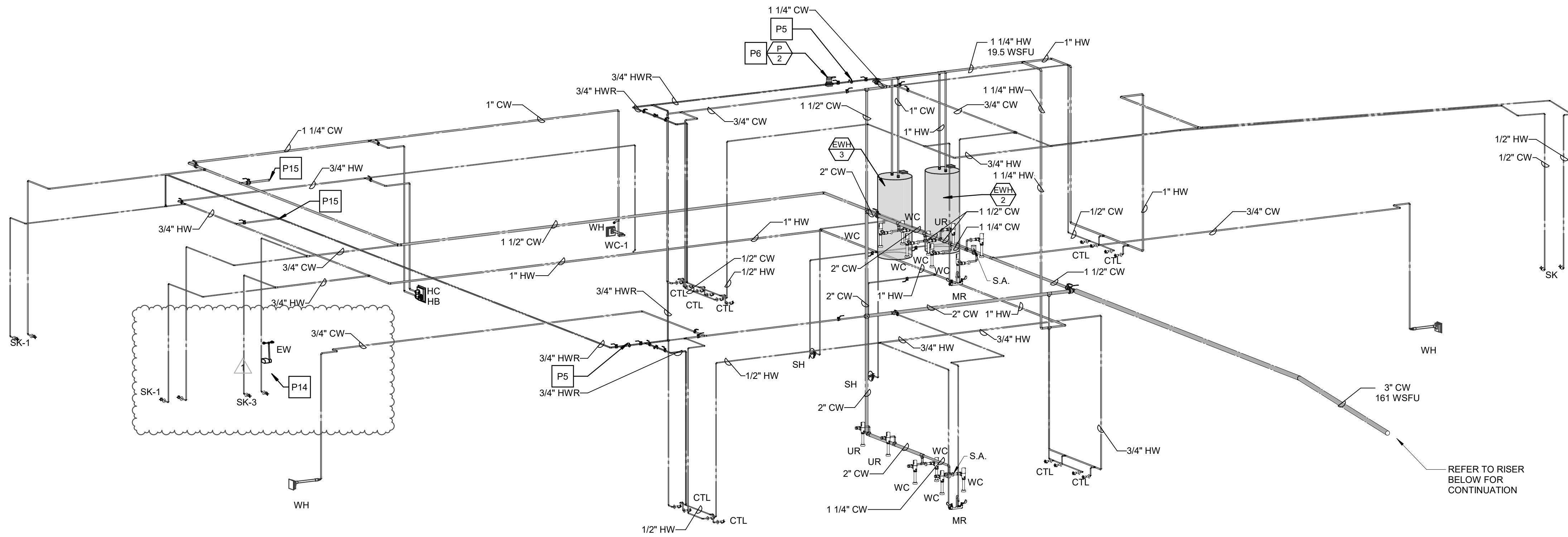
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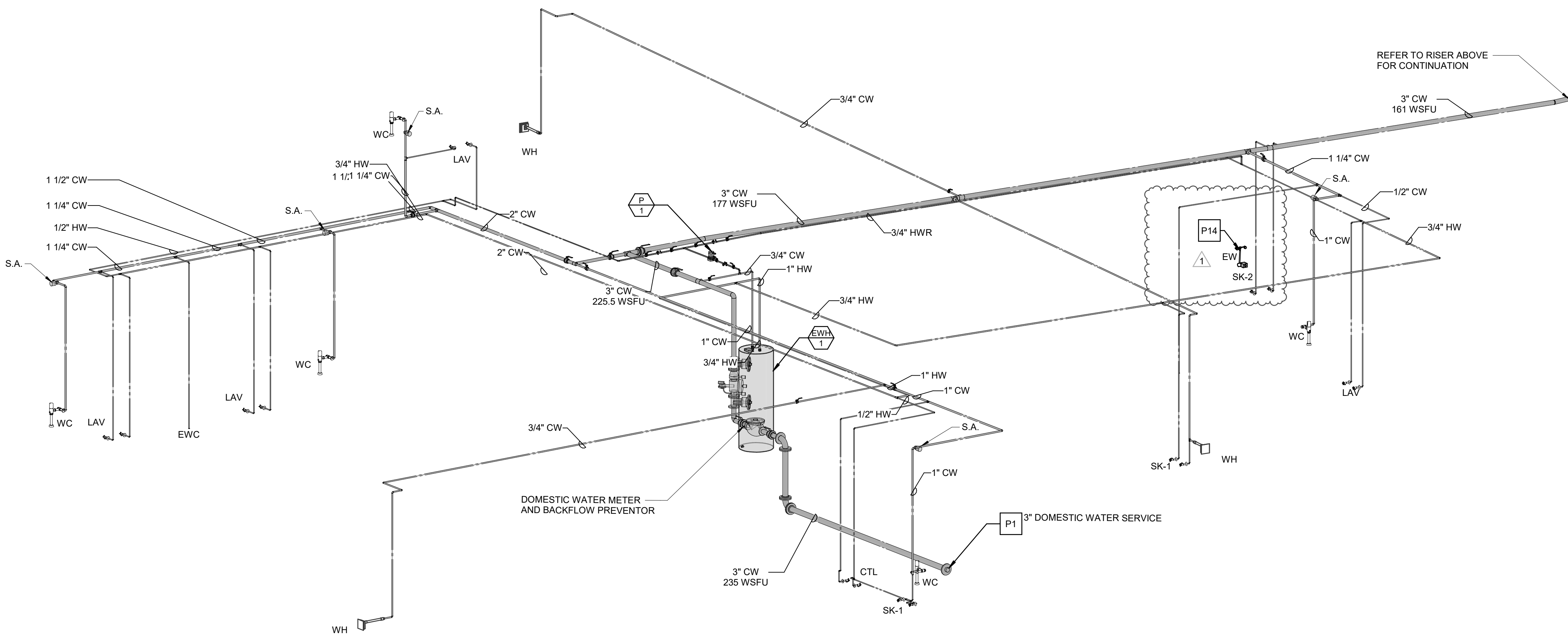
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Sheet Title:
RISER DIAGRAMS- DOMESTIC WATER

Sheet Number:
P-402



DOMESTIC WATER RISER DIAGRAM
NOT TO SCALE



DOMESTIC WATER RISER DIAGRAM
NOT TO SCALE

- DOMESTIC WATER RISER DIAGRAM NOTES**
1. PROVIDE A TRAP PRIMER AT EVERY FLOOR DRAIN.
 2. PROVIDE A SHUT OFF VALVE AT EACH PIECE OF EQUIPMENT.
 3. PROVIDE A CHECK VALVE AND BALANCING VALVE AT EVERY DOMESTIC HOT WATER RETURN BRANCH / LOOP. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE A CERTIFIED BALANCING REPORT ON EACH HOT WATER RETURN SYSTEM.
 4. REFER TO PLUMBING FIXTURE SCHEDULE FOR FIXTURE BRANCH PIPE SIZING.

- PLUMBING KEYNOTES**
- NOTED THUS
- P1 REFER TO CIVIL PLANS FOR CONTINUATION.
P5 PROVIDE HOT WATER BALANCING VALVE AND SHUTOFF VALVE.
P6 HOT WATER RECIRCULATION PUMP. REFER TO DETAIL.
P14 PROVIDE GUARDIAN 6186 ANSI-COMPLIANT WALL MOUNTED EYEWASH AT SINK. COORDINATE SPECIFIC MODEL AND MOUNTING OPTION WITH ARCHITECT PRIOR TO ORDERING.
P15 PROVIDE G8020 THERMOSTATIC MIXING VALVE FOR EYEWASH.
PROVIDE CAP ON 1" COLD WATER AND 1/2" HOT WATER FOR FUTURE CONNECTION.

