South Fayette Township School District
New District Maintenance and Bus Depot Facility

Project No: 24-S49-01B

3631 Old Oakdale Road, McDonald, PA 15057

ADDENDUM 3

October 27, 2025

This Addendum forms part of the Contract Documents and modifies the original bidding documents dated October 1, 2025. Acknowledge receipt of this Addendum by inserting its number and date in the space provided on the Bid Form. Failure to do so may subject Bidder to disqualification.

BIDDING RFI & RESPONSES

The following bidding RFIs and responses are included for reference by all bidding contractors. Responses to RFIs are considered part of the project. All RFIs received to date are included below. Any un-answered RFIs are highlighted and shall be answered in future addenda.

RFI #	Bidding Contractor	Question	Response	Response By
GC01	Stonemile Group	C001 Geotechnical Recommendations:	*See attached RFI document and corresponding response by CEC. Answer was too long to include in this list.*	CEC
GC02	Cast & Baker Corp	413/C403, Toe Drain, shows 12" perf pipe. Sheet C400B calls for 4" perf pipe. Which size is correct?	*The invert elevation is as indicated on Outlet Structure 34. The toe bench outlet drains shall connect at an invert elevation of 1116.80 feet or higher, provided that a minimum positive slope of 1.0% can be maintained to the outlet structure from the bench.*	CEC
GC03	The Flag Factory	The specifications for finish contradictory, indicating both "natural satin" and "clear anodic". Please clarify which finish is required.	*Clear Anodic should be provided.*	DRAW
GC04	Cast & Baker Corp	Geotech Supplemental Sheet-2: It shows the Toe Bench Outlet Drains going into the Basin Outlet Structure. Can you provide us with a profile or invert elevations at the structure?	*The invert elevation is as indicated on Outlet Structure 34. The toe bench outlet drains shall connect at an invert elevation of 1116.80 feet or higher, provided that a minimum positive slope*	CEC

			of 1.0% can be maintained to the outlet structure from the bench.	
GC05	VendRick	Please advise if Drawing C300 is available in CAD format for cut/fill calculations.	*C300 CAD file is provided for reference in performing cut/fill calculations. Quantities derived from this file are for contractor use only and shall not be shared with any other party. This file is provided for reference only and not for construction. Please review the disclaimer below prior to using this file for the intended cut/fill calculations.*	CEC
GC06	VendRick	Please confirm the HVAC Prime is to provide the temporary heat and the ELEC Prime is to provide the temporary electric as directed in Spec 011200	*Responsibilities for temporary heat is described in 01 5000 Article 3.10. Responsibility for temporary power, distribution, lighting, connections per 011200*	DRAW
PC01	Wheels Mechanical	Just for confirmation, the sanitary pipe on drawing C500A, from existing manhole (9) to the new building outlet is being installed by the PC, correct?	Site sanitary utility work shall be the responsibility of the GC, from the connection points indicated on plumbing drawing 1/P100 to manhole indicated on Civil drawings. Refer to attached revised SECTION 01 1200 - MULTIPLE CONTRACT SUMMARY for further clarifications.	CEC
PC02	Wheels Mechanical	Will the owners be paying for the tap fees for the new water, gas, and sanitary connections? If not, does the design team have an idea of the known costs of these tap fees per utility? Calling the utility company is of no use for these costs.	Payment of all utility tap, connection, and capacity fees shall be by the Owner. The Contractor shall coordinate with the applicable utility companies to verify the physical extent of required taps and provide all associated documentation, including any referenced fee schedules, to the Owner for processing and payment to the utility provider. The Contractor shall not include such fees in the bid. The Contractor shall include within the scope of work all physical installation labor up to and including the utility point of connection, as indicated and noted on the Contract Drawings. See below revision to specification SECTION 22 0500 – GENERAL PROVISIONS AND COMMON WORK RESULTS FOR PLUMBING for this clarification.	CEC
HC01	LMI	Can Siemens price this project as an extension of the current district wide Desigo CC solution in lieu of their Niagara SLX-8000 solution?	Yes, this is acceptable.	Tower
MISC	MISC	Note that all RFIs submitted on or after 10/21/25 have been received and will be processed and responded to in Addendum #4	*Responses Forthcoming*	

CHANGES TO PRIOR ADDENDA

- *See Revisions to **01 1200 MULTIPLE CONTRACT SUMMARY** listed below in addition to and as a replacement to revisions issued in Addendum #2*

CHANGES TO THE BIDDING DOCUMENTS

C300 CAD file is provided for reference in performing cut/fill calculations. Quantities derived from this file are for contractor use only and shall not be shared with any other party. This file is provided for reference only and not for construction. Please review the disclaimer below prior to using this file for the intended cut/fill calculations.

***Disclaimer**: You ("Recipient") have requested that the drawings prepared for this project by Civil & Environmental Consultants, Inc. and/or its subsidiaries and affiliates ("CEC") be furnished to you in electronic format. CEC agrees to provide the requested drawings conditioned upon your acceptance of the following terms and conditions. It is understood and agreed that the drawings prepared by CEC, whether in hard copy or electronic form, are instruments of professional service prepared for its client solely for use on this project. CEC will retain the original record copy of the drawings which shall govern in the event of any inconsistency between the electronic or machine readable drawings and the record copy. Recipient and any other parties receiving these drawings agree and acknowledge that: 1) the automated conversion of information and data from a system to an alternate system or format cannot be accomplished without introduction of inexactitudes, anomalies, and errors; and 2) any changes or modifications to CEC's instruments of professional services introduced by anyone other than CEC may result in adverse consequences which CEC can neither predict nor control. In consideration of CEC providing the drawings in electronic and/or machine readable form, the Recipient agrees to assume all risks associated therewith, the drawings are provided "as is where is" and, to the fullest extent permitted by the law, to hold harmless, defend and indemnify CEC from and against all claims, liabilities, losses, damages, and costs, including but not limited to attorney's fees, arising therefrom or in connection therewith.*

CHANGES TO PROJECT MANUAL

Item 3.01: **00 4116.01 GC Construction Bid Form**
Bid Form issued as part of this addendum

Item 3.02: **00 4116.02 HC Construction Bid Form**
Bid Form issued as part of this addendum

Item 3.03: **00 4116.03 PC Construction Bid Form**
Bid Form issued as part of this addendum

Item 3.04: **00 4116.04 EC Construction Bid Form**
Bid Form issued as part of this addendum

Item 3.05: **01 1200 MULTIPLE CONTRACT SUMMARY**
Entire Specification Re-issued as part of this addendum with further clarifications in addition to those provided in Addendum #2

Item 3.G01: **SECTION 10 7516 – GROUND-SET FLAGPOLES**

Article 2.8: CHANGE Paragraph A. to read as follows:

A. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical Finish, nonspecular as fabricated; Chemical Finish, etched, medium matte; Anodic Coating, Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.

Item 3.G02: SECTION 11 3316 – MISCELLANEOUS SPECIALTY EQUPMENT

Article 1.1: ADD SubParagraph A.2. to read as follows:

2. Pre-fabricated air compressor enclosure (Construction Note 3.1)..

Article 2.3: ADD Paragraph B. to read as follows:

B. Provide product, as listed below and identified as Construction Note 3.1 on Floor Plans Drawing:

1. Basis of Design: Freedom Series Enclosure by Shelter Works, www.shelterworks.com as represented by Riordan Materails, Blue Bell PA; www.riordanmat.com

   a. 8-ft wide x 10-ft 6-in long' x 8-ft high fiberglass shelter with FiberBeam Technology, 1/4-in x min 2-in wide FRP interior mounting flange with pre-drilled holes for mounting to concrete pad.
   b. Performance: ASCE/SEI 7-22 Risk Category III, Ground Level, psf ground snow load, 26 psf roof snow load, 103 mph wind.
   c. Insulation: 1.5 in. thick polyiso, R-12
   d. Flange Seal: Continuous bituminous blend sealant: ConSeal CS-102B or as recommended by Manufacturer.
   e. Color:

      1) Exterior as selected by Architect from manufacturer's available range.
      2) Interior white gel coat

   f. Door: 4-ft w x 6-ft 8-in h with FiberWrap Technology

      1) Manufacturer's standard hydraulic closer
      2) 3-point latch, pad-lockable, anti-entrapment hardware
      3) 1/2-in high continuous aluminum threshold

   g. Electrical Distribution and Lighting:

      1) Schedule 40 PVC conduit; Wiring per current NEC.
      2) 6x6x4-in PVC, NEMA 4X, screw cover, Carlon E987R, electrical termination point
      3) 125V, 20A, NEMA 5-20R GFCI duplex receptacle, weatherproof while not in use cover
      4) Single-pole switch, 20 amp, 0-277V, weatherproof
      5) Interior LED light, vaportight, dimmable, 120-277V, 4000K, 45W, 6254 lumens, polycarbonate housing with metal gear tray.

   h. 12 x 12-in aluminum vent, manually adjustable, with insect screen. Color: white

   i. Warranty: Manufacturer's standard 25-year limited warranty.

2. Substitution subject to Architect approval.

Item 3.G03: MULTIPLE SECTIONS RELATING TO SITE UTILITIES

- 33 10 00 – Water Distribution: Paragraph 1.06 (Regulatory Requirements)
  - Add Paragraph 1.06 (Regulatory Requirements): All site plumbing work for water as defined by the drawings and specifications, shall be included in the General Contractor's bid and shall entirely remain part of the General Contractor's scope of work. The General Contractor shall retain a Registered Master Plumber licensed in the Commonwealth of Pennsylvania to supervise, perform, and also assume responsibility for this work, including obtaining plumbing permits, coordinating inspections, and providing certification of completion in accordance with state and local requirements.
- 33 30 00 – Sanitary Sewer: Paragraph 1.06 (Regulatory Requirements)
  - Add Paragraph 1.06 (Regulatory Requirements): All site plumbing work for sanitary sewer as defined by the drawings and specifications, shall be included in the General Contractor's bid and shall entirely remain part of the General Contractor's scope of work. The General Contractor shall retain a Registered Master Plumber licensed in the Commonwealth of Pennsylvania to supervise, perform, and also assume responsibility for this work, including obtaining plumbing permits, coordinating inspections, and providing certification of completion in accordance with state and local requirements.
- 33 41 00 – Storm Sewer: Paragraph 1.06 (Regulatory Requirements)
  - Add Paragraph 1.06 (Regulatory Requirements): All site plumbing work for storm sewer as defined by the drawings and specifications, shall be included in the General Contractor's bid and shall entirely remain part of the General Contractor's scope of work. The General Contractor shall retain a Registered Master Plumber licensed in the Commonwealth of Pennsylvania to supervise, perform, and also assume responsibility for this work, including obtaining plumbing permits, coordinating inspections, and providing certification of completion in accordance with state and local requirements.
- 33 51 13 – Gas Distribution: Paragraph 1.06 (Regulatory Requirements)
  - Add Paragraph 1.06 (Regulatory Requirements): All site plumbing work for gas distribution as defined by the drawings and specifications, shall be included in the General Contractor's bid and shall entirely remain part of the General Contractor's scope of work. The General Contractor shall retain a Registered Master Plumber licensed in the Commonwealth of Pennsylvania to supervise, perform, and also assume responsibility for this work, including obtaining plumbing permits, coordinating inspections, and providing certification of completion in accordance with state and local requirements.

Item 3.P01 SECTION 211000 WATER BASED FIRE-SUPPRESSION SYSTEMS

Add Sub-Section 2.03D to read as follows: (Wash Bay 118 only) Schedule 40 sprinkler piping and fittings to be coated with UL and FM approved corrosion resistant red paint.

Item 3.E01 SECTION 26 1900 Addressable Fire Alarm System

Add paragraph 2.05-C as follows:

A. Duct Smoke Detectors: Photoelectric type complying with UL 268A.

1. Detector address shall be accessible from fire alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
   a. Primary status.
   b. Device type.
   c. Present average value.
   d. Present sensitivity selected.
   e. Sensor range (normal, dirty, etc.).
3. Each sensor shall have multiple levels of detection sensitivity.
4. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.
5. Relay Fan Shutdown: Fully programmable relay rated to interrupt fan motor-control circuit.
6. Provide a remote indicator lamp for all air sampling smoke detectors and install in an approved, accessible location. Provide a custom label for each remote indicator lamp (ie: AHU-1 Supply Duct Detector).

Add paragraph 3.01-B-4 as follows:

4. Duct Smoke Detectors:

   a. Furnish all duct or unit mounted smoke detectors, and provide power wiring (if required) and fire alarm control wiring to these smoke detectors. Detectors shall be provided with alarm contacts for use by the DDC system.
   b. Install sampling tubes so they extend the full width of duct. Tubes more than 36 inches long shall be supported at both ends.
   c. Do not install smoke detector in duct smoke-detector housing during construction. Install detector only during system testing and prior to system turnover.

CHANGES TO DRAWINGS

Item 3.G04: CIVIL DRAWING #4 : GEOTECHNICAL DETAILS

Entire Sheet re-issued with new sub-surface drain detail (Detail 7) to be used in conjunction with new "Unit Prices" specification for unforeseen existing spring conditions.

Item 3.P02: FP101 Floor Plans, Notes, Legends & Details – Fire Protection

Entire Sheet re-issued with Added Note to Fire Service Entrance, Revised Coded Note #3

Item 3.P03: P000 Notes, Schedules, Legends, Abbreviations -Plumbing

Entire Sheet re-issued with Revised Note to Water Service Schematic

Item 3.P04: P001 Details - Plumbing Plan

Entire Sheet re-issued with Revised Notes to Building Gas and Emergency Generator Gas Connection Schematic, Revised note to Downspout Boot Detail

Item 3.P05: P100 Foundation Plan - Plumbing

Entire Sheet re-issued with revised notes.

Item 3.P06: P102 Upper Level Floor Plan – Plumbing

Entire Sheet re-issued with revised notes.

Item 3.E02: DRAWING E001 ELECTRICAL SYMBOL LEGEND & ABBREVIATIONS

ADD the following under the NOMENCLATURE for receptacles under POWER in the ELECTRICAL SYMBOL LEGEND:

'CR' DENOTES CEILING MOUNTED CORD REEL. PROVIDE RECEPTACLE MOUNTED TO STRUCTURE FOR CORD AND PLUG CONNECTION TO CORD REEL. PROVIDE 20A CORD REEL WITH QUAD OUTLET, 25' LONG CABLE AND IN-LINE GFCI PROTECTION, PASS & SEYMOUR 1000 SERIES OR EQUAL.

ADD the following under FIRE ALARM SYSTEM in the ELECTRICAL SYMBOL LEGEND:

DUCT TYPE SMOKE DETECTOR. MOUNTING LOCATION SHALL BE COORDINATED WITH THE HC. REFER TO DETAIL 8/E204 FOR REQUIREMENTS.

NOMENCLATURE:
• 'AHU-X' DENOTES DETECTOR FOR DESIGNATED AIR HANDLING UNIT.

Item 3.E02: DRAWING E201 POWER, FIRE ALARM, AV & DATA ROUGH-IN PLANS

ADD a third flow switch (FS) in Water Service 117.

ADD a duct detector (DD) associated with AHU-1 in Mechanical/Data 204.

Item 3.E03: DRAWING E204 POWER & FIRE ALARM DETAILS

ADD detail 8, TYPICAL DUCT SMOKE DETECTOR INSTALLATION, as shown in revised drawing.

Item 3.E04: DRAWING E205 PAGING & AV DETAILS & SCHEDULE

CHANGE CLOCK SCHEDULE as shown in revised drawing.

SUPPLEMENTAL INFORMATION

- *RFI GC01 from StoneMile Group (Stonemile Group RFI 001) and associated response from CEC.*

END OF ADDENDUM 3

SFTSD Bus Depot - Pre-Bid RFI GC01

STONEMILE GROUP LLC

PRE-BID REQUEST FOR INFORMATION

Project:	**South Fayette Maintenance & Bus Depot Facility**	**Date Submitted:**	**10.14.25**	**Date Returned:**	
Request From:	**STONEMILE GROUP**	**Drawing Reference:**		**C001**	
Request To:	**TimR@DRAWCollective.com**	**Spec Section Reference:**		**N/A**	

Subject: **Geotechnical Recommendations**	**RFI #:** **001**

Information Requested: Please see attached.

Date Submitted: **October 14, 2025** **Signature:**

RFI Response:

See responses in red on page 2 from CEC, Inc.

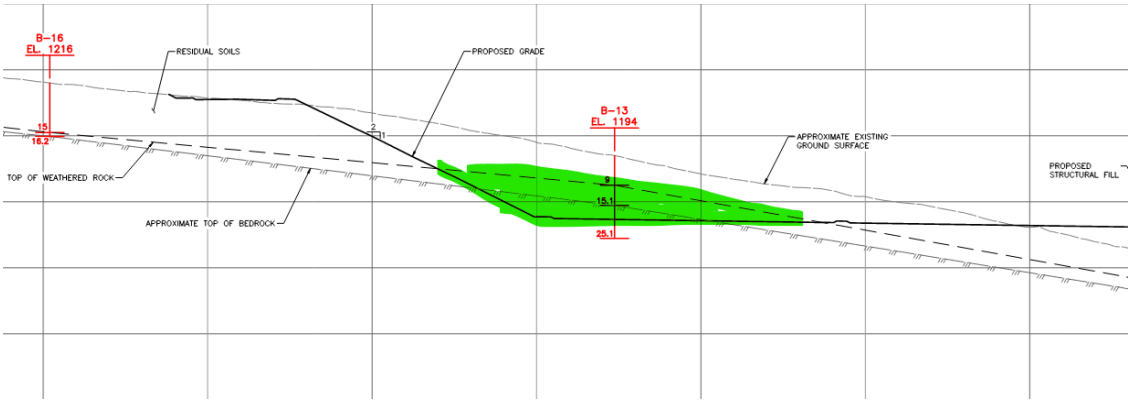
Response Date: 10/20/2025 **Signature:** Tyler J. Reynolds, P.E.

103 Progress Lane, Canonsburg, PA 15317
Phone: (724) 485-9790 • Fax: (724) 485-9791

SFTSD Bus Depot - Pre-Bid RFI GC01

Section 4.1.2

1.Should we assume that none of the material is suitable and remove and replace all cut material? There does not appear to be enough other suitable material to blend. CEC is not recommending to remove and replace all cut materials on-site. The residual soils appear to be generally suitable for re-use as fill, provided that the materials are adequately blended with on-site weathered rock and/or bedrock materials in order to achieve the specified CL gradation requirements. Based on review of the borings and proposed grading, CEC is of the opinion that there should be an abundance of weathered rock/bedrock materials obtained from proposed cut areas. As an example, please see cross section A-A from the geotechnical report below. The highlighted section of cut is anticipated to consist of weathered rock/bedrock materials. For reference, 35 percent of this example cut area is approximated to consist of weathered rock/bedrock. Further, the proposed cutslope east of the proposed building (i.e., within the vicinity of Borings B-9, B-10, and B-11) should also provide ample amounts of weathered rock/bedrock necessary to blend CL materials.



2.What if the material is in specification by the geotechnical report and later testing determines that the material is out of specification, would that be a change order? CEC does not anticipate that significant portions of blended fill will fall outside the specified gradation or compaction requirements when the procedures as outlined in the geotechnical report are followed during excavation and compaction of fill material. Verification of compliance shall be determined through field and laboratory testing performed in accordance with the project specifications. Any corrective measures, if necessary, will consist of reworking or re-blending the affected material to meet specification requirements, at no adjustment to the Contract Sum, consistent with standard construction practice.

Section 4.1.6

1.How do we quantify the excavation amount when the rock elevation is vague? Contractors should use the subsurface information contained in the boring logs (Appendix A of the Geotechnical Report) and the geotechnical cross-sections to develop their own excavation estimates based upon all currently known information concerning the site and the depth to rock.

Section 4.3

1.How do we quantify the excavation amount when the rock elevation is vague? Contractors should use the subsurface information contained in the boring logs (Appendix A of the Geotechnical Report) and the geotechnical cross-sections to develop their own excavation estimates based upon all currently known information concerning the site and the depth to rock.

RFI- Suitable Structural Fill

Drawing Sheet C001- Geotechnical Recommendations

4.1.2 Suitable Fill, Fill Placement and Compaction
Structural Fill-General Site

"CL SOILS MAY BE UTILIZED AS STRUCTRAL FILLPROVIDED THE LL IS LESS THAN 45 PERCENT, THE PI IS LESS THAN 25 PERCENT AND THE FINES CONTENT OF THE MATERIAL DOES NOT EXCEED 70 PERCENT."

TEST RESULTS FROM CUT AREA

B-9	
FINER THAN #200	73.85%
LL	43%
PI	22%
B-10	
FINER THAN #200	86.66%
LL	50%
PI	25%
B-12	
FINER THAN #200	63.52%
LL	49%
PI	24%
B-14	
FINER THAN #200	78.05%
LL	44%
PI	21%

Based on the Test Results, no excavation material is suitable for structural fill. In addition, the LL and PI percentages are such that additional testing during construction could render them not in compliance with the Geotechnical recommendations.

1. Should we assume that none of the material is suitable and remove and replace all cut material? There does not appear to be enough other suitable material to blend.

2. What if the material is in specification by the geotechnical report and later testing determines that the material is out of specifications, would that be a Change Order?

Drawing Sheet C001- Geotechnical Recommendations

4.1.6 Slope Construction

"CEC RECOMMENDS TOE-KEYS BE CONSTRUCTED AT THE BASE OF ALL NEW FILL SLOPES EXCEDDING 5 FEET HEIGHT, AND CEC RECOMMENDS THE TOE-KEYS EXTEND INTO WEATHERED ROCK/BEDROCK"

1. How do we quantify the excavation amount when the rock elevation is vague

Drawing Sheet C001- Geotechnical Recommendations

4.3 Slabs on Grade

"OVEREXCAVATE RESIDUAL SOILS TO WEATHERED ROCK AND BACKFILL WITH PENNDOT 2A AGGREGATE, OR APPROVED ALTERNATE"

1. How do we quantify the excavation amount when the rock elevation is vague?

DOCUMENT 00 4116.01 – GENERAL CONSTRUCTION BID FORM

CONTRACT NO. 24-S49-01B-01

ON

PROJECT NO. 24-S49-01B

NEW DISTRICT MAINTENANCE &
BUS DEPOT FACILITY
for

SOUTH FAYETTE TOWNSHIP SCHOOL DISTRICT
3680 Old Oakdale Road, McDonald PA 15057

DRAW Collective
470 Washington Road
Pittsburgh, PA 15228

BID OF _____ _____
(Name) (Date)

_____ _____
(Address) (Telephone Number)

_____
(City, State, Zip)

TO: Dr. Michelle Miller, Superintendent
South Fayette Township School District
3680 Old Oakdale Road
McDonald PA 15057

Ladies and Gentlemen:

The undersigned submits this Bid in conformity with the Drawings and Specifications prepared by DRAW Collective., 470 Washington Road, Pittsburgh, PA 15228-2811, and on file at the above named office; and after examination of the site of the Work, the Bidding Requirements (including the Advertisement for Bids, Instructions to Bidders, and Contractors' Qualification Statement), and the proposed Contract Documents (including the General Conditions, and any addenda issued during the bidding period changing any part of the Contract Documents).

For the price hereinafter stated, it is proposed to provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, transportation, and other facilities and services, and to do and perform all superintendence of the construction, and to secure and pay for all permits and licenses, and to do all incidental work in order to execute and complete the Work in an expeditious and workmanlike manner to the satisfaction and acceptance of the Owner, and the Architect, all in accordance with the Contract Documents.

Enclosed herewith as bid security is a Bid Bond or certified check drawn to the order of the Owner in the amount stated in the Advertisement for Bids. The undersigned agrees not to withdraw this Bid for a period of 60 days after the designated time for receipt of Bids; and that if this Bid is accepted by the Owner, to execute the Contract and furnish the required bonds and insurance coverages. It is agreed that upon the request of the Owner, that date of award will be extended by 30 days. It is agreed that the bid security will be forfeited as liquidated damages, not as a penalty, if the undersigned fails to furnish the required bonds and insurance coverages within 10 days after receipt of written

notice of award of Contract, or fails to execute and deliver the Agreement for the Work within 10 days after receipt of it.

The Bidder hereby certifies that he is the only person(s) interested in this Bid as principal; and has not entered into collusion with any person, firm, or corporation in respect to this Bid or the submitting of Bids for this Contract.

The Bidder hereby agrees to comply with and to be bound by all applicable governmental regulations, laws, codes, ordinances and legal requirements affecting the work, including, but not limited to, Sections 752, 755, and 757 of the "Public School Code of 1949" of the Commonwealth of Pennsylvania, as amended, and the "Pennsylvania Human Relations Act," as amended.

The Bidder hereby acknowledges that Act 114 of 2006, Act 34 of 1985, and Act 151 of 1994 requires that all of the Contractor's employees and all lower tier contractors' employees produce an FBI Federal Criminal History Record, reports of criminal history record information from the Pennsylvania State Police, or a statement from the State Police that the State Police central repository contains no such information relating to each such person, and an "Official Clearance Statement" (OCS) from the Department of Public Welfare before said person may begin working on School District Projects. (See Division 01 Section, "Regulatory Requirements" for additional information.)

The Bidder hereby agrees to comply with and to be bound by all applicable governmental regulations, laws, codes, ordinances and legal requirements affecting the work, including, but not limited to, Compliance required with the Pennsylvania Prevailing Wage Act of 1961, P.L. 987, No. 442; Title VI and other applicable provisions of the Civil Rights Act of 1964; the Department of Labor Equal Opportunity Clause (41 CFR 60 -1.4); Executive Order 11625 (Utilization of Minority Business Enterprise); Executive Order 12138 (Utilization of Female Business Enterprise); in compliance with Section 504 of Rehabilitation Act of 1973 and Americans with Disabilities Act of 1990.

The Bidder hereby agrees to progress with the Work in accordance with the predetermined schedule, and to achieve Substantial Completion within the Contract Time in accordance with the dates established in the Agreement.

The Bidder hereby agrees that the right is reserved to the Owner to reject any or all Bids and to waive any informality or irregularity in any Bid received. It is further understood that the competency and responsibility of Bidders is a consideration in the award of the Contract.

The Base Bid, price quotations, and other information are submitted in the spaces provided on the Bid Form or attached to the Bid Form. Omission of price quotations or other information requested will be sufficient reason for rejection of this Bid.

In submitting this Bid, the Bidder hereby acknowledges the issuance, receipt, and acceptance of Addenda as indicated below:

Addenda issued: YES / NO [*cross out one*]; if YES list below:			
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated

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CONTRACT NO. 24-S49-01B-01
BASE BID

For all GC Work, the total sum of:

_____ Dollars ($_____)
(Written) (Figures)

****

ALTERNATE BID SCHEDULE

--none scheduled--

(Written) (Figures)

****

UNIT PRICE SCHEDULE

Do not include costs for insurance coverages that will be provided under the OCIP, as set forth in the Contract Documents.

UG-1	Over Excavation and Engineered Fill using Reworked On-Site Soil	CY	$_____.____
UG-2	Over Excavation and Engineered Fill using Crushed Limestone	CY	$_____.____
UG-3	Treatment of Unforeseen Subgrade Springs or Perched Ground Water	LF	$_____.____
UG-4	Yard Inlet	PC	$_____.____

****

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SIGNATURES

When the Bidder is an Individual:

_____(SEAL)

****

When the Bidder is a Partnership:

_____
Name of Partnership

By_____(SEAL)
Partner

_____(SEAL)
Partner

_____(SEAL)
Partner

****

When the Bidder is a Corporation:

_____
Name of Corporation

By_____
President

Corporate Seal

ATTEST:_____
Secretary

The_____is a corporation

organized and existing under the laws of _____and (has) (has not) been granted a certificate of authority to do business in Pennsylvania, as required by the Business Corporation Law, approved May 5, 1933, P. S. 364, as amended.

****

When the Bidder is trading under a fictitious name:

The_____is an individual, partnership, or corporation trading under a fictitious or assumed name and has (has not) registered under the Fictitious Name Act of Pennsylvania – namely, the Act of May 24, 1945, P. S. 967.

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END OF DOCUMENT 00 4116.01

DOCUMENT 00 4116.02 – HVAC CONSTRUCTION BID FORM

CONTRACT NO. 24-S49-01B-02

ON

PROJECT NO. 24-S49-01B

NEW DISTRICT MAINTENANCE &
BUS DEPOT FACILITY
for

SOUTH FAYETTE TOWNSHIP SCHOOL DISTRICT
3680 Old Oakdale Road, McDonald PA 15057

DRAW Collective
470 Washington Road
Pittsburgh, PA 15228

BID OF _____ _____
(Name) (Date)

_____ _____
(Address) (Telephone Number)

_____
(City, State, Zip)

TO: Dr. Michelle Miller, Superintendent
South Fayette Township School District
3680 Old Oakdale Road
McDonald PA 15057

Ladies and Gentlemen:

The undersigned submits this Bid in conformity with the Drawings and Specifications prepared by DRAW Collective., 470 Washington Road, Pittsburgh, PA 15228-2811, and on file at the above named office; and after examination of the site of the Work, the Bidding Requirements (including the Advertisement for Bids, Instructions to Bidders, and Contractors' Qualification Statement), and the proposed Contract Documents (including the General Conditions, and any addenda issued during the bidding period changing any part of the Contract Documents).

For the price hereinafter stated, it is proposed to provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, transportation, and other facilities and services, and to do and perform all superintendence of the construction, and to secure and pay for all permits and licenses, and to do all incidental work in order to execute and complete the Work in an expeditious and workmanlike manner to the satisfaction and acceptance of the Owner, and the Architect, all in accordance with the Contract Documents.

Enclosed herewith as bid security is a Bid Bond or certified check drawn to the order of the Owner in the amount stated in the Advertisement for Bids. The undersigned agrees not to withdraw this Bid for a period of 60 days after the designated time for receipt of Bids; and that if this Bid is accepted by the Owner, to execute the Contract and furnish the required bonds and insurance coverages. It is agreed that upon the request of the Owner, that date of award will be extended by 30 days. It is agreed that the bid security will be forfeited as liquidated damages, not as a penalty, if the undersigned fails to furnish the required bonds and insurance coverages within 10 days after receipt of written

notice of award of Contract, or fails to execute and deliver the Agreement for the Work within 10 days after receipt of it.

The Bidder hereby certifies that he is the only person(s) interested in this Bid as principal; and has not entered into collusion with any person, firm, or corporation in respect to this Bid or the submitting of Bids for this Contract.

The Bidder hereby agrees to comply with and to be bound by all applicable governmental regulations, laws, codes, ordinances and legal requirements affecting the work, including, but not limited to, Sections 752, 755, and 757 of the "Public School Code of 1949" of the Commonwealth of Pennsylvania, as amended, and the "Pennsylvania Human Relations Act," as amended.

The Bidder hereby acknowledges that Act 114 of 2006, Act 34 of 1985, and Act 151 of 1994 requires that all of the Contractor's employees and all lower tier contractors' employees produce an FBI Federal Criminal History Record, reports of criminal history record information from the Pennsylvania State Police, or a statement from the State Police that the State Police central repository contains no such information relating to each such person, and an "Official Clearance Statement" (OCS) from the Department of Public Welfare before said person may begin working on School District Projects. (See Division 01 Section, "Regulatory Requirements" for additional information.)

The Bidder hereby agrees to comply with and to be bound by all applicable governmental regulations, laws, codes, ordinances and legal requirements affecting the work, including, but not limited to, Compliance required with the Pennsylvania Prevailing Wage Act of 1961, P.L. 987, No. 442; Title VI and other applicable provisions of the Civil Rights Act of 1964; the Department of Labor Equal Opportunity Clause (41 CFR 60 -1.4); Executive Order 11625 (Utilization of Minority Business Enterprise); Executive Order 12138 (Utilization of Female Business Enterprise); in compliance with Section 504 of Rehabilitation Act of 1973 and Americans with Disabilities Act of 1990.

The Bidder hereby agrees to progress with the Work in accordance with the predetermined schedule, and to achieve Substantial Completion within the Contract Time in accordance with the dates established in the Agreement.

The Bidder hereby agrees that the right is reserved to the Owner to reject any or all Bids and to waive any informality or irregularity in any Bid received. It is further understood that the competency and responsibility of Bidders is a consideration in the award of the Contract.

The Base Bid, price quotations, and other information are submitted in the spaces provided on the Bid Form or attached to the Bid Form. Omission of price quotations or other information requested will be sufficient reason for rejection of this Bid.

In submitting this Bid, the Bidder hereby acknowledges the issuance, receipt, and acceptance of Addenda as indicated below:

Addenda issued: YES / NO [*cross out one*]; if YES list below:			
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated

****

CONTRACT NO. 24-S49-01B-02
BASE BID

For all HC Work, the total sum of:

_____ Dollars ($_____)
(Written) (Figures)

****

****

ALTERNATE BID SCHEDULE

Costs listed for each Alternate include costs of related coordination, modification, and adjustment. Do not include costs for insurance coverages that will be provided under the OCIP, as set forth in the Contract Documents.

ALTERNATE NO. H-1a: Automatic Temperature Control for HVAC - Siemens

ADD / DEDUCT _____ Dollars ($_____)
circle one (Written) (Figures)

ALTERNATE NO. H-1b: Automatic Temperature Control for HVAC - KMC

ADD / DEDUCT _____ Dollars ($_____)
circle one (Written) (Figures)

****

UNIT PRICE SCHEDULE

--none scheduled--

****

****

SIGNATURES

When the Bidder is an Individual:

_____(SEAL)

****

When the Bidder is a Partnership:

_____
Name of Partnership

By_____(SEAL)
Partner

_____(SEAL)
Partner

_____(SEAL)
Partner

****

When the Bidder is a Corporation:

_____
Name of Corporation

By_____
President

Corporate Seal

ATTEST:_____
Secretary

The_____is a corporation

organized and existing under the laws of _____and (has) (has not) been granted a certificate of authority to do business in Pennsylvania, as required by the Business Corporation Law, approved May 5, 1933, P. S. 364, as amended.

****

When the Bidder is trading under a fictitious name:

The_____is an individual, partnership, or corporation trading under a fictitious or assumed name and (has) (has not) registered under the Fictitious Name Act of Pennsylvania – namely, the Act of May 24, 1945, P. S. 967.

****

END OF DOCUMENT 00 4116.02

DOCUMENT 00 4116.03 – PLUMBING and FIRE PROTECTION CONSTRUCTION BID FORM

CONTRACT NO. 24-S49-01B-03

ON

PROJECT NO. 24-S49-01B

NEW DISTRICT MAINTENANCE &
BUS DEPOT FACILITY
for

SOUTH FAYETTE TOWNSHIP SCHOOL DISTRICT
3680 Old Oakdale Road, McDonald PA 15057

DRAW Collective
470 Washington Road
Pittsburgh, PA 15228

BID OF _____ _____
(Name) (Date)

_____ _____
(Address) (Telephone Number)

_____
(City, State, Zip)

TO: Dr. Michelle Miller, Superintendent
South Fayette Township School District
3680 Old Oakdale Road
McDonald PA 15057

Ladies and Gentlemen:

The undersigned submits this Bid in conformity with the Drawings and Specifications prepared by DRAW Collective., 470 Washington Road, Pittsburgh, PA 15228-2811, and on file at the above named office; and after examination of the site of the Work, the Bidding Requirements (including the Advertisement for Bids, Instructions to Bidders, and Contractors' Qualification Statement), and the proposed Contract Documents (including the General Conditions, and any addenda issued during the bidding period changing any part of the Contract Documents).

For the price hereinafter stated, it is proposed to provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, transportation, and other facilities and services, and to do and perform all superintendence of the construction, and to secure and pay for all permits and licenses, and to do all incidental work in order to execute and complete the Work in an expeditious and workmanlike manner to the satisfaction and acceptance of the Owner, and the Architect, all in accordance with the Contract Documents.

Enclosed herewith as bid security is a Bid Bond or certified check drawn to the order of the Owner in the amount stated in the Advertisement for Bids. The undersigned agrees not to withdraw this Bid for a period of 60 days after the designated time for receipt of Bids; and that if this Bid is accepted by the Owner, to execute the Contract and furnish the required bonds and insurance coverages. It is agreed that upon the request of the Owner, that date of award will be extended by 30 days. It is agreed that the bid security will be forfeited as liquidated damages, not as a penalty, if the undersigned fails to furnish the required bonds and insurance coverages within 10 days after receipt of written

notice of award of Contract, or fails to execute and deliver the Agreement for the Work within 10 days after receipt of it.

The Bidder hereby certifies that he is the only person(s) interested in this Bid as principal; and has not entered into collusion with any person, firm, or corporation in respect to this Bid or the submitting of Bids for this Contract.

The Bidder hereby agrees to comply with and to be bound by all applicable governmental regulations, laws, codes, ordinances and legal requirements affecting the work, including, but not limited to, Sections 752, 755, and 757 of the "Public School Code of 1949" of the Commonwealth of Pennsylvania, as amended, and the "Pennsylvania Human Relations Act," as amended.

The Bidder hereby acknowledges that Act 114 of 2006, Act 34 of 1985, and Act 151 of 1994 requires that all of the Contractor's employees and all lower tier contractors' employees produce an FBI Federal Criminal History Record, reports of criminal history record information from the Pennsylvania State Police, or a statement from the State Police that the State Police central repository contains no such information relating to each such person, and an "Official Clearance Statement" (OCS) from the Department of Public Welfare before said person may begin working on School District Projects. (See Division 01 Section, "Regulatory Requirements" for additional information.)

The Bidder hereby agrees to comply with and to be bound by all applicable governmental regulations, laws, codes, ordinances and legal requirements affecting the work, including, but not limited to, Compliance required with the Pennsylvania Prevailing Wage Act of 1961, P.L. 987, No. 442; Title VI and other applicable provisions of the Civil Rights Act of 1964; the Department of Labor Equal Opportunity Clause (41 CFR 60 -1.4); Executive Order 11625 (Utilization of Minority Business Enterprise); Executive Order 12138 (Utilization of Female Business Enterprise); in compliance with Section 504 of Rehabilitation Act of 1973 and Americans with Disabilities Act of 1990.

The Bidder hereby agrees to progress with the Work in accordance with the predetermined schedule, and to achieve Substantial Completion within the Contract Time in accordance with the dates established in the Agreement.

The Bidder hereby agrees that the right is reserved to the Owner to reject any or all Bids and to waive any informality or irregularity in any Bid received. It is further understood that the competency and responsibility of Bidders is a consideration in the award of the Contract.

The Base Bid, price quotations, and other information are submitted in the spaces provided on the Bid Form or attached to the Bid Form. Omission of price quotations or other information requested will be sufficient reason for rejection of this Bid.

