

**SECTION 000004 – ADDENDUM NUMBER 4**

**DATE: JANUARY 9, 2026**

**TO: ALL BIDDERS**

**FROM: PERKINS & WILL  
225 FRANKLIN STREET, SUITE 700  
BOSTON, MA 02110**

**RE: WORCESTER SOUTH DIVISION FIRE STATION, WORCESTER, MA**

**THIS ADDENDUM FORMS A PART OF THE CONTRACT AND MODIFIES THE ORIGINAL DOCUMENTS DATED DECEMBER 2025.**

**PART 1 - GENERAL**

- 1.1** This addendum must be returned with plans and specifications (if not already returned) to have your deposit returned.
- 1.2** This addendum modifies, amends, and supplements the Contract Documents for the above referenced project. This addendum is hereby made a part of the Contract Documents by reference and shall be as binding as though inserted in locations designated hereunder.
- 1.3** Each general bidder shall be responsible for notifying all his non-filed sub-bidders and suppliers of the content of this addendum. No claim for additional compensation will be considered because of lack of knowledge of changes or modifications contained in this addenda.
- 1.4** Questions or requests for clarification shall be in writing, addressed to Jeremy C. Flansburg, Assistant Purchasing Director at **PURCHASING DEPARTMENT**, and be sent flansburgjc@worcesterma.gov. Please include your name, phone number, and e-mail.
- 1.5** Part 2 of this addendum indicates revisions to the Project Manual.
- 1.6** Part 3 of this addendum indicates revisions to the Drawings.
- 1.7** Part 4 of this addendum indicates clarification to Contractors Questions.

## **PART 2 - SPECIFICATION**

### **2.1 SECTION 011000 – SUMMARY**

**A. REVISE paragraph 1.6B in its entirety with:**

Refer to Section 01 12 00 for Construction Manager Project Schedule

### **2.2 New Trade supplementals sections attached (13 sections)**

## **PART 3 - DRAWINGS**

### **3.1 DELETE Drawings A62-01 and INSERT new drawing A62-01**

### **3.2 DELETE ALL TELECOM (T) drawings and INSERT new TELECOM (T) drawings**

### **3.3 DELETE ALL SECURITY (TY) drawings and INSERT new SECURITY (TY) drawings**

## **PART 4 - CONTRACTOR QUESTIONS**

### **4.1 Q: Roofing: substitution request**

A: The project is not currently accepting any substitution request during bidding phase.

### **4.2 Q: Paragraph 1.5B of specification section 088000 Glazing requires the subcontractor responsible for glass and glazing to be a member of the North American Contractor Certification Program (NACC) for Architectural Glass and Metal Contractors. Typically, this language is removed. Please either:**

· confirm that the NACC certification is not required and that this language will be removed from the specification

OR

· confirm that the Awarding Authority intends to enforce this requirement and is aware that it will substantially reduce the number of qualified bidders.

A: NACC requirement is not applicable for glazing trade. NACC requirement remains applicable for Curtainwall/Storefront trade.

### **4.3 Q: Door #101.1 has frame type ST (includes transom) per the door schedule on sheet A62-01, however the exterior elevations do not show a transom on Exterior Elevations sheet 4/A20-01. Please confirm door schedule is incorrect.**

A: Door 101.1 should have type S frame instead of ST as listed. Drawing A62-01 is updated to reflect the changes in this addendum.

### **4.4 Q: Please clarify the required glass makeup for interior STC rated glazed hollow metal doors and frames (referenced as STC35-40 in Remarks column on sheet A62-01 Door Schedule).**

A: Make up of glass for door with sidelight frame to meet STC rated wall assembly is: 5/8" laminated glass with 2" min spacers (with perforated vinyl coated foam) and 5/16" laminated glass.

### **4.5 Q: This project includes frameless mirrors which are typically part of the glass and glazing scope, but are not included under section 080001 Glass and Glazing (Trade Bid). Please confirm mirrors are not the responsibility of the glass and glazing filed sub bid.**

A: Frameless mirror (Section 08 83 00) are part of 08 00 01 trade scope.

- 4.6** Q: Please reference Section 01 10 00 Part 1.6.B.4, will Phase 1 be completed on the date listed?  
A: Project schedule can be found in 01 12 00. See revised Section 01 10 00 in this addendum
- 4.7** Q: Will the CM at Risk be distributing a project schedule?  
A: See Section 01 12 00 for CM project schedule
- 4.8** Q: Specification section 260001 Part 1.2 G states “The Electrical Trade Contractor shall carry in the bid price all Utility Company and Municipal back charges for all materials furnished and work performed by them in conjunction with this Contract and pay same to the respective agency upon demand.” Please provide a budget amount for said utility fee/municipal fee as to ensure a competitive bidding process.  
A: Any utility/municipal fee back charges to be paid by the owner. No budget should be carried by trade.
- 4.9** Q: The ductwork specification is not clear for Water gauge and materials for each system. Can a schedule be provided?  
A: Refer to section 3.13 Duct Schedule in specification 23 31 13.
- 4.10** Q: Duct Liner:  
a. 233113 – 2.5 states Duct liner shall not be acceptable except and unless where used in a double-wall duct application, with no fibers exposed to the airstream.  
b. 233113 -3.13-D states supply air and Transfer duct to have 1” fiberglass liner  
c. The HVAC drawings call for the FCU supply and return duct to have 1” liner  
d. The HVAC detail pages call for double wall with perforated interior liner  
i. Will all lined duct need to be double wall with perforated interior liner?  
ii. Would the use of flexible closed-cell elastomeric thermal and acoustical duct insulation be acceptable in lieu of the perforated liner?  
A: See answer below:  
i. Yes, exception as follows  
ii. The use of flexible closed-cell elastomeric insulation (meeting ASTM C1534) is acceptable in lieu of double-wall perforated liner. This non-fibrous liner is compliant with ASTM E84 25/50 flame/smoke ratings as required by code and aligns with Worcester design standards for indoor air quality and moisture resistance. We request that the specific product submittal, including sound absorption coefficients, be provided for final review to ensure it meets the project's acoustical goals.
- 4.11** Q: Will the exposed outside air ducts need to be internally lined?  
A: Conditioned exposed outside air ducts need to be internally lined
- 4.12** Q: Is the vehicle exhaust system part of this scope of work or will this be part of another bid? The drawings only show the EF-2 and associated exhaust main.  
A: Mechanical owns the duct main and EF-2 of the vehicle exhaust system. Downstream of the main is part of the vehicle exhaust system scope
- 4.13** Q: Detail # 9 on M-08.02 Type II hood – Is this part of the project? I couldn’t locate where this would be on the floor plans.  
A: Confirmed that this detail is not applicable

**List of Attachments**

- A3.1 Trade supplementals**
  - a. 04 00 01.1 – Supplemental Scope – UNIT MASONRY**
  - b. 05 00 01.1 – Supplemental Scope – MISCELLANEOUS METALS & ORNAMENTAL IRON**
  - c. 07 00 01.1 – Supplemental Scope – WATERPROOFING, DAMPROOFING, & CAULKING**
  - d. 07 00 02.1 – Supplemental Scope – ROOFING AND FLASHING**
  - e. 08 00 02.1 – Supplemental Scope – GLASS AND GLAZING**
  - f. 09 00 00.1 – Supplemental Scope – PAINTING**
  - g. 09 00 01.1 – Supplemental Scope – TILE**
  - h. 09 00 02.1 – Supplemental Scope – ACOUSTIC CEILINGS**
  - i. 09 00 04.1 – Supplemental Scope – RESILIENT FLOORING**
  - j. 21 00 00.1 – Supplemental Scope – FIRE PROTECTION**
  - k. 22 00 00.1 – Supplemental Scope – PLUMBING**
  - l. 23 00 00.1 – Supplemental Scope – HVAC**
  - m. 26 00 00.1 – Supplemental Scope – ELECTRICAL**
- A3.2 Revised Drawing A62-01**
- A3.3 Revised Drawings T series**
- A3.4 Revised Drawings TY series**

**END OF ADDENDUM NUMBER 4**



**SECTION 04 00 01.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – UNIT MASONRY**

**PART 1 GENERAL**

- 1.1 The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 04 00 01, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
- 1.2 Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
- 1.3 MBE/WBE Commitment minimum requirements for each Trade Contractor (Filed-Sub Bid) are listed in the CM Supplemental Conditions section 00 72 25. It is expected that this Trade Contractor will meet the participation goals as listed in the section.
- 1.4 Special attention is drawn to CM Site Utilization section 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements, and other provisions and restrictions)
- 1.5 Special attention is drawn to CM Project Schedule section 01 12 00 specifically but not limited to: phasing requirements. Shear wall construction schedule must be closely coordinated with the structural steel installation and sequencing.
- 1.6 Special attention is drawn to Section 01 43 39 – Mockup Requirements.
- 1.7 Special attention is drawn to Section 04 20 00 – Unit Masonry, subsection 1.5 Quality Assurance regarding "sample panels" and mockups.
- 1.8 Special attention is drawn to Section 04 43 13.13 – Anchored Stone Masonry Veneer, subsection 1.5 Quality Assurance regarding mockups.
- 1.9 **NOTE:** For the purposes of the Contract Drawings, Specifications and supplemental scope sheets, the terms 'Filed Sub-Bidder' and 'Trade Contractor' shall be considered interchangeable, each carrying identical meaning and obligations in accordance with Massachusetts General Laws Chapter 149 and M.G.L. Chapter 149A.

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR UNIT MASONRY**

1. This scope includes, but is not limited to, the items identified below. Specific references to drawing pages, details and notes may be provided for illustrative purposes only and are not intended to be all inclusive of the work required. Review all architectural, structural and MEP plans in detail to identify the scope of this requirement.
2. The Masonry Trade Contractor shall furnish and install all (unless otherwise noted): Stone masonry veneer, CMU, pre-cast lintels, face Brick, limestone Units, masonry through-wall

flashing/metal drip edges, including associated sealants, termination bars, and other flashing ancillary items, embedded flashing, cavity drainage material, and control joint fillers in unit masonry.

3. The Masonry Trade Contractor is responsible for mock-ups as shown or noted in the project drawings and specifications related to the masonry scope of work.
4. This Trade Contractor will be responsible for ALL hoisting and scaffolding for completion of Masonry work regardless of height. If the mason intends to use any mast climbing working platforms (i.e., hydro lift) for any part of the work, engineered drawings, connection details, safety requirements and calculations are to be provided four weeks prior to mobilization. Any repairs or go-back work for working platform attachment locations shall be the full responsibility of the Masonry Trade Contractor.
5. The Masonry Trade Contractor is to provide weather protection (tenting) and heating of scaffolding and masonry work and stockpiled materials (such as sand, cement, bricks, CMU, precast concrete, and water) to appropriate temperature for masonry construction. This Trade Contractor shall provide, maintain, and remove all weather-related requirements, including but not limited to scaffolding enclosures/work area enclosures, hot water.
6. Furnishing and installation of reglets and thru-wall flashing shall be by the Masonry Trade Contractor, unless specifically identified by others.
7. Door frames at CMU/Brick openings:
  - A. Received, inventoried, unloaded and installed by the Masonry Trade Contractor. Grout solid at all locations. Exercise care that no mortar droppings are placed or fall inside the cavities that are not to be grouted. Do not proceed with the slushing in of door frames unless mud boxes and silencer buttons are in place on the door frame and the electrician has completed conduit to the mud boxes as may be required.
8. For the purposes of this scope of work, metal lintels shall include all steel not affixed to structural steel. For **all** such openings, including but not limited to the Elevator Door(s), Windows, Louvers, etc., the Masonry Trade Contractor shall:
  - A. Install steel lintel (furnished by Miscellaneous Metal Trade Contractor)
  - B. Provide all necessary masonry infill or patching at or above the lintel
  - C. Rebuild, infill, and patch masonry as necessary above and around installed lintel or beam to transfer load to the beam.
9. Elevator Hoist Beams, roof deck support bearing plates, anchors, and/or any other elevator related items embedded in masonry as shown on the architectural or structural drawings shall be furnished by Others for installation by Masonry Trade Contractor.
10. CMU Embeds: All Embeds furnished by others, installed and grouted by the Masonry Trade Contractor.
11. Acoustical/Fire Rated Insulation/Mineral Wool Infills at metal Deck above masonry wall construction to be by this Subcontractor. (note well G02-01)

12. The Masonry Trade Contractor shall furnish and install all necessary ties/anchors/rebar/couplers that need to be welded to steel members. Masonry Trade Contractor shall have the option to furnish and ship all necessary ties/anchors/rebar/couplers that need to be welded to steel members to the designated steel fabricator if the overall project schedule permits and if the Masonry Trade Contractor is prepared to provide any and all layout/shop drawings needed for steel fabricator installation.
13. The Masonry Trade Contractor shall install all miscellaneous accessories that are embedded within the masonry work for future use of other trades.
14. Provide for removal and legal disposal off-site of all masonry waste and debris associated with the work of this trade. Comply with requirements of Division 01 Section Construction Waste Management. Quantity and location of dumpsters shall be coordinated with the CM.
15. Masonry Beam Pockets:
  - A. Cut, build, and prepare masonry pockets to receive structural steel beams within masonry walls. Install masonry-embedded anchor bolts and associated base plates furnished by others at new masonry pockets at locations indicated in drawings (including but not limited to S11-02 and S11-03. After steel has been installed, infill pocket as required. (Refer to S30-02).
16. All work is to be brushed down at the end of each workday to remove mortar droppings. Soon after installation, lightly stone down exposed surfaces to remove excess mortar and droppings.
17. Wash Downs:
  - A. Masonry Wash Downs shall be completed immediately following completion of EACH elevation. Proper protection of all finished materials (from other trades) shall be protected by the Masonry Trade Bidder.
18. Relieving angles:
  - A. Review, coordinate and confirm all relieving angle elevations and details with the installing contractor and other affected contractors.
19. Roof Protection:
  - A. Where masonry work is to be performed on, above or near the building's roof, the Masonry Trade Contractor shall provide, install, remove, and maintain appropriate protection. Any damages to the roof as a result of poor or inadequate protection shall be the full responsibility of the Masonry Trade Contractor.
20. The Masonry Trade Contractor shall furnish and install rigid insulation and mineral wool at cavity walls whenever the exterior wall veneer construction is masonry – regardless of the backup wall construction. Comply with requirements defined in 07 21 00 Insulation.

21. The Masonry Trade Contractor shall furnish and install rigid insulation (below through wall flashing) cut at top to match slope.
22. The Masonry Trade Contractor shall furnish and install all acoustical insulation infill at metal deck cavity above masonry partitions.
23. The Masonry Trade Contractor shall coordinate pre-cast window/sills install with framed opening and blocking requirements.
24. Furnish and install acoustic foam insulation or fired rated joint sealant at the tops of CMU walls or other gaps and openings (ie- deck flutes, expansion joints, beam penetrations, penetrations by existing MEP/FP utilities, etc). Furnish and install fire-safing insulation and fire stopping at the tops of all fire rated CMU walls.
25. Furnish and install compressible filler at tops of all non-loadbearing, non-fire rated CMU walls and at all expansion joints in CMU walls
26. Coordinate and provide all openings in CMU masonry work for other trades, including box outs, cutouts, recesses, and/or sleeves in walls for Mechanical, Electrical, Plumbing, Fire Protection and Elevators. Refer to applicable Architectural, Mechanical, Electrical, Plumbing and Fire Protection Drawings. Trade Contractor has reviewed the mechanical drawings and included all cost for duct and pipe penetrations through and within CMU walls, including supports over large duct openings.
27. Installation of built-in items of work such as conduit, pipe, electrical junction boxes, wall hydrants, Knox box, elevator call buttons, door position indicators, and other miscellaneous items will be by others. The mason is to coordinate their work such that these trades have sufficient notice to install their work either in advance (as with door frames) or to coordinate their manpower to install work alongside the mason as may be necessary.
28. Shoring and/or Temporary Supports: All engineered shoring necessary to complete the scope of work as required, designed by a MA licensed PE by the FSB/Trade Masonry Contractor.
29. Masonry Trade Contractor shall expedite precast submittals, design, and shop drawings so as to allow for proper coordination with structural steel fabrication. All Precast Submittals must be provided to the CM, complete and in entirety, no later than 40 calendar days from Notice of Award.
30. Access Panels installed within Masonry assemblies to be provided by others, installed by the FSB/Trade Masonry Contractor.

**END OF SECTION**

**SECTION 05 00 00.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – MISCELLANEOUS METALS & ORNAMENTAL IRON**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 05 00 00, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each Trade Contractor (Filed-Sub Bid) are listed in the CM Supplemental Conditions section 00 72 25. It is expected that this subcontractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization section 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions).
5. Special attention is drawn to CM Project Schedule section 01 12 00.
6. NOTE: For the purposes of the Contract Drawings, Specifications and supplemental scope sheets, the terms 'Filed Sub-Bidder' and 'Trade Contractor' shall be considered interchangeable, each carrying identical meaning and obligations in accordance with Massachusetts General Laws Chapter 149 and M.G.L. Chapter 149A.

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR MISCELLANEOUS METALS AND ORNAMENTAL IRON TRADE CONTRACTOR**

1. In addition to scope listed in 05 00 00 and related specification sections, furnish and install the following:
  - A. All Loose Lintels (lintels not affixed to structural steel) furnished to the Masonry Trade Contractor (Furnish only)
  - B. Fireman's Slide Pole System
  - C. Roof Ladders, Roof Guardrails
  - D. Interior Railings & Removable Railings/Sleeves grouted.
  - E. Exterior Metal Stair, Site railings and other misc. metal site elements
  - F. All angles, plates, embedments, etc. not shown on the structural drawings.
  - G. Furnish and install ladders and grating at Elevator Pits

- H. Elevator hoistbeam
  - I. Countertop support angles/plates
  - J. Stair and stair landing stringers
  - K. Masonry anchorage & Clips
  - L. Steel angles as identified on the Architectural Drawings
  - M. Metal Decking at light gauge and/or cold formed metal framing.
  - N. All plates/covers/embeds shown
  - O. Furnish and install exterior site bollards.
  - P. Stainless Steel work surfaces with marine edge
  - Q. Hose Reels as shown on the contract drawings
  - R. Refer to A17-20 for Contractor Furnish/Contractor Install Firematic FF&E to be furnished and installed by the Miscellaneous Metal Trade Contractor.
  - S. Furnish and install Equipment and Fall Protection assembly complete (ref to detail 2/A31-01)
2. Within 35 calendar days of Notice of Award, provide a detailed schedule of each and every work item to be provided under this scope. This schedule shall include:
- A. Name of Item
  - B. Location(s)
  - C. Quantity
  - D. Applicable plan detail reference(s)
  - E. Field measurement requirements, if any.
  - F. Fabrication and delivery lead times
3. Provide and maintain all required ventilation within all areas (including enclosed areas, plenum spaces, pits, tunnels, etc.) throughout the duration of welding activities as required for a safe workplace and to the satisfaction of the Construction Manager. Furnish and handle all ventilation equipment as required to remove fumes and vapors created by welding.
4. All mobilizations necessary to complete work as scheduled are included as part of this Subcontract.
5. Prepare all surfaces with primer or finish in accordance with the contract documents. Include field touch up of shop primer after installation.
6. Coordinate shop drawings with structural steel and field conditions. Field measure and verify all field dimensions.
7. Provide all coring and/or sleeves for handrails, guardrails, cane bolts, etc. including grouting of same.
8. Provide layout drawings for all blocking or attachment needs at wall mounted rail/hidden bracket locations.
9. In addition to the architectural drawings, this Subcontractor shall review all relevant drawings and specifications to verify the requirements of each and has included all costs to

comply with the miscellaneous metals requirements as noted in the civil, landscape, equipment, mechanical, electrical, plumbing, and structural drawings and specifications.

10. Provide seismic bracing/clips/angles as required per the current Massachusetts Building Code. This includes but is not limited to bent plates, angles, expansion bolts, etc. as necessary for a complete installation. Subcontractor is responsible to weld plates and beams. Tabs shall not be pre-installed on beams. Provide certification of seismic compliance, sealed by a Professional Engineer who is registered in the State of Massachusetts, addressing applicable codes and regulations. This certification will include but not be limited to design and installation compliance.
11. Welders: All welders shall be mounted on the Decks (Each Floor). No Parking onsite / No Truck mounted welders.

**END OF SECTION**

**Section 07 00 01.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – WATERPROOFING, DAMPPROOFING AND CAULKING**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 07 00 01, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each Non-Trade and Trade Contractor (Filed-Sub Bid) are listed in the CM Supplemental Conditions section 00 72 25. It is expected that this subcontractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization section 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions)
5. Special attention is drawn to CM Project Schedule section 01 12 00.
6. **NOTE:** For the purposes of the Contract Drawings, Specifications and supplemental scope sheets, the terms 'Filed Sub-Bidder' and 'Trade Contractor' shall be considered interchangeable, each carrying identical meaning and obligations in accordance with Massachusetts General Laws Chapter 149 and M.G.L. Chapter 149A.

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR WATERPROOFING, DAMPROOFING AND CAULKING (WDC) TRADE CONTRACTOR**

1. This scope includes, but is not limited to, the items identified below. Specific references to drawing pages, details and notes may be provided for illustrative purposes only and are not intended to be all inclusive of the work required. Review all defined scope of work documents in detail to identify the scope of this requirement
2. The WDC Trade Contractor scope of work includes, but is not limited to the following:
  - A. Foundation Dampproofing
  - B. Underslab Vapor Barrier
  - C. Fluid-Applied Vapor Barrier
  - D. Continuous Air & Vapor Barrier
  - E. Backer Rod and Sealant
  - F. Continuous AVB Sill Pan (if applicable)
  - G. Continuous AVB below grade
  - H. Concrete sidewalk Joint Sealant (ref Civil Drawing Details)



3. If applicable, furnish and Install Underslab waterproofing – Seal to foundation wall and ensure compatibility with wall barrier.
4. For clarity of Joint Sealant scope of work:
  - A. All exterior and interior storefront, windows, and curtainwall perimeter caulking shall be by the **WDC contractor**.
  - B. Joint Sealants and Caulking between millwork and an adjacent different surface shall be by the WDC contractor. Joint Sealants and Caulking for millwork-to-millwork elements shall be by Others.
  - C. All other interior and exterior sealants and caulking shall be by the WDC trade Contractor, unless specifically noted otherwise in the contract documents.
  - D. WDC Trade Contractor owns all caulking between dissimilar materials unless otherwise noted whether or not keynoted. Not all caulk joints are necessarily keynoted but are required by the WDC Trade Contractor per the contract details.
  - E. The WDC Trade Contractor shall furnish and install all exterior concrete paving joint sealants and caulking, as specified under 03 30 00 and/or 32 13 13.
  - F. The WDC Trade contractor shall caulk all plumbing fixtures, toilet accessories, AED Cabinets, fire protections specialties, and the like unless otherwise noted.
5. Complete all necessary preparation of the foundation walls to properly receive and warranty your products including:
  - A. Inspect and accept all substrates with which the waterproofing system will come into contact including any testing that may be required by the waterproofing manufacturer. This bidder shall assume that all foundation concrete will be “green” and shall submit the proper corresponding adhesive/bonding for approval and use at no additional cost to the project.
  - B. Provide temporary membrane terminations at the end of each day. All temporary terminations shall be done in accordance with the manufacturer’s approved system and shall prevent any water or moisture from migrating beneath the waterproofing system previously installed.
  - C. Waterproofing shall extend out over entire footing per details.
6. The Subcontractor is aware that joints will vary in width. Include all costs to install sealants of varying widths and comply with the manufacturer’s installation instructions.
7. Perform sealant adhesion and compatibility tests as requested. Costs to patch any destructive testing will be at the WDC Trade Contractor’s expense.
8. The entire foundation waterproofing “system”, including drainage mat, shall be furnished and installed by WDC with the exception of the vertical insulation which will be provided by others.
9. Provide in-place mock-ups as defined in the contract documents. Expedite mock-up materials to meet schedule. Where in-place or standalone mock-ups are utilized, the contractor shall not proceed with work beyond the mock-up area until the mock-up installation has been reviewed, tested (as applicable) and approved. Any such progression of work would be at contractor’s risk.

**END OF SECTION**

**SECTION 07 00 02.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – ROOFING AND FLASHING**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify the scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 07 00 02, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and determine several compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each Trade Contractor (Filed-Sub Bid) are listed in the CM Supplemental Conditions section 00 72 25. It is expected that this subcontractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization section 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions)
5. Special attention is drawn to CM Project Schedule section 01 12 00.
6. NOTE: For the purposes of the Contract Drawings, Specifications and supplemental scope sheets, the terms 'Filed Sub-Bidder' and 'Trade Contractor' shall be considered interchangeable, each carrying identical meaning and obligations in accordance with Massachusetts General Laws Chapter 149 and M.G.L. Chapter 149A.

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR ROOFING AND FLASHING TRADE CONTRACTOR**

1. This scope includes, but is not limited to, the items identified below. Specific references to drawing pages, details and notes may be provided for illustrative purposes only and are not intended to be all inclusive of the work required. Review all defined scope of work documents in detail to identify the scope of this requirement.
2. Roof Cutting and Patching:
  - A. The Roofing Trade Contractor shall be responsible for all roof cutting and patching at all roof openings and penetrations, including both temporary patching and flashing of openings and penetrations required throughout the project.
  - B. Refer to Architectural, Structural and MEP drawings for locations of the work of other trades requiring roof cutting, penetrations and patching. The Roofing Trade Contractor is to examine the Architectural, Structural, and MEP drawings carefully in order to include a full scope of work.

3. Temporary Roofing and Weather Protection:

- A. Provide all necessary management, planning, measures, temporary roofing and other provisions to prevent water infiltration through the roof for the full duration of any roof cutting, patching, removal or replacement operations.
- B. Install deck sheathing and vapor retarder/barrier in expeditious manner so as to get the building as watertight as possible, assuming separate mobilization once parapets are constructed for completion of roofing system installation. Costs for multiple mobilizations shall be included in this bid. This may include roofing installation in unorthodox manners such as working high-to-low or low-to-high such that warranties are maintained but the building is made watertight in an expeditious manner.
- C. Provide roofing as required at rooftop curbs to keep interior of curbs/units dry in cases where rooftop equipment is set prior to roofing system installation/detailing.
- D. Provide temporary protection pathways after the new roof has been installed, to allow other trades to work on or traverse roof without damaging the newly installed roofing system. Any damages and/or repairs to roof needed from failure to install temporary pathways will be the full responsibility of the Roofing Trade Contractor. Walkways are to be routed and will be utilized at the Construction Managers discretion.

4. Specification Clarifications:

- A. Refer to 007225 Construction Manager Supplemental Conditions 3.07, B for roof blocking scope of work. Where blocking is provided by Others, the Roofing Trade Contractor is responsible for coordinating with the Others prior to and during the roof blocking installation process to ensure proper heights are installed. Roofing Trade Contractor is responsible for verifying blocking substrate is level, plumb, and straight prior to field measuring and installation to ensure a clean straight look with no oil canning.
  - B. Refer to 007225 Construction Manager Supplemental Conditions 3.07, C for flashings scope of work.
  - C. Section 079500 Expansion Control, partial, Expansion control directly relating to Roof Assembly shall be by the Roofing and Flashing Trade Contractor.
  - D. Sheet metal flashing to be included stainless steel through-wall flashing at base of walls furnished by the Roofing Trade Contractor and installed by the Masonry Trade Contractor.
5. Roofing Trade Contractor to provide final cleaning of all roof systems at 100% completion. Timing for final cleaning of roof(s) shall be at the discretion of the Construction Manager and as recommended by the Roofing Manufacturer. Submit a recommended plan for review and approval prior to cleaning.
6. Coordinate all requirements for PV installation and full roofing manufacturer's warranty for ballasted or penetrating PV systems. Roofing Contractor to provide full warranty as indicated in the specification.
7. Roofing Trade Contractor shall include furnishing and installing enough roofing material to drape over the perimeter of the building, enough to cover the edge as well as a three feet of the exterior vertical wall.
8. Roofing Trade Contractor shall include / anticipate separate mobilizations for the roof pedestal / paver system installation.

9. Roofing Trade Contractor to furnish and install all insulation around roof drains (ref: 1/A31-01)
10. Roofing Trade Contractor must review the plans and specs with the roofing materials manufacturer and provide job specific details and/or verified manufacturer details for each roofing condition. A full project specific shop drawing and coordination drawing is required to be submitted for review.
11. Building Mock-Up: Furnish and install all mock-up requirements for the Roofing and Flashing scope of work. Expedite all material and schedule according to the CM Project Schedule that is to be installed by this Contractor.

**END OF SECTION**

**SECTION 08 00 02.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – GLASS AND GLAZING**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 08 80 00, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each Trade Contractor (Filed-Sub Bid) are listed in the CM Supplemental Conditions section 00 72 25. It is expected that this subcontractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization section 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions)
5. Special attention is drawn to CM Project Schedule section 01 12 00.
6. NOTE: For the purposes of the Contract Drawings, Specifications and supplemental scope sheets, the terms 'Filed Sub-Bidder' and 'Trade Contractor' shall be considered interchangeable, each carrying identical meaning and obligations in accordance with Massachusetts General Laws Chapter 149 and M.G.L. Chapter 149A.

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR GLASS AND GLAZING TRADE CONTRACTOR**

1. Review all defined scope of work documents in detail to identify the scope of this requirement. Specific references to drawing pages, details and notes may be provided for illustrative purposes only and are not intended to be all inclusive of the work required.
2. Removal of all factory applied labels, stickers, protection, etc. shall be by the contractor, except for fire-rating labels or other code required labels.
3. Within 30 calendar days of Notice of Award, provide a detailed schedule of **each and every work item** to be provided under this scope. This schedule shall include:
  - A. Name of item
  - B. Location(s)
  - C. Quantity
  - D. Applicable plan detail reference(s)
  - E. Field measurement requirements, if any

- F. Fabrication and delivery lead time including “drop dead” date for field measurement completion for each item in order to achieve project schedule requirements.
- 4. The Glass & Glazing Trade Contractor shall notify the Construction Manager 30 days prior to any such drop dead dates for which measurements have not yet been taken.
- 5. Reference Section 08 14 16 for factory installed glazing in wood doors.

**END OF SECTION**

**SECTION 09 00 00.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – PAINTING**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 090000, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 007225 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each FSB trade are listed in the CM Supplemental Conditions section 007225. It is expected that this subcontractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization 008300 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions)
5. Special attention is drawn to CM Project Schedule 01 12 00.

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR PAINTING TRADE CONTRACTOR**

1. Section 09 96 56-Epoxy Wall Coating shall be part of the Painting Trade Contractor's scope of work in entirety.
2. Provide necessary surface preparation to achieve proper paint adhesion and desired finish quality. Scrape, sand, and infill existing surfaces to provide a smooth and even finish. Special note to the following but not limited to:
  - a. Interior Steps, Stairs and Handrails
  - b. Exterior Step, Stairs and Handrails
  - c. Exposed [Interior/Exterior] Piping
3. All newly installed materials that are to remain exposed to view, for example but not limited to, structural steel, shall be scraped, sanded, and prepared by this bid in order to provide a smooth and even finish. Special attention to painting of exposed piping. Ductwork, conduit and other MEPFP components.
4. Provide all labor, material and equipment as required for the complete performance of their work including but not limited to staging, scaffolding, planks, aerial work platforms, swing staging, scissor lifts, fork lifts, cranes, rigging, etc. This shall also include all fuel consumption, maintenance, and engineering, inspections, training certifications, safety inspections and permitting as required. Prior approval from project structural engineer is

required when utilizing some equipment on slab on deck. Consult with WTR Superintendent for assistance.

5. Visually inspect all surfaces prior to prime painting. Commencement of work over a substrate will indicate acceptance. No additional charge for repairs or rework will be allowed. Patching required after prime coats shall be the painter's responsibility and shall be re-primed before finish paint is applied.
6. Protect wet paint from disturbance using signage and caution tape and other means deemed appropriate. Use only professional looking signage and tape. Remove once paint has dried.
7. All concrete sealing as noted on the finish plan is to be completed by the Painting Trade Contractor. This does not include exterior sidewalks/walkways.
8. Special attention to painting of adjacent surfaces to exposed wood decking and other prefinished material or to remain unpainted. This contractor shall protect adjacent surfaces from paint and overspray to ensure condition remains as intended.
9. All deck, steel, mechanical (heating, ventilation and plumbing) services and equipment, e.g ducts, sprinkler piping and electrical work exposed to view shall be prepped and painted by the Painting Trade Contractor, unless pre-finished.
10. All semi-concealed areas (e.g. inside of light troughs and valances, cavities, behind grilles and projecting edges above and below sight lines) shall be prepped and painted by the Painting Trade Contractor.
11. At direction of Construction Manager, return to the site to provide painting touch-up services near or after the completion of all work. Carry an **40 man-hour allowance** including all associated paint, material and equipment costs (this excludes punchlist and corrective work that would have already been the responsibility of the painter).. Touch-Up allowance shall be clearly broken out in contractors schedule of values and shall not be billed against unless explicitly authorized by the CM and Owner.
12. Special attention to painting of exposed decking and architecturally exposed structural steel Painting Contractor to provide paints and coatings per AESS Categories as indicated in specifications. Required top coatings if indicated on the drawings are to be prepped and painting by the Painting Trade Contractor.
13. Provide all necessary masking and protection of surrounding areas to protect all other finishes from paint. Remove all overspray, drips, or excessive paint.
14. Review the finish schedule and resolve all conflicts between the drawings, finish schedule and specifications. The most stringent shall govern.

## END OF SECTION



**SECTION 09 00 01.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – TILE**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 09 00 01, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each Trade Contractor (Filed-Sub Bid) are listed in the CM Supplemental Conditions section 00 72 25. It is expected that this subcontractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization section 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions)
5. Special attention is drawn to CM Project Schedule section 01 12 00.
6. NOTE: For the purposes of the Contract Drawings, Specifications and supplemental scope sheets, the terms 'Filed Sub-Bidder' and 'Trade Contractor' shall be considered interchangeable, each carrying identical meaning and obligations in accordance with Massachusetts General Laws Chapter 149 and M.G.L. Chapter 149A.

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR TILE TRADE CONTRACTOR**

1. Perform all necessary floor preparation as necessary to allow for proper installation of floor system. Work is to be installed on new and existing concrete slabs. Slabs will be exposed to construction operations that will result in minor chips, voids, and depressions. The Tile Trade Contractor shall be responsible for trowel-applied patching, smoothing, and leveling as required per tile manufacturer's instructions.
2. Installation of floor or wall tile is acknowledgment and acceptance of substrate conditions.
3. Remove all paints, coatings, and any other substance that may act as a bond breaker between the tile underlayment and the concrete substrate, including this floor prep.
4. Furnish, install, and maintain appropriate temporary protection for all finished installations. Damage resulting to installed tile due to a lack of proper protection will be repaired by this contractor at no extra cost to the project. Kraft paper will NOT be acceptable as a means

of protection. Ram Board or Cover Guard are the protection levels that will be acceptable. At high-impact areas provide protection at tile walls up 4 feet above finish floor.

5. All necessary transitions strips, trim, profiles, and caulking for your work. Marble Thresholds, if required, shall be furnished, and installed by the Tile Trade Contractor.
6. All required mud set floors shall be furnished and installed by the Tile Trade Contractor (pitched to floor drains), reference the Structural and A-Series Drawings for depressed areas.
7. Coordination for building expansion joints, control joints, or slab cold joints shall be the full responsibility of the Tile Trade Contractor including but not limited to any expansion joint systems needed to bridge these joints.
8. The tile flooring system shall be final cleaned by the prior to installing the protection by the Tile Trade Contractor per the manufacturers' recommendations.
9. This contractor shall be responsible for providing the style and color tile selected by the design team through the submittal process. Upon approval, the Tile Trade Contractor shall immediately (within 10 working days) to identify any selections whose procurement will not accommodate the construction schedule through either manufacturer delays of discontinuations in order to allow the design team to make an alternate selection in a timely manner. No delay claims or additional costs for alternate or expedited tile will be accepted if this notification is not provided.
10. Extra Materials (Attic Stock) shall be provided as NEW materials in the manufacturers' original packaging. No partial or used boxes will be accepted.
11. Furnish and install all metal transition strips shown at tile transitions.
12. Supply layout and install Schluter to receive epoxy base at 4" epoxy cove base below tile.

**END OF SECTION**

**SECTION 09 00 02.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – ACOUSTIC CEILINGS**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 09 00 02, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each Trade and Non-Trade Contractor (Filed-Sub Bid) are listed in the CM Supplemental Conditions section 00 72 25. It is expected that this Trade Contractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization section 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions)
5. Special attention is drawn to CM Project Schedule section 01 12 00.
6. NOTE: For the purposes of the Contract Drawings, Specifications and supplemental scope sheets, the terms 'Filed Sub-Bidder' and 'Trade Contractor' shall be considered interchangeable, each carrying identical meaning and obligations in accordance with Massachusetts General Laws Chapter 149 and M.G.L. Chapter 149A.

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR ACOUSTIC CEILINGS TRADE CONTRACTOR**

1. Coordinate ceiling layout and work sequence with the work of all other trades that have work installed within or mounted on the acoustical ceiling system. Provide all necessary ceiling tile cuts for penetrating or ceiling mounted items.
2. Trade Contractor shall include provisions to install ceiling grid system prior to installation of tile. Trade Contractor shall carry multiple mobilizations to complete cuts, device installation, and full tiles.
3. Trade Contractor to frame to and provide cutouts in the tiles for other trades including lighting fixtures, mechanical equipment, projection screens, access panels, expansion joints, fire protection heads, electrical/FA devices.
4. Provide and install touch up paint at cut ceiling tile edges exposed to view.
5. The Acoustical Tile Trade Contractor shall furnish and install **5%** of each type of ceiling

CM SUPPLEMENTAL SCOPE STATEMENT – ACOUSTIC CEILINGS

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tile/grid beyond attic stock requirements for damaged or missing tiles during course of construction. At direction of Construction Manager, return to the site to provide installation near or after the completion of all work. Carry a **40 man-hour** allowance for re-installation/installation of ACT (this excludes punchlist and corrective work that would have already been the responsibility of the ACT Trade Contractor). ACT allowance shall be clearly broken out in contractors schedule of values and shall not be billed against unless explicitly authorized by the CM and Owner.

6. Provide all labor, material and equipment as required for the complete performance of their work including but not limited to staging, scaffolding, planks, aerial work platforms, swing staging, scissor lifts, fork lifts, cranes, rigging, etc. This shall also include all fuel consumption, maintenance, and engineering, inspections, training certifications, safety inspections and permitting as required. Prior approval from project structural engineer is required when utilizing some equipment on slab on deck. Consult with WTR Superintendent for assistance.
7. Assume separate mobilization(s) for room-perimeter and/or ceiling device ceiling tile cuts.
8. All necessary caulking for your work including acoustic caulking at the ceiling perimeters.
9. All necessary touch-up for your work.
10. As a result of the coordination process, reflected ceiling plans may vary from original contract documents (light fixtures, diffusers, etc.). Attend and participate in the overhead coordination meetings. Participation in these meetings includes sign off on MEP coordination drawings. Adjustments to the ceiling assemblies to address layout of overhead equipment will be at no additional cost to the project. Bring to the attention of the CM any discrepancies in height or layout not noted during coordination. Confirm ceiling height or layout changes through shop drawings or RFIs to the design team.
11. In special circumstances, the CM may deem it necessary to leave a specialty room ceiling open to allow for overhead work to be completed. Contractor shall accommodate this request, should it be made, without seeking additional compensation for "go-backs".
12. This contractor shall furnish and install thermal clips, z-clips, fasteners, and full framing backup system as shown in exterior soffit details to complete the full installation of the ceiling soffit panels.

#### **END OF SECTION**

**SECTION 09 00 04.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – RESILIENT FLOORING**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 09 00 04, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each Trade Contractor (Filed-Sub Bid) are listed in the CM Supplemental Conditions section 00 72 25. It is expected that this subcontractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization section 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions)
5. Special attention is drawn to CM Project Schedule section 01 12 00.
6. NOTE: For the purposes of the Contract Drawings, Specifications and supplemental scope sheets, the terms 'Filed Sub-Bidder' and 'Trade Contractor' shall be considered interchangeable, each carrying identical meaning and obligations in accordance with Massachusetts General Laws Chapter 149 and M.G.L. Chapter 149A.

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR RESILIENT FLOORING TRADE CONTRACTOR**

1. Floor Preparation - Perform all necessary floor preparation to allow for proper installation of flooring system.
  - A. Although work is to be installed on new concrete slabs, those slabs will be exposed to construction operations that will result in minor chips, voids and depressions.
  - B. The Resilient Flooring Trade Contractor shall be responsible for skim coat, 1/8" trowel-applied as necessary of underlayment, to surfaces in order to have a smooth and level surface to complete work outlined in 09 65 13, 09 65 19, 09 65 36, and 09 65 66. This scope shall also assume the following work items:
    - 1) Voids, cracks and depressions
    - 2) Infill all Slab on Grade (SOG) saw-cuts/joints with filler material that is acceptable to the Resilient Manufacturer.

- 3) If paint overspray/markings exist, the Resilient Trade Contractor shall own removal in order to install flooring per Manufacture instructions.
  - 4) Transitions between concrete and other substrate surfaces accepting flooring.
  - 5) Remove substate coatings and other substances (inclusive of paint) that are incompatible with floor levelers and adhesives.
2. Furnish and install all necessary transition strips between resilient flooring and dissimilar materials, except for Marble Thresholds between Resilient Flooring and Tile Flooring.
  3. Furnish, install, and maintain appropriate temporary protection for all finished installations including stairs. Damage resulting to installed flooring due to a lack of proper protection will be repaired by this contractor at no extra cost to the project. Please further be advised that kraft paper will NOT be acceptable as a means of protection. Ram Board or Cover Guard are the protection levels that will be acceptable. The Resilient Flooring contractor shall thoroughly broom clean and/or vacuum all floor systems prior to installing temporary protection.
  4. Installation of finish floor is acknowledgment and acceptance of subfloor conditions.
  5. All Adhesives for Resilient Flooring shall be for 99%RH or better, such as Forbo Sustain 100 or a similar/or equal product.