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ABBREVIATIONS				GENERAL NOTES	
ABS	ABSOLUTE	MECH	MECHANICAL	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.
AC	ALTERNATING CURRENT	MCC	MOTOR CONTROL CENTER	2.	OBTAIN AND PAY FOR ALL BUILDING PERMITS, INSPECTIONS, CONNECTION CHARGES, AND FEES.
AFF	ABOVE FINISHED FLOOR	MCM	THOUSAND CIRCULAR MILLS	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.
AHU	AIR HANDLING UNIT	MFR	MANUFACTURER	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.
AMP, A	AMPERE	MH	MANHOLE, MOUNTING HEIGHT	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 ARCHITECTS AND ENGINEER'S INTERPRETATION OF THE DOCUMENTS ARE TO BE BINDING UPON THE CONTRACTOR.
APP	APPROVED	MIN	MINIMUM	6.	PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT FOR REVIEW PRIOR TO ORDERING. COORDINATE ALL PHYSICAL DIMENSIONS PRIOR TO SHOP DRAWING SUBMISSION.
APPROX	APPROXIMATE	MISC	MISCELLANEOUS	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.
ATS	AUTOMATIC TRANSFER SWITCH	MLO	MAIN LUG ONLY	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.
AVG	AVERAGE	MOD	MOTOR OPERATED DAMPER	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.
BLDG	BUILDING	MTD	MOUNTED	10.	COORDINATE LOCATIONS AND ROUGH-IN REQUIREMENTS WITH ALL TRADES PRIOR TO INSTALLATION.
C	CONDUIT	(N)	NEW	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.
CB	CIRCUIT BREAKER	NA	NOT APPLICABLE	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.
COL	COLUMN	N.C.	NORMALLY CLOSED	13.	PROVIDE POWER TO HVAC AND PLUMBING EQUIPMENT AS REQUIRED FOR COMPLETE, OPERATIONAL SYSTEMS.
CONN	CONNECTION	NEUT.	NEUTRAL	14.	PROVIDE LIGHTING THROUGH-OUT, WITH EXTERIOR LIGHTING AT ALL EGRESS DOORS.
CONT	CONTINUED	NIC	NOT IN CONTRACT	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.
CONTR	CONTRACTOR	NL	NIGHT LIGHT	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.
DB	DECIBEL	N.O.	NORMALLY OPEN	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.
DEG	DEGREE	NO.	NUMBER	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.
DIA	DIAMETER	NTS	NOT TO SCALE	19.	PROVIDE GROUNDING SYSTEM FOR FACILITY IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
DN	DOWN	OD	OUTSIDE DIAMETER	20.	PROVIDE ROOF PENETRATIONS FOR ALL ASSOCIATED ELECTRICAL WORK.
DT	DOUBLE THROW	OH	OVERHEAD	21.	ALL DEVICES ARE TO BE INSTALLED SQUARE, LEVEL, PLUMB, AND TRUE.
DWG	DRAWING	OHD	OVERHEAD DOOR	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.
(E)	EXISTING	%	PERCENT	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".
E.C.	ELECTRICAL CONTRACTOR	PB	PUSH BUTTON	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.
EF	EXHAUST FAN	PH	PHASE-ELECTRICAL	25.	PROVIDE CODE REQUIRED SIGNAGE (I.E., NEC 110.34, NEC 700.8, AND 695.4 B3).
EL	ELEVATION	PNL	PANEL	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.
ELEC	ELECTRICAL	PVC	POLYVINYL CHLORIDE PIPE	27.	ALL EQUIPMENT PANELS, CONTROLS, SAFETY SWITCHES, AND DEVICES ARE TO BE PROVIDED WITH PERMANENT BLACK LAMINATED MICARTA WHITE 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.
EQ	EQUAL	(R)	REMOVE EXISTING	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.
EQUIP	EQUIPMENT	(RE)	RELOCATE EXISTING	29.	ALL WORK IS TO BE CONCEALED, UNLESS OTHERWISE INDICATED.
EW	ELECTRIC WATER COOLER	R&D	RESEARCH & DEVELOPMENT	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.
EXH	ELECTRIC WATER HEATER	REQ	REQUIRED	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.
EXT	EXTERIOR	RM	ROOM	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.
*F	DEGREE FAHRENHEIT	SCH	SCHEDULE	33.	PROVIDE ONE SET OF ELECTRONIC AS-BUILT DRAWINGS AT COMPLETION OF WORK. SUBMIT TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL.
FAB	FIRE ALARM CONTROL PANEL	SF	SQUARE FEET		
FAC	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	UL	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 26 30 00.



DRAWING LIST

Drawing List- Electrical					
NUMBER	NAME	Issued Drawings	Current Revision	Current Revision Date	Current Description
E-001	COVER SHEET- ELECTRICAL	•	1	04/17/24	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	•	1	04/17/24	Revisions
E-202	DETAILS- ELECTRICAL	•	0	03/29/24	Issued
E-203	DETAILS- ELECTRICAL	•	1	04/17/24	Revisions
E-301	SCHEDULES- ELECTRICAL	•	1	04/17/24	Revisions

ELECTRICAL SYMBOLS AND ABBREVIATIONS

S	SINGLE-POLE WALLBOX SWITCH	TV	TELEVISION OUTLET:		SURFACE MOUNTED DISTRIBUTION PANEL SERVED VIA NORMAL POWER FEEDER
S ₃	3-WAY WALLBOX SWITCH		COMMON AREAS:		
S ₄	4-WAY WALLBOX SWITCH		PROVIDE BACK BOX WITH 3/4"Ø BUSHED CONDUIT WITH PULL-STRING TO ACCESSIBLE CEILING SPACE. DEVICES, WIRING METHODS, AND TERMINATIONS BY OTHERS. MOUNT 60" ABOVE FINISHED FLOOR TO CENTER OF DEVICE OR AS DIRECTED BY THE OWNER.		SURFACE MOUNTED LIGHTING, OR POWER BRANCH CIRCUIT PANEL SERVED VIA NORMAL POWER FEEDER
S _D	LUMINAIRE CONTROL SYSTEM DIMMER				RECESSED MOUNTED LIGHTING, OR POWER BRANCH CIRCUIT PANEL SERVED VIA NORMAL POWER FEEDER
S ₂₂₃₄	LUMINAIRE CONTROL SYSTEM WALLBOX CONTROL FOR TIMECLOCK PROGRAM OVERRIDE.				
S ₂₂₃₄	INDICATES AREA OR ZONE OF CONTROL		DWELLING UNITS:		MOTOR
SE	EMERGENCY SHUT-DOWN SWITCH		PROVIDE BACK BOX WITH 3/4"Ø BUSHED CONDUIT WITH PULL-STRING TO ACCESSIBLE CEILING SPACE ABOVE STRUCTURED MEDIA ENCLOSURE. DEVICES, WIRING METHODS, AND TERMINATIONS BY OTHERS. MOUNT 20" ABOVE FINISHED FLOOR TO TOP OF DEVICE.		
St	SINGLE-POLE WALLBOX SWITCH WITH INTEGRAL TIMER FUNCTION.				MOTOR RATED SWITCH (PROVIDE MANUAL MOTOR STARTER FOR OVERLOAD PROTECTION, AS REQUIRED)
Sp	SINGLE-POLE WALLBOX SWITCH WITH PILOT LIGHT		DATA OUTLET:		UN-FUSED DISCONNECTING MEANS
◇	DUAL TECHNOLOGY, WALL BOX OCCUPANCY SENSOR WITH OFF/ AUTO OVERRIDE SWITCH	◇	PROVIDE BACK BOX WITH 3/4"Ø BUSHED CONDUIT WITH PULL-STRING TO ACCESSIBLE CEILING SPACE. DEVICES, WIRING METHODS, AND TERMINATIONS BY OTHERS.	XXAF	FUSIBLE DISCONNECTING MEANS
◇	DUAL TECHNOLOGY, CEILING MOUNTED OCCUPANCY SENSOR	◇		XXAT	FRAME CAPACITY
◇	DUAL TECHNOLOGY, WALL BOX VACANCY SENSOR WITH OFF/ AUTO OVERRIDE SWITCH	◇	TELEPHONE OUTLET:	XXAF	ENCLOSED CIRCUIT BREAKER
◇		◇	INDICATES WALL PHONE MOUNTED 54" A.F.F.	XXAT	FRAME CAPACITY
◇		◇	COMMON AREAS:		TRIP RATING
◇		◇	PROVIDE BACK BOX WITH 3/4"Ø BUSHED CONDUIT WITH PULL-STRING TO ACCESSIBLE CEILING SPACE. DEVICES, WIRING METHODS, AND TERMINATIONS BY OTHERS.		
◇		◇	DWELLING UNITS:		MOTOR STARTER
◇		◇	PROVIDE BACK BOX WITH 3/4"Ø BUSHED CONDUIT WITH PULL-STRING TO ACCESSIBLE CEILING SPACE ABOVE STRUCTURED MEDIA ENCLOSURE. DEVICES, WIRING METHODS, AND TERMINATIONS BY OTHERS.		COMBINATION MOTOR STARTER/ DISCONNECTING MEANS
◇		◇	INDICATES TELEPHONE/ DATA OUTLET:		INDICATES HEIGHT ABOVE FINISHED FLOOR TO CENTER OF DEVICE(S)
◇		◇	COMMON AREAS:		WIRING METHOD DESIGNATION (CONDUCTOR QUANTITY AND SIZE)
◇		◇	PROVIDE BACK BOX WITH 1"Ø BUSHED CONDUIT WITH PULL-STRING TO ACCESSIBLE CEILING SPACE ABOVE STRUCTURED MEDIA ENCLOSURE. DEVICES, WIRING METHODS, AND TERMINATIONS BY OTHERS.		PANEL, AND POLE SPACE DESIGNATION (CONCEALED WIRING METHOD)
◇		◇	DWELLING UNITS:		CONCEALED BRANCH CIRCUIT WIRING METHOD
◇		◇	PROVIDE BACK BOX WITH 1"Ø BUSHED CONDUIT WITH PULL-STRING TO ACCESSIBLE CEILING SPACE ABOVE STRUCTURED MEDIA ENCLOSURE. DEVICES, WIRING METHODS, AND TERMINATIONS BY OTHERS.		
◇		◇	WIRELESS ACCESS POINT (CEILING MOUNTED): POWER-OVER-ETHERNET (NO AC POWER REQUIRED). PROVIDE (2) CAT-6 HOME-RUN TO THE MAIN DATA FRAME. PROVIDE 10'-0" PIGTAIL AT EACH LOCATION.		JUNCTION BOX
◇		◇	RECESSED, OR SURFACE MOUNTED LED LUMINAIRE CONNECTED TO NORMAL POWER. REFER TO THE LUMINAIRE SCHEDULE FOR ADDITIONAL INFORMATION.		DUPLEX RECEPTACLE DEVICE
◇		◇	RECESSED, OR SURFACE MOUNTED LED LUMINAIRE CONNECTED TO EMERGENCY POWER, OR PROVIDED WITH INTEGRAL BATTERY BACK-UP. REFER TO THE LUMINAIRE SCHEDULE FOR ADDITIONAL INFORMATION.		
◇		◇	INDICATES LUMINAIRE TYPE		TAG:
◇		◇	INDICATES BRANCH CIRCUIT DESIGNATION		C = DEVICE MOUNTED 0'-8" ABOVE COUNTER TOP
◇		◇	INDICATES CONTROL ZONE		D = DEDICATED OVERCURRENT PROTECTION DEVICE
◇		◇			T = TAMPER RESISTANT DEVICE
◇		◇			U = INTEGRAL USB OUTLETS
◇		◇			GFCI (GROUND-FAULT CIRCUIT-INTERRUPTER) DUPLEX RECEPTACLE DEVICE FOR PERSONAL PROTECTION
◇		◇			SWITCHED (BOTTOM OUTLET) DUPLEX RECEPTACLE DEVICE
◇		◇			INDICATES CORRESPONDING CONTROL DEVICE
◇		◇			SINGLE RECEPTACLE DEVICE FOR EQUIPMENT
◇		◇			DOUBLE DUPLEX RECEPTACLE DEVICE
◇		◇			SPECIAL RECEPTACLE DEVICE (COORDINATE NEMA CONFIGURATION WITH FINAL EQUIPMENT SELECTIONS)
◇		◇			POWER, CCTV, OR CATV
◇		◇			W = WALL SOURCE
◇		◇			F = FLOOR SOURCE
◇		◇			X = 2, 3, OR 4 GANG BOX
◇		◇			FLUSH MOUNTED, ADJUSTABLE FLOOR BOX WITH POWER, IS POWER, AND VOICE/ DATA OUTLETS
◇		◇			W = WALL SOURCE
◇		◇			F = FLOOR SOURCE
◇		◇			X = 2, 3, OR 4 GANG BOX
◇		◇			PUSH-BUTTON DEVICE
◇		◇			ON/ OFF PUSH-BUTTON DEVICE
◇		◇			THREE FUNCTION PUSH-BUTTON DEVICE (UP/ DOWN/ STOP)
◇		◇			VOLUME CONTROL DEVICE:
◇		◇			PROVIDE BACK BOX WITH 3/4"Ø BUSHED CONDUIT WITH PULL-STRING TO ACCESSIBLE CEILING SPACE. DEVICES, WIRING METHODS, AND TERMINATIONS BY OTHERS. MOUNT 48" ABOVE FINISHED FLOOR TO CENTER OF DEVICE OR AS DIRECTED BY THE OWNER.
◇		◇			
◇		◇			MICROPHONE OUTLET