In submitting this Bid, the Bidder hereby acknowledges the issuance, receipt, and acceptance of Addenda as indicated below:

Addenda issued: YES / NO [*cross out one*]; if YES list below:			
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated

****

CONTRACT NO. 24-S49-01B-03
BASE BID

For all PC Work, the total sum of:

_____ Dollars ($_____)
(Written) (Figures)

****

****

ALTERNATE BID SCHEDULE

--none scheduled--

****

UNIT PRICE SCHEDULE

--none scheduled--

****

****

SIGNATURES

When the Bidder is an Individual:

_____(SEAL)

****

When the Bidder is a Partnership:

_____
Name of Partnership

By_____(SEAL)
Partner

_____(SEAL)
Partner

_____(SEAL)
Partner

****

When the Bidder is a Corporation:

_____
Name of Corporation

By_____
President

Corporate Seal

ATTEST:_____
Secretary

The_____is a corporation

organized and existing under the laws of _____and (has) (has not) been granted a certificate of authority to do business in Pennsylvania, as required by the Business Corporation Law, approved May 5, 1933, P. S. 364, as amended.

****

When the Bidder is trading under a fictitious name:

The_____is an individual, partnership, or corporation trading under a fictitious or assumed name and (has) (has not) registered under the Fictitious Name Act of Pennsylvania – namely, the Act of May 24, 1945, P. S. 967.

****

END OF DOCUMENT 00 4116.03

DOCUMENT 00 4116.04 – ELECTRICAL CONSTRUCTION BID FORM

CONTRACT NO. 24-S49-01B-04

ON

PROJECT NO. 24-S49-01B

NEW DISTRICT MAINTENANCE &
BUS DEPOT FACILITY
for

SOUTH FAYETTE TOWNSHIP SCHOOL DISTRICT
3680 Old Oakdale Road, McDonald PA 15057

DRAW Collective
470 Washington Road
Pittsburgh, PA 15228

BID OF _____ _____
(Name) (Date)

_____ _____
(Address) (Telephone Number)

_____
(City, State, Zip)

TO: Dr. Michelle Miller, Superintendent
South Fayette Township School District
3680 Old Oakdale Road
McDonald PA 15057

Ladies and Gentlemen:

The undersigned submits this Bid in conformity with the Drawings and Specifications prepared by DRAW Collective., 470 Washington Road, Pittsburgh, PA 15228-2811, and on file at the above named office; and after examination of the site of the Work, the Bidding Requirements (including the Advertisement for Bids, Instructions to Bidders, and Contractors' Qualification Statement), and the proposed Contract Documents (including the General Conditions, and any addenda issued during the bidding period changing any part of the Contract Documents).

For the price hereinafter stated, it is proposed to provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, transportation, and other facilities and services, and to do and perform all superintendence of the construction, and to secure and pay for all permits and licenses, and to do all incidental work in order to execute and complete the Work in an expeditious and workmanlike manner to the satisfaction and acceptance of the Owner, and the Architect, all in accordance with the Contract Documents.

Enclosed herewith as bid security is a Bid Bond or certified check drawn to the order of the Owner in the amount stated in the Advertisement for Bids. The undersigned agrees not to withdraw this Bid for a period of 60 days after the designated time for receipt of Bids; and that if this Bid is accepted by the Owner, to execute the Contract and furnish the required bonds and insurance coverages. It is agreed that upon the request of the Owner, that date of award will be extended by 30 days. It is agreed that the bid security will be forfeited as liquidated damages, not as a penalty, if the undersigned fails to furnish the required bonds and insurance coverages within 10 days after receipt of written

notice of award of Contract, or fails to execute and deliver the Agreement for the Work within 10 days after receipt of it.

The Bidder hereby certifies that he is the only person(s) interested in this Bid as principal; and has not entered into collusion with any person, firm, or corporation in respect to this Bid or the submitting of Bids for this Contract.

The Bidder hereby agrees to comply with and to be bound by all applicable governmental regulations, laws, codes, ordinances and legal requirements affecting the work, including, but not limited to, Sections 752, 755, and 757 of the "Public School Code of 1949" of the Commonwealth of Pennsylvania, as amended, and the "Pennsylvania Human Relations Act," as amended.

The Bidder hereby acknowledges that Act 114 of 2006, Act 34 of 1985, and Act 151 of 1994 requires that all of the Contractor's employees and all lower tier contractors' employees produce an FBI Federal Criminal History Record, reports of criminal history record information from the Pennsylvania State Police, or a statement from the State Police that the State Police central repository contains no such information relating to each such person, and an "Official Clearance Statement" (OCS) from the Department of Public Welfare before said person may begin working on School District Projects. (See Division 01 Section, "Regulatory Requirements" for additional information.)

The Bidder hereby agrees to comply with and to be bound by all applicable governmental regulations, laws, codes, ordinances and legal requirements affecting the work, including, but not limited to, Compliance required with the Pennsylvania Prevailing Wage Act of 1961, P.L. 987, No. 442; Title VI and other applicable provisions of the Civil Rights Act of 1964; the Department of Labor Equal Opportunity Clause (41 CFR 60 -1.4); Executive Order 11625 (Utilization of Minority Business Enterprise); Executive Order 12138 (Utilization of Female Business Enterprise); in compliance with Section 504 of Rehabilitation Act of 1973 and Americans with Disabilities Act of 1990.

The Bidder hereby agrees to progress with the Work in accordance with the predetermined schedule, and to achieve Substantial Completion within the Contract Time in accordance with the dates established in the Agreement.

The Bidder hereby agrees that the right is reserved to the Owner to reject any or all Bids and to waive any informality or irregularity in any Bid received. It is further understood that the competency and responsibility of Bidders is a consideration in the award of the Contract.

The Base Bid, price quotations, and other information are submitted in the spaces provided on the Bid Form or attached to the Bid Form. Omission of price quotations or other information requested will be sufficient reason for rejection of this Bid.

In submitting this Bid, the Bidder hereby acknowledges the issuance, receipt, and acceptance of Addenda as indicated below:

Addenda issued: YES / NO [*cross out one*]; if YES list below:			
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated
Addendum:	dated	Addendum:	dated

****

CONTRACT NO. 24-S49-01B-04
BASE BID

For all EC Work, the total sum of:

_____ Dollars ($_____)
(Written) (Figures)

****

****

ALTERNATE BID SCHEDULE

Costs listed for each Alternate include costs of related coordination, modification, and adjustment. Do not include costs for insurance coverages that will be provided under the OCIP, as set forth in the Contract Documents.

ALTERNATE NO. E-1a: Lighting Controls Manufacturer – Wattstopper DLM

ADD / DEDUCT _____ Dollars ($_____)
circle one (Written) (Figures)

ALTERNATE NO. E-1b: Lighting Controls Manufacturer – Sensor Switch n Light

ADD / DEDUCT _____ Dollars ($_____)
circle one (Written) (Figures)

ALTERNATE NO. E-1c: Lighting Controls Manufacturer – Hubbell NX

ADD / DEDUCT _____ Dollars ($_____)
circle one (Written) (Figures)

****

UNIT PRICE SCHEDULE

--none scheduled--

****

****

SIGNATURES

When the Bidder is an Individual:

_____(SEAL)

****

When the Bidder is a Partnership:

_____
Name of Partnership

By_____(SEAL)
Partner

_____(SEAL)
Partner

_____(SEAL)
Partner

****

When the Bidder is a Corporation:

_____
Name of Corporation

By_____
President

Corporate Seal

ATTEST:_____
Secretary

The_____is a corporation

organized and existing under the laws of _____and (has) (has not) been granted a certificate of authority to do business in Pennsylvania, as required by the Business Corporation Law, approved May 5, 1933, P. S. 364, as amended.

****

When the Bidder is trading under a fictitious name:

The_____is an individual, partnership, or corporation trading under a fictitious or assumed name and (has) (has not) registered under the Fictitious Name Act of Pennsylvania – namely, the Act of May 24, 1945, P. S. 967.

****

END OF DOCUMENT 00 4116.04

SECTION 01 1200 - MULTIPLE CONTRACT SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes a summary of Prime Contracts, with scope descriptions and respective responsibilities for coordination and temporary facilities and controls.

1. Specific requirements of each Prime Contract are also indicated in individual Specification Sections and on Drawings.
2. Where requirements for Work of each Contract indicated in individual Specification Sections or on Drawings are or may be interpreted to be at variance with requirements in this Section, request clarification from Architect, or perform the Work.

B. Related Sections:

1. Section 01 1000 "Summary of Work" for general description and summary of Work covered by Contract Documents.

1.2 CONTRACTS INCLUDED

A. Project Identification:

DRAW Collective Project No. 24-S49-01B

New District Maintenance & Bus Depot Facility,
3600 Old Oakdale Road, South Fayette Township, Allegheny County, Pennsylvania.

for the

South Fayette Township School District, 3680 Old Oakdale Road, McDonald PA 15057

B. Prime Contracts are separate individual agreements with the Owner for significant specific construction activities, performed concurrently with and closely coordinated with one another and administered by the Architect and Construction Manager. Prime Contracts for this Project:

1. Contract No 24-S49-01B-01 General Construction (GC)
2. Contract No 24-S49-01B-02 HVAC Construction (HC)
3. Contract No 24-S49-01B-03 Plumbing and Fire Protection Construction (PC)
4. Contract No. 24-S49-01B-04 Electrical Construction (EC)

1.3 PERMITS AND INSPECTIONS

A. Unless otherwise provided in the Contract Documents, the Owner, through the Architect, will secure and pay for the initial building permit and the municipality's initial construction code review and plan examination fees, if any.

1. Lead Contractor shall coordinate final issuance of permit prior to starting on-site operations, shall properly post necessary permits at the project site prior to the start of construction activity, and shall maintain posting on-site through the completion of the Project.
2. Contractor shall secure and pay for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.
3. Singular purpose permits shall be the sole responsibility of the Prime Contract to which they apply and shall be secured prior to the initial project meeting.

B. Each Prime Contractor will be responsible for scheduling all inspections as required for its work, with the appropriate inspection agency. Notification of scheduled inspections shall be made to the Architect and the Construction Manager, no less than three business days prior to its scheduled date. No Work which requires inspection shall be concealed from view until approved by the inspection agency and the Architect.

1. Lead Contractor shall maintain an inspection log available to the Inspector, the Architect, the Construction Manager, and all Prime Contractors at all times during construction and until final approvals are obtained for the project.

C. Verify costs of permit and inspection fees prior to submitting bids. The benefit of waived or discounted fees shall be passed to Owner.

1.4 LEAD CONTRACTOR

A. Definition: The Prime Contractor selected by the Owner to perform duties described generally as multiple-prime coordination.

B. The General Contractor is designated as Lead Contractor for this Project, except as otherwise indicated.

1. The HVAC Contractor is designated as Lead Contractor solely for preparation of interdisciplinary coordination drawings.

C. Lead Contractor shall be responsible for overall coordination of the Work, including among operations of the Work performed by each of the separate Prime Contractors.

1. Lead Contractor shall assign full-time personnel experienced in administration and supervision of multiple-prime contract building construction on projects.

D. Support, administrative, and control activities of Lead Contractor:

1. Provide Construction Manager's field office, complete, including equipment and services, for use as a common meeting area for all personnel engaged in construction activities per Section 01 3100 "Project Management and Coordination."
2. Provide quality-assurance and quality-control services specified in Section 01 4000 "Quality Requirements."
3. Provide those Field Engineering Services not provided by Owner, in compliance with Section 01 7300 "Execution"
4. Project Record Documents: Coordinate preparation, printing, and submitting of Project Record Documents if information from more than one Contractor is to be integrated with information from other Prime Contractors to form one combined record. Collect record Specification Sections from Contractors, collate Sections into numeric order, and submit complete set.
5. Provide progress cleaning of common areas and coordinate progress cleaning of areas or pieces of equipment where more than one Prime Contractor or their sub-contractors has worked.
6. Providing and maintaining all dust and sound partitions.

E. Coordination activities of Lead Contractor:

1. Coordinate overall safety and security procedures for project.
2. Provide overall coordination of temporary facilities and controls.
3. Coordinate Pre-Installation meetings as required in individual Specifications Sections that affect the work of more than one Prime Contract.
4. Coordinate, schedule, and approve interruptions of permanent and temporary utilities, including those necessary to make connections for temporary services.
5. Coordinate sequence of activities to accommodate tests and inspections, and coordinate schedule of tests and inspections.
6. Coordinate cutting and patching by the various Prime Contractors.
7. Coordinate protection of the Work.
8. Coordinate compliance with requirements of penetration fireproofing by the various Prime Contractors.
9. Coordinate completion of interrelated punch list items.

10. Coordinate shared access to work spaces.
11. Coordinate product selections for compatibility.
12. Coordinate preparation of Operation and Maintenance manuals if information from more than one Contractor is to be integrated to form one combined record.
13. Coordinate all required pre-installation meetings on site as required in individual Specifications Sections.

F. Sequencing and scheduling activities of the Lead Contractor: Coordinate sequencing and scheduling of the Work. Observe requirements of Section 01 3200 "Construction Progress Documentation" Include the following:

1. Initial Coordination Meeting: At earliest possible date, arrange and conduct a meeting with Prime Contractors for sequencing and coordinating the Work; negotiate reasonable adjustments to schedules.
2. Prepare, maintain, distribute, and submit Contractors' Combined Construction Schedule for entire Project. Secure time commitments for performing critical construction activities from separate Prime Contractors. Show activities of each Contract on a separate sheet.
    a. It shall be the responsibility of each Prime Contract to fully participate in preparing and updating the Construction Schedule to fully understand the sequencing and durations.
3. Work closely with the Construction Manager and other Prime Contracts to coordinate all Prime Contractors' Submittals Schedules with the Combined Construction Schedule, for entire Project.
    a. Secure and coordinate submittal requirements from individual Prime Contractors, allowing reasonable review time in compliance with Section 01 3300.
    b. Show schedule of submittals for each Contract on a separate sheet, properly keyed to Combined Construction Schedule.
    c. Coordinate Schedule with Construction Manager to accommodate Owner's pre-occupancy activities to be performed under other contracts or with Owner's own forces.
4. Schedule and coordinate in-wall and above-ceiling utility rough-in inspections and Prime Contractor signoffs prior to wall/ceiling closures.
    a. Coordinate sequencing of Prime Contractor Work to avoid cutting and patching of new construction.

G. HC Responsibility as Lead Contractor:

1. Initiate and manage Coordination Drawings in collaboration with each Contractor. Observe requirements of Section 01 3100 "Project Management and Coordination".

1.5 ALL PRIME CONTRACTS: GENERAL REQUIREMENTS OF CONTRACTS

A. Extent of Contract: Unless the Contract Documents contain a more specific description of the Work of each Contract, names and terminology on Drawings and in Specification Sections determine which contract includes a specific element of Project.

1. Local custom and trade-union jurisdictional settlements do not control the scope of the Work of each contract. When a potential jurisdictional dispute or similar interruption of work is first identified or threatened, affected Contractors shall negotiate a reasonable settlement to avoid or minimize interruption and delays.
2. Perform Work specifically depicted and described by, or reasonably inferable from, the Contract Documents as work necessary to produce the intended results of the respective Construction Contract. Commonly recognized names and terminology on Drawings and in Specifications may reasonably be used to infer which contract includes a specific element of the Project.
3. Requirements and Specifications of the Project Manual applicable to all Contracts:
    a. Contract Documents of Division 00 – Introductory Information, Bidding Requirements and Contracting Requirements,
    b. Sections of Division 01 – General Requirements

B. Each Prime Contractor shall be responsible for the following as it relates to its own scope of Work, including work of its Subcontractors.

1. General coordination and cooperation with all other Prime Contractors so as not to delay timely progress of the Project.
2. Compliance with ANSI A117.1: Required of each Contract as relates its scope of Work.
3. Photographic documentation prior to demolition or cutting and patching, with each payment application, and at closeout.
4. All equipment, tools and material needed by the Contractor to perform and complete its Work.
5. All safety equipment, tools and material required in performance of its work in compliance with OSHA and local requirements.
6. Local licenses, permits, inspections, approvals, tests and fees.
7. Submission of compliant prevailing wage documents, including for its subcontracts.
8. Costs for document reproduction.
9. Hoisting and rigging equipment; shoring, scaffolding, special equipment, etc.
10. Selective Demolition: Performed by each Contract for its own Work, and as delineated throughout the Contract Documents, properly coordinated with the Work of other Contracts, through the Lead Contractor.
11. Interior and exterior equipment pads and housekeeping pads.
    a. Coordinate sizes and locations of pads with other Prime Contractors and CM
12. Trenching/excavation, dewatering, bedding and backfill material, and proper removal and disposal/placement of spoils.
13. Hangers, supports, identification and painting required for all systems in its scope of work.
14. Through-penetration fire stopping, fire sealing, tagging and/or labeling for rated walls and floors.
15. Blocking, backing panels, sleeves, and metal fabrication supports: provided by each Contract for its own Work, coordinated with the Work of other Contracts.
16. *–deleted--*
17. Field-applied caulk and joint sealant, and acoustic sealants: provided by each Contract for its own Work, coordinated with the Work of other Contracts.
    a. Sealing of joints between installed work of different Prime Contracts shall be the responsibility of the installer of the work last in sequence, unless otherwise indicated.
18. Floor, wall, and roof penetrations, cutting and patching: provided by each Contract for its own Work, coordinated with the Work of other Contracts.
    a. Patching shall match adjacent installed finishes.
    b. All locations of installed roof where a penetration is part of cutting and patching operations shall be immediately made weathertight by the Prime Contractor causing the breach, with permanent cap or patching materials and methods acceptable to the manufacturer.
19. Each Prime Contractor shall be responsible to furnish and install access doors and frames required for its own Work.
    a. Where an access door is required for the work of more than one prime, coordinate with Lead Contractor and Construction Manager.
    b. Where hidden Work requires future or ongoing access for service, maintenance, operation, observation, or inspection, submit to Lead Contractor (GC) detailed requirements for size, location, type and clearance needed for access doors and frames. Cooperate with Lead Contractor in verifying proper sequencing and installation.
20. Roof-mounted equipment curbs with associated wood blocking for the work of each contract shall be the work of each contract for its own work.
    a. Coordinate size, location, and sequencing with RC and Lead Contractor.
21. Daily cleanup and debris removal
22. As-built drawings for all systems related to its scope of work.
23. Project closeout requirements by each contract for its own Work.
24. Providing and maintaining temporary barricades, coverings, signage and protection related to openings and penetrations in floors, walls, or roof per current OSHA standards and local code requirements.
25. All necessary traffic control measures.

C. Unless otherwise indicated, the Work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.

1. All Contractors shall be responsible for verification of existing conditions.
2. Each Contract includes complete cooperation, coordination and communication with other Prime Contractors whose work interfaces with its Work, and whose sequencing is affected by its Work, in support of the most current Combined Construction Schedule.
3. Except as otherwise indicated, each Contract includes permits and inspections specified or required by authorities having jurisdiction, including timely notifications, applications and payment of fees.
4. Each Contract includes demonstration, training, and support of Owner personnel in products, systems, assemblies, and equipment included in its scope.

D. Coordination and Scheduling:

1. Contractors' Startup Construction Schedule: Within five working days after startup horizontal bar-chart-type construction schedule and preliminary network diagram submittal has been received from the Lead Contractor, submit a matching startup horizontal bar-chart schedule and startup network diagram showing construction operations sequenced and coordinated with overall construction.
2. Submit preliminary and progress project schedules, matching and coordinated with Lead Contractor's Project master schedule, showing construction operations sequenced and coordinated with overall construction.
3. Participate in and cooperate with coordination activities of Lead (General) Contractor as specified in Section 01 3100 and 01 3200. Perform Work in support of the most recent updated and approved Project Schedule, Submittals Schedule and Coordination Drawings to maintain the required sequence and overall progress of the Project.
    a. Provide information requested by Lead Contractor in preparation of Combined Construction Schedule, including time commitments for critical activities.
    b. Prepare and schedule necessary personnel for scheduled project update, coordination and preinstallation meetings, and other project meetings.
4. Participate in preparing, amending, and circulating Coordination Drawings.
5. Coordinate Work with that of other Prime Contractors and work by the Owner, including access and performance of personnel and equipment, staging and storing of tools and materials, sequencing of operations, use and maintenance of temporary facilities including shoring and scaffolding.
    a. No Contractor may embark upon work that impacts another Prime Contract without detailed coordination with that Prime Contractor and the Lead Contractor.
    b. Modifications to the Work made necessary by a Contractor's failure to properly coordinate the Work, shall be made by that Contractor, at no additional cost to the Owner.
6. Participate in and cooperate with requirements and procedures for site safety and security measures, daily and periodic cleaning, personnel behavior, worker and delivery access, daily materials delivery, and Owner's continued occupancy and use of sites adjacent to Project areas.
7. Participate in and cooperate with quality assurance, testing and inspection activities of Lead Contractor, Owner, Architect, Owner's Commissioning Authority, and Construction Manager.
8. Participate in and cooperate with all Special Inspections being done by Owner's Special Inspections Testing Agency, and with consulting testing or inspection agencies or municipal inspectors requiring access to and throughout the Project site.
9. Participate in and cooperate with closeout activities and procedures of Lead Contractor, Construction Manager, and Architect.

E. Logistics:

1. Requirements for use of building and site for specific activities will be clarified at the initial Pre-Construction Conference, and are intended to allow for Owner's continued use of the building and site during the Contract Time, and to allow the Work to proceed uninterrupted during the Contract Time.
2. It is the responsibility of each Prime Bidder to anticipate logistics requirements prior to bid to fully understand the proposed sequencing, restrictions and durations. There will be no extensions of time on the Project.
3. Deviations from specific logistics requirements will be acceptable only with prior written approval from Owner, Construction Manager, and Architect, and properly coordinated with all Prime Contracts, and only if there is no

adverse impact on Owner's intended continued use of the building and site and no additional cost to the Owner from any Prime Contractor.

4. Each Prime Contractor shall be responsible to protect, maintain, extend, repair, restore, or otherwise keep functional all building systems in occupied spaces that may be interrupted or disturbed by construction activities or by phasing relocations and/or restrictions.

F. Recovery Schedule: The Combined Construction Schedule shall indicate work activity duration and sequence, including critical benchmarks. It shall be the responsibility of each Prime Contract to fully participate in preparing and updating the Construction Schedule to fully understand the sequencing and durations.

1. There will be no extensions of time on the project. If it becomes apparent that a Prime Contractor will not meet any one of the agreed-upon critical benchmarks, that Contractor shall institute a Recovery Plan as outlined in Section 01 3200. Some or all of the following shall by employed at no additional cost to the Owner:

   a. Increase manpower.
   b. Increase man-hours per shift, shifts per workday, days per work week, or any combination thereof. Additional cost for Architect, Construction Manager or Owner for overtime or shift work is the responsibility of the Contractor.
   c. Increase construction equipment or expedite material deliveries.
   d. Revise the scheduled sequencing of tasks to put project back on schedule.

2. If the contractor fails to institute a recovery plan within 24 hrs. from written notice, which will return the project to the original schedule, appropriate action may be taken involving contractual commitments and performance bonds.
3. The costs for any recovery plan shall be anticipated by the Contractor and included in the Contractor's Base Bid plus approved Alternate Bid amounts.

G. Substitutions and Options: Each Contractor shall cooperate with other Prime Contractors involved to coordinate approved substitutions and Contractor's options with remainder of the Work.

1. Lead Contractor shall coordinate substitutions.
2. Any Contractor providing materials that meet the standard established by a Basis-of-Design specification but is not actually the Basis-of-Design material itself, shall be responsible for coordinating such material's installation requirements with all other affected Prime Contractors.
3. Use by any Prime Contractor of products, systems or assemblies other that those identified as Basis-of-Design, shall not result in additional cost to the Owner or any other Prime Contract. Except as otherwise indicated, Prime Contractor employing such substitution shall be subject to a reduction in Contract Sum to compensate for charges so incurred by Owner or other Prime Contract.

H. Benchmarks and Building Control Lines:

1. The Lead Contractor shall procure the services of a registered land surveyor to perform the field layout work for establishing primary site lines and levels. If any of the control points initially are moved or lost, control points shall be re-established by the General Contractor at no additional cost to the Owner. Contract work shall properly relate to lines and levels and detail dimensions shown or established by supplemental drawings.
2. All engineering or field layout for points necessary to perform work is the responsibility of each Prime Contractor and all such information must be copied to the Construction Manager.
3. All other layout is the responsibility of each Prime contractor. Contractors shall exercise proper precaution to verify the dimensions shown on drawings prior to laying out work and report any inaccuracies or errors to Construction Manager prior to beginning work. The contractor shall be held responsible for any error resulting from failure to exercise such precautions. Coordinate and check all other dimensions and levels as necessary for detailed layout work. All discrepancies which are found, must be coordinated with Construction Manager prior to proceeding with the work.
4. Contractors are cautioned that temperature corrections during all surveying and layout must be used. Contractors will be responsible for any and all extensions of lines and grades necessary for their work.
5. At the request of the Construction Manager provide certification, signed by the Contractor's retained field engineer, certifying that elevations and locations of improvements are in conformance or non-conformance with requirements of the Contract Documents.

I. Cleaning: Each Contractor is responsible for progress cleaning of work areas affected by its operations on a daily and periodic basis. Remove construction debris to general waste facility as provided by Lead Contractor.

J. Cutting and Patching: Except as otherwise indicated, each Contractor is responsible for cutting and patching for its own Work, coordinated with the Work of other Contracts.

1. Patching shall match in-place finishes.
2. *–deleted--*

K. Temporary Facilities and Controls: In addition to specific responsibilities for temporary facilities and controls indicated in Sections 21 0500 “Common Work Results for Fire Suppression,” 22 0500 “General Provisions and Common Work Results for Plumbing,” 23 0500 “Common Work Results for HVAC,” 26 0100 “Basic Electrical Requirements, 27 0100 “Basic Communications Systems Requirements,“ 28 0100 “Basic Electronic Safey and Security Requirements,” and in 01 5000 "Temporary Facilities and Controls," each Contractor is responsible for the following:

1. Installation, operation, maintenance, and removal of each temporary facility usually considered as its own normal construction activity, and costs and use charges associated with each facility, except as otherwise provided for in this Section.
2. Plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
3. Its own field office, complete with necessary furniture, utilities, and telephone service, in compliance with Construction Manager’s Site Logistics Diagram and Additional Site Logistics Requirements, and as otherwise directed or approved by Construction Manager.
4. Its own storage and fabrication sheds.
5. Temporary enclosures for its own construction activities.
6. Staging for its own construction activities.
7. General hoisting facilities for its own construction activities.
8. Shoring as required for its own work.
9. Scaffolding as required for its own work, except as specifically indicated.
10. Waste disposal facilities, including collection and legal disposal of its own hazardous, dangerous, unsanitary, or other harmful waste materials.
11. Secure lockup of its own tools, materials, and equipment.
12. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.

L. Temporary Heating, Cooling, and Ventilation: Requirements, restrictions and responsibilities as described in Section 01 5000 "Temporary Facilities and Controls".

M. Use Charges: Requirements, restrictions and responsibilities as described in Section 01 5000 "Temporary Facilities and Controls".

N. Site Utilities: Site Utility systems are generally defined as that part of systems beyond five feet from building line. Responsibility for site utilities and structures, including trenching and backfilling, and cutting and patching in-place paving and other site surfaces (or sleeves under road where acceptable), shall be as follows.

1. GC:

a. Storm Sewage and Drainage: Complete system, including but not limited to piping, structures and connections and final connections to building storm drainage plumbing.
b. Storm retention systems.
c. Complete foundation drainage: Include necessary testing and inspection coordination of storm drain systems.
d. Complete Erosion and Sedimentation Controls.
e. Sanitary Sewer System: Complete system, including but not limited to piping, structures and connections to public sanitary system and final connections to building sanitary sewer plumbing.
f. Fuel Gas Service: Complete system, including but not limited to piping, structures and connections to public utility system and final connections to building fuel gas plumbing.

g. Domestic and Fire Suppression Water Service: Complete system, including but not limited to piping, structures and connections to public utility system and final connections to building deomestic and fire suppression water service plumbing.
h. Coordination between PC, utility companies, and Owner for final taps and connections to existing lines and new meters. Refer to section 220500 for specific details.

2. HC: None
3. PC: ~~None~~ Coordination and cooperation with GC, utility companies, and Owner with regard to final site utility connection requirements and metering requirements.
4. EC:

a. Complete power and communication service including coordination with public utility.
b. Work associated with Site Lighting.

1.6 GENERAL CONSTRUCTION CONTRACT NO. 24-S49-01B--01

A. The abbreviation GC, as used in reference to contract work scope on the Drawings or elsewhere in the Contract Documents, refers to the Contract, or the Prime Contractor, for General Construction.

B. General Summary of GC Work, in addition to applicable GC Requirements of Articles 1.4 "Lead Contractor" and 1.5 "**All Prime Contracts: General Requirements of Contracts**" above.

1. All work as described in the following Specification Divisions:

a. Division 01 – General Requirements.....All Sections
b. Division 02 – Existing Conditions 02 4113
c. Division 03 – Concrete .....All Sections
d. Division 04 – Masonry .....All Sections
e. Division 05 – Metals .....All Sections
f. Division 06 – Wood, Plastic and Composites.....All Sections
g. Division 07 – Thermal and Moisture Protection .....All Sections
h. Division 08 – Openings .....All Sections
i. Division 09 – Finishes .....All Sections
j. Division 10 – Specialties .....All Sections
k. Division 11 – Equipment.....All Sections
l. Division 12 – Furnishings .....All Sections
m. Division 14 – Conveying Equipment.....All Sections
n. Divisions 21 through 28 .....as applicable to GC scope of Work
o. Division 31 – Earthwork .....All Sections
p. Division 32 – Exterior Improvements.....All Sections
q. Division 33 – Utilities 33 4100, 33 4913

2. All work as identified on the following Drawings:

a. General.....All Drawings
b. Civil .....All Drawings
c. Structural .....All Drawings
d. Architectural .....All Drawings
e. Coordination with all other Drawings

3. All Work indicated on the Contract Documents not assigned to another Contract.

C. General Outline of GC Responsibility:

1. All Work indicated as GC Work, plus other construction operations traditionally recognized as General Construction, and Work not specifically identified or reasonably inferred to be in the scope of another Prime Contract.
2. Site preparation, except as otherwise indicated, including clearing and grubbing, earth moving, erosion and sedimentation controls, building pad grading and preparation, disturbed site restoration, and maintenance of mown areas, and other site activities as indicated.

3. Site utilities and structures to the extent described in Article "General Requirements of Contracts" above.
4. Site improvements not assigned to another Prime Contract, including, roadways, parking lots, pedestrian paving, stairs, ramps, railings, utility structures, segmental retaining wall, site development furnishings and equipment, plantings and landscaping.
5. Exterior identification, wayfinding, and traffic control signage
6. Site structures, enclosures and equipment.
7. Guard rail, fencing and gates
8. Superstructure, including floor and roof framing and decking.
9. Miscellaneous metal fabrications and secondary framing not assigned to another Prime Contract.
10. Include the work necessary for structural framing assemblies at floor and roof openings.
11. Exterior closure not assigned to another Prime Contract
    a. GC: Air compressor enclosure
    b. GC: All openings and associated framing, flashing, and structural supports and lintels for work by other prime contractors, except in cases of cutting and patching.
12. Complete and continuous Air Barrier System, including transitions between various air barrier assemblies.
13. Complete roofing systems, roof accessories and specialties not assigned to another Prime Contract, including gutters and downspouts.
14. Interior construction not assigned to another Prime Contract,
    a. Partitions and ceilings
    b. Fire rated assemblies
    c. Expansion devices and covers
    d. Doors and hardware, interior glazed openings, window treatments
        1) EC: Coordinate interface requirements for controls; Provide controls where indicated
        2) GC: Provide all labor and parts necessary for door and frame internal low voltage wiring for electrified door openings and control. Coordinate final connections with EC.
    e. Access doors and frames: Coordinate size, types, and locations with other Prime Contracts, as applicable.
    f. Miscellaneous rough and finish carpentry, and architectural woodwork
    g. Miscellaneous appurtenances.
    h. Fire-protection specialties.
    i. Interior finishes and specialties.
        1) Includes painting of exposed unfinished mechanical and electrical work.
15. Casework: Manufactured and custom institutional cabinet units, countertops, accessories and trim. Include:
    a. Coordination with and preparation for installation of utilities and services under other Contracts
    b. Provide holes and cutouts in counter tops, for fixtures and bowls provided under PC. Cooperate with PC for proper size and location of holes and cutouts.
        1) PC: Supply GC with full-size templates and location guides for holes and cutouts.
    c. Provide electrical service fittings as described in Section 12 3553. Provide cutouts and grommets for passage of wiring where indicated.
        1) EC: Provide rough-in and final connections.
16. Fixed equipment, fixtures and specialties not assigned to another Prime Contract.
17. Window treatments, furnishings and movable equipment not otherwise assigned to another Prime Contract.

D. Temporary facilities and controls, in addition to requirements of Lead Contractor and not otherwise specifically assigned to another Prime Contract.

E. Related work by other Prime Contractors

1. PC:
    a. Rough-in and final connections for plumbing devices and appliances.
    b. Stainless steel sinks and fixtures, including countertop cutouts.

c. Full-size templates for holes and cutouts in tops.
d. --Deleted--
e. All work related to grease interceptor ~~and final connections between grease interceptor and site utilities.~~
f. Downspout boots and associated underground stormwater piping within 5' of building.

2. HC:

a. Coordinate penetrations through floor and building enclosure.

3. EC:

a. Rough-in and final connections for electrical devices and appliances.
b. Rough-in and final connections for electrical service fittings installed in casework.
c. Rough-in wiring to and between equipment, and final connections.
d. Wall receptacles and devices not otherwise provided
e. Disconnects and devices as indicated

F. Refer to all other Specifications Sections, and other Articles in this Section, for coordination requirements of the Work of the GC with Work of other Prime Contracts.

1. Coordinate phasing and scheduling requirements with CM and other Prime Contracts.
2. Coordinate slab penetrations, underslab utilities, and floor drain locations and elevations with affected Prime Contract.
3. Coordinate penetration fireproofing and smoke proofing with other affected Prime Contracts.
4. Coordinate access door and frame sizes and locations with other affected Prime Contracts.
5. Coordinate roof curb, equipment support, and penetrations with other affected Prime Contracts.
6. Coordinate penetrations of building enclosure and air barrer (roof and wall) by other Prime Contracts.

1.7 HVAC CONSTRUCTION CONTRACT NO. 24-S49-01B--02

A. The abbreviation HC, as used in reference to contract work scope on the Drawings or elsewhere in the Contract Documents, refers to the Contract, or the Prime Contractor, for HVAC Construction.

B. General Summary of HC Work, in addition to applicable HC Requirements of Articles 1.4 "**Lead Contractor**" and 1.5 "**All Prime Contracts: General Requirements of Contracts**" above.

1. All work as described in the following Specification Divisions:

a. Divisions 21, 22, 26 through 28 .....as applicable to HC scope of Work
b. Division 23 – HVAC.....All Sections

2. All work as identified on the following Drawings:

a. General.....All Drawings
b. HVAC .....All Drawings
c. Coordination with all other Drawings

3. All HVAC Construction work indicated on the Contract Documents plus other construction operations traditionally recognized as HVAC Construction and not assigned to another Contract.

C. General Outline of HC Responsibility:

1. –deleted--
2. –deleted--
3. HVAC central and terminal systems and equipment.
4. Air distribution systems and equipment

a. Include final air duct cleaning.

5. HVAC instrumentation and controls.
6. HVAC testing, adjusting, and balancing.

7. Building automation system.
8. Mechanical connections to equipment of another Prime Contract
9. Sheet metal work and accessories.
10. Refrigerant piping systems
11. Terminal heating units.
12. Humidification units.
13. Thermal, sound and vibration insulation
14. Exhaust systems and equipment.
15. Meters and gages, valves and fittings, hangars and supports, boxes and fittings, vibration isolation and controls, installation accessories and other appurtenances that form part of installed HVAC, automation and controls systems.
16. Identification for systems, equipment and components
17. HVAC cleaning and equipment startup, air and water testing, adjusting, and balancing.
    a. Include final duct and coil cleaning prior to startup.
    b. Include filter replacement at substantial completion
18. Starting and testing of control voltage systems and equipment.
19. Mechanical connections to equipment of other Contracts.
20. HVAC Louvers

D. Temporary facilities and controls in the HC Contract, as specified, as identified in the Construction Manager's Phasing and Site Logistics instructions (attached hereto), and as follows:

1. Temporary Heating, Dehumidification, and Ventilation:
    a. Provide temporary equipment as specified or otherwise indicated.
    b. Operation of permanent HVAC equipment, subject to Owner approval and requirements of Sections 01 5000 and 01 7700. Do not use permanent cooling equipment for temporary construction use.
    c. Include temporary filtering and final duct and equipment cleaning prior to permanent startup.
2. Temporary duct and piping for heating and cooling: schedule to maintain conditioned occupied spaces.

E. Refer to all other Specifications Sections, and other Articles in this Section, for coordination requirements of the Work of the HC with Work of other Prime Contracts.

1. Coordinate with Lead Contractor and CM to maintain phasing, sequencing, and scheduling.
2. Initiate and coordinate preparation of interdisciplinary coordination drawings with other Prime Contractors.
3. Cooperate with and assist other Prime Contractors whose work interfaces with HC Work
4. Coordinate sizes and locations of building enclosure (roof and wall) penetrations with the GC and CM
5. Coordinate sizes and locations of access doors and frames with the GC and CM

1.8 PLUMBING AND FIRE PROTECTION CONSTRUCTION CONTRACT NO. 24-S49-01B--03

A. The abbreviation PC, as used in reference to contract work scope on the Drawings or elsewhere in the Contract Documents, refers to the Contract or the Prime Contractor for Plumbing Construction.

B. General Summary of PC Work, in addition to applicable PC Requirements of Article 1.5 "**All Prime Contracts: General Requirements of Contracts**" above.

1. All work as described in the following Specification Divisions:
    a. Division 21 – Fire Suppression.....All Sections
    b. Division 22 – Plumbing.....All Sections
    c. Divisions 26 through 28 .....as applicable to PC scope of Work
    d. Division 31 – Earthwork .....31 2300 and 31 2333 as they relate to site utility installations.
    e. Division 33 – Utilities ..... 33 3000, 33 4913, 33 5113.
2. All work as identified on the following Drawings:

a. General.....All Drawings
b. Civil .....Drawings identifying Site Water, Gas, and Sanitary.
c. Plumbing .....All Drawings
d. Fire Protection .....All Drawings
e. Coordination with all other Drawings

3. All Plumbing and Fire Protection Construction work indicated on the Contract Documents plus other construction operations traditionally recognized as Plumbing and Fire Protection Construction and not assigned to another Contract.

C. General Outline of PC Responsibility:

1. *–deleted--*
2. Domestic water distribution.
3. *–deleted--*
4. Sanitary waste and vent piping.
5. Piped systems within existing and new construction.
6. Special plumbing systems and equipment
7. In casework provided under another Prime Contracts, furnish and install drop-in sink bowls, and water fixtures, as scheduled in Plumbing Drawings and Division 12 and 22 Sections. Provide full-size templates to GC.

   a. GC: Cutouts in countertops.