**END OF SECTION**

**SECTION 21 00 00.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – FIRE PROTECTION**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 21 00 00, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED/NE-CHPS Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each trade contractor is listed in the CM Supplemental Conditions section 00 72 25. It is expected that this Trade Contractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions)
5. Special attention is drawn to CM Project Schedule 01 12 00.

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR FIRE PROTECTION TRADE CONTRACTOR**

1. Special Note with regards to sprinkler heads: The Fire Protection Trade Contractor shall review the drawings in depth, bid and install ALL of the necessary sprinkler heads for the project. In some locations additional sprinkler heads have been indicated for design purposes and thus, even if calculations permit, heads shown on the drawings shall be considered the minimum. No additional compensation will be provided to the Fire Protection Trade Bidder for missing sprinkler heads or additional heads required based on calculations.
2. MEP Coordination utilizing 3D Modeling (BIM):
  - A. Provide 3D coordination models and related responsibilities. See Section Construction Manager Supplemental Conditions 00 72 25 for additional information.
  - B. Provide appropriate BIM expertise and resources to meet the MEP Coordination Requirements defined in Construction Manager Project Schedule 01 12 00.
  - C. It is anticipated that as a result of the coordination process, piping may be oriented in a way that will require additional pipe lengths, elbows, fittings and low points requiring drainage. This work is to be included in this base contract and no additional costs will be entertained due to coordination.
3. Penetration Firestopping and Acoustical Sealant:

- A. This Trade Contractor shall furnish and install fire stopping at all fire protection penetrations through fire-rated assemblies, whether the fire rated assembly is in place before or after the installation of the fire protection system(s). Refer to Section 07 84 13 for technical requirements.
  - B. For fire-rated assemblies, this Trade Contractor shall ensure all penetrations are installed per the approved manufacturer's fire stopping details. Where they are not installed per the approved manufacturers fire stopping details it is this Trade Contractor's responsibility to review and submit engineering judgements as required by the approved fire stopping manufacturer. This Trade Contractor shall also install labels for each fire stopping penetration which shall include at a minimum UL label, products installed, date installed and installing contractor.
  - C. This Trade Contractor will furnish and install all acoustical and smoke stop sealant to be used in penetrations created by the Contractor where these products are required in the surrounding assemblies regardless of the wall type.
4. Cutting, Coring and Patching:
- A. Provide all cutting and coring required by the work of this trade, including walls, floors and roof decks, where applicable.
  - B. Refer to Construction Manager Supplemental Conditions 3.07. A.
  - C. Temporary enclosures/covers, sealing, and general temporary watertightness of any penetrations, roof curbs, or other roof mounted, or penetrating items created or needed by this Trade Contractor shall be the full responsibility of this Trade Contractor. Maintaining weathertightness until system components are complete is the full responsibility of this Trade Contractor.  
NOTE: Regardless of anything contrary in the Constructions Manager Supplemental Conditions, the Trade Contractor requiring the metal deck opening shall cut all roof deck openings required for their equipment.
5. Access Doors and Panels:
- A. The Fire Protection Trade Contractor shall furnish access doors and panels as required to allow access to fire protection valves, equipment, and the like.
  - B. Access doors and panels shall be installed by the trade responsible for the material into which the access door and panel is to be installed (for example, drywall, masonry, tile, acoustical ceiling)
  - C. Access doors for MEP's shall be furnished from a single source vendor in order for them to be keyed alike. Coordinate with all other MEP's Trade Contractors at the appropriate time.
  - D. Access panel ceiling (location) coordination must be completed for Design Team review.
6. NFPA 241 and NFPA 14: Requirements shall be included and executed as required by this trade bid. This shall include but is not limited to:
- A. One (1) dry standpipe shall be installed as slab on deck placements proceed.
  - B. Provide temporary fire department connection at one (1) building exterior.
  - C. Provide necessary signage to locate FDC, standpipes, etc.
  - D. Provide one (1) hose and hose cabinets at each floor. Hoses shall extend at least 100 feet. Boxes shall be installed at each floor adjacent to standpipe as standpipe is installed.
7. Provide all labor, material and equipment as required for the complete performance of their work including but not limited to staging, scaffolding, planks, aerial work platforms, swing



staging, scissor lifts, forklifts, cranes, rigging, etc. This shall also include all fuel consumption, maintenance, and engineering, inspections, training certifications, safety inspections and permitting as required. Prior approval from project structural engineer is required when utilizing some equipment on slab on deck. Consult with WTR Superintendent for assistance.

8. Special attention shall be taken by this Trade Contractor for review of Architectural drawings. There are many instances of required layouts, layouts allowing concealed conditions, layout through access panels within decking.
9. Fire Protection Trade Contractor shall arrange for all inspections and tests, including line tests, as required by applicable codes and engineers. This Trade Contractor shall notify the Construction Manager in advance of any such test and shall provide written documentation of all tests performed.
10. Fire protection systems installed under this subcontract shall continue all exterior piping, fittings, accessories, to gate valve provided by DIV. 33 near the street. This Trade Contractor shall also include piping, connections, and hydrant for the adjacent hydrant work. This contractor shall oversee installation of exterior fire protection system components by the site contractor as required by code
11. The Fire Protection Trade Contractor shall provide all code required signage related to this Trade.
12. All foundation wall penetrations (sleeves/coring/link seals) needed for this Scope of Work shall be completed by this Trade Contractor.
13. All Steel Deck penetrations needed for this scope of work shall be made by this Trade Contractor.
14. WTR and Structural Engineer's approval required should the trade require penetrations through structural beams or columns. It is this Trade's responsibility to lay out location(s) of penetration(s) prior to them being cut.
15. Coordinate all device locations, handoff, wiring and programming requirements for the nitrogen generator with Division 26.
16. Special attention should be given to specification section 011200 - CM Project Schedule for Fully Functional/Fully Tested Systems (FFFT) requirements.
17. The Subcontractor shall update the as-built drawings monthly, both to indicate progress for requisition approval and to identify field-driven changes. This Subcontractor shall make these as-builts available to the Construction Manager, the Owner, and the Engineer for review. Failure to properly update the as-built drawings will result in withholding of the full monthly requisition payment amount until such time as the as-built drawings have been updated. The final as-built drawings shall incorporate existing conditions that are to remain.

**END OF SECTION**

CM SUPPLEMENTAL SCOPE STATEMENT – FIRE PROTECTION

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**SECTION 22 00 00.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – PLUMBING**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 22 00 00, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each Trade Contractor (Filed-Sub Bid) are listed in the CM Supplemental Conditions section 00 72 25. It is expected that this subcontractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization section 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions)
5. Special attention is drawn to CM Project Schedule section 01 12 00.
6. For the purposes of the Contract Drawings, Specifications and supplemental scope sheets, the terms 'Filed Sub-Bidder' and 'Trade Contractor' shall be considered interchangeable, each carrying identical meaning and obligations in accordance with Massachusetts General Laws Chapter 149 and M.G.L. Chapter 149A

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR PLUMBING TRADE CONTRACTOR**

1. MEP Coordination utilizing 3D Modeling (BIM):
  - A. Provide 3D coordination models and related responsibilities. See Section Construction Manager Supplemental Conditions 00 72 25 for additional information.
  - B. Provide appropriate BIM expertise and resources to meet the MEP Coordination Requirements defined in Construction Manager Project Schedule 01 12 00.
  - C. It is anticipated that as a result of the coordination process, piping and ductwork may be oriented in a way that will require additional pipe/ductwork lengths, elbows, supports, and fittings. This work is to be included in this base contract and no additional costs will be entertained due to coordination.
2. Penetration Firestopping and Acoustical Sealant:
  - A. This Trade Contractor shall furnish and install fire stopping at all plumbing penetrations through fire-rated assemblies, whether the fire rated assembly is in place before or after the installation of the plumbing system(s). Refer to Section 07 84 13 for technical requirements.

- B. For fire-rated assemblies, this Trade Contractor shall ensure all penetrations are installed per the approved manufacturer's fire stopping details. Where they are not installed per the approved manufacturer's fire stopping details it is this Trade Contractor's responsibility to review and submit engineering judgements as required by the approved fire stopping manufacturer. This Trade Contractor shall also install labels for each fire stopping penetration which shall include at a minimum UL label, products installed, date installed and installing contractor.
  - C. This Trade Contractor will furnish and install all acoustical and smoke stop sealant to be used in penetrations created by the Plumbing Trade Contractor where these products are required in the surrounding assemblies.
  - D. The Subcontractor is aware that joints will vary in width. Include all costs to install sealants of varying widths and depths and comply with the manufacturer's installation instructions.
3. Cutting, Coring and Patching:
- A. Provide all cutting and coring required by the work of this trade, including walls, floors, and roof decks, where applicable.
  - B. Refer to Construction Manager Supplemental Conditions 3.07. A.
  - C. Temporary enclosures/covers, sealing, and general temporary watertightness of any penetrations, roof curbs, or other roof mounted, or penetrating items created or needed by this Trade Contractor shall be the full responsibility of this Trade Contractor. Maintaining weathertightness until system components are complete is the full responsibility of this Trade Contractor.  
NOTE: Regardless of anything contrary in the Constructions Manager Supplemental Conditions, this trade contractor shall cut all roof deck openings required for their equipment.
4. Access Doors and Panels:
- A. The Plumbing Trade Contractor shall furnish access doors and panels as required to allow access to plumbing valves, equipment, and the like.
  - B. Access doors and panels shall be installed by the trade responsible for the material into which the access door and panel is to be installed (for example, drywall, masonry, tile, acoustic ceiling)
  - C. Access doors for MEP's shall be furnished from a single source vendor for them to be keyed alike. Coordinate with all other MEP's Trade Contractors at the appropriate time.
  - D. Access panel ceiling (location)coordination must be completed for Design Team review.
5. This contractor is responsible for furnishing and installing all sleeves for all penetrations related to this subcontractor's scope of work including sleeves required through drywall assemblies.
6. The Plumbing Trade Contractor shall be responsible for being present during all slab on grade and slab on deck concrete placements to ensure underground/in-slab/rough-in piping does not move during the concrete pours. The Plumbing Trace Contractor will be solely responsible for the final location of all plumbing rough-ins.
7. All underslab as-builts must be completed and reviewed by the CM prior to concrete placement. Due to scheduling restrictions, this will need to be expedited so as to not delay SOG placements.
8. Temporary Water:

- A. Install all necessary temporary water systems consisting of a connection to the building's water service and a distribution system that provides for one hose bibb connection at a central location on each floor of the project. The Plumbing Trade Contractor shall:
  - B. Maintain this system for the duration of the project.
  - C. Disconnect, dismantle, remove, and dispose of the system when no longer required for temporary water (at discretion of Construction Manager)
9. Special attention shall be taken by this Trade Contractor to the review of Architectural drawings. There are many instances of required layouts, layouts allowing concealed conditions, layout through access panels within decking, dimensions, and other aspects of the scope to be properly coordinated by this Trade Contractor
10. Plumbing Trade Contractor shall expedite submittals relating to below grade drainage, trench drains, perimeter drainage, under slab piping, roof drains and rain leaders
11. Under slab Excavation Responsibilities:
- A. Excavation and backfilling for under slab plumbing will be provided by others only for underground plumbing work shown on the plumbing drawings. The Plumbing Trade Contractor shall be responsible for excavation and backfill work for all under slab or underground plumbing work not shown or not explicitly depicted as under slab or underground work on the plumbing drawings.
12. All foundation wall penetrations (sleeves/coring/link seals) needed for this Scope of Work shall be completed by this Trade Contractor. Given the timing of early foundation work, these openings will need to be cored (in lieu of being sleeved). All such coring will be the responsibility of the Plumbing Trade Contractor.
13. The Plumbing Trade Contractor shall install all exterior piping within 10' of the building. Excavation and backfill for the piping will be by others.
14. All inverts need to be coordinated with the Civil contractor prior to underground installation.
15. Provide all coring required by the work of this trade, including walls, floors, and roof decks, where applicable. All Steel Deck penetrations and openings needed for this scope of work shall be made by this Trade Contractor. Regardless of anything contrary in the Construction Manager Supplemental Conditions, this Trade Contractor shall cut all deck openings required for their equipment.
16. Provide all labor, material and equipment as required for the complete performance of their work including but not limited to staging, scaffolding, planks, aerial work platforms, swing staging, scissor lifts, forklifts, cranes, rigging, etc. This shall also include all fuel consumption, maintenance, and engineering, inspections, training certifications, safety inspections and permitting as required. Prior approval from project structural engineer is required when utilizing some equipment on slab on deck. Consult with WTR Superintendent for assistance.
17. Roof Drains shall be connected immediately (in coordination with the roofing trade bidder). Should the Roofing Trade Contractor complete their drain work prior to the actual connection of the roof drains, the Plumbing Trade Contractor shall provide temporary

provisions including pumping the roof water to prevent water infiltration into the building. Water will be pumped to a location selected by the Construction Manager. **Temporary provisions, if needed, shall be made to get the rainwater at least 10ft away from the building and away from access points (i.e. Doorways/entrances) into the building.**

18. The Plumbing Trade Contractor shall provide all code required signage related to this trade.
19. Plumbing Trade Contractor shall arrange for all inspections and tests, including line tests, as required by applicable codes and engineers. Plumbing Trade Contractor shall notify the Construction Manager in advance of any such test and shall provide written documentation of all tests performed.
20. The Plumbing Trade Contractor shall install hub drains / condensate drains that are centrally located whether or not shown on the contract drawings. If not shown, there should be a minimum of (2) locations carried for each separate floor. These drains shall be coordinated with the HVAC Trade Contractor in advance of installation in order to allow proper pitch without affecting the noted ceiling heights to the greatest extent possible
21. Protect floor drains, trench drains, and clean outs until building has been turned over to the owner. ALL damage to floor drains will be repaired by and at the cost of the plumbing Trade Contractor regardless of the cause. Remove and clean protection at the completion of the project and clean covers to look like new. Replace covers as necessary.
22. Any power or low voltage wiring equipment provided in Division 22 00 00 but not owned in Division 26 00 00 shall be provided by Division 22 00 00.
23. The Plumbing Trade Contractor shall install all finished plumbing/foodservice related fixtures furnished by Division 11 40 00. Coordinate locations and final connections with the Architectural plans.
24. WTR and Structural Engineer's approval required should the trade require penetrations through structural beams or columns. It is this Trade's responsibility to lay out location(s) of penetration(s) prior to them being cut.
25. This Subcontractor shall leave all equipment in a wiped-clean condition free of all excess sealants, packing, labels (not required to remain), dirt or residues.
26. Special attention should be given to specification section 011200 - CM Project Schedule for Fully Functional/Fully Tested Systems (FFFT) requirements.
27. The Subcontractor shall update the as-built drawings monthly, both to indicate progress for requisition approval and to identify field-driven changes. This Subcontractor shall make these as-builts available to the Construction Manager, the Owner, and the Engineer for review. Failure to properly update the as-built drawings will result in withholding of the full monthly requisition payment amount until such time as the as-built drawings have been updated. The final as-built drawings shall incorporate existing conditions that are to remain.

**28. Building Preventative Operation and Maintenance:**

- A. During the first-year warranty period the Plumbing Trade Contractor is required to perform all preventative maintenance as specified by the manufacturer's maintenance

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requirements for each type of equipment provided by this contractor. Equipment included but not limited to:

- 1) Water Heaters (WH-1)
- 2) Recirculation Pumps (HWP-1&2)
- 3) Elevator Sump Pump (ESP-1)
- 4) Gas & Sand Interceptor (G/S-1)
- 5) Clean all strainers quarterly

B. This scope of work shall include all replacement parts and materials associated with or required by the preventative maintenance program.

C. All maintenance visits are to be coordinated with the owner, ensuring facilities / maintenance personnel are in attendance to verify, observe, and learn from maintenance being completed.

D. Proposed maintenance schedule to be submitted prior to start-up and testing.

**29. Post-Occupancy Inspections:**

A. The equipment manufacturer shall also perform independently from the maintenance contract, periodic inspections (see schedule below) of the following equipment.

- 1) Water Heaters (WH-1 & WH-2)
- 2) Recirculation Pumps (HWP-1&2)
- 3) Elevator Sump Pump (ESP-1)
- 4) Gas & Sand Interceptor (G/S-1)
- 5) Water meter
- 6) Mixing valves & mixing valve settings
- 7) Clean all strainers

The schedule for inspections, unless noted otherwise, shall be as follows. Durations to start after formal acceptance of system by the owner.

- 6 months
- 12 months

**END OF SECTION**

**SECTION 23 00 00.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – HVAC**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 23 00 00, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each Trade Contractor (Filed-Sub Bid) are listed in the CM Supplemental Conditions section 00 72 25. It is expected that this subcontractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization section 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions)
5. Special attention is drawn to CM Project Schedule section 01 12 00.
6. NOTE: For the purposes of the Contract Drawings, Specifications and supplemental scope sheets, the terms 'Filed Sub-Bidder' and 'Trade Contractor' shall be considered interchangeable, each carrying identical meaning and obligations in accordance with Massachusetts General Laws Chapter 149 and M.G.L. Chapter 149A

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR HVAC TRADE CONTRACTOR**

1. MEP Coordination utilizing 3D Modeling (BIM):
  - A. Provide 3D coordination models and related responsibilities. See Section Construction Manager Supplemental Conditions 00 72 25 for additional information.
  - B. Provide appropriate BIM expertise and resources to meet the MEP Coordination Requirements defined in Construction Manager Project Schedule 01 12 00.
  - C. It is anticipated that as a result of the coordination process, piping and ductwork may be oriented in a way that will require additional pipe/ductwork lengths, elbows, supports, and fittings. This work is to be included in this base contract and no additional costs will be entertained due to coordination.
2. Penetration Firestopping and Acoustical Sealant:
  - A. This Trade Contractor shall furnish and install fire stopping at all HVAC penetrations through fire-rated assemblies, whether the fire rated assembly is in place before or

after the installation of the HVAC system(s). Refer to Section 07 84 13 for technical requirements.

- B. For fire-rated assemblies, this Trade Contractor shall ensure all penetrations are installed per the approved manufacturer's fire stopping details. Where they are not installed per the approved manufacturers fire stopping details it is this Trade Contractor's responsibility to review and submit engineering judgements as required by the approved fire stopping manufacturer. This Trade Contractor shall also install labels for each fire stopping penetration which shall include at a minimum UL label, products installed, date installed and installing contractor.
- C. This Trade Contractor will furnish and install all acoustical and smoke stop sealant to be used in penetrations created by the Contractor where these products are required in the surrounding assemblies regardless of the wall type.
- D. For all sheet metal/duct penetrations provide a finish sheet metal "picture frame".

3. Cutting, Coring and Patching:

- A. Provide all cutting and coring required by the work of this trade, including walls, floors and roof decks, where applicable.
- B. Refer to Construction Manager Supplemental Conditions 3.07. A.
- C. Temporary enclosures/covers, sealing, and general temporary watertightness of any penetrations, roof curbs, or other roof mounted, or penetrating items created or needed by this Trade Contractor shall be the full responsibility of this Trade Contractor. Maintaining weathertightness until system components are complete is the full responsibility of this Trade Contractor.

NOTE: Regardless of anything contrary in the Constructions Manager Supplemental Conditions, the contractor shall cut all roof deck openings required for their equipment.

4. Access Doors and Panels

- A. The HVAC Trade Contractor shall furnish access doors and panels as required to allow access to HVAC valves, equipment and the like.
  - B. Access doors and panels shall be installed by the trade responsible for the material into which the access door and panel is to be installed (for example, drywall, masonry, tile, acoustic ceiling)
  - C. Access doors for MEP's shall be furnished from a single source vendor in order for them to be keyed alike. Coordinate with all other MEP's subcontractors at the appropriate time.
  - D. Access panel ceiling locations and coordination must be completed for Design Team review prior to installation.
5. Special attention shall be taken by this Trade Contractor for review of Architectural drawings. There are many instances of required layouts, layouts allowing concealed conditions, layout through access panels within decking.
6. All volume dampers shall be installed in accessible location wherever possible. Any volume dampers that are installed in an inaccessible ceiling (i.e. GWB, wood, etc) shall be provided with cable operated dampers.

7. Provide all labor, material and equipment as required for the complete performance of their work including but not limited to staging, scaffolding, planks, aerial work platforms, swing



staging, scissor lifts, forklifts, cranes, rigging, etc. This shall also include all fuel consumption, maintenance, and engineering, inspections, training certifications, safety inspections and permitting as required. Prior approval from project structural engineer is required when utilizing some equipment on slab on deck. Consult with WTR Superintendent for assistance.

8. Flush Out Requirements:

- A. Provide technical and field support and labor to implement building flushout as required to fulfill requirements of LEED. This includes but is not limited to temporary Controls adjustments for air and volume requirements, trending data (including temperatures, RH) for final reporting, filtration media documentation, and any other such requirements not explicitly listed herein.
- B. At least one month prior to flushout, HVAC Trade Contractor shall demonstrate that the BMS and associated equipment is functional, and all points are reporting correctly to facilitate the LEED required flushout data point.

9. It is anticipated that the permanent HVAC/MECHANICAL system will be temporarily used during construction. The MECHANICAL Trade Contractor is responsible for the installation and maintenance of all filter media required to protect the permanent system during temporary use. Failure to properly protect and maintain the filter media for the permanent system may result in this Subcontractor cleaning the duct at their own expense.

10. Start and utilize new permanent heating and cooling system for use as construction heat and cooling no later than JANUARY 2027 per the requirements listed below:

- 1) Provide and maintain temporary construction filters and temporary filter media on all supply, return, and exhaust diffusers during the period in which the system is being used for construction heating or cooling. If sufficient filtration media is not provided or properly maintained this Trade Contractor shall be responsible for all cleaning of ductwork required.
- 2) Replace temporary filters with new, temporary filters for the flushout. Filter types to comply with LEED / SMACNA requirements.
- 3) Replace temporary filters with new, permanent filters at the time of building turnover.
- 4) Perform and document all necessary maintenance on HVAC/MECHANICAL system during their use for temporary construction heat. Conform to all manufacturer requirements and recommendations for initial and preventative maintenance during this time.
- 5) Extend all warranties as necessary such that the contractually required warranty period commences as of the date of project substantial completion or as otherwise defined in the contract documents.

11. With regards to the ATC & TAB subcontractors, the HVAC Trade Contractor must review, understand, and enforce seeking qualified sub tier subcontractors per the specifications "Quality Assurance" program. Any issues arising from improper coordination and scheduling will be investigated by the Construction Manager and back charged accordingly for such failures. This will be strictly enforced and monitored throughout the project. The ATC System must be 100% complete and fully functional (pre-functionally tested, by the HVAC Trade Contractor and respective ATC & TAB Sub tier Subcontractors) by the Project Substantial Completion date. Should this date NOT be met, liquidated damages, as set forth in the contract, will be assessed. Time Frames for "Service Contracts" shall not be

initiated until 1) the Commissioning is fully complete / signed off by the Cx Agent and 2) warranty time frame has expired per the specifications.

12. Interior Grills shall be furnished and installed by the HVAC Trade Contractor, unless specifically identified by others.
13. Furnish and Install all louvers - reference Specification Section 08 91 21 Wind-Driven-Rain-Resistant Louvers for technical requirements. This includes all submittal, sample, and coordination requirements.
14. All foundation wall penetrations (sleeves/coring) needed for this Scope of Work shall be completed by this Trade Contractor. Given the timing of early foundation work, these openings will need to be cored (in lieu of being sleeved). All such coring will be the responsibility of the HVAC Trade Contractor.
15. All Steel Deck penetrations and openings needed for this scope of work shall be made by this Contractor.  
NOTE: Regardless of anything contrary in the Construction Manager Supplemental Conditions, the contractor shall cut all roof deck openings required for their equipment.
16. HVAC and ATC trade contractor are required to attend and participate in coordination meetings for plumbing and electrical equipment contractors.
17. HVAC and ATC trade contractor foremen are required to attend all job foremen's meetings.
17. WTR and Structural Engineer's approval required should the trade require penetrations through structural beams or columns. It is this Trade's responsibility to lay out location(s) of penetration(s) prior to them being cut.
18. Provide all coring required by the work of this trade, including walls, floors, and roof decks, where applicable. All Steel Deck penetrations and openings needed for this scope of work shall be made by this Trade Contractor.  
NOTE: Regardless of anything contrary in the Construction Manager Supplemental Conditions, this Trade Contractor shall cut all deck openings required for their equipment.
19. MECHANICAL Trade Contractors shall wipe down and clean all equipment, piping, and ductwork and ensure the conditions of surfaces to be painted are free of excess oil, sealants, packing labels, stickers, dirt, and residue.
20. The Subcontractor shall update the as-built drawings monthly, both to indicate progress for requisition approval and to identify field-driven changes. This Subcontractor shall make these as-builts available to the Construction Manager, the Owner, and the Engineer for review. Failure to properly update the as-built drawings will result in withholding of the monthly requisition until such time as the as-built drawings have been updated. The final as-built drawings shall incorporate existing conditions that are to remain.
21. Special attention should be given to specification section 011200 - CM Project Schedule for Fully Functional/Fully Tested Systems (FFFT) requirements.

**18. Building Preventative Operation and Maintenance:**

A. Maintenance & Warranty:

CM SUPPLEMENTAL SCOPE STATEMENT - HVAC

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- i. Warranties required by the Contract Documents shall commence on the date of Final Completion of the Work. For the purposes of warranty start date, the final completion of the work shall be determined on a contractor-by-contractor basis and shall include full completion of all contract work – including correction and acceptance of all punch list items and submission and approval of all closeout documents. In no case shall the warranty start date be earlier than the substantial completion date of the project.
- ii. The contractor shall guarantee each and every component for one year including parts and labor from the date of final completion of the work. The contractor shall also provide the owner with all contract-required factory or extended warranties for all equipment.

B. Extended Warranties – Reference Trade Specification Section for Requirements.

C. Building Preventative Operation (BPO) and Maintenance:

During the first-year warranty period the Mechanical Trade Contractor is required to perform all preventative maintenance as specified by the manufacturer's maintenance requirements for each type of equipment provided by this contractor. This shall include at a minimum quarterly filter change, belt adjustments, lubrication, cleaning of coils, screens, and strainers, inspections, and cleaning of all heating components, cleaning condensate traps and replacing acid neutralizer media for 1 year after commencement of the warranty period.

Equipment included but not limited to:

- i. DX Packaged Air Handling Units (DOAS-1&2)
- ii. VRF Outdoor Unit Heat Pump (HVRF-1&2) (VRF-1-4)
- iii. VRF Indoor Unit Heat Pump (FC1-01 through FC2-37)
- iv. DX Split System (ACCU-1-3)
- v. Air/Water Heat Pump (ASHP-1)
- vi. Energy Recovery Ventilator (HRV-1)
- vii. Water Pumps (HHWP-1&2)
- viii. Clean all strainers
- ix. Electric Unit Heaters (EUH-01 through EUH-09)
- x. Glycol Makeup (GF-1)
- xi. Exhaust Fans (EF-1,2,3, D1&D2)
- xii. Destratification Fans (DSF-1,2,3,4,5)
- xiii. Condensate Pumps
- xiv. Fuel Oil Pump (FOP-1,2)
- xv. Fuel Oil Maintenance System (FPS-1)
- xvi. DDC HVAC Controls: Twice during warranty, check function of entire system including calibration of all sensors and make any software updates needed.

This scope of work shall include all replacement parts and materials associated with or required by the preventative maintenance program.

All maintenance visits are to be coordinated with the owner, ensuring facilities / maintenance personnel are in attendance to verify, observe, and learn from maintenance being completed.

Proposed maintenance schedule to be submitted prior to start-up and testing.

- D. Post-Occupancy Inspections: The equipment manufacturer shall also perform independently from the maintenance contract, periodic inspections (see schedule below) of the following equipment.
- i. DX Packaged Air Handling Units (DOAS-1&2)
  - ii. VRF Outdoor Unit Heat Pump (HVRF-1&2) (VRF-1-4)
  - iii. VRF Indoor Unit Heat Pump (FC1-01 through FC2-37)
  - iv. DX Split System (ACCU-1-3)
  - v. Air/Water Heat Pump (ASHP-1)
  - vi. Energy Recovery Ventilator (HRV-1)
  - vii. Water Pumps (HHWP-1&2)
  - viii. Clean all strainers
  - ix. Electric Unit Heaters (EUH-01 through EUH-09)
  - x. Glycol Makeup (GF-1)
  - xi. Exhaust Fans (EF-1,2,3, D1&D2)
  - xii. Destratification Fans (DSF-1,2,3,4,5)
  - xiii. Condensate Pumps
  - xiv. Fuel Oil Pump (FOP-1,2)
  - xv. Fuel Oil Maintenance System (FPS-1)

The schedule for inspections, unless noted otherwise, shall be as follows. Durations to start after formal acceptance of system by the owner.

- 6 months
- 12 months

**END OF SECTION**

**SECTION 26 00 00.1**  
**CM SUPPLEMENTAL SCOPE STATEMENT – ELECTRICAL**

**PART 1 GENERAL**

1. The purpose of this section is to amend, highlight and clarify scope of work responsibilities for the identified Trade Contractor package. The specification sections listed within 26 00 00, and any additional sections listed therein, bear the primary responsibility for defining this Trade Contractor's scope of work. Unless explicitly modified within this section, the requirements of those section(s) remain in full force.
2. Special attention is drawn to Section 00 72 25 Construction Manager Supplemental Conditions which define and delineate a number of compulsory requirements for all Trade Contractors, including but not limited to: MBE/ WBE Commitments, Health and Safety, Project Management and Administrative Requirements, Performance Provisions, LEED Requirements, and Work Clarifications and Scope Responsibilities.
3. MBE/WBE Commitment minimum requirements for each Trade Contractor (Filed-Sub Bid) are listed in the CM Supplemental Conditions section 00 72 25. It is expected that this subcontractor will meet the participation goals as listed in the section.
4. Special attention is drawn to CM Site Utilization section 00 83 00 (specifically, but not limited to: Site Configuration, Parking, Traffic Management, On-Site Storage requirements and other provisions and restrictions)
5. Special attention is drawn to CM Project Schedule section 01 12 00.
6. For the purposes of the Contract Drawings, Specifications and supplemental scope sheets, the terms 'Filed Sub-Bidder' and 'Trade Contractor' shall be considered interchangeable, each carrying identical meaning and obligations in accordance with Massachusetts General Laws Chapter 149 and M.G.L. Chapter 149A

**PART 2 SUPPLEMENTAL SCOPE REQUIREMENTS FOR ELECTRICAL TRADE CONTRACTOR**

1. MEP Coordination utilizing 3D Modeling (BIM):
  - A. Provide 3D coordination models and related responsibilities. See Section Construction Manager Supplemental Conditions 00 72 25 for additional information.
  - B. Provide appropriate BIM expertise and resources to meet the MEP Coordination Requirements defined in Construction Manager Project Schedule 01 12 00.
  - C. It is anticipated that as a result of the coordination process, piping and ductwork may be oriented in a way that will require additional pipe/ductwork lengths, elbows, supports, and fittings. This work is to be included in this base contract and no additional costs will be entertained due to coordination.
2. **Pre-Purchase - 26 12 19 Pad-Mounted, Liquid-Filled, Medium-Voltage Transformers, 26 13 29 Medium-Voltage, Pad-Mounted, 26 24 13 Switchboards**

- A. The construction manager has pre-purchased the interior and exterior switchgear, and exterior pad mount transformer per the specifications noted above.
  - B. The short circuit study was excluded from the pre-purchase agreement and is to be provided by the Electrical Trade Contractor.
  - C. The Electrical Trade Contractor shall be responsible for full and complete installation of these items, including:
    - i. Coordination with supplying vendors regarding exact scope of purchase orders, delivery timing and logistics, off site storage, startup scheduling and services, and owner training.
    - ii. Receiving, offloading, off site storage, protecting, safeguarding, and rigging of the equipment. The material will be delivered to a distribution facility or rigger storage facility within MA. This subcontractor is responsible for the delivery from the distribution facility to the job site.
    - iii. Any ancillary items or accessories that are not part of the purchase order but are required to provide a complete and operational system as defined in the contract documents are the responsibility of the Electrical Trade Contractor. Refer to Contract Documents for the list of items being provided. The Electrical Trade Contractor is responsible to furnish and install all remaining components not called for on that list.
    - iv. Coordination of installation with Utility Company
    - v. The Electrical Trade Contractor shall be responsible for the complete warranty for the pre-purchased equipment as noted above including initiating contact and communication with the manufacturer to address warranty claims.
    - vi. The executed purchase orders have been attached to this section for purposes of delineating work responsibilities.
    - vii. All training, warranty and maintenance obligations at substantial completion shall be the responsibility of the Electrical Trade Contractor.
    - viii. In the event of additional work that requires material changes to the equipment, the Electrical Trade Contractor shall obtain all pricing and acceptable materials from the supplier/manufacturer to complete the authorized change order work.
    - ix. The electrical contractor is responsible for all load bank testing and breaker testing.
3. **Pre-Purchase: 26 32 13 Engine Generator & 26 28 26 Automatic Transfer Switches**
- A. The Construction Manager has pre-purchased the Generator and automatic transfer switches.
  - B. The Electrical Trade Contractor shall be responsible for full and complete installation of these items, including:
    - i. Coordination with supplying vendors regarding exact scope of purchase orders, delivery timing and logistics, startup scheduling and services, owner training.
    - ii. Receiving, offloading, off site storage, protecting, safeguarding, and rigging of the equipment. The material will be delivered to a distribution facility or rigging facility within MA. This subcontractor is responsible for the delivery from the distribution facility to the job site including crane and rigging of generator into place.
    - iii. Any ancillary items or accessories that are not part of the purchase order but are required to provide a complete and operational system as defined in the contract documents are the responsibility of the Electrical Trade Contractor. Refer to Contract Documents for the list of items being provided. The Electrical Trade Contractor is responsible to furnish and install all remaining components not called for on that list.

- iv. Startup by a manufacturer's authorized representative to maintain all warranty obligations is the responsibility of the Electrical Trade Contractor including any labor or setup of pumps, vent stacks, etc. to provide a fully operational generator. Fuel for startup, testing, and commissioning, and a full tank at substantial completion shall be the responsibility of the Electrical Trade Contractor.
- v. The Electrical Trade Contractor shall be responsible for the complete warranty, and maintenance for the pre-purchased equipment as noted above including initiating contact and communication with the manufacturer to address warranty claims.
- vi. The executed purchase orders have been attached to this section for purposes of delineating work responsibilities.
- vii. All training, warranty and maintenance obligations at substantial completion shall be the responsibility of the Electrical Trade Contractor.
- viii. In the event of additional work that requires material changes to the equipment, the Electrical Trade Contractor shall obtain all pricing and acceptable materials from the supplier/manufacturer to complete the authorized change order work.
- ix. The electrical contractor is responsible for all load bank testing.

**4. Pre-Purchase – PURVIS Station Altering System:**

- A. The Construction Manager has pre-purchased the PURVIS Station Altering system parts and components (reference Volume 3 of the Project Manual for cutsheets).
- B. Coordination with supplying vendors regarding exact scope of purchase orders, delivery timing and logistics, off site storage, startup scheduling and services, and owner training.
- C. Receiving, offloading, off site storage, protecting, safeguarding, and rigging of the equipment. The material will be delivered to a distribution facility or rigger storage facility within MA. This subcontractor is responsible for the delivery from the distribution facility to the job site.
- D. Any ancillary items or accessories that are not part of the purchase order but are required to provide a complete and operational system as defined in the contract documents are the responsibility of the Electrical Trade Contractor. Refer to Contract Documents for the list of items being provided. The Electrical Trade Contractor is responsible to furnish and install all remaining components not called for on that list.
- E. Coordination of installation with Utility Company.
- F. Electrical Trade Contractor is responsible for all conduit, backboxes, wiring, installation, wiring, terminations, testing, programming by manufacturers rep. and commissioning for a complete operational system.
- G. The Electrical Trade Contractor shall be responsible for the complete warranty for the pre-purchased equipment as noted above including initiating contact and communication with the manufacturer to address warranty claims.
- H. The executed purchase orders have been attached to this section for purposes of delineating work responsibilities.
- I. All training by manufacturers rep, warranty and maintenance obligations at substantial completion shall be the responsibility of the Electrical Trade Contractor.
- J. In the event of additional work that requires material changes to the equipment, the Electrical Trade Contractor shall obtain all pricing and acceptable materials from the supplier/manufacturer to complete the authorized change order work.

**5. Penetration Firestopping and Acoustical Sealant**

- A. The Electrical Trade Contractor shall furnish and install fire stopping at all Electrical penetrations through fire-rated assemblies, whether the fire rated assembly is in place before or after the installation of the Electrical system(s). Refer to **Section 07 84 00** for technical requirements.
  - B. For fire-rated assemblies, this Trade Contractor shall ensure all penetrations are installed per the approved manufacturer's fire stopping details. Where they are not installed per the approved manufacturers fire stopping details it is this Trade Contractor's responsibility to review and submit engineering judgements as required by the approved fire stopping manufacturer. This Trade Contractor shall also install labels for each fire stopping penetration which shall include at a minimum UL label, products installed, date installed and installing contractor.
  - C. The Electrical Trade Contractor will furnish and supply all acoustical and smoke stop sealant to be used in penetrations created by the aforementioned Contractor where these products are required in the surrounding assemblies.
6. Cutting, Coring and Patching:
- A. Refer to Construction Manager Supplemental Conditions 3.7.A.
  - B. Temporary enclosures/covers, sealing, and general temporary watertightness of any penetrations, roof curbs, or other roof mounted, or penetrating items created or needed by this Trade Contractor shall be the full responsibility of this Trade Contractor. Maintaining weathertightness until system components are complete is the full responsibility of this Trade Contractor.
7. Access Doors and Panels:
- A. The Electrical Trade Contractor shall furnish access doors and panels as required to allow access to Electrical Switches, and all other equipment that requires access.
  - B. Access doors and panels shall be installed by the trade responsible for the material into which the access door and panel is to be installed (for example, drywall, masonry, tile, acoustic ceiling)
  - C. Access doors for MEP's shall be furnished from a single source vendor in order for them to be keyed alike. Coordinate with all other MEP's Trade Contractors at the appropriate time.
  - D. Access panel ceiling coordination drawings must be completed by this Trade and submitted for Design Team review and approval.
8. Special attention shall be taken by this Trade Contractor for review of Architectural drawings. There are many instances of required layouts, layouts allowing concealed conditions, layout through access panels within decking.
9. Temporary Power and Lighting:
- A. All temporary power and lighting for the project is to be furnished, installed, maintained, and removed by the Electrical Contractor. Install temporary panels and all equipment.
  - B. Temporary power that is run outside (i.e. from temp service stanchion to building or to the construction trailers) and shall be furnished and installed by the Electrical Trade Contractor. The Electrical Trade Contractor shall carry providing a temporary construction 'mast' to support any overhead cabling from the primary connection (Electrical Power Pole) to the area/item temporary power is being provided to.



- C. Trade Contractor shall provide connections to CM trailer as well as OPM/Owner trailer/office as part of bid. It is understood that these facilities may be moved during the construction period, and that these relocations will be performed at no additional cost. Power provided to CM and Owner trailers/offices shall be sufficient to power everyday operations including operation of computers, copiers, printers, and heating equipment integral to trailers/offices. Refer to the Site Utilization Plan 00 73 30 for locations of the trailers. This temporary power work for the construction trailers shall be provided within 15 Calendar days of the Notice of Award issuance to this Trade Contractor. This contractor shall include coordinating with the Power company in order to provide temporary power in compliance with their standard work requirements / parameters and for scheduling the work / inspections / etc. to take place.
- D. Temporary power and lighting systems should be installed by the Electrical Contractor such that it can be activated, utilized and de-activated without the need for Electrical Contractor assistance or standby time. If standby time or electrician involvement is required to support the activation, operation, safeguarding or de-activation of temporary power or lighting, the costs of such support shall be carried by the Electrical Contractor in its base bid price.
- E. The Electrical Contractor shall carry the cost of installation, relocation and removal of temporary power and lighting to accommodate normal construction operations, and work sequencing. All temp lighting to be removed or brought below ceiling before ceilings are closed. When removed, this contractor shall patch those holes. If transition to permanent power is not available, temporary lights shall be moved below ceiling height at no additional cost. Trade Contractor shall include dismantling system safely and without further damage to installed finishes around system.
- F. Removal of temporary power and lighting will be at the discretion of the CM. As timing is of the essence, temporary facilities will not be permitted to remain after the designated removal date instituted by the CM.
- G. Temporary interior lighting and power shall be not less than the following:
  - Lighting - 200 watts per 100 square feet of floor area, plus 60 watts for each stair landing. All lighting shall be installed with CFL Bulbs. Provide and maintain 150 watt per 60 ft lighting of exterior staging and storage areas after dark for security purposes. Additionally, the Electrical Trade Contractor shall provide 24 portable light stands for use in areas where general temporary lighting is not sufficient.
  - This trade contractor shall be responsible to maintain temporary lighting foot candle intensities per OSHA standard 1926.56, table D-3.
- H. The Electrical Contractor, at his own expense, shall maintain all lamps in operating condition. Damaged or non-functioning lighting will be addressed within 24-hours of receiving notification.
- I. Receptacles - OSHA compliant GFI receptacles. At least one (1) 20 ampere duplex for each 1,000 square feet of floor space (home run/dedicated circuit for each), and such others as will accommodate extension cords not greater than 50 feet in length to reach all work of all trades. (GFI receptacles shall be tested weekly. Provide documentation of testing to construction manager).
- J. Fused switches for special construction equipment - On each floor of each building, at least one 30 ampere, 2 pole fused switch for equipment connection. Cables, and connection from switch to the special equipment, shall be provided, maintained and paid for by the trade requiring same.
- K. This bid shall also include installation of a quantity of **6 "high voltage" temporary connections** for work items such as, but not limited to, fire proofing equipment, elevator, sanders, and welders ("pigtailed" for such devices shall be provided by the trade requiring such power).