NOTICE

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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. ANY CONTRACTOR IS BOUND TO PROVIDE A SUPPLIER OR CONTRACTOR'S PRICING, WHICH IS BASED ONLY ON DRAWINGS OR SCHEDULES, MAY LEAVE UNPAID COSTS UNACCOUNTED FOR WHICH WILL ULTIMATELY BE THE CONTRACTOR OR SUPPLIER'S RESPONSIBILITY TO PROVIDE.

Consultant:

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215-641-1158

2023-141

Project:

ASTON TOWNSHIP MUNICIPAL COMPLEX
3264 Concord Road
Aston, PA 19014

Owner:

ASTON TOWNSHIP
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Aston, PA 19014

Revision/Issue:

0 03/29/24 Issued
1 04/17/24 Revisions

Sheet Title:

COVER SHEET- ELECTRICAL

Sheet Number:

E-001

Consultant:
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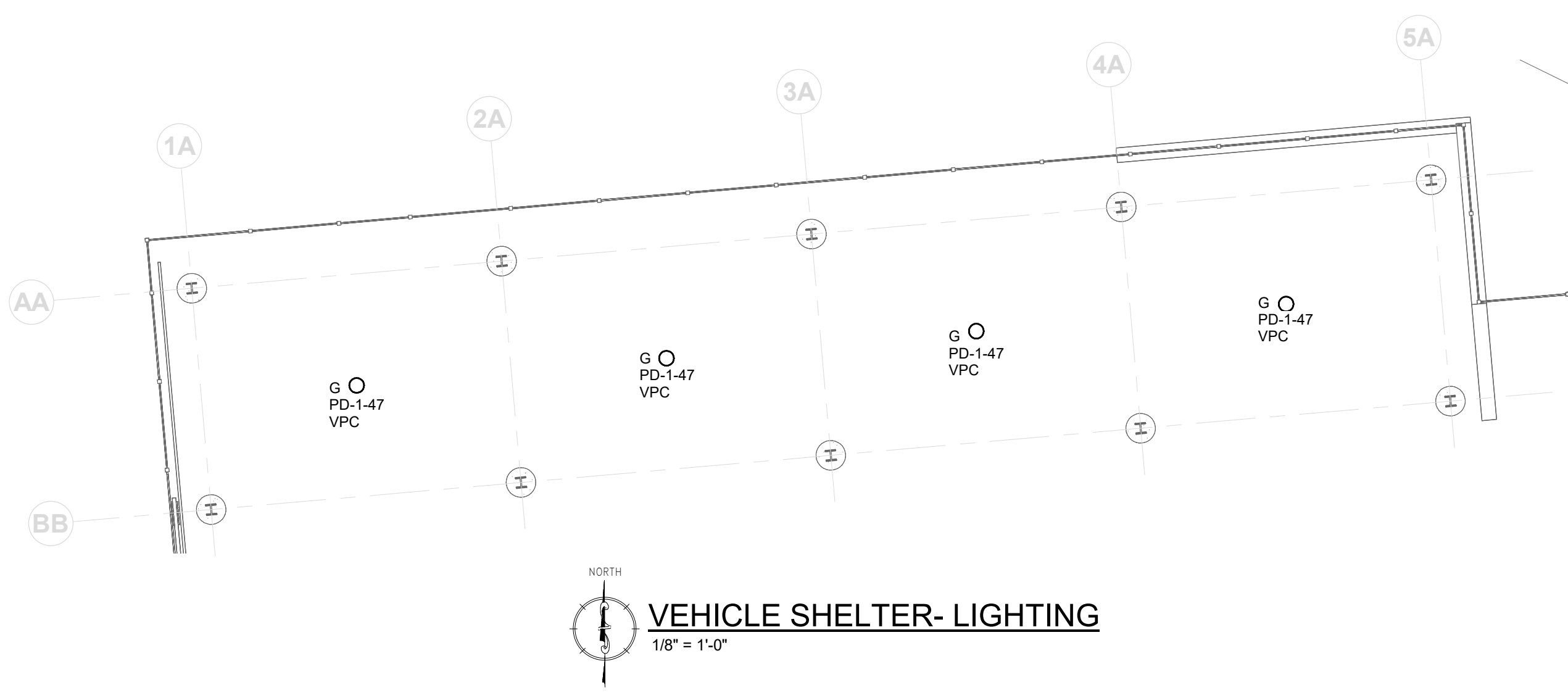
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Drawn: IM
Reviewed: -
Contact: JK
Project Number: 2301.00-22

Sheet Title:
FIRST FLOOR PLAN -LIGHTING

Sheet Number:
E-101



ELECTRICAL KEY NOTES

NOTED THUS

FIXTURES "B" AND "H" ARE
NOW NOTED AS "P1"