8. Building plumbing-fixtures, trim, and specialties, including wall hydrants, hose bibbs, floor drains, backflow prevention, fittings, devices and accessories.
9. *–deleted--*
10. Identification tags and schedules for plumbing piping systems, equipment, valves, and components
11. Plumbing connections to equipment of other Contracts.
12. Provide points of connections for Building Automation System for designated plumbing equipment alarms, monitoring and controls.
13. Piped fire suppression systems, as defined in Division 21 and summarized below:

    a. Final design of fire suppression systems, including the following:

       1) Flow tests of municipal water supply
       2) Hydraulic design calculations
       3) Sprinkler and riser layouts and working plans for submission to authorities having jurisdiction
       4) Initial, interim and final municipal approvals and inspections
       5) Flow and tamper switches to be integrated to the building fire alarm system by the EC

    b. Building fire suppression system and specialties, including riser system, connection to fire service line, sprinklers, test and drains, flow and tamper switches, gauges, valves and fittings, devices, and accessories.
    c. Include the following:

       1) Hangars and supports, pipe sleeves and seals, escutcheons, vibration controls, installation accessories and other appurtenances that form part of installed FC systems
       2) Identification tags and schedules for piping systems, equipment, valves, and components

    d. Provide points of connections for Building Automation System for designated Fire Suppression equipment alarms, monitoring and controls.
    e. Cooperation with and assistance to separate Prime Contractors whose work interfaces with fire sprinkler Work

       1) HC: Wiring and interconnection with Building Automation System

14. Special fire-suppression systems.
15. Post-occupancy inspection service
16. Demonstration, training and support of Owner personnel
17. All work related to grease interceptor ~~and final connections between grease interceptor and site utilities~~.
18. All work related to compressed air system as detailed on plumbing drawings.

    a. GC: air compressor enclosure

19. *–deleted--*
20. Downspout boots and associated underground stormwater piping within 5' of building.

    a. GC: gutters and downspouts.

D. Temporary facilities and controls in the Plumbing Contract, as specified, as identified in the Construction Manager's Phasing and Site Logistics instructions (attached hereto), and as follows:

1. Temporary fire suppression
2. Piped sewerage and drainage.
3. Piped gas service.
4. Piped water service.
5. Plumbing connections to temporary facilities and controls of other Contracts.
6. Water connections to Construction Manager's Field Office
7. Temporary piping as required to maintain conditioned occupied spaces.

E. Refer to all other Specifications Sections, and other Articles in this Section, for coordination requirements of the Work of the PC with Work of other Prime Contracts.

1. Coordinate with Lead Contractor and CM to maintain phasing and scheduling.
2. Participate in preparation of interdisciplinary coordination drawings with other Prime Contractors.
3. Cooperate with and assist other Prime Contractors whose work interfaces with PC Work
4. Coordinate floor drain locations and elevations with the GC.
5. Coordinate sizes and locations of equipment pads with the GC and CM
6. Coordinate sizes and locations of building enclosure (roof and wall) penetrations with the GC and CM
7. Coordinate sizes and locations of access doors and frames with the GC and CM

1.9 ELECTRICAL CONSTRUCTION CONTRACT NO. 24-S49-01B--04

A. The abbreviation EC, as used in reference to contract work scope on the Drawings or elsewhere in the Contract Documents, refers to the Contract, or the Prime Contractor, for Electrical Construction.

B. General Summary of EC Work, in addition to applicable EC Requirements of Article 1.5 "**All Prime Contracts: General Requirements of Contracts**" above.

1. All work as described in the following Specification Divisions:

    a. Divisions 21, 22, 23 .....as applicable to EC scope of Work
    b. Division 26 – Electrical .....All Sections
    c. Division 27 – Communications .....All Sections
    d. Division 28 – Electronic Safety and Security.....All Sections
    e. Division 31 – Earthwork .....31 2300 and 31 2333 as they relate to site utility installations.
    f. Division 33 – Utilities 33 7000

2. All work as identified on the following Drawings:

    a. General.....All Drawings
    b. Electrical.....All Drawings
    c. Coordination with all other Drawings

3. All Electrical Construction work indicated on the Contract Documents plus other construction operations traditionally recognized as Electrical Construction and not assigned to another Contract.

C. General Outline of EC Responsibility:

1. Electrical site utilities and structures, including trenching and backfilling, to the extent described in Article "General Requirements of Contracts" above.
2. Electrical distribution systems and equipment, including transformers, panelboards, surge suppression equipment, wiring devices, switches and disconnects, cabinets, boxes and fittings.

3. Exterior and interior lighting systems, controls and equipment.

    a. New lighting
    b. Relocated lighting in select locations
    c. Lighting controls and lighting control system upgrades

4. Wiring, conduit, and raceway, including accessories.
5. Hangers and supports, vibration isolation, installation accessories for all electrical, technology, communications, security and surveillance systems.
6. Bonding and grounding for all electrical, technology, communications, security and surveillance systems.
7. Disconnects and power connections for equipment provided under another Contract, unless the equipment provided by another Contract has those devices integral.
8. Identification for systems, equipment and components for all electrical, technology, communications, security and surveillance systems.
9. *–deleted--*
10. Addressable Fire Alarm System

    a. *–deleted--*
    b. Duct detectors in HVAC units (supplied by EC for installation by HC)
    c. Emergency responder radio coverage system for entire building.

11. Technology and Communications Systems
12. Security and Surveillance systems
13. Cooperation with and assistance to other Prime Contractors whose work interfaces with EC Work
14. Electrical connections to equipment of other Contracts.
15. Cooperation and assistance with the commissioning agent
16. Demonstration, training and support of Owner personnel

D. Temporary facilities and controls in the Electrical Contract, as specified, as identified in the Construction Manager's Phasing and Site Logistics instructions (attached hereto), and as follows:

1. Electric power service and distribution.
2. Lighting, including site and perimeter lighting.
3. Electrical connections to temporary facilities and controls provided under other Contracts.
4. *–deleted--*
5. Electric Service to Construction Manager's Field Office and all Prime Contractors field offices and trailers.

E. Refer to all other Specifications Sections, and other Articles in this Section, for coordination requirements of the Work of the EC with Work of other Prime Contracts.

1. Coordinate with Lead Contractor and CM to maintain phasing, sequencing and scheduling.
2. Participate in preparation of Interdisciplinary Coordination Drawings with other Prime Contractors and their subcontractors as necessary.
3. Cooperate with and assist other Prime Contractors whose work interfaces with EC Work
4. Field verify locations of exposed wall-mounted EC devices and equipment prior to installation.
5. Coordinate sizes and locations of equipment pads with the GC and CM
6. Coordinate sizes and locations of building enclosure (roof and wall) penetrations with the GC and CM
7. Coordinate sizes and locations of access doors and frames with the GC and CM
8. Furnish duct detectors and associated wiring for installation by HC.
9. Coordinate with PC and local authorities for the connection of fire alarm system to all necessary fire protection devices or components.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1200

SECTION 01 2200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

1.2 DEFINITIONS

A. Unit price is an amount proposed by bidders, stated on the Bid Form, and incorporated into the Agreement, as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

1. Propose Unit Prices "net of insurance," excluding costs or expenses for General Liability, Workers' Compensation, and Builder's Risk Insurance, in accordance with Article 11 of the Conditions of the Contract.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections and scheduled below.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the Part 3 "Schedule of Unit Prices" Article contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES for GENERAL CONSTRUCTION CONTRACT 24-S49-01A-01

A. **Unit Price No. UG-1:** Over Excavation and Engineered Fill using Reworked On-Site Soil

1. Description:
Over-Excavation: Remove unsuitable subgrade soils, identified in the field and approved for removal by the Owner's Geotechnical Engineer (OGE), beyond depths of final proposed grade in cut areas beneath paving and toe-key areas, down to elevation of competent soils.

Engineered Fill: Replace over excavated materials using fill material composed of on-site soils, properly reworked under the direction of the OGE for use as suitable engineered fill.

Additional Requirements:

a. Unsuitable soils include previously placed unsuitable fill, soils associated with abandoned prior construction, high plasticity soil (MH/CH), pyritic or acid producing soils, and loose/soft subgrade soils under proposed new construction. Approved removals may also include additional excavation needed to construct toe keys and benching for new and reconstructed fill slopes.

b. Removed soils, where authorized by OGE, shall be stockpiled on site and protected from weather until processed as suitable fill. Prior to placement, existing excavated material shall be mixed and moisture conditioned to the approval of OGE. Work of the Unit Price, regardless of fill material used, shall include necessary processing, disking, mixing, moisture conditioning (drying or wetting as appropriate), and proper compactive effort to yield suitable layers of engineered fill.

c. Work of the Unit Price shall include necessary shoring, de-watering, and other appropriate operations, and temporary stockpiling and protection of materials into separate stockpile areas; one for subsequent re-use, and one for ultimate removal from site.

d. Re-use or removal and replacement of excavated materials shall be at the discretion of the OGE.

e. Excess material not re-worked for fill or otherwise approved for use on site shall be removed from the site at no additional cost.

2. **Unit of Measurement:** Cubic yard of in-place and compacted fill, determined by field measuring and/or surveying, greater or less base-bid design quantity as indicated below.

   a. Base Bid Design Quantity: Volume of in-place and compacted re-worked soil fill as represented by the subsurface information contained in the boring logs, and the geotechnical cross-sections on the Drawings, **plus an additional 100 cubic yards** of compacted fill.

3. **Payment:** As calculated on the basis of volume of fill, determined by field-measuring or surveying, or both. Counting of trucks of loose delivered tonnage may be used as a check for reasonableness but shall not be used to determine payment.

   a. The Contractor and the OGE shall reconcile the quantity of fill on a daily basis. If the quantity cannot be reconciled, the Contractor shall engage an Independent Professional Land Surveyor to field survey and calculate the volume at no additional cost to the Owner. The surveyor shall provide the stamped volume calculations to the Owner's Design Team.

   b. No additional payment will be made for cutting to reach final proposed grades, that work is included in the base bids. No additional compensation will be made to remove unsuitable soils and debris located above the final proposed sub-grade in cut areas.

   c. No additional compensation will be made for excavation or fill due to unauthorized over-excavating. Over-excavation without written approval will be considered unauthorized.

   d. Excess material not re-worked for fill or otherwise approved for use on site shall be removed from the site at no additional cost.

B. **Unit Price No. UG-2:** Over Excavation and Engineered Fill using Crushed Limestone

1. Description:

   Over-Excavation: Remove unsuitable subgrade soils, identified in the field and approved for removal by the Owner's Geotechnical Engineer (OGE), beyond depths of final proposed grade in cut areas beneath building foundations and floor slabs, down to elevation of competent soils.

   Engineered Fill: Replace over excavated materials using imported limestone meeting PennDOT gradation requirements for 2A stone aggregate and PennDOT durability requirements for Type C coarse aggregate. Prior to placement, stone aggregate material shall be processed and moisture conditioned to the approval of the OGE to yield a suitable, bearing layer.

   Additional Requirements:

   a. Unsuitable soils include subgrade soils under proposed building. Approved removals may also include additional excavation required should the actual competent bearing strata vary from the depths shown on the Drawings.

   b. Removed soils, where authorized by OGE, shall be stockpiled on site and protected from weather until processed as suitable fill beneath paving and toe key areas .

c. Work of the Unit Price shall include necessary shoring, de-watering, and other appropriate operations, and temporary stockpiling and protection of materials into separate stockpile areas; one for subsequent re-use, and one for ultimate removal from site.

2. **Unit of Measurement:** Cubic yard of in-place and compacted fill, determined by field measuring and/or surveying, greater or less base-bid design quantity as indicated below.
   a. Base Bid Design Quantity: Volume of in-place and compacted stone fill as represented by the subsurface information contained in the boring logs, and the geotechnical cross-sections on the Drawings, **plus an additional 50 cubic yards** of compacted fill.

3. **Payment**: As calculated on the basis of volume of fill, determined by field-measuring or surveying, or both. Counting of trucks of loose delivered tonnage may be used as a check for reasonableness but shall not be used to determine payment.
   a. The Contractor and the OGE shall reconcile the quantity of fill on a daily basis. If the quantity cannot be reconciled, the Contractor shall engage an Independent Professional Land Surveyor to field survey and calculate the volume at no additional cost to the Owner. The surveyor shall provide the stamped volume calculations to the Owner's Design Team.
   b. No additional payment will be made for cutting to reach final proposed grades, that work is included in the base bids. No additional compensation will be made to remove unsuitable soils and debris located above the final proposed sub-grade in cut areas.
   c. No additional compensation will be made for excavation or fill due to unauthorized over-excavating. Over-excavation without written approval will be considered unauthorized.

C. **Unit Price No. UG-3:** Treatment of Unforeseen Subgrade Springs or Perched Ground Water
   1. **Description:** Where unforeseen ground water is encountered, expose ground water source and provide Typical Subsurface Drain (Detail 7, "Subsurface Drain" on Sheet 4 "Geotechnical Details"). Pipe shall be daylighted or tied to storm drain as directed in the field by the Owner's Geotechnical Engineer.
   2. **Unit of Measurement and Payment:** Lineal foot of in-place Subsurface Drain greater or less than the base-bid design value of 20 linear-feet.

D. Unit Price No. UG-4: Yard Inlet
   1. **Description:** Provide additional yard drain, complete including proper backfill and grading and up to 100 feet of piping, per drawing details in sizes as follows:
   2. **Unit of Measurement and Payment:** Each drain greater or less than the base-bid design values as represented on the Drawings.

3.2 SCHEDULE OF UNIT PRICES for HVAC CONSTRUCTION CONTRACT 24-S49-01A-02

-- none scheduled –

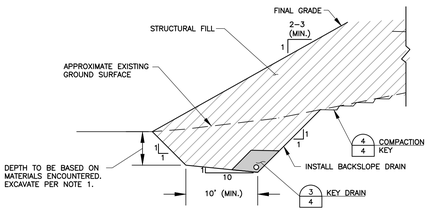
3.3 SCHEDULE OF UNIT PRICES for PLUMBING and FIRE PROTECTION CONSTRUCTION CONTRACT 24-S49-01A-03

-- none scheduled –

3.4 SCHEDULE OF UNIT PRICES for FIRE ELECTRICAL CONSTRUCTION CONTRACT 24-S49-01A-04

-- none scheduled –

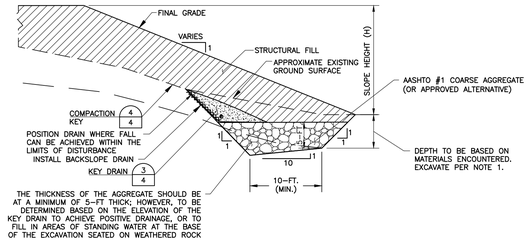
END OF SECTION 01 2200



NOTES:

1. THE FRONT OF THE PROPOSED TOE–KEYS SHALL BE EXTENDED INTO WEATHERED ROCK AND/OR BEDROCK.
2. REFER TO AVAILABLE BORING INFORMATION TO ESTIMATE APPROXIMATE TOE–KEY DEPTHS. ACTUAL TOE–KEY DEPTH SHALL BE DETERMINED IN THE FIELD BY A QUALIFIED DESIGNATED REPRESENTATIVE.
3. DEEPER TOE–KEYS SHALL TRANSITION GRADUALLY INTO SHALLOWER TOE KEYS.
4. INSTALL KEY DRAIN AT THE HEEL (BOTTOM BACK) OF TOE KEY IN ACCORDANCE WITH DETAIL 3. IF APPROVED BY THE GEOTECHNICAL ENGINEER, THE BASE OF KEY DRAINS MAY BE RAISED IN ELEVATION TO ALLOW FOR OUTLETTING WITHIN THE PROPOSED LOD.
5. OUTLET TOE KEY DRAINS AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER. CONSTRUCT OUTLETS IN ACCORDANCE WITH OUTLET DRAIN DETAIL 5.

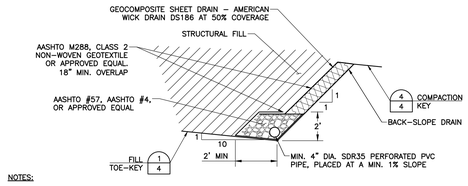
DETAIL 1
FILL TOE-KEY
N.T.S.



NOTES:

1. THE FRONT OF THE PROPOSED TOE–KEYS SHALL BE EXTENDED INTO WEATHERED ROCK AND/OR BEDROCK.
2. REFER TO AVAILABLE BORING INFORMATION TO ESTIMATE APPROXIMATE TOE–KEY DEPTHS. ACTUAL TOE–KEY DEPTH SHALL BE DETERMINED IN THE FIELD BY A QUALIFIED DESIGNATED REPRESENTATIVE.
3. DEEPER TOE–KEYS SHALL TRANSITION GRADUALLY INTO SHALLOWER TOE KEYS.
4. INSTALL KEY DRAIN AT THE HEEL (BOTTOM BACK) OF TOE KEY IN ACCORDANCE WITH DETAIL 3. IF APPROVED BY THE GEOTECHNICAL ENGINEER, THE BASE OF KEY DRAINS MAY BE RAISED IN ELEVATION TO ALLOW FOR OUTLETTING WITHIN THE PROPOSED LOD.
5. OUTLET TOE KEY DRAINS AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER. CONSTRUCT OUTLETS IN ACCORDANCE WITH OUTLET DRAIN DETAIL 5.

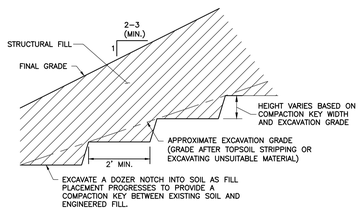
DETAIL 2
FILL AGGREGATE KEY
N.T.S.



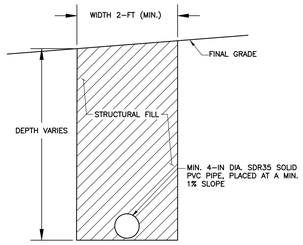
NOTES:

1. SLOPE PIPES AT 1% MIN. TOWARDS THE OUTLET DRAIN LOCATION AND IN THE DIRECTION INDICATED ON THE PLAN.
2. BACK–SLOPE DRAINS CONSIST OF GEOCOMPOSITE SHEET DRAIN (50% COVERAGE) AND SHALL BE INSTALLED IF SEEPS, GROUNDWATER, OR EVIDENCE OF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION. TERMINATE BACK–SLOPE DRAIN AT THE OBSERVED SEEP/GROUNDWATER LOCATION OR A MAXIMUM OF 3–FT BELOW FINISHED GRADE.

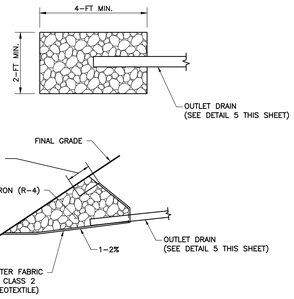
DETAIL 3
KEY DRAIN
N.T.S.



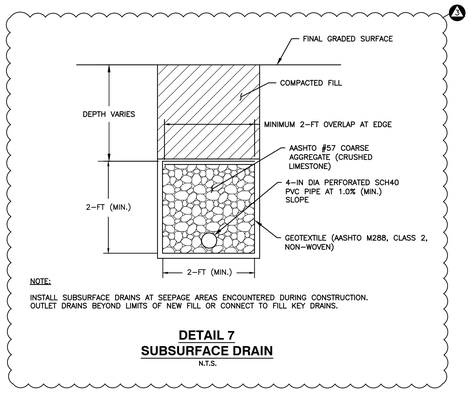
DETAIL 4
COMPACTION KEY
N.T.S.



DETAIL 5
OUTLET DRAIN
N.T.S.



DETAIL 6
OUTLET DRAIN RIPRAP APRON
N.T.S.



NOTE:

INSTALL SUBSURFACE DRAINS AT SEEPAGE AREAS ENCOUNTERED DURING CONSTRUCTION. OUTLET DRAINS BEYOND LIMITS OF NEW FILL OR CONNECT TO FILL KEY DRAINS.

DETAIL 7
SUBSURFACE DRAIN
N.T.S.

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www.cecinc.com
Civil & Environmental Consultants, Inc.

DATE:	06/06/2025	DRAWN BY:	SCC
SCALE:	AS SHOWN	CHECKED BY:	TJR
CEC PROJECT NO.	330-101	APPROVED BY:	AWL

*HAND SIGNATURE ON FILE

REVISIONS
3 10/07/2025 ADDENDUM #3

BIDDING SET

NEW DISTRICT MAINTENANCE & BUS DEPOT FACILITY

3600 OLD OAKDALE RD MCDONALD, PA. 15057
SOUTH FAYETTE TOWNSHIP SCHOOL DISTRICT 3680 OLD OAKDALE RD
MCDONALD, PA. 15057

GEOTECHNICAL DETAILS

Proj No. 24-S49-01B
Issue Date 06/06/2025

4

FIRE PROTECTION GENERAL NOTES

A. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO THE FABRICATION OR INSTALLATION OF ANY PIPING.

B. THE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR MUST FIELD VERIFY ACTUAL CONDITIONS AT THE SITE PRIOR TO PROCEEDING WITH THE WORK.

C. PROVIDE SLEEVES AND FIRESTOP SEALANTS WHERE PIPES PENETRATE FIRE RATED FLOORS AND WALLS. COMPLY WITH ASTM E-814 AND UL 1479.

D. CONFORM TO IRI, FM, NFPA REQUIREMENTS AND/OR OWNERS INSURANCE UNDERWRITER. OBTAIN PERMITS AND REVIEW STAMPS FROM THE AUTHORITIES HAVING JURISDICTION.

E. CENTER HEADS IN CEILING TILES. VERIFY BEFORE INSTALLATION, THE EXACT CEILING TYPE & PATTERN.

F. COORDINATE FINAL LOCATIONS OF SPRINKLER HEADS, PIPING, AND ALL NEW WORK WITH ALL LIGHT FIXTURES, DIFFUSERS, GRILLES, REGISTERS, SMOKE DETECTORS, SPEAKERS, AND OTHER CEILING MOUNTED DEVICES.

G. SPRINKLER MAIN SIZES SHOWN ARE SIZED FOR FUTURE CONNECTIONS.

H. PIPING SHOWN IS ABOVE THE CEILING UNLESS OTHERWISE NOTED.

I. ALL CONTROL VALVES SHALL BE MONITORED.

J. THE SPRINKLER SYSTEM SHALL BE DESIGNED, SIZED, AND SEALED BY THE SPRINKLER CONTRACTOR. THESE DOCUMENTS SHALL BE USED AS A GUIDE FOR INTENT ONLY. THE SPRINKLER HEAD TYPES SHOWN ON THE DOCUMENTS SHALL BE CONFORMED TO. SPRINKLER CONTRACTOR SHALL INFORM AND COORDINATE ALL ELECTRICAL AND FIRE ALARM DEVICES WITH THE ELECTRICAL CONTRACTOR.

K. INSPECTOR'S TEST VALVES SHALL NOT DRAIN ONTO CONCRETE SIDEWALKS, PADS OR CONCRETE PLAZA'S DUE TO STAINING. IF DRAINING TO GRASS AREA, PROVIDE MEANS TO ELIMINATE MUD OR OTHER DEBRIS FROM SPLASHING ONTO BUILDING.

L. SUBMIT SEALED DETAILED FIRE PROTECTION DRAWINGS, HYDRAULIC CALCULATIONS, AND ALL ITEMS STATE ON THE ICC CHECKLIST TO THE CODE REVIEW OFFICIAL.

M. PROVIDE SPRINKLER HEAD WITH SPRINKLER HEAD GUARD BELOW EXPOSED MECHANICAL EQUIPMENT AND DUCTWORK WIDER THAN 48" INCHES.

N. SPRINKLERS SUBJECT TO MECHANICAL DAMAGE SHALL BE PROTECTED WITH WIRE CAGE GUARDS. REFER TO DRAWINGS FOR ANY ADDITIONAL LOCATIONS.

O. REFER TO NFPA 13 2016 SECTION 8.3.2.5 (FIGURE 8.3.2.5) FOR SPRINKLER HEAD TEMPERATURE RATING AND LOCATIONS FOR UNIT AND INFRA-RED HEATERS.

P. VEHICLE TIRE STORAGE SHALL ADHERE TO IFC 2018 SECTION 3405.4. NO TIRES TO BE STORED INSIDE OR NEXT TO BUILDING.

Q. REFER TO NFPA 13 9.3.16 FOR INSTALLATION OF SPRINKLERS IN SKYLIGHTS AND SPRINKLER TEMPERATURE RATINGS.

CODED NOTES - SHEET FP101

1 PROVIDE SPRINKLER BELOW DUCTWORK 48" AND LARGER WITH SPRINKLER HEAD GUARD.

2 PROVIDE SPRINKLER HEAD GUARDS.

3 PROVIDE NICKEL PTFE COATED UPRIGHT SPRINKLERS AND UL AND FM APPROVED CORROSION RESISTANT RED PAINTED SCHEDULE 40 STEEL PIPING AND FITTINGS IN WASH BAY 118.

4 CONTRACTOR TO REFER TO STRUCTURAL DRAWINGS AND REQUIREMENTS WHEN INSTALLING FIRE PROTECTION PIPING THIS AREA. COORDINATE WITH STRUCTURAL CONTRACTOR AND TRUSS MANUFACTURER.

FIRE PROTECTION ABBREVIATIONS

ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
BFP	BACKFLOW PREVENTER
CBV	CURB BOX & VALVE
CLG	CEILING
CONC	CONCRETE
CONN	CONNECT, CONNECTION
CONT	CONTINUED, CONTINUATION
CTB	CONCRETE THRUST BLOCK
CW	COLD WATER
DDC	DOUBLE DETECTOR CHECK
DIA	DIAMETER
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EL	ELEVATION
ELEV	ELEVATOR, ELEVATION
EXIST	EXISTING
F	FIRE PROTECTION PIPING
°F	DEGREES FAHRENHEIT
FDC	FIRE DEPARTMENT CONNECTION
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FH	FIRE HYDRANT
FT	FEET/FOOT
FPC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HC	HEATING CONTRACTOR
HP	HORSEPOWER
ID	INSIDE DIAMETER
INV	INVERT
MAX	MAXIMUM
MIN	MINIMUM
NC	NORMALLY CLOSED
NIFPC	NOT IN FIRE PROTECTION CONTRACT
NO	NORMALLY OPEN
OD	OUTSIDE DIAMETER
OS&Y	OUTSIDE SCREW & YOKE
PC	PLUMBING CONTRACTOR
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
SPEC	SPECIFICATION
SPR	SPRINKLER
S/S	STAINLESS STEEL
▲T	TEMPERATURE DIFFERENTIAL
TEMP	TEMPERATURE
TR	THRU ROOF
TYP	TYPICAL

HYDRANT FLOW TEST DATA

DATE OF TEST: 06/2025 HYDRANT PERMIT NO.: _____

TEST PERFORMED BY: PENNSYLVANIA AMERICAN WATER

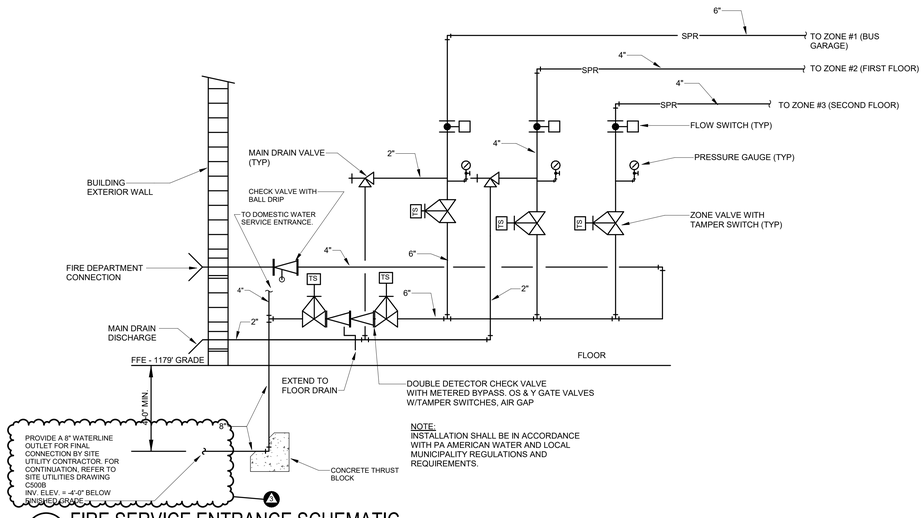
FLOW HYDRANT	FLOW HYDRANT	PRESSURE HYDRANT
HYDRANT NO.	HSFAP-5026	HSFAP-8830
LOCATION	OLD OAKDALE ROAD	AT ELEM. SCHOOL
STATIC PRESSURE (PSI)		125
RESIDUAL PRESSURE (PSI)		40
FLOW OBSERVED (GPM)	750	

FIRE SPRINKLER SYSTEM PEAK DEMAND: 700 (INC. Hose Stream Allowance) GPM

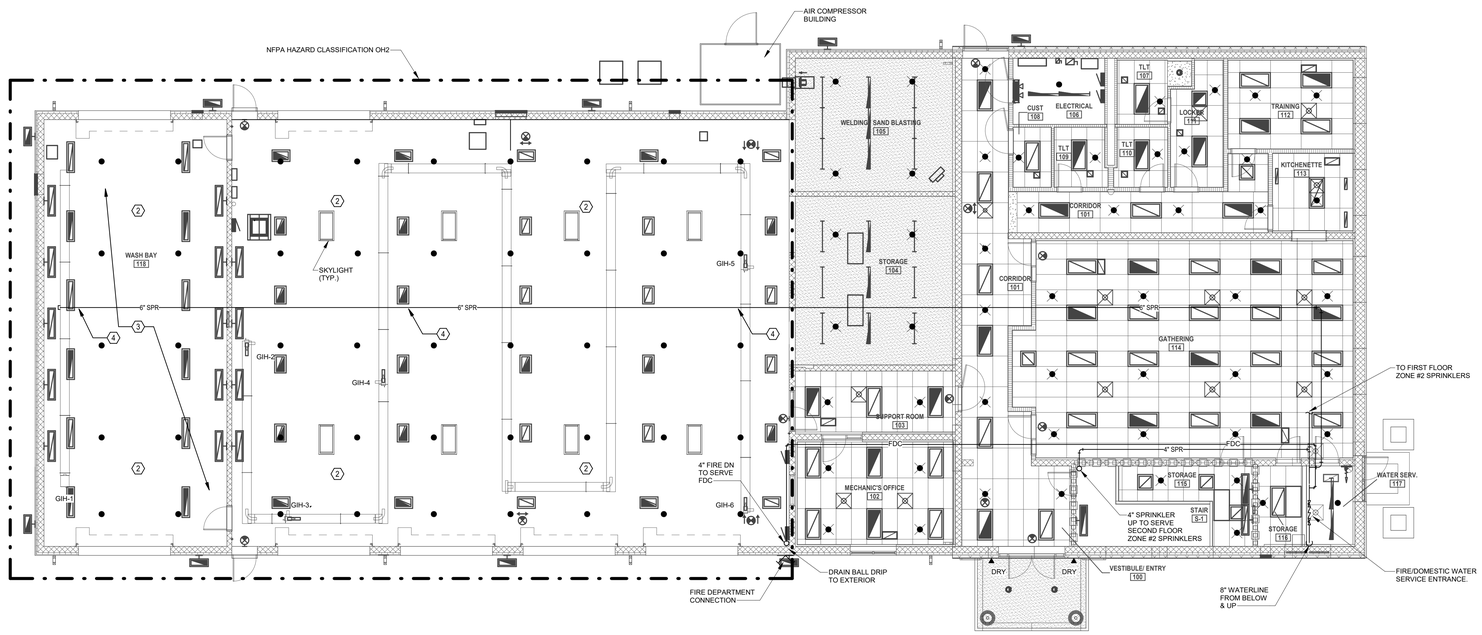
DOMESTIC SYSTEM PEAK DEMAND: 70 GPM

FIRE PROTECTION LEGEND

SPR	FIRE PROTECTION SPRINKLER (WET)
FDC	LINE TO FIRE DEPARTMENT CONNECTION
F	FIRE PROTECTION WET
	CONCEALED SPRINKLER
	UPRIGHT SPRINKLER (NO CEILING)
DRY	DRY BARREL SIDEWALL SPRINKLER
	MONITORED OSY VALVE
	CHECK VALVE
	FLOW SWITCH
	FIRE DEPARTMENT CONNECTION



2 FP101 FIRE SERVICE ENTRANCE SCHEMATIC
SCALE: None



1 FP101 LOWER LEVEL FIRE PROTECTION PLAN
SCALE: 1/8" = 1'-0"

3 FP101 UPPER LEVEL FIRE PROTECTION PLAN
SCALE: 1/8" = 1'-0"

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TOWER ENGINEERING
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Project Number: 2024077

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JAMES N. KOSINSKI ENGINEER PE-043141E 10/21/2025

REVISIONS
3 10/27/2025 Addendum #3

BIDDING SET

NEW DISTRICT MAINTENANCE & BUS DEPOT FACILITY

3600 OLD OAKDALE ROAD McDonald, PA 15057
SOUTH FAYETTE TWP SCHOOL DISTRICT 3680 Old Oakdale RD McDonald, PA 15057

FLOOR PLANS, NOTES, LEGENDS & DETAILS - FIRE PROTECTION

Proj No. 24-S49-01B
Issue Date October 1, 2025

FP101

PLUMBING GENERAL NOTES

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY FITTINGS AS REQUIRED BY ALL APPLICABLE CODES AND GOVERNING AUTHORITIES.

B. THE CONTRACTOR SHALL VERIFY AND CORRECT, AS REQUIRED TO MEET ALL CODES AND REGULATIONS, ANY AND ALL POSSIBLE DISCREPANCIES BETWEEN TYPE AND SIZE OF CONNECTIONS SPECIFIED IN THE PLUMBING FIXTURE SCHEDULES AND FIXTURES ACTUALLY INSTALLED.

C. VALVES AND FITTING SHALL BE OF THE SAME SIZE AS THE PIPING OF WHICH THEY ARE INSTALLED.

D. THE DRAWINGS ARE DIAGRAMMATIC, THE CONTRACTOR SHALL VERIFY ACTUAL CONDITIONS AT THE SITE PRIOR TO ANY INSTALLATION.

E. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS.

F. CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS PRIOR TO LAYING AND CONNECTING ALL SANITARY, STORM AND WASTE PIPING AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES.

G. INSTALL WATER HAMMER ARRESTORS ON HOT AND COLD WATER PIPING TO EACH FIXTURE OR BATTERY OF FIXTURES. ARRESTORS SHALL BE FACTORY FABRICATED, SIZED AND PLACED IN ACCORDANCE WITH PLUMBING AND DRAINAGE INSTITUTE STANDARD P.D.I. WH-201. INSTALL WATER HAMMER ARRESTORS IN AN ACCESSIBLE LOCATION.

H. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER HAMMER ARRESTORS.

I. ALL PIPING SHALL BE INSTALLED AS CLOSE TO DRAWINGS AS POSSIBLE WITH NO CHANGES IN SIZING.

J. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY SUPPORTING DEVICES FOR ALL FIXTURES INCLUDED IN THE CONTRACT DRAWINGS AND AS SPECIFIED.

K. CONTRACTOR SHALL GIVE SUITABLE NOTICE TO ALL APPLICABLE UTILITY COMPANIES AND OWNER PRIOR TO PERFORMING WORK INVOLVING UTILITIES.

L. ALL PIPING SHALL BE ROUTED CONCEALED ABOVE CEILINGS, WITHIN WALLS OR IN CHASES EXCEPT FINAL CONNECTIONS TO FIXTURES, OR IN MECHANICAL ROOMS AND AS SPECIFICALLY NOTED OTHERWISE.

M. PROVIDE ACCESS PANELS FOR ALL VALVES WITHIN CHASES OR ABOVE NON-ACCESSIBLE CEILINGS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

N. INSTALL WALL HYDRANTS 24 INCHES ABOVE FINISHED GRADE/FLOOR.

O. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT PLUMBING FIXTURE LOCATIONS, MOUNTING HEIGHTS AND DIMENSIONS.

P. PRIOR TO THE INSTALLATION OF NEW SEWER PIPING, THE CONTRACTOR SHALL VERIFY EXACT INVERT ELEVATIONS OF THE EXISTING SEWERS TO WHICH NEW SEWER PIPING IS TO BE CONNECTED.

Q. ALL VENTS THROUGH ROOF SHALL BE A MINIMUM OF FIFTEEN (15) FEET FROM MECHANICAL ROOFTOP AIR INTAKES.

R. CONTRACTOR SHALL ROUGH-IN ALL WASTE AND SUPPLY PIPING TO SPECIAL EQUIPMENT IN ACCORDANCE WITH MANUFACTURES APPROVED SHOP DRAWINGS AND MAKE FINAL CONNECTIONS. ALL SUPPLIES SHALL BE VALVED AND INCLUDE VACUUM BREAKERS WHERE REQUIRED BY CODE.

S. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS (INCLUDING PIPE ROUTING AND EQUIPMENT LOCATIONS) TO ARCHITECT/ENGINEER FOR REVIEW PRIOR TO THE INSTALLATION OR PURCHASING OF ANY PIPING AND/OR EQUIPMENT.

T. THE CONTRACTOR SHALL BASE HIS/HER PROPOSAL UPON THE EQUIPMENT, FIXTURES, ETC. SCHEDULED OR SPECIFIED, USING THE MANUFACTURERS AND MODEL NUMBERS AS CALLED FOR IN THE SPECIFICATIONS AND SCHEDULED ON THE DRAWINGS. IF MORE THAN ONE MANUFACTURER IS SPECIFIED, ANY ONE OF THE MANUFACTURERS MAY BE USED IN THE PROPOSAL. IF THE CONTRACTOR WISHES TO USE EQUIPMENT, FIXTURES, ETC. NOT SPECIFIED, HE MUST SUBMIT ON LETTERHEAD STATIONERY, THE EQUIPMENT, FIXTURES, ETC. SUBSTITUTED AND RECEIVE ARCHITECT/ENGINEER APPROVAL 10 DAYS BEFORE THE BID IS DUE.

U. THE CONTRACTOR SHALL ORDER ALL MATERIALS IN SUFFICIENT TIME TO AVOID DELAYING THE COMPLETION OF THE PROJECT. DELAY IN DELIVERIES WILL NOT BE CONSIDERED A JUSTIFIABLE REASON FOR SUBMISSION OF SUBSTITUTE MATERIALS.

V. PIPING SHALL NOT PENETRATE ANY WALL FOOTINGS, COORDINATE WITH GENERAL CONTRACTOR TO DROP FOOTINGS AS REQUIRED TO CLEAR PLUMBING SERVICES WHERE ABSOLUTELY NECESSARY. PIPING PENETRATING A BEARING WALL OR FOOTING MUST BE SLEEVED AND THE LOCATION BE APPROVED BY THE STRUCTURAL ENGINEER.

W. EXPOSED PIPING IN FINISHED SPACES SHALL BE CHROME PLATED.

X. ALL PIPING IS ABOVE THE CEILING UNLESS OTHERWISE NOTED.

Y. MINIMUM SIZE FOR SANITARY PIPING BELOW GRADE IS 4" DIAMETER

Z. SANITARY AND STORM PIPING SHOWN ON FOUNDATION PLAN IS BELOW THE 1ST FLOOR.

AA. PROVIDE SLEEVES AND FIRE STOP SEALANTS AT ALL PIPE PENETRATIONS THROUGH FIRE RATED FLOORS AND WALLS. COMPLY WITH ASTM E-814 AND UL 1479.