- L. Trade Contractor shall provide labor, equipment, and materials necessary for the connections and operation of temporary heating equipment provided by others, including special connections, and disconnections, as part of base bid during the winter of 2026/2027.
  - M. Upon completion of use of the Temporary Electrical Services, the Electrical Trade Bid shall complete all necessary work activities to remove and then transfer the temporary power and lighting system to the new electrical system service. This work activity shall be required during the second/third/adjusted shift and the Electrical Trade Contractor shall include all necessary second/third/adjusted shift work in order to complete.
  - N. Expedite activation of new, permanent electrical service. Upon activation re-feed all temporary and permanent panels and the main electrical room equipment so that this service and gear can be utilized, in addition to any newly installed equipment throughout the building.
  - O. The Electrical Trade Contractor shall include furnishing and installation of **6 exterior motion sensor 400-watt spotlights** around the project. Work shall include all time clocks, wiring, mounting, etc. for a complete installation and eventual removal. Coordinate exact locations and removal time frames with the Construction Manager.
10. The Electrical Contractor shall be responsible for ensuring new permanent light fixtures are procured, delivered, and installed to meet the needs of occupancy requirements. If new permanent light fixtures are not delivered in time to meet scheduling requirements, the Electrical Trade Contractor shall be responsible for furnishing and installing temporary light fixtures, which shall be approved by the owner, and are adequate to meet occupancy requirements. In addition, the Electrical Contractor shall be responsible for any temporary construction or provisions to accommodate the temporary lighting. Upon receipt of the new permanent light fixtures, the Electrical Contractor shall be responsible for the following, in a timely fashion:
- A. Remove and dispose temporary light fixtures
  - B. Additional cost for touchup and/or repair of other trades work.
  - C. Alter / restore construction elements as necessary to receive new permanent light fixtures, per the permanent design
  - D. Install new light fixtures
  - E. Perform all such work during non-school operating hours (second shift, third shift, Saturdays, Sundays, school vacation days) and in a manner such that occupied areas of the school are not without code-compliant light during any operating hours.
11. Install and energize permanent light fixtures for final painting.
12. Special Attention for items within Specification Divisions 10, 11 and 12 for Power requirements. Regardless of whether or not such power requirements are shown, they shall be furnished and all final connections installed by the Electrical Trade Contractor.
13. Poke Thru Devices and/or Floor Assemblies shall be furnished and installed by the Electrical Trade Contractor, including all necessary coring, floor repair, patching, grouting, etc. for a complete installation.
14. Under slab Excavation Responsibilities:
- A. Excavation and backfilling for under slab electrical will be provided by others only for underground electrical work shown on the electrical drawings. The Electrical Trade Contractor shall be responsible for excavation and backfill work for all under slab or

underground electrical work not shown or not explicitly depicted as under slab or underground work on the electrical drawings.

15. Provide all labor, material and equipment as required for the complete performance of their work including but not limited to staging, scaffolding, planks, aerial work platforms, swing staging, scissor lifts, forklifts, cranes, rigging, etc. This shall also include all fuel consumption, maintenance, and engineering, inspections, training certifications, safety inspections and permitting as required. Prior approval from project structural engineer is required when utilizing some equipment on slab on deck. Consult with WTR Superintendent for assistance.
16. All foundation wall penetrations (sleeves/coring/link seals) needed for this Scope of Work shall be completed by this Trade Contractor. If coordination is not complete in time, these openings will need to be cored (in lieu of being sleeved). All such coring will be the responsibility of the Electrical Trade Contractor.
17. The Electrical Trade Contractor shall be responsible for being present during all slab on grade and slab on deck concrete placements to ensure underground rough-in conduit and conduit sleeves do not move during the concrete pours. Contractor will be solely responsible for the final location of all electrical rough-ins.
18. All Steel Deck penetrations needed for this scope of work shall be made by this Contractor. Coring after deck placement will not be permitted unless approved by the CM. All sleeves must be in place and secure prior to concrete.
19. This contractor shall be responsible for the removal and reinstallation of device and outlet cover plates so as to allow for finish painting. No claim shall be made for the handling of these cover plates on numerous occasions for the purpose of painting.
20. Generator Fuel:
  - A. Provide all fuel needed for startup, load-bank testing, and any other requirements to obtain final acceptance. At Substantial Completion the Electrical Trade Contractor shall ensure all fuel tanks for the generator are full with all costs of fuel by the Electrical Trade Contractor.
21. Reference Details for support hanger load restrictions for composite steel deck if applicable.
22. Each Trade Contractor shall furnish their own extension cords and any additional task lighting as may be required for their work.
23. The Electrical Trade Contractor will actively participate in the electrical commissioning including making the required changes to meet the project design intent.
24. Prior to commencement of PA System Rough-In, the Electrical Contractor shall obtain project specific interior and exterior zoning information/layouts from the Owner. Obtaining this information shall be via Electrical Contractor provided zoning layout/shop dwg and/or schedule as reviewed by the Design Team/Owner or via an RFI submission and subsequent response from Design Team/Owner.

25. Before programming of the security system begins, the Electrical Trade Contractor shall schedule and hold a meeting with the Owner to confirm naming conventions, partitions, card access rules, etc.
26. Before any fire alarm rough in and programming can start, the Electrical Trade Contractor shall schedule and hold a meeting with the Owner and fire department to confirm any specific alarming, naming conventions, zoning, etc.
27. Electrical Trade Contractor shall provide 120V power to all aquastats.
28. Electrical Trade Contractor shall provide 120v power for ATC/BMS/security/access control panels as well as data cabling and terminations from ATC/BMS main control panel to nearest IDF/MDF room.
29. Electrical Trade Contractor will provide coordination of electric metering to make sure all metering is capable of being monitored at the BMS. Provide all gateways, bacnet cards as required to fully monitor all metered electrical systems.
30. The Electrical Trade Contractor is responsible for providing, installing and removal of dust covers for indirect/direct pendants, and for final cleaning of all light fixtures in accordance with the manufacturers cleaning requirements.
31. Temporary storage of equipment and/or lights is not allowed onsite with prior review and approval by the CM.
32. Electrical Trade Contractor owns all requirements noted in **Section 23 05 48** for all vibration control and seismic requirements for Electrical equipment as required per State Building and Electrical Code.
33. Special attention should be given to specification section 011300 - CM Project Schedule for Fully Functional/Fully Tested Systems (FFFT) requirements.
34. The Subcontractor shall update the as-built drawings monthly, both to indicate progress for requisition approval and to identify field-driven changes. This Subcontractor shall make these as-builts available to the Construction Manager, the Owner, and the Engineer for review. Failure to properly update the as-built drawings will result in withholding of the monthly requisition until such time as the as-built drawings have been updated. The final as-built drawings shall incorporate existing conditions that are to remain.
35. Building Performance for Owner (BPO) – Performance Requirements:
  - A. Maintenance & Warranty
    - Warranties required by the Contract Documents shall commence on the date of Final Completion of the Work. For the purposes of warranty start date, the final completion of the work shall be determined on a contractor-by-contractor basis and shall include full completion of all contract work – including correction and acceptance of all punch list items and submission and approval of all closeout documents. In no case shall the warranty start date be earlier than the substantial completion date of the project.
    - The contractor shall guarantee each and every component for one year including parts and labor from the date of final completion of the work. The contractor shall also provide the owner with all contract-required factory or extended warranties for all equipment.

- Extended Warranties – Reference Trade Specification Section for Requirements.
- B. Preventative Maintenance: During the first-year warranty period the Electrical Trade Contractor is required to perform all preventative maintenance as specified by the manufacturer's maintenance requirements for each type of equipment provided by this contractor. This shall include at a minimum quarterly filter change, belt adjustments, lubrication, cleaning of coils, screens, and strainers, inspections, and cleaning of all heating components, cleaning condensate traps and replacing acid neutralizer media for 1 year after commencement of the warranty period. Equipment included but not limited to:
- Occupancy/vacancy sensors
  - Daylight dimming sensors
  - Switches
  - Security system (intrusion alarm, cameras, prox card readers, Aiphone, area of rescue, servers, software): Twice during warranty check function of entire system and make any software updates needed
  - Audio visual system
  - Electrical (SWBD-1, MV-SWGR-1, SWBD-GEN-1, DP-1A, DP-OS-1A)
  - Lighting controls
  - Metering
  - Fire Alarm System
  - BDA System
  - FACP / Annunciators
  - Interconnection with the Pre-Action Suppression System
  - Contractor to participate and assist in the 1st annual inspection for recertification of the Fire Alarm and FP system.
- A. This scope of work shall include all replacement parts and materials associated with or required by the preventative maintenance program.
- B. All maintenance visits are to be coordinated with owner, ensuring facilities / maintenance personnel are in attendance to verify, observe, and learn from maintenance being completed.
- C. Post-Occupancy Inspections
- A. The equipment manufacturer shall also perform independent from the maintenance contract, periodic inspections (see schedule below) of the following equipment. The inspections shall consist of retesting and resetting daylight dimming, occupancy/vacancy sensors and setpoints, and light switches.
- a. Occupancy/vacancy sensors
  - b. Daylight dimming sensors
  - c. Switches
  - d. Security system (intrusion alarm, cameras, prox card readers, Aiphone, area of rescue, servers, software): Twice during warranty check function of entire system and make any software updates needed
  - e. Audio visual system
  - f. Electrical (SWBD-1, MV-SWGR-1, SWBD-GEN-1, DP-1A, DP-OS-1A)
  - g. Lighting controls
  - h. Metering
  - i. Fire Alarm System
  - j. BDA System

- k. FACP / Annunciators
- l. Interconnection with the Pre-Action Suppression System
- m. Contractor to participate and assist in the 1st annual inspection for recertification of the Fire Alarm and FP system.

The schedule for inspections, unless noted otherwise, shall be as follows. Durations to start after formal acceptance of system by the owner.

- 6 months
- 12 months

**END OF SECTION**



## DOOR SCHEDULE

MARK	To Room: Number	MARK	FIRE RATING	DOOR				FRAME				HARDWARE SET NUMBER	REMARKS			
				W	SIZE	THK	TYPE	MATERIAL	FINISH	TYPE	MATERIAL			FINISH	DETAILS	
DOOR NO		ROOM NAME									HEAD	JAMB				
LEVEL 01																
101.2	101	SCBA FILL	-	3'-6"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
102.2	102	YARD STORAGE	-	3'-6"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
102a	102	YARD STORAGE	-	3'-6"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	19.0	
103	103	COMPRESSOR ROOM	-	5'-0"	7'-10"	0'-1 3/4"	FF	HM	PNT3	D	HM	PNT3	12/A61-50	15/A61-50	25.0	STC 35-40
104	104	EMS STO	-	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
105	105	DEPT STORAGE	-	3'-8"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
106.1	106	TURN OUT GEAR	-	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
106.2	106	TURN OUT GEAR	-	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
107	107	STORAGE ROOM 1A2	-	3'-8"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	10.0	
107a	107	STORAGE ROOM 1A2	-	3'-0"	7'-0"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	19.0	
108	108	BAY WC	-	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	10.0	
109	109	BAY CUSTODIAL	-	3'-8"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	21.0	
110	110	SCBA SHOP	-	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
111.1	121	CORRIDOR	60	5'-0"	7'-10"	0'-1 3/4"	FF	HM	PNT1	D	HM	PNT1	10/A61-50	9/A61-50	23.0	STC 35-40
111.2	111	MAIN ELEC	90	3'-0"	7'-0"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	22.0	
112.1	121	CORRIDOR	90	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	22.0	STC 35-40
112.2	112	EMERGENCY ELEC	90	3'-0"	7'-0"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	22.0	
113.1	113	EXERCISE	-	3'-0"	7'-10"	0'-1 3/4"	FG	HM	PNT7	S/L1	HM	PNT7	10/A61-50	9/A61-50	20.0	STC 35-40
114	114	WATER SERVICE	-	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	19.0	STC 35-40
115.1	115	TRAINING ROOM	-	3'-0"	8'-0"	0'-1 3/4"	I	AL	PNT11	S/L1	AL	PNT11	108/11/A61-50	88/9/A61-50	20.0	STC 35-40
115.2	115	TRAINING ROOM	-	3'-0"	8'-0"	0'-1 3/4"	I	AL	PNT11	S/L1	AL	PNT11	108/11/A61-50	88/9/A61-50	20.0	STC 35-40
115a	115	TRAINING ROOM	60	5'-0"	7'-8"	0'-1 3/4"	FF	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	15.0	
116	116	WC 2	-	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	7/A41-04	16/A61-50	10.0	
117	117	WC 1	-	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	7/A41-04	16/A61-50	10.0	
118	118	WORK ROOM	-	5'-0"	7'-10"	0'-1 3/4"	FF	HM	PNT3	D	HM	PNT3	12/A61-50	15/A61-50	25.0	
119	119	DECON	20	3'-8"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	7.0	
119a	119a	PPE DRYING ROOM	20	3'-0"	7'-0"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	20.0	
119C.1	119C	SHOWER LOCKERS	-	3'-0"	7'-0"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	15.0	
119C.2	119C	SHOWER LOCKERS	20	3'-0"	7'-0"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	15.0	
119D.1	119D	SHOWERS	-	2'-6"	7'-0"	0'-1 3/4"	F	FB	-	S	FB	-	12/A61-50	15/A61-50	24.0	
119D.2	119D	SHOWERS	-	2'-6"	7'-0"	0'-1 3/4"	F	FB	-	S	FB	-	12/A61-50	15/A61-50	24.0	
119D.3	119D	SHOWERS	-	2'-6"	7'-0"	0'-1 3/4"	F	FB	-	S	FB	-	12/A61-50	15/A61-50	24.0	
119D.4	119D	SHOWERS	-	2'-6"	7'-0"	0'-1 3/4"	F	FB	-	S	FB	-	12/A61-50	15/A61-50	24.0	
119E	119E	CTL RM	60	3'-0"	7'-0"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	19.0	
120	120	SHOWER WC	-	3'-0"	7'-0"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	12/A61-50	15/A61-50	10.0	
121.1	121.1	CLOSET	-	5'-0"	7'-8"	0'-1 3/4"	FF	WD	SEAL	S	MW	PNT3	7/A52-01	12/A52-01	18.0	BLIND CUT DOORS - REFER TO A52-01
121.2	215.4	CLOSET	-	5'-0"	7'-8"	0'-1 3/4"	FF	WD	SEAL	S	MW	PNT3	7/A52-01	12/A52-01	18.0	BLIND CUT DOORS - REFER TO A52-01
121.3	121.2	CLOSET	-	5'-0"	7'-8"	0'-1 3/4"	FF	WD	SEAL	S	MW	PNT3	7/A52-01	12/A52-01	18.0	BLIND CUT DOORS - REFER TO A52-01
121.4	121D	ICE	-	2'-6"	7'-10"	0'-1 3/4"	F	HM	PNT1	D	HM	PNT1	10/A61-50	9/A61-50	18.0	
121a.3	121A	VESTIBULE	-	6'-0"	7'-10"	0'-1 3/4"	FGFG	AL	PNT11	AL	PNT11	AL	PNT11	10/A61-50		
121b.1	121B	VEST 1	-	3'-0"	7'-10"	0'-1 3/4"	N	HM	PNT1	S	HM	PNT1	12/A61-50	15/A61-50	7.0	
121b.2	121B	VEST 1	-	3'-0"	7'-10"	0'-1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	8.0	
121c.1	121C	VEST 2	-	3'-0"	7'-10"	0'-1 3/4"	N	HM	PNT1	S	HM	PNT1	12/A61-50	15/A61-50	7.0	
121c.2	121C	VEST 2	-	3'-0"	7'-10"	0'-1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	8.0	
122	122	CUSTODIAL	-	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	21.0	
123	123	WATCH ROOM	-	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	20.0	
123a	123a	BUNK	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
S-1.1	S-A1	STAIR A	60	1'-6"	10'-6"	0'-3"	AC	HM	PNT1	S	HM	PNT8	11/A41-01	11/A41-01		ACCORDION FIRE DOOR - POCKET OPENING
S-B1.2	S-B1	STAIR B	60	3'-0"	7'-10"	0'-1 3/4"	N	HM	PNT8	S	HM	PNT8	12/A61-50	15/A61-50	16.0	
S-B1.3			-	3'-8"	3'-0"	0'-1 3/4"	BG	-	-	-	-	-	-	-	-	EGRESS BARRIER GATE
S-C1.2	S-C1	STAIR C	60	3'-0"	7'-10"	0'-1 3/4"	N	HM	PNT8	S	HM	PNT8	12/A61-50	15/A61-50	7.0	
S-C1.3			-	3'-8"	3'-0"	0'-1 3/4"	BG	-	-	-	-	-	-	-	-	EGRESS BARRIER GATE

LEVEL 02																
200F	200	CORRIDOR	-	6'-0"	7'-10"	0'-1 3/4"	FF	HM	PNT3	D	HM	PNT3	10/A61-50	9/A61-50		
201	201	COMPANY OFFICER	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	SEAL	S/L1	HM	PNT3	108/11/A61-50	88/9/A1-50	9.0	STC 35-40
201.1	201.1	CLO	-	5'-0"	7'-10"	0'-1 3/4"	S	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	13.0	
201a	201	COMPANY OFFICER	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	SEAL	S	HM	PNT3	10/A61-50	9/A61-50	11.0	
202	202	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	PNT1	SEAL	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
203	203	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
204	204	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
205	205	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
206	206	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
207	207	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
208.1	208	COMPANY OFFICER	20	3'-0"	7'-10"	0'-1 3/4"	FG	WD	PNT7	S	HM	PNT7	10/A61-50	9/A61-50	9.0	STC 35-40
208.2	208.1	CLO	-	4'-0"	7'-10"	0'-1 3/4"	S	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	13.0	
208a	208A	C/O BUNK ROOM	-	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	
209	209	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
210	210	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
211	211	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
212	212	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
213.1	213	COMPANY OFFICER	20	3'-0"	7'-10"	0'-1 3/4"	FG	HM	PNT7	S	HM	PNT7	108/11/A61-50	88/9/A61-50	9.0	STC 35-40
213.2	213.1	CLO	-	4'-0"	7'-10"	0'-1 3/4"	S	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	13.0	STC 35-40
213A.1	213	COMPANY OFFICER	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	
214.1	214	DISTRICT CHIEF OFFICE	20	3'-0"	7'-10"	0'-1 3/4"	FG	HM	PNT7	S	HM	PNT7	10/A61-50	9/A61-50	9.0	STC 35-40
214.2	214.1	CLO	-	5'-0"	7'-10"	0'-1 3/4"	S	WD	SEAL	S	HM	PNT3	10/A61-50	9/A61-50	13.0	
214A.1	214	DISTRICT CHIEF OFFICE	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	9.0	STC 35-40
214B.1	214B	CORRIDOR	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	12.0	
214B.2	214B	CORRIDOR	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	12.0	
214C	214B	CORRIDOR	20	3'-0"	7'-0"	0'-1 3/4"	F	HM	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	10.0	
215.1	215	DISTRICT CHIEF OFFICE	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT7	S/L1	HM	PNT7	108/11/A61-50	88/9/A61-50	9.0	STC 35-40
215.2	215.1	CLO	-	6'-0"	7'-10"	0'-1 3/4"	S	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	13.0	
215a	215	DISTRICT CHIEF OFFICE	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
216	216	STUDY	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT7	S/L1	HM	PNT7	10/A61-50	9/A61-50	9.0	STC 35-40
217	217	SERVER	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	14.0	
218	218	ADA WC	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	10.0	
219	219	ADA WC	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	10.0	
220	220	ADA WC	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	10.0	
221	221	CUSTODIAL	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	21.0	
222.1	222	DAY ROOM	20	3'-0"	7'-10"	0'-1 3/4"	FG	HM	PNT7	S/L1	HM	PNT7	10/A61-50	9/A61-50	16.0	STC 35-40
222.2	222	DAY ROOM	20	3'-0"	7'-10"	0'-1 3/4"	FG	HM	PNT7	S/L1	HM	PNT7	10/A61-50	9/A61-50	16.0	STC 35-40
222a	222a	ELEC	-	6'-4"	7'-10"	0'-1 3/4"	FF	HM	PNT3	D	HM	PNT3	10/A61-50	9/A61-50	17.0	
223	223	ADA WC	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	10.0	
224	224	ADA WC	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	10.0	
225	225	LAUNDRY	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT3	S	HM	PNT3	10/A61-50	9/A61-50	20.0	STC 35-40
226.2	226	KITCHEN DINING	20	3'-0"	7'-10"	0'-1 3/4"	FG	HM	PNT7	S/L1	HM	PNT7	108/11/A61-50	88/9/A61-50	20.0	
226.3	226	KITCHEN DINING	20	3'-0"	7'-10"	0'-1 3/4"	FG	HM	PNT7	S/L2	HM	PNT7	108/11/A61-50	88/9/A61-50	20.0	STC 35-40
227.1	227	COMPANY OFFICER	20	3'-0"	7'-10"	0'-1 3/4"	FG	HM	PNT7	S	HM	PNT7	10/A61-50	9/A61-50	9.0	STC 35-40
227.2	227.1	CLO	-	5'-0"	7'-10"	0'-1 3/4"	S	WD	SEAL	D	HM	PNT3	10/A61-50	9/A61-50	13.0	
227A.1	227	COMPANY OFFICER	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	
228	228	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
229	229	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
230	230	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
231	231	BUNK ROOM	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	10/A61-50	9/A61-50	11.0	STC 35-40
232.1	232	COMPANY OFFICER	20	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT7	S/L1	HM	PNT7	10/A61-50	9/A61-50	9.0	STC 35-40
232.2	232.1	CLO	-	7'-0"	7'-10"	0'-1 3/4"	S	WD	SEAL	D	HM	PNT3	108/11/A61-50	88/9/A61-50	13.0	
232A.1	232	COMPANY OFFICER	20	3'-0"	7'-10"	0'-1 3/4"	F	WD	PNT1	S	HM	PNT1	7/A41-04	16/A61-50	11.0	
FP-1.1	100	APPARATUS BAY	20	3'-0"	7'-10"	0'-1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	
FP-1.2	100	APPARATUS BAY	20	3'-0"	7'-10"	0'-1 3/4"	FG	AL	PNT8	S	AL	PNT8	7/A41-04	16/A61-50	8.0	
FP-2.1	100	APPARATUS BAY	20	3'-0"	7'-10"	0'-1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	
FP-2.2	100	APPARATUS BAY	20	3'-0"	7'-10"	0'-1 3/4"	FG	AL	PNT8	S	AL	PNT8	7/A41-04	16/A61-50	8.0	
FP-3.1	100	APPARATUS BAY	20	3'-0"	7'-10"	0'-1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	
FP-3.2	100	APPARATUS BAY	20	3'-0"	7'-10"	0'-1 3/4"	FG	AL	PNT8	S	AL	PNT8	7/A41-04	16/A61-50	8.0	
S-4.2.1	226	KITCHEN DINING	60	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT7	S	HM	PNT7	10/A61-50	9/A61-50	16.0	
S-4.2.2	S-4.2	STAIR B	60	3'-0"	7'-10"	0'-1 3/4"	F	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	
S-8.2	S-8.2	STAIR B	60	3'-0"	7'-10"	0'-1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	
S-C.2	S-C.2	STAIR C	60	3'-0"	7'-10"	0'-1 3/4"	N	HM	PNT8	S	HM	PNT8	7/A41-04	16/A61-50	16.0	



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# TECHNOLOGY SYSTEMS DESIGN DRAWINGS

GENERAL NOTES	
1.	THE INFORMATION ON THIS SHEET APPLIES TO ALL OF THE TECHNOLOGY AND LOW VOLTAGE SYSTEMS REPRESENTED IN THIS SET OF DRAWINGS.
2.	THESE DRAWINGS ARE COMPLEMENTARY TO THE SPECIFICATIONS. ITEMS REQUIRED BY EITHER THESE DRAWINGS OR SPECIFICATIONS ARE BINDING AS THOUGH THEY ARE REQUIRED BY BOTH. REVIEW THE SPECIFICATIONS IN DETAIL AND USE IN CONJUNCTION WITH THESE DRAWINGS.
3.	CABLE TRAY, CONDUIT, AND J-HOOKS ARE SHOWN IN THEIR APPROXIMATE REQUIRED LOCATION. CONTRACTORS SHALL COORDINATE WITH OTHER TRADES PRIOR TO INSTALLATION.
4.	CABLING SHALL NOT BE INSTALLED FREE ABOVE INACCESSIBLE CEILINGS. IT SHALL BE INSTALLED IN CONDUIT EVEN IF NOT SPECIFICALLY SHOWN ON THE DRAWINGS.
5.	ANY CABLES INSTALLED IN CABLE TRAY SYSTEMS NOT SPECIFICALLY SHOWN ON THESE DRAWINGS OR INCLUDED IN THE DIVISION 27 AND 28 SPECIFICATIONS SHALL BE APPROVED BY THE CONSULTANT PRIOR TO INSTALLATION.
6.	COMPONENTS AND INSTALLATION SHALL COMPLY WITH NFPA 70 "NATIONAL ELECTRICAL CODE". CROSS REFERENCE AND COORDINATE WITH ELECTRICAL DRAWINGS.
7.	COORDINATE ALL SERVICE REQUIREMENTS WITHIN ITEMS OF MILLWORK, CASEWORK AND CEILINGS.
8.	ANY QUESTIONS AND/OR CONCERNS ABOUT THE WORK TO BE PERFORMED SHALL BE ADDRESSED PRIOR TO THE START OF THAT WORK. OTHERWISE THE CONTRACTOR SHALL BE THE RESPONSIBLE PARTY ONCE THAT WORK HAS STARTED.

ROUGH-IN AND SUPPORT NOTES	
1.	PROVIDE ALL BACKBOX AND CONDUIT ROUGH-IN AS INDICATED ON THE LEGENDS, FLOOR PLANS, RISER DIAGRAMS AND OTHER DRAWINGS. PROVIDE PULL STRINGS IN ALL CONDUITS. PROVIDE SMOOTH INSULATED BUSHINGS ON ALL CONDUITS.
2.	PROVIDE ALL FLOOR AND WALL PENETRATIONS INCLUDING CONDUIT SLEEVES, FLOOR CORES, FLOOR BOXES, POKE-THRU'S, CONDUITS, FIRE-RATED AND SMOKE-RATED SLEEVES. PROVIDE SPECIFIED FIRE RATED DEVICES PER THE NOTES ON THIS SHEET AND SPECIFICATION SECTIONS.
3.	REFER TO THE ARCHITECTURAL ELEVATIONS AND DETAILS FOR THE EXACT HEIGHT AND PLACEMENT OF OUTLETS AND OTHER LOW VOLTAGE SYSTEM DEVICES PRIOR TO ROUGH-IN. ELECTRICAL CONTRACTOR TO LOCATE DATA OUTLET BACKBOX AT SAME HEIGHT AS CORRESPONDING ELECTRICAL OUTLET, EITHER BELOW OR ABOVE COUNTER, AT COUNTERTOP LOCATIONS. LOCATE ALL BACKBOXES AT FURNITURE LOCATIONS TO BE ACCESSIBLE AND TO MISS FURNITURE SUPPORT CHANNELS.
4.	CONDUIT INSTALLED SHALL COMPLY WITH NEC REQUIREMENTS FOR CONDUIT INSTALLATION. PROVIDE PULLBOX ON CONDUIT RUNS EVERY 150', AFTER (2) 90 DEGREE BENDS AND AS OTHERWISE REQUIRED BY NEC.
5.	ALL INTERIOR JUNCTION BOXES SHALL BE NEMA 1 RATED UNLESS OTHERWISE SPECIFIED. ALL EXTERIOR JUNCTION BOXES SHALL BE NEMA 4 RATED WITH HINGED COVERS UNLESS OTHERWISE SPECIFIED. USE MYERS HUB CONNECTORS AT EXTERIOR OR JUNCTION BOX LOCATIONS.
6.	ELECTRICAL CONTRACTOR SHALL MOUNT THE DATA OUTLET AND ELECTRICAL OUTLET IN A RIGID BOX MOUNTING BRACKET TO ENSURE CONSISTENT SPACING THROUGHOUT.
7.	THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND VERIFYING PLACEMENT OF ALL OUTLETS, CONDUIT, FLOOR BOXES, POKE-THRU'S, ETC. WITH THE FURNITURE OR EQUIPMENT SUPPLIER TO ENSURE PROPER PLACEMENT WITH INSTALLED DEVICES. ADDITIONAL CHARGES FOR RELOCATING OUTLETS, CONDUIT, FLOOR BOXES, ETC. NOT PROPERLY COORDINATED OR INSTALLED WILL NOT BE ACCEPTED.
8.	PROVIDE GROUNDING PER THE GROUNDING DETAILS IN THE DRAWINGS AND SPECIFICATIONS.
9.	PRIOR TO INSTALLING ANY ELECTRICAL CONNECTIONS IN THE TDRs, COORDINATE THE EXACT POWER RECEPTACLE TYPES, LOCATIONS, PANEL LOCATIONS AND CONDUIT ROUTING WITH THE CONSULTANT.
10.	SUPPORT ALL CABLE TRAY FROM STRUCTURE AT A MINIMUM OF 8'-0" ON CENTER AND WITHIN 1'-0" OF EACH END WITH TWO 1/2" DIAMETER ALL-THREAD RODS AND HANGER KITS. USE TRAPEZE HANGER FOR CABLE TRAY. DO NOT CENTER MOUNT OR WALL MOUNT TRAY. HANGER SHALL SUPPORT FULL WIDTH OF CABLE TRAY AND BE HUNG FROM CEILING WITH ALL-THREAD RODS. FOR HORIZONTAL TEE'S AND 90 DEGREE TURNS, FIELD CUT AND FABRICATE. PROVIDE RADIAL SWEEPING TURNS.
11.	COORDINATE CABLE TRAY INSTALLATION WITH MECHANICAL EQUIPMENT, ELECTRICAL EQUIPMENT, DUCTWORK, CONDUITS, PIPING AND ALL OTHER TRADES PRIOR TO ORDERING AND INSTALLING.

PENETRATION REQUIREMENTS	
1.	THE ELECTRICAL CONTRACTOR SHALL PROVIDE FIRE-RATED SLEEVES PER THESE INSTRUCTIONS AND AS SHOWN ON THE PLANS.
2.	AT EACH ROOM WHERE LOW VOLTAGE CABLING IS BEING ROUTED INTO OR THROUGH, PROVIDE A MINIMUM OF: 2.1 (1) MILTI-CFS-MSL MODULAR SLEEVE (OR APPROVED EQUIVALENT) FOR FIRE RATED WALLS. 2.2 (1) MILTI-CFS-SL-SM SMOKE AND ACOUSTIC SLEEVE (OR APPROVED EQUIVALENT) FOR NON-RATED OR SMOKE RATES WALLS. 2.3 IF SLEEVES ARE ALREADY SHOWN FOR THAT ROOM, PROVIDE AS INDICATED.
3.	FOR EACH SET OF SLEEVES, INSTALL THEM WITH THE APPROPRIATE GANGABLE BRACKETS FOR A TIGHT AND CLEAN INSTALLATION.
4.	PROVIDE A STICKER ON THE WALL BY THE SLEEVES DETAILING THE UL RATING AND DATE INSTALLED.
5.	WHERE CABLE TRAY PASSES THROUGH NON-RATED WALLS, PROVIDE FRAMING IN THE STUDS AND DRYWALL TO ALLOW THE CABLE TRAY TO PASS THROUGH. PROVIDE SLEEVES FOR CABLE TRAY IF IT PASSES THROUGH SMOKE OR FIRE RATED WALLS.

TECHNOLOGY LEGEND				
SYMBOL	DESCRIPTION	DETAIL #	PROVIDE CONDUIT	NOTES
SYMBOLS				
	END USER DEVICE SYMBOL EXAMPLE	--	--	THIS SYMBOL AND SIMILARLY NAMED DEVICE SYMBOLS ARE FOR I.T. COORDINATION AND PLANNING ONLY.
	TYPICAL ROOM DESIGNATION	--	--	TYPICAL ROOMS ARE SHOWN ON PLANS USING THIS SYMBOL WITH A LETTER DESIGNATION. THE LETTER MATCHES A TYPICAL ROOM LAYOUT ON THE ENLARGED ROOM PLANS. PROVIDE ALL DEVICES IN THE TYPICAL LAYOUT TO THE ROOMS IN WHICH THIS SYMBOL IS SHOWN.
PATHWAYS & PENETRATIONS				
	J-HOOK PATHWAY	--	--	PROVIDE J-HOOKS AS REQUIRED TO ROUTE CABLING.
	CABLE TRAY	--	--	PROVIDE CABLE TRAY PER SPECIFICATIONS. REFER TO TAG ON DRAWINGS FOR SIZE.
	LADDER RACK CABLE TRACK	--	--	PROVIDE RACK TRAY PER SPECIFICATIONS. REFER TO TAG ON DRAWINGS FOR SIZE.
	FIRE RATED SLEEVE ASSEMBLY. QUANTITY AND TYPE INDICATED ON THE DRAWINGS.	--	--	ROUTE CABLING THROUGH SLEEVES. INSTALL IT NETWORK CABLING IN SEPARATE SLEEVE FROM OTHER LOW VOLTAGE CABLING.
	SMOKE RATED SLEEVE ASSEMBLY. QUANTITY AND TYPE INDICATED ON THE DRAWINGS.	--	--	ROUTE CABLING THROUGH SLEEVES. INSTALL IT NETWORK CABLING IN SEPARATE SLEEVE FROM OTHER LOW VOLTAGE CABLING.
	CONDUIT SLEEVES	--	✓	--
	4" CONDUIT FLOOR CORE	--	✓	--
	CONDUIT UNDER FLOOR OR IN SLAB TO FREE STANDING MILLWORK	--	(2) 2"	ROUTE CABLING THROUGH CONTINUOUS CONDUIT FROM MILLWORK OVER TO THE WALL AND UP INTO ACCESSIBLE CEILING. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS.
	CONDUIT PATHWAY BETWEEN TWO BOXES	--	✓	ROUTE TO LOCATION NOTED ON DRAWINGS. PROVIDE PULL STRING.
	CONDUIT PATHWAY FROM BOX, ROUTED UP WALL. CAP INDICATED STUB OUT ABOVE ACCESSIBLE CEILING.	--	✓	ROUTE CONDUIT UP WALL. CAP INDICATES STUB OUT ABOVE ACCESSIBLE CEILING. PROVIDE PULL STRING.
LINETYPES				
	FIBER OPTIC PRIMARY ROUTING	--	--	REFER TO THE FLOOR PLANS AND RISER DIAGRAMS FOR BACKBONE ROUTING THROUGH BUILDING.
	FIBER OPTIC SECONDARY ROUTING	--	--	REFER TO THE FLOOR PLANS AND RISER DIAGRAMS FOR BACKBONE ROUTING THROUGH BUILDING.
	COPPER BACKBONE CABLE ROUTING	--	--	REFER TO THE FLOOR PLANS AND RISER DIAGRAMS FOR BACKBONE ROUTING THROUGH BUILDING.
	TELECOM ROOM BOUNDARY LINE	--	--	DELINEATION LINE BETWEEN TELECOM ROOMS. ROUTE THE CABLING FOR ALL SYSTEMS TO THE TELECOM ROOMS SHOWN ON THE DRAWINGS BASED ON THIS SEPARATION LINE.