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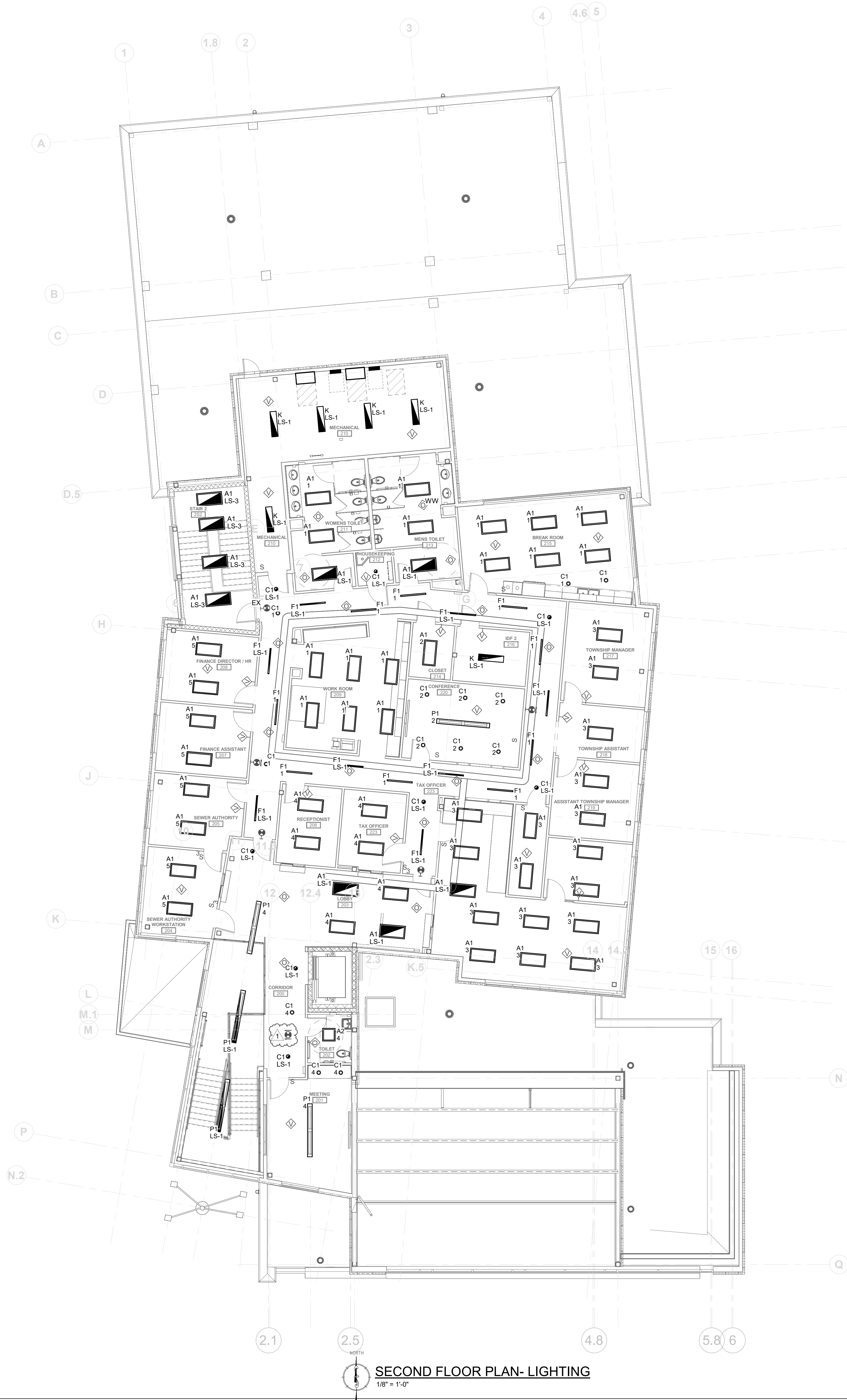
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Sheet Title:
SECOND FLOOR PLAN- LIGHTING

Sheet Number:
E-102



NOTICE
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.

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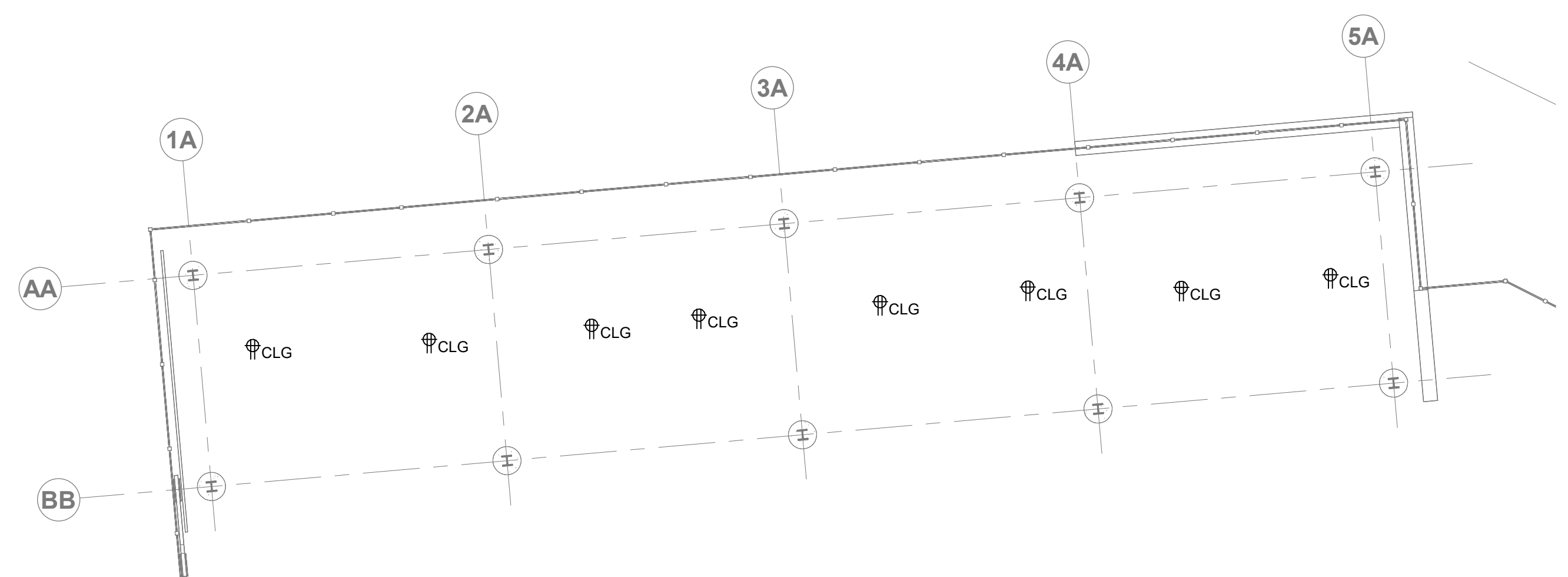
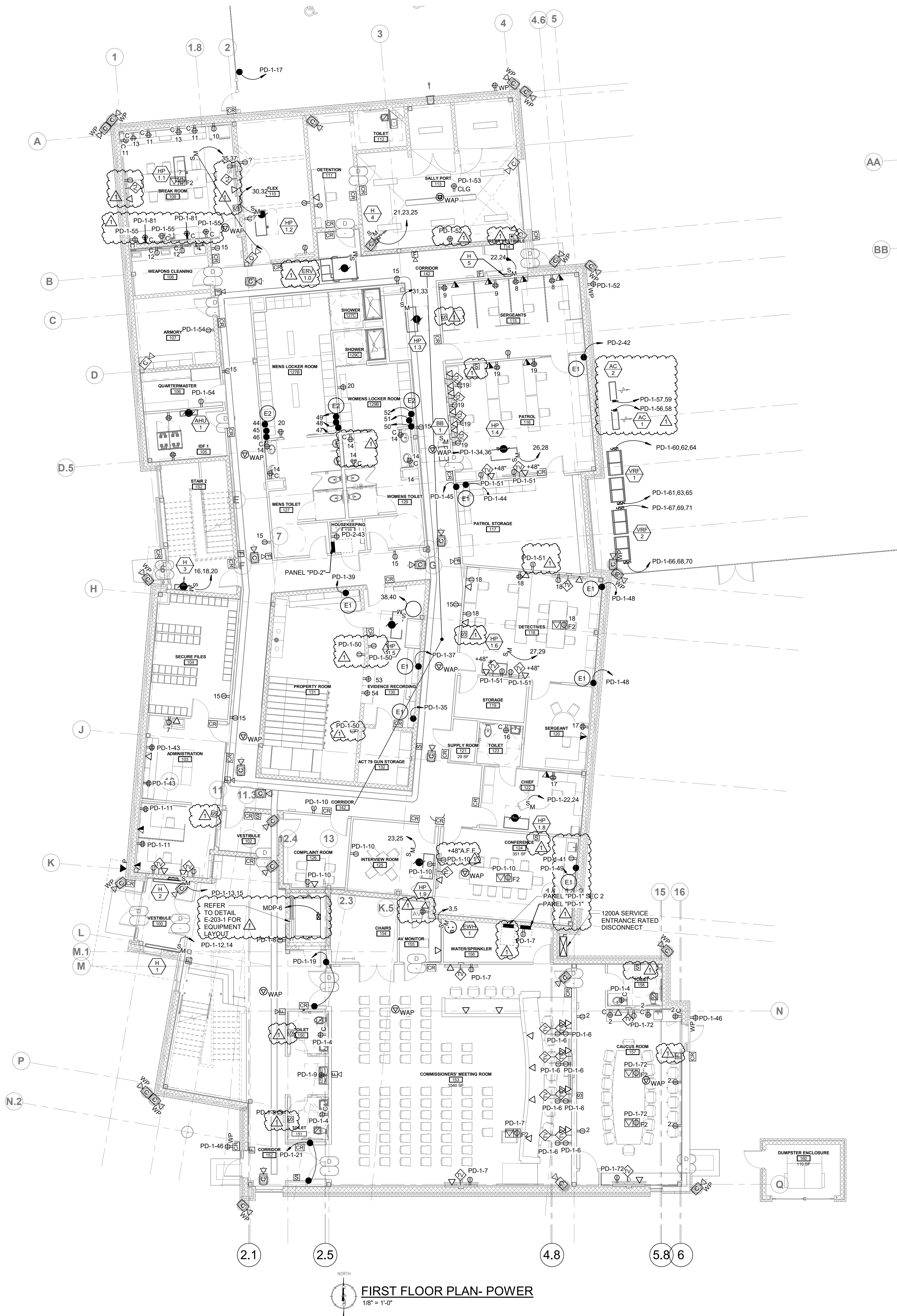
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Reviewed: -
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Project Number: 2301.00-22