BB. EXPANSION FITTINGS THOUGH NOT SHOWN, ARE REQUIRED ON THIS PROJECT. THE PLUMBING CONTRACTOR SHALL PROVIDE A DELEGATED DESIGN FOR ALL EXPANSION FITTINGS AND LOOPS FOR PLUMBING PIPING. REFER TO SECTION 220516 FOR MORE INFORMATION ON DELEGATED DESIGN REQUIREMENTS.

CC. INVERT ELEVATIONS ARE FOR REFERENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL NEW INVERT ELEVATIONS BEFORE INSTALLING ANY NEW PIPING. CONTRACTOR SHALL ADJUST INVERT ELEVATIONS AS REQUIRED TO MEET SITE UTILITIES. COORDINATE WITH SITE UTILITY CONTRACTOR.

DD. PROVIDE 1/2" CW BRANCH OUTLET WITH ISOLATION BALL VALVE TO TRAP PRIMERS. NOT SHOWN ON DOCUMENTS

EE. PROVIDE 1/2" CW CONNECTION TO ALL FLOOR DRAIN TRAP PRIMER CONNECTIONS. NOT SHOWN ON DOCUMENTS

FF. ALL EXPOSED DOMESTIC WATER PIPING IN WASH BAY 118 SHALL BE INSULATED AND HAVE A PVC OUTER COVERING INSTALLED TO PROTECT THE PIPING.

GG. REFER TO ARCHITECTURAL DRAWINGS FOR FLOOR SLOPES.

PLUMBING ABBREVIATIONS

ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BFP	BACKFLOW PREVENTER
BTUH	BRITISH THERMAL UNIT
CFH	CUBIC FOOT PER HOUR
CAI	COMBUSTION AIR INTAKE
CLG	CEILING
CO	CLEANOUT
CONN	CONNECT, CONNECTION
CONT	CONTINUED, CONTINUATION
CW	COLD WATER
DDC	DOUBLE DETECTOR CHECK
DIA	DIAMETER
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
EA	EACH
EC	ELECTRICAL CONTRACTOR
ELEV	ELEVATION
ES	EMERGENCY SHOWER
ESEW	COMBINATION SAFETY SHOWER/EYE WASH
EWC	ELECTRIC WATER COOLER
EWS	EYEWASH STATION
F	FIRE PROTECTION PIPING
FAI	FRESH AIR INTAKE
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FH	FIRE HYDRANT
FT	FEET/FOOT
FPC	FIRE PROTECTION CONTRACTOR
G	NATURAL GAS
GC	GENERAL CONTRACTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HC	HEATING CONTRACTOR
HP	HORSEPOWER
HW	DOMESTIC HOT WATER
HR	DOMESTIC HOT WATER RETURN
AHR-	HOSE REEL DESIGNATION
ID	INSIDE DIAMETER
INV	INVERT
LAV	LAVATORY
MB	MOP BASIN
MAX	MAXIMUM
MBH	THOUSAND BTUH
MIN	MINIMUM
NC	NORMALLY CLOSED
NIPC	NOT IN PLUMBING CONTRACT
NO	NORMALLY OPEN
OS&Y	OUTSIDE SCREW & YOKE
PC	PLUMBING CONTRACTOR
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PWR-	PRESSURE WASHER HOSE REEL
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
RWC	RAINWATER CONDUCTOR
S	SINK
SAN	SANITARY
SHR	SHOWER
SPEC	SPECIFICATION
SPR	SPRINKLER
ST	STORM
TD	TRENCH DRAIN
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TR	THRU ROOF
TW	TEMPERED WATER
TYP	TYPICAL
V	VENT
VTR	VENT THRU ROOF
WC	WATER CLOSET
WHR-	WATER HOSE REEL
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTOR
WOB	WATER OUTLET BOX
MAU	MAKEUP AIR UNIT
PW	POWER WASHER

PLUMBING LEGEND

- BALL VALVE
- GATE VALVE
- BUTTERFLY VALVE
- PLUG VALVE
- CHECK VALVE
- GAUGE COCK
- HOSE BIBB
- UNION
- DROP/RISE
- CAP
- SOLENOID VALVE
- OS&Y GATE VALVE
- STRAINER, WYE TYPE
- PRESSURE REDUCING VALVE
- CLEANOUT VERTICAL/HORIZONTAL
- BREAK/CONTINUATION
- FLOW DIRECTION
- HOUSE TRAP
- WATER HAMMER ARRESTOR
- THERMOMETER
- PRESSURE GAUGE
- RECIRC PUMP
- FLOOR DRAIN
- FLOOR SINK
- METER
- WALL HYDRANT
- CODED NOTE

PLUMBING PIPE LEGEND

- CW — DOMESTIC COLD WATER
- HW — DOMESTIC HOT WATER
- HR — DOMESTIC HOT WATER RETURN
- RWC — RAIN WATER CONDUCTOR
- SAN — SANITARY PIPING
- V — VENT PIPING
- G — NATURAL GAS
- CA — COMPRESSED AIR
- FLUE — FLUE
- CAI — COMBUSTION AIR INTAKE
- OW — OIL WASTE

FIXTURE CONNECTION SCHEDULE

TAG No.	CW	HW	TRAP	VENT	REMARKS
WC-1	1"	----	4"	2"	WALL-HUNG WATER CLOSET ADA COMPLIANT, MANUAL FLUSH VALVE. WATER CLOSET BASED ON AFWALL MODEL 2257.101 MANUFACTURED BY AMERICAN STANDARD. FLUSH VALVE BASED ON SLOAN "ROYAL" 111-1.6
L-1	1/2"	1/2"	1 1/2"	1 1/2"	WALL HUNG LAVATORY - ADA COMPLIANT - DECK MOUNTED MANUAL FAUCET LAVATORY BASED ON AMERICAN STANDARD LUCERNE MODEL 0355.012. DECK MOUNTED MANUAL FAUCET BASED ON CHICAGO MODEL 802-VE2805ABCP 0.5 GPM THERMOSTATIC MIXING VALVE
S-1	1/2"	1/2"	1 1/2"	1 1/2"	STAINLESS STEEL DROP-IN CASEWORK SINK, ADA COMPLIANT, BASED ON ELKAY MODEL 25" x 19-1/2" x 6" DECK-MOUNTED GOOSENECK FAUCET BASED ON CHICAGO MODEL 786-E35-369ABCP - ASSE 1070 THERMOSTATIC MIXING VALVE - GARBAGE DISPOSER
S-2	1/2"	1/2"	1 1/2"	1 1/2"	STAINLESS STEEL WALL-HUNG MULTI-STATION SINK, BASED ON JUST MANUFACTURING MODEL J-4820-J, FAUCETS BASED ON CHICAGO FAUCET 305-VBCP ASSE 1070 THERMOSTATIC MIXING VALVE
SHR-1	1/2"	1/2"	2"	1 1/2"	SHOWER CABINET - ADA COMPLIANT BASED ON CLARION MODEL MF3837B34 WITH SHOWER HEAD AND HAND WAND BASED ON SYMMONS S9608-X-PLR-T724
EWC-1	1/2"	----	1 1/2"	1 1/2"	BI-LEVEL WATER COOLER WITH BOTTLE FILLER BASED ON ELKAY PG8SBFSL
MB-1	3/4"	3/4"	3"	1 1/2"	MOLDED STONE MOP BASIN 24" x 24" BASED ON FIAT MODEL MSB2424 WITH ACCESSORIES
LT-1	1/2"	1/2"	2"	1 1/2"	FLOOR MOUNTED DOUBLE-BOWL LAUNDRY TRAY BASED ON FIAT MODEL FLTD-II, DECK MOUNTED FAUCET WITH HOSE END FAUCET AND VACUUM BREAKER
WH-1	3/4"	----	----	----	NON-FREEZE WALL HYDRANT BASED ON ZURN MODEL Z1305
HB-1	3/4"	----	----	----	MILD CLIMATE HOSE BIB BASED ON WOODFORD MODEL 24/B24-P WITH VACUUM BREAKER
FD-1	----	----	4"	2"	FLOOR DRAIN WITH FLUSH STRAINER, WITH TRAP PRIMER BASED ON ZURN MODEL ZN415B-NH-Y-P-AR
FD-2	----	----	4"	2"	FLOOR DRAIN WITH RECESSED LIP STRAINER, WITH TRAP PRIMER BASED ON ZURN MODEL ZN415I-NH-7I-Y-AR-P
TD-1	----	----	4"	2"	12" WIDE TRENCH DRAIN WITH EXTRA HEAVY-DUTY DUCTILE IRON FRAME & Z887 12 x 24 CATCH BASIN - Z882-DGE-USA-E4-1A
ESEW-1	1-1/4"	3/4"	2"	2"	RECESSED EMERGENCY SHOWER/EYEWASH STATION W/THERMOSTATIC MIXING VALVE BASED ON GUARDIAN MODEL GBF2250
PW-1	3/4"	3/4"	----	12"	GAS-FIRED HOT WATER PRESSURE WASHER BASED ON ALKOTA MODEL 5301D 10 HP, 5 GPM, 3000 PSI, 230 V/3 PH, 30 AMP, 415,000 BTU'S, 12" FLUE
WOB-1	1/2"	----	----	----	WATER OUTLET BOX FOR REFRIGERATOR WITH WATER HAMMER ARRESTOR. BASED ON OATEY MODEL MODA
AHR-1	1/2"	----	----	----	RETRACTABLE COMPRESSED AIR HOSE REEL. BASED ON REELCRAFT MODEL 7850 OLP, 50' FEET OF HOSE
PWR-1	1/2"	----	----	----	PRESSURE WASHER MANUAL CRANK WALL-MOUNTED HOSE REEL BASED ON HANNAY MODEL SS-1500 SERIES,1/2" I.D. 50' HOSE, INCLUDING MOUNTING BRACKET AND MOUNTING KIT
WHR-1	1/2"	----	----	----	RETRACTABLE STRUCTURE MOUNTED WATER HOSE REEL BASED ON REELCRAFT MODEL 7850 OLP, 50' FEET OF TUBING. SPRAY NOZZLE
WFA-1	1/2"	1/2	2"	1-1/2"	WALL-MOUNTED WASHER FILLER ASSEMBLY WITH WATER HAMMER ARRESTORS

AIR COMPRESSOR SCHEDULE

TAG No.	COMPRESSOR				AIR RECEIVER				REMARKS
	CAPACITY (SCFM)	ELECTRICAL	PRESSURE	HP	TYPE	CAPACITY	DIAMETER	LENGTH	
AC-1	82	208/3/60	175 psi	25	TANK	240 GAL	51"	76"	BASED ON INGERSALL-RAND MODEL 2000A25 TANK MOUNTED, RECIPRICATING COMPRESSOR ASME RATED, AND INGERSALL-RAND MODEL D1700INA100 NON-CYCLING, REFRIGERATED DRYER

WATER HEATER SCHEDULE

TAG NO.	STORAGE GAL.	DELIVERY TEMP (°F)	RECOVERY		GAS	WATER		VENT		REMARKS
			GPH	ΔT	BTU/HR	IN	OUT	AIR	EXHAUST	
DWH-1	100	140	232	100	200,000	1-1/2"	1-1/2"	4"	4"	BASED ON LOCHINVAR MODEL SWA200N-100
DWH-2	50	140	153	100	130,000	1"	1"	3"	3"	BASED ON LOCHINVAR MODEL SWN130-050

EXPANSION TANK SCHEDULE

TAG No.	LOCATION	SERVICE	CAP. (GAL)	SIZE (INCHES)		INITIAL FILL PRESS.	REMARKS
				DIA.	LENGTH		
ET-1	WATER SERVICE 117	CW	8	12	20	40 PSI	WESSELS MODEL TTA-20
ET-2	WASH BAY 118	CW	5	12	14	40 PSI	WESSELS MODEL TTA-12

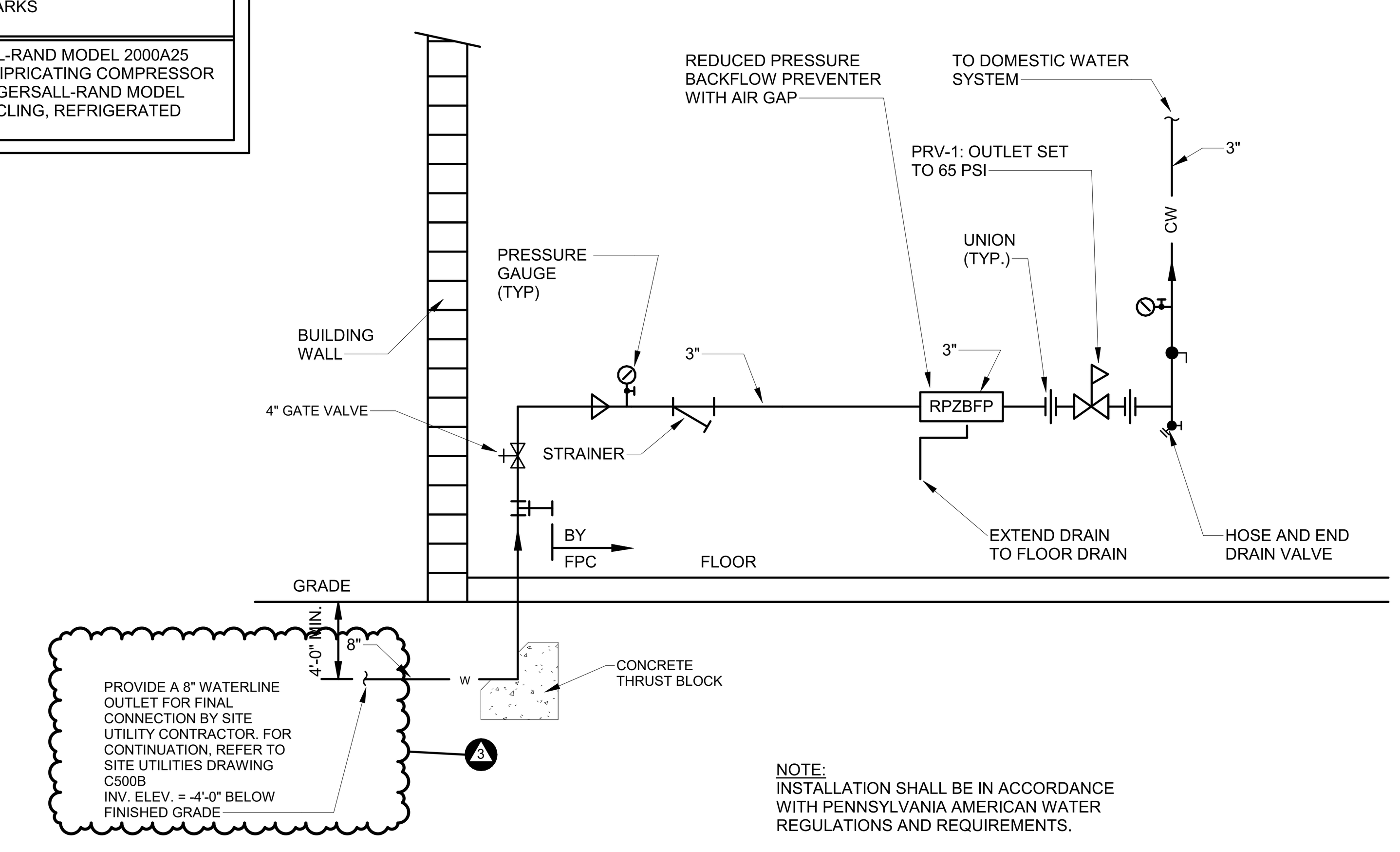
RECIRCULATING PUMP SCHEDULE

TAG No.	GPM	T.D.H	H.P.	ELECTRICAL VOLT/PH/HZ	REMARKS
RP-1	3.0	6.0	1/12	120/1/60	MODEL PL-30 BY BELL & GOSSETT
RP-2	1.0	2.0	1/12	120/1/60	MODEL PL-30 BY BELL & GOSSETT

WATER HAMMER ARRESTOR

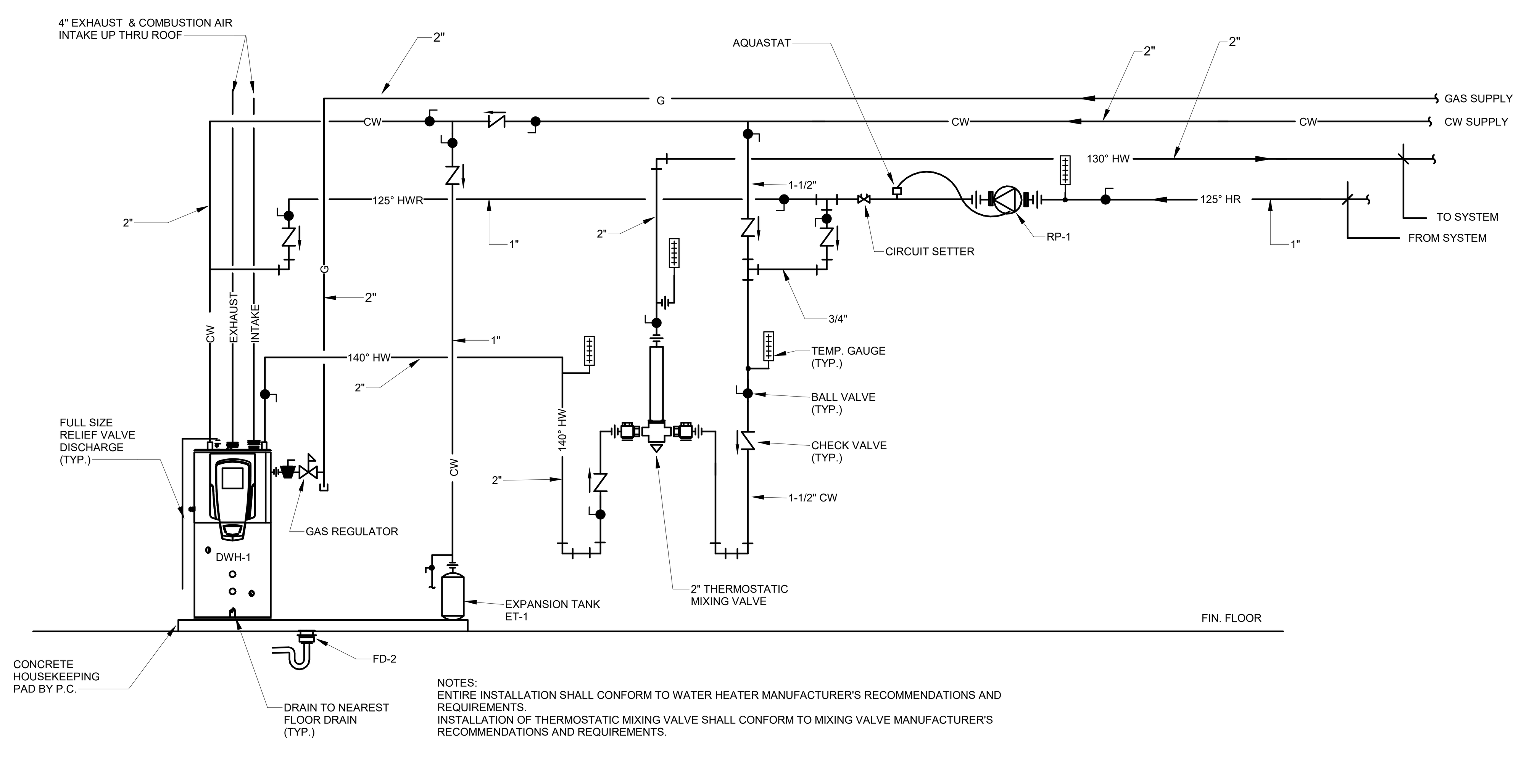
TAG No.	FIXTURE UNITS	SIZE *	PIPE SIZE
WHA-A	1-11	A	1/2"
WHA-B	12-32	B	3/4"
WHA-C	33-60	C	1"
WHA-D	61-113	D	1 1/4"
WHA-E	114-154	E	1 1/2"
WHA-F	155-330	F	2"

* PLUMBING AND DRAINAGE INSTITUTE STANDARD PDI-WH-201.



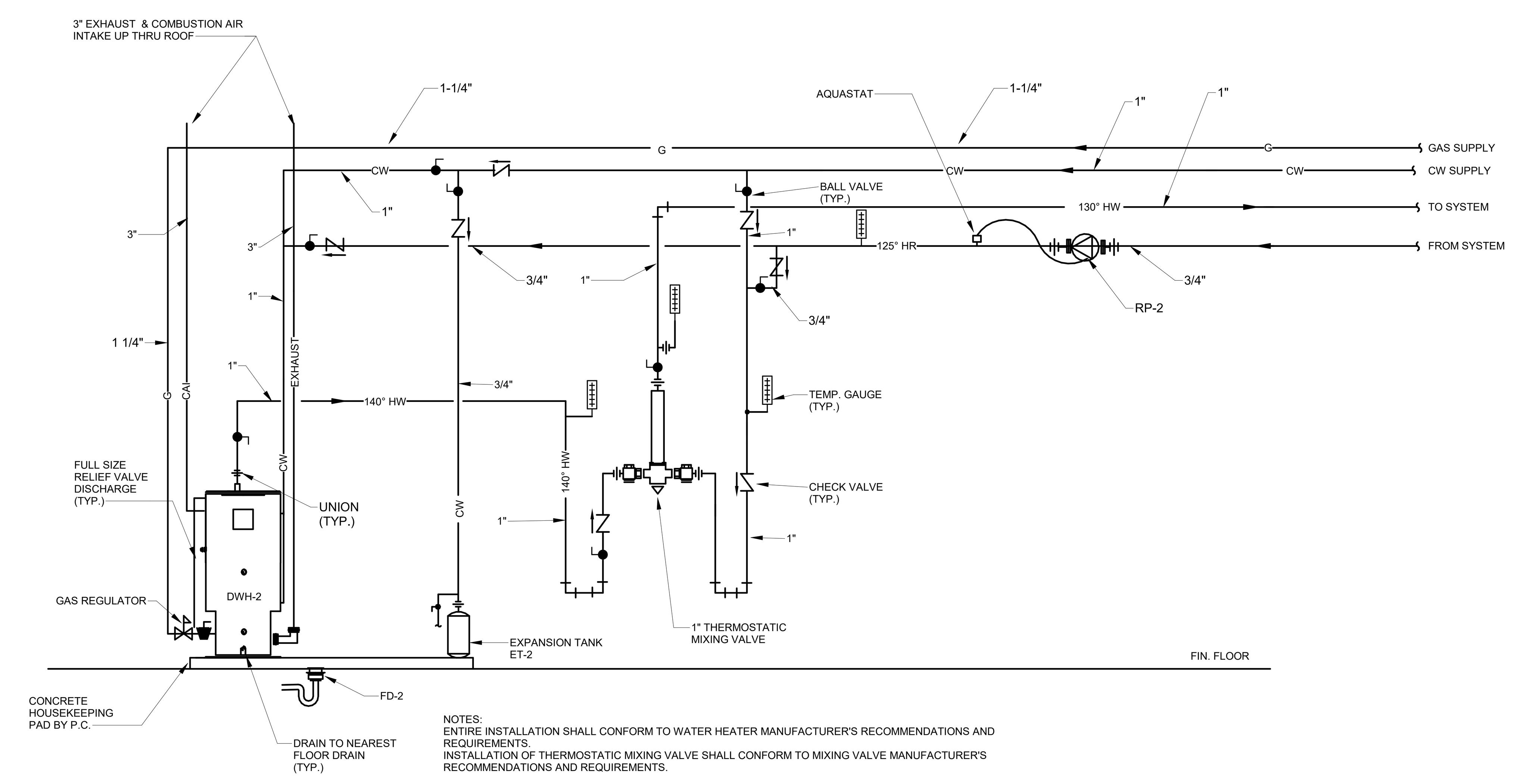
NOTE:
INSTALLATION SHALL BE IN ACCORDANCE WITH PENNSYLVANIA AMERICAN WATER REGULATIONS AND REQUIREMENTS.

1 / P000 WATER SERVICE ENTRANCE SCHEMATIC
SCALE: NONE



NOTES:
ENTIRE INSTALLATION SHALL CONFORM TO WATER HEATER MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
INSTALLATION OF THERMOSTATIC MIXING VALVE SHALL CONFORM TO MIXING VALVE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.

2 / P000 DOMESTIC WATER HEATER SCHEMATIC (DWH-1)
SCALE: NONE



NOTES:
ENTIRE INSTALLATION SHALL CONFORM TO WATER HEATER MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
INSTALLATION OF THERMOSTATIC MIXING VALVE SHALL CONFORM TO MIXING VALVE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.

3 / P000 DOMESTIC WATER HEATER SCHEMATIC (DWH-2)
None

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TOWER ENGINEERING
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Project Number: 2024077

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER JAMES N. KOSINSKI PE-045741-E 10/01/2025

REVISIONS
3 10/27/2025 Addendum #3

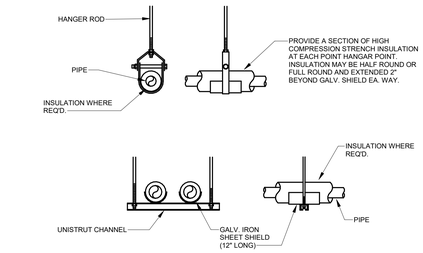
BIDDING SET

NEW DISTRICT MAINTENANCE & BUS DEPOT FACILITY
3600 OLD OAKDALE ROAD McDonald, PA 15057
SOUTH FAYETTE TWP SCHOOL DISTRICT 3680 Old Oakdale RD McDonald, PA 15057

Notes, Schedules, Legends, Abbreviations - Plumbing

Proj No. 24-S49-01B
Issue Date October 1, 2025

P000

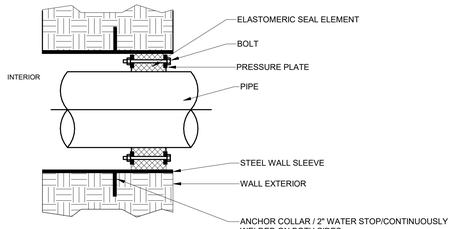


NOTES:

1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE TO THE TOP CORD OF JOISTS OR BEAMS.
2. PROVIDE COPPER OR PLASTIC COATED HANGERS FOR NON-INSULATED COPPER PIPE.

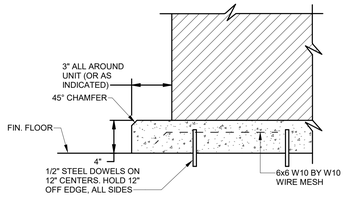
1 P001 PIPE HANGER DETAIL

NONE



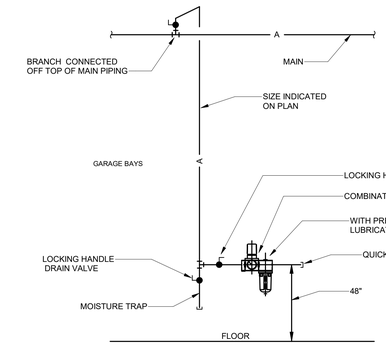
5 P001 LINK SEAL SCHEMATIC

NONE



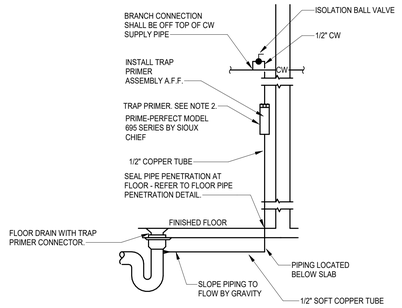
77 P001 INTERIOR CONCRETE PAD DETAIL

NONE



2 P001 COMPRESSED AIR OUTLET

NONE



Floor Drain Trap Primer Detail

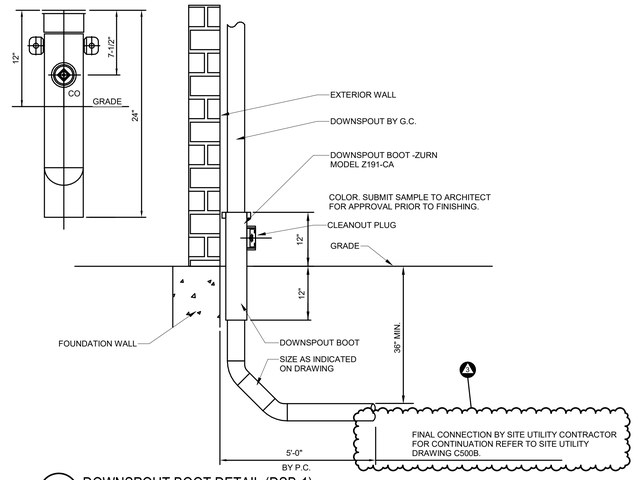
Not To Scale

NOTES:

1. TRAP PRIMER SHALL BE USED TO SERVE SINGLE AND MULTIPLE TRAPS. MULTIPLE BEING SERVED WITH ADD-ON DISTRIBUTION UNIT.
2. IN FINISHED AREAS, ROUTE PIPING WITHIN WALL AND LOCATE TRAP PRIMER IN A RECESSED BOX. BOX SHALL BE FULL SIZE TO SERVICE VALVE AND TRAP PRIMER ASSEMBLY. MINIMUM 12X12 FOR ONE ASSEMBLY. (BASED ON JR. SMITH MODEL 4760)
3. ALL INACCESSIBLE PIPING, SUCH AS BURIED IN CONCRETE, SHALL BE SOFT COPPER WITH MECHANICAL CONNECTIONS. ALL OTHER PIPING SHALL BE HARD COPPER.

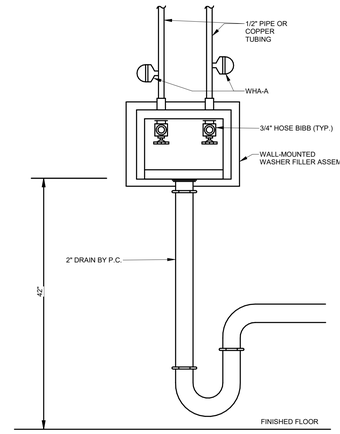
6 P001 TRAP PRIMER DETAIL

SCALE: NONE



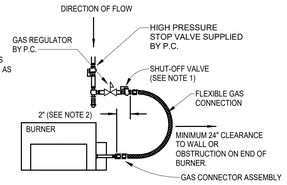
3 P001 DOWNSPOUT BOOT DETAIL (DSB-1)

NONE



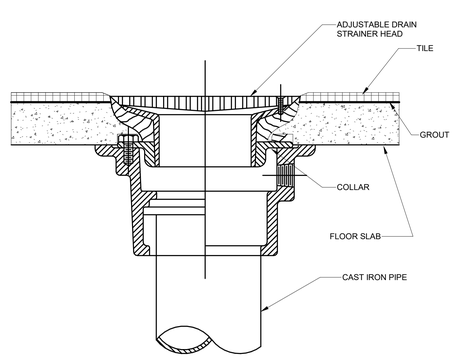
NOTES:

1. SHUT-OFF VALVE MUST BE PARALLEL TO 1/2" BURNER INLET PIPE.
2. THE 2" DISPLACEMENT AS SHOWN IS FOR THE COLD CONDITION. THIS DISPLACEMENT WILL BE REDUCED AS THE SYSTEM IS FIRED.
3. ALL GAS PIPING AND CONNECTIONS TO BE BY P.C.



8 P001 INFRARED HEAT GAS PIPING DETAIL

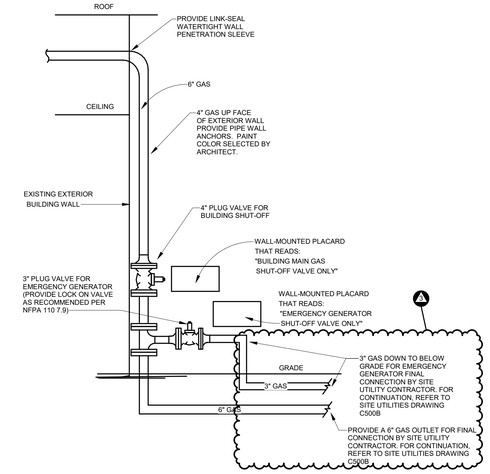
NONE



NOTE:
PLEASE REFER TO FLOOR MANUFACTURER'S INSTALLATION MANUAL FOR CORRECT INSTALLATION.
REFER TO ARCHITECT DRAWING A603 FOR CORRECT FLOOR MATERIAL TYPE

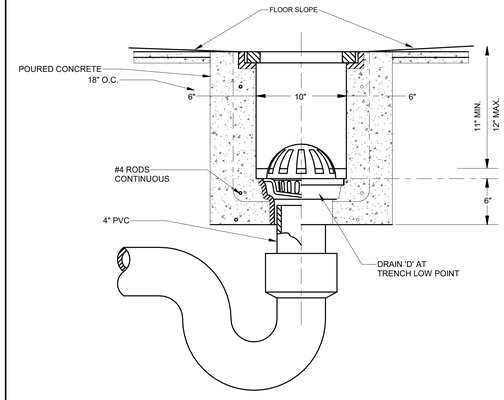
4 P001 FLOOR DRAIN SCHEMATIC

None



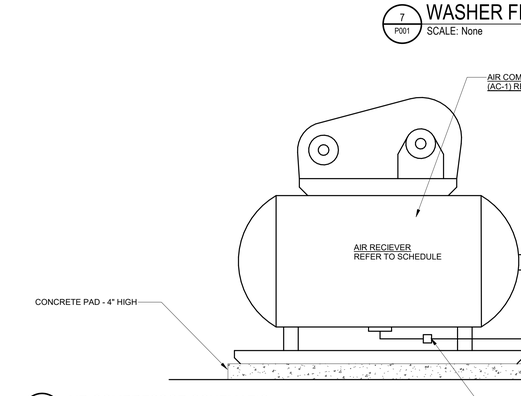
9 P001 BUILDING GAS ENTRANCE AND GENERATOR GAS CONNECTION SCHEMATIC

NONE



10 P001 TRENCH DRAIN W/ TRAP SCHEMATIC

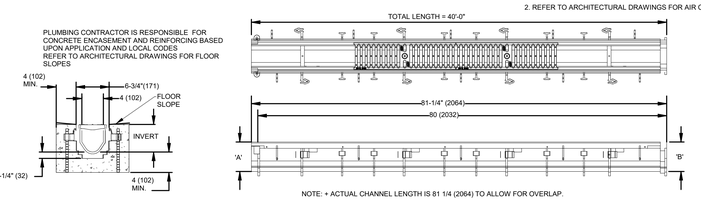
SCALE: NONE



11 P001 AIR COMPRESSOR SCHEMATIC

None

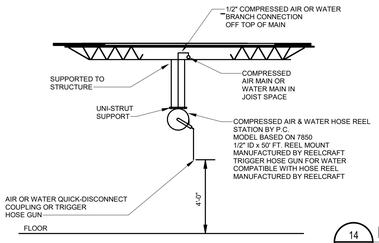
NOTES:
1. ENTIRE INSTALLATION SHALL BE PER AIR COMPRESSOR MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS. PROVIDE ALL PIPING, FITTINGS, VALVES AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
2. REFER TO ARCHITECTURAL DRAWINGS FOR AIR COMPRESSOR ENCLOSURE.



NOTE: + ACTUAL CHANNEL LENGTH IS 81 1/4 (2064) TO ALLOW FOR OVERLAP.