ABBREVIATIONS			
AFF	ABOVE FINISHED FLOOR	MTD	MOUNTED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MTR	MAIN TELECOMMUNICATION ROOM
AWG	AMERICAN WIRE GAUGE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
ARCH	ARCHITECTURAL	NEXT	NEAR-END CROSSTALK
AC	AIR CONDITIONING	NIC	NOT IN CONTRACT
C	CONDUIT	NTS	NOT TO SCALE
CAB	CABINET	N.C.	NORMALLY CLOSED
CAT	CATEGORY	N.O.	NORMALLY OPEN
CLG	CEILING	NPT	NATIONAL PIPE THREAD
DAS	DISTRIBUTED ANTENNA SYSTEM	O.F.O.I.	OWNER FURNISHED OWNER INSTALLED
DWG	DRAWING	O.R.	OPERATING ROOM
EG	EMPTY CONDUIT	PS	PULL BOX
EF	ENTRANCE FACILITY	PBX	PRIVATE BRANCH EXCHANGE
EMI	ELECTROMAGNETIC INTERFERENCE	PR	PASSIVE INFRA RED
EMT	ELECTRICAL METALLIC TUBING	PNL	PANEL
ER	EQUIPMENT ROOM	PR	PAIR
ELEC	ELECTRIC	SM	SINGLE MODE FIBER OPTIC CABLE
ENR	ELEVATOR MECHANICAL ROOM	SS	STAINLESS STEEL
EXIST	EXISTING	STP	SHIELDED TWISTED-PAIR
FUTP	FOILED UNSHIELDED TWISTED PAIR	TBB	TELECOMMUNICATION BONDING BACKBONE
FL	FLOOR	TBD	TO BE DETERMINED
FO	FIBER OPTIC	TC	TELECOMMUNICATION CLOSET
FOPP	FIBER OPTIC PATCH PANEL	TDR	TELECOMMUNICATION DISTRIBUTION ROOM
GND	GROUND	TEL	TELEPHONE
GRC	GALVANIZED RIGID CONDUIT	TGB	TELECOMMUNICATION GROUNDING BUS BAR
HC	HORIZONTAL CROSS-CONNECT	TMGB	TELECOMMUNICATION MAIN GROUNDING BUS BAR
IC	INTERMEDIATE CROSS-CONNECT	TIA	TELECOMMUNICATION INDUSTRY ASSOCIATION
IDC	INSULATION DISPLACEMENT CONNECTOR	TR	TELECOMMUNICATION ROOM
IDF	INTERMEDIATE DISTRIBUTION FRAME	TV	TELEVISION
JB	JUNCTION BOX	TYP	TYPICAL
LAN	LOCAL AREA NETWORK	U.O.N.	UNLESS OTHERWISE NOTED
LS	LOUDSPEAKER	UTP	UNSHIELDED TWISTED-PAIR
LV	LOW VOLTAGE	V	VOLT
MC	MAIN CROSS-CONNECT	VSS	VIDEO SURVEILLANCE SYSTEM
MDF	MAIN DISTRIBUTION FRAME	W	WATT
MER	MECHANICAL EQUIPMENT ROOM	WAP	WIRELESS ACCESS POINT
MIC	MICROPHONE	WP	WEATHERPROOF
MM	MULTI-MODE FIBER OPTIC CABLE		

TECHNOLOGY DRAWING LIST	
Sheet Number	Sheet Name
T-000	TECHNOLOGY COVER PAGE
T-010	STRUCTURED CABLING LEGEND
T-020	SYNCHRONIZED CLOCK AND OVERHEAD PAGING SYSTEM LEGENDS
T-030	TECHNOLOGY SYSTEMS RESPONSIBILITY MATRIX
T-100	TELECOM FLOOR PLAN - LEVEL 01 - DISTRIBUTION
T-101	TELECOM FLOOR PLAN - LEVEL 02 - DISTRIBUTION
T-200	TELECOM FLOOR PLAN - LEVEL 01 - DEVICES
T-201	TELECOM FLOOR PLAN - LEVEL 02 - DEVICES
T-210	TELECOM CEILING PLAN - LEVEL 01
T-211	TELECOM CEILING PLAN - LEVEL 02
T-400	SERVER ROOM ENLARGED PLANS AND ELEVATIONS
T-500	TECHNOLOGY TYPICAL DETAILS
T-501	TECHNOLOGY TYPICAL DETAILS
T-502	TECHNOLOGY TYPICAL DETAILS
T-503	TECHNOLOGY TYPICAL DETAILS
T-504	STATION ALERTING / PAGING SYSTEM DETAILS

SECURITY DRAWING LIST	
Sheet Number	Sheet Name
TY-010	SECURITY SYSTEMS LEGEND
TY-200	SECURITY FLOOR PLAN - LEVEL 01
TY-201	SECURITY FLOOR PLAN - LEVEL 02
TY-202	SECURITY FLOOR PLAN - ROOF
TY-500	SECURITY ACCESS CONTROL DETAILS
TY-501	SECURITY VSS CAMERA DETAILS
TY-600	SECURITY SYSTEM SCHEDULES

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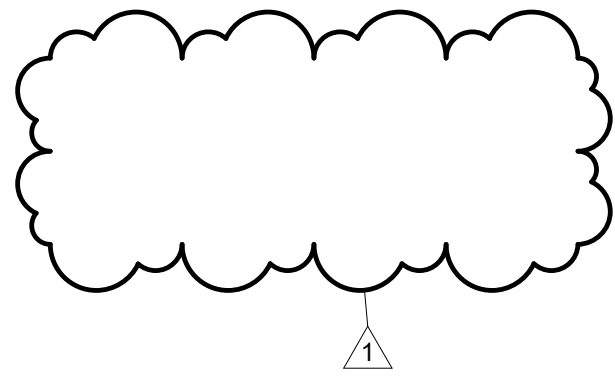
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ANDELMAN/LEK  
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### PROJECT



WORCESTER SOUTH  
DIVISION FIRE  
STATION PROJECT  
25 MADISON ST  
WORCESTER, MA 01608



CITY OF WORCESTER

455 MAIN STREET  
WORCESTER, MA 01605

### KEY PLAN

### ISSUE CHART

T	ADDENDUM #4	10/26
DATE	ISSUE	DATE
Job Number	157132.000	

TITLE


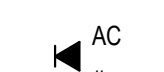











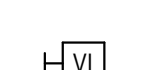

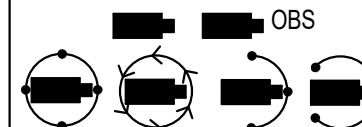
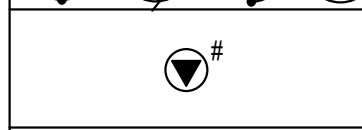
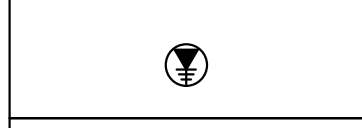





TECHNOLOGY COVER  
PAGE

SHEET NUMBER

T-000

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STRUCTURED CABLING SYSTEM LEGEND											
			BY CABLING CONTRACTOR				ROUGH-IN AND SUPPORT BY ELECTRICAL CONTRACTOR				
SYMBOL	DESCRIPTION	MOUNTING HEIGHT ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE	NUMBER OF UTP CABLES	FACEPLATE TYPE DETAIL MATRIX REFERENCE	NOTES	PROVIDE BACKBOX	PROVIDE PLASTER RING	PROVIDE CONDUIT	PROVIDE BACKING PER ARCH. DETAILS	NOTES	
WALL OR FURNITURE MOUNTED DEVICES											
 #	COMMUNICATION OUTLET	+18"	(2)	COMM	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	2-GANG	1-GANG	(1) 1"	--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 AC #	ABOVE COUNTER COMMUNICATION OUTLET	+6" ABOVE BACKSPLASH	(2)	COMM	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	2-GANG	1-GANG	(1) 1"	--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 F #	SYSTEM FURNITURE COMMUNICATION OUTLET	IN SYSTEM FURNITURE	(2)	FURN	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	YES	--	PROVIDE ROUGH-IN FOR FURNITURE FEED.	
 W	WALL PHONE COMMUNICATION OUTLET	+54"	(1)	WPH	--	2-GANG	1-GANG	(1) 1"	--	LEAVE 6" CLEARANCE ON WALL FROM CENTER OF FINISHED BACKBOX IN ALL DIRECTIONS. PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 RW	HORIZONTAL SURFACE MOUNTED RACEWAY DATA OUTLET	COORDINATE MOUNTING HEIGHT WITH ELECTRICAL DRAWINGS	(2)	SEE SPEC.	TERMINATE DATA CABLING WITHIN PROVIDED WALL MOUNTED RACEWAY. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATION FOR ADDITIONAL INFORMATION.	--	--	(1) 1" (SEE NOTE)	--	COORDINATE ROUGH-IN WITH ELECTRICAL DRAWINGS AND SPECIFICATIONS. PROVIDE BACKBOX AND CONDUIT AS REQUIRED. STUB CONDUIT UP TO ACCESSIBLE CEILING SPACE. PROVIDE PULL STRING. FOR RACEWAY OUTLET LOCATIONS, PROVIDE ADDITIONAL 1" CONDUIT(S) FOR EVERY (6) CABLES IN RACEWAY.	
 STATUS	STATUS BOARD DATA OUTLET	+60" (U.O.N.)	(1)	COMM	-	2-GANG	1-GANG	(1) 1"	--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 BMS	BUILDING MANAGEMENT SYSTEM (BMS) DATA OUTLET	COORDINATE LOCATION(S) WITH BMS CONTRACTOR	(1)	SURF-1	COORDINATE EACH EXACT LOCATION WITH BMS CONTRACTOR. PROVIDE EITHER SURFACE MOUNT BOX OR OUTLET WITH FACEPLATE DEPENDING ON INSTALLATION.	2-GANG	1-GANG	(1) 1"	--	COORDINATE ROUGH-IN WITH BMS CONTRACTOR. PROVIDE BACKBOX AND CONDUIT WHERE REQUIRED. STUB CONDUIT UP TO ACCESSIBLE CEILING SPACE. PROVIDE PULL STRING.	
 TC	ATTEND TIME CLOCK DATA OUTLET	+44	(1)	TC	PROVIDE BISCUIT DATA JACK IN BACKBOX FOR TIME CLOCK.	2-GANG	1-GANG	(1) 1"	--	LEAVE 6" CLEARANCE ON WALL FROM CENTER OF FINISHED BACKBOX IN ALL DIRECTIONS. PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 DIS-B #	IN-WALL BOX DISPLAY COMMUNICATIONS OUTLET WITH AV INFRASTRUCTURE	+80"	(2) UTP	DIS-B	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	2-GANG	1-GANG	(1) 1"	YES	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 TV-B #	IN-WALL BOX TELEVISION COMMUNICATIONS OUTLET WITH AV INFRASTRUCTURE	+80"	(2) UTP, (1) COAX	TV-B	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	2-GANG	1-GANG	(1) 1"	YES	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 F-P	FURNITURE FEED	+18"	(-)	FURN	ROUTE CABLING IN CONDUIT TO SYSTEM FURNITURE OUTLET.	2-GANG	2-GANG	(2) 1-1/4"	--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 C-2	DATA OUTLET FOR SYNCHRONIZED CLOCK - DIGITAL	+84"	(1)	SURF-1	PROVIDE SURFACE MOUNT BOX IN BACKBOX. DEVICE PROVIDED BY OTHERS.	--	--	(1) 1"	--	INSTALL CUSTOM BACKBOX FURNISHED WITH CLOCK. PROVIDE CONDUIT FROM BOX UP INTO CLOSEST ACCESSIBLE CEILING SPACE OF THE SAME ROOM AS THE STATION AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING. PROVIDE POWER.	
 I-VM	VIDEO INTERCOM SYSTEM MASTER STATION COMMUNICATIONS OUTLET	REFER TO SECURITY LEGEND	(2)	SURF-1	PROVIDE SURFACE MOUNT BOX IN BACKBOX. DEVICE PROVIDED BY OTHERS.	REFER TO SECURITY LEGEND			--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 I-VI	VIDEO INTERCOM SYSTEM SUBSTATION COMMUNICATIONS OUTLET	REFER TO SECURITY LEGEND	(-)	SURF-1	PROVIDE SURFACE MOUNT BOX IN BACKBOX. DEVICE PROVIDED BY OTHERS.	REFER TO SECURITY LEGEND			--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 WAP	WIRELESS ACCESS POINT WALL MOUNTED OUTLET	AS NOTED ON PLANS	(2)	WAP-2	PROVIDE TYPICAL FACEPLATE FOR ACCESS POINT.	2-GANG	1-GANG	(1) 1"	--	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
CEILING MOUNTED / ABOVE CEILING DEVICES											
 OBS	SECURITY CAMERA DATA CEILING OUTLET	ABOVE ACCESSIBLE CEILING	(1)	SURF-1	PROVIDE SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING. # INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	--	--	--	
 #	DATA CEILING OUTLET NO TAG = ACCESSIBLE CEILING HL = HARD LID CEILING TYPE	ABOVE ACCESSIBLE CEILING	(1)	SURF-1	PROVIDE SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING. # INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	--	--	--	
 WAP	WIRELESS ACCESS POINT OUTLET	ABOVE ACCESSIBLE CEILING	(2)	WAP-1	PROVIDE SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING.	NO TAG = -- HL = -	NO TAG = -- HL = -	NO TAG = -- HL = (1) 1"	--	IN HARDLID LOCATIONS, PROVIDE CONDUIT TO ACCESSIBLE CEILING OR AS SHOWN ON THE DRAWINGS. PROVIDE PULL STRING.	
UNDER OR IN FLOOR DEVICES											
 FB-T1 #	COMMUNICATIONS / POWER FLOOR BOX	IN FLOOR	(2)	FB	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	YES	--	PROVIDE CONTINUOUS CONDUITS FROM FLOOR BOX OVER TO WALL AND UP INTO ACCESSIBLE CEILING SPACE OF THE LEVEL IT SERVES. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS. REFER TO DETAIL FOR CONDUIT SIZE REQUIREMENTS.	
 FB-TX #	COMMUNICATIONS / POWER / AUDIO VISUAL FLOOR BOX	IN FLOOR	(2)	FB-AV	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	YES	--	PROVIDE CONTINUOUS CONDUITS FROM FLOOR BOX OVER TO WALL AND UP INTO ACCESSIBLE CEILING SPACE OF THE LEVEL IT SERVES. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS. REFER TO DETAIL FOR CONDUIT SIZE REQUIREMENTS.	
 PT-T1 #	COMMUNICATIONS / POWER POKE-THRU	IN FLOOR	(2)	PT	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	YES	--	PROVIDE CONTINUOUS CONDUITS FROM POKE-THRU OVER TO WALL AND UP INTO ACCESSIBLE CEILING SPACE OF THE LEVEL IT SERVES. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS. REFER TO DETAIL FOR CONDUIT SIZE REQUIREMENTS.	
 PT-TX #	COMMUNICATIONS / POWER / AUDIO VISUAL POKE-THRU	IN FLOOR	(2)	PT-AV	# INDICATES QUANTITY OF CABLES IF OTHER THAN TYPICAL.	--	--	YES	--	PROVIDE CONTINUOUS CONDUITS FROM POKE-THRU OVER TO WALL AND UP INTO ACCESSIBLE CEILING SPACE OF THE LEVEL IT SERVES. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS. REFER TO DETAIL FOR CONDUIT SIZE REQUIREMENTS.	
 F-P	FURNITURE FEED POKE THRU	IN FLOOR	--	--	ROUTE CABLING THROUGH POKE-THRU TO FURNITURE.	--	--	YES	--	PROVIDE CONDUIT FROM POKE-THRU TO CABLE TRAY ON FLOOR BELOW OR OVER TO WALL AND UP INTO ACCESSIBLE CEILING SPACE AS SHOWN ON DRAWINGS. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS.	

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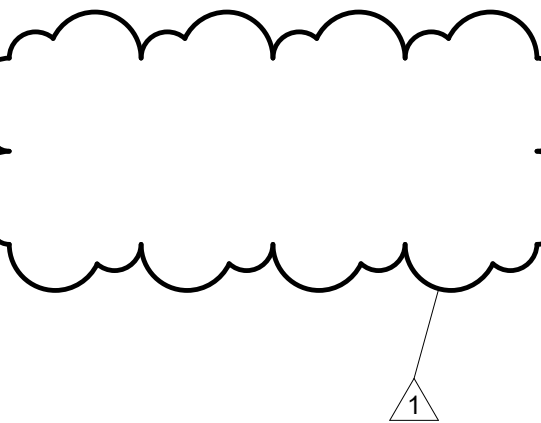
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KEY PLAN

ADDENDUM #4 1/9/26 7/25/25





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






1	ADDENDUM #4	1/9/26
MARK	ISSUE	DATE
Job Number		157132.000
TITLE		

STRUCTURED CABLING  
LEGEND

SHEET NUMBER

T-010

SYNCHRONIZED CLOCK SYSTEM LEGEND									
				BY SYNCHRONIZED CLOCK SYSTEM CONTRACTOR		ROUGH-IN AND SUPPORT BY ELECTRICAL CONTRACTOR			
SYMBOL	DESCRIPTION	DETAIL	MOUNTING HEIGHT ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE	NOTES		PROVIDE BACKBOX	PROVIDE PLASTER RING	PROVIDE CONDUIT	NOTES
	xx' - SYNCHRONIZED CLOCK - BATTERY	--	+84"	PROVIDE AND INSTALL CLOCK. COORDINATE EXACT LOCATION AND HEIGHT WITH ARCHITECT AND INTERIOR DESIGNER PRIOR TO INSTALLATION.		--	--	--	--
	SYNCHRONIZED CLOCK - DIGITAL	--	+84"	PROVIDE AND INSTALL CLOCK. COORDINATE EXACT LOCATION AND HEIGHT WITH ARCHITECT AND INTERIOR DESIGNER PRIOR TO INSTALLATION.		SEE NOTE		(1) 1"	INSTALL CUSTOM BACKBOX FURNISHED WITH CLOCK. PROVIDE CONDUIT FROM BOX UP INTO CLOSEST ACCESSIBLE CEILING SPACE OF THE SAME ROOM AS THE STATION AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING. PROVIDE POWER, CONNECT TO PIGTAIL CORD.
	SYNCHRONIZED CLOCK - DIGITAL ELAPSED TIMER	--	+84"	PROVIDE AND INSTALL CLOCK. FURNISH BACKBOX TO ELECTRICAL CONTRACTOR.		2-GANG	1-GANG	(1) 1"	INSTALL CUSTOM BACKBOX FURNISHED WITH CLOCK. PROVIDE CONDUIT FROM BOX UP INTO CLOSEST ACCESSIBLE CEILING SPACE OF THE SAME ROOM AS THE STATION AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING. PROVIDE POWER, CONNECT TO PIGTAIL CORD.
 S/S	ELAPSED TIMER START / STOP / RESET CONTROLLER	--	+48"	PROVIDE AND INSTALL CONTROLLER.		2-GANG	1-GANG	(1) 1"	PROVIDE CONDUIT FROM BOX TO THE BACKBOX OF THE CONTROLLED CLOCK. PROVIDE PULL STRING.

STATION ALERTING / PAGING COMBINED-USE PURVIS SYMBOL LIST									
				BY OVERHEAD PAGING SYSTEM CONTRACTOR		ROUGH-IN AND SUPPORT BY ELECTRICAL CONTRACTOR			
SYMBOL	DESCRIPTION	DETAIL	MOUNTING HEIGHT ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE	NOTES		PROVIDE BACKBOX	PROVIDE PLASTER RING	PROVIDE CONDUIT	NOTES
OVERHEAD PAGING									
	OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - 2'X2' DROP-TILE MOUNTED LOUDSPEAKER	--	IN FINISHED CEILING	PROVIDE LOUDSPEAKER. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS		--	--	--	--
	OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - 2'X2' DROP-TILE MOUNTED LOUDSPEAKER WITH BEACON LIGHT	--	IN FINISHED CEILING	PROVIDE LOUDSPEAKER BEACON ASSEMBLY. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS		--	--	--	--
	OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - GYPSUM CEILING MOUNTED LOUDSPEAKER	--	IN FINISHED CEILING	PROVIDE LOUDSPEAKER. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS		1-GANG	--	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO NEXT LOUDSPEAKER BOX OR TO ACCESSIBLE CEILING AS SHOWN ON DRAWINGS. CAP WITH NYLON BUSHINGS AND PROVIDE PULL STRINGS.
	OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - WALL MOUNTED LOUDSPEAKER	--	+84"	PROVIDE LOUDSPEAKER. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS		1-GANG	--	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
	OVERHEAD PAGING SYSTEM ANALOG DIRECTIONAL/HORN LOUDSPEAKER - CEILING MOUNTED LOUDSPEAKER	--	IN FINISHED CEILING	PROVIDE LOUDSPEAKER. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS		1-GANG	--	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
	OVERHEAD PAGING SYSTEM ANALOG LOUDSPEAKER - PENDANT MOUNTED LOUDSPEAKER	--	FROM STRUCTURE THROUGH CEILING	PROVIDE LOUDSPEAKER. ROUTE CABLE AS REQUIRED BY SYSTEM IN DESIGNATED ZONES. PROVIDE ZONING AS SHOWN ON PLANS, ZONE CHART AND SPECIFICATIONS		1-GANG	--	(1) 3/4"	
	OVERHEAD PAGING SYSTEM MICROPHONE	--	BOX AT +18". DEVICE ON WORK SURFACE	ROUTE CABLE AS REQUIRED BY SYSTEM.		2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
	OVERHEAD PAGING SYSTEM VOLUME CONTROL	--	+48"	ROUTE CABLE SO VOLUME CONTROL CONTROLS THE ASSOCIATED LOUDSPEAKER'S VOLUME.		2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
	DORM REMOTE DEVICE	--	+48"	ROUTE CABLE SO DORM REMOTE DEVICE CONTROLS THE ASSOCIATED LIGHTING LEVEL.		2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.
	AMBIENT NOISE SENSOR	--	+12'-0"			--	--	--	

PAGING ZONE NOTES
1. REFER TO OVERHEAD PAGING ZONE CHART FOR DEPARTMENT LEVEL ZONING.
2. IN ADDITION TO THE OVERHEAD PAGING ZONING CHART, CONFIGURE ALL CALL TO ADDRESS EVERY ZONE LOUDSPEAKER PER LEVEL AND THROUGHOUT THE BUILDING.
3. ANY OVERHEAD PAGING LOUDSPEAKERS IN ELEVATOR CABS WILL BE ON THE ALL CALL ZONE.
4. COORDINATE FINAL ZONING WITH OWNER PRIOR TO SUBMITTALS.

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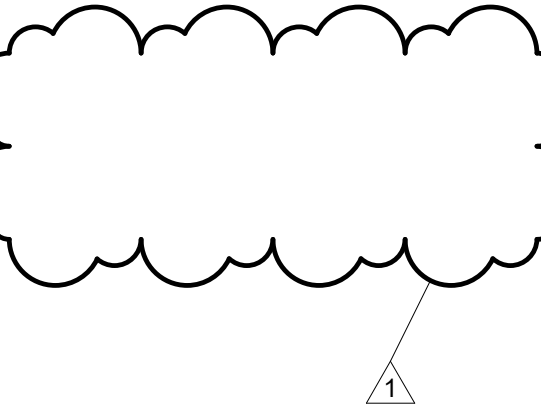
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PROJECT



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STATION PROJECT  
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CITY OF WORCESTER

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WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

1	ADDENDUM #4		1/9/26
MARK	ISSUE	DATE	
Job Number		157132.000	
TITLE			
SYNCHRONIZED CLOCK AND OVERHEAD PAGING SYSTEM LEGENDS			
SHEET NUMBER			

T-020



TECHNOLOGY SYSTEMS RESPONSIBILITY									
SYSTEMS BREAKOUT	PROVIDED BY:								
	OWNER	GENERAL CONTRACTOR	ELECTRICAL CONTRACTOR	CABLING CONTRACTOR	SECURITY CONTRACTOR	OVERHEAD PAGING CONTRACTOR	AUDIO / VISUAL SYSTEM VENDOR	NETWORK/ TELEPHONE VENDOR	
ROUGH-IN AND SUPPORT									
1	BACKBOXES, CONDUITS, SLEEVES, FLOOR PENETRATIONS, ETC. FOR ALL SYSTEMS LISTED IN THIS MATRIX.	---	---	✓	---	---	---	---	---
2	BLOCKING IN WALL FOR WALL-MOUNTED TELEVISIONS, TRACKING BOARDS, AUDIO VISUAL DISPLAYS, COMPUTERS, ETC.	---	✓	---	---	---	---	---	---
3	FIRE RATED SLEEVE ASSEMBLIES, CONDUIT SLEEVES AND FIRESTOPPING	---	---	✓	---	---	---	---	---
4	POWER OUTLETS FOR ALL SYSTEMS	---	---	✓	---	---	---	---	---
5	ALL BACKBOXES, JUNCTION BOXES, PULLBOXES, AND CONDUIT FOR ALL SYSTEMS	---	---	✓	---	---	---	---	---
6	WIRE BASKET TRAY THROUGH CORRIDORS	---	---	✓	---	---	---	---	---
7	MAIN GROUNDING WITH BUSBARS	---	---	✓	---	---	---	---	---
8	TELECOM ROOM PLYWOOD BACKBOARD	---	✓	---	---	---	---	---	---
STRUCTURED CABLING AND IT INFRASTRUCTURE									
1	FACE PLATES, INSERTS, JACKS FOR DATA/VOICE/WIRELESS OUTLETS	---	---	✓	---	---	---	---	---
2	FIBER BACKBONE, COPPER RISER, UTP CABLING SUPPORTED ON J-HOOKS	---	---	✓	---	---	---	---	---
3	CABLE TRAY INSIDE TELECOM ROOMS, EQUIPMENT RACKS AND CABINETS, CABLE MANAGEMENT UNITS, PATCH PANELS	---	---	✓	---	---	---	---	---
4	GROUNDING OF RACKS, CABLE TRAY AND OTHER EQUIPMENT INSIDE TELECOM ROOMS	---	---	✓	---	---	---	---	---
CATV SYSTEM									
1	FACE PLATES, INSERTS, JACKS FOR CATV OUTLETS	---	---	✓	---	---	---	---	---
2	COAX AND/OR UTP CABLING INFRASTRUCTURE, BACKBONE WITH J-HOOKS	---	---	✓	---	---	---	---	---
3	TELEVISIONS AND WALL MOUNTS	✓	---	---	---	---	---	---	---
4	INSTALLATION OF WALL MOUNTS	✓	---	---	---	---	---	---	---
5	CATV UTP HUBS, AMPLIFIERS, SWITCHES, BALUNS, SPLITTERS, COUPLERS, ETC.	---	---	✓	---	---	---	---	---
6	BED CONTROLNURSE CALL PILLOW SPEAKER INTERFACE CABLE AND CONNECTION	---	---	✓	---	---	---	---	---
SECURITY SYSTEM									
1	VSS CAMERAS & MOUNTING HARDWARE	---	---	---	---	✓	---	---	---
2	SECURITY INTERCOMS, EMERGENCY CALL STATIONS	---	---	---	---	✓	---	---	---
3	UTP CABLING FOR IP CAMERAS AND EMERGENCY CALL STATIONS	---	---	✓	---	---	---	---	---
4	CARD READERS, DOOR POSITION SWITCHES, PANIC AND REMOTE RELEASE BUTTONS	---	---	✓	---	---	---	---	---
5	ACCESS CONTROL SYSTEM CABLING WITH SUPPORT VIA J-HOOKS	---	---	✓	---	---	---	---	---
6	INTELLIGENT FIELD PANELS	---	---	✓	---	---	---	---	---
7	VIDEO SYSTEM HARDWARE, SERVERS, SOFTWARE, STORAGE SYSTEM, & PRINTERS	---	---	✓	---	---	---	---	---
8	ELECTRIFIED DOOR HARDWARE AND PERIPHERALS	---	✓	---	---	---	---	---	---
9	ACCESS CARDS	---	---	✓	---	---	---	---	---
10	ACCESS CONTROL AND VIDEO SERVERS AND RECORDERS	---	---	✓	---	---	---	---	---
11	ACCESS CARD CREATION STATION (WORKSTATION SOFTWARE, CAMERA, PRINTERS)	---	---	✓	---	---	---	---	---
12	SECURITY COMMAND CENTER BUILD-OUT (MOUNTS, MONITORS, WORKSTATION SOFTWARE)	---	---	✓	---	---	---	---	---
13	FIRE ALARM INTERFACE TO ACCESS CONTROL SYSTEM AND LOCKS	---	---	✓	---	---	---	---	---
CLOCK SYSTEMS									
1	SYNCHRONIZED CLOCKS, ELAPSED TIME CLOCKS, CODE BLUE CLOCKS, ACCESSORIES, HARDWARE, HEAD-END EQUIPMENT	✓	---	---	---	---	---	---	---

TECHNOLOGY SYSTEMS RESPONSIBILITY									
SYSTEMS BREAKOUT	PROVIDED BY:								
	OWNER	GENERAL CONTRACTOR	ELECTRICAL CONTRACTOR	CABLING CONTRACTOR	SECURITY CONTRACTOR	OVERHEAD PAGING CONTRACTOR	AUDIO / VISUAL SYSTEM VENDOR	NETWORK/ TELEPHONE VENDOR	
NETWORK AND TELEPHONE SYSTEMS									
1	NETWORK HARDWARE - SWITCHES, ROUTERS, FIREWALLS, VPN APPLIANCES, WIRELESS HARDWARE, ETC.	---	---	---	---	---	---	---	✓
2	TELEPHONE SERVERS, VOIP HARDWARE AND SOFTWARE, ROUTERS, CIRCUIT INTERFACES	---	---	---	---	---	---	---	✓
4	TELEPHONES, PERSONAL COMMUNICATION DEVICES, WIRELESS PHONES, BATTERIES AND CHARGERS	---	---	---	---	---	---	---	✓
5	WIRELESS ACCESS POINTS	---	---	---	---	---	---	---	✓
6	INTEGRATION / COORDINATION	---	---	✓	---	---	---	---	✓
7	ORDER TELCO CIRCUITS FOR FACILITY	✓	---	---	---	---	---	---	---
8	ORDER TELEPHONE LINES FOR FIRE ALARM AND ELEVATORS	---	✓	✓	---	---	---	---	---
MISC. PERIPHERAL EQUIPMENT									
1	ON-DEMAND VIDEO SERVERS AND SOFTWARE	✓	---	---	---	---	---	---	---
2	CONTROL DISPLAYS WITH MOUNT	✓	---	---	---	---	---	---	---
3	INSTALLATION AND CONFIGURATION	✓	---	---	---	---	---	---	---
MISC. PERIPHERAL EQUIPMENT									
1	END USER PC'S	✓	---	---	---	---	---	---	---
2	END USER PRINTERS	✓	---	---	---	---	---	---	---
3	SCANNERS	✓	---	---	---	---	---	---	---
4	COPIERS AND FAX MACHINES	✓	---	---	---	---	---	---	---
5	WALL MOUNTS FOR COMPUTERS AND/OR MONITORS	✓	---	---	---	---	---	---	---
AUDIO VISUAL SYSTEMS									
1	SPECIALTY FACEPLATES WITH AUDIO VISUAL CONNECTIONS	✓	---	---	---	---	---	---	---
2	AUDIO VISUAL CABLING, CONTROL CABLING, SPECIALTY CABLING SUPPORTED ON J-HOOKS	✓	---	---	---	---	---	---	---
3	ACTIVE AUDIO VISUAL EQUIPMENT - AMPLIFIERS, MICROPHONES, SPEAKERS, PROJECTORS, CONTROLS SYSTEMS, DSPS, ETC.	✓	---	---	---	---	---	---	---
4	PROJECTION SCREENS	✓	✓	---	---	---	---	---	---
5	ABOVE CEILING COORDINATION AND CEILING PREPARATION/ROUGH-IN FOR PROJECTION SCREENS	✓	✓	---	---	---	---	---	---
6	CONFERENCE, TRAINING, TEAM, BOARDROOM AND MOUNTING BRACKETS	---	✓	---	---	---	---	---	---
7	AUDIO VISUAL RACKS, CABINETS, & CABLE MANAGEMENT UNITS	---	---	---	---	---	✓	---	---
8	COMPUTER FOR CONTROLLING AUDIO VISUAL SYSTEM IN ROOM	✓	---	---	---	---	---	---	---

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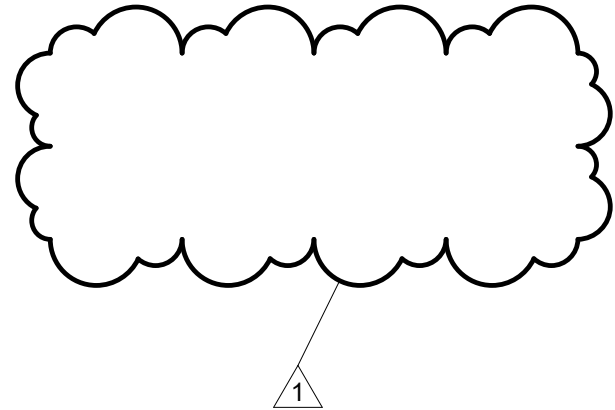
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**PROJECT**

  
**WORCESTER SOUTH  
DIVISION FIRE  
STATION PROJECT**  
25 MADISON ST  
WORCESTER, MA 01608

  
**CITY OF WORCESTER**

455 MAIN STREET  
WORCESTER, MA 01605

**KEY PLAN**

ADDENDUM #4 1/9/26 7/25/25



1	ADDENDUM #4	1/9/26
DATE	ISSUE	DATE

Job Number 157132.000

TITLE

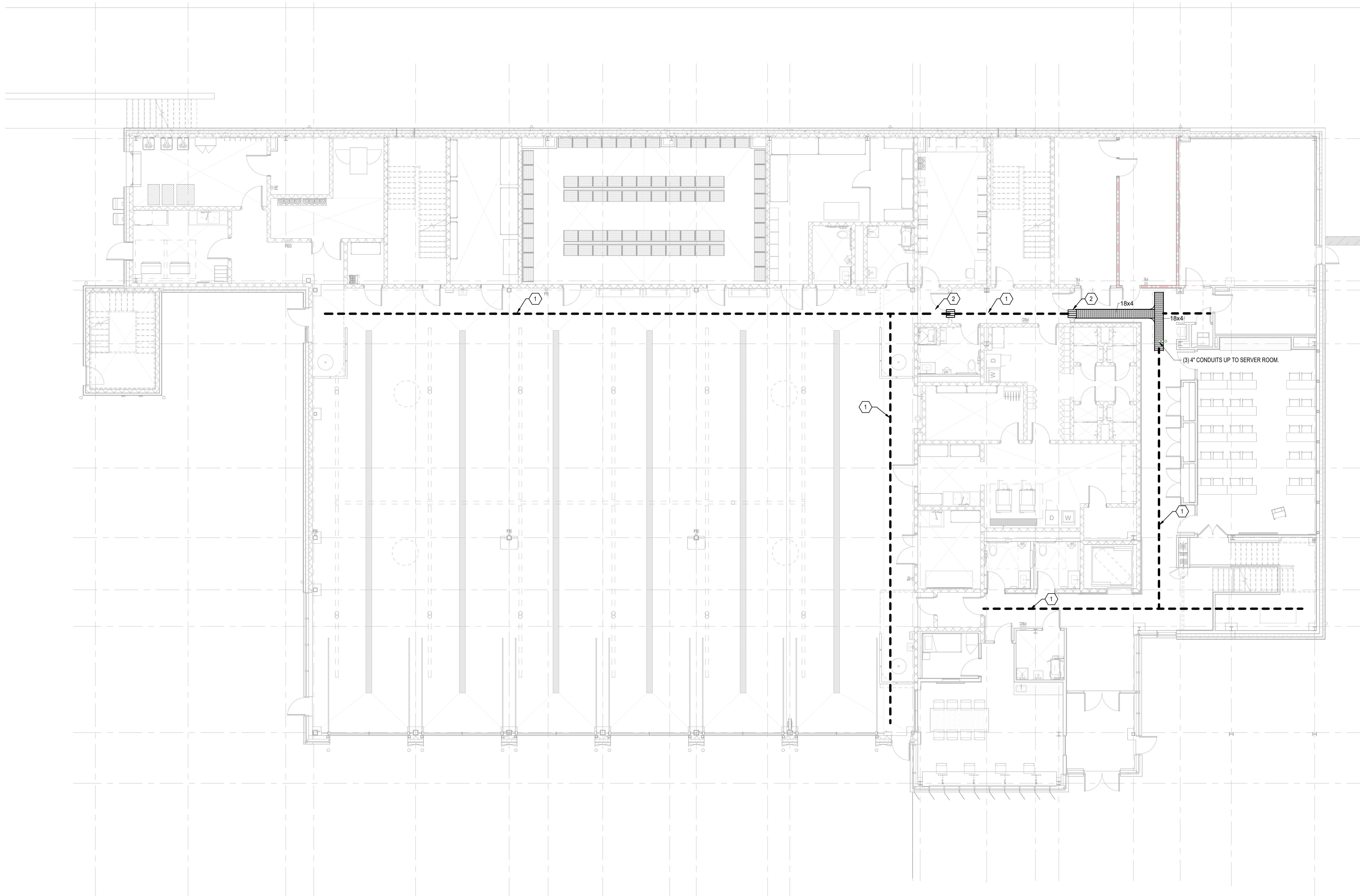
**TECHNOLOGY SYSTEMS  
RESPONSIBILITY  
MATRIX**

SHEET NUMBER

**T-030**

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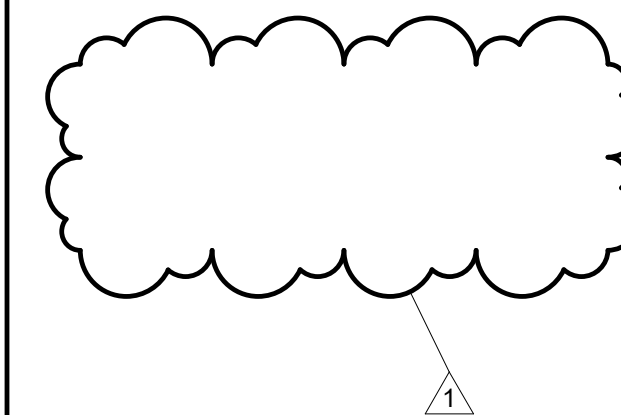
**1 LEVEL 01 - TELECOM FLOOR PLAN - DISTRIBUTION**  
1/8" = 1'-0"

**CABLING NOTES:**


1. ALL LOW VOLTAGE CABLING FROM OUTLETS AND DEVICES ON THIS PLAN SHALL BE HOMERUN TO THE SERVER ROOM ON SECOND FLOOR U.O.N.
2. CONTRACTOR TO ROUTE LOW VOLTAGE CABLING FROM EACH ROOM TO CORRIDOR VIA SMOKE AND ACOUSTICAL PATHWAYS (THROUGH NON-FIRE RATED WALLS) OR VIA FIRE-RATED PATHWAYS (THROUGH FIRE RATED WALLS). REFER TO ARCHITECTURAL DRAWINGS FOR WALL TYPES. INSTALL PATHWAYS ABOVE ACCESSIBLE CEILING. PROVIDE ADDITIONAL PATHWAYS AS REQUIRED.
3. PROVIDE J-HOOKS MOUNTED EVERY 5'-0" (MAX.) TO SUPPORT CABLING NOT IN CONDUIT OR CABLE TRAY.
4. THIS FLOOR PLAN REPRESENTS CABLING DISTRIBUTION INTENT FOR THE FLOOR. ACTUAL DISTRIBUTION PATHWAY ROUTING TO BE COORDINATED WITH OTHER WORK, INCLUDING ARCHITECTURAL, SPRINKLER AND HVAC.


**DRAWING KEY NOTES:**

- 1 J-HOOK PATHWAYS IN ACCESSIBLE CEILING.
- 2 (4) CONDUIT SLEEVES AT FIRE RATED WALL PENETRATIONS. PROVIDE PROPER FIRESTOPPING AT THE CONDUIT TO WALL PENETRATIONS.



**PROJECT**

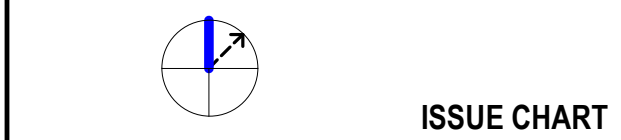
  
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**CITY OF WORCESTER**

455 MAIN STREET  
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**KEY PLAN**

ADDENDUM #4 1/9/26 7/25/25



1	ADDENDUM #4	1/9/26
ISSUE	DATE	
Job Number	157132.000	
TITLE		
TELECOM FLOOR PLAN - LEVEL 01 - DISTRIBUTION		
SHEET NUMBER		
T-100		
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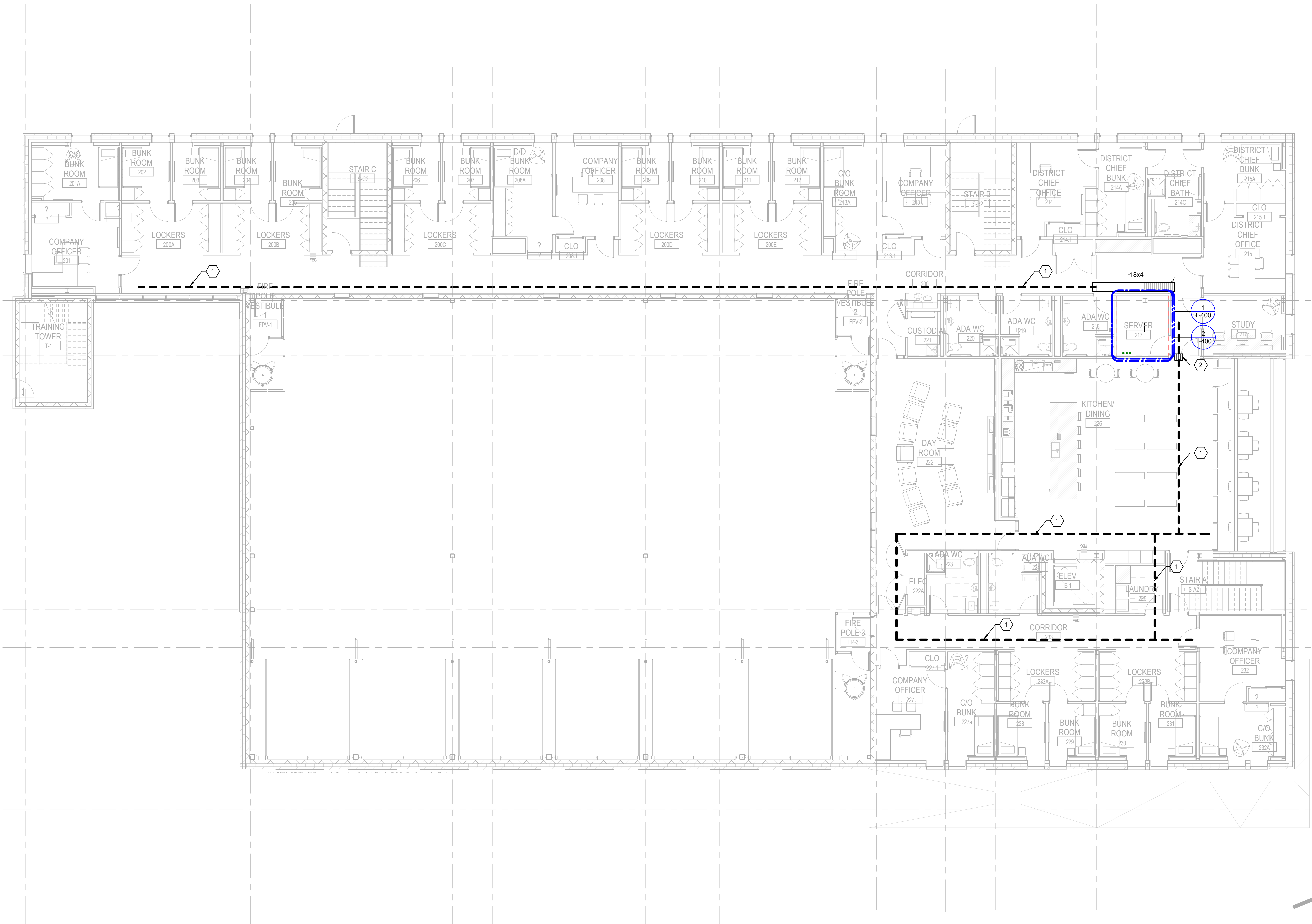


**CABLING NOTES:**

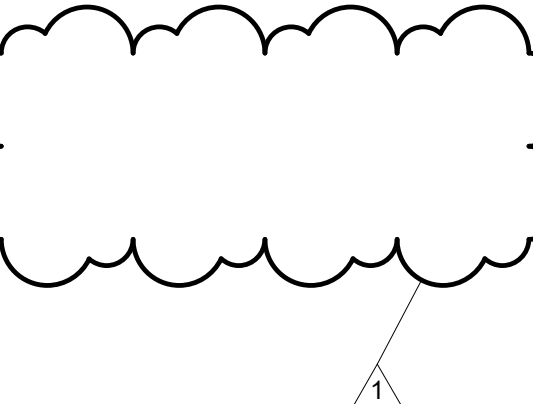
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2. CONTRACTOR TO ROUTE LOW VOLTAGE CABLING FROM EACH ROOM TO CORRIDOR VIA SMOKE AND ACOUSTICAL PATHWAYS (THROUGH NON-FIRE RATED WALLS) OR VIA FIRE-RATED PATHWAYS (THROUGH FIRE RATED WALLS). REFER TO ARCHITECTURAL DRAWINGS FOR WALL TYPES. INSTALL PATHWAYS ABOVE ACCESSIBLE CEILING. PROVIDE ADDITIONAL PATHWAYS AS REQUIRED.
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**DRAWING KEY NOTES:**

- ① J-HOOK PATHWAYS IN ACCESSIBLE CEILING.
- ② (4) CONDUIT SLEEVES AT FIRE RATED WALL PENETRATIONS. PROVIDE PROPER FIRESTOPPING AT THE CONDUIT TO WALL PENETRATIONS.



1 LEVEL 02 - TELECOM FLOOR PLAN - DISTRIBUTION  
1/8" = 1'-0"



PROJECT



**WORCESTER SOUTH  
DIVISION FIRE  
STATION PROJECT**  
25 MADISON ST  
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**CITY OF WORCESTER**

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KEY PLAN



ISSUE CHART

ISSUE	ADDENDUM #4	DATE
1	19/26	19/26

Job Number 157132.000

TITLE

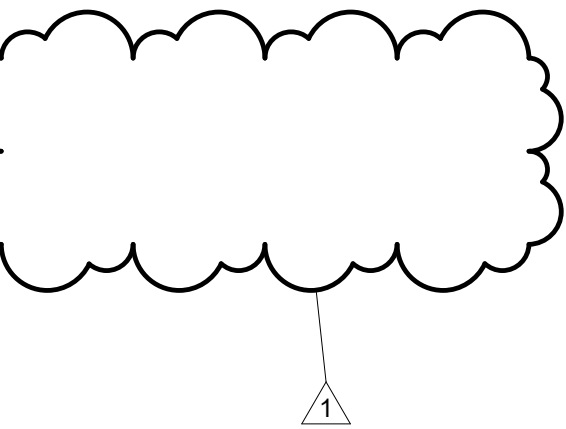
**TELECOM FLOOR PLAN -  
LEVEL 02 -  
DISTRIBUTION**

SHEET NUMBER

**T-101**

DRAWING NOTES:

- FOR DEVICE SYMBOL LEGEND, NOTES AND ABBREVIATIONS, REFER TO SHEETS T-000, T-010, AND T-020.
- FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF LOW VOLTAGE DEVICES, REFER TO THE ARCHITECTURAL DRAWINGS.
- REFER TO T-21X SERIES DRAWINGS FOR CEILING MOUNTED LOW VOLTAGE DEVICE LOCATIONS.