Sheet Title:
FIRST FLOOR PLAN- POWER

Sheet Number:
E-103



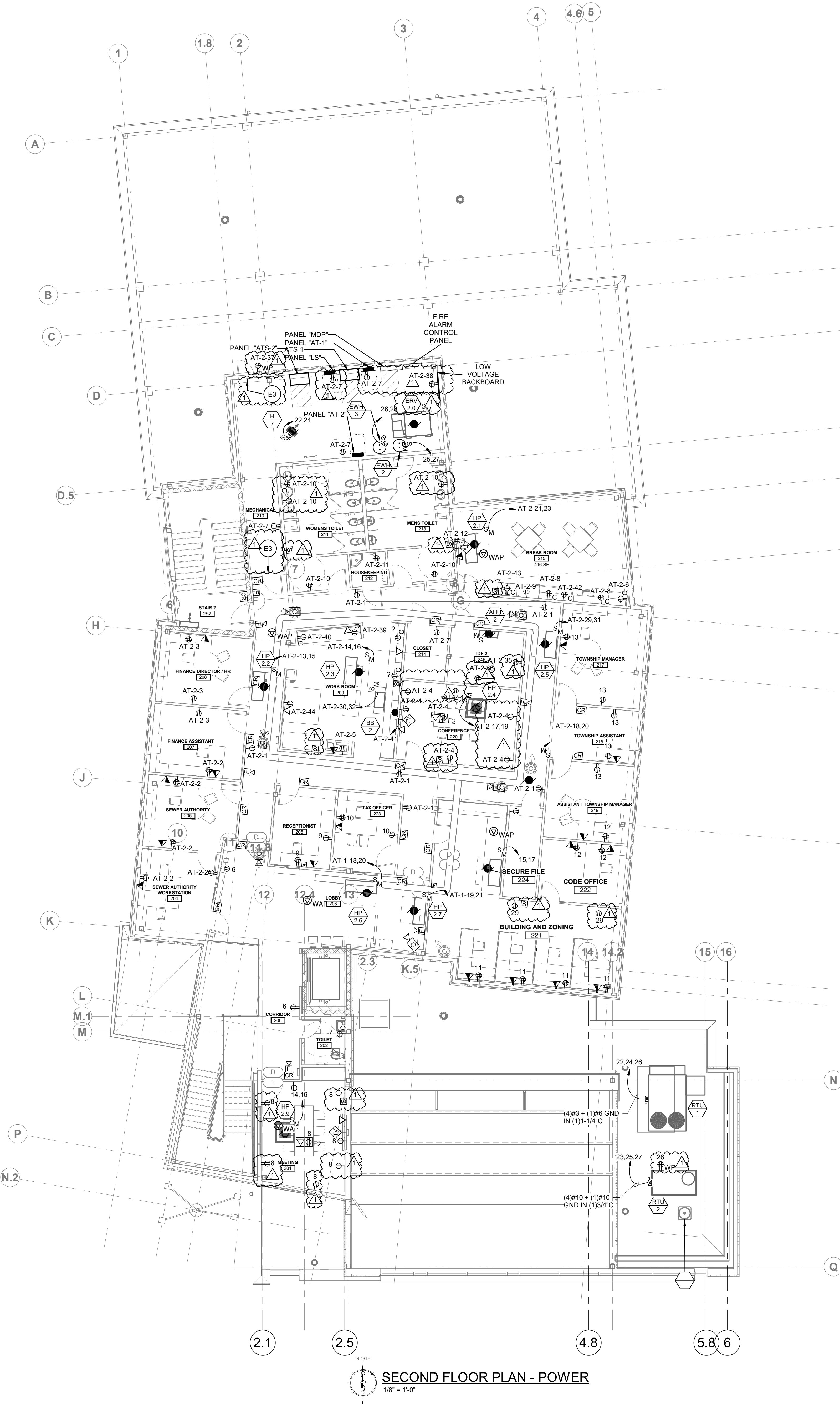
2 VEHICLE SHELTER- POWER
1/8" = 1'-0"

ELECTRICAL KEY NOTES NOTED THUS

- E1 COORDINATE WIREMOLD REQUIREMENTS WITH OWNER
- E2 COORDINATE LOCKER POWER REQUIREMENTS WITH FINAL SELECTION

NOTICE
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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. ANY USE OF THIS INFORMATION WITHOUT THE WRITTEN APPROVAL OF 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.



ELECTRICAL KEY NOTES

E3 DOOR TO BE EQUIPPED WITH PANIC HARDWARE

NOTED THUS

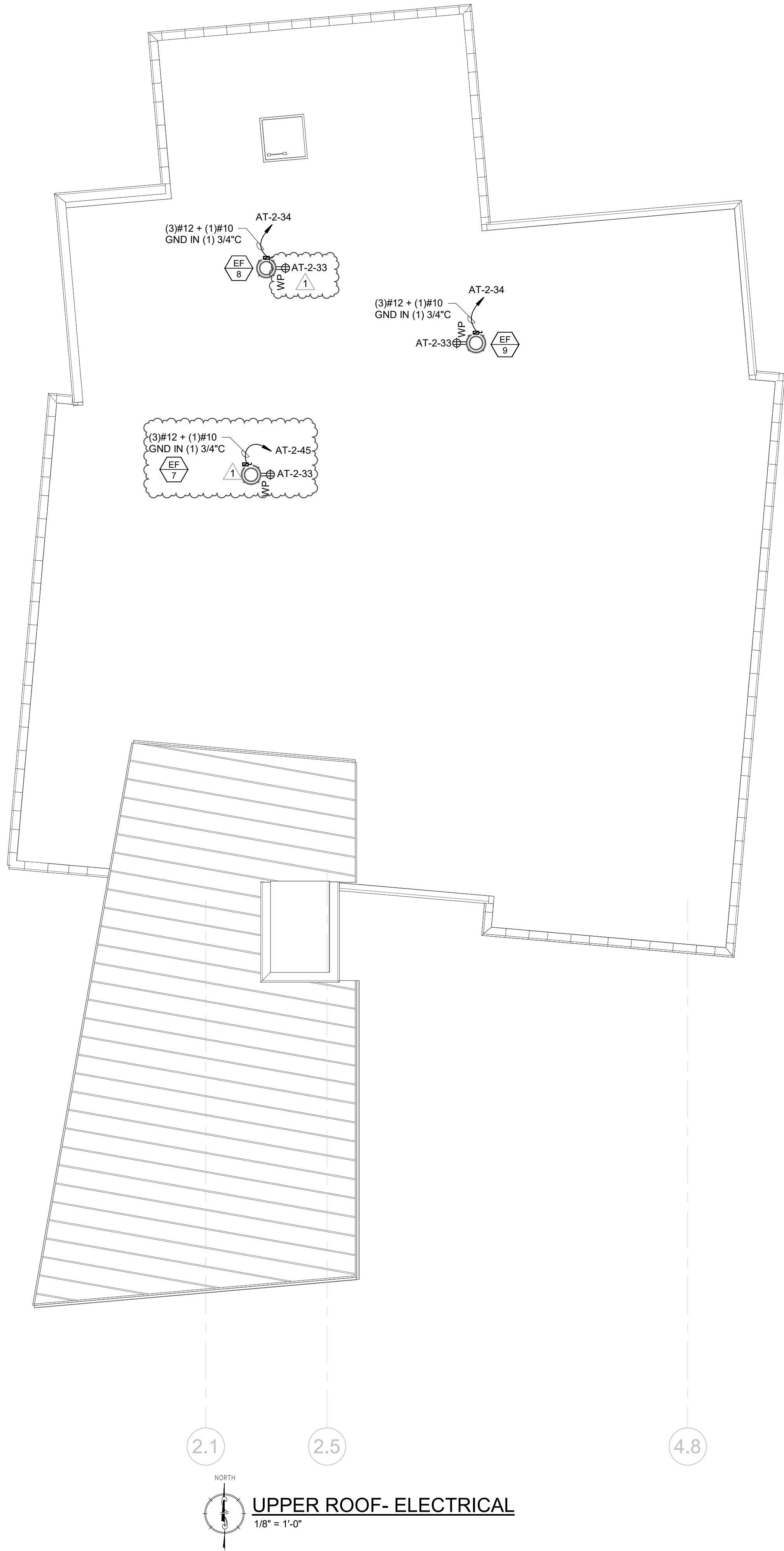
- GENERAL POWER AND LOW VOLTAGE NOTES:**
- COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF ALL WIRING DEVICES WITH OWNER/ TENANT/ ARCHITECT PRIOR TO ROUGH-IN. REFER TO DETAILS AND SPECIFICATIONS FOR TYPICAL MOUNTING HEIGHTS.
 - UNLESS OTHERWISE NOTED, BRANCH CIRCUIT NUMBERS ARE VIA PANEL "AT-2".
 - CONTRACTOR IS TO CONCEAL WIRING WHENEVER POSSIBLE. ALL EXPOSED WIRING IS TO BE INSTALLED IN EMT. CONTRACTOR IS TO PAINT AS DIRECTED BY THE ARCHITECT. CONDUIT PATH IS TO BE AS INCONSPICUOUS AS POSSIBLE. COORDINATE CONDUIT ROUTE WITH ARCHITECT/ OWNER PRIOR TO ROUGH-IN AND INSTALLATION.
 - ALL NETWORK, POE, AND IT INFRASTRUCTURE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.
 - ALL POWER REQUIREMENTS FOR DOORS AND ASSOCIATED LOCKING MECHANISMS INDICATED IN DIVISION 8 "HARDWARE SCHEDULE FIRE ALARM INTERFACE" ARE TO BE PROVIDED BY THE GENERAL CONTRACTOR.
 - ALL CABLE TERMINATIONS, AND CERTIFICATIONS FOR PATCH PANELS ARE TO BE PROVIDED BY THE GENERAL CONTRACTOR.
 - POWER, AND DATA/ COAX FOR SECURITY TV, NVR, KEYPER SYSTEM, AND IT EQUIPMENT CLOSET WITH RACKS, AND TERMINATIONS ARE TO BE BY THE GENERAL CONTRACTOR.