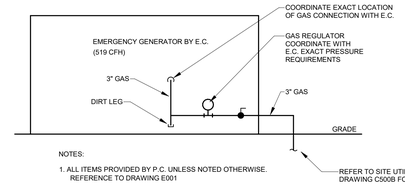
12 P001 TRENCH DRAIN SCHEMATIC

NONE



13 P001 AIR & WATER HOSE REEL SCHEMATIC

NONE

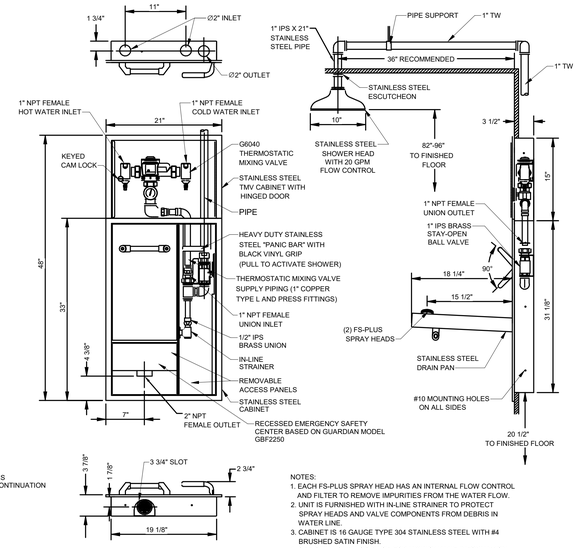


NOTES:

1. ALL ITEMS PROVIDED BY P.C. UNLESS NOTED OTHERWISE. REFERENCE TO DRAWING E001

14 P001 EMERGENCY GENERATOR GAS CONNECTION SCHEMATIC

NONE



NOTES:
1. EACH FS-PLUS SPRAY HEAD HAS AN INTERNAL FLOW CONTROL AND FILTER TO REMOVE IMPURITIES FROM THE WATER FLOW.
2. UNIT IS FURNISHED WITH IN-LINE STRAINER TO PROTECT SPRAY HEADS AND VALVE COMPONENTS FROM DEBRIS IN WATER LINE.
3. CABINET IS 16 GAUGE TYPE 304 STAINLESS STEEL WITH #4 BRUSHED SATIN FINISH.
4. SEE G6040 CATALOG PAGE FOR MIXING VALVE INFORMATION.
5. CABINET IS SUPPLIED IN TWO MODULAR PIECES

15 P001 EMERGENCY SAFETY CENTER

SCALE: NONE

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Project Number: 2024077

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JAMES N. KOSINSKI ENGINEER PE-043114-E 10/21/2025

REVISIONS
3 10/27/2025 Addendum #3

BIDDING SET

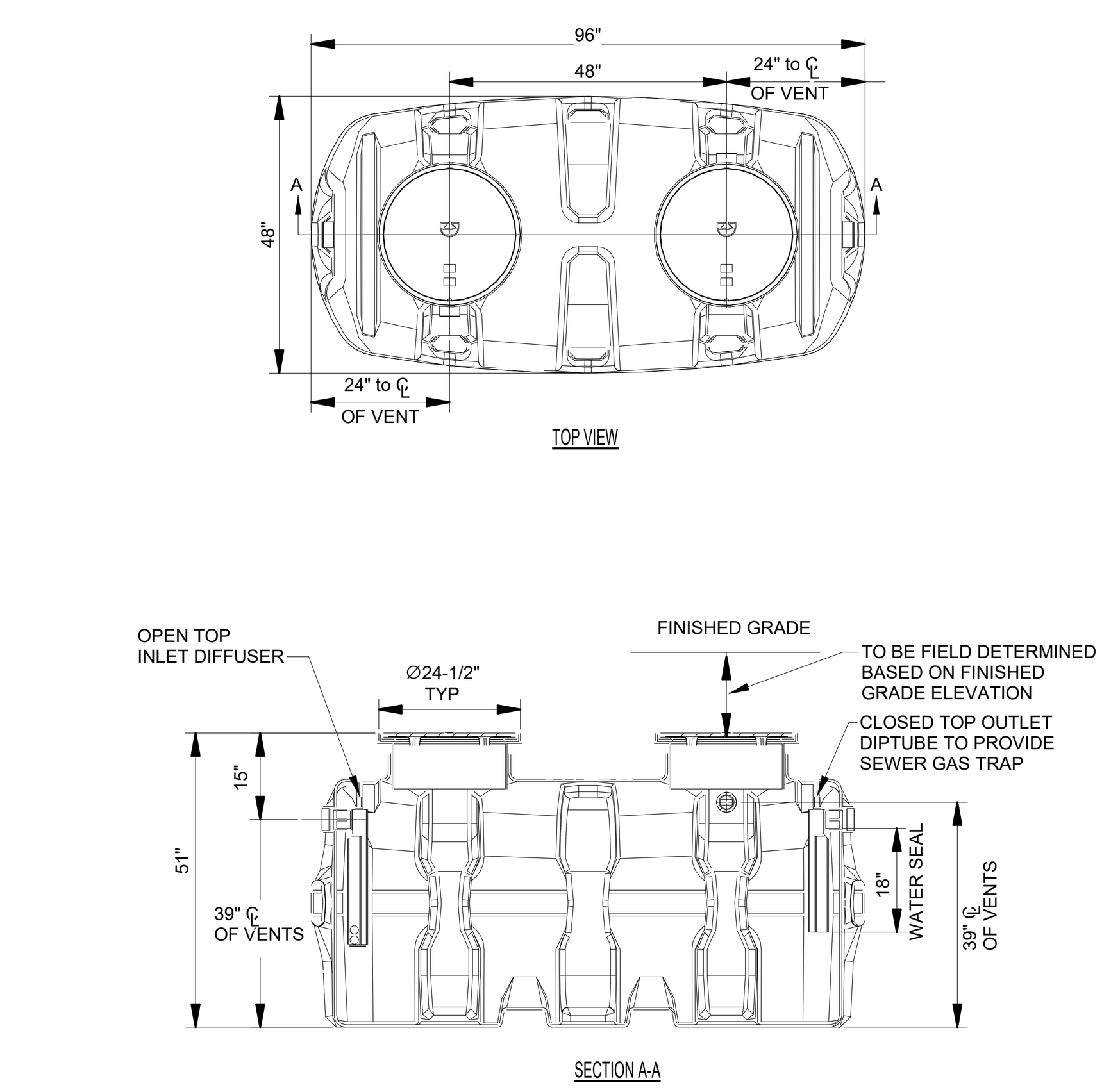
NEW DISTRICT MAINTENANCE & BUS DEPOT FACILITY
3600 OLD OAKDALE ROAD McDonald, PA 15057
SOUTH FAYETTE TWP SCHOOL DISTRICT 3680 Old Oakdale RD McDonald, PA 15057

DETAILS - PLUMBING

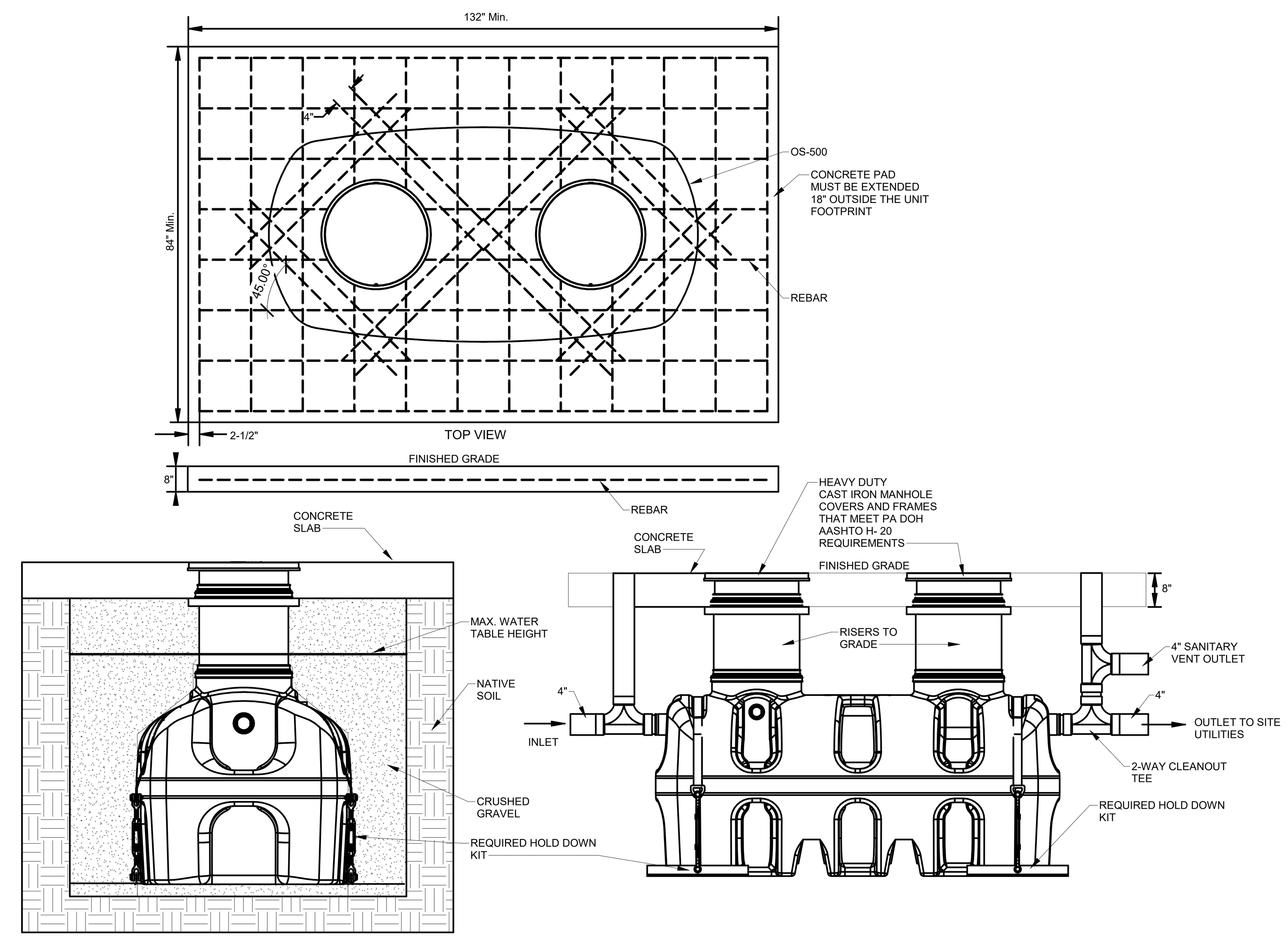
Proj No. 24-S49-01B
Issue Date October 1, 2025

P001

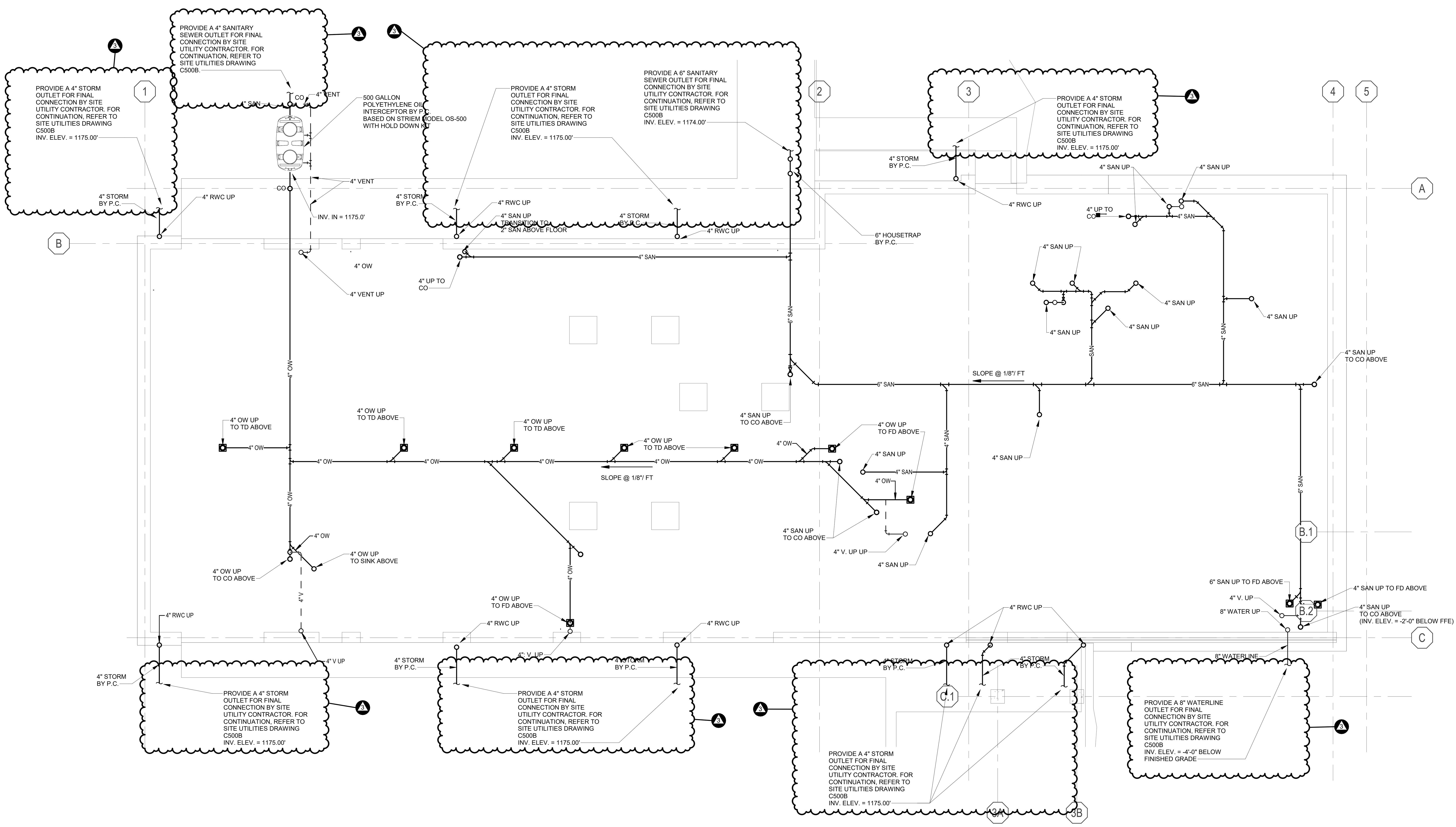
10/28/2025 7:45:53 AM Autodesk Docs://S49-24-01 South Fayette SD/PlbgFP_20240777_SFSD Bus Depot_2025.rvt



2 P100 OIL INTERCEPTOR SCHEMATIC
SCALE: None



3 P100 OIL WASTE SECURING DETAIL
SCALE: 3/4" = 1'-0"



1 P100 FOUNDATION PLAN - PLUMBING
SCALE: 1/8" = 1'-0"

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412.561.7117 www.DRAWcollective.com

TOWER ENGINEERING
Project Number: 2024077

REVISIONS
3 10/27/2025 Addendum #3

BIDDING SET

NEW DISTRICT MAINTENANCE & BUS DEPOT FACILITY
3600 OLD OAKDALE ROAD McDonald, PA 15057
SOUTH FAYETTE TWP SCHOOL DISTRICT 3680 Old Oakdale RD McDonald, PA 15057

FOUNDATION PLAN - PLUMBING

Proj No. 24-S49-01B
Issue Date October 1, 2025

P100

10/28/2025 7:45:55 AM Autodesk Docs://S49-24-01 South Fayette SD/Plbg/FP_2024077_SFSD Bus Depot_2025.rvt

CODED NOTES - SHEET P102

1 1-1/2" CW FROM BELOW AND UP IN CHASE TO SERVE FIXTURES. PROVIDE 1" CW TO EACH WATER CLOSET.

2 3/4" CW FROM BELOW AND UP IN WALL TO SERVE FIXTURES. PROVIDE 1/2" CW TO EACH LAVATORY.

3 REFER TO PLUMBING FIXTURE CONNECTION SCHEDULE FOR SANITARY AND VENT CONNECTIONS TO FIXTURES.

4 1-1/2" HW FROM BELOW & UP IN WALL. RUN 1-1/2" HW IN WALL TO SERVE FIXTURES. PROVIDE 1/2" HW TO EACH LAVATORY.

5 1-1/2" HW DN.

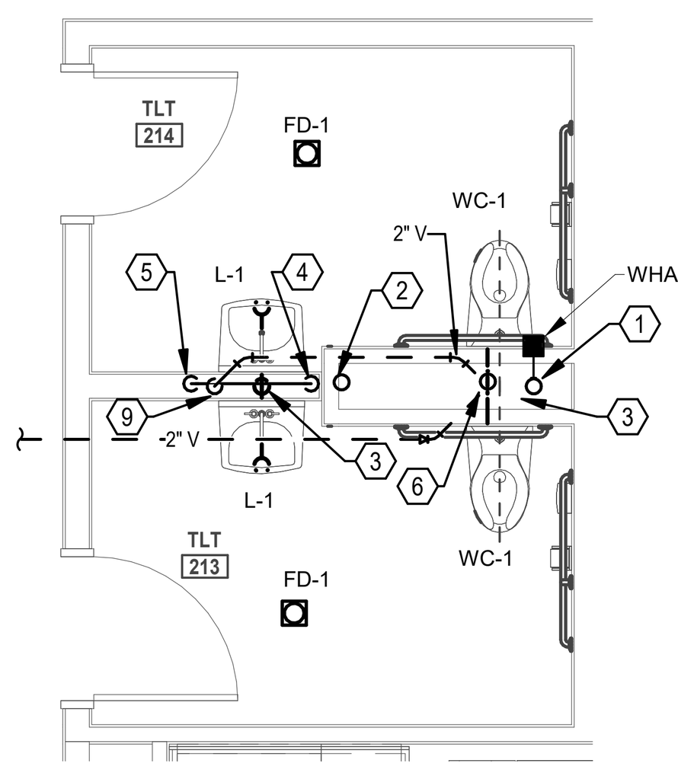
6 2" VENT UP. 3" VENT UP THRU ROOF. 4" SAN DN.

7 1/2" HW & CW FROM BELOW AND UP IN WALL TO SERVE FIXTURE. RUN SEPARATE 1/2" HW BRANCH CONNECTION WITH ISOLATION BALL VALVE TO DISHWASHER. RUN DISHWASHER DRAIN TO SINK P-TRAP.

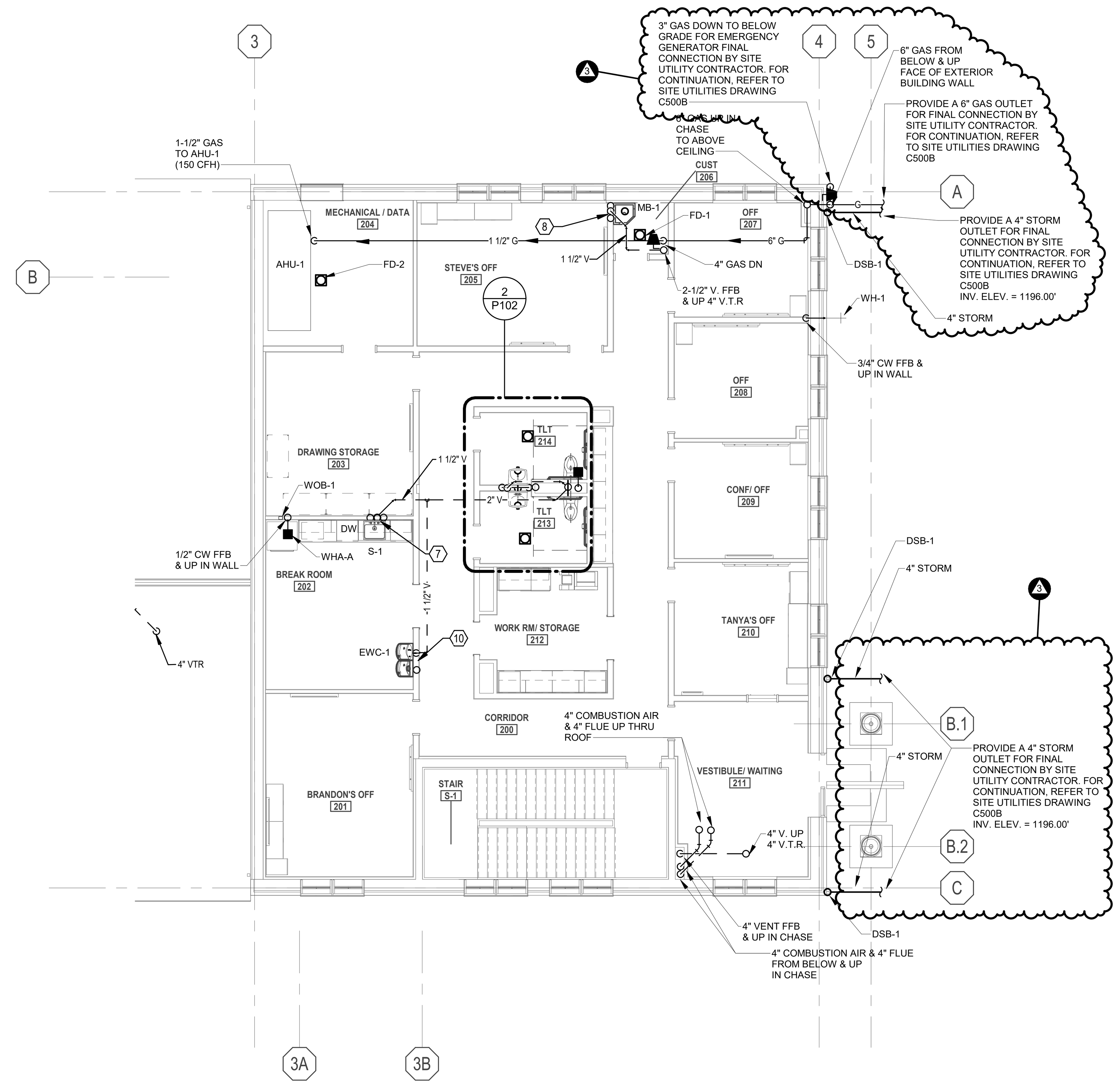
8 3/4" HW & CW FROM BELOW AND UP IN WALL TO SERVE FIXTURE. 1-1/2" VENT UP IN WALL. PROVIDE CHECK VALVES ON HW & CW.

9 2" V UP, 2" SAN DN.

10 1/2" CW FFB & UP IN WALL TO SERVE FIXTURE AND 1-1/2" SAN DN TO BELOW FLOOR AND 1-1/2" VENT UP IN WALL.



2 / P102 ENLARGED TOILET ROOM PLAN (ROOMS 213 & 214)
SCALE: 1/4" = 1'-0"



1 / P102 UPPER LEVEL PLUMBING PLAN
SCALE: 1/8" = 1'-0"

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REVISIONS
3 10/27/2025 Addendum #3

BIDDING SET

UPPER LEVEL FLOOR PLAN - PLUMBING

Proj No. 24-S49-01B
Issue Date October 1, 2025

P102

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ELECTRICAL SYMBOL LEGEND

ELECTRICAL GENERAL NOTES

A. **BRANCH CIRCUITING:**
1. ALL ELECTRICAL DEVICES HAVE BRANCH CIRCUIT NUMBERS AND PANELS INDICATED ADJACENT TO THE POWER CONNECTION SYMBOL ON THE PLANS. ALTHOUGH THE INTERCONNECTING BRANCH CIRCUITING IS NOT SHOWN, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL WIRE AND CONDUIT REQUIRED FOR A COMPLETE AND OPERATION POWER DISTRIBUTION SYSTEM.
2. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL BRANCH CIRCUITING SHALL BE INSTALLED CONCEALED IN EMT, 3/4" MINIMUM.
3. ALL CONDUIT SHALL BE 3/4" EMT, UNLESS NOTED OTHERWISE ON THE DRAWINGS. THE FOLLOWING EXCEPTIONS ALSO APPLY:
   a. ALL BRANCH CIRCUIT WIRING TO SITE LIGHTING FIXTURES SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT.
   b. THE CONDUIT FOR ALL FEEDERS SHALL BE AS SHOWN ON THE SINGLE-LINE DIAGRAM.
   c. THE CONDUIT FOR ALL HVAC EQUIPMENT SHALL BE AS SCHEDULED UNDER THE 'MECHANICAL EQUIPMENT SCHEDULE'.
   d. MAXIMUM CONDUIT SIZE IN CONCRETE SLABS SHALL BE 1" PVC.
4. ALL BRANCH CIRCUIT WIRING SHALL BE #12AWG THHN COPPER, UNLESS NOTED OTHERWISE ON THE DRAWINGS. THE FOLLOWING EXCEPTIONS APPLY:
   a. BRANCH CIRCUIT WIRING TO ALL SITE LIGHTING FIXTURES SHALL BE #10AWG THWN COPPER, UNLESS NOTED AS A LARGER SIZE ON THE DRAWINGS.
   b. THE WIRE FOR ALL FEEDERS SHALL BE AS SHOWN ON THE SINGLE-LINE DIAGRAM.
   c. THE WIRE FOR ALL HVAC EQUIPMENT SHALL BE AS SCHEDULED UNDER THE 'MECHANICAL EQUIPMENT SCHEDULE' .
   d. WHERE MC CABLING IS USED FOR BRANCH CIRCUIT WIRING TO LED LAMPED LIGHT FIXTURES THAT ARE DIMMED, PROVIDE CIRCUITING (2-#12, 1-#12GRD.) TO ALL LIGHT FIXTURES IN MC CABLE WITH TWO CONDUCTORS FOR 0-10 VOLT CONTROL ORIGINATING AT RELAY PACK, UNO. CIRCUITING SHALL BE AFC CABLE SYSTEMS MC LUMINARY CABLE TYPE MC-PCS (12-2 BLACK, WHITE, GREEN WITH 16-2 PURPLE AND PINK) OR APPROVED EQUIVALENT. WHERE DISTANCE EXCEEDS 100', PROVIDE #10 CONDUCTORS.
5. THE MAXIMUM NUMBER OF CURRENT CARRYING WIRING (DOES NOT INCLUDE GROUND WIRE) IN ANY ONE CONDUIT SHALL NOT EXCEED SIX (6), UNLESS NOTED OTHERWISE ON THE DRAWINGS.

B. **GROUNDING:**
1. PROVIDE A SEPARATE INSULATED GROUND WIRE IN EACH CONDUIT RUN. MINIMUM WIRE SIZE SHALL BE #12AWG. GROUND WIRE IS TYPICALLY NOT SHOWN.

C. **LOCATION OF ALL EQUIPMENT AND DEVICES:**
1. OBTAIN WRITTEN APPROVAL OF LOCATIONS OF ALL ELECTRICAL DEVICES FROM THE OWNER AND THE ARCHITECT PRIOR TO ROUGH-IN. THE OWNER RESERVES THE RIGHT TO MOVE ANY OR ALL ELECTRICAL DEVICES PRIOR TO ROUGH-IN, AT NO ADDITIONAL COST.
2. COORDINATE THE LOCATION AND SERVICE REQUIREMENTS OF ALL HVAC AND PLUMBING EQUIPMENT WITH THE RESPECTIVE CONTRACTORS. INFORM THE ARCHITECT OF ANY CONFLICTS IMMEDIATELY.
3. THE ELECTRICAL CONTRACTOR SHALL CHECK ALL ARCHITECTURAL, HVAC AND PLUMBING DRAWINGS FOR THE LOCATION OF SINKS. RECEPTACLES SHALL BE LOCATED A MINIMUM OF 1'-0" FROM THE EDGE OF ANY SINK. EVEN IF SHOWN CLOSER TO THE SINK ON THE ELECTRICAL DRAWINGS.

D. **EQUIPMENT LABELING:**
1. PROVIDE NAMEPLATE LABELS ON ALL ELECTRICAL DISTRIBUTION EQUIPMENT IN ACCORDANCE WITH DETAIL 2/E203.
2. PROVIDE ARC FLASH HAZARD LABELING ON ALL ELECTRICAL DISTRIBUTION EQUIPMENT IN ACCORDANCE WITH SPECIFICATION SECTION 260573.

E. **LIGHTING FIXTURE SCHEDULE:**
1. REFERENCE SPECIFICATION SECTIONS 265100 (INTERIOR LIGHTING) AND 265600 (EXTERIOR LIGHTING) FOR DETAILED LAMP, BALLAST, DRIVER AND FIXTURE SPECIFICATIONS.
2. BID PRICES SHALL BE BASED ON INFORMATION IN ALL COLUMNS. WHERE A CONFLICT EXISTS, THE PRICE SHALL INCLUDE THE MORE EXPENSIVE OPTION. COORDINATE CONFLICTS WITH ENGINEER PRIOR TO SUBMITTING BID.
3. THE LAMP COLUMN INDICATES THE NOMINAL LAMP WATTAGE, SHAPE, COLOR TEMPERATURE AND/OR DISTRIBUTION. LAMPS SHALL BE PROVIDED AS RECOMMENDED AND TESTED BY THE MANUFACTURER OF THE FIXTURE SPECIFIED. THE FIXTURE MANUFACTURER SHALL BE RESPONSIBLE FOR THE LAMP-DRIVER COMPATIBILITY.
4. NOMINAL LUMEN OUTPUT IS LISTED FOR LED FIXTURE TYPES. SUBMITTED FIXTURE SHALL BE CAPABLE OF PROVIDING LISTED LUMEN OUTPUT WITHIN 10% OF LISTED LUMEN OUTPUT.
5. NO SUBSTITUTIONS SHALL BE ACCEPTED UNLESS LISTED.
6. PRICING FOR LIGHT FIXTURE TYPES SHALL BE THROUGH LOCAL LIGHTING REP LISTED ONLY.
7. UNLESS NOTED OTHERWISE, LED LIGHT FIXTURES SHALL HAVE A COLOR TEMPERATURE OF 3500K FOR INTERIOR LIGHTING AND 3000K FOR EXTERIOR LIGHTING

F. **SWITCHING:**
1. CHECK ALL DRAWINGS FOR WALL SWITCHES. SWITCHES ARE SHOWN ON LIGHTING, POWER, AND SYSTEM PLANS.
2. WHERE ONE OR MORE WALL SWITCHES APPEAR IN THE SAME GENERAL LOCATION, SWITCHES SHALL BE GROUPED AND INSTALLED IN ONE WALL BOX WITH ONE CONTINUOUS COMMON COVER PLATE, WHEREEVER POSSIBLE. WHERE GROUPING IS NOT POSSIBLE DUE TO SIZE OR TYPE OF DEVICE, GROUP DEVICES CLOSE TOGETHER AND AT THE EXACT SAME MOUNTING HEIGHT.

G. **CUTTING AND PATCHING:**
1. ALL OPENINGS IN EXISTING STRUCTURAL ELEMENTS, REQUIRED FOR COMPLETION OF THE CONTRACT (SUCH AS FLOORS, WALLS, CEILINGS, AND ROOFS), SHALL BE CUT AND/OR PATCHED BY THE ELECTRICAL CONTRACTOR.

TECHNOLOGY GENERAL NOTES

A. **LOW VOLTAGE SYSTEM INSTALLATION:**
1. PROVIDE ALL AUXILIARY DEVICES SUCH AS TIE BARS, CABLE SUPPORTS, CONDUIT, RACEWAYS, INNERDUCT, ETC. THAT ARE NOT SHOWN BUT ARE REQUIRED FOR A COMPLETE INSTALLATION.
2. PROVIDE ALL CONDUIT, BACKBOXES, AND POWER SOURCES FOR EQUIPMENT AS REQUIRED FOR A COMPLETE INSTALLATION.
3. CONCEAL ALL CABLES WHEREVER POSSIBLE. WHEN CABLE CANNOT BE CONCEALED IN FINISHED AREAS, THE PROVIDE CONDUIT AND/OR SURFACE MOUNTED RACEWAY (WHERE APPROVED BY ARCHITECT).
4. CABLE RUN OPEN IN WALLS AND ABOVE DROPPED CEILINGS SHALL BE SUPPORTED EVERY 4 TO 5 FT. WITH PROPER CABLE SUPPORTS, PANDUIT J-MOD CABLE SUPPORT SYSTEM, OR EQUAL AS INDICATED IN SPECIFICATIONS.
5. PLASTIC TIEWRAPS ARE NOT PERMITTED. USE PANDUIT HLTP/HLSP HOOK & LOOP CABLE TIES - PLENUM RATED.
6. ALL CABLES INSTALLED ABOVE CEILINGS SHALL HAVE PLENUM RATING.
7. PROVIDE FIRE STOP WHERE CONDUITS, CONDUIT SLEEVES, WIRE WAYS, AND OTHER NETWORK RACEWAYS OR CABLES PASS THROUGH FIRE PARTITIONS, FIRE WALLS, FIRE FLOORS, OR SMOKE WALLS.
8. CONFIRM THE LAYOUT OF ALL PATCH PANELS, WIRING TROUGHS, TERMINAL BLOCKS, HEAD-END EQUIPMENT AND WIRING WITH THE OWNER'S REPRESENTATIVE BEFORE INSTALLATION.
9. REFER TO DIVISION 27 AND DIVISION 28 SPECIFICATIONS FOR ADDITIONAL DETAILS AND INFORMATION.

B. **COPPER CABLING SYSTEMS:**
1. HORIZONTAL CABLING FOR THE VOICE/DATA COMMUNICATION STRUCTURED CABLING SYSTEM SHALL BE CATEGORY 6A PLENUM RATED CABLE. CATEGORY 6A CABLE SHALL BE TERMINATED ON CATEGORY 6A RATED CONNECTORS AT THE WORKSTATION AND ON CATEGORY 6A RATED PATCH PANELS AT THE MDF/IDF.
2. PROVIDE CATEGORY 6A CABLE TO ALL WIRELESS ACCESS POINTS (WAP) AS DETAILED ON DRAWINGS. AT THE MDF/IDF TERMINATE CABLING ON CATEGORY 6A PATCH PANELS. AT THE WAP LOCATION TERMINATE THE CABLING WITH BISCUIT JACK. PROVIDED A 20' COIL OF CABLE ABOVE CEILING FOR FINAL PLACEMENT OF WIRELESS ACCESS POINT. SUPPORT CABLE LOOP WITH HOOK AND LOOP CABLE TIES.
3. PROVIDE CATEGORY 6A CABLE TO ALL SURVEILLANCE CAMERA LOCATIONS AS DETAILED ON DRAWINGS. AT THE MDF TERMINATE CABLING ON CATEGORY 6A PATCH PANELS. AT THE CAMERA LOCATION TERMINATE THE CABLING WITH BISCUIT JACK. PROVIDED A 20' COIL OF CABLE FOR FINAL PLACEMENT OF CAMERA.
4. FURNISH ALL CATEGORY 6A PATCH CABLES AT THE MDF, FOR ALL DATA CABLES INSTALLED. PATCH CABLES SHALL BE TURNED OVER TO THE OWNER FOR PATCHING OF DATA NETWORK CONNECTIONS.
5. SYSTEM COMPONENTS SHALL BE OF SAME MANUFACTURER FOR END TO END CHANNEL PERFORMANCE AND SHALL MEET THE WARRANTY AS DESCRIBED IN THE DIVISION 27 SPECIFICATIONS.
6. TELEPHONE/DATA OUTLET AND CABLE TOTALS ARE TO BE VERIFIED BY TAKE-OFF DEVICE COUNTS PROVIDED ON FLOOR PLANS.
7. SEE SPECIFICATIONS FOR SPECIFIC OUTLET TYPE, COLOR AND COMPONENTS. COORDINATE WITH OWNER AND ENGINEER PRIOR TO ORDERING.
8. FINAL LOCATION OF WORKSTATION OUTLETS SHALL BE CONFIRMED WITH OWNER'S REPRESENTATIVE.
9. PROVIDE A WIRING DIAGRAM AND FLOOR PLAN FOR THE EQUIPMENT AS INSTALLED WITH CLEARLY LABELED CONNECTIONS INTO ROOMS, USING THE SAME NOMENCLATURE ON THE OUTLETS AND TERMINATION PANELS.
10. MAKE ALL FINAL CONNECTIONS AS DIRECTED BY THE OWNER'S REPRESENTATIVE. TAG BOTH ENDS OF ALL WIRES WITH A COMPLETE IDENTIFICATION SCHEME. THE IDENTIFICATION SCHEME SHALL BE REVIEWED AND APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION. THIS REQUIREMENT SHALL APPLY TO ALL TELEPHONE/DATA CABLES AND CROSS CONNECT CABLES.
11. HORIZONTAL CATEGORY 6A CABLE RUNS SHALL NOT EXCEED 295 FT. FROM TERMINATION PANEL TO OUTLET CONNECTING HARDWARE. IF DURING CONSTRUCTION, DUE TO EXISTING BUILDING CONSTRUCTION, ETC. THIS LENGTH WILL BE EXCEEDED, IT SHALL BE BROUGHT TO THE ATTENTION OF ENGINEER PRIOR TO INSTALLING ANY RACEWAY, CONDUIT, CABLE, ETC.
12. CONDUITS AND SLEEVES FOR TELECOMMUNICATIONS CABLING SHALL BE, AT A MINIMUM, THE FOLLOWING SIZES:
   A. 3/4" - UP TO (2) CAT6A CABLES
   B. 1" - UP TO (4) CAT6A CABLES
   C. 1-1/4" - UP TO (6) CAT6A CABLES
   D. 1-1/2" - UP TO (10) CAT6A CABLES
   E. 2" - UP TO (16) CAT6A CABLES
   F. 2-1/2" - UP TO (22) CAT6A CABLES
   G. 3" - UP TO (36) CAT6A CABLES
   H. 4" - UP TO (62) CAT6A CABLES
   I. BEYOND (62) CABLES - PROVIDE MULTIPLE CONDUITS

C. **LOW VOLTAGE EQUIPMENT GROUNDING:**
1. PROVIDE A TELECOMMUNICATIONS GROUNDING AND BONDING SYSTEM WITHIN THE TELECOMMUNICATIONS SPACES IN ACCORDANCE WITH THE RECOMMENDATION OF ANSI/TIA-EIA-607 AND ARTICLE 250 OF THE NATIONAL ELECTRIC CODE AND AS DESCRIBED IN THE CONTRACT DOCUMENTS. PROVIDE TIES TO BUILDING GROUND IN ACCORDANCE WITH DETAIL 6/E301.
2. PROVIDE A GROUND BUS BAR AT EACH DATA RACK LOCATION, TELEPHONE AND/OR CABLE TELEVISION DEMARCATION POINT AND ELSEWHERE AS INDICATED ON THE DRAWINGS IN ACCORDANCE WITH DETAIL 5/E301. PROVIDE A #3/0 INSULATED GROUNDING CONDUCTOR FROM THE SERVICE ENTRANCE GROUNDING ELECTRODE TO EACH GROUND BUS LOCATION.
3. PROVIDE AN INSULATED #3/0 AWG GROUNDING CONDUCTOR ALONG THE SIDE RAIL OF EACH CABLE TRAY. ATTACH THE GROUNDING CONDUCTOR TO THE OUTSIDE OF THE SIDE RAIL OF THE CABLE TRAY, MINIMUM EVERY 5'. PROVIDE A #3/0 AWG INSULATED GROUNDING CONDUCTOR FROM THE CABLE TRAY TO EACH GROUNDING BUS.
4. PROVIDE A #6 AWG INSULATED GROUND WIRE BETWEEN THE EQUIPMENT AND THE COMMUNICATIONS SYSTEM GROUND BAR LOCATED IN THE SAME ROOM. PROVIDE ALL NECESSARY HARDWARE FOR FASTENING OF GROUND WIRES TO GROUNDING BLOCKS.
5. REFER TO SPECIFICATION SECTION 270526 FOR REQUIREMENTS.

GENERAL ABBREVIATIONS

A	AMPERE	MLO	MAIN LUG ONLY
AC	ABOVE COUNTER	MTD	MOUNTED
AFF	ABOVE FINISHED FLOOR	MTG	MOUNTING
AWG	AMERICAN WIRE GAUGE	NA	NOT APPLICABLE
C	CONDUIT	NIC	NOT IN THIS CONTRACT
CKT	CIRCUIT	NO	NUMBER
CLG	CEILING	NTS	NOT TO SCALE
CU	COPPER	OC	ON CENTER
DISC	DISCONNECT	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
DWG	DRAWING	P	POLE
E	EMERGENCY OR EMERGENCY SYSTEM	PC	PLUMBING CONTACTOR
EC	ELECTRICAL CONTRACTOR	PH	PHASE
EMT	ELECTRIC METALLIC TUBING	PNL	PANELBOARD
FA	FIRE ALARM	POS	POSITION
FBO	FURNISHED BY OTHERS WITH ALL RELATED ELECTRICAL WORK BY ELECTRICAL CONTRACTOR	PRI	PRIMARY
		PWR	POWER
FDR	FEEDER	REC	RECESSED
FT	FEET	RECPT	RECEPTACLE
FTL	FEED THROUGH LUGS	REQ	REQUIRED
GC	GENERAL CONTRACTOR	RMC	RIGID GALVANIZED METAL CONDUIT
GND	GROUND OR GROUNDED	SCCR	SHORT CIRCUIT CURRENT RATING
GRD	GROUND OR GROUNDED	SEC	SECONDARY
HC	HVAC CONTRACTOR	SPD	SURGE PROTECTIVE DEVICE
HP	HORSEPOWER	TYP	TYPICAL
HVAC	HEATING, VENTILATING AND AIR CONDITIONING	UNO	UNLESS NOTED OTHERWISE
IN	INCH	V	VOLT
JB	JUNCTION BOX	W	WATT
KW	KILOWATT	W/	WITH
LTG	LIGHTING	W/O	WITHOUT
MCB	MAIN CIRCUIT BREAKER	WP	WEATHER PROOF ENCLOSURE
MFR	MANUFACTURER	WPP	WEST PENN POWER
MH	MANHOLE	Y	STAR OR WYE DISTRIBUTION SYSTEM

GENERAL DRAWING SYMBOLS

DETAIL INDICATOR. '#' DENOTES SEQUENTIAL ALPHANUMERIC DESIGNATION. 'DWG' DENOTES DRAWING NUMBER WHERE DETAIL IS DRAWN.

SECTION INDICATOR. '#' DENOTES SEQUENTIAL ALPHANUMERIC DESIGNATION. 'DWG' DENOTES DRAWING NUMBER WHERE SECTION IS DRAWN.

COLUMN LINE OR GRID INDICATOR. '#' DENOTES SEQUENTIAL ALPHANUMERIC DESIGNATION.

#/DWG — ELEVATION/VIEW INDICATOR. '#' DENOTES SEQUENTIAL ALPHANUMERIC DESIGNATION. 'DWG' DENOTES DRAWING NUMBER WHERE DETAIL IS DRAWN.

REVISION INDICATOR. '#' DENOTES REVISION LEVEL.

CODED NOTE. '#' DENOTES SEQUENTIAL ALPHANUMERIC DESIGNATION.

SITE UTILITIES

SERVICE METER.

HAND-HOLE.

UTILITY POLE.