PROJECT



WORCESTER SOUTH  
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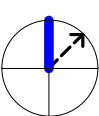


CITY OF WORCESTER

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KEY PLAN

ADDENDUM #4 1/9/26 7/25/25



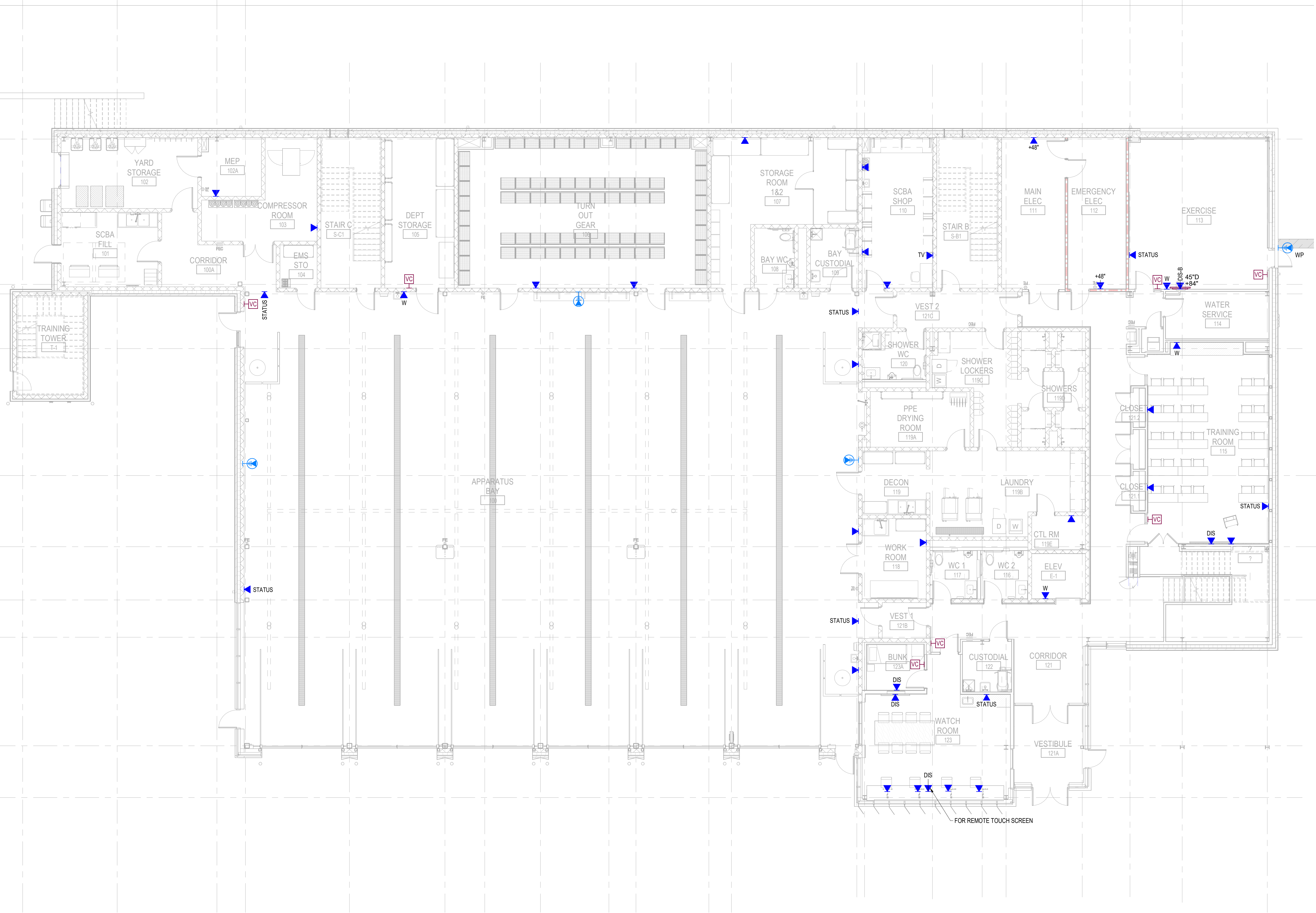
ISSUE CHART

DATE	ADDENDUM #4	1/9/26
ISSUE	ISSUE	DATE
Job Number	157132.000	TITLE

TELECOM FLOOR PLAN -  
LEVEL 01 - DEVICES

SHEET NUMBER

T-200





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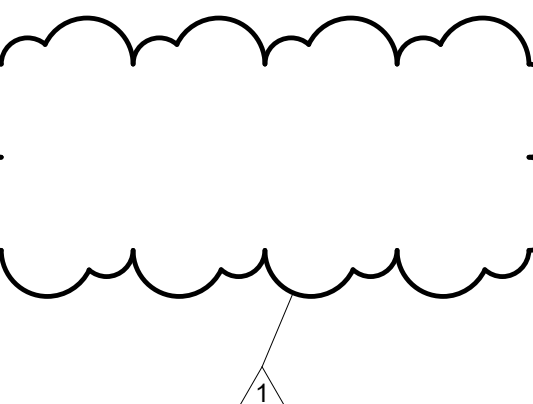
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DRAWING NOTES:

- FOR DEVICE SYMBOL LEGEND, NOTES AND ABBREVIATIONS, REFER TO SHEETS T-000, T-010, AND T-020.
- FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF LOW VOLTAGE DEVICES, REFER TO THE ARCHITECTURAL DRAWINGS.
- REFER TO T-21X SERIES DRAWINGS FOR CEILING MOUNTED LOW VOLTAGE DEVICE LOCATIONS.



PROJECT



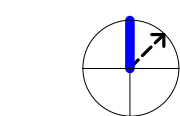
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KEY PLAN



ISSUE CHART

DATE	ADDENDUM #4	19/26
19/26	19/26	19/26
Job Number	157132.000	TITLE

TELECOM FLOOR PLAN -  
LEVEL 02 - DEVICES

SHEET NUMBER

T-201



1 LEVEL 02 - TELECOM FLOOR PLAN  
1/8" = 1'-0"



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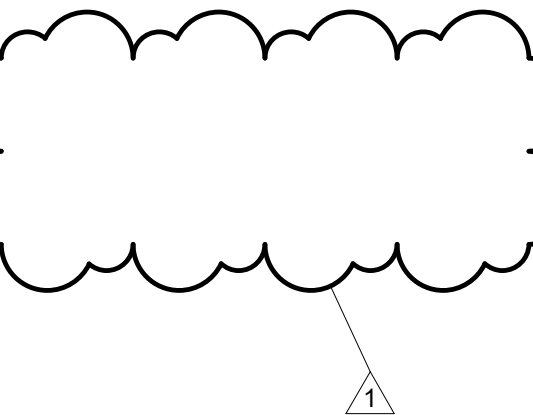
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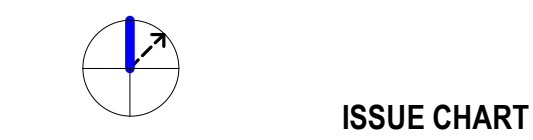
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STATION PROJECT**  
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**CITY OF WORCESTER**

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KEY PLAN



ISSUE CHART

NO.	ADDENDUM #4	DATE
1	19/26	19/26
2	19/26	19/26
3	19/26	19/26
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99	19/26	19/26
100	19/26	19/26

**TELECOM CEILING PLAN  
- LEVEL 01**

SHEET NUMBER

**T-210**

**1 LEVEL 01 - TELECOM CEILING PLAN**  
1/8" = 1'-0"



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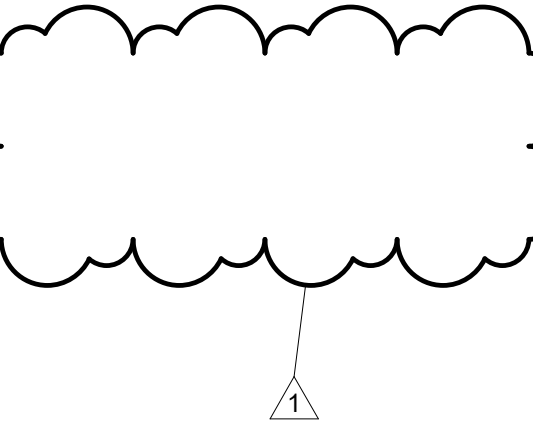
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**PROJECT**

  
**WORCESTER SOUTH  
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STATION PROJECT**  
25 MADISON ST  
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**CITY OF WORCESTER**

455 MAIN STREET  
WORCESTER, MA 01605

**KEY PLAN**



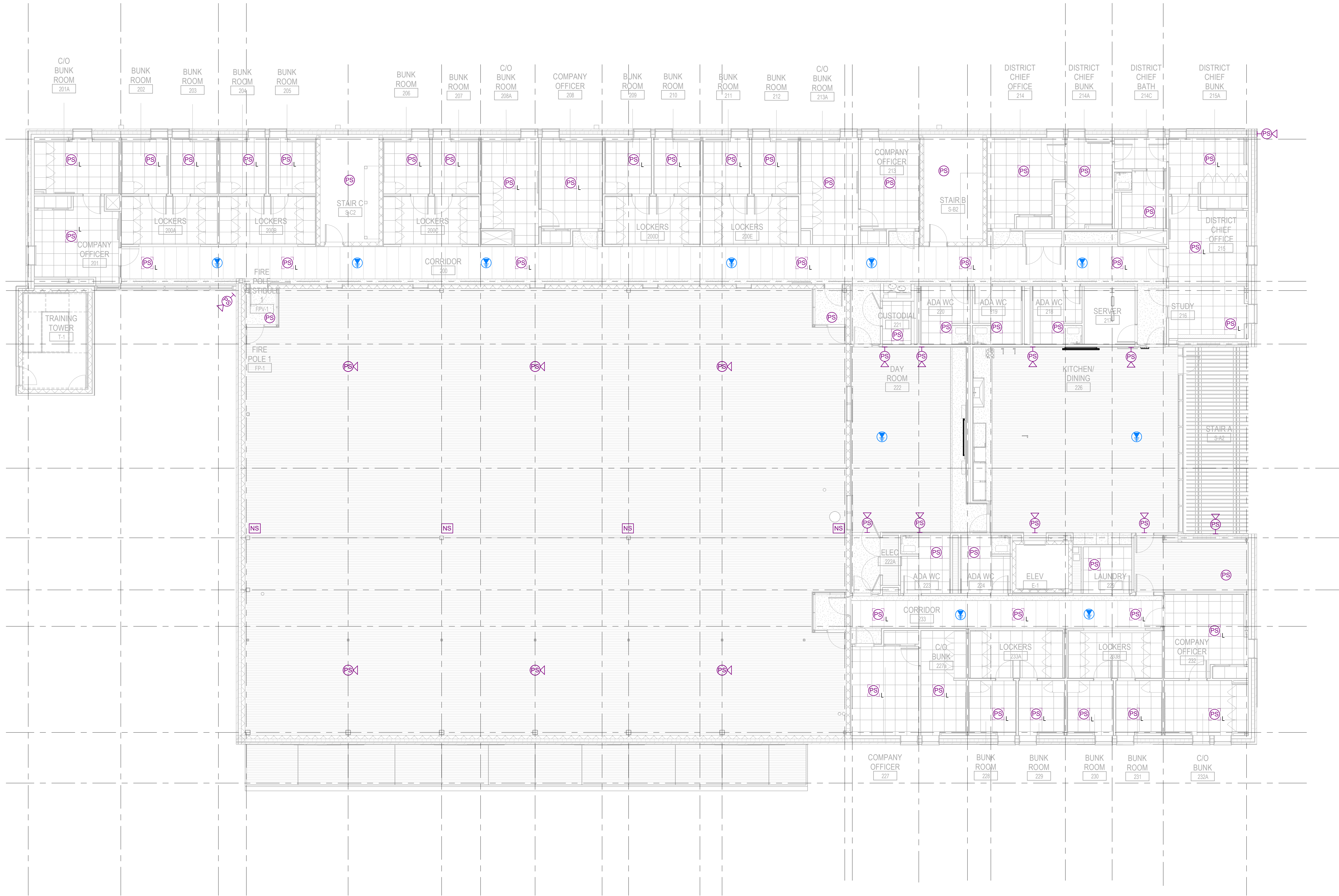
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Job Number	157132.000	TITLE

**TELECOM CEILING PLAN  
- LEVEL 02**

**SHEET NUMBER**

**T-211**

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**1 LEVEL 02 - TELECOM CEILING PLAN**  
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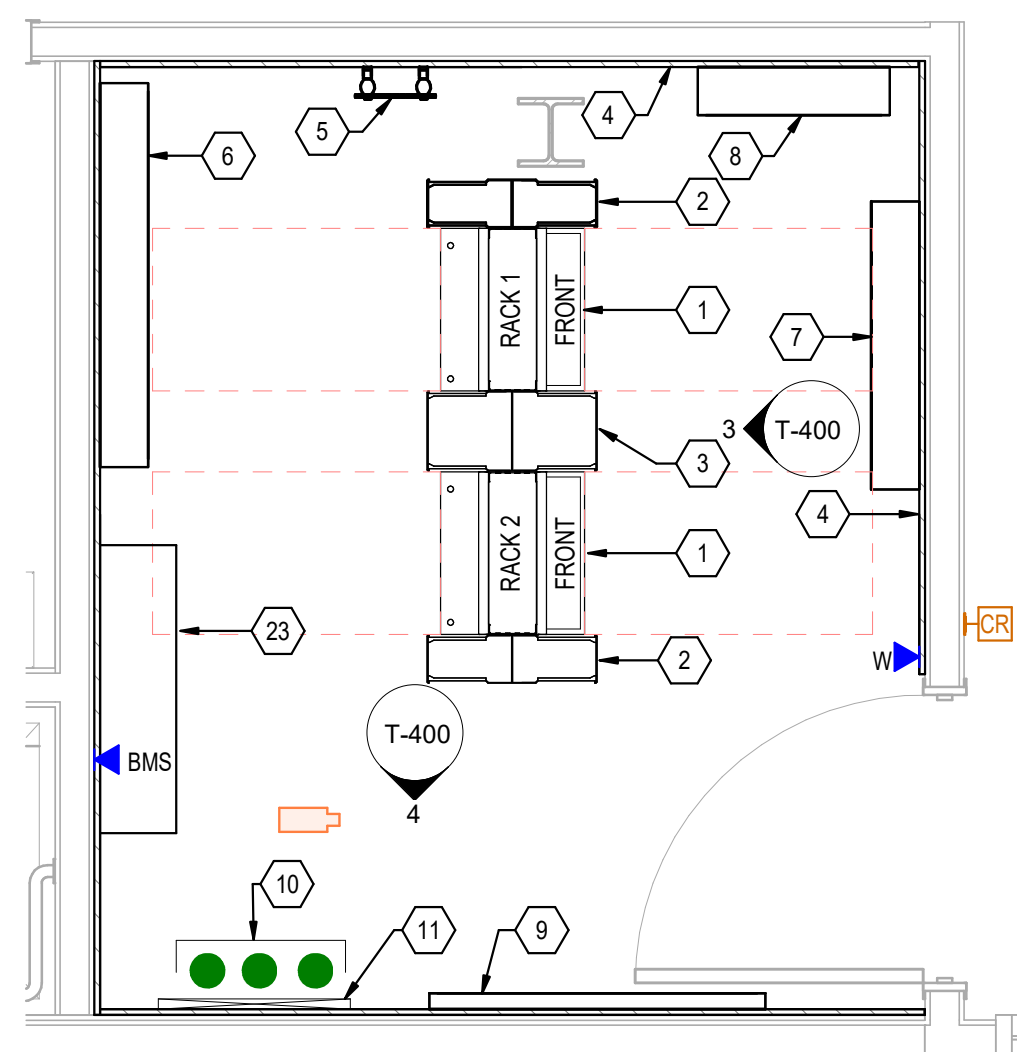
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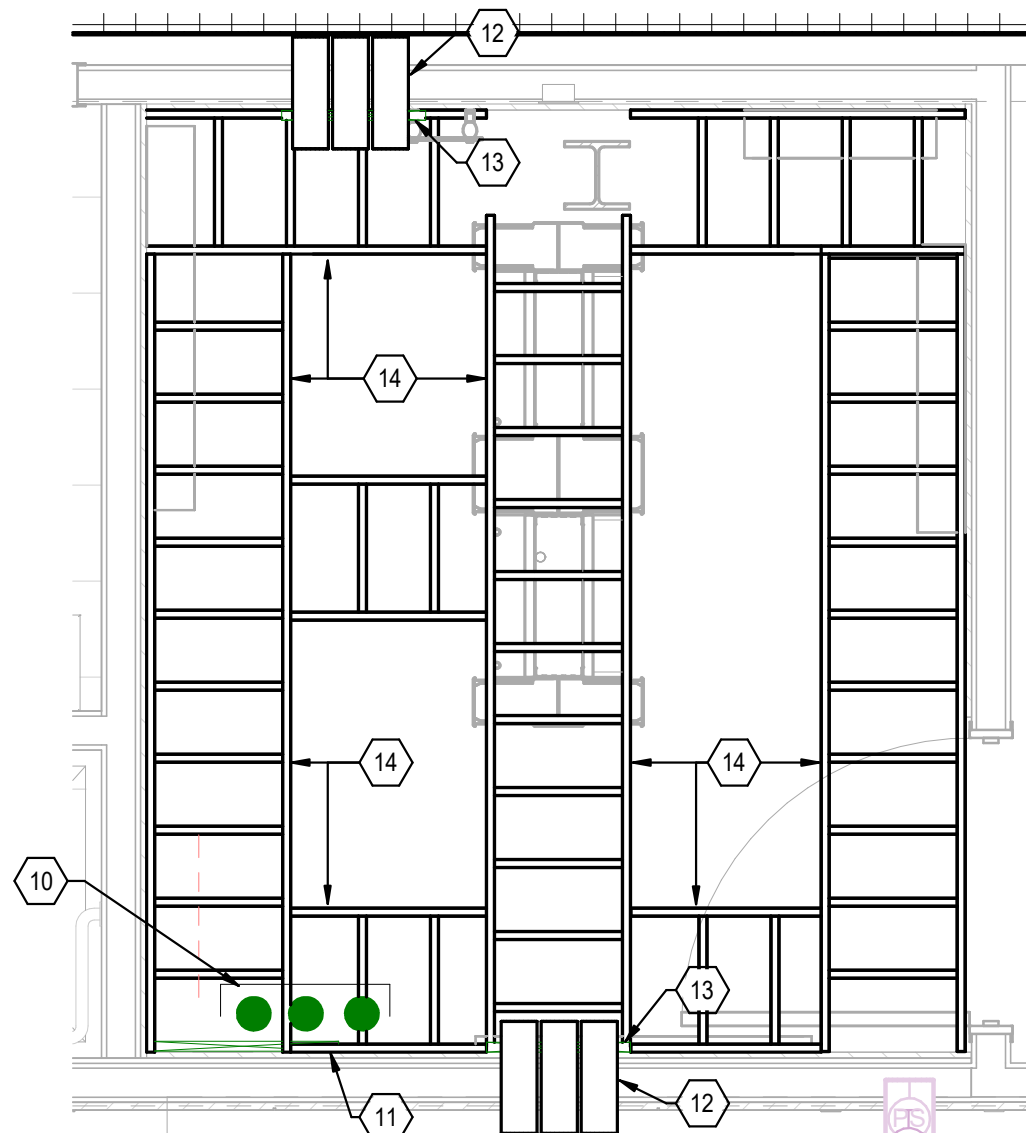
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KEYED NOTES

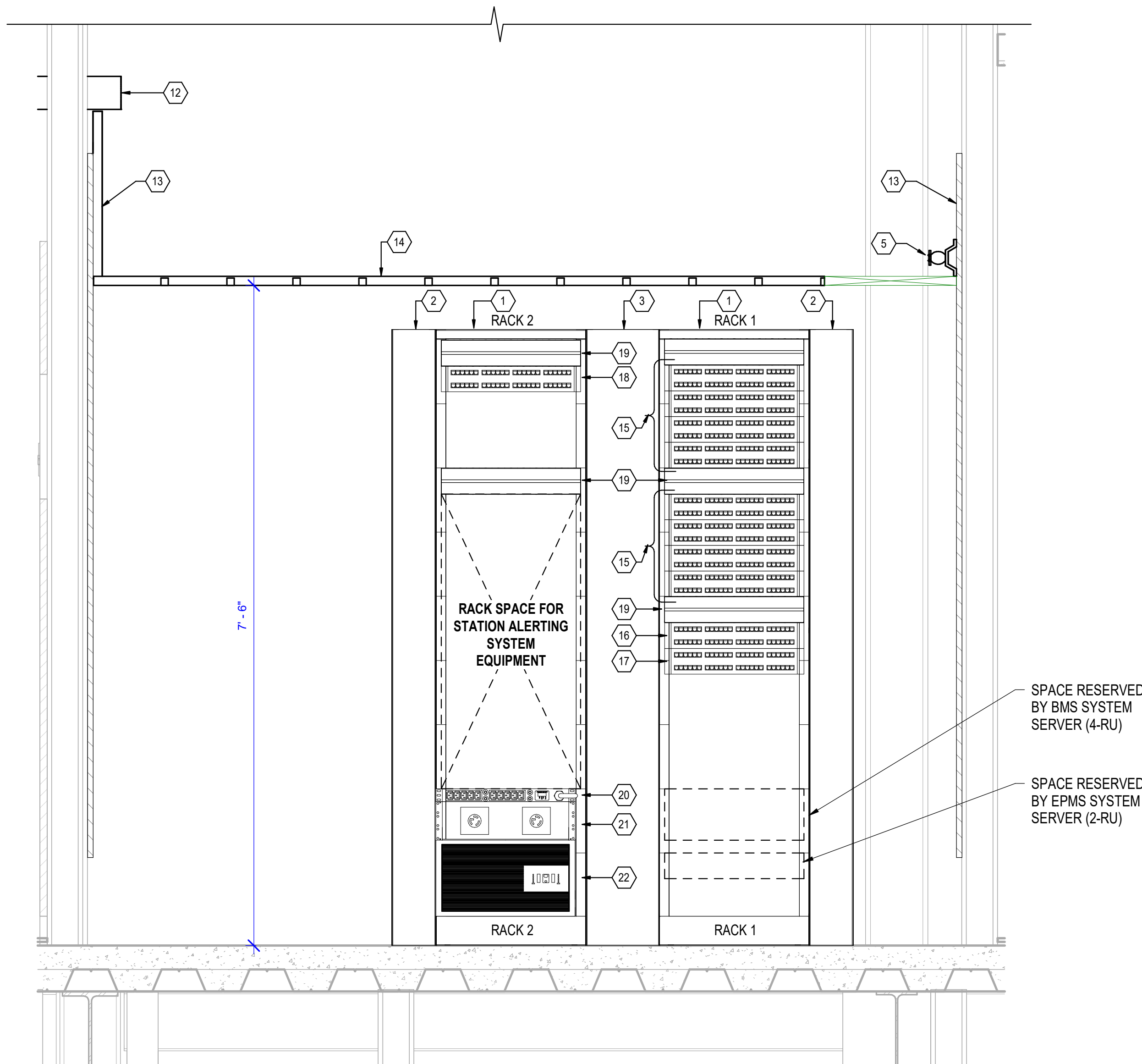
- 7'-0" HIGH X 18" WIDE EQUIPMENT RACK WITH UNIVERSAL 5/8" 5/8" 1/2" ALTERNATING HOLE PATTERN. FRONT AND BACK, AND BLACK BAKED ENAMEL FINISH. PROVIDE GROUND TERMINAL BLOCK, RACK BASE DUST COVER, AND RACK ISOLATION KIT. SECURE RACK TO FLOOR WITH CONCRETE FLOOR RACK MOUNTING KIT.
- 6" WIDE VERTICAL CABLE MANAGER WITH HINGED DOOR.
- 12" WIDE VERTICAL CABLE MANAGER WITH HINGED DOOR.
- PLYWOOD BACKBOARD, 8'-0" HIGH X FULL LENGTH OF WALL, MOUNT WITH BOTTOM AT 12" ABOVE FINISH FLOOR. ROUGH ALL ELECTRICAL OUTLETS IN BACKBOARD FOR FLUSH MOUNT INSTALLATION OF FACEPLATES. BACKBOARDS SHALL BE 3/4" THICK AG EXTERIOR GRADE PLYWOOD. COUNTERSINK ALL SCREWS. PRIME WITH TWO COATS PRIMER, SANDING SMOOTH AFTER EACH COAT. FINISH WITH TWO COATS SEMI-GLOSS FIRE-RETARDANT PAINT, COLOR GREY. FINAL SURFACE SHALL BE UNIFORMLY SMOOTH AND EVEN. TOUCH UP AT END OF PROJECT. COORDINATE WORK WITH ELECTRICAL CONTRACTOR TO ENSURE THAT POWER RECEPTACLES ARE PROPERLY LOCATED AND WITH FACEPLATES FLUSH ON FACE OF BACKBOARD.
- GROUNDING BUSBAR MOUNTED AT 84" ABOVE FINISH FLOOR, WITH TWO ROWS OF 7/16" HOLES AT 1" SPACING EACH WAY. MAKE ALL CONNECTS WITH TWO HOLE LONG BARREL COMPRESSION LUGS AND BOND TO BUSBAR WITH TWO 3/8" SS HEX HEAD CAP SCREWS WITH SS LOCKING NUTS. SEE GROUNDING SPECIFICATIONS AND GROUND BUSBAR DETAILS FOR NOTES.
- SPACE FOR SECURITY SYSTEM CONTROL PANELS AND POWER SUPPLIES. REFER TO SECURITY DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- SPACE FOR WALL-MOUNTED SERVICE PROVIDER EQUIPMENT.
- SPACE FOR WALL-MOUNTED OVERHEAD CATV SYSTEM EQUIPMENT.
- CABLING SYSTEM AS-BUILT FLOOR PLAN, WALL MOUNTED IN FRAME.
- THREE (3) 4" CONDUIT SLEEVES IN FLOOR SLAB. PROVIDE PROPER FIRESTOPPING AT THE CONDUIT TO SLAB PENETRATIONS.
- 24" LADDER RACK MOUNTED VERTICALLY TO SUPPORT VERTICALLY ROUTED CABLES.
- HORIZONTAL CABLING ENTERING ROOM OVERHEAD. PROVIDE QUANTITY OF FIRE RATED SLEEVES (OR APPROVED EQUIVALENT) AS REQUIRED PLUS (1) SPARE. EXTEND CABLES FROM WALL PENETRATION DOWN TO LADDER TRAY AT 7'-6" WITH VERTICALLY MOUNTED LADDER TRAY SECTIONS. REFER TO OVERALL PLANS FOR EXACT QUANTITIES.
- 18" LADDER RACK MOUNTED VERTICALLY ON WALL FOR VERTICAL SUPPORT OF CABLING ENTERING THRU HORIZONTAL PATHWAYS.
- 18" LADDER RACK, COLOR BLACK, MOUNTED AT 7'-6" ABOVE RACKS UNLESS NOTED OTHERWISE. PROVIDE BUTT-SPICE KIT TO BUTT-SPICE SECTIONS OF CABLE RUNWAY (PAINT BEFORE INSTALLING AND TOUCH UP AFTER INSTALLATION). PROVIDE ALL CABLE RUNWAY, FITTINGS, AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS. PROVIDE ALL ANGLE SUPPORT KITS, WALL SUPPORT KITS, AND SPLICE KITS AS REQUIRED.
- 48-PORT CATEGORY 6 UTP PATCH PANEL FOR STATION CABLING TERMINATION.
- 48-PORT CATEGORY 6A UTP PATCH PANEL FOR WAP CABLING TERMINATION.
- 48-PORT CATEGORY 6 UTP PATCH PANEL FOR SECURITY CAMERA CABLING TERMINATION.
- 48-PORT CATEGORY 6 UTP PATCH PANEL FOR COPPER RISER CABLING TERMINATION.
- 2-RU HORIZONTAL CABLE MANAGER.
- POWER STRIP.
- POWER PANEL.
- RACK MOUNTED UPS.
- SPACE RESERVED FOR BMS PANEL.



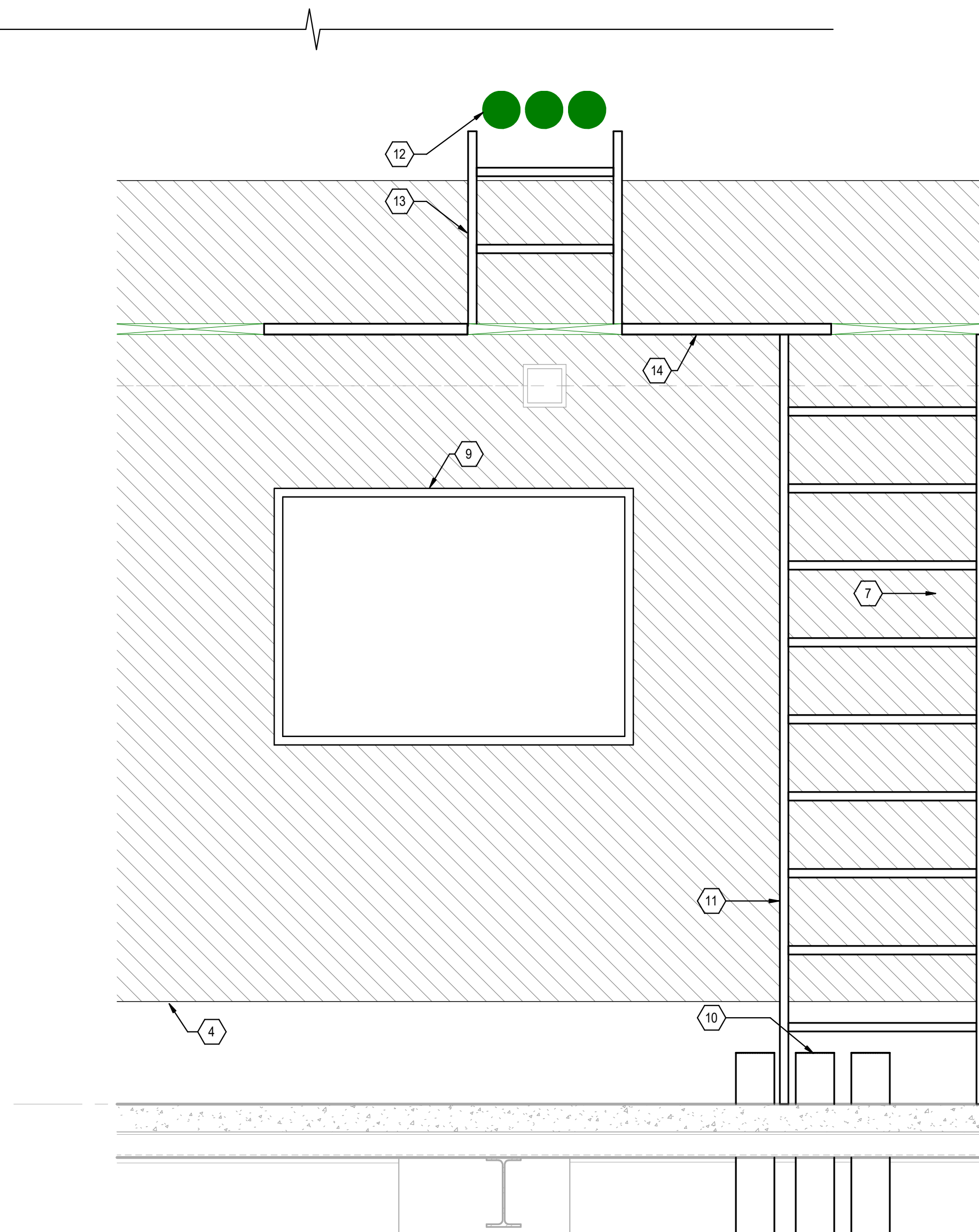
1 ENLARGED PLAN - LEVEL 2 - SERVER ROOM - LAYOUT  
1/2" = 1'-0"



2 ENLARGED PLAN - LEVEL 2 - SERVER ROOM - PATHWAYS  
1/2" = 1'-0"



3 SERVER ROOM RACK ELEVATION  
1" = 1'-0"



4 SERVER ROOM WALL ELEVATION - SOUTH  
1" = 1'-0"

PROJECT



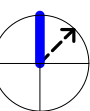
WORCESTER SOUTH  
DIVISION FIRE  
STATION PROJECT  
25 MADISON ST  
WORCESTER, MA 01608



CITY OF WORCESTER

455 MAIN STREET  
WORCESTER, MA 01605

KEY PLAN



ISSUE CHART

1	ADDENDUM #4	19/26
ISSUE	ISSUE	DATE

Job Number 157132.000

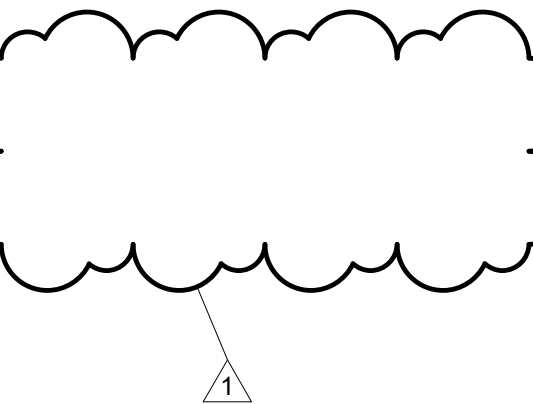
TITLE

SERVER ROOM  
ENLARGED PLANS AND  
ELEVATIONS

SHEET NUMBER

T-400





**PROJECT**

**WORCESTER SOUTH DIVISION FIRE STATION PROJECT**  
25 MADISON ST  
WORCESTER, MA 01608

**CITY OF WORCESTER**

455 MAIN STREET  
WORCESTER, MA 01605

**KEY PLAN**



**ISSUE CHART**

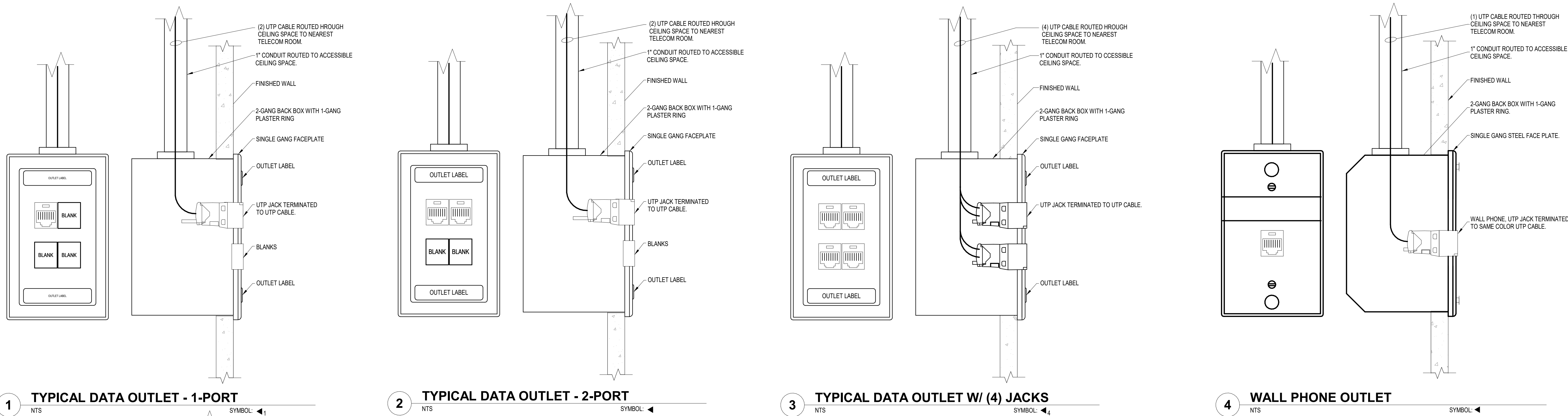
1	ADDENDUM #4	1/9/26
2	ISSUE	DATE
Job Number	157132.000	TITLE