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4/17/2024 5:49:31 PM C:\Users\carlhenne\Documents\Aston Township Municipal Complex-MPE-Revt 23_CCCXX.rvt



2.1 2.5 4.8

NORTH

UPPER ROOF- ELECTRICAL

1/8" = 1'-0"

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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

Revision/Issue:

0 03/29/24 Issued
1 04/17/24 Revisions


Drawn: IM
Reviewed: -
Contact: JK
Project Number: 2301.00-22

Sheet Title:

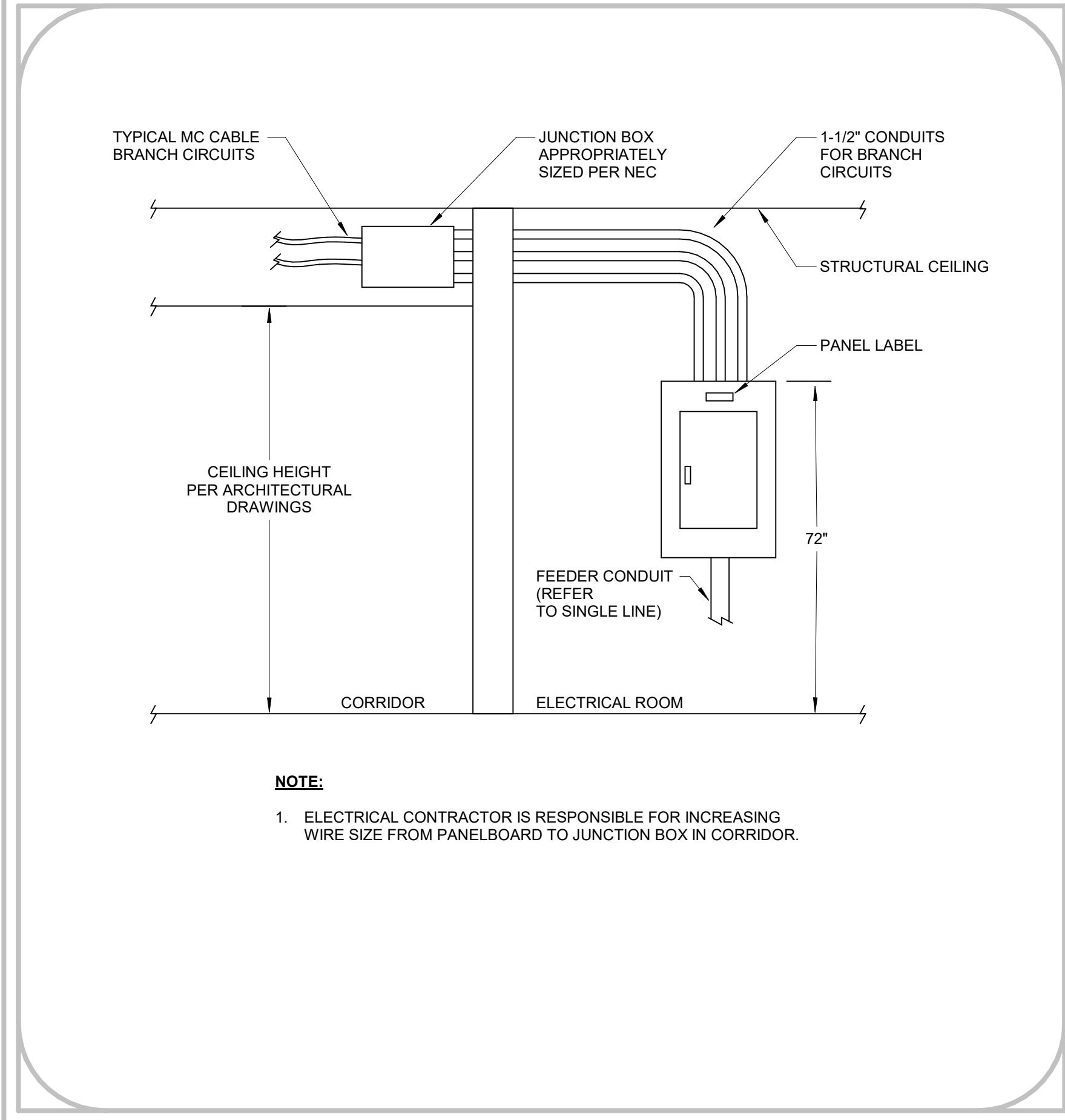
ROOF PLAN- ELECTRICAL

Sheet Number:

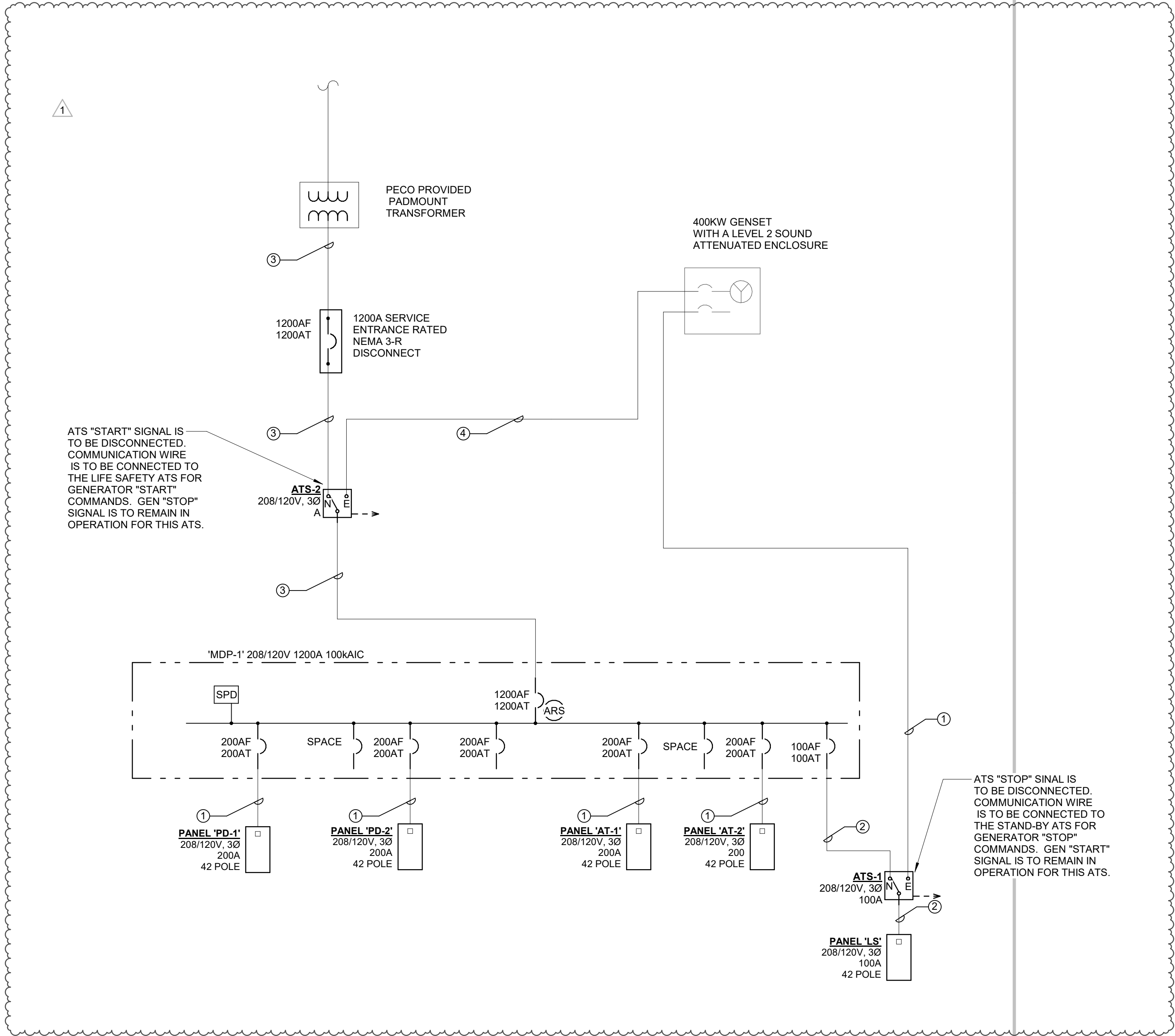
E-105

FEEDER SCHEDULE								(3 PHASE, 4 WIRE, COPPER, 75°C)		
FEEDER TYPE	PHASE CABLE		NEUTRAL CABLE		EQUIPMENT GROUND CABLE		RACEWAY**		REMARKS	
	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE		
100	3	#2	1	#2	1	#6	1	1 1/4"	- (#8 GND FOR 30KVA XFMR SECONDARY) - GND NOT REQUIRED FOR SERVICE ENTRANCE - 1 1/2" PVC CONDUIT	
200	3	#3/0	1	#3/0	1	#6	1	2"	- 3" PVC CONDUIT (SCHEDULE 40) - GND NOT REQUIRED FOR SERVICE ENTRANCE	
1200	12	350KCMIL	4	350KCMIL	4	#3/0	4	3"	• #3/0 GROUNDING CONDUCTOR FOR 300KVA TRANSFORMER SECONDARY FEEDER • GROUNDING CONDUCTOR NOT REQUIRED FOR SERVICE ENTRANCE RATED EQUIPMENT • PROVIDE (2) SPARE 3" CONDUITS	
1600	15	600KCMIL	5	600KCMIL	5	#2/0	5	4"	• PROVIDE (1) 4" SPARE CONDUIT	

GRS CONDUIT, SCHEDULE 40 PVC, EMT OR IMC UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS FOR APPLICATION REQUIREMENTS.

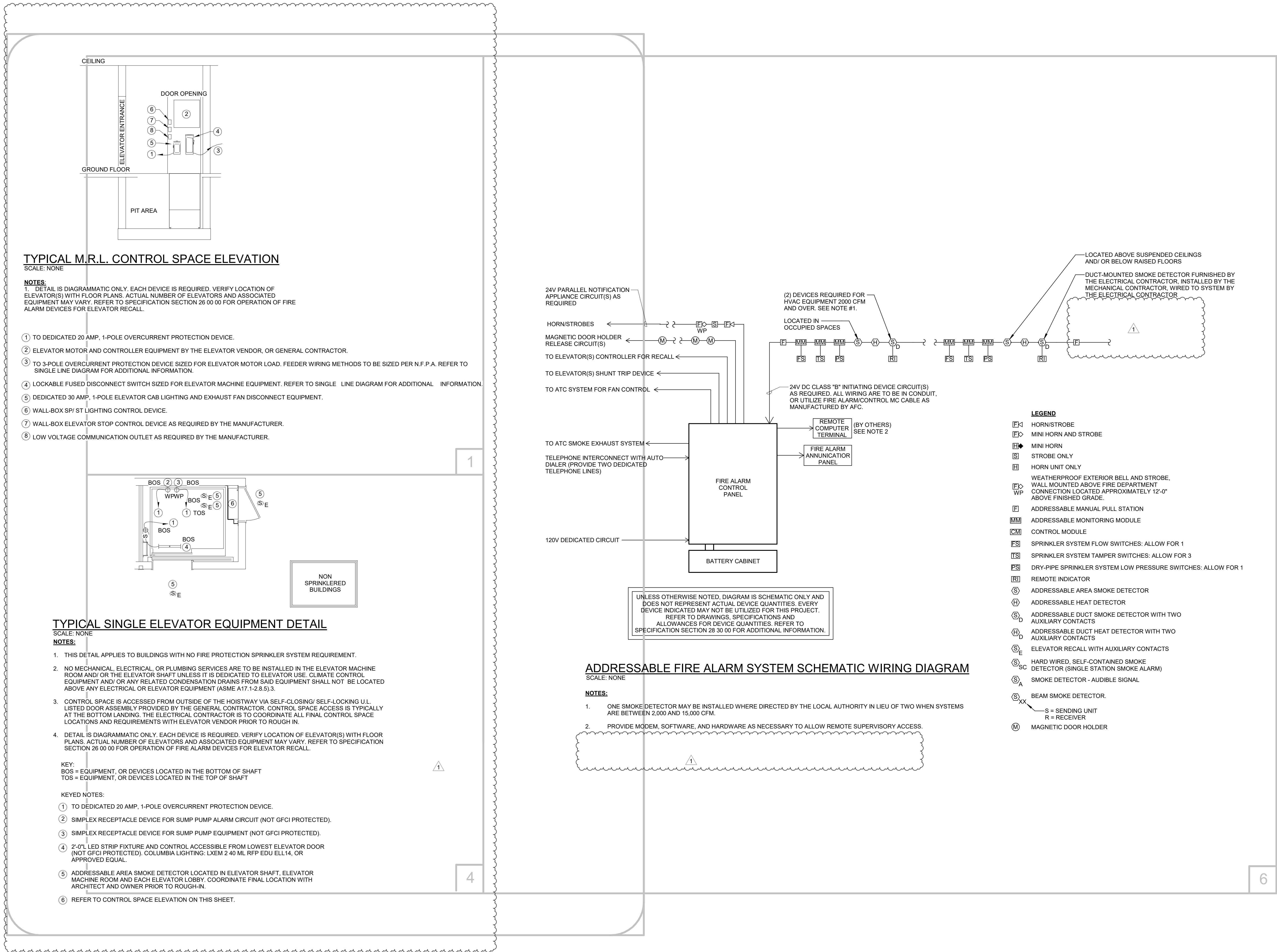


③ TYPICAL SURFACE MOUNTED LIGHTING/APPLIANCE PANELBOARD INSTALLATION DETAIL
12" = 1'-0"



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AT-2

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

ENCLOSURE
NEMA: Type 1
MOUNTING: SURFACE
WIDTH: 20"