OE — UNDERGROUND DUCT BANK - SEE DRAWING SECTION AS INDICATED BY TAG.

NOMENCLATURE:
- 'OE' DENOTES OVERHEAD ELECTRIC.
- 'UE' DENOTES UNDERGROUND ELECTRIC.
- 'OT' DENOTES OVERHEAD TELECOMMUNICATIONS.
- 'UT' DENOTES UNDERGROUND TELECOMMUNICATIONS.

UTILITY INFORMATION

LOCAL ELECTRIC COMPANY:
WEST PENN POWER

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POWER

CEILING MTD | FLOOR MTD | WALL MTD

JUNCTION BOX. MOUNT 18" AFF UNO.

DUPLEX OUTLET RECEPTACLE. MOUNT 18" AFF UNO

DOUBLE DUPLEX RECEPTACLE OUTLET (2 DUPLEX OUTLETS WITH COMMON FACEPLATE). MOUNT 18" AFF UNO.

SINGLE OUTLET RECEPTACLE - SPECIAL NEMA TYPE (SEE SCHEDULE). MOUNT 18" AFF UNO.

ESD — ELECTRIFIED SECURITY DOOR - PROVIDE A 3/4" EMT CONDUIT STUBBED INTO TOP OF DOOR FRAME AND ROUTE CONDUIT INTO NEAREST ACCESSIBLE CEILING FOR SECURITY SYSTEM AND DOOR CONTROL CABLING. PROVIDE A PULLWIRE IN CONDUIT AND THROUGHOUT ENTIRE LENGTH OF DOOR FRAME.

T1 — COMBINATION POWER/DATA FLOOR BOX. 'T1', 'T2', ETC DENOTES TYPE OF FLOOR BOX. REFER TO DETAIL 3/E204.

1 / 1L1 — NOMENCLATURE:
- '1' DENOTES CIRCUIT NUMBER. TWO NUMBERS SEPARATED BY A SLASH (e.g. 31/33) INDICATES A 2-POLE CIRCUIT TO BE CONNECTED TO POSITIONS 31 AND 33 IN THE PANELBOARD. THREE NUMBERS SEPARATED BY A SLASH (e.g. 31/33/35) INDICATES A 3-POLE CIRCUIT IN THE PANELBOARD. NUMBERS SEPARATED BY COMMAS, INDICATES INDIVIDUAL SINGLE-POLE CIRCUITS (e.g. 31,33,35).
- '1L1' DENOTES PANELBOARD.
- 'AC' DENOTES RECEPTACLE MOUNTED ABOVE COUNTER. MOUNT 6" ABOVE TOP OF BACKSPLASH.
- 'CR' DENOTES CEILING MOUNTED CORD REEL. PROVIDE RECEPTACLE MOUNTED TO STRUCTURE FOR CORD AND PLUG CONNECTION TO CORD REEL. PROVIDE 20A CORD REEL WITH QUAD OUTLET, 25' LONG CABLE AND IN-LINE GFCI PROTECTION, PASS & SEYMOUR 1000 SERIES OR EQUAL
- 'ED' DENOTES ELECTRIC DRYER. MOUNT AT 48" AFF. PROVIDE NEMA 6-30R RECEPTACLE, 3-#10AWG AND 1-#10AWG GROUND IN 3/4" CONDUIT.
- 'EM' DENOTES RECEPTACLE ON EMERGENCY POWER. PROVIDE DEVICE IN THE COLOR RED. LABEL FACEPLATE 'EMERGENCY ONLY'.
- 'ER' DENOTES RECEPTACLE FOR ELECTRIC RANGE. MOUNT AT 36" AFF. PROVIDE NEMA 6-50R RECEPTACLE, 3-#6AWG AND 1-#10AWG GROUND IN 1" CONDUIT.
- 'EWC' DENOTES GFCI TYPE RECEPTACLE FOR ELECTRIC WATER COOLER. MOUNT AT CENTER-LINE DIRECTLY UNDER WATER COOLER. COORDINATE WITH PC.
- 'GD' DENOTES RECEPTACLE FOR GARBAGE DISPOSAL.
- 'GFI' DENOTES GROUND FAULT INTERRUPTING RECEPTACLE.
- 'RF' DENOTES GROUND FAULT INTERRUPTING RECEPTACLE FOR REFRIGERATOR MOUNTED AT 48" AFF.
- 'RH' DENOTES POWER CONNECTION TO RANGE HOOD. ROUTE 2-#12 AND 1-#12 GROUND IN 3/4" CONDUIT. COORDINATE CONNECTION REQUIREMENTS WITH MANUFACTURER'S DOCUMENTATION.
- 'TTB' DENOTES RECEPTACLE WITH INTEGRAL SURGE PROTECTIVE DEVICE MOUNTED ON TELEPHONE TERMINAL BOARD AT 48" AFF. PROVIDE DEVICE IN THE COLOR BLUE.
- 'TV' DENOTES RECEPTACLE FOR TELEVISION. PROVIDE RECESSED IN-WALL STORAGE BOX WITH DUPLEX RECEPTACLE, LEGRAND/CHIEF PAC525F OR EQUAL. COORDINATE MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
- 'UR' DENOTES GROUND FAULT INTERRUPTING RECEPTACLE FOR UNDERCOUNTER REFRIGERATOR MOUNTED AT 18" AFF.
- 'WELD' DENOTES NEMA L6-50 RECEPTACLE FOR WELDER MOUNTED AT 48" AFF. ROUTE 3-#6 AND 1-#10 GROUND IN 1" CONDUIT. VERIFY RECEPTACLE CONFIGURATION WITH OWNER PRIOR TO INSTALLATION.
- 'WM' DENOTES GFCI TYPE RECEPTACLE FOR WASHING MACHINE MOUNTED AT 48" AFF.
- 'WP' DENOTES RECEPTACLE WITH WEATHERPROOF IN-USE COVER.
- 'WR' DENOTES WEATHER RESISTANT GFI RECEPTACLE WITH EXTRA HEAVY DUTY BOX COVER.
- '+XX' DENOTES RECEPTACLE MOUNTED AT SPECIFIC MOUNTING HEIGHT WHERE 'XX' IS INCHES AFF TO CENTER OF DEVICE.

WALL SWITCH. MOUNT 48" AFF TO TOP OF BOX UNO.

NOMENCLATURE:
- 'M' DENOTES MANUAL MOTOR STARTER.

NON-FUSED SAFETY DISCONNECT SWITCH. MOUNT 6'-0" AFF TO TOP OF ENCLOSURE UNO.

FUSED SAFETY DISCONNECT SWITCH. MOUNT 6'-0" AFF TO TOP OF ENCLOSURE UNO.

COMBINATION MOTOR STARTER/DISCONNECT SWITCH. MOUNT 6'-0" AFF TO TOP OF ENCLOSURE UNO.

100/3/80 — NOMENCLATURE:
- '3R' DENOTES NEMA RATING.

FUSE SIZE
NUMBER OF POLES
SWITCH RATING

PANELBOARD. MOUNT 6'-0" AFF TO TOP CIRCUIT BREAKER.

NOMENCLATURE:
FLOOR LEVEL
PANEL TYPE (WHERE APPLICABLE)
- 'LS' DENOTES LIFE SAFETY NORMAL/EMERGENCY.
- 'ES' DENOTES EMERGENCY STANDBY NORMAL/EMERGENCY.

VOLTAGE/SYSTEM
- 'L' DENOTES 208Y/120V.

PANEL L L 1 / 208V, 3PH, 4W — SEQUENTIAL NUMERATION

EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. REFER TO EQUIPMENT SCHEDULE FOR REQUIREMENTS.

UH-01 / 1 / 1H1 / a — NOMENCLATURE:
EQUIPMENT TAG (REFER TO SCHEDULE)
POSITION NUMBER IN PANELBOARD
- TWO NUMBERS SEPARATED BY A COMMA (e.g. 31,33) INDICATES A 2-POLE CIRCUIT TO BE CONNECTED TO POSITIONS 31 AND 33 IN THE PANELBOARD. THREE NUMBERS SEPARATED BY A COMMA (e.g. 31,33,35) INDICATES A 3-POLE CIRCUIT IN THE PANELBOARD.

PANELBOARD THE EQUIPMENT SHALL BE CONNECTED TO
REFERENCE TO EQUIPMENT CONNECTION DETAIL

TELE/DATA COMMUNICATION SYSTEM

REFER TO DETAIL 2/E204 FOR TYPICAL WALL-MOUNT ROUGH-IN REQUIREMENTS.

CEILING MTD | FLOOR MTD | WALL MTD

COMBINATION TELEPHONE/DATA OUTLET MOUNTED AT 18" AFF, UNO - REFER TO DETAIL 4/E301 FOR JACK/FACEPLATE REQUIREMENTS.

NOMENCLATURE:
- 'AC' DENOTES OUTLET MOUNTED ABOVE COUNTER, MOUNT 6" ABOVE TOP OF BACKSPLASH
- '+XX' DENOTES OUTLET MOUNTED AT SPECIFIC MOUNTING HEIGHT WHERE 'XX' IS INCHES ABOVE FINISHED FLOOR
- 'W' DENOTES OUTLET MOUNTED AT 48" AFF FOR WALL-MOUNTED TELEPHONE

WAP — WIRELESS ACCESS POINT FURNISHED BY OWNER, INSTALLED BY EC. CABLING TO BE PROVIDED BY EC. TERMINATE CABLING WITH BISCUIT JACK. PROVIDE AN ADDITIONAL 20' OF CABLING COILED ABOVE ACCESSIBLE CEILING FOR WAP PLACEMENT AND PROVIDE PATCH CABLE AT WAP.

TTB — 4' x 8' x 3/4" PLYWOOD TERMINAL BOARD PAINTED GRAY WITH FIREPROOF PAINT

CABLE TRAY

X # — DEVICE REQUIRING DATA CABLE - SEE DATA NOMENCLATURE BELOW. DATA TAG MAY BE APPLIED TO ANY DEVICE WHICH REQUIRED A NETWORK CONNECTION INCLUDING BUT NOT LIMITED TO DATA JACKS, SURVEILLANCE CAMERAS, WAPS, ACCESS CONTROL PANELS, AV DEVICES, SPEAKERS, ETC.

NOMENCLATURE:
DENOTES DESTINATION RACK ROOM NUMBER
DENOTES NUMBER OF CABLES
PORT ID - SEQUENTIAL LETTERS A, B, C, ETC. CONFIRM PREFERRED TAGGING SCHEME WITH OWNER'S REPRESENTATIVE IN WRITING. IF ROOM NUMBERS ARE TO BE USED, USE FINAL POST-CONSTRUCTION ROOM NUMBERS. TAG EACH PORT FACEPLATE IN ADDITION TO BOTH ENDS OF CABLE.

LIGHTING

CEILING MOUNTED | WALL MOUNTED

POINT SOURCE LIGHTING FIXTURE. WALL MOUNT AT 6'-8" AFF TO BOTTOM OR CEILING MOUNT UNO.

INDIVIDUAL LIGHTING FIXTURE. WALL MOUNT AT 6'-8" AFF TO BOTTOM OR CEILING MOUNT UNO.

STRIP LIGHT. WALL MOUNT AT 6'-8" AFF TO BOTTOM OR CEILING MOUNT UNO.

NORMAL/EMERGENCY LIGHTING FIXTURE. WALL MOUNT AT 6'-8" AFF TO BOTTOM OR CEILING MOUNT UNO.

EXIT SIGN. MOUNT 1'-0" BELOW CEILING UNO. SHADING INDICATES LIGHTED FACE. PROVIDE DIRECTIONAL ARROWS AS INDICATED.

UNIT BATTERY EMERGENCY LIGHT. MOUNT 1'-0" BELOW CEILING UNO.

POLE MOUNTED FIXTURE.

G01 a 1 1H1 — NOMENCLATURE:
- 'G01' DENOTES FIXTURE TYPE (REFER TO LIGHTING FIXTURE SCHEDULE).
- '1' DENOTES CIRCUIT NUMBER.
- '1H1' DENOTES PANELBOARD.
- 'a' DENOTES SWITCH CONTROL.

NOTES:
1. ADJACENT FIXTURES WITHOUT TAGS TO BE SAME TYPE AS TAGGED FIXTURES.
2. REFER TO LIGHTING FIXTURE SCHEDULE FOR LIGHTING FIXTURE DESCRIPTIONS.
3. WHERE POSSIBLE, LIGHTING FIXTURES ARE SHOWN AS ACTUAL SIZE AND CONFIGURATION.

LIGHTING CONTROLS

REFER TO SPECIFICATION SECTION 260923 AND DETAIL 1/E102

WALL SWITCH. MOUNT 48" AFF TO TOP OF BOX UNO.

NOMENCLATURE:
- LOWER CASE LETTER ADJACENT TO SYMBOL DESIGNATES SWITCH TAG.
- 'LV' DENOTES LOW VOLTAGE SWITCH. NUMBER ADJACENT TO 'LV' INDICATES SWITCH DESIGNATION. REFER TO DETAIL 2/E102 FOR REQUIREMENTS. COORDINATE PROGRAMMING IN CONSTRUCTION.
- 'W1' DENOTES DUAL TECHNOLOGY AUTOMATIC WALL SWITCH.
- 'WD' DENOTES THREE-WAY, DUAL TECHNOLOGY AUTOMATIC WALL SWITCH.

NB — NETWORK LIGHTING CONTROL DEVICE: NETWORK BRIDGE. WALL MOUNT ABOVE ACCESSIBLE CEILING OR 9'-0" AFF IN EXPOSED CEILINGS. PROVIDE POWER TO DEVICE AS INDICATED ON DRAWINGS.

SGW — NETWORK LIGHTING CONTROL DEVICE: SYSTEM GATEWAY. PROVIDE POWER TO DEVICE AS INDICATED ON DRAWINGS.

SRP — NETWORK LIGHTING CONTROL DEVICE: STANDARD RELAY PACK. WALL MOUNT ABOVE ACCESSIBLE CEILING OR 9'-0" AFF IN EXPOSED CEILINGS. LOWER CASE LETTER(S) ADJACENT TO DEVICE INDICATE NUMBER OF RELAYS REQUIRED.

DRP — NETWORK LIGHTING CONTROL DEVICE: 0-10V DIMMING RELAY PACK. WALL MOUNT ABOVE ACCESSIBLE CEILING OR 9'-0" AFF IN EXPOSED CEILINGS. LOWER CASE LETTER(S) ADJACENT TO DEVICE INDICATE NUMBER OF RELAYS REQUIRED.

ERP — NETWORK LIGHTING CONTROL DEVICE: 0-10V DIMMING EMERGENCY RELAY PACK. WALL MOUNT ABOVE ACCESSIBLE CEILING OR 9'-0" AFF IN EXPOSED CEILINGS. LOWER CASE LETTER(S) ADJACENT TO DEVICE INDICATE NUMBER OF RELAYS REQUIRED.

DUAL TECHNOLOGY OCCUPANCY SENSOR. CORNER CEILING OR WALL MOUNT UNO.

DUAL TECHNOLOGY OCCUPANCY SENSOR (360 DEGREE COVERAGE). CEILING MOUNT.

PC — PHOTOCELL. MOUNT AS INDICATED ON DRAWINGS.

AMBIENT LIGHT SENSOR. CEILING MOUNT.

FIRE ALARM SYSTEM

REFER TO SPECIFICATION SECTION 261900 AND DETAIL 5/E204

CEILING MOUNTED | WALL MOUNTED

PULL STATION. INSTALL WITHIN 5'-0" OF THE ENTRANCE TO EACH EXIT. MOUNT 42" AFF TO BOTTOM OF DEVICE UNO.

BELL. MOUNT 8'-0" AFF UNO.

STROBE. WALL MOUNT SUCH THAT ENTIRE LENS IS NOT LESS THAN 80" AFF AND NOT GREATER THAN 96" AFF, OR CEILING MOUNT. NUMBER ADJACENT TO DEVICE INDICATES CANDELA RATING.

COMBINATION STROBE/HORN. WALL MOUNT SUCH THAT ENTIRE LENS IS NOT LESS THAN 80" AFF AND NOT GREATER THAN 96" AFF, OR CEILING MOUNT. NUMBER ADJACENT TO DEVICE INDICATES CANDELA RATING.

PD — PHOTOELECTRIC TYPE SMOKE DETECTOR. WALL MOUNT AT 8" BELOW CEILING OR CEILING MOUNT UNO.

HD — HEAT DETECTOR - WALL MOUNT 8" BELOW CEILING OR CEILING MOUNT, UNO

FACP — FIRE ALARM CONTROL PANEL.

FAAP — FIRE ALARM REMOTE ANNUNCIATION PANEL.

TS — TAMPER SWITCH. VERIFY ALL LOCATIONS WITH FIRE PROTECTION CONTRACTOR (PROVIDED BY FPC, WIRED BY EC)

FS — FLOW SWITCH. VERIFY ALL LOCATIONS WITH FIRE PROTECTION CONTRACTOR (PROVIDED BY FPC, WIRED BY EC)

CM — CONTROL ZONE ADDRESSABLE MODULE.

MM — INDIVIDUAL ADDRESSABLE MODULE.

DD — DUCT TYPE SMOKE DETECTOR. MOUNTING LOCATION SHALL BE COORDINATED WITH THE HC. REFER TO DETAIL 8/E204 FOR REQUIREMENTS.

NOMENCLATURE:
- 'AHU-X' DENOTES DETECTOR FOR DESIGNATED AIR HANDLING UNIT.

3

AUDIO/VISUAL SYSTEMS

REFER TO SPECIFICATION SECTION 274115 AND SHEET E205.
REFER TO DETAIL 2/E204 FOR TYPICAL WALL-MOUNT ROUGH-IN REQUIREMENTS.

CEILING MTD | FLOOR MTD | WALL MTD

VC — PAGING SYSTEM VOLUME CONTROL, MOUNT 48" AFF TO TOP OF BOX UNO

X# — SPEAKER/HORN, FOR WALL MOUNTED DEVICES, LOCATE 1'-0" BELOW CEILING UNO - 'A', 'R', ETC. DENOTES SPEAKER TYPE. REFER TO SPEAKER SCHEDULE FOR DETAILS.

NOMENCLATURE:
NUMBER DENOTES AV DEVICE NUMBER
LETTER DENOTES SYSTEM THE DEVICE IS ASSOCIATED WITH. REFER TO AV SYSTEM NOMENCLATURE FOR ADDITIONAL DEFINITIONS.
- 'A' DENOTES GATHERING ROOM
- 'R' DENOTES LOCAL TWO-WAY RADIO SYSTEM

1:00 T1 — DIGITAL CLOCK, MOUNT 1'-0" BELOW CEILING UNO - 'T1', 'T2', ETC. DENOTES CLOCK TYPE. REFER TO CLOCK SCHEDULE FOR ADDITIONAL INFORMATION.

AV.X# — AUDIO/VIDEO DEVICE, MOUNT 18" AFF UNO - 'AV1', 'AV2', ETC. DENOTES IDENTIFICATION. REFER TO DETAIL 3/E205 FOR ROUGH-IN REQUIREMENTS AND AV DEVICE SCHEDULE FOR ADDITIONAL DETAILS.

NOMENCLATURE:
NUMBER DENOTES AV DEVICE NUMBER
LETTER DENOTES AV SYSTEM THE DEVICE IS ASSOCIATED WITH:
- 'A' DENOTES GATHERING ROOM

INTEGRATED SECURITY SYSTEM

REFER TO DIVISION 28 SPECIFICATION SECTIONS AND SHEET E206.
REFER TO DETAIL 2/E204 FOR TYPICAL WALL-MOUNT ROUGH-IN REQUIREMENTS.

CR — CARD READER, MOUNT 48" AFF TO TOP OF BOX UNO

DR — DOOR RELEASE, WALL-MOUNTED ABOVE COUNTERTOP. REFER TO CODED NOTE FOR ADDITIONAL INFORMATION.

ACP — ACCESS CONTROL PANEL

SURVEILLANCE CAMERA. REFER TO SPECIFICATION SECTION 282300 AND CAMERA SCHEDULE TYPE DESCRIPTION AND REQUIREMENTS. TERMINATE CABLING WITH BISCUIT JACK. PROVIDE AN ADDITIONAL 20' OF CABLING COILED ABOVE ACCESSIBLE CEILING FOR CAMERA PLACEMENT. PROVIDE CAT6A PATCH CORD FOR FINAL CONNECTION. CAMERA SHALL BE AIMED PER OWNER'S PREFERENCE.

#1 — DENOTES CAMERA IDENTIFICATION NUMBER

MULTIDIRECTIONAL SURVEILLANCE CAMERA. REFER TO SPECIFICATION SECTION 282300 AND CAMERA SCHEDULE TYPE DESCRIPTION AND REQUIREMENTS. TERMINATE CABLING WITH BISCUIT JACK. PROVIDE AN ADDITIONAL 20' OF CABLING COILED ABOVE ACCESSIBLE CEILING FOR CAMERA PLACEMENT. PROVIDE CAT6A PATCH CORD FOR FINAL CONNECTION. CAMERA SHALL BE AIMED PER OWNER'S PREFERENCE.

NOMENCLATURE:
ABBREVIATION DENOTES SPECIAL CAMERA OPERATION
- 'BI' DENOTES BI-DIRECTIONAL TYPE CAMERA
- 'MS' DENOTES MULTI-SENSOR TYPE CAMERA

NUMBER DENOTES CAMERA IDENTIFICATION NUMBER

SECURITY DOOR TYPE
D1 — 'Dx' DENOTES DOOR TYPE. REFER TO DETAIL 1/E206 FOR DESCRIPTION AND REQUIREMENTS.
D001/1 — NUMBER DENOTES DOOR TAG (FROM ARCHITECTURAL DRAWINGS)

CELLULAR ANTENNA DISTRIBUTION SYSTEM

REFER TO SPECIFICATION SECTION 275319, SHEET E202 AND DETAIL 5/E206

DA — DONOR ANTENNA, WALL-MOUNTED ON EXTERIOR WALL

DAS — DISTRIBUTED SERVER ANTENNA, CEILING MOUNTED OR WALL MOUNTED AT 9'-0" AFF

CU — COVERAGE UNIT

EMERGENCY RESPONDER RADIO COVERAGE SYSTEM

REFER TO SPECIFICATION SECTION 261901 AND DETAIL 6/E204

ERA — UHF DISTRIBUTION ANTENNA, CEILING MOUNTED

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Project Number: 2024077

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — T STEFFANIE BAKO — PE-061041 — 10/01/2025

REVISIONS
3 10/27/2025 Addendum 3

BIDDING SET

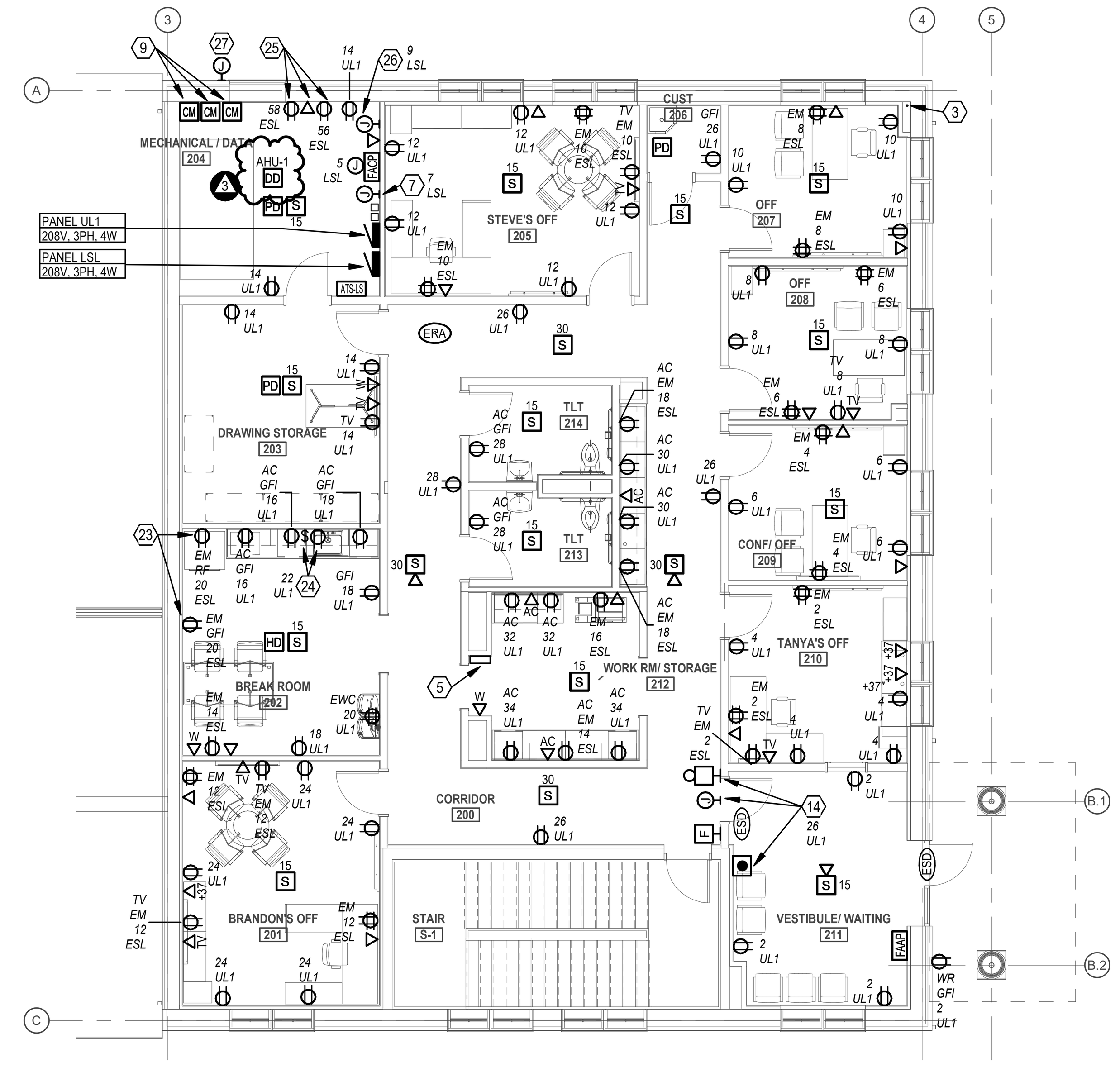
NEW DISTRICT MAINTENANCE & BUS DEPOT FACILITY

3600 OLD OAKDALE RD MCDONALD, PA 15057
SOUTH FAYETTE TOWNSHIP SCHOOL DISTRICT 3680 OLD OAKDALE RD MCDONALD, PA 15057

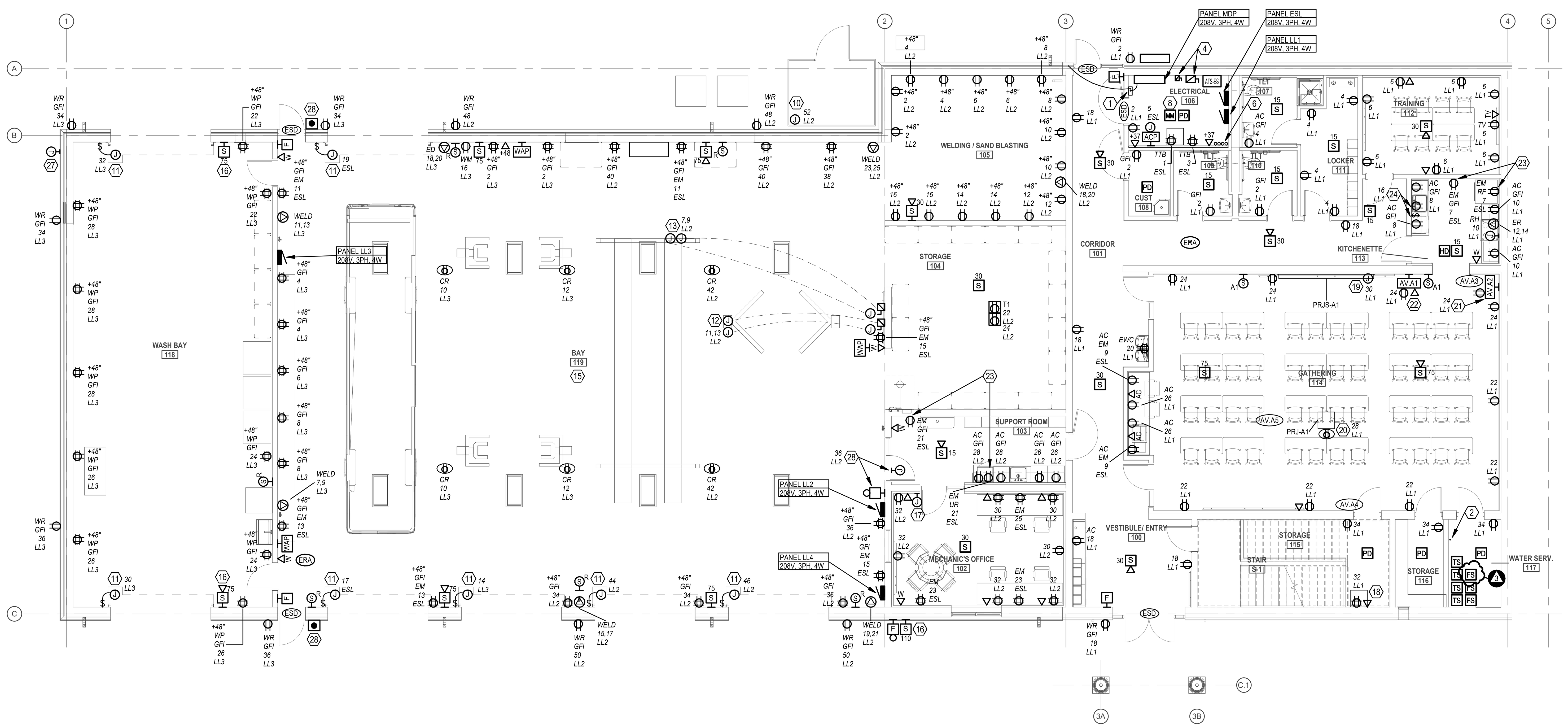
ELECTRICAL SYMBOL LEGEND & ABBREVIATIONS

Proj No. 24-S49-01B
Issue Date OCTOBER 1, 2025

E001



2 E201 UPPER LEVEL - POWER & SYSTEMS PLAN
SCALE: 1/8" = 1'-0"



1 E201 LOWER LEVEL - POWER & SYSTEMS PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES - POWER & SYSTEMS PLAN

A. PROVIDE LABEL ON BACK OF FACEPLATE OF ALL ELECTRICAL DEVICES INDICATING PANELBOARD OF ORIGIN AND CIRCUIT NUMBER.
B. WHERE A CEILING IS SCHEDULED TO BE EXPOSED TO STRUCTURE, ALL CABLING/WIRING SHALL BE INSTALLED IN CONDUIT. ALL CONDUIT AND DEVICES SHALL BE SECURED TO STRUCTURE TO PROVIDE A CLEAN, ORGANIZED APPEARANCE. EC TO PROVIDE PHYSICAL PROTECTION ON ANY EXPOSED DEVICES TO ALLOW FOR PAINTING OF EXPOSED STRUCTURE AND DECKING.
C. WHERE A CEILING IS SCHEDULED TO BE EXPOSED TO STRUCTURE, MOUNT FIRE ALARM STROBES/HORNS TO BOTTOM OF JOIST.
D. FOR ALL DEVICES FED FROM EMERGENCY PANELS, PROVIDE A RED DEVICE AND PROVIDE THE LABEL 'EMERGENCY POWER' ON FACEPLATE.
E. WHERE RECEPTACLES ARE BEING INSTALLED DIRECTLY ADJACENT TO TECHNOLOGY AND/OR AV WALL PLATES, MOUNT CENTER OF ALL DEVICES AT SAME ELEVATION AS INDICATED ON ELECTRICAL RECEPTACLE.
F. WHERE WIRELESS ACCESS POINTS AND/OR CAMERAS ARE WALL MOUNTED, INSTALL AT 12'-0" AFF UNO. PROVIDE 1" CONDUIT SLEEVE THROUGH WALL AND STUBBED INTO NEAREST ACCESSIBLE CEILING. WHERE LOCATED ON EXTERIOR WALL, SLOPE CONDUIT TOWARDS THE OUTSIDE TO AVOID WATER RUNNING INTO BUILDING THROUGH CONDUIT.

CODED NOTES - SHEET E201

1 PROVIDE COMMON GROUNDING BAR AND SERVICE GROUND CONNECTION TO BUILDING STEEL IN ACCORDANCE WITH DETAIL 4/E204.
2 PROVIDE SERVICE GROUND CONNECTION AT WATER SERVICE ENTRANCE IN ACCORDANCE WITH DETAIL 4/E204.
3 PROVIDE SERVICE GROUND CONNECTION AT GAS SERVICE ENTRANCE IN ACCORDANCE WITH DETAIL 4/E204.
4 PROVIDE WIREWAY AND DISCONNECT SWITCHES TO FEED ATS-LS AND ATS-ES. REFER TO SINGLE-LINE DIAGRAM ON SHEET E203 FOR ADDITIONAL INFORMATION.
5 LOCATION OF GENERATOR ANNUNCIATOR PANEL.
6 STUB (2) 4" CONDUITS FOR TELECOMMUNICATIONS UTLITY CABLING AND (2) 4" CONDUITS FOR SITE LOW VOLTAGE CABLING INTO ELECTRICAL 106.
7 PROVIDE CELLULAR DIALER FOR NEW FIRE ALARM SYSTEM MOUNTED ON WALL BESIDE FIRE ALARM CONTROL PANEL. PROVIDE POWER TO UNIT FROM DESIGNATED CIRCUIT.
8 PROVIDE FIRE ALARM CONNECTION AT SECURITY PANEL FOR DOOR RELEASE UPON ACTIVATION OF FIRE ALARM SYSTEM. COORDINATE EXACT CONNECTION REQUIREMENTS WITH OWNER.
9 PROVIDE FIRE ALARM CONNECTION TO BUILDING AUTOMATION SYSTEM. COORDINATION CONNECTION REQUIREMENTS WITH BUILDING AUTOMATION SYSTEM INSTALLER.
10 PROVIDE POWER TO AIR COMPRESSOR ENCLOSURE FOR LIGHT FIXTURE AND RECEPTACLE. LIGHT FIXTURE AND RECEPTACLE PROVIDED INTEGRAL WITH ENCLOSURE. ROUTE 2-#10 AND 1-#10 GROUND IN 1" CONDUIT FROM DESIGNATED PANELBOARD TO POWER CONNECTION POINT AT ENCLOSURE. COORDINATE EXACT POWER CONNECTION LOCATION AND CONNECTION REQUIREMENTS WITH INSTALLING CONTRACTOR.
11 PROVIDE POWER TO GARAGE DOOR FROM DESIGNATED CIRCUIT. INSTALL CONTROL SWITCH, FURNISHED WITH DOOR, AND INSTALL CONTROL WIRING AS RECOMMENDED BY DOOR MANUFACTURER. COORDINATE WITH INSTALLING CONTRACTOR.
12 PROVIDE POWER TO 2-POST LIFT FROM 60A/2P CIRCUIT BREAKER IN DESIGNATED PANELBOARD. PROVIDE 60A DISCONNECT SWITCH MOUNTED ON WALL BESIDE PANEL AT 48" AFF AND ROUTE CIRCUITING (2-#4 AND 1#10 GROUND IN 1-1/2" CONDUIT) THROUGH DISCONNECT SWITCH, BELOW FLOOR SLAB TO LIFT MOTOR. PROVIDE SECOND 1-1/2" CONDUIT ROUTED BELOW FLOOR SLAB AND STUBBED AT MOTOR LOCATION AND AT 3" AFF BELOW DISCONNECT SWITCH FOR FUTURE USE. PROVIDE PULL STRING IN CONDUIT. COORDINATE EXACT LOCATIONS, FUSE SIZE, AND FINAL CONNECTION REQUIREMENTS WITH INSTALLING CONTRACTOR.
13 PROVIDE POWER TO 4-POST LIFT FROM 60A/2P CIRCUIT BREAKER IN DESIGNATED PANELBOARD. PROVIDE 60A DISCONNECT SWITCH MOUNTED ON WALL BESIDE PANEL AT 48" AFF AND ROUTE CIRCUITING (2-#4 AND 1#10 GROUND IN 1-1/2" CONDUIT) THROUGH DISCONNECT SWITCH, BELOW FLOOR SLAB TO LIFT MOTOR. PROVIDE SECOND 1-1/2" CONDUIT ROUTED BELOW FLOOR SLAB AND STUBBED AT MOTOR LOCATION AND AT 3" AFF BELOW DISCONNECT SWITCH FOR FUTURE USE. PROVIDE PULL STRING IN CONDUIT. COORDINATE EXACT LOCATIONS, FUSE SIZE, AND FINAL CONNECTION REQUIREMENTS WITH INSTALLING CONTRACTOR.
14 PROVIDE WALL-MOUNTED DOOR CHIME AND PUSHBUTTON KIT, HONEYWELL MODEL RCW110KB OR EQUIVALENT, FOR UPPER LEVEL. PROVIDE 4" SQUARE JUNCTION BOX MOUNTED ON WALL ABOVE THE ACCESSIBLE CEILING FOR DOOR CHIME TRANSFORMER AND PROVIDE POWER CONNECTION TO TRANSFORMER. MOUNT CHIME AT 8'-0" AFF ABOVE CORRIDOR SIDE OF DOOR. MOUNT PUSHBUTTON AT 4'-0" AFF BESIDE DOOR AT VESTIBULE SIDE. PROVIDE ALL ACCESSORIES AND WIRING AS REQUIRED FOR A COMPLETE INSTALLATION.
15 COORDINATE EXACT LOCATION OF ALL CORD REELS IN FIELD TO AVOID CONFLICTS WITH LIGHTING, HVAC, SPRINKLERS, ETC.
16 PROVIDE WEATHERPROOF FIRE ALARM DEVICE AT THIS LOCATION.
17 PROVIDE TWO-GANG JUNCTION BOX RECESSED IN WALL AT 18"AFF. PROVIDE SPEAKER CABLING FROM THIS LOCATION TO EACH OF THE TYPE 'R' SPEAKERS SHOWN IN BAY 119 AND WASH BAY 118 (TOTAL OF 6 RUNS). PROVIDE 6' COIL OF CABLING AT EACH END FOR FINAL TERMINATION BY OWNER'S TWO-WAY RADIO SYSTEM INSTALLER.
18 RECEPTACLE AND DATA JACK FOR GATHERING ROOM AV SYSTEM RACK. COORDINATE EXACT LOCATION IN FIELD. REFER TO DETAIL 1/E205 FOR ADDITIONAL INFORMATION.
19 PROVIDE POWER TO RECESSED PROJECTION SCREEN FROM DESIGNATED CIRCUIT. SCREEN TO BE CONTROLLED THROUGH AV SYSTEM CONTROL PANEL. REFER TO DETAIL 1/E205 FOR ADDITIONAL INFORMATION.
20 PROVIDE HOSPITAL-GRADE RECEPTACLE MOUNTED IN FACE OF CEILING TILE FOR POWER TO CEILING-MOUNTED PROJECTOR. SUPPORT RECEPTACLE FROM STRUCTURE ABOVE. REFER TO DETAIL 1/E205 FOR ADDITIONAL INFORMATION.
21 PROVIDE TWO-GANG JUNCTION BOX AT THIS LOCATION. PROVIDE MOBILE DEVICE STATION WITH DUPLEX RECEPTACLE, USB-A, USB-C, WIRELESS CHARGING, AND DEVICE HOLDER, HUBBELL/BRYANT USBB1528AC OR EQUAL.
22 PROVIDE POWER TO AV DEVICE FACEPLATE FROM SAME CIRCUIT FEEDING RECEPTACLE.
23 CIRCUIT RECEPTACLE DOWNSTREAM OF GFCI PROTECTION IN ADJACENT RECEPTACLE.
24 PROVIDE SPLIT SWITCHED RECEPTACLE UNDER SINK FOR POWER TO GARBAGE DISPOSAL AND DISHWASHER. PROVIDE A 12/2 SO TYPE CORD WITH 20A RATED PLUG CONNECTED TO GARBAGE DISPOSAL, FURNISHED BY PC, AND PLUG INTO TOP RECEPTACLE. PROVIDE SWITCH ABOVE COUNTER ADJACENT TO SINK TO CONTROL TOP RECEPTACLE AND LABEL SWITCH 'GARBAGE DISPOSAL'. BOTTOM RECEPTACLE SHALL BE UNSWITCHED FOR CONSTANT POWER TO DISHWASHER.
25 PROVIDE RECEPTACLES AND DATA JACK AT 48" AFF FOR CONNECTION TO LIGHTING CONTROL SYSTEM GATEWAY AND WIRELESS EXTERIOR LIGHTING CONTROLLER.
26 PROVIDE VHF/UHF CHANNELIZED DIGITAL REPEATER AND ASSOCIATED EQUIPMENT FOR BI-DIRECTIONAL AMPLIFICATION (BDA) SYSTEM. PROVIDE POWER FROM DESIGNATED CIRCUIT. PROVIDE BDA SYSTEM WITH ALL ASSOCIATED ANTENNAS, CABLING, COUPLERS, ETC. FOR FULL BUILDING COVERAGE IN ACCORDANCE WITH SPECIFICATION SECTION 261901 AND DETAIL 6/E204. PROVIDE OUTDOOR UHF YAGI ANTENNA MOUNTED ON EXTERIOR WALL. PROVIDE FIVE FIRE ALARM CONTROL MODULES FOR SYSTEM MONITORING.
27 LOCATION OF ANTENNA FOR LOCAL TWO-WAY RADIO SYSTEM ANTENNA BY OWNER'S VENDOR/INSTALLER. PROVIDE 1" CONDUIT SLEEVE THROUGH WALL (SLOPE CONDUIT TOWARDS THE OUTSIDE OF BUILDING) FOR CABLING BY OWNER'S VENDOR. PROVIDE #6AWG GROUND WIRE CONNECTED TO BUILDING COUNTERPOISE LOOP SHOWN ON SHEET E002 AT ANTENNA LOCATION FOR FINAL CONNECTION TO ANTENNA BY OWNER'S INSTALLER. COORDINATE EXACT LOCATIONS IN FIELD.
28 PROVIDE WALL-MOUNTED DOOR CHIME AND PUSHBUTTON KIT, HONEYWELL MODEL RCW110KB OR EQUIVALENT, FOR LOWER LEVEL. PROVIDE 4" SQUARE JUNCTION BOX MOUNTED ON WALL ABOVE THE ACCESSIBLE CEILING FOR DOOR CHIME TRANSFORMER AND PROVIDE POWER CONNECTION TO TRANSFORMER. MOUNT CHIME AT 8'-0" AFF IN BAY 119. MOUNT ASSOCIATED PUSHBUTTONS AT 4'-0" AFF BESIDE MAN DOORS INTO BAY 119. PROVIDE ALL ACCESSORIES AND WIRING AS REQUIRED FOR A COMPLETE INSTALLATION.