**TECHNOLOGY TYPICAL DETAILS**

**SHEET NUMBER**

**T-500**

ADDENDUM #4 1/9/26 7/25/25

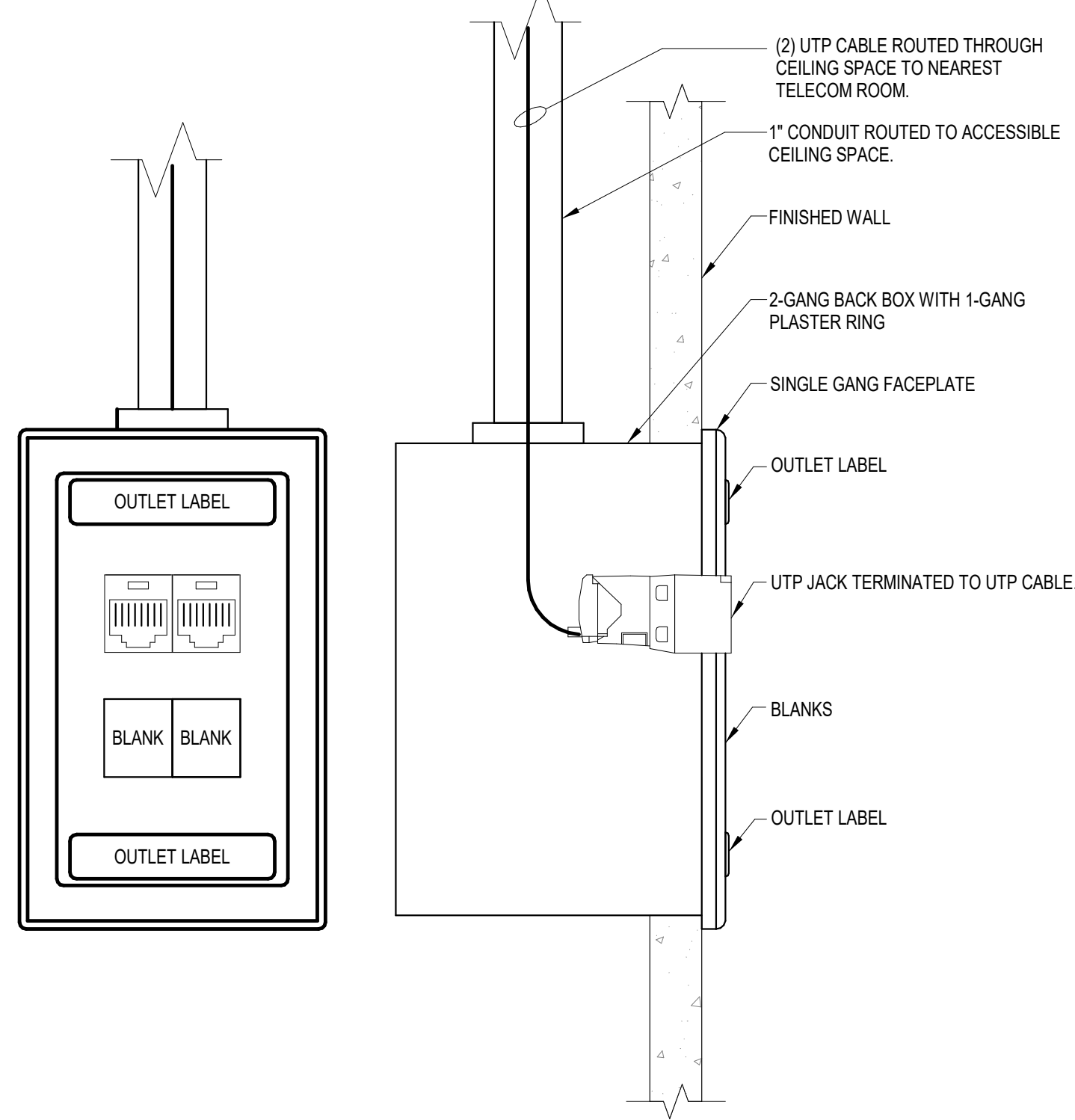


**1 TYPICAL DATA OUTLET - 1-PORT**

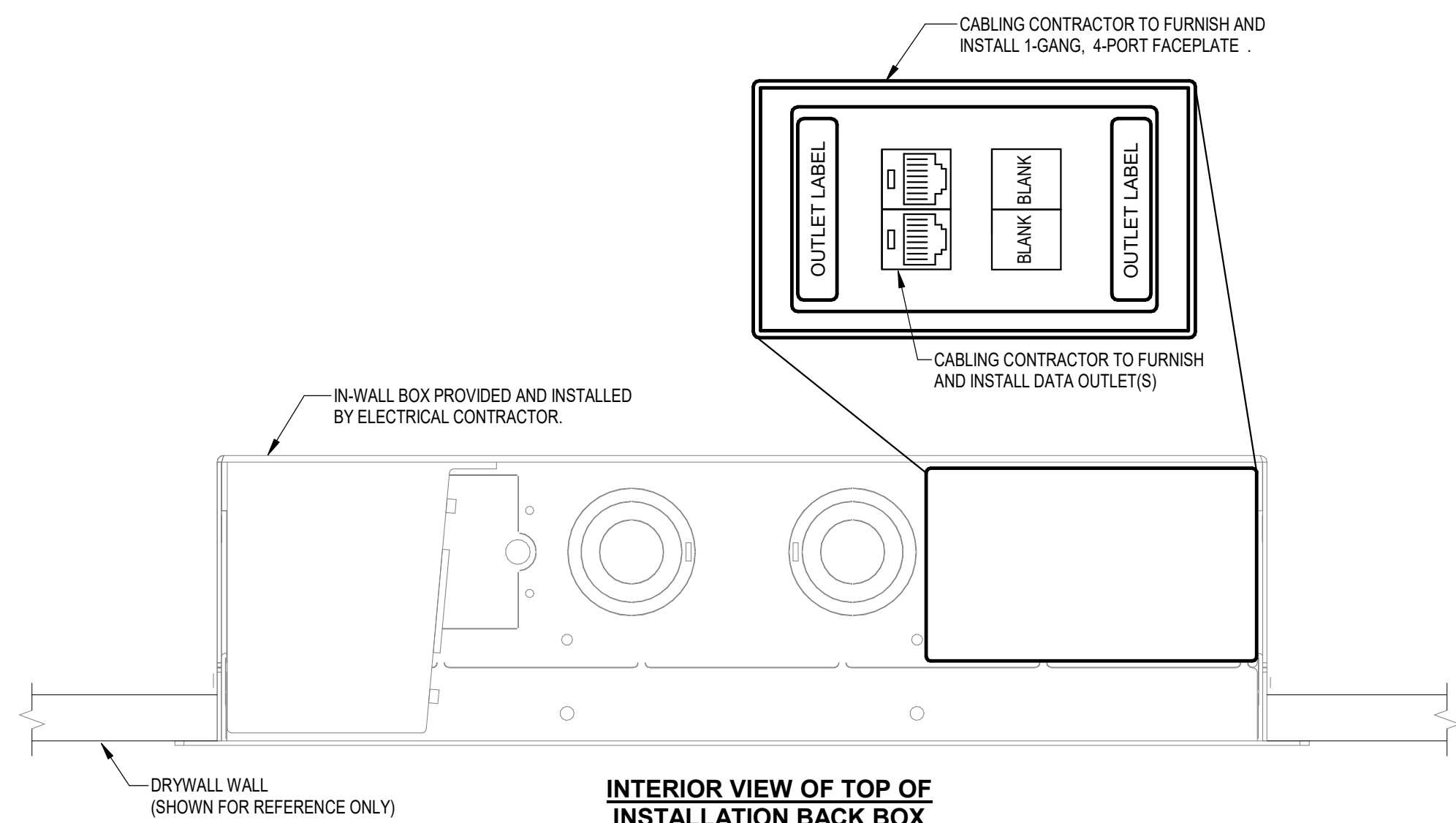
**2 TYPICAL DATA OUTLET - 2-PORT**

**3 TYPICAL DATA OUTLET W/ (4) JACKS**

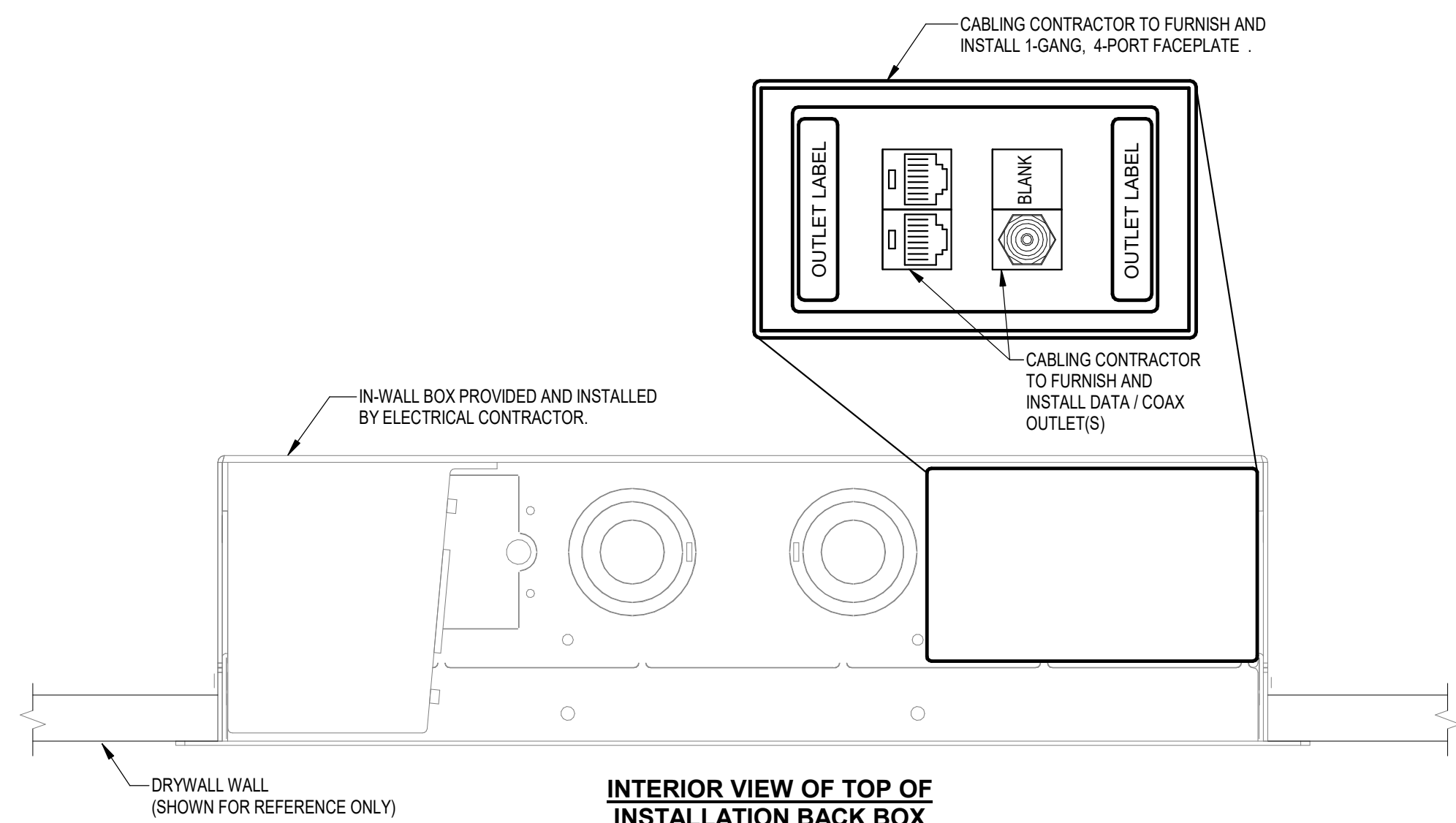
**4 WALL PHONE OUTLET**



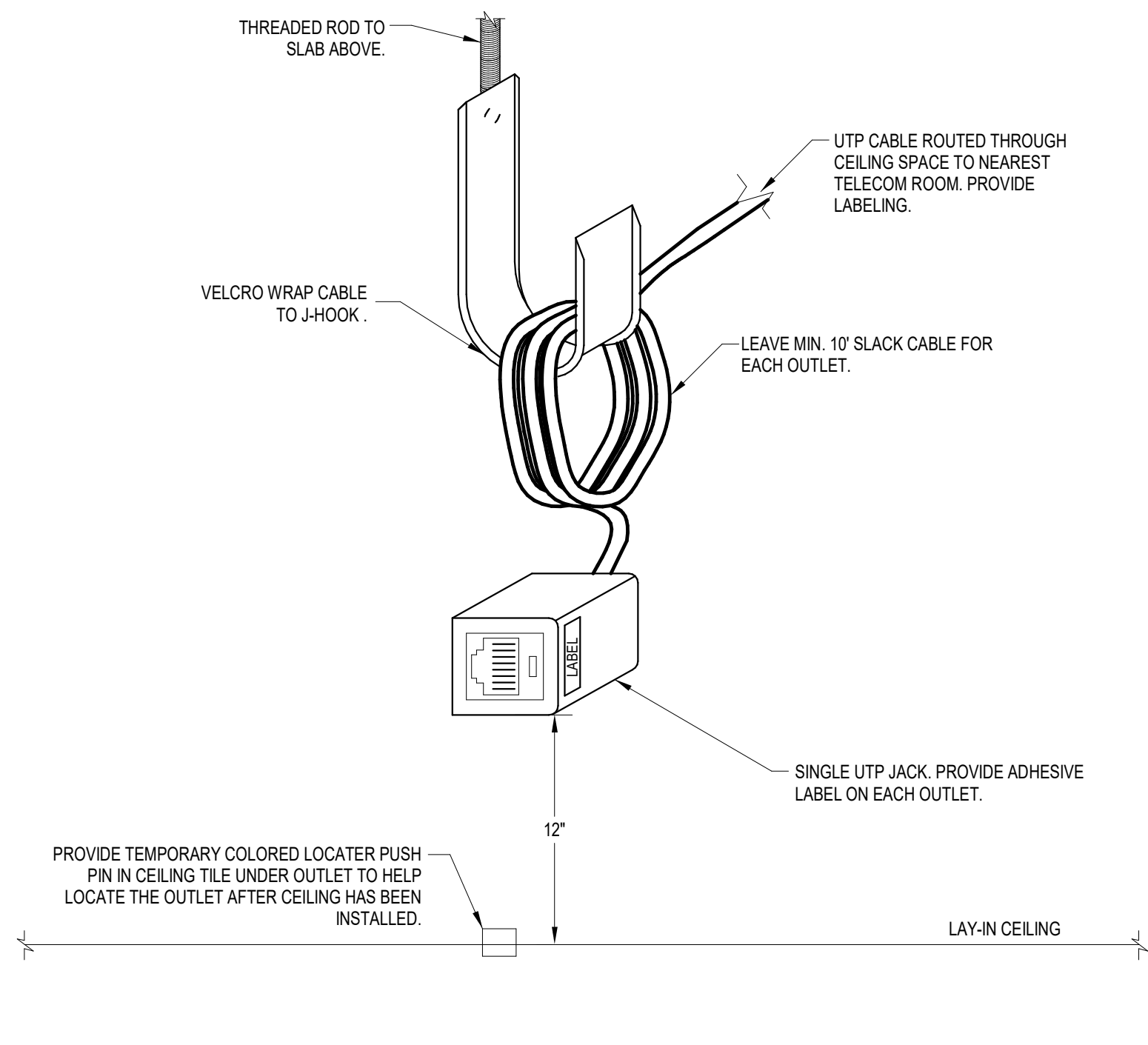
**5 TYPICAL TV OUTLET WITH (2) JACKS**



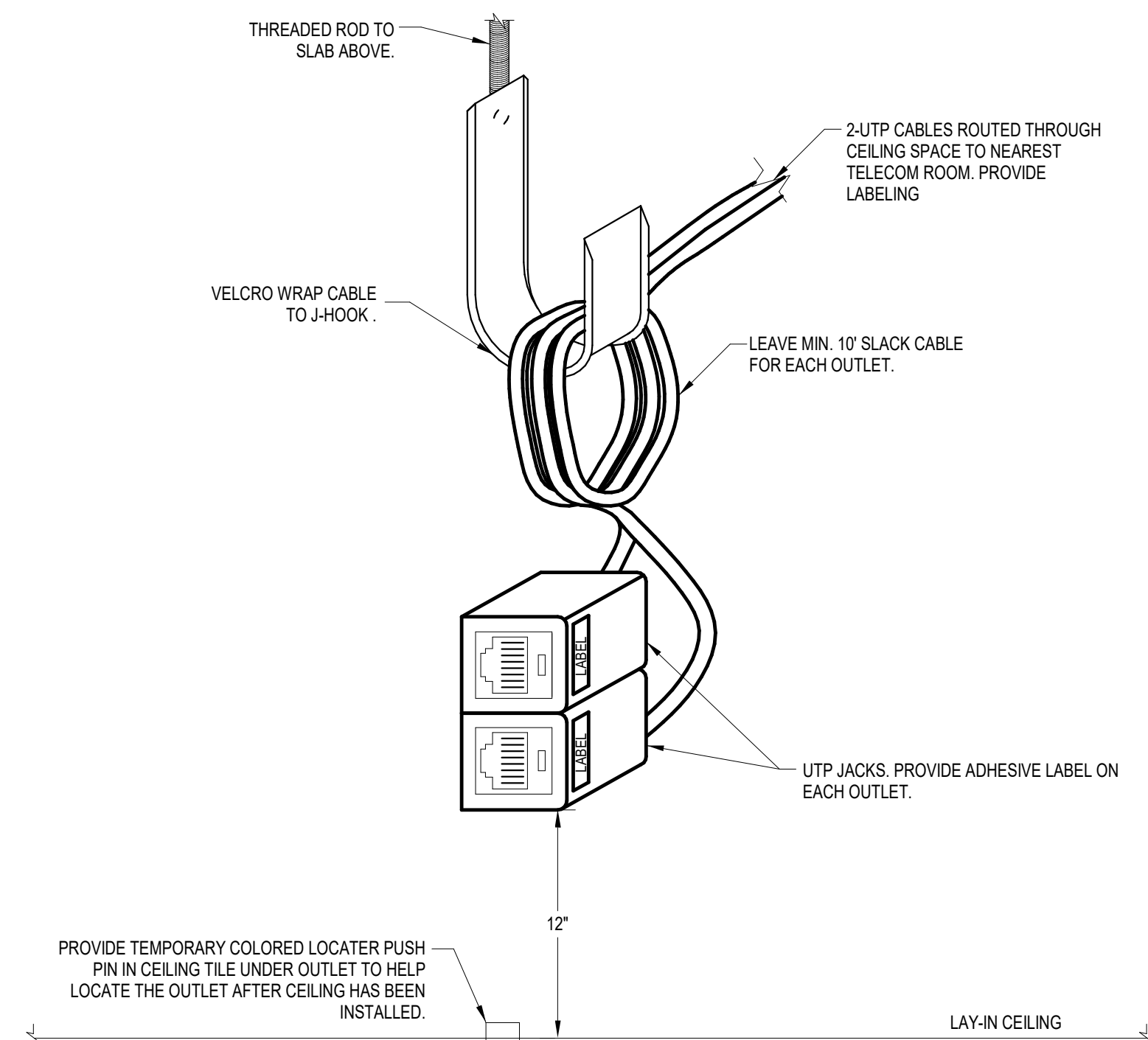
**6 IN-WALL BOX MOUNTED AV DISPLAY OUTLET WITH (2) DATA JACKS**



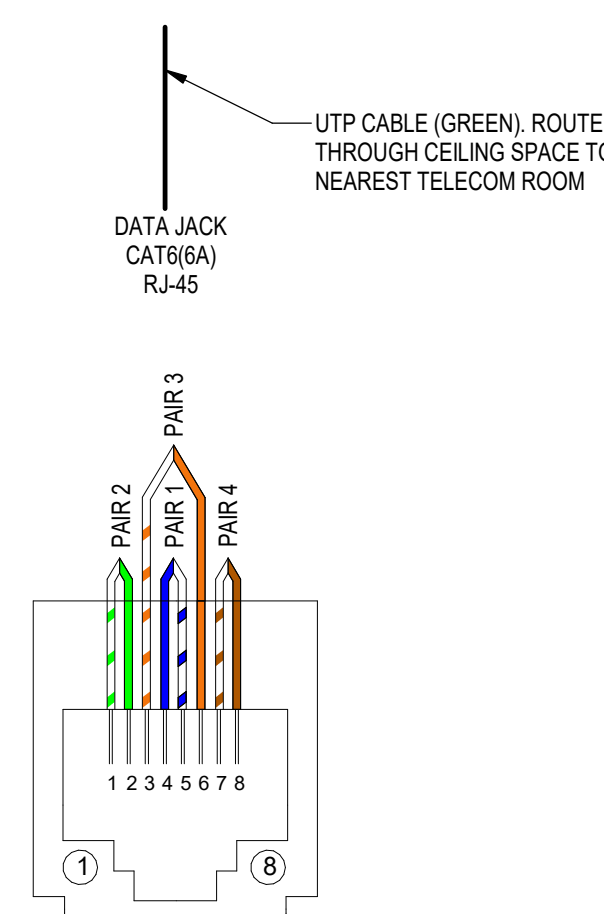
**7 IN-WALL BOX MOUNTED TV DISPLAY OUTLET WITH (2) DATA+(1) COAX JACKS**



**8 ABOVE CEILING DATA OUTLET - (1) JACK**

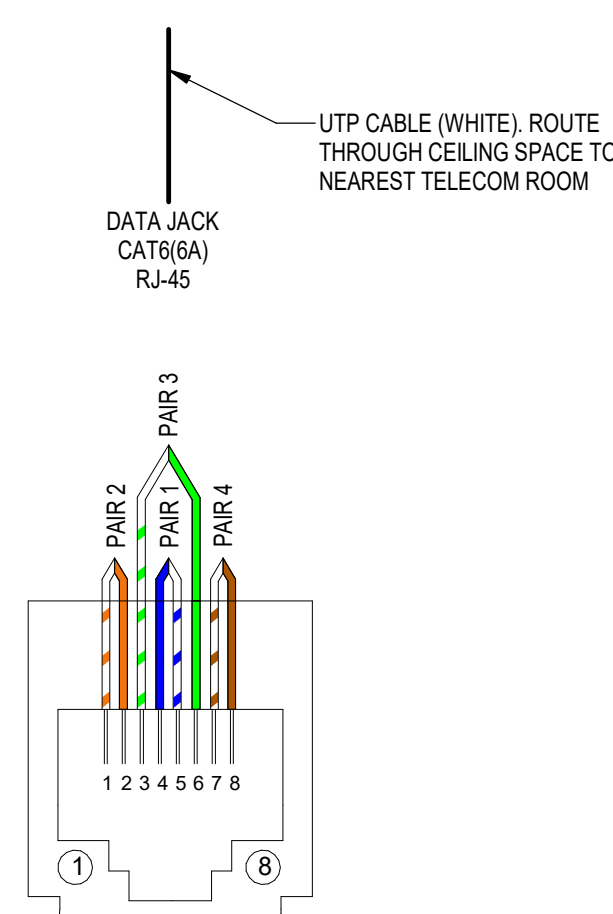


**9 ABOVE CEILING OUTLET - (2) JACKS**



**T568A WIRING**

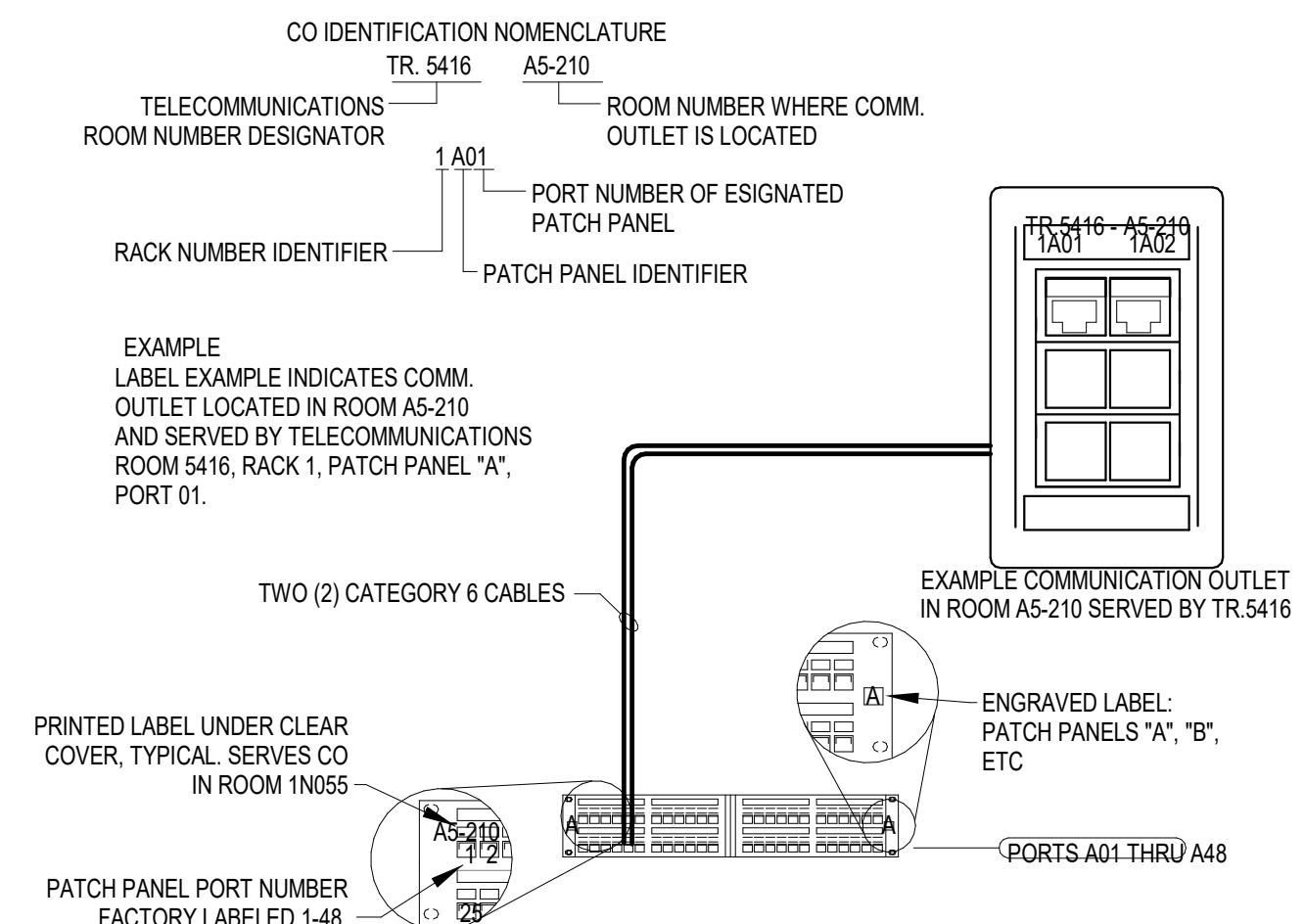
PAIR	CABLE COLOR
1	WHITE/BLUE
2	ORANGE
3	WHITE/BLUE
4	ORANGE
5	WHITE/BLUE
6	ORANGE
7	WHITE/BROWN
8	BROWN



**T568B WIRING \***

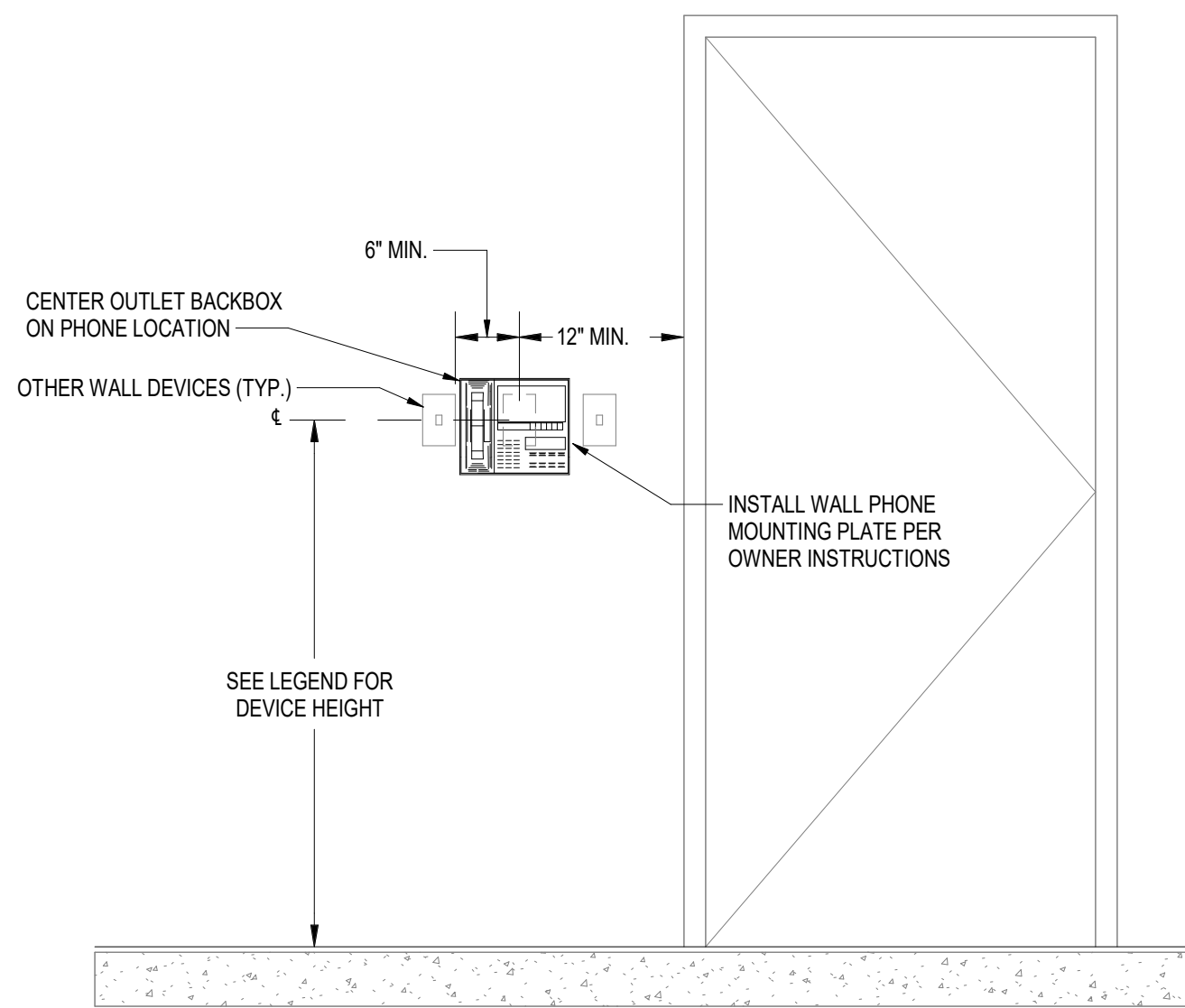
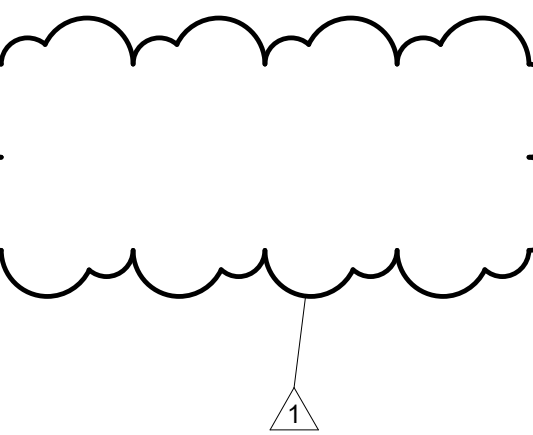
PAIR	CABLE COLOR
1	WHITE/BLUE
2	ORANGE
3	WHITE/BLUE
4	ORANGE
5	WHITE/BLUE
6	ORANGE
7	WHITE/BROWN
8	BROWN

\* DEFAULT WIRING SCHEME

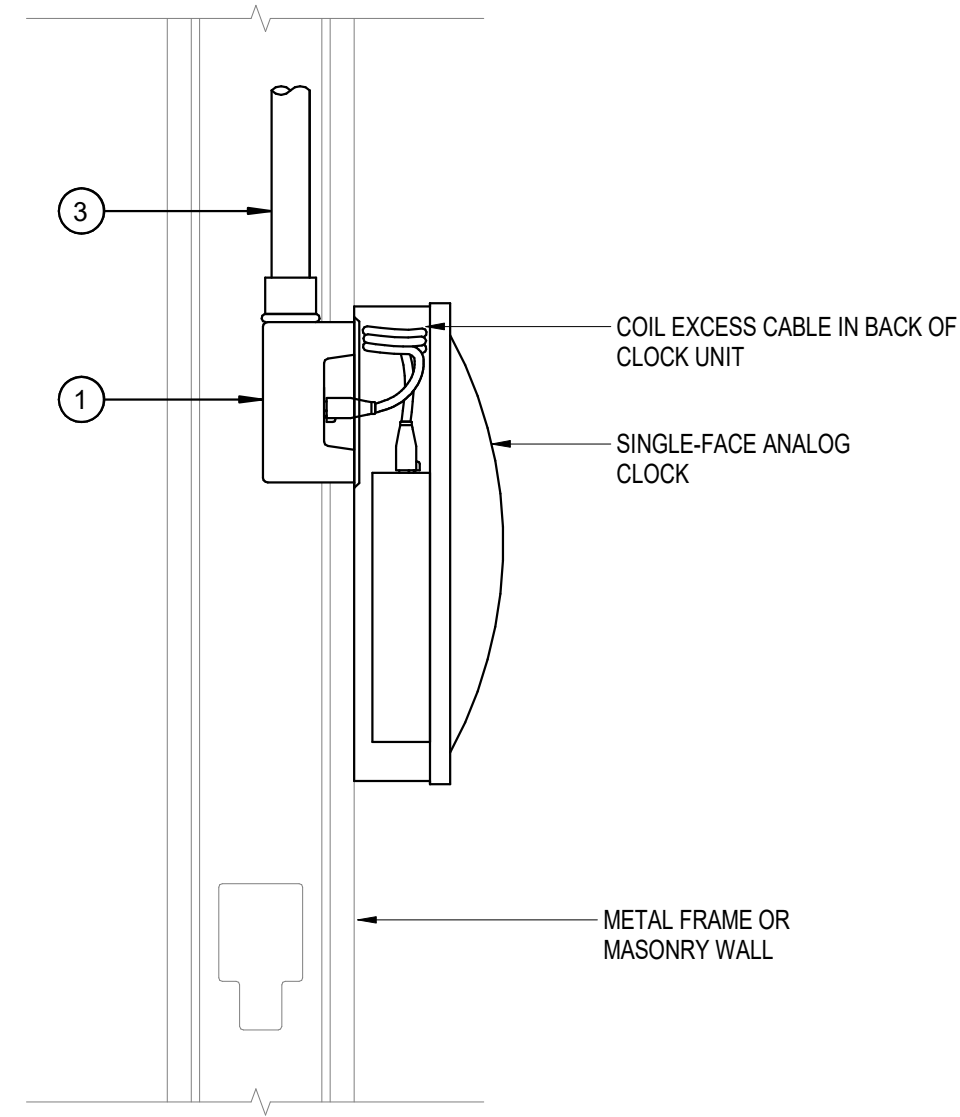


**11 ANSI/TIA 606A OUTLET LABELING**

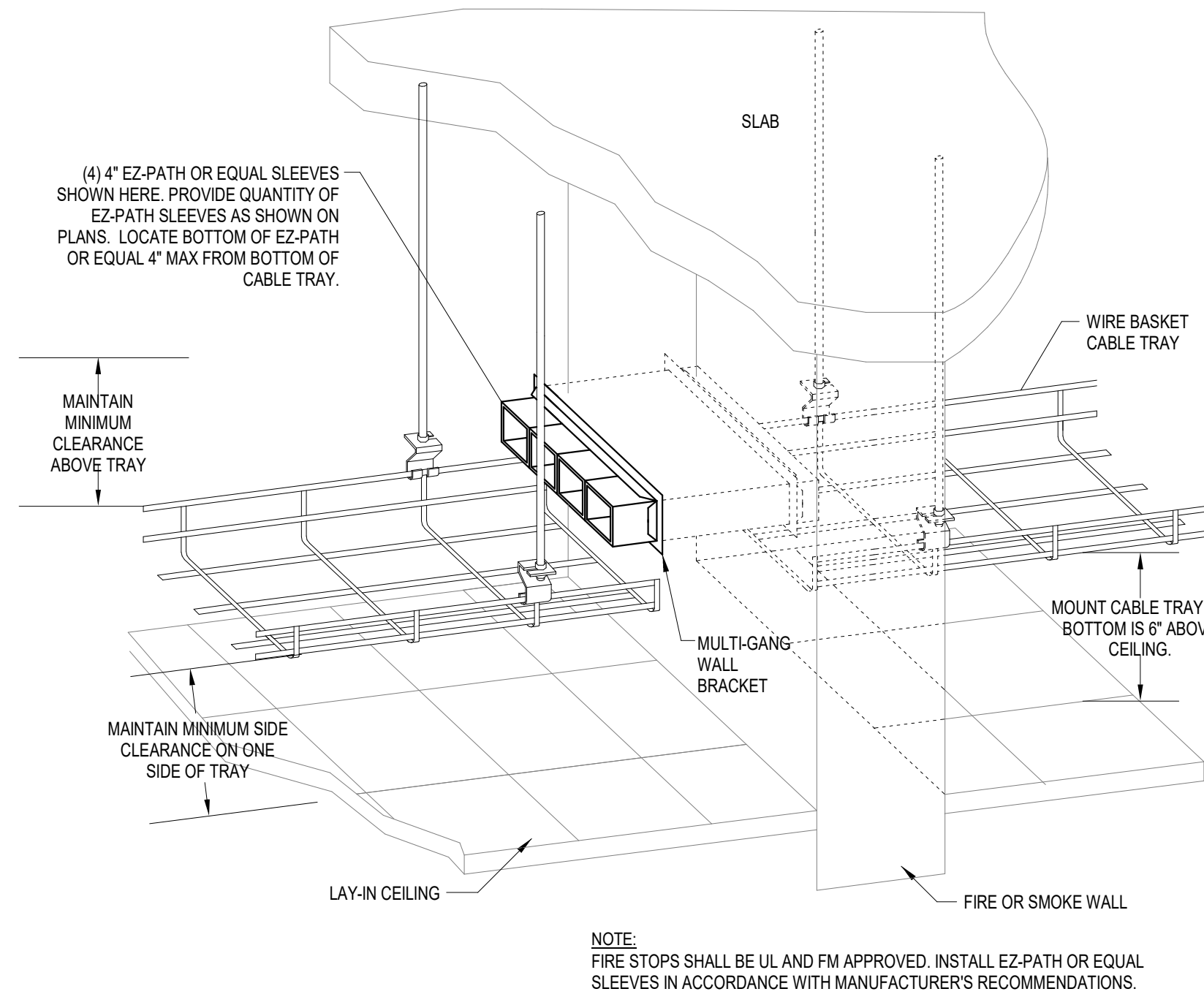




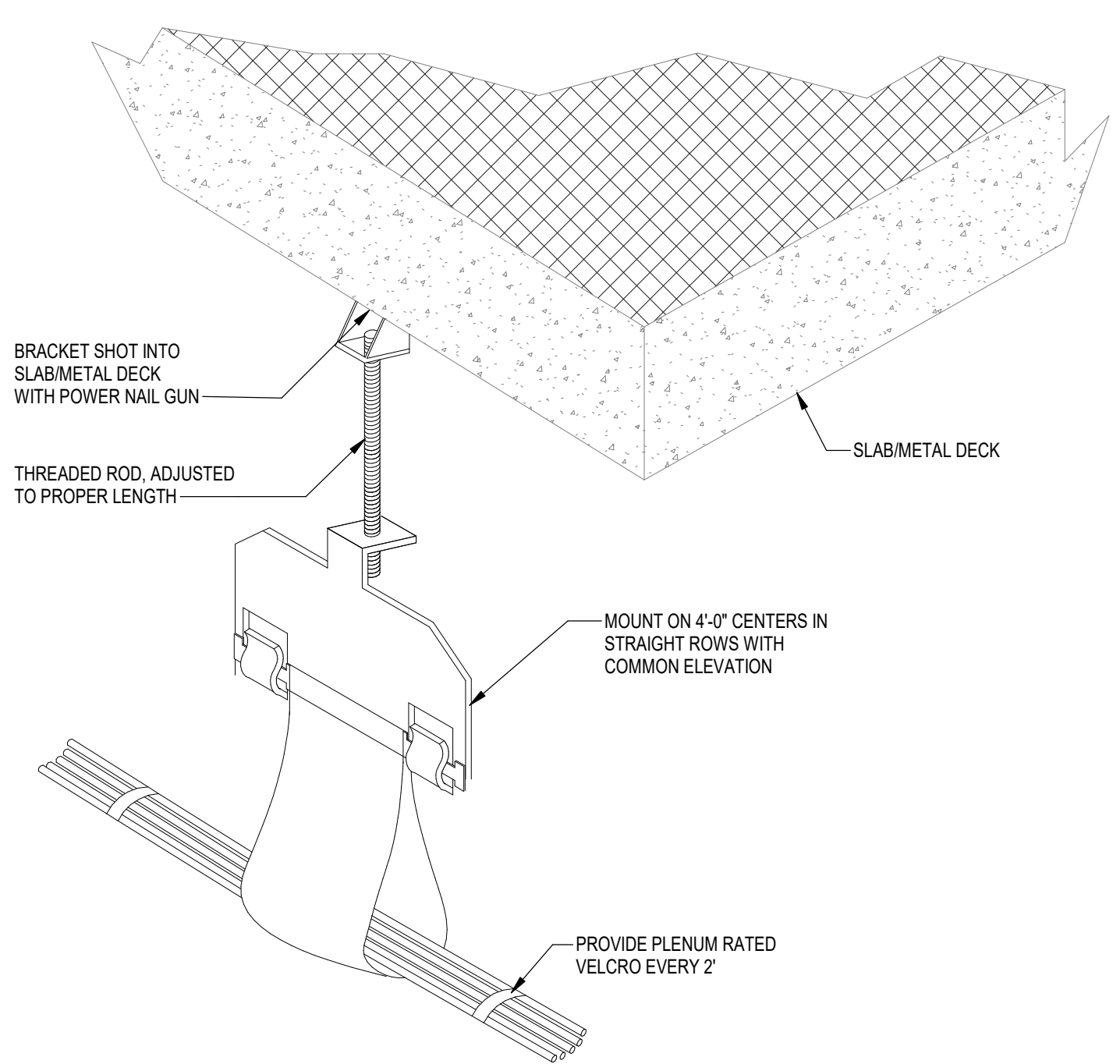
1 TYPICAL WALL PHONE DISTANCE FROM CORNER AND DOOR  
12" = 1'-0"



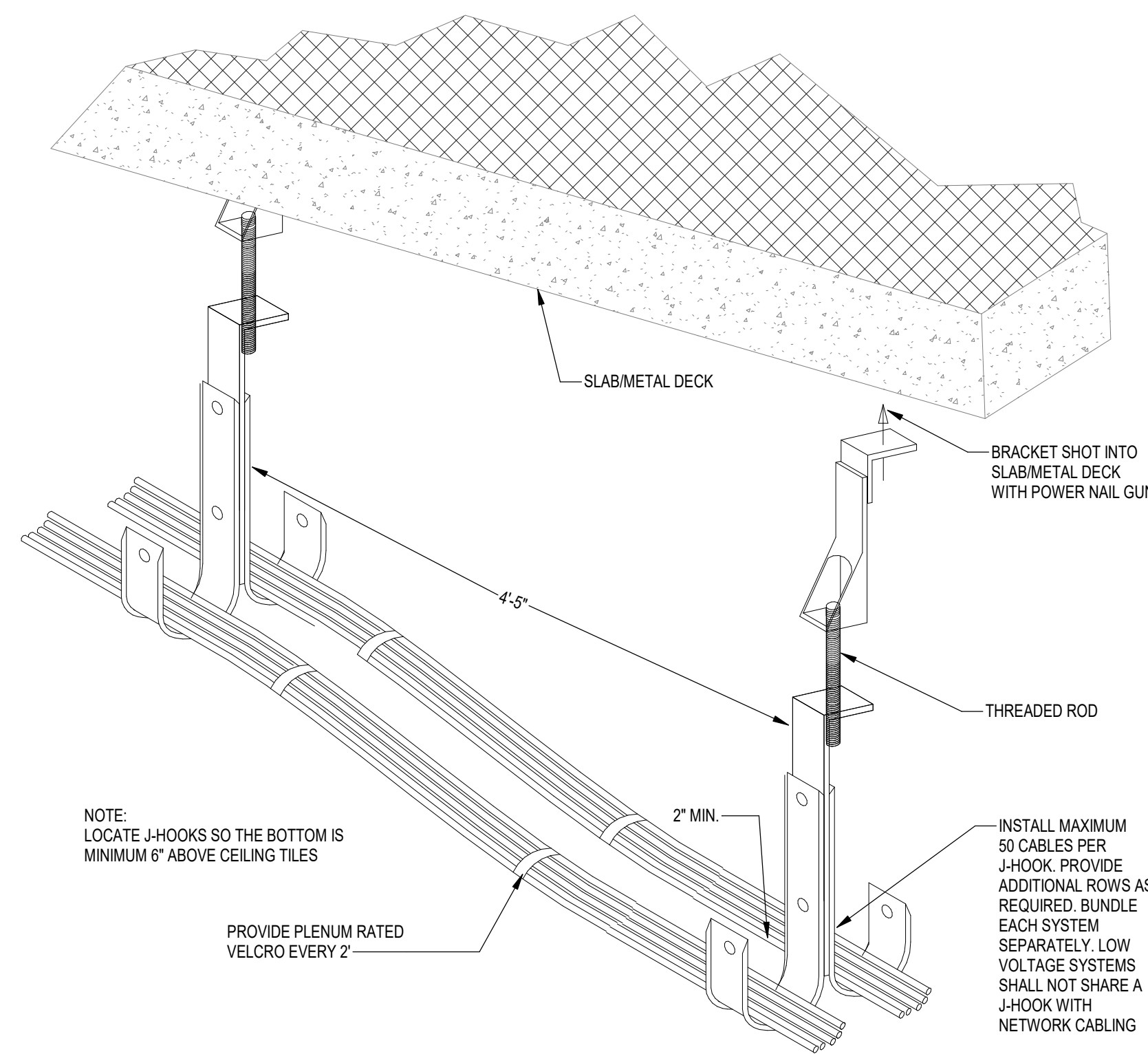
2 SINGLE-FACE ANALOG CLOCK  
N.T.S.