TRIP	POLE	LOAD TYPE	DESCRIPTION/LOCATION	WATTS	A	B	C	DESCRIPTION/LOCATION	LOAD TYPE	POLE	TRIP
1	20 A	1 RECEPTACLE	CORRIDOR REPT	1080			1620	HR FINANCE REPT	RECEPTACLE	20 A	2
3	20 A	1 RECEPTACLE	SEWER AUTH. REPT	1200			1800	CONF 220 REPT	PWR	20 A	2
5	20 A	1 RECEPTACLE	WORKROOM 290 PRINTER	180			180	BREAKROOM 215 COUNTEUR 1	RECEPTACLE	20 A	6
7	20 A	1 RECEPTACLE	MCHIEFLEC REPT	900			360	BREAKROOM 215 COUNTEUR 2	RECEPTACLE	20 A	6
9	20 A	1 BREAK-GENERATOR	BREAK-215 PHONE	900			900	TOLL 211 213 REPT	RECEPTACLE	20 A	6
11	20 A	1 RECEPTACLE	HOUSEKEEPING REPT	180			180	BREAKROOM 215 REPT	RECEPTACLE	20 A	14
13	15 A	2 Other	HP-2.2	860			860	HP-2.3	Other WORK ROOM	15 A	16
15	15 A	2 Other	HP-2.4	54			860	HP-2.5	Other	2	18
17	15 A	2 Other	CONFERENCE..							2	18
19	20 A	2 Other	BREAK ROOM R215	HP-2.1			5000	EH-6	Other MECHANICAL 210	25 A	24
21	20 A	2 Other	BREAK ROOM R215	HP-2.1			5000	EHW-3	Other MECHANICAL 210	25 A	24
23	35 A	2 Other	MECHANICAL 210	EHV-2			5500	EHW-3	Other MECHANICAL 210	35 A	26
25	35 A	2 Other	MECHANICAL 210	EHV-2			5500	EB-2	Other WORK ROOM	35 A	28
27	35 A	2 Other	MECHANICAL 210	EHV-2			5500	EFB & EF-9	Other WORK ROOM	35 A	30
29	15 A	2 RECEPTACLE	RECEP.TS - ROOFTOP	640			1000	33 EQUIPMENT	2	20 A	32
31	20 A	1 RECEPTACLE	IDF-1	360			360	IDF-2	RECEPTACLE ID..	20 A	34
33	20 A	1 RECEPTACLE	ROOFTOP DOOR REPT	180			360	MICH ROOM BACKBOARD	RECEPTACLE	20 A	36
35	20 A	1 RECEPTACLE	WORK ROOM REPT 1	180			180	WORK ROOM COUNTER	RECEPTACLE	20 A	38
37	20 A	1 EQUIPMENT	WORK ROOM WIREMOLD	500			180	BREAKROOM 215 COUNTEUR 3	RECEPTACLE	20 A	42
41	20 A	1 RECEPTACLE	BREAKROOM 215 COUNTEUR 4	180			180	WORKROOM 209 DEDICATED 3	RECEPTACLE	20 A	44
43	20 A	1 EQUIPMENT	EF-1	500			--	SOLT	SPARE	20 A	46
47	20 A	1 SPARE	--	--			--	--	SPARE	20 A	48
49	20 A	1 SPARE	--	--			--	--	SPARE	20 A	50
51	20 A	1 SPARE	--	--			--	--	SPARE	20 A	52
53	20 A	1 SPARE	--	--			--	--	SPARE	20 A	54
				TOTAL WATTS	32794 VA						
								TOTAL AMPS	91 A		

TOTAL AMPS	81 A
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TOTAL AMPS	81 A
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PD-2

NG	
NG	
ITACLE	

6	20 A	1	ADMIN LIGHTING	400	300	COMPLIANT LIGHTING	LIGHTING	1	20 A	6
7	20 A	1	RECEPTACLE	ADMIN 103 COPER	180	720	SEARANTS 115 RECEPT - 1	RECEPTACLE	1	20 A
9	20 A	1	RECEPTACLE	SEARANTS 115 RECEPT - 2	720	900	BREAK ROOM 108 REFRIDGE	REFRIGERATOR	1	20 A
10	20 A	1	RECEPTACLE	BREAKROOM COUNTER 1-1	300	340	WEAPON CLEANING RECEPT	RECEPTACLE	1	20 A
11	20 A	1	RECEPTACLE	BREAKROOM 108 COUNTER 2	300	1080	TOILET 127 129 REPT	RECEPTACLE	1	20 A
16	20 A	1	RECEPTACLE	CORR 142 RECEPT	1000	180	TOILET 123 REPT	RECEPTACLE	1	20 A
18	20 A	1	RECEPTACLE	CHEF 167 RECEPT	900	720	DETECTIVES RECEPT	RECEPTACLE	1	20 A
19	20 A	1	POWER PATROL	PATROL RECEPT	1440	360	LOCKER ROOM 127, 129 RECEPT	RECEPTACLE	1	20 A
21	20 A	3	Other SALLY					Other REAR		
22	20 A	3	PORT 103	EH-4	7500	4000	EH-5	Other REAR		
26	20 A	2	Other					RECEIPTURE 114	24	24
27	20 A	2	Other			859	HP-1.4	Other RECEPT 116	2	25 A
28	20 A	2	Other	HP-1.6	624				30	28
29	20 A	2	Other						32	30
31	20 A	2	Other	HP-1.3	624		HP-1.2	Other FLEX 10	1	25 A
33	20 A	142	Other					SPARE	1	20 A
35	20 A	2	Other	HP-1.1	624			Other EVIDENCE	1	35 A
37	20 A	1	Other		900	624	HP-1.5	Other EVIDENCE	1	35 A
39	20 A	1	SPARE					RECORDING 130	1	40
40	20 A	1	SPARE			500	PATROL WIREMOLD	EQUIPMENT	1	20 A
43	20 A	1	RECEPTACLE	HOUSEKEEPING RECEPT	180	500	MENS LOCKER 1-1	EQUIPMENT	1	20 A
45	20 A	1	EQUIPMENT	MENS LOCKER 1-2	500	500	MENS LOCKER 1-3	EQUIPMENT	1	20 A
46	20 A	1	EQUIPMENT	MENS LOCKER 2-1	500	500	MENS LOCKER 2-2	EQUIPMENT	1	20 A
47	20 A	1	EQUIPMENT	MENS LOCKER 2-3	500	500	WOMENS LOCKER 1-1	EQUIPMENT	1	20 A
49	20 A	1	EQUIPMENT	MENS LOCKER 2-3	500	500	WOMENS LOCKER 1-2	EQUIPMENT	1	20 A
50	20 A	1	EQUIPMENT	WOMENS LOCKER 1-2	500	500	WOMENS LOCKER 1-3	EQUIPMENT	1	20 A
53	20 A	1	REFRIGERANT	EVIDENCE FRIDGE	900	900	EVIDENCE FRIDGE 2	REFRIGERATOR	1	20 A
				TOTAL WATTS	35791 VA			TOTAL AMPS	99 A	

PD-1

TACLE	
TACLE	

PANEL LABEL: PD-1 A.I.C.				MAINS: 200 A MCB:				ENCLOSURE NEMA Type 1					
SERVED VIA MDP DOWNED VOLT				LUGS: M.L.O TOP:				MOUNTING SURFACE WIDTH: 20"					
3 @ 4 WIRE				TOP:				BOTTOM:					
CKT TRIP	POLE	LOAD TYPE	DESCRIPTION/LOCATION	WATT	A	B	C	WATT	DESCRIPTION/LOCATION	LOAD TYPE	POLE	TRIP	CKT
1	20A	1 LIGHTING	MEETING ROOM LIGHTING	831				1260	CAUCUS ROOM RECP	RECEPTACLE		120	2
5	35A	2 OTHER	OTHER 4 MONITOR 155	4000				540	TOILET 150.151, 158	RECEPTACLE		120	4
9	20A	1 RECEPTACLE	SPRINKLER ROOM/LIGHT	490				1440	MONITOR ROOM DISPLAY	RECEPTACLE		120	6
9	20A	1 RECEPTACLE	WATER COOLER	180				360	CORR 150 RECP	RECEPTACLE		120	2
9	20A	1 RECEPTACLE	ADMIN 103	720				1000	CONF 142 RECP	POWER		120	10
13	15A	2 EQUIPMENT	ADMIN 103	1300				1500	EH-1	OTHER VESTIBULE 100		20	12
15	20A	1 EQUIPMENT	ADMIN ADMINISTRATOR	1500								120	14
17	20A	1 EQUIPMENT	GAE 2	1200				4000	EH-3	OTHER STAR 2 152		120	16
19	20A	1 EQUIPMENT	COMMISSIONER ROOM DOOR-1	1500								120	18
21	20A	1 EQUIPMENT	COMMISSIONER ROOM DOOR-2	1500				624	OTHER	OTHER CHIEF 122		25	20
23	15A	2 OTHER	INTERVIEW ROOM 15	73				1200	PARKING CANOPY RECP1-1	RECEPTACLE		120	22
27	20A	1 RECEPTACLE	PARKING CANOPY RECP1-2	1200				1200	PARKING CANOPY RECP1-3	RECEPTACLE		120	24
29	20A	1 RECEPTACLE	PARKING CANOPY RECP1-4	1200				1200	PARKING CANOPY RECP1-5	RECEPTACLE		120	26
31	20A	1 RECEPTACLE	PARKING CANOPY RECP1-6	1200				1200	PARKING CANOPY RECP1-7	RECEPTACLE		120	28
33	20A	1 RECEPTACLE	PARKING CANOPY RECP1-8	1200				250	BB-1	OTHER CORRIDOR 142		120	30
35	20A	1 EQUIPMENT	EVIDENCE WIREMOLD 11	500								120	32
37	20A	1 EQUIPMENT	EVIDENCE WIREMOLD 2	500								120	34
39	20A	1 EQUIPMENT	PROPERTY WIREMOLD	500				13616	PD1-SEC 2	PD1-SEC 2		30	36
41	20A	1 REFRIGERATOR	CONF 124 REFRIG	500								120	38
				TOTAL WATTS				148250		TOTAL AMPS	412 A		

PD-2

PD-2

PD-2

ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE ARCHITECTURE

www.bernardon.com

McHUGH ENGINEERING

2023-141

**ASTON TOWNSHIP
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3264 Concord Road
Aston, PA 19014**

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2 New Road
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0	03/29/24	Issued
1	04/17/24	Revisions

SCHEDULES-ELECTRICAL

E-301

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