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TOWER ENGINEERING
Project Number: 2024077

REVISIONS
3 10/27/2025 Addendum 3

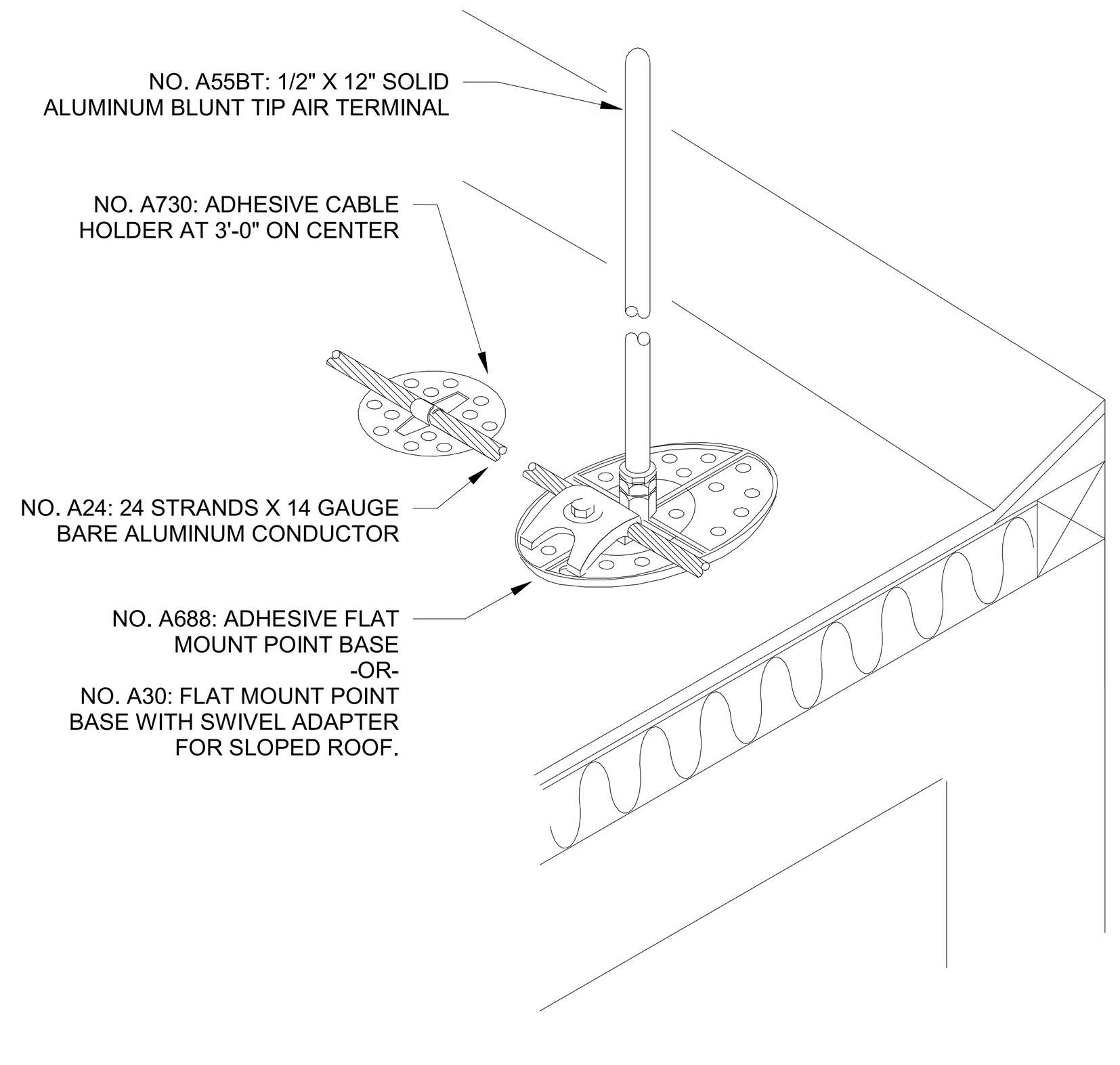
BIDDING SET

NEW DISTRICT MAINTENANCE & BUS DEPOT FACILITY
3600 OLD OAKDALE RD MCDONALD, PA 15057
SOUTH FAYETTE TOWNSHIP SCHOOL DISTRICT 3600 OLD OAKDALE RD

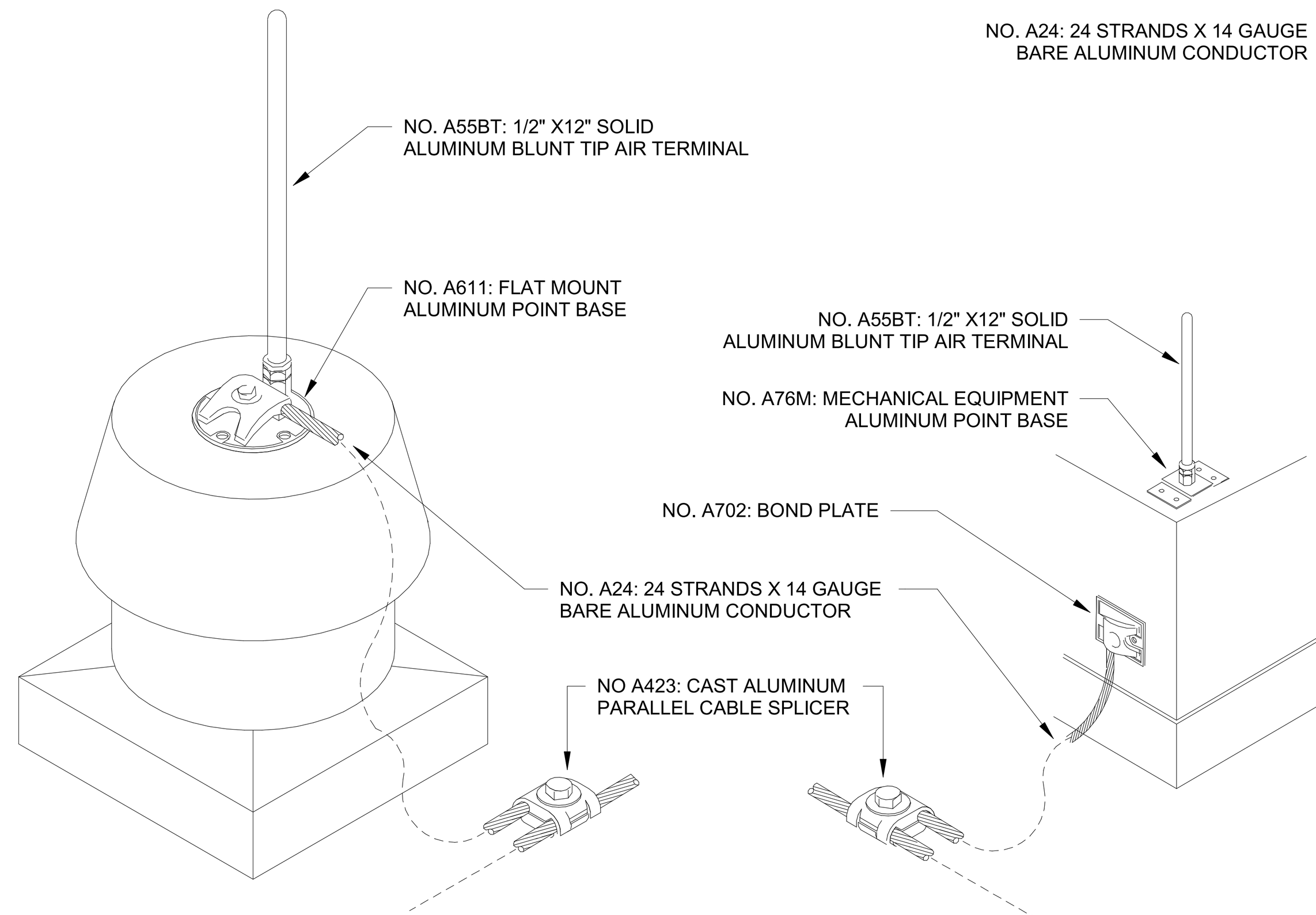
POWER, FIRE ALARM, AV & DATA ROUGH-IN PLANS

Proj No. 24-S49-01B
Issue Date OCTOBER 1, 2025

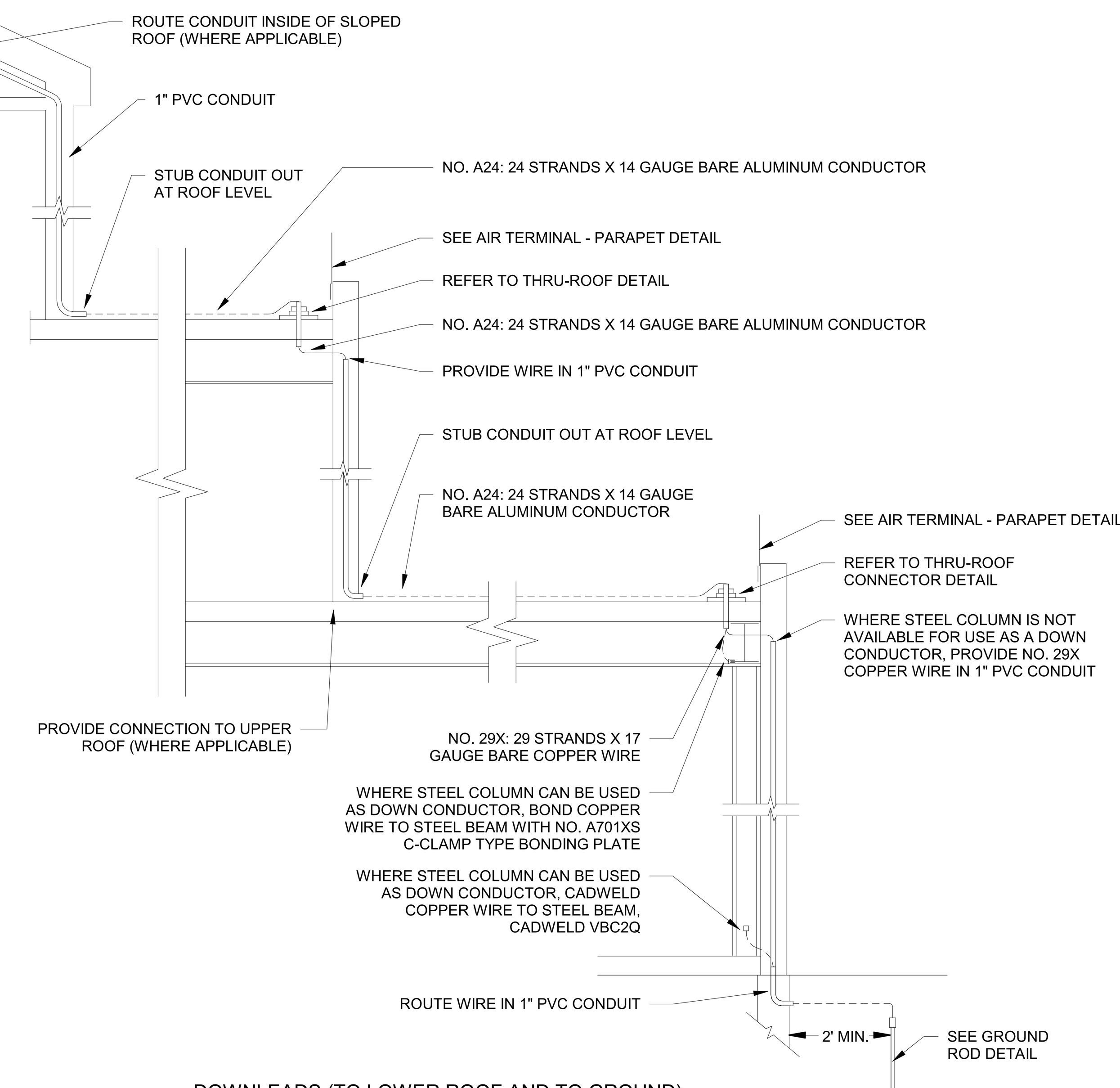
E201



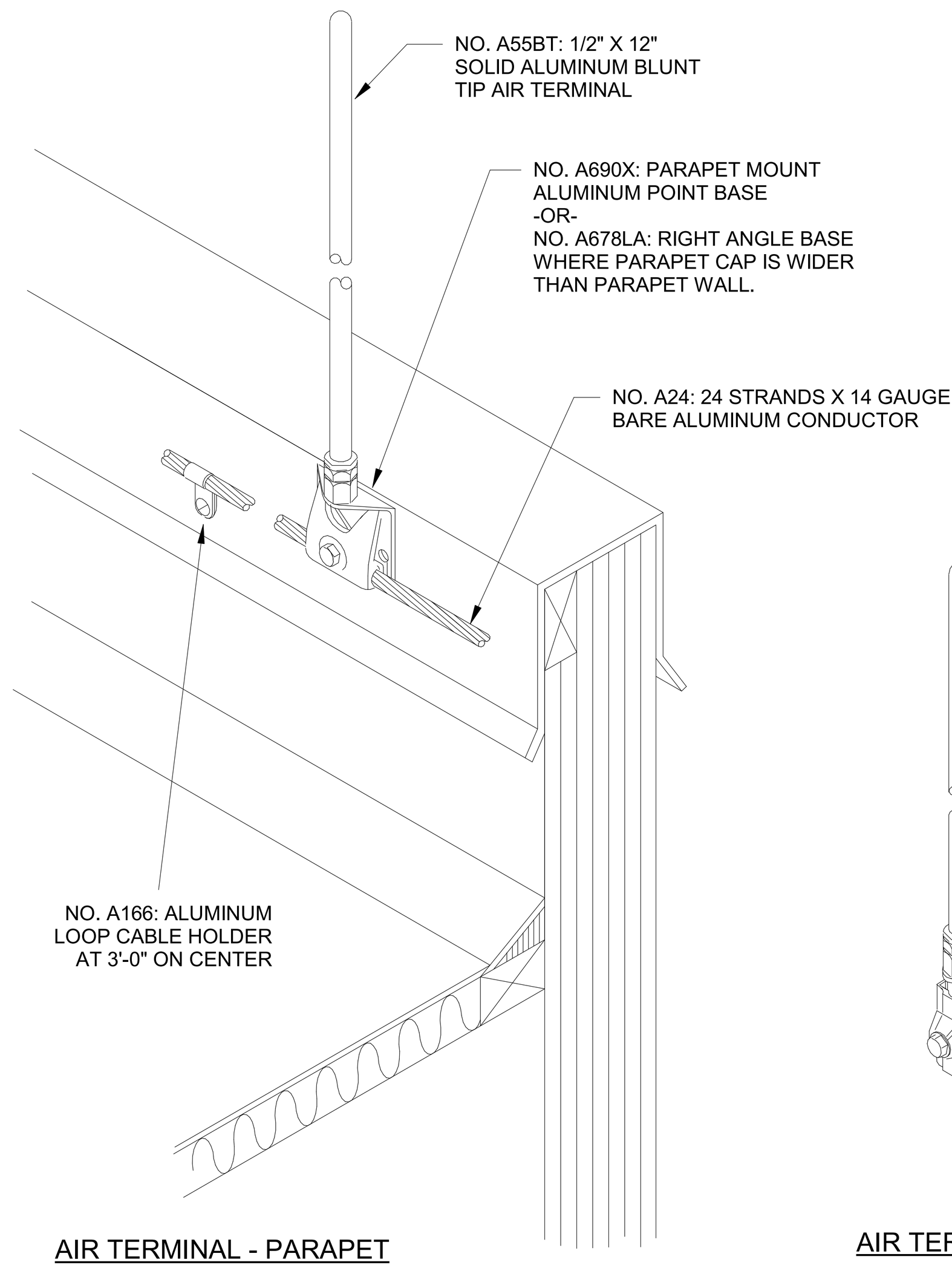
AIR TERMINAL - ROOF EDGE (NO PARAPET), FLAT ROOF, SLOPED ROOF



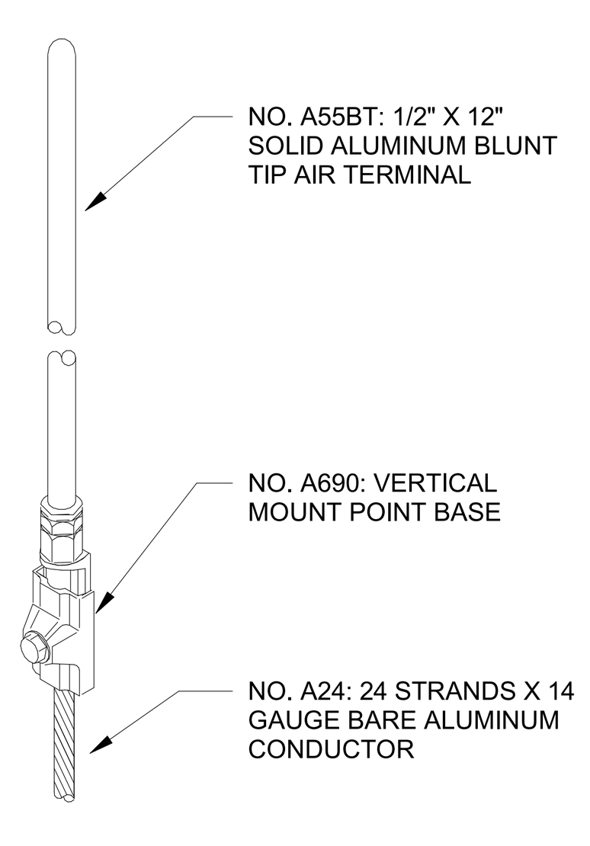
HVAC EQUIPMENT BONDING



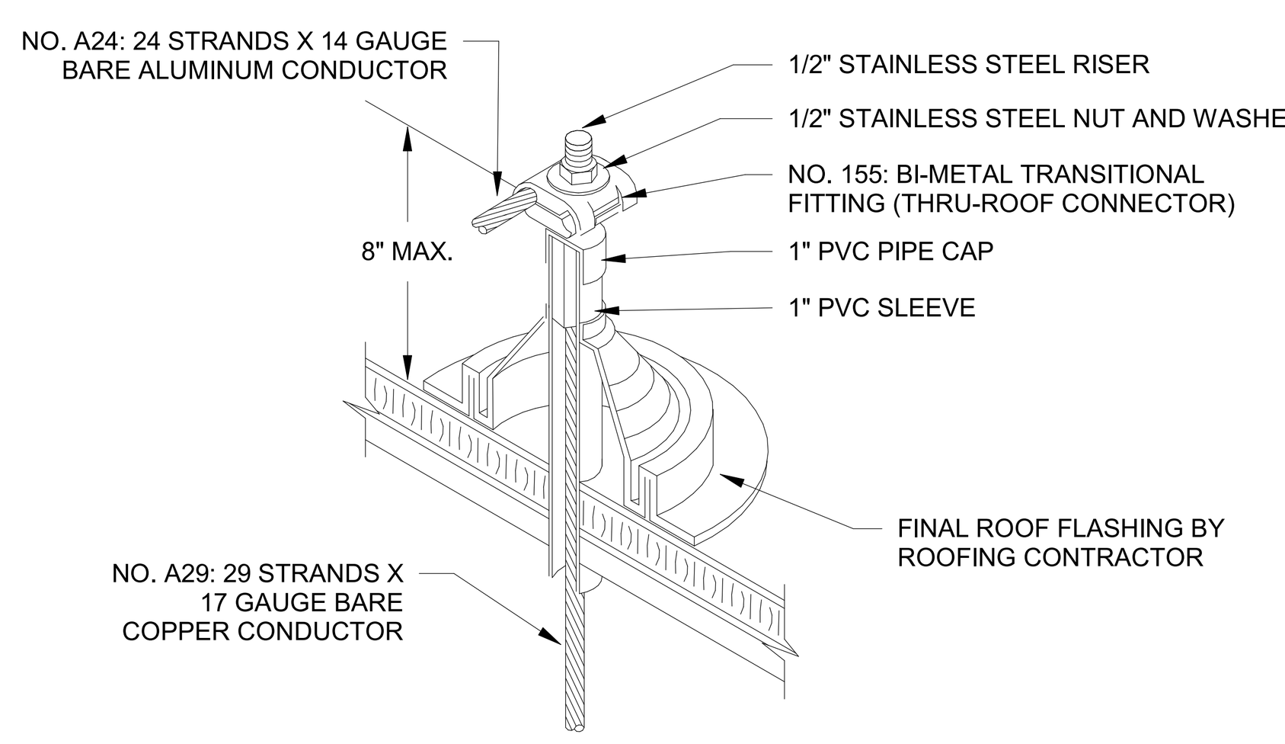
DOWNLEADS (TO LOWER ROOF AND TO GROUND)



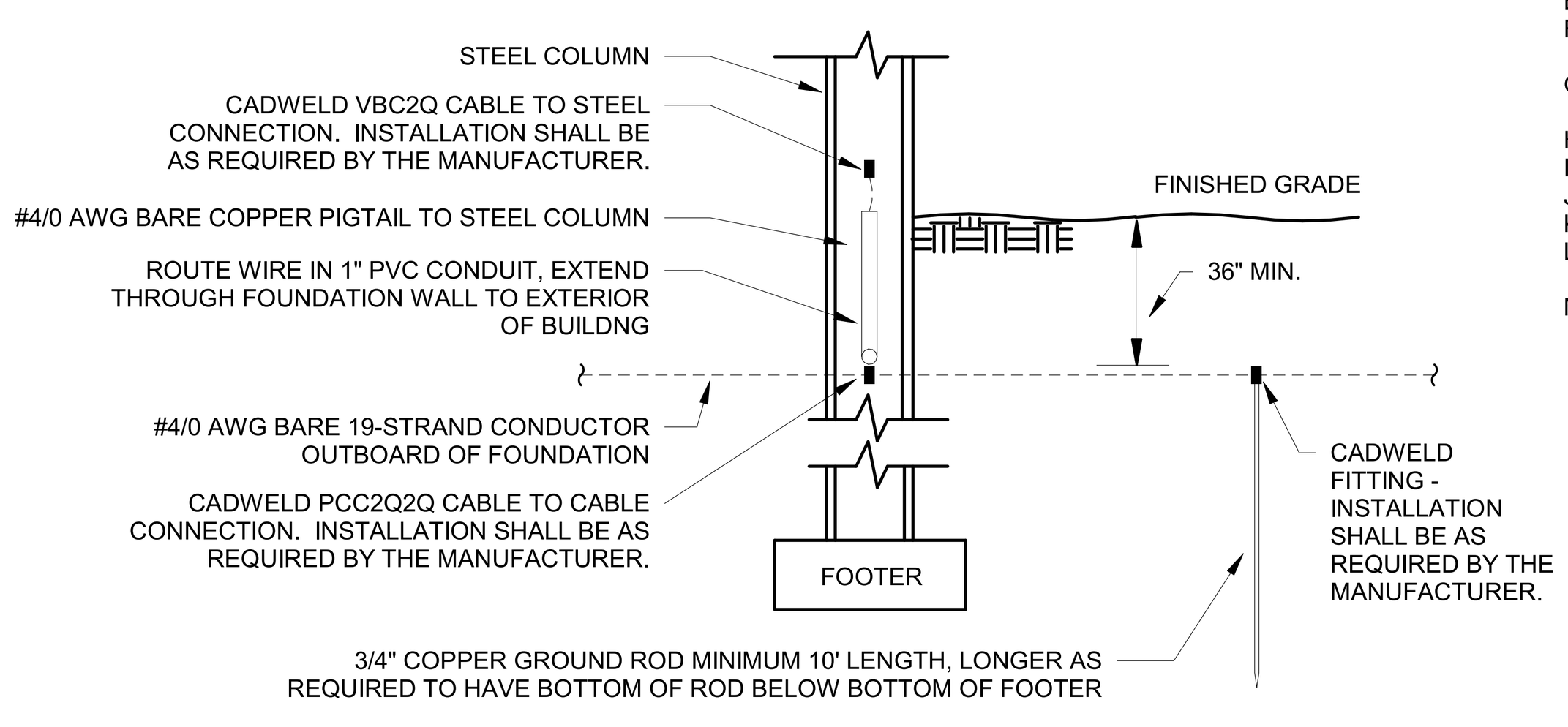
AIR TERMINAL - PARAPET



AIR TERMINAL - VENT PIPE



THROUGH-ROOF CONNECTOR

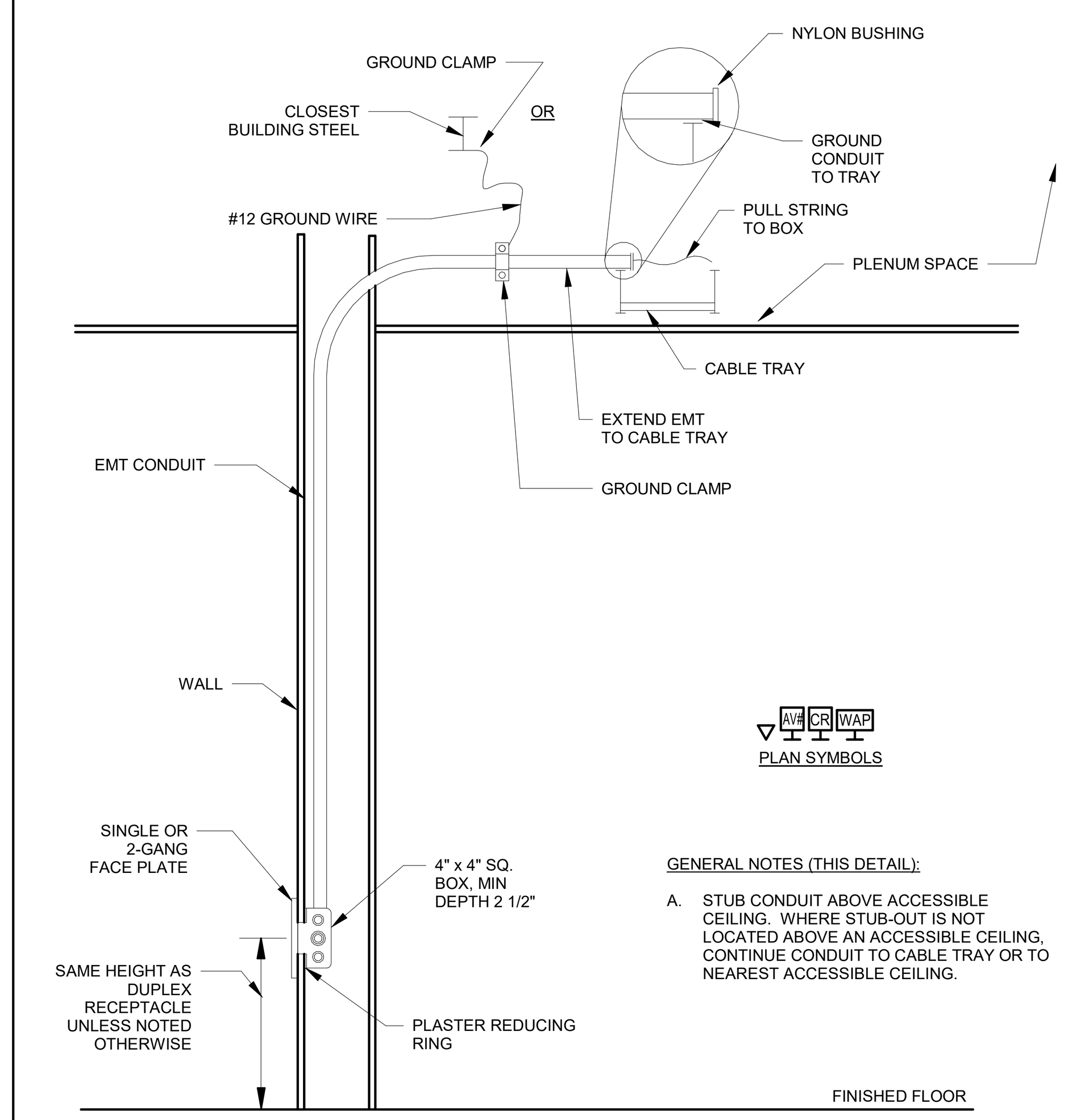


GROUND ROD AND LOOP

GENERAL NOTES - LIGHTNING PROTECTION SYSTEM

A. PROVIDE LIGHTNING PROTECTION SYSTEM FOR ENTIRE BUILDING IN ACCORDANCE WITH SPECIFICATION SECTION 264113.
B. ALL MODEL NUMBERS SHOWN ARE BASED ON THOMPSON LIGHTNING PROTECTION INC. REFER TO SPECIFICATION FOR ACCEPTABLE ALTERNATE MANUFACTURERS.
C. ALL MATERIAL TO BE UL APPROVED WITH LABELS ON CONDUCTORS AT 10'-0" INTERVALS AND LABELS ON ALL AIR TERMINALS.
D. MAINTAIN HORIZONTAL OR DOWNWARD COURSING OF MAIN CONDUCTOR AND ENSURE THAT ALL BENDS HAVE AT LEAST AN 8" RADIUS AND DO NOT EXCEED 90 DEGREES.
E. ATTACH ALL EXPOSED ROOF, DOWN LEAD AND BONDING CABLES AT 3'-0" ON CENTER MAXIMUM.
F. INSTALLATION IS BASED UPON ALL ROOF-MOUNTED LIGHTNING PROTECTION EQUIPMENT BEING ADHERED DIRECTORY TO ROOF SURFACE. VERIFY COMPATIBILITY OF ADHESIVE ON MEMBRANE ROOF APPLICATIONS WITH ROOFING INSTALLER PRIOR TO INSTALLATION.
G. LIGHTNING PROTECTION COMPONENT MATERIALS SHALL BE GALVANICALLY COMPATIBLE WITH METAL COPING. VERIFY WITH ARCHITECT. SEAL METAL COPING PENETRATIONS WITH SILICONE SEALANT.
H. BOND TO WATER SERVICE AND OTHER PIPING SYSTEMS AS SHOWN AND AS REQUIRED BY CODES.
I. INTERCONNECT LIGHTNING PROTECTION GROUND TO ELECTRIC, TELEPHONE, AND OTHER BUILDING GROUND SYSTEMS AS SHOWN OR AS REQUIRED BY CODE.
J. "AS -BUILT" DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH CERTIFICATION PROCEDURES.
K. COMPLETED INSTALLATION AS SHOWN SHALL BEAR UL MASTER LABEL, SECURED BY SYSTEM INSTALLER PER UL96A.
L. INSTALLATION SHALL COMPLY IN ALL RESPECTS TO LPI CODE 175. INSTALLATION SHALL BE MADE BY OR UNDER THE SUPERVISION OF AN LPI CERTIFIED MASTER INSTALLER. COMPLETED INSTALLATION TO RECEIVE SYSTEM CERTIFICATION INCLUDING SUBMITTAL OF FORM LPI-1-R91.
M. AT A MINIMUM, THE COMPLETE LIGHTNING PROTECTION SYSTEM SHALL INCLUDE THE FOLLOWING:
   1. AIR TERMINALS LOCATED ALONG THE PARAPET WALLS AND ROOF RIDGES. AIR TEMINALS SHALL BE LOCATED A MAXIMUM OF 20'-0" ON CENTER AND WITHIN 2'-0" OF OUTSIDE BUILDING EDGE, OUTSIDE CORNERS, AND RIDGE ENDS. INSTALL WITH A MINIMUM PROJECTION OF 10" ABOVE OBJECT PROTECTED. PROVIDE 24 STRAND, 14 GAUGE BARE ALUMINUM CONDUCTOR ROUTED CONTINOUSLY ALONG THE PARAPET WALL OR ROOF RIDGE, THROUGH EACH AIR TERMINAL MOUNTING PLATE.
   2. PROVIDE 24 STRAND, 14 GAUGE BARE ALUMINUM CONDUCTOR ACROSS LONGEST DIMENSION OF FLAT ROOF(S). PROVIDE ADHESIVE PADS TO SECURE CABLING TO ROOF. PROVIDE AIR TERMINALS LOCATED EVERY 20'-0" ALONG LENGTH OF CONDUCTOR AND ROUTE CONDUCTOR THROUGH EACH AIR TERMINAL MOUNTING PLATE.
   3. AIR TERMINALS ON ALL VENT PIPING.
   4. BOND ALL ROOF-MOUNTED MECHANICAL EQUIPMENT. LIGHTNING PROTECTION SYSTEM MATERIALS AT MECHANICAL EQUIPMENT MUST BE ALUMINUM TO ENSURE ELECTROLYTIC COMPATIBILITY AND CODE COMPLIANCE.
   5. PROVIDE DOWNLEADS BETWEEN DIFFERENT ROOF ELEVATIONS AND DOWNLEADS TO GROUND. PROVIDE PENETRATIONS THROUGH ROOF FOR LIGHTNING PROTECTION CABLE. WHERE APPLICABLE, BOND CABLE TO BUILDING STEEL BELOW ROOF .
   6. GROUND RODS AND GROUND LOOP. ALL GROUNDING CABLES SHALL BE #4/0 CONCENTRIC STRAND COPPER, 19 STRAND. HOLES SHALL BE CORE DRILLED THROUGH ROCK TO INSTALL GROUND RODS IF REQUIRED. WHERE OVER 10' IN LENGTH, GROUND RODS SHALL BE SECTIONAL TYPE.