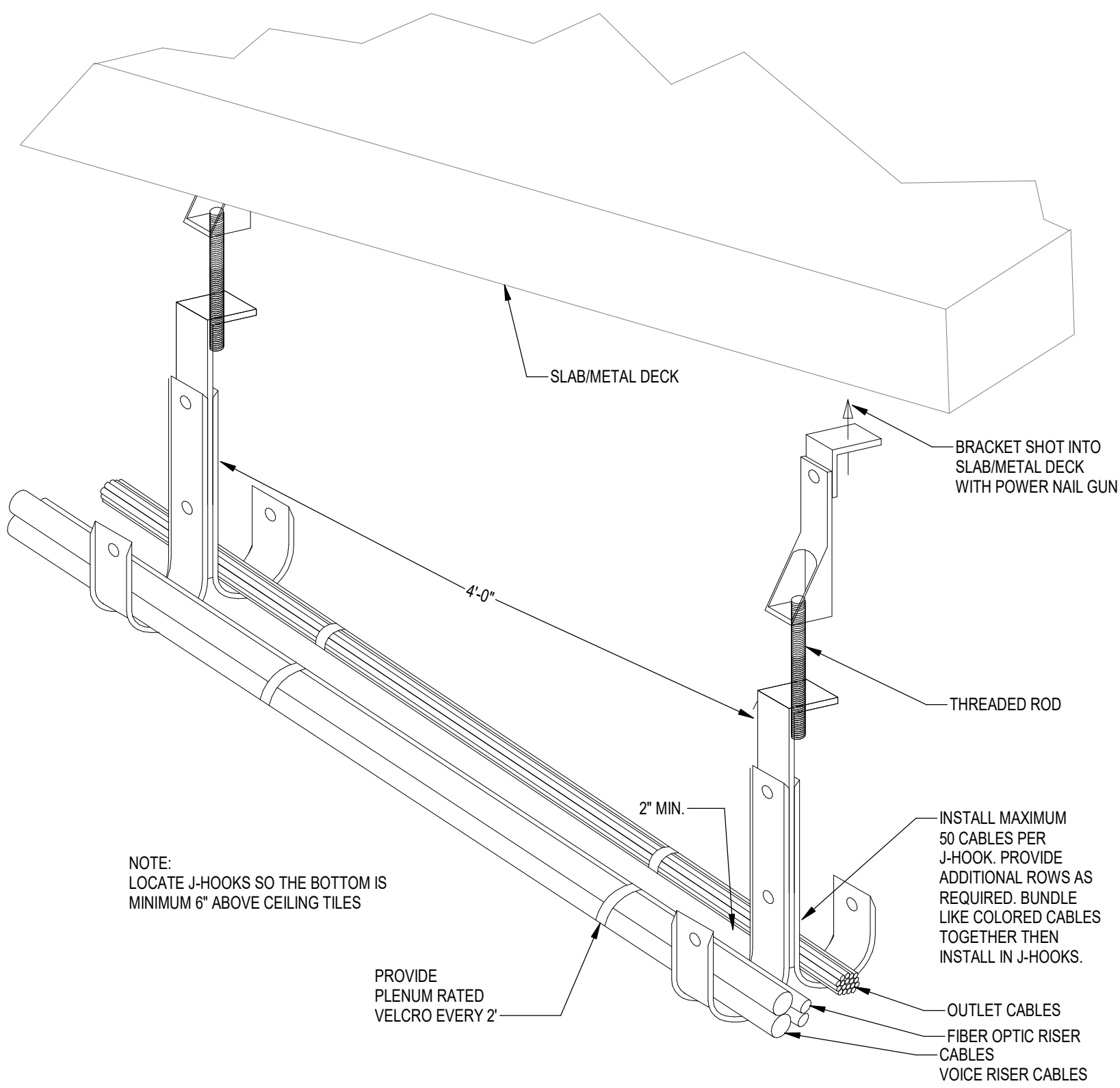
3 EZ-PATH OVER CABLE TRAY  
1" = 1'-0"



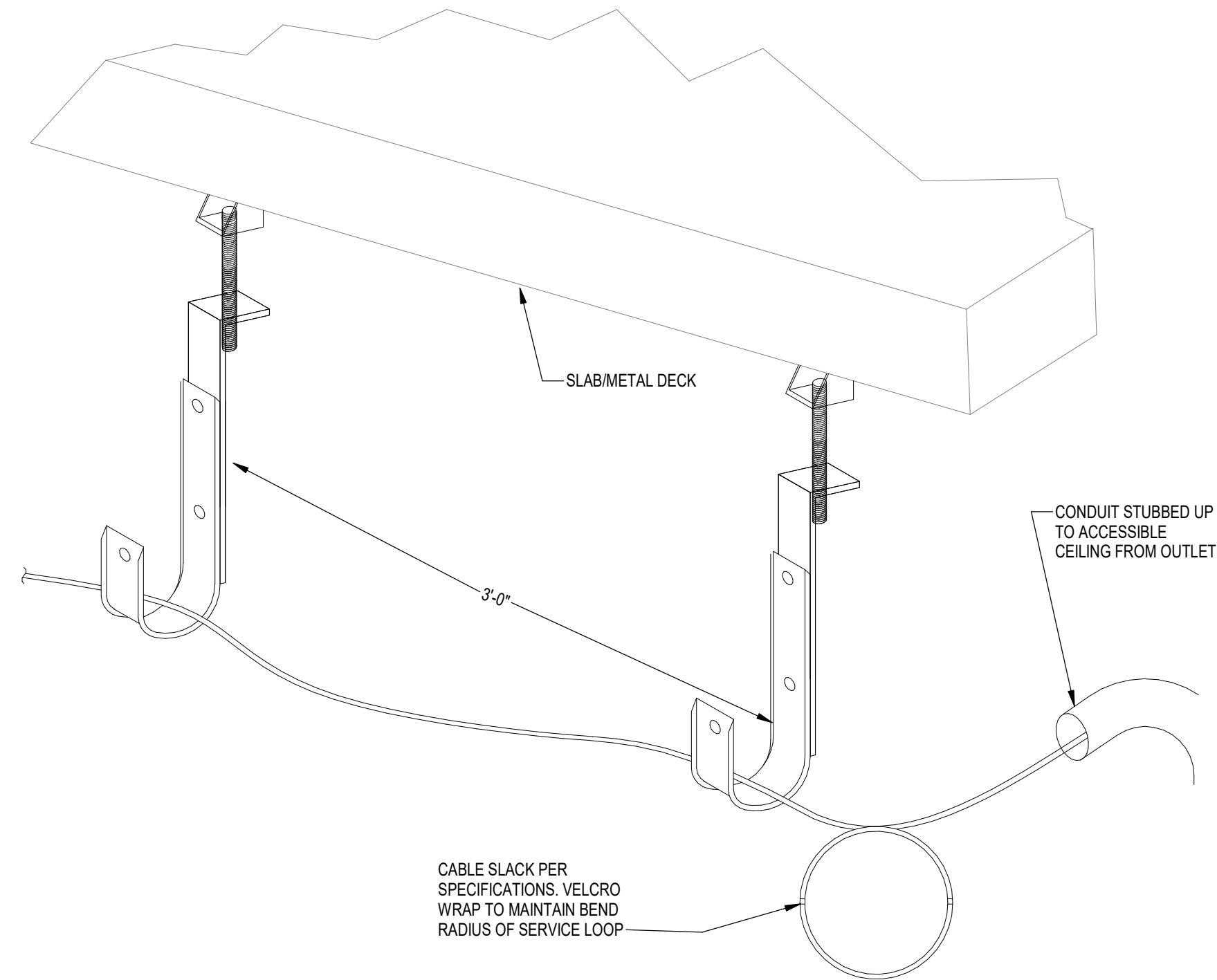
4 CABLE SLING ASSEMBLY  
N.T.S.



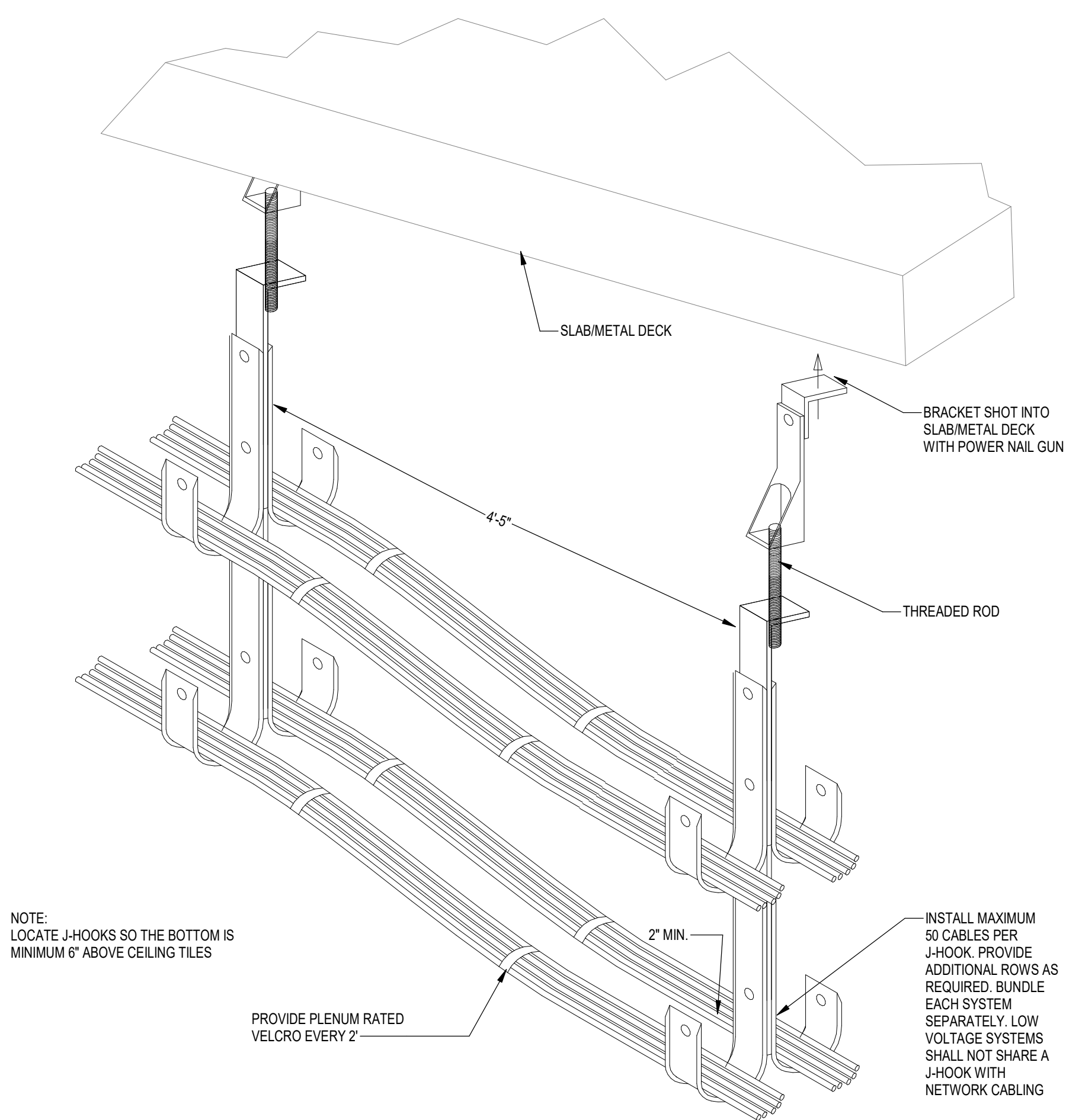
5 J-HOOK ASSEMBLY  
N.T.S.



6 J-HOOK ASSEMBLY WITH RISER CABLES  
N.T.S.

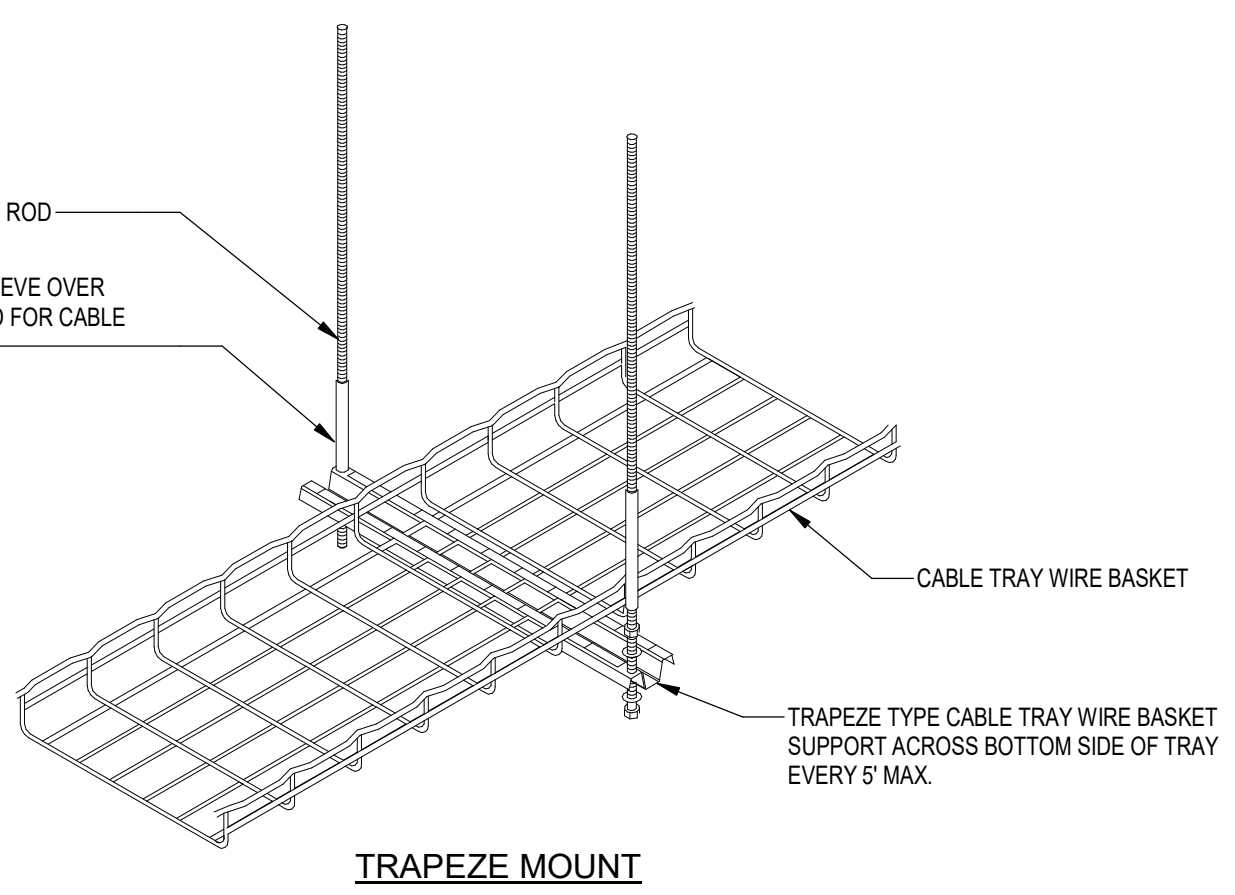


7 SERVICE LOOP  
N.T.S.

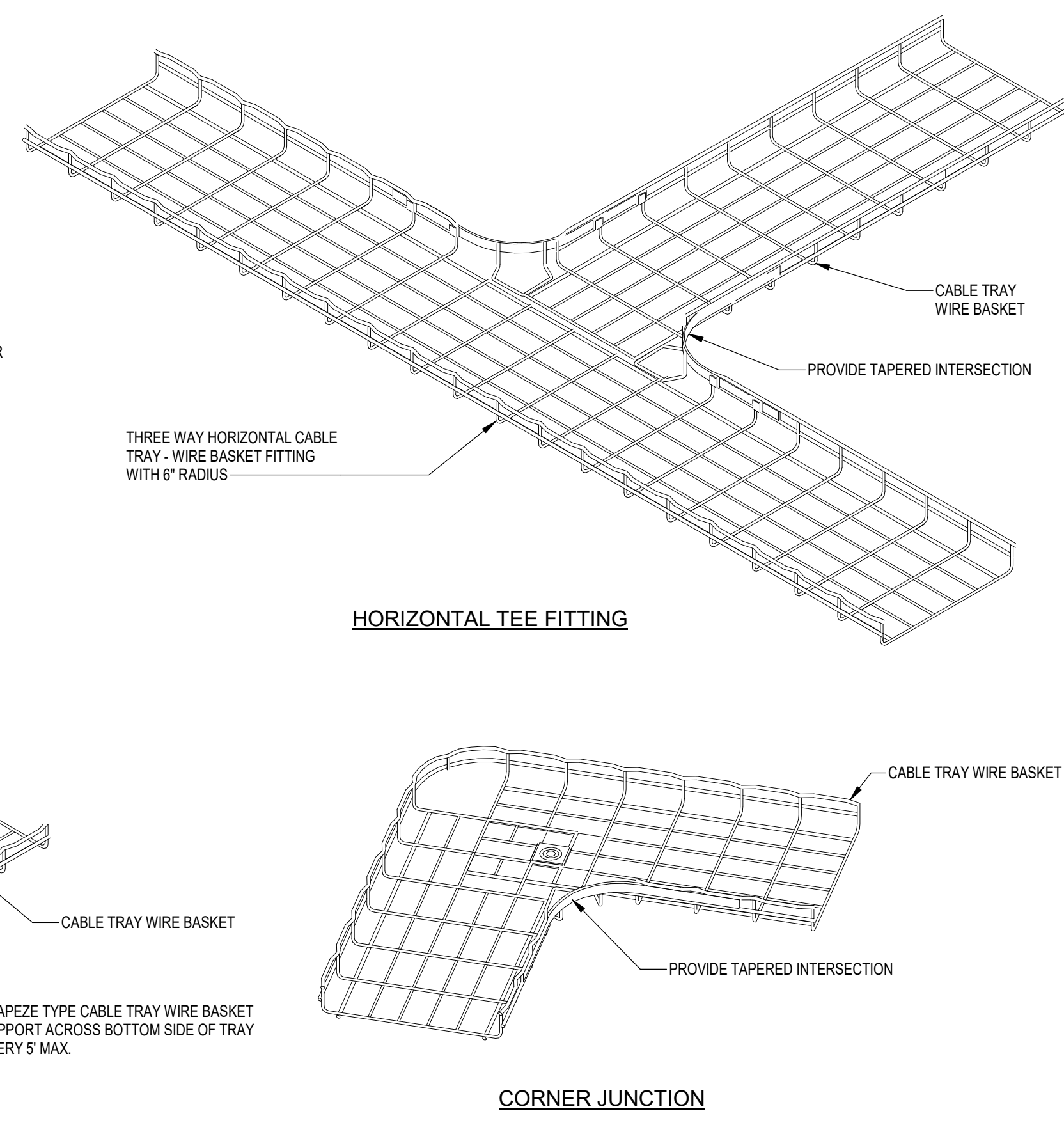


8 J-HOOK ASSEMBLY - TWO ROWS  
N.T.S.

- NOTES:
1. TRAPAZE MOUNT TRAY.
  2. PROVIDE CORNER JUNCTIONS TO WRAP TRAY AROUND CORRIDORS CORNERS.
  3. PROVIDE TEE FITTING WHERE TRAYS JOIN TOGETHER.
  4. PROVIDE GROUND CONNECTION AND BONDING PER SPECIFICATIONS AND MANUFACTURER REQUIREMENTS.
  5. ALIGN CABLE TRAY - WIRE BASKET WITH CONDUITS AND FIRE/SMOKE SLEEVES THAT PASS THROUGH FIRE OR SMOKE RATED WALLS.
  6. MAINTAIN PROPER CLEARANCES AROUND TRAY AS NOTED IN THE SPECIFICATIONS.

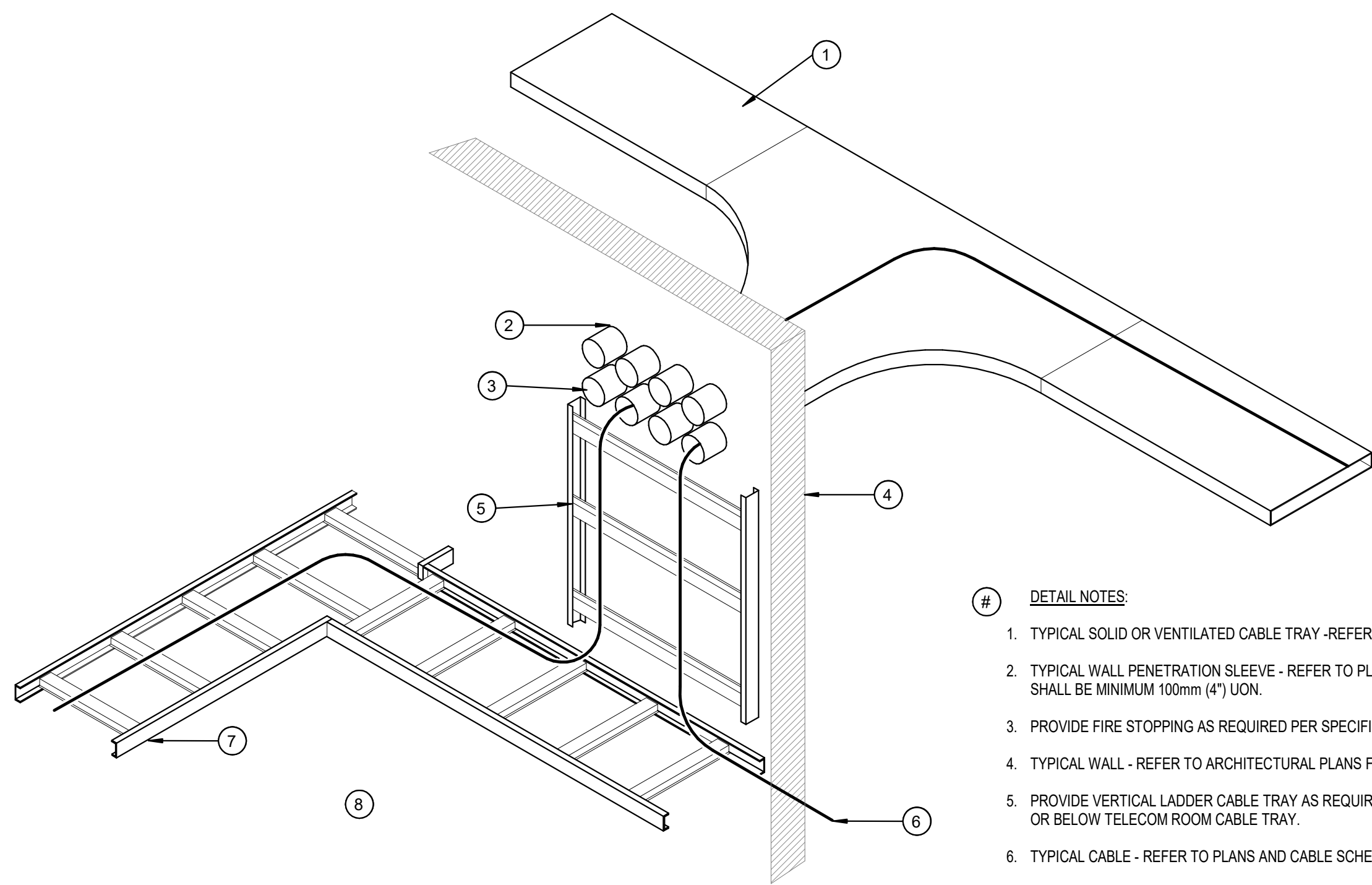


9 CABLE TRAY - WIRE BASKET  
12" = 1'-0"



10 CONDUITS TO FREE STANDING MILLWORK  
12" = 1'-0"

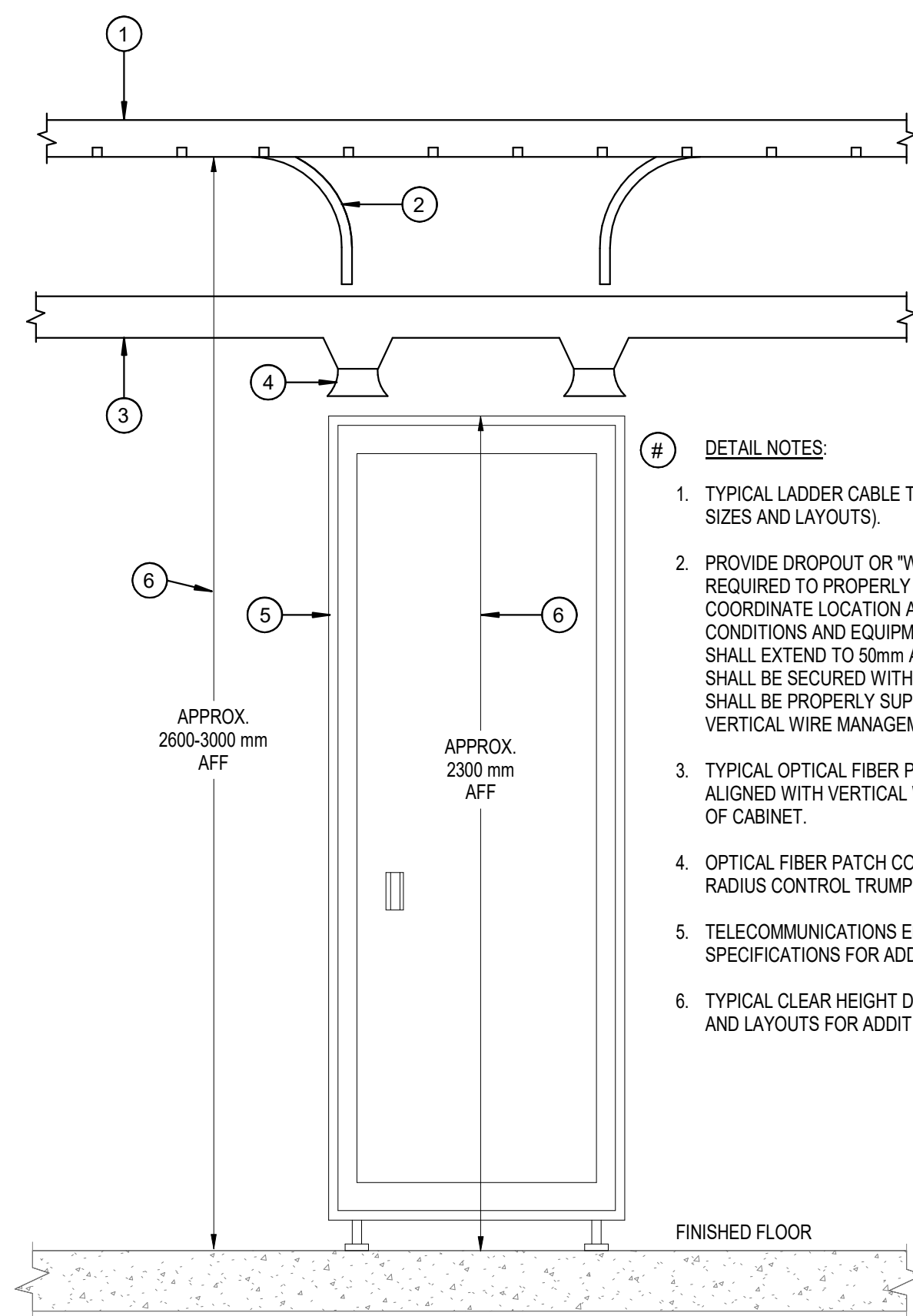




- # DETAIL NOTES
1. TYPICAL SOLID OR VENTILATED CABLE TRAY - REFER TO PLANS FOR TYPES, SIZES, MOUNTING HEIGHT AND LAYOUTS.
  2. TYPICAL WALL PENETRATION SLEEVE - REFER TO PLANS FOR EXACT QUANTITY, SIZE, AND LOCATION. ALL SLEEVES SHALL BE MINIMUM 100mm (4") UON.
  3. PROVIDE FIRE STOPPING AS REQUIRED PER SPECIFICATIONS.
  4. TYPICAL WALL - REFER TO ARCHITECTURAL PLANS FOR DETAILS.
  5. PROVIDE VERTICAL LADDER CABLE TRAY AS REQUIRED WHEN ENTRY CABLE TRAY IS GREATER THAN 500mm ABOVE OR BELOW TELECOM ROOM CABLE TRAY.
  6. TYPICAL CABLE - REFER TO PLANS AND CABLE SCHEDULES FOR ADDITIONAL INFORMATION.
  7. TYPICAL LADDER CABLE TRAY USED WITHIN TELECOM.
  8. ROOMS - REFER TO PLANS FOR SIZES AND LAYOUTS.

## 6 CABLE TRAY ROOM ENTRANCE

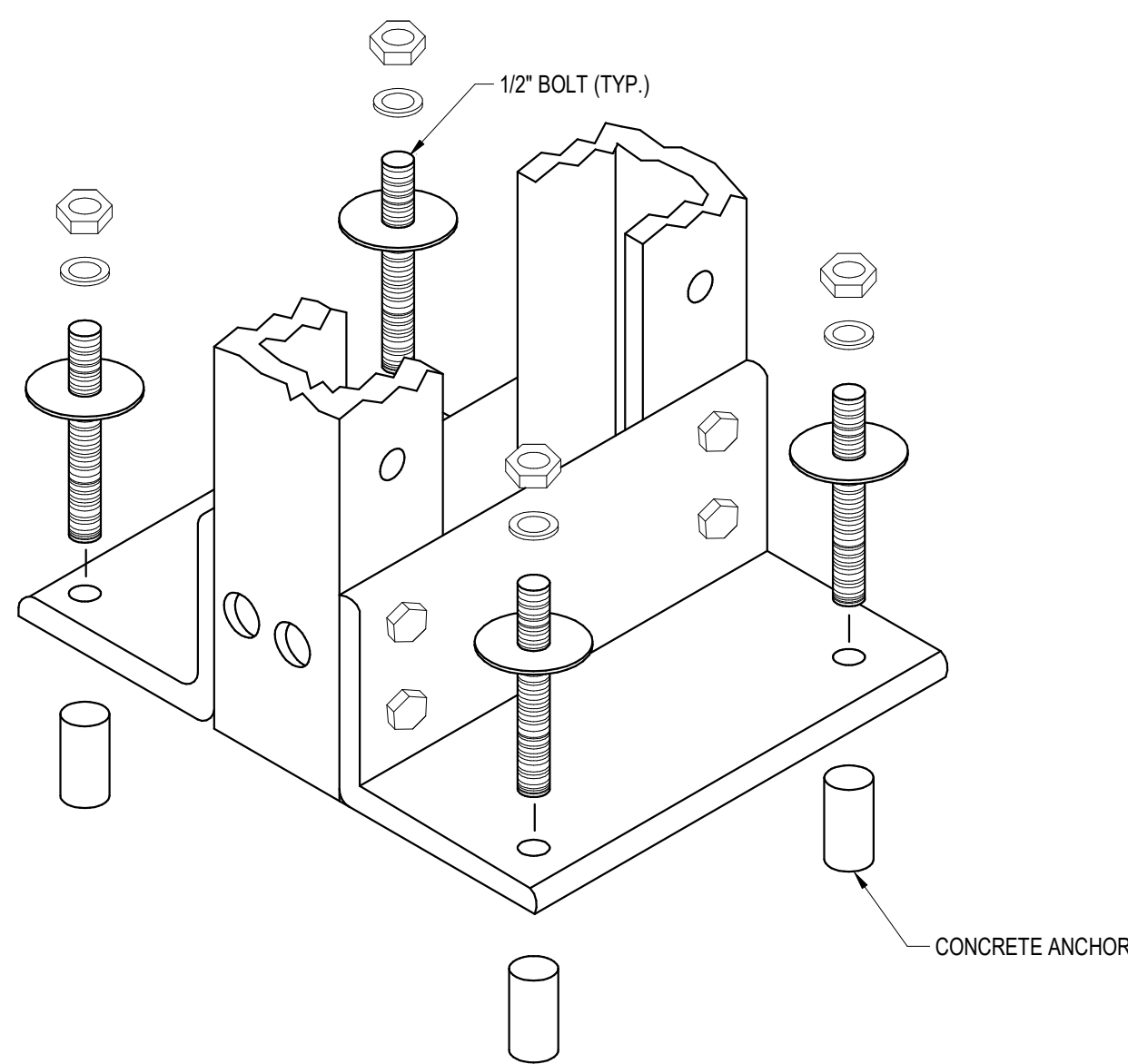
N.T.S.



- # DETAIL NOTES
1. TYPICAL LADDER CABLE TRAY (REFER TO PLANS FOR SIZES AND LAYOUTS).
  2. PROVIDE DROPOUT OR "WATERFALL" ACCESSORIES AS REQUIRED TO PROPERLY MANAGE BEND RADI. COORDINATE LOCATION AND STYLE WITH FIELD CONDITIONS AND EQUIPMENT SELECTIONS. WATERFALL SHALL EXTEND TO 60mm ABOVE CABINET. ALL CABLES SHALL BE PROPERLY SUPPORTED AND ROUTED INTO VERTICAL WIRE MANAGEMENT WITHIN THE CABINET.
  3. TYPICAL OPTICAL FIBER PATCH CORD CONTAINMENT ALIGNED WITH VERTICAL WIRE MANAGEMENT ON FRONT OF CABINET.
  4. OPTICAL FIBER PATCH CORD CONTAINMENT BEND RADIUS CONTROL TRUMPET.
  5. TELECOMMUNICATIONS ENCLOSURE - REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  6. TYPICAL CLEAR HEIGHT DIMENSION. REFER TO PLANS AND LAYOUTS FOR ADDITIONAL INFORMATION.

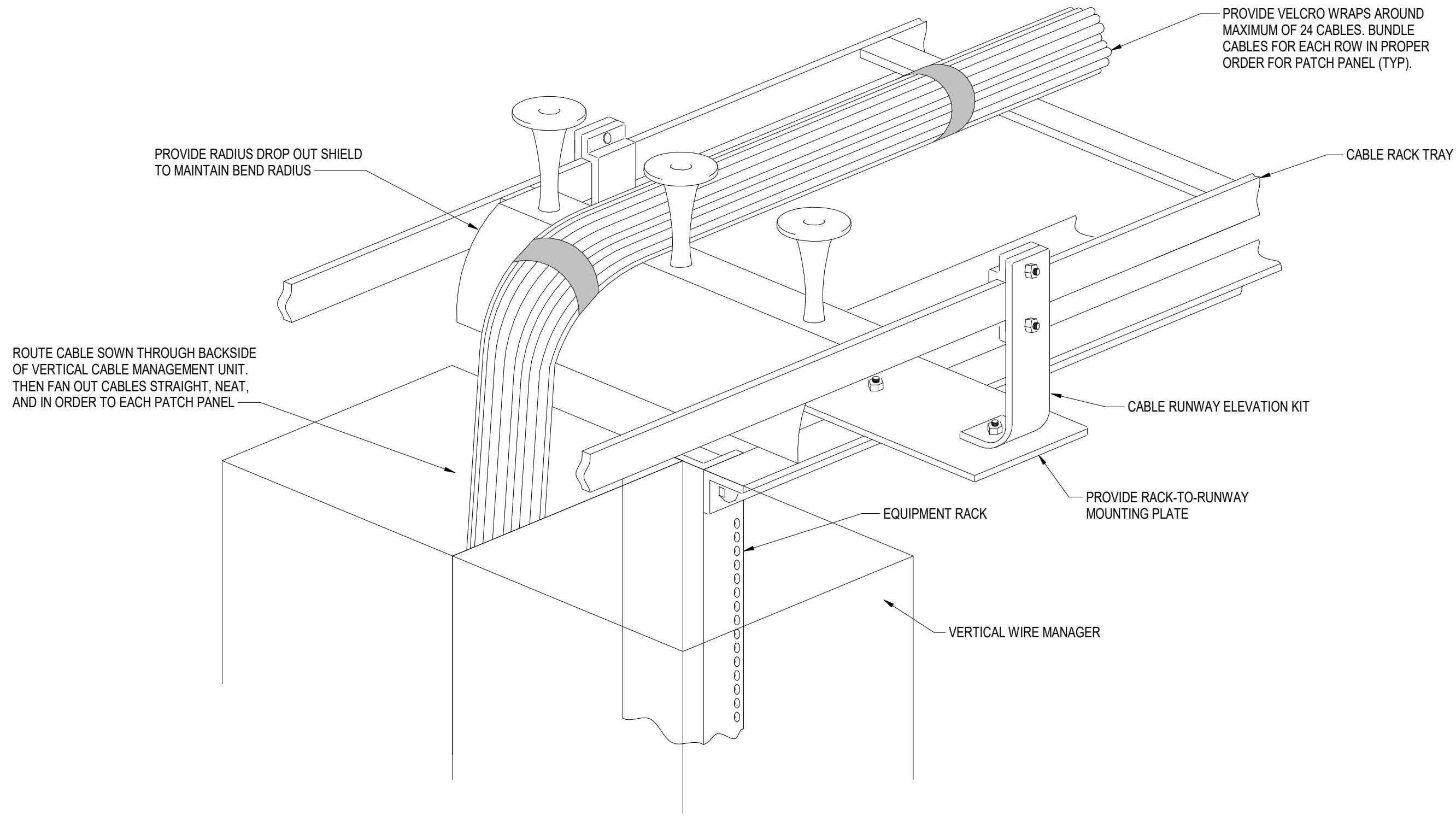
## 5 CABLE TRAY WATERFALL

N.T.S.



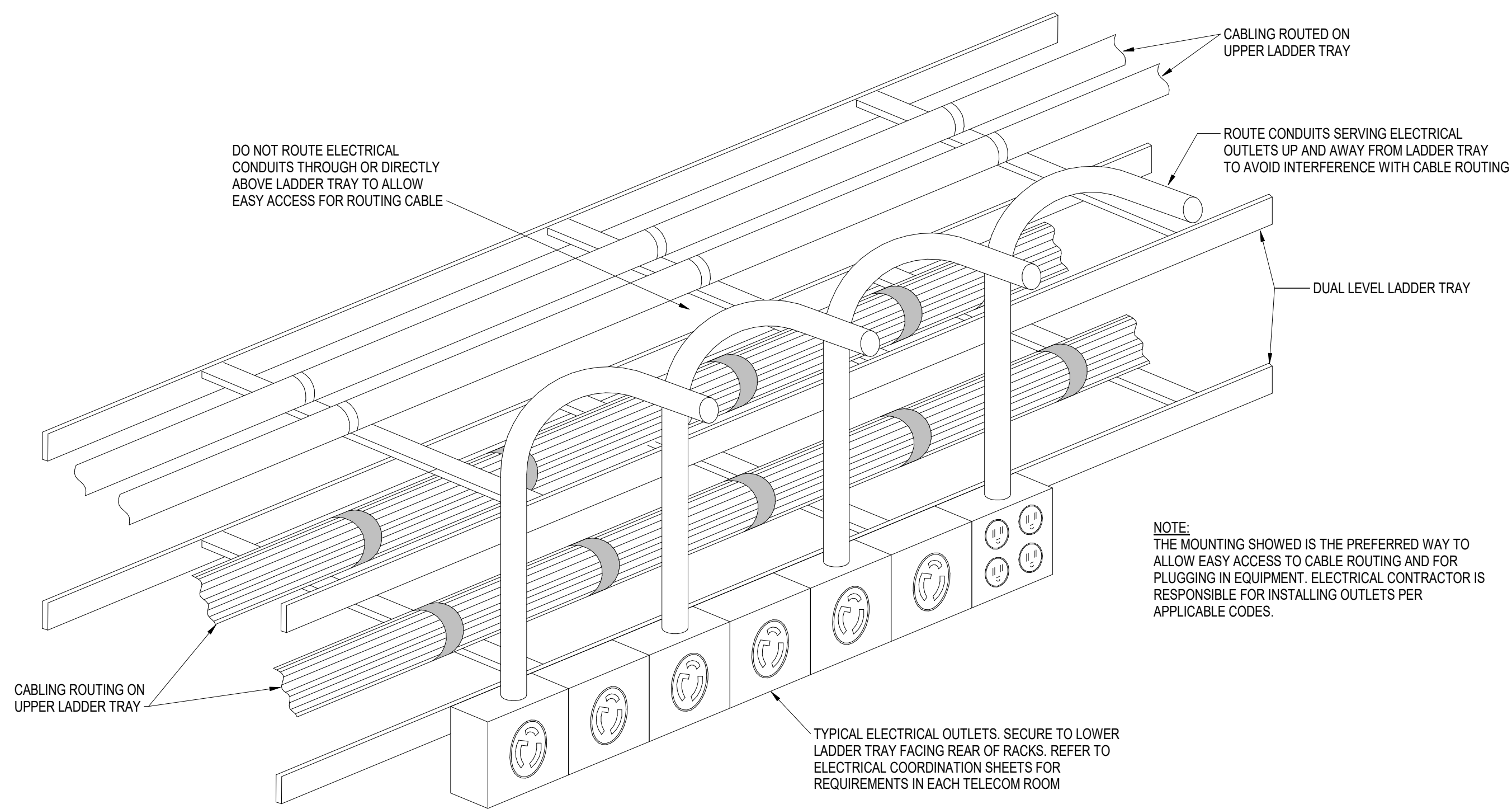
## 4 EQUIPMENT RACK - TYP. FLOOR ATTACHMENT

N.T.S.



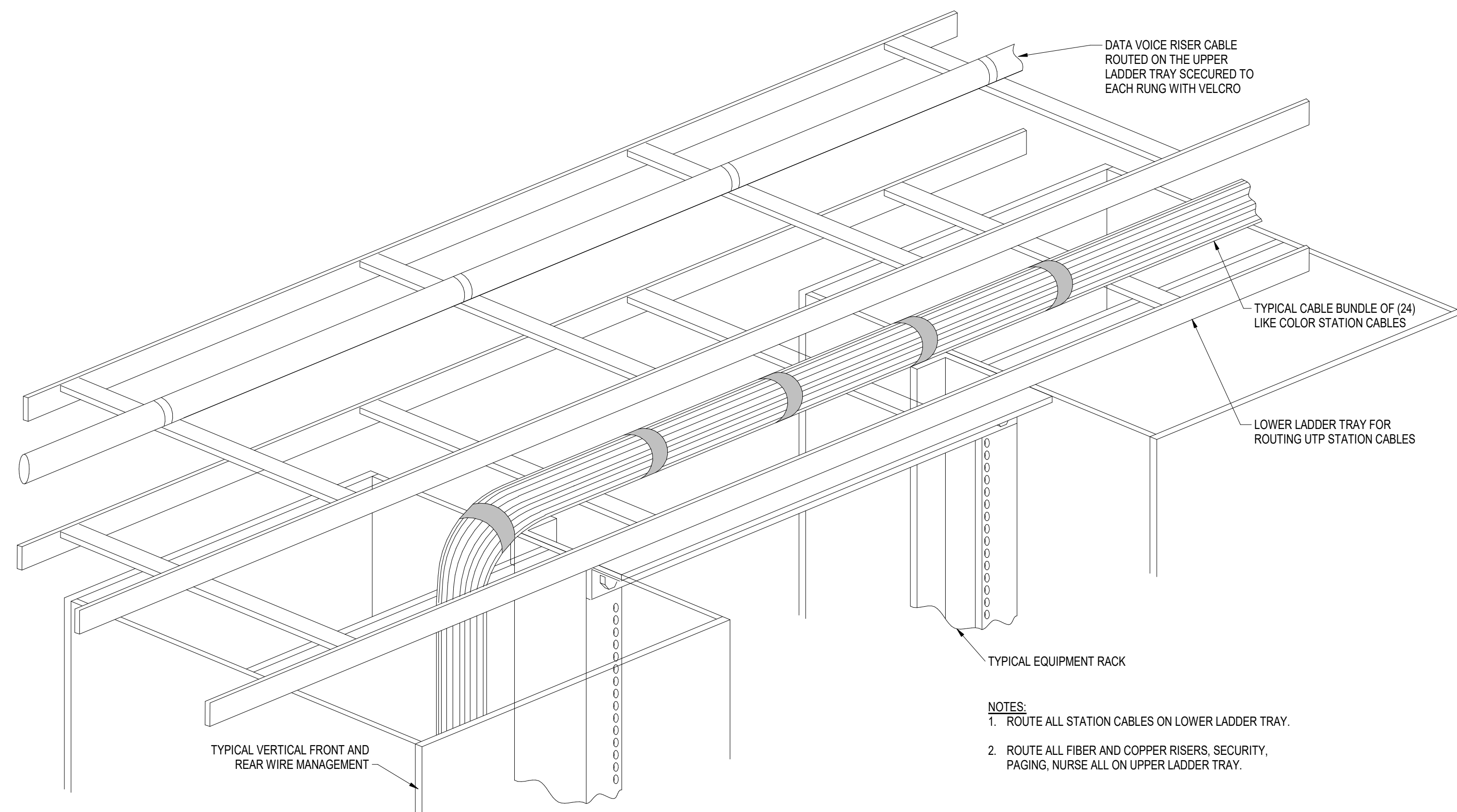
## 3 CABLE TRAY OVER RACK ELEVATION

N.T.S.



## 2 ELECTRICAL OUTLET MOUNTING

N.T.S.



## 1 EQUIPMENT RACK CABLING IN TELECOM ROOM

N.T.S.

# Perkins&Will

225 Franklin Street, Suite 700  
Boston, MA 02110  
1.617.478.0300  
1.617.478.0321  
www.perkinswill.com

## CONSULTANTS

### FIRE/MATIC

WENDEL | MITCHELL ASSOCIATES  
29 THATCHER PARK RD, VOORHEESVILLE,  
NY 12186

### CIVIL/LANDSCAPE

WESTON & SAMPSON  
85 DEVONSHIRE ST, 3RD FL, BOSTON, MA 02109

### STRUCTURAL

RSE ASSOCIATES  
63 PLEASANT ST, WATERTOWN, MA 02471

### MEP/ELECTRICAL

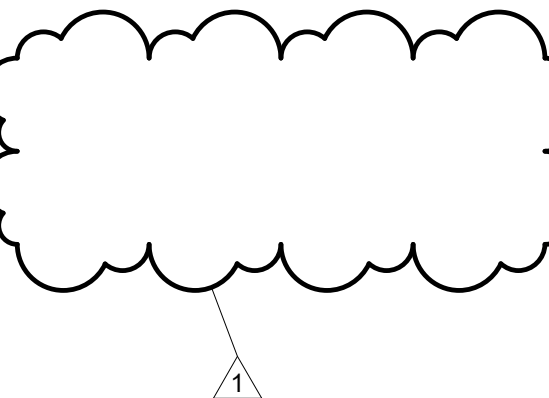
ARUP  
60 STATE ST, BOSTON, MA 02109

### CODE

JENSEN HUGHES  
33 ARCH ST, BOSTON, MA 02110

### ENERGY MODEL

ANDELMANLELEK  
1408 PROVIDENCE HWY, NORWOOD, MA 02062



## PROJECT



**WORCESTER SOUTH  
DIVISION FIRE  
STATION PROJECT**  
25 MADISON ST  
WORCESTER, MA 01608



**CITY OF WORCESTER**

455 MAIN STREET  
WORCESTER, MA 01605

## KEY PLAN



## ISSUE CHART

1	ADDENDUM #4	1/9/26
DATE	DATE	DATE
Job Number	157132.000	TITLE

## TECHNOLOGY TYPICAL DETAILS

## SHEET NUMBER

**T-502**

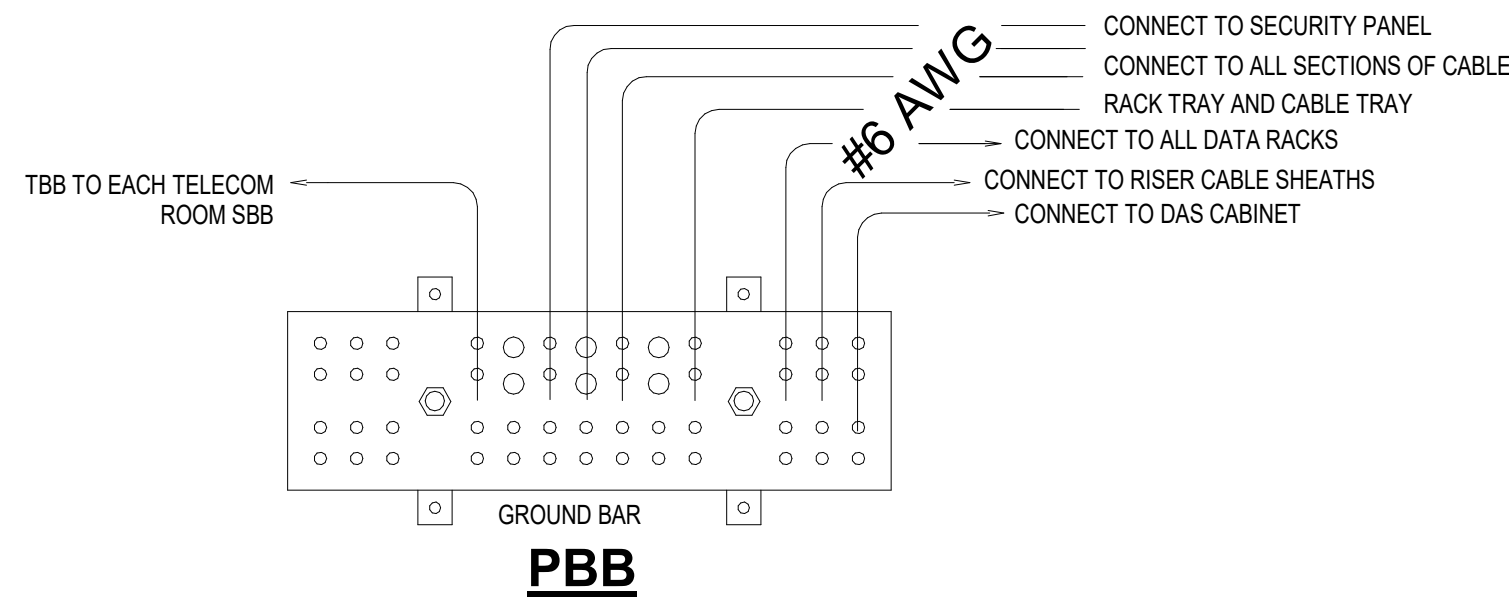
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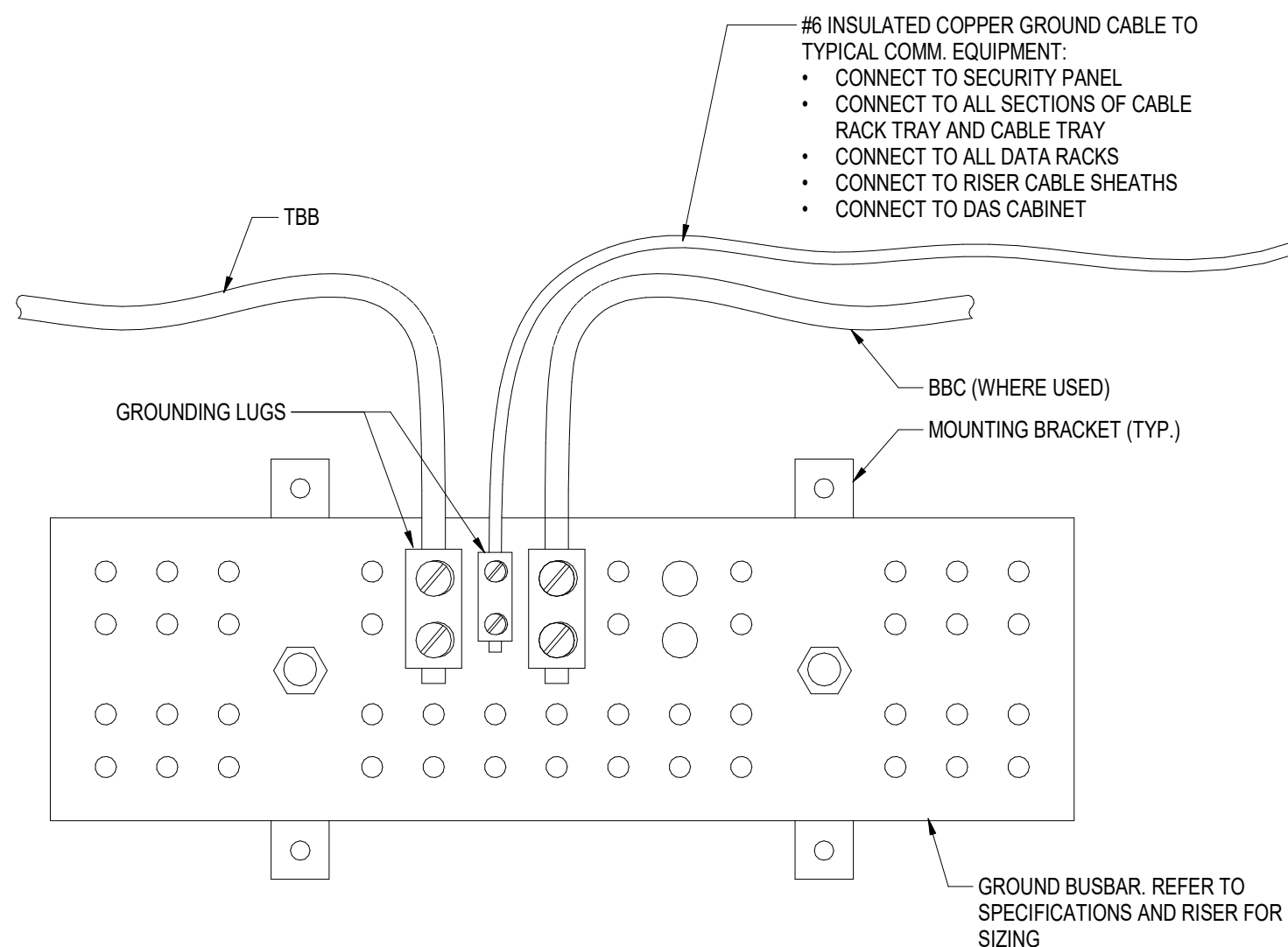
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GROUNDING NOTES:

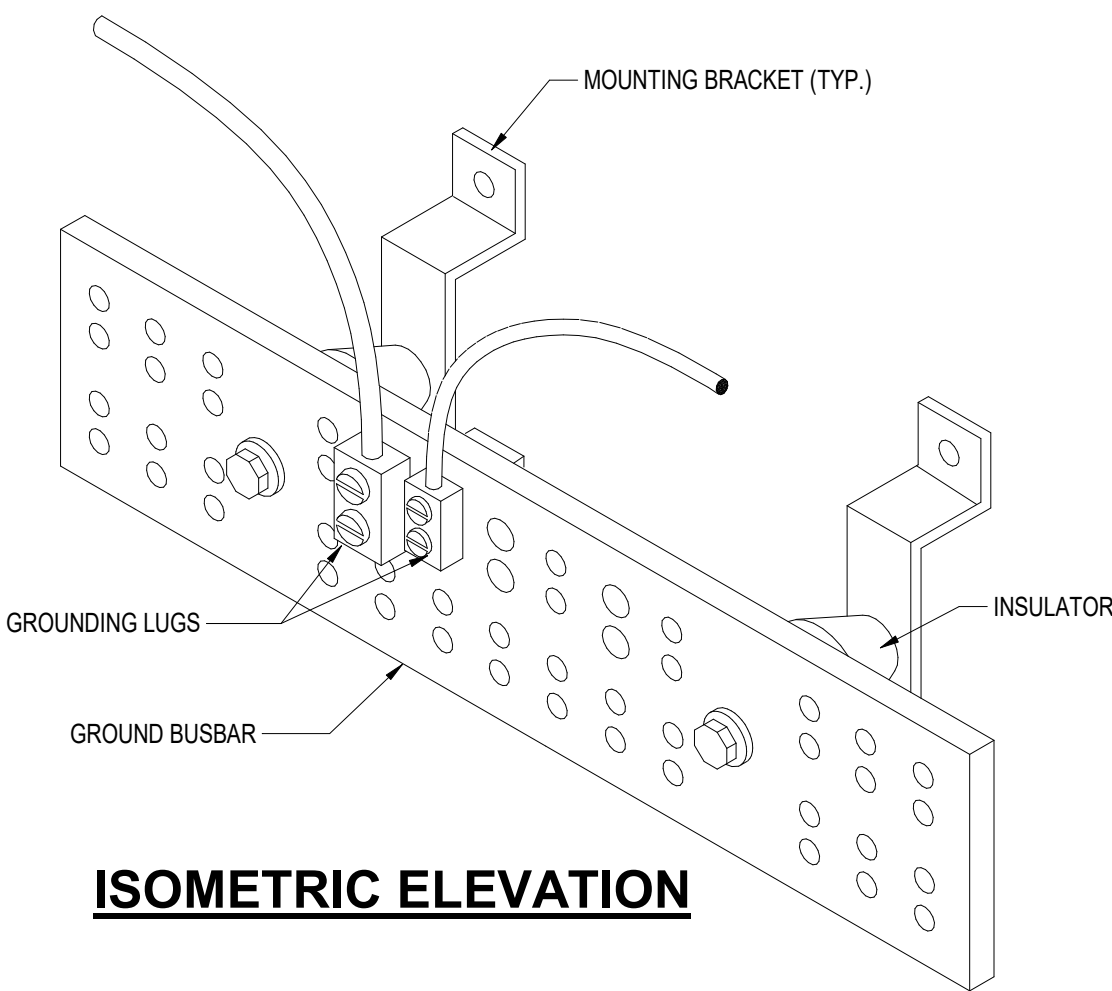
1. ALL GROUND CONNECTIONS SHALL BE MADE WITH HEAVY DUTY 2 HOLES COMPRESSION LUGS WITH STAINLESS STEEL HEX HEAD CAP SCREWS WITH SS LOCKING NUTS (TWO SCREWS AND NUTS PER 2 HOLES LUG).
2. WHERE GROUND CABLE IS RUN IN METAL CONDUIT, PROVIDE INSULATED GROUNDING BUSHING- MALLEABLE IRON, STEEL CITY #6G-807 AT CONDUIT ENDS AND GROUND PER NEC. GROUNDING TO BUILDING STRUCTURE, CONDUITS, UTILITY PIPING, OR ELECTRICAL SUBPANELS IN LIEU OF BONDING TO BUILDING MAIN ELECTRICAL SERVICE GROUND IS NOT ACCEPTABLE.
3. GROUND ALL COMMUNICATIONS RACKS WITH #6 AWG INSULATED STRANDED COPPER GROUNDING CONDUCTOR TO MAIN GROUNDING BUSBAR. GROUND RACKS INDIVIDUALLY TO BUSBAR (DO NOT LOOP GROUNDS). ROUTE CONDUCTOR ALONG RACK REAR AND CABLE RUNWAY TO GROUNDING BUSBAR.
4. GROUND EACH CONDUIT AND CONDUIT SUPPORTS STRUTS IN ALL COMMUNICATION ROOMS WITH #6 AWG INSULATED STRANDED COPPER GROUNDING CONDUCTOR TO GROUNDING BUSBAR. ROUTE CONDUCTOR IN CABLE RUNWAY TO GROUNDING BUSBAR.
5. GROUND CABLE RUNWAY WITH #6 AWG SOLID BARE COPPER GROUNDING CONDUCTOR TO GROUNDING BUSBAR. ROUTE CONDUCTOR IN CABLE RUNWAY TO GROUNDING BUSBAR.
6. MARK CONDUCTOR 6" FROM TERMINATION WITH GREEN TAPE.
7. ELECTRICAL CONTRACTOR TO PROVIDE #30 COPPER CABLE FROM BUILDING GROUND AND OTHER TELECOM ROOMS TO GROUND BAR LOCATION AND PROVIDE GROUNDING BAR IN EACH TELECOM ROOM. CABLING CONTRACTOR TO PROVIDE GROUNDING CABLING FROM EACH PEACE OF EQUIPMENT WITHIN THE TELECOM ROOM, UNLESS OTHERWISE NOTED.



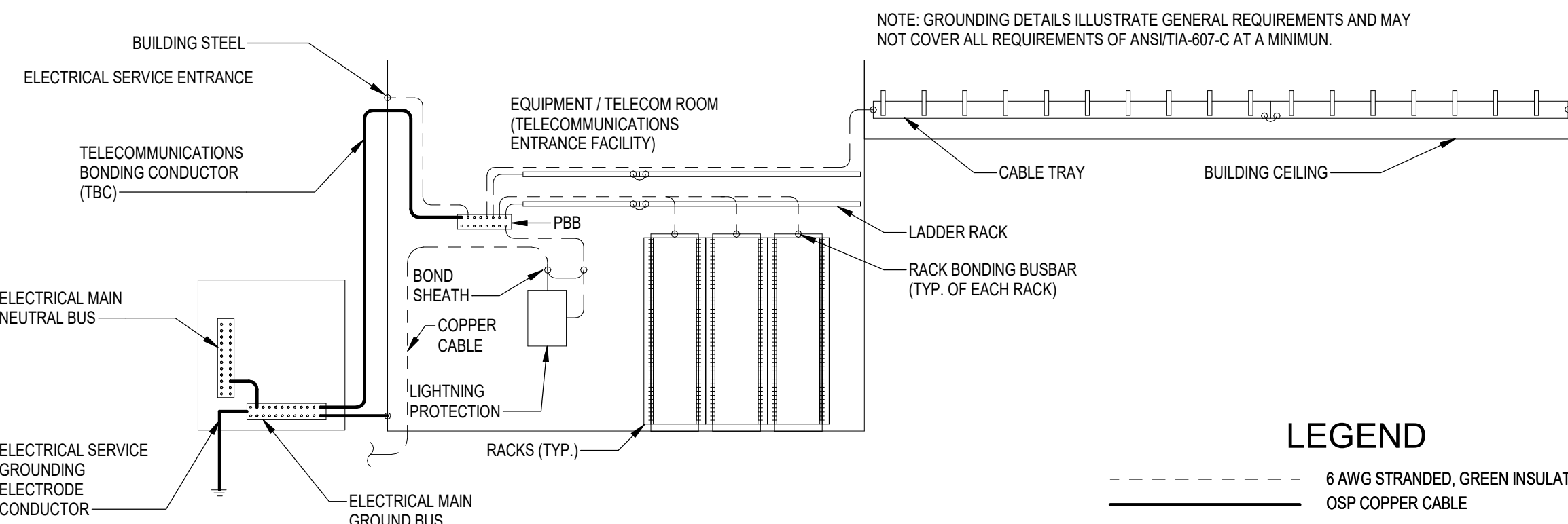
5 GROUND BAR DETAIL  
NTS



SBB FRONT ELEVATION



ISOMETRIC ELEVATION

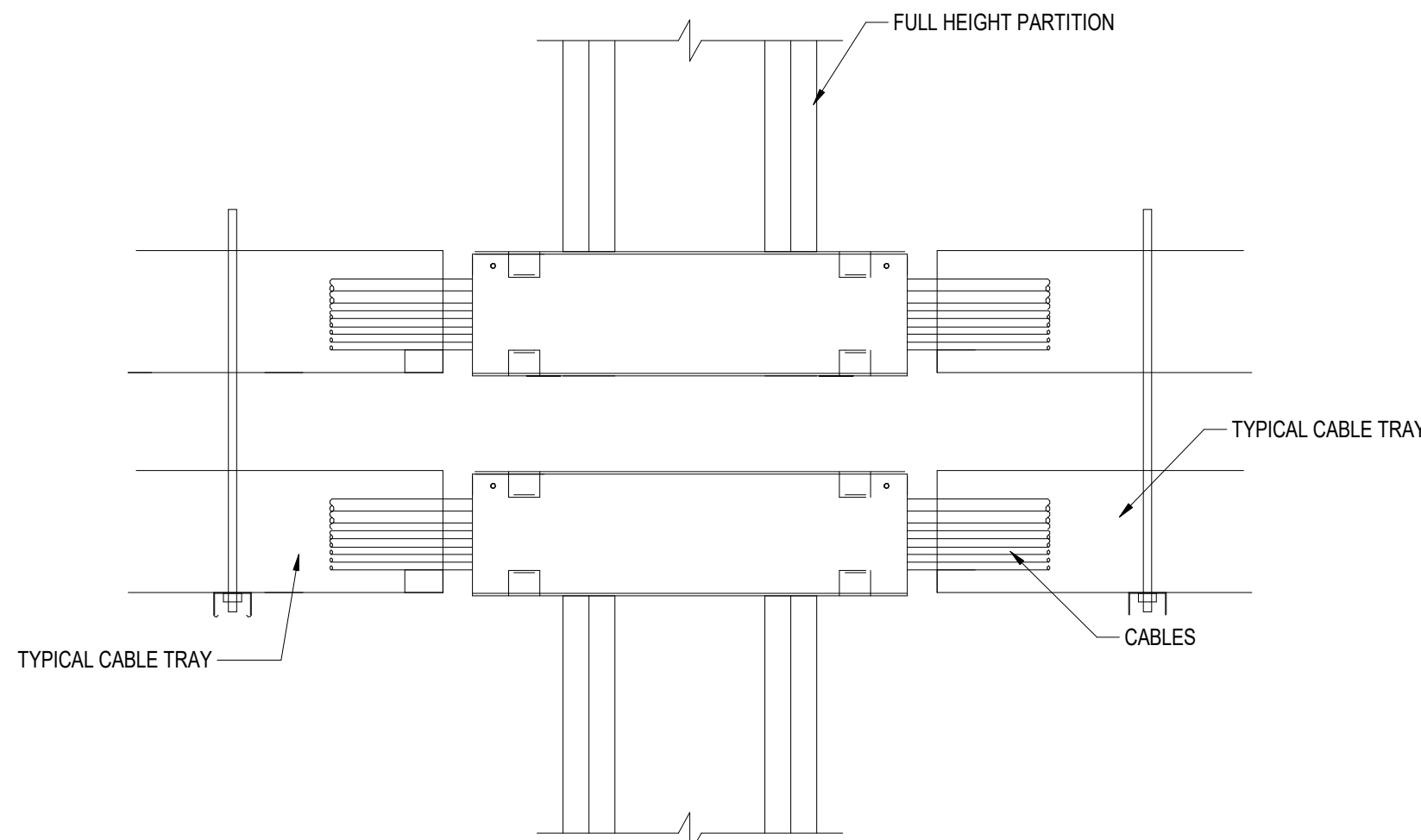


LEGEND

--- 6 AWG STRANDED, GREEN INSULATED GROUND WIRE  
--- OSP COPPER CABLE

TBB - MUST BE CONTINUOUS WITH EXOTHERMIC WELD TAPS OR INDIVIDUAL HOME RUNS, NOT DAISY CHAINED SIZING BASED ON LENGTH. SEE ANSITIA-607-C.  
PBB - PRIMARY BONDING BUSBAR  
SBB - SECONDARY BONDING BUSBAR  
TBC - TELECOMMUNICATIONS BONDING CONDUCTOR - SAME SIZE AS LARGEST  
BBC - BACKBONE BONDING CONDUCTOR - SAME SIZE AS LARGEST SBB

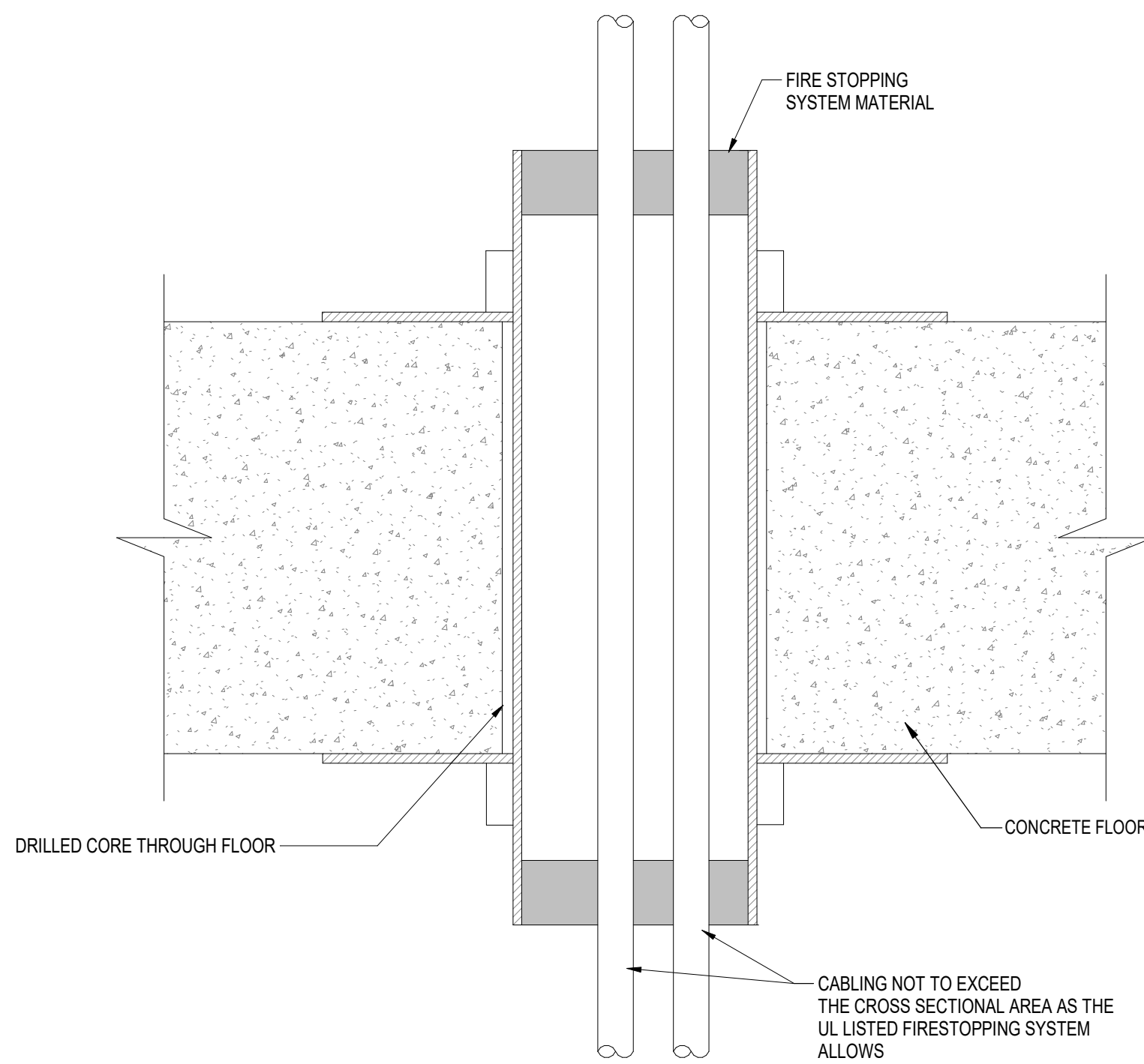
4 GROUNDING SYSTEM DETAIL  
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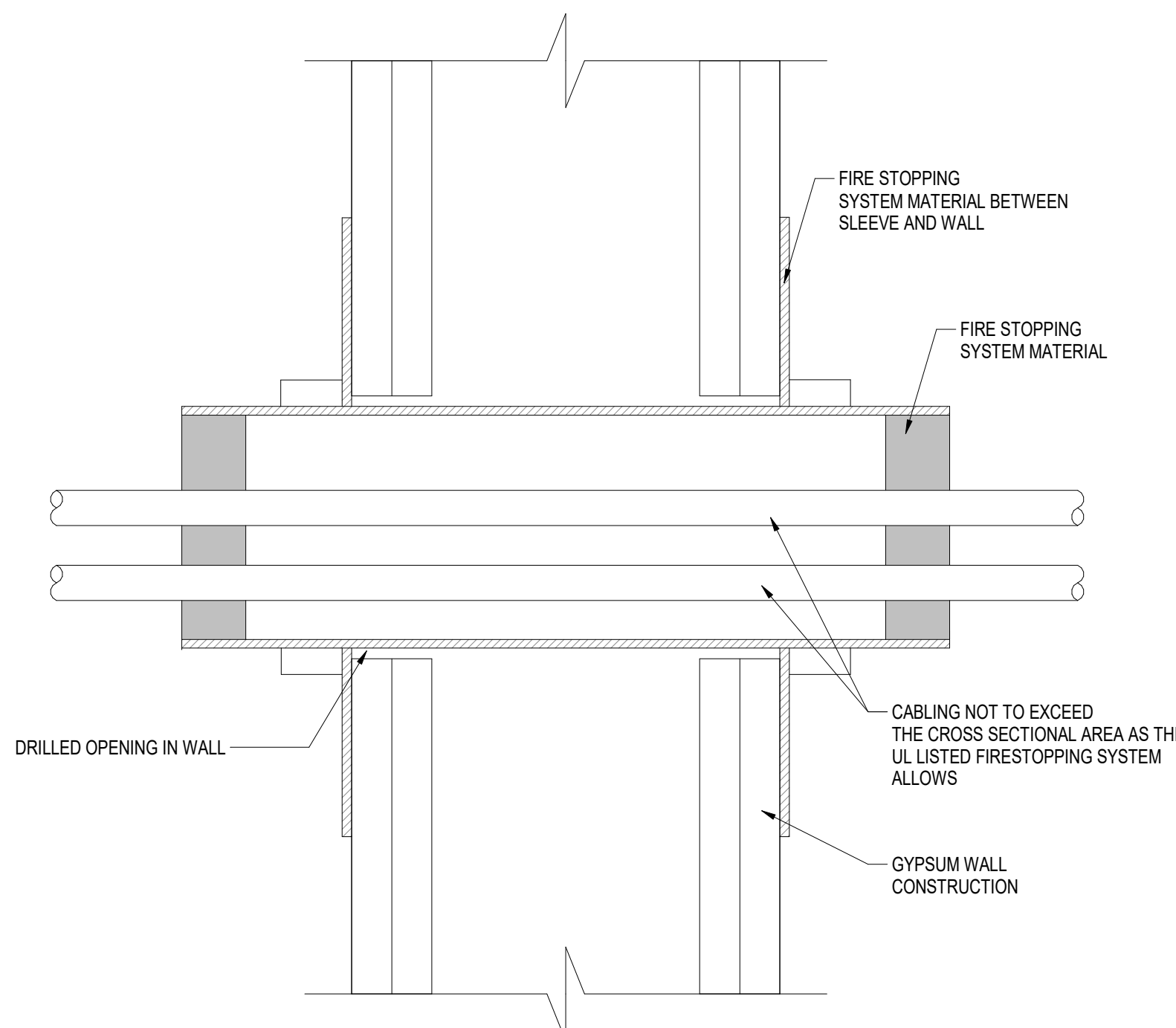
SIDEVIEW

NOTE:  
INSTALL WHENEVER MORE THAN 16 CABLES MUST PASS THROUGH FULL HEIGHT PARTITION.

3 WALL PENETRATION - DOUBLE  
NTS



2 FLOOR CORE  
NTS



1 CONDUIT SLEEVE THROUGH A PARTITION  
NTS

Perkins&Will

225 Franklin Street, Suite 700  
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1 617 478 0300  
1 617 478 0321  
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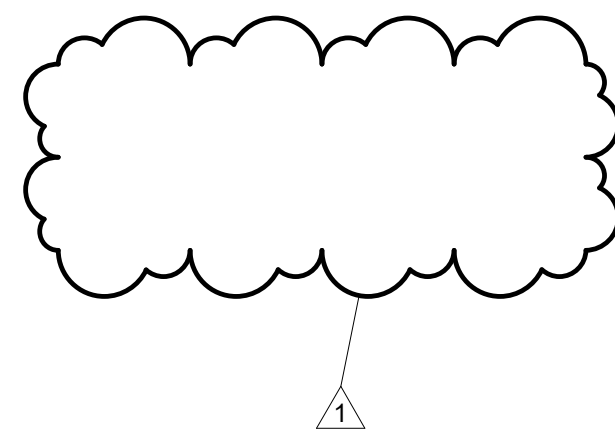
FIREMATIC  
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CIVIL/LANDSCAPE  
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85 DEVONSHIRE ST, 3RD FL, BOSTON, MA 02109

STRUCTURAL  
RSE ASSOCIATES  
63 PLEASANT ST, WATERTOWN, MA 02471

MEP/PLUMBING  
ARUP  
60 STATE ST, BOSTON, MA 02109

CODE  
JENSEN HUGHES  
33 ARCH ST, BOSTON, MA 02110

ENERGY MODEL  
ANDELMAN/LELEX  
1408 PROVIDENCE HWY, NORWOOD, MA 02062



PROJECT



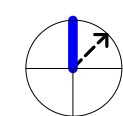
WORCESTER SOUTH  
DIVISION FIRE  
STATION PROJECT  
25 MADISON ST  
WORCESTER, MA 01608



CITY OF WORCESTER

455 MAIN STREET  
WORCESTER, MA 01605

KEY PLAN



ISSUE CHART

1	ADDENDUM #4	1/9/26
DATE	DATE	DATE
Job Number	157132.000	

TITLE

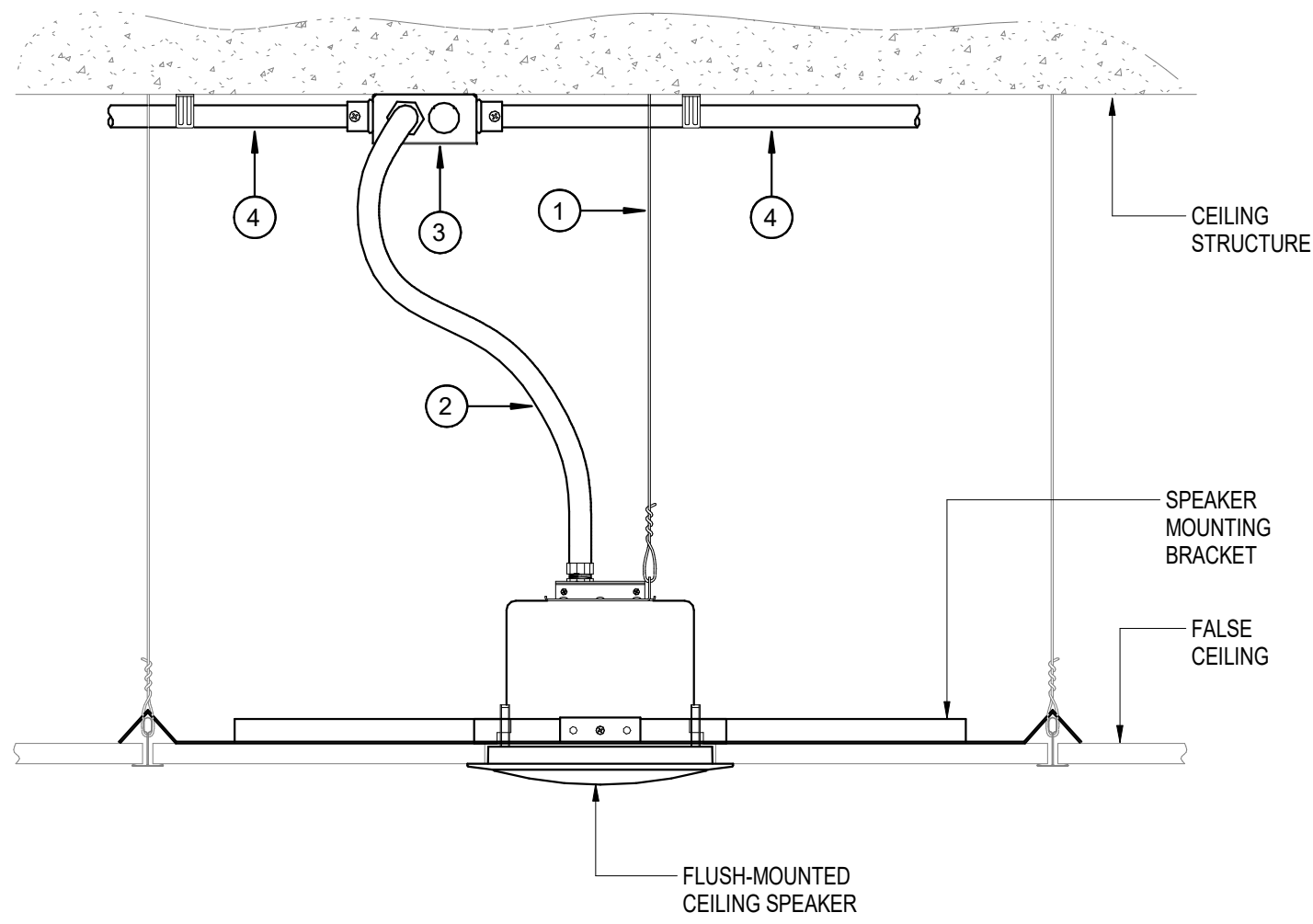
TECHNOLOGY TYPICAL  
DETAILS

SHEET NUMBER

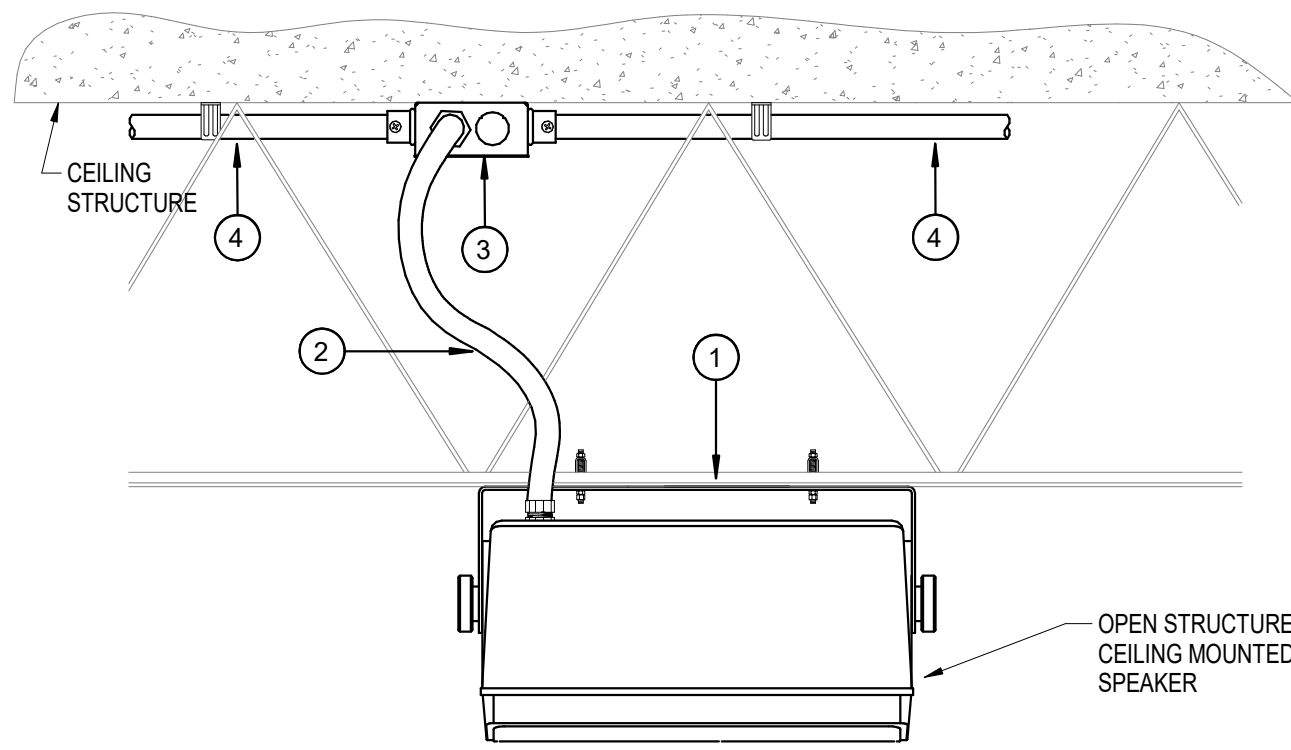
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