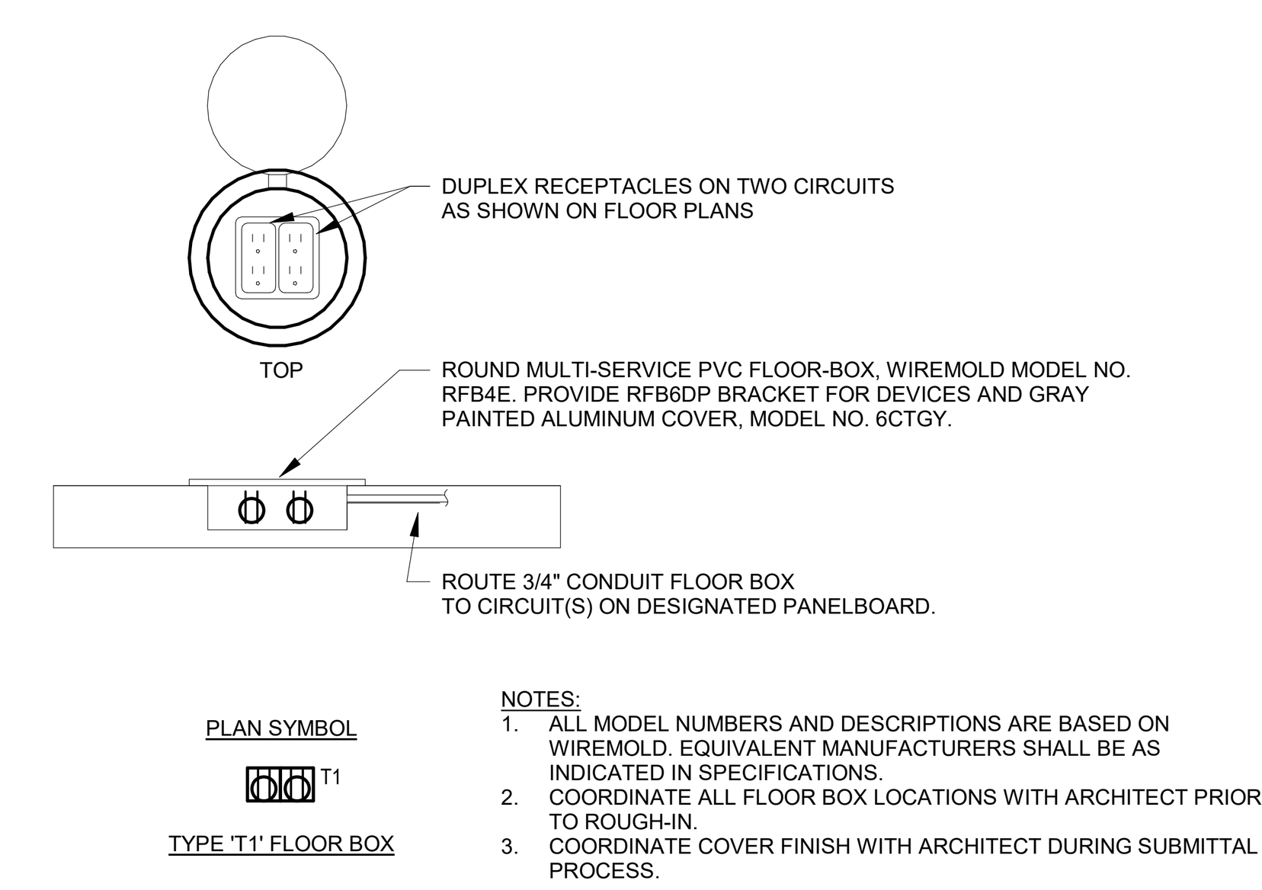
1 LIGHTNING PROTECTION DETAILS
NOT TO SCALE



GENERAL NOTES (THIS DETAIL):

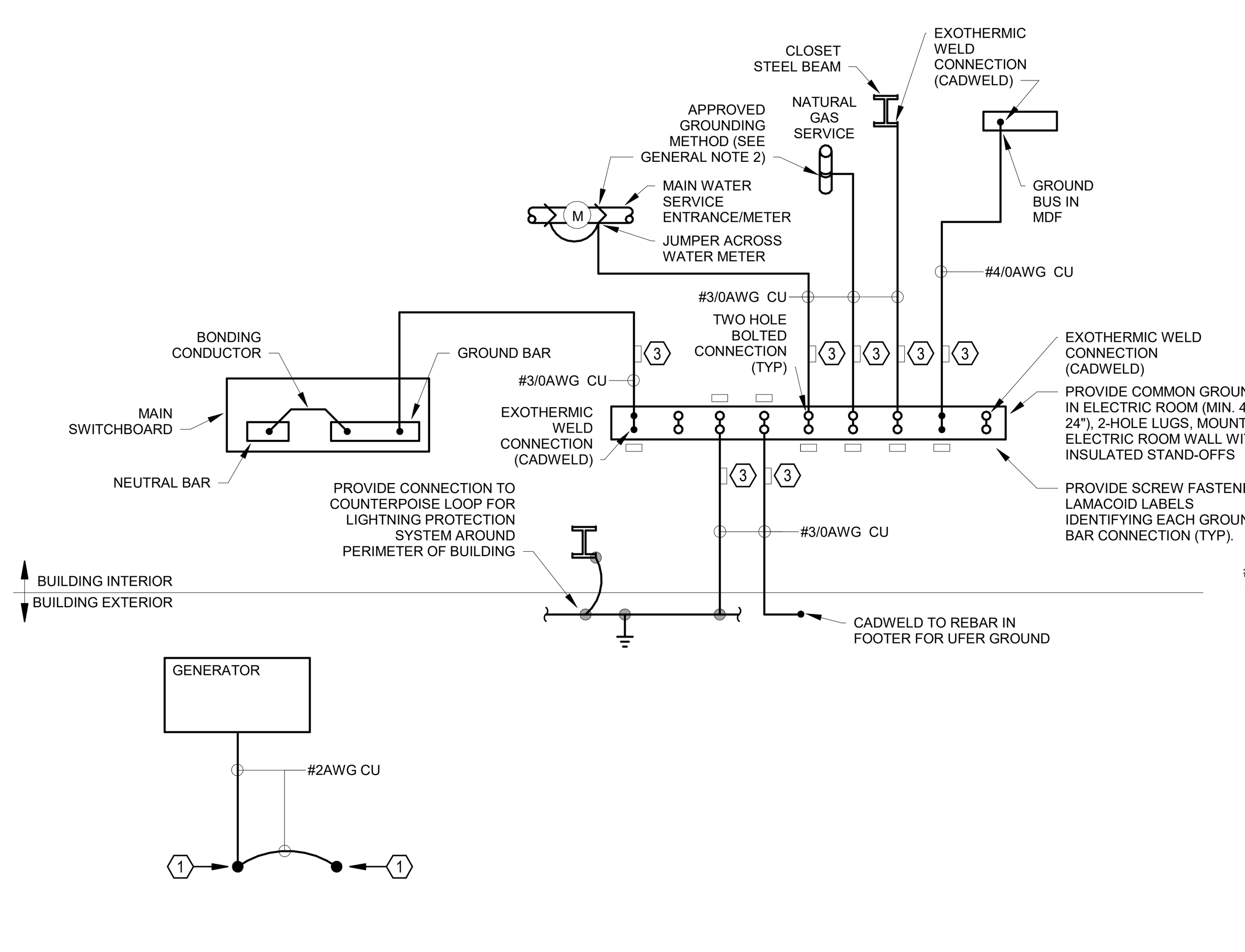
A. STUB CONDUIT ABOVE ACCESSIBLE CEILING. WHERE STUB-OUT IS NOT LOCATED ABOVE AN ACCESSIBLE CEILING, CONTINUE CONDUIT TO CABLE TRAY OR TO NEAREST ACCESSIBLE CEILING.

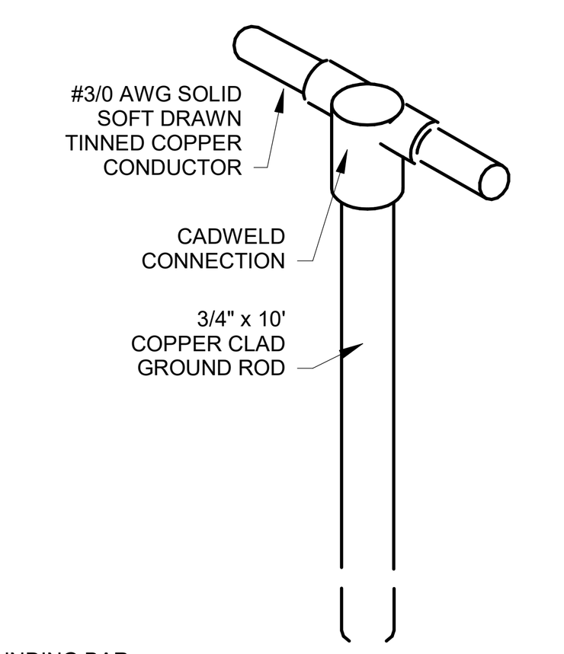
2 VOICE/DATA OUTLET ROUGH-IN REQUIREMENTS
NOT TO SCALE



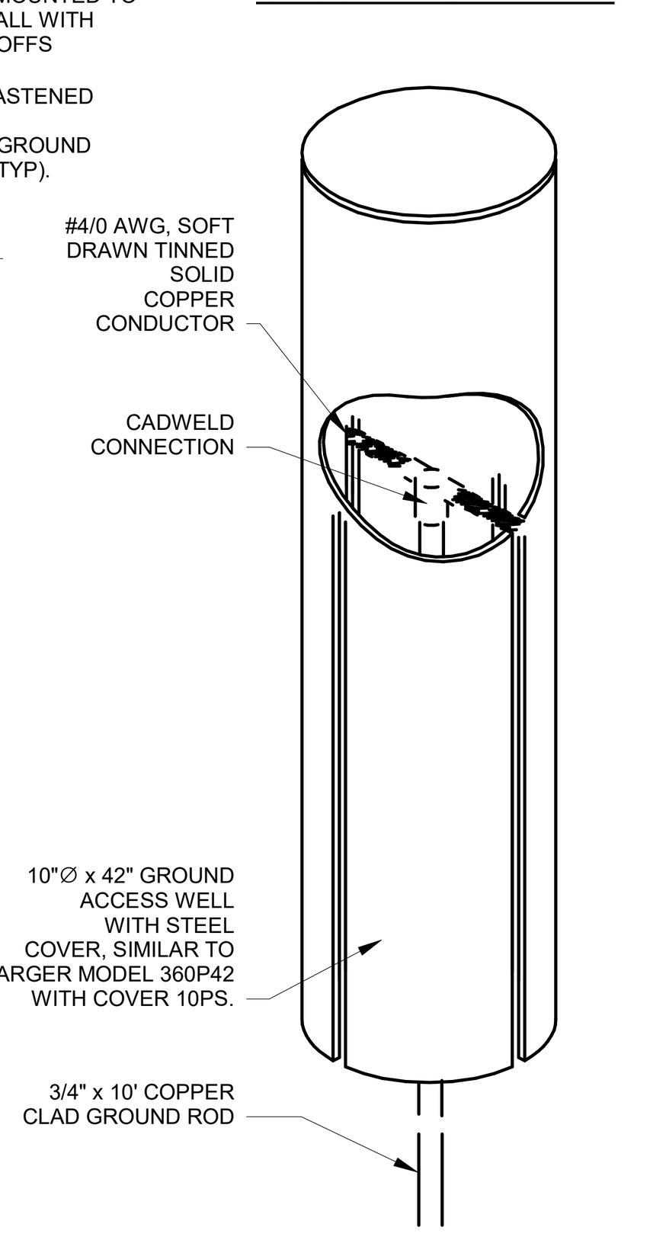
NOTES:
1. ALL MODEL NUMBERS AND DESCRIPTIONS ARE BASED ON WIREMOLD. EQUIVALENT MANUFACTURERS SHALL BE AS INDICATED IN SPECIFICATIONS.
2. COORDINATE ALL FLOOR BOX LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.
3. COORDINATE COVER FINISH WITH ARCHITECT DURING SUBMITTAL PROCESS.

3 FLOOR OUTLET TYPES
NOT TO SCALE





GROUND ROD DETAIL



GROUND ROD ACCESS WELL DETAIL

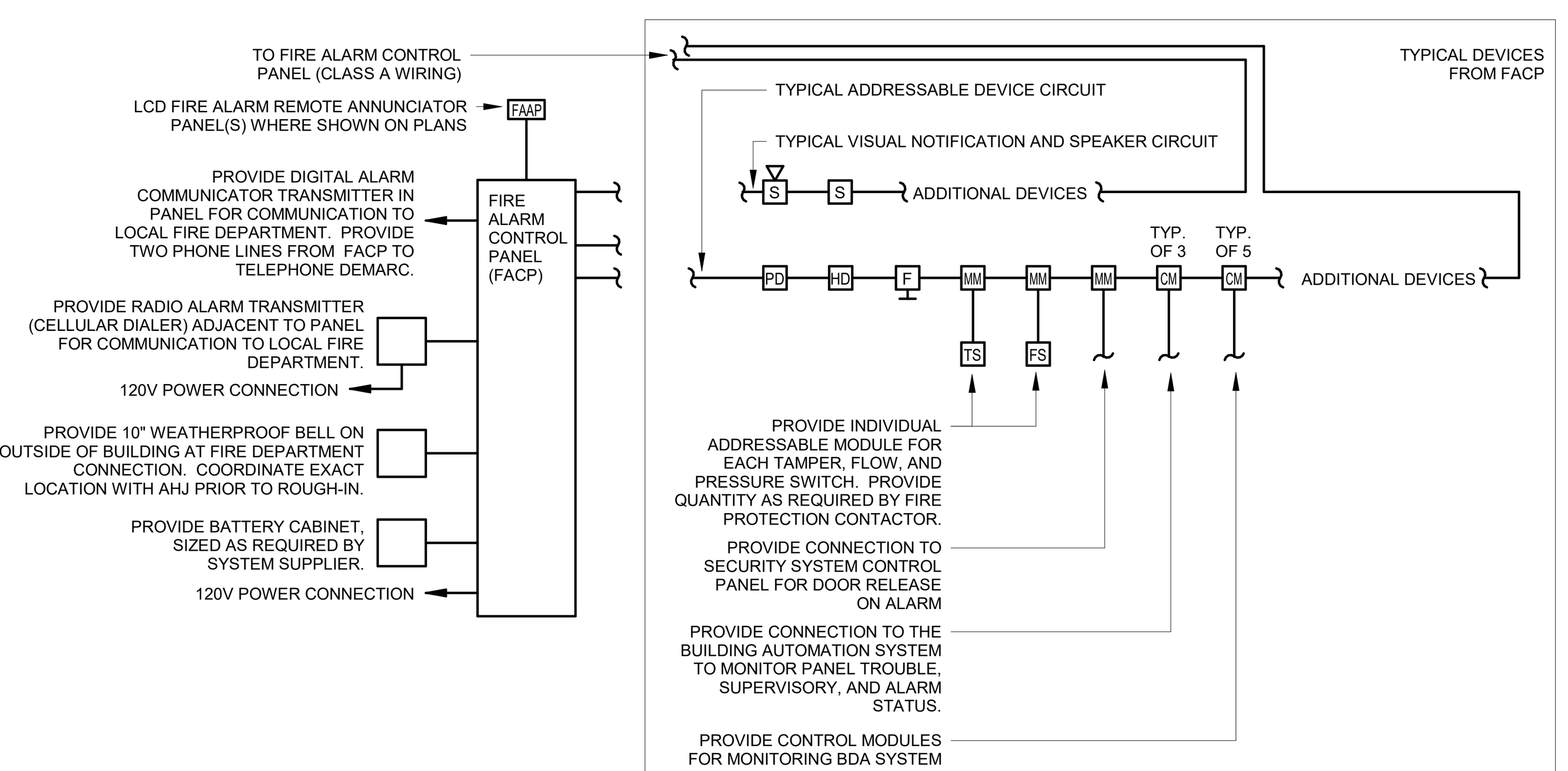
GENERAL NOTES: (GROUNDING DETAIL)

A. ALL WIRE SHALL BE COPPER.
B. PROVIDE A MINIMUM OF 10'-0" SEPARATION BETWEEN DRIVEN GROUND RODS.
C. A GROUNDING JUMPER SHALL BE PROVIDED AROUND THE WATER OR GAS METER AND BACKFLOW PREVENTER.
D. PVC CONDUIT IS THE PREFERRED METHOD OF PROTECTION FOR THE GROUNDING CONDUCTORS.

CODED NOTES: (GROUNDING DETAIL)

1. PROVIDE DRIVEN GROUNDS RODS AND CADWELD CONNECTION IN ACCORDANCE WITH SECTION 260526 OF THE SPECIFICATION.
2. PROVIDE A HAND HOLE AT THE LOCATION OF THIS GROUND ROD TO SERVE AS A TEST WELL.
3. PROVIDE ENGRAVED NAMEPLATE ON ALL GROUND CABLE CONNECTIONS AT THE BUS BAR AND AFFIX WITH WIRE TIES.

4 SERVICE GROUNDING REQUIREMENTS
NOT TO SCALE

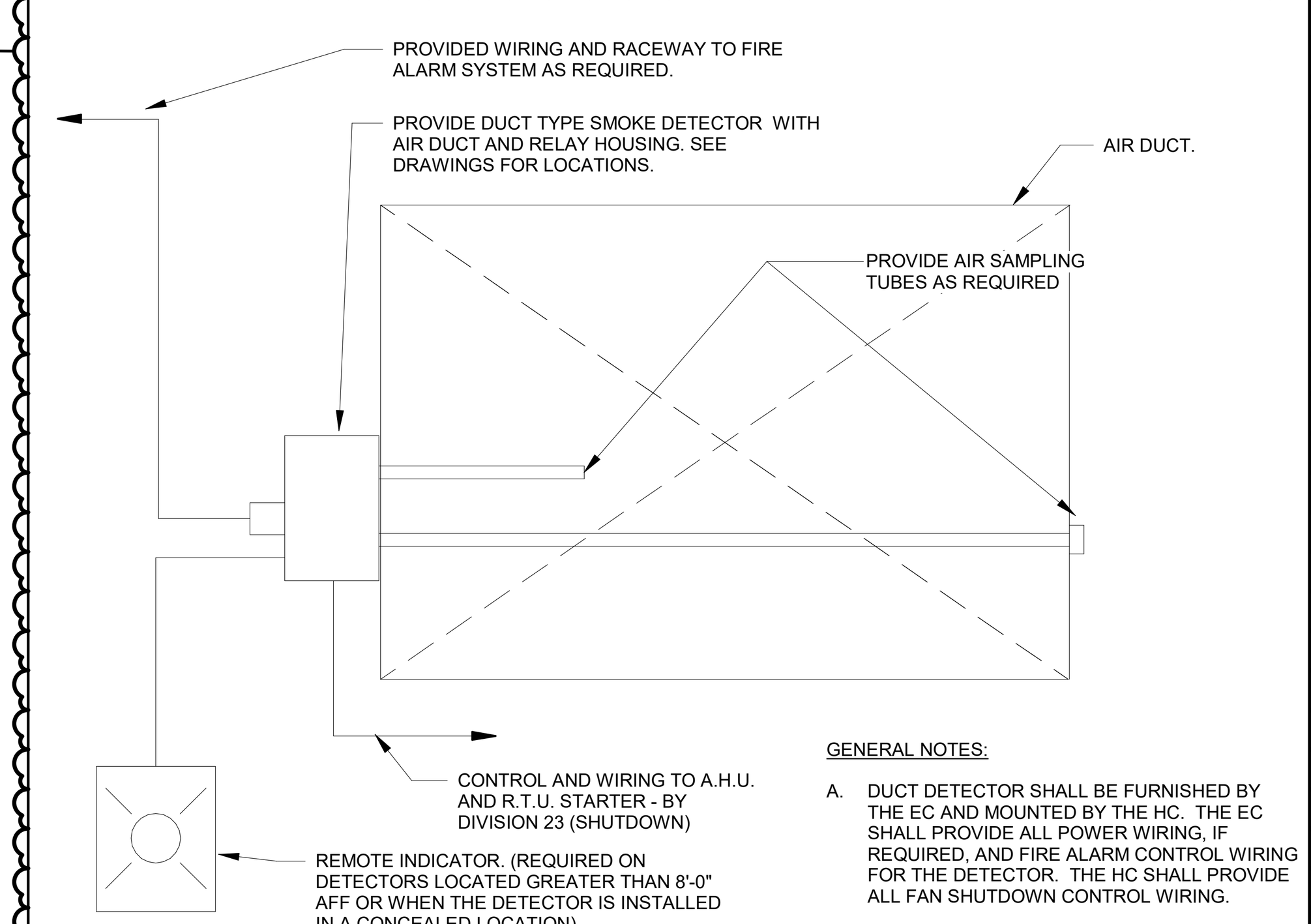


GENERAL NOTES:

1. THIS RISER IS A REPRESENTATION AND IS NOT INTENDED FOR INSTALLATION. SYSTEM SUPPLIER SHALL PROVIDE INSTALLATION DRAWINGS AND WIRING DIAGRAMS TO SHOW THE EXACT SYSTEM REQUIREMENTS.
2. SYSTEM SUPPLIER SHALL SUPERVISE INSTALLATION, PROGRAM SYSTEM, TEST SYSTEM, AND INSTRUCT OWNER ON SYSTEM OPERATION.
3. PROVIDE PROGRAMMING TO IDENTIFY ALL DEVICE LOCATIONS WITHIN SYSTEM BASED ON ACTUAL BUILDING AREA DESCRIPTIONS (FOR EXAMPLE, 'CORRIDOR A'). COORDINATE IDENTIFICATION SCHEME WITH OWNER DURING CONSTRUCTION.
4. REFER TO SPECIFICATION SECTION 261900 FOR ADDITIONAL REQUIREMENTS.
5. REFER TO DRAWINGS FOR DEVICE QUANTITIES AND LOCATIONS.
6. ALL 120V POWER CONNECTIONS TO BE 2-#10 AND 1-#10 GROUND IN 3/4" CONDUIT. PROVIDE 20A/1P LOCK-ON CIRCUIT BREAKER(S) WITH RED MARKING FOR ALL FIRE ALARM CIRCUITS.
7. ALL CONTROL CABINETS SHALL BE GROUNDED PER N.E.C. REQUIREMENTS AND PER SPECIFICATIONS.
8. THE FIRE ALARM SYSTEM SHALL COMPLY WITH THE ZONING REQUIREMENTS OF THE NFPA. ALL INITIATING DEVICES SHALL INDIVIDUALLY REPORT TO THE FIRE ALARM CONTROL PANEL FOR SEPARATE ANNUNCIATION.
9. COORDINATE TIE-IN REQUIREMENTS WITH LOCAL FIRE DEPARTMENT OR MONITORING AGENCY.
10. PROVIDE ALL ADDITIONAL CONTROL MODULES AND/OR MONITORING MODULES AS RECOMMENDED BY THE SYSTEM SUPPLIER
11. PROVIDE ALL WIRING BETWEEN DEVICES AND CONTROL PANEL/POWER EXTENDER PANEL(S) AS REQUIRED BY THE SYSTEM SUPPLIER.
12. WHERE ROUTED CONCEALED ABOVE CEILINGS, PROVIDE PLENUM-RATED FIRE ALARM CABLE WITH PREMIUM-GRADE RED PVC JACKET, TYPE FPLR FOR RISER APPLICATION AND TYPE FPLP FOR GENERAL APPLICATION.
13. WHERE ROUTED EXPOSED, ALL CABLING SHALL BE ROUTED IN 3/4" EMT CONDUIT, FACTORY PAINTED RED.
14. MINIMUM WIRE SIZE TO BE 18AWG OR LARGER WHERE REQUIRED BY SYSTEM SUPPLIER.

5 FIRE ALARM SYSTEM RISER
NOT TO SCALE

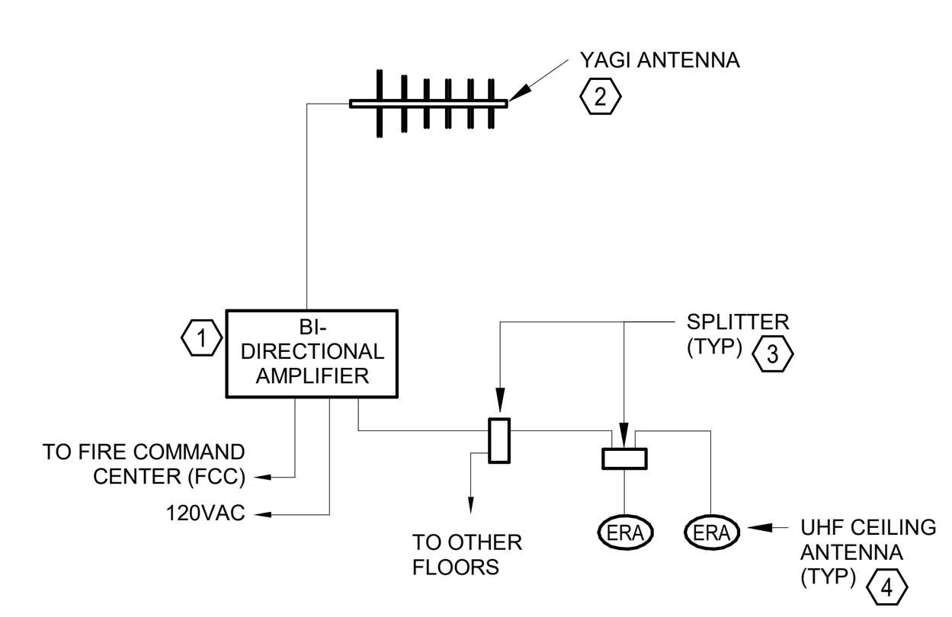
3



GENERAL NOTES:

A. DUCT DETECTOR SHALL BE FURNISHED BY THE EC AND MOUNTED BY THE HC. THE EC SHALL PROVIDE ALL POWER WIRING, IF REQUIRED, AND FIRE ALARM CONTROL WIRING FOR THE DETECTOR. THE HC SHALL PROVIDE ALL FAN SHUTDOWN CONTROL WIRING.

8 TYPICAL DUCT SMOKE DETECTOR INSTALLATION
NOT TO SCALE



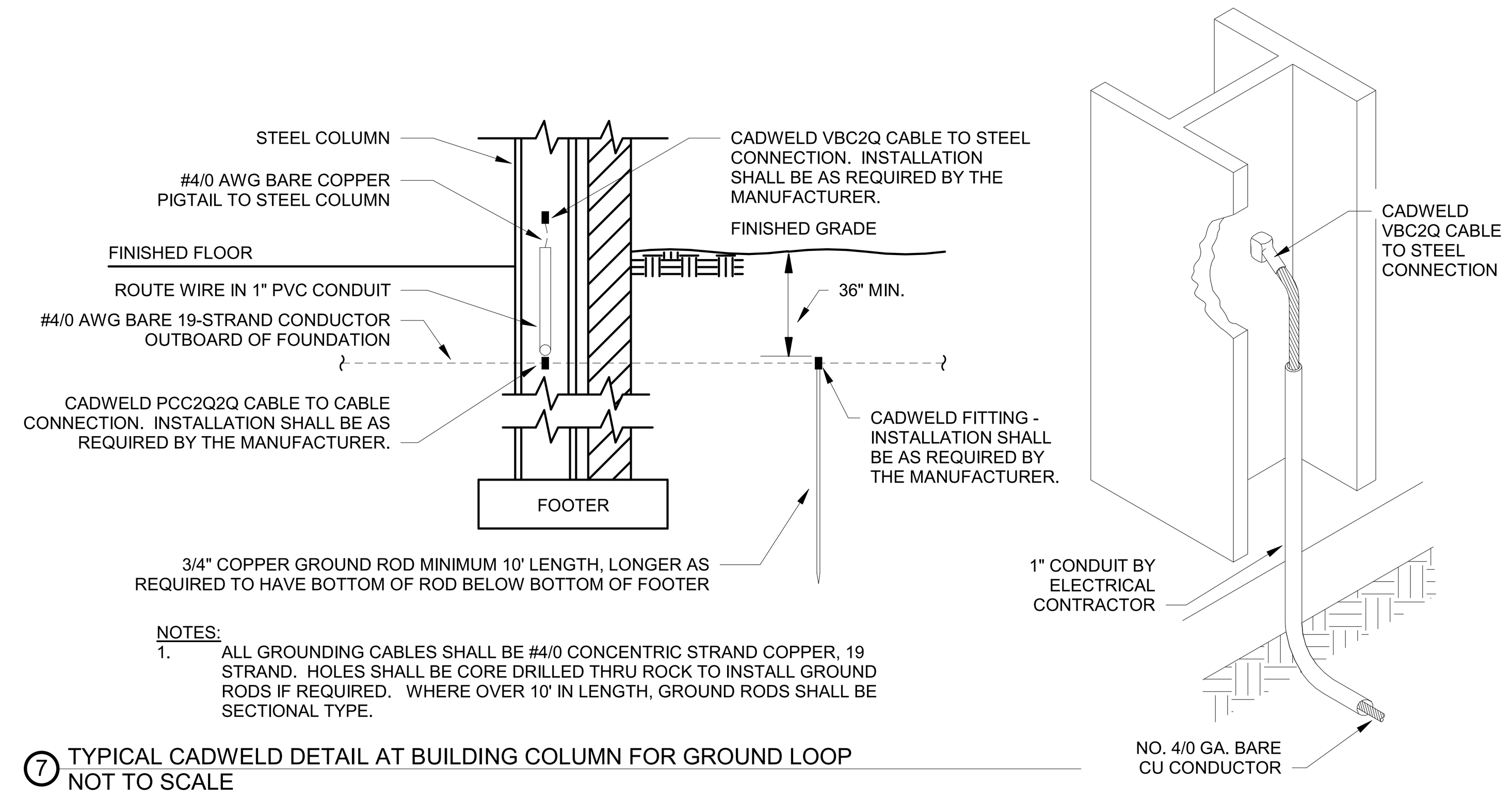
GENERAL NOTES: (EMERGENCY RESPONDER RADIO COVERAGE SYSTEM)

A. THE SYSTEM SHALL ADHERE TO THE REQUIREMENTS OF IFC AND NFPA 72 FOR SIGNAL BOOSTERS.
B. THE SYSTEM SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER.
C. DETAIL IS DIAGRAMMATIC AND DOES NOT SHOW ALL REQUIRED COMPONENTS. PROVIDE ALL EQUIPMENT AS NECESSARY AND AS RECOMMENDED BY THE SYSTEM MANUFACTURER FOR A COMPLETE WORKING SYSTEM.
D. FLOOR PLANS SHOW APPROXIMATE QUANTITY AND LOCATION OF DISTRIBUTED ANTENNAS. EC TO VERIFY EXACT QUANTITY AND LOCATION OF ANTENNAS WITH SYSTEM MANUFACTURER PRIOR TO INSTALLATION.
E. ALL CABLING SHALL BE PLENUM RATED COAXIAL CABLE, COMMSCOPE AL4RPV-50 OR APPROVED EQUAL.
F. ALL RISER CABLING BETWEEN FLOORS TO ROUTED IN STAIRWELL.
G. ONCE INSTALLATION IS COMPLETE, THE SYSTEM SHALL BE TESTED AND ADJUSTED AS NECESSARY.
H. THE SYSTEM SHALL BE REGISTERED WITH THE FEDERAL COMMUNICATIONS COMMISSION (FCC) AND LICENSED AS NECESSARY.
I. ALL FIVE (5) OUTPUT SIGNALS TO THE FIRE ALARM SYSTEM SHALL BE TIED TOGETHER INTO ONE FIRE ALARM CONTROL MODULE TO PROVIDE A SINGLE TROUBLE SIGNAL AT THE FIRE COMMAND CENTER.
J. VERIFY AND COORDIANATE RADIO FREQUENCIES WITH LOCAL FIRST RESPONDERS.

CODED NOTES: (EMERGENCY RESPONDER RADIO COVERAGE SYSTEM)

1. PROVIDE BI-DIRECTIONAL AMPLIFIER, BATTERY BACKUP, AND ALL ASSOCIATED EQUIPMENT WHERE SHOWN ON DRAWINGS.
2. PROVIDE OUTDOOR UHF YAGI ANTENNA MOUNTED ON ROOF AT HIGHEST POINT ON BUILDING. COORDINATE EXACT LOCATION IN FIELD.
3. PROVIDE QUANTITY AND TYPE OF SPLITTERS AS REQUIRED FOR A COMPLETE INSTALLATION.
4. ANTENNA LOCATIONS ARE NOT SHOWN ON THE DRAWINGS. MANUFACTURER TO MODEL SYSTEM, CALCULATE LOCATIONS AND QUANTITIES, AND INCLUDE ALL QUANTITIES AND LOCATIONS AS REQUIRED FOR PROPER OPERATION.

6 EMERGENCY RESPONDER RADIO COVERAGE SYSTEM
NOT TO SCALE



NOTES:
1. ALL GROUNDING CABLES SHALL BE #4/0 CONCENTRIC STRAND COPPER, 19 STRAND. HOLES SHALL BE CORE DRILLED THRU ROCK TO INSTALL GROUND RODS IF REQUIRED. WHERE OVER 10' IN LENGTH, GROUND RODS SHALL BE SECTIONAL TYPE.

7 TYPICAL CADWELD DETAIL AT BUILDING COLUMN FOR GROUND LOOP
NOT TO SCALE

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Project Number: 2024077

REVISIONS
3 10/27/2025 Addendum 3

BIDDING SET

NEW DISTRICT MAINTENANCE & BUS DEPOT FACILITY
3600 OLD OAKDALE RD MCDONALD, PA 15057
SOUTH FAYETTE TOWNSHIP SCHOOL DISTRICT 3680 OLD OAKDALE RD MCDONALD, PA 15057

POWER & FIRE ALARM DETAILS

Proj No. 24-S49-01B
Issue Date OCTOBER 1, 2025

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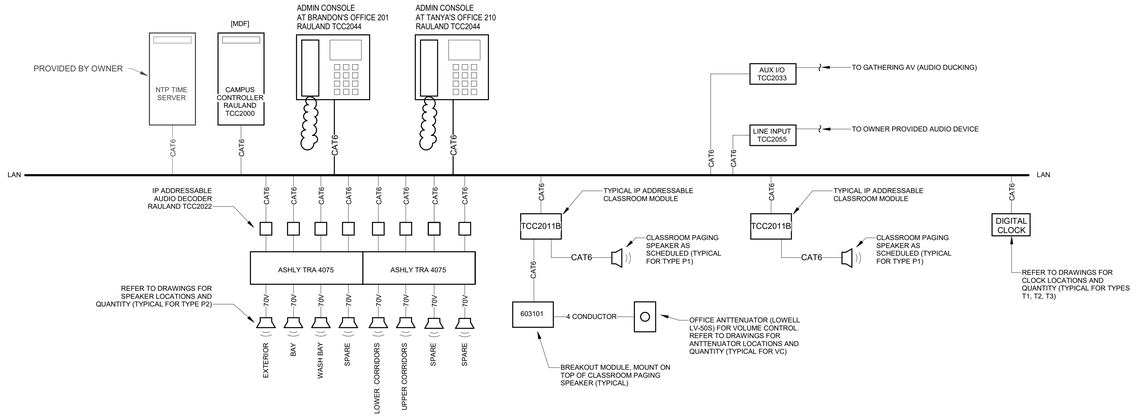


GENERAL NOTES: (THIS DETAIL)

A. THIS RISER IS A REPRESENTATION AND IS NOT INTENDED FOR INSTALLATION. SYSTEM SUPPLIER SHALL PROVIDE INSTALLATION DRAWINGS AND WIRING DIAGRAMS TO SHOW THE EXACT SYSTEM REQUIREMENTS.

B. SYSTEM SUPPLIER SHALL SUPERVISE INSTALLATION, PROGRAM AND TEST SYSTEM AND INSTRUCT OWNER ON SYSTEM OPERATION.

C. ALL WIRING SHALL BE VERIFIED WITH THE SYSTEM SUPPLIER PRIOR TO BID AND SHALL BE PLENUM RATED CABLE.

D. ALL CONTROL CABINETS SHALL BE GROUNDED PER N.E.C. REQUIREMENTS AND PER SPECIFICATIONS.

E. REFER TO SPECIFICATION 275120 FOR ADDITIONAL DETAILS AND REQUIREMENTS.

F. PROVIDE A DRY CONTACT SIGNAL FROM THE ACCESS CONTROL SYSTEM TO THE PAGING SYSTEM.

G. PROVIDE EQUIPMENT, MISCELLANIOUS CABLING AND PROGRAMMING REQUIRED TO TIE THE CONDUCTOR PAGING SYSTEM INTO THE OWNER'S PHONE SYSTEM. THIS COMMUNICATION SHALL BE ONE WAY AND WILL ALLOW AN ALL PAGE TO BE MADE FROM ANY PHONE, GIVEN THE PROPER CREDENTIALS ARE PROVIDED.

H. ALL DEVICES IN MDF AND IDF'S SHALL BE CONNECTED TO UPS POWER. ALL DEVICES INSTALLED W/O UPS POWER THROUGHOUT THE BUIDLING SHALL UTALIZE A POE EXTRACTOR TO PROVIDE UNINTERUPTED POWER.

I. REFER TO AV DETAILS FOR ADDITIONAL CONNECTION REQUIREMENTS BETWEEN PAGING SYSTEM AND AV SYSTEMS.

OPERATIONAL NOTES: (THIS DETAIL)

A. REFER TO SPECIFICATION 275120 FOR ADDITIONAL DETAILS AND REQUIREMENTS.

② PAGING & EMERGENCY NOTIFICATION SYSTEM (RAULAND TCU)
NOT TO SCALE

PROJECTOR SCHEDULE

TAG	BASIS OF DESIGN MODEL	BASIS OF DESIGN MFG	BRIGHTNESS (LUMENS)	RESOLUTION H	RESOLUTION V	ASPECT RATIO	CONTRAST RATIO	IMAGE SIZE	PROJECTION DISTANCE	PROJECTION SURFACE	LENS	MOUNTING NOTES
PRJ-1	PT-FRZ60U	PANASONIC	6000 lm	1920	1200	16:10	20,000:1	13' - 4"	16' - 6"	PRJS-1	Flexible 2.0x zoom lens (1.46 – 2.94:1) with V/H Lens-Shift	CEILING MOUNT

PROJECTOR SCREEN SCHEDULE

TAG	LOCATION NAME	LOCATION NUMBER	BASIS OF DESIGN MFG	BASIS OF DESIGN MODEL	IMAGE HEIGHT	IMAGE WIDTH	IMAGE DIAGONAL	DESCRIPTION
PRJS-A1	GATHERING	114	DRAPER	142032	88"	140"	165"	165" DIAGONAL 16:10 CEILING RECESSED PROJECTOR SCREEN WITH MATT WHITE XT1000E SURFACE MATERIAL

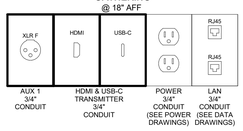
SPEAKER SCHEDULE

TAG	BASIS OF DESIGN MFG	BASIS OF DESIGN MODEL	DESCRIPTION
A1	JBL	CONTROL 29AV-1	GATHERING ROOM AV SPEAKER
P1	QUAM	BAFKIT1X2S8RJ	1X2 8 OHM DROP-IN SPEAKER WITH MOUNTING PLATE, RJ45, AND CLASSROOM IP MODULE
P2	QUAM	SYSTEM 5	1X2 DROP-IN CEILING SPEAKER WITH 25/70V TRANSFORMER
P3	QUAM	SYSTEM 2	PAGING 1-WAY 70V SPEAKER, SURFACE WALL MOUNT WITH IP MODULE
P4	QUAM	SYSTEM 6VPS	PAGING 1-WAY 70V SPEAKER, SURFACE WALL MOUNT, HORN WITH STAINLESS STEEL BACKBOX
R	N/A	N/A	LOCAL TWO-WAY RADIO SYSTEM AMPLIFICATION SPEAKER, FURNISHED AND INSTALLED BY OWNER

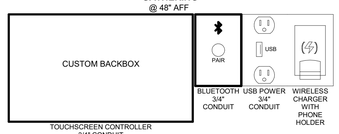
CLOCK SCHEDULE

TAG	MFG	MODEL	DESCRIPTION	TYPICAL LOCATION	MOUNT
T1	RAULAND	TCC3011S	SMALL, ONE LINE SIANGLE-FACE DIGITAL MESSAGE BOARD IN RECESSED MOUNTING BOX	OFFICE/ GATHERING	WALL
T2	RAULAND	(2)TCC3011S, TCC300DFM	TWO SMALL, ONE LINE DIGITAL MESSAGE BOARDS MOUNTED IN DUAL FACE MOUNTING BOX	CORRIDORS	WALL/CEILING
T3	RAULAND	TCC3012L	LARGE, TWO-LINE DIGITAL MESSAGE BOARD IN RECESSED MOUNTING BOX	BAY	WALL

AV.A1
GATHERING
@ 18" AFF



AV.A2
GATHERING
@ 48" AFF



③ WALLPLATES AND CONDUITS EC
NOT TO SCALE

① AV SYSTEM 'A' GATHERING ROOM
NOT TO SCALE

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL T. STEFFANIE BAKO ENGINEER 10/27/2025

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PAGING & AV DETAILS & SCHEDULES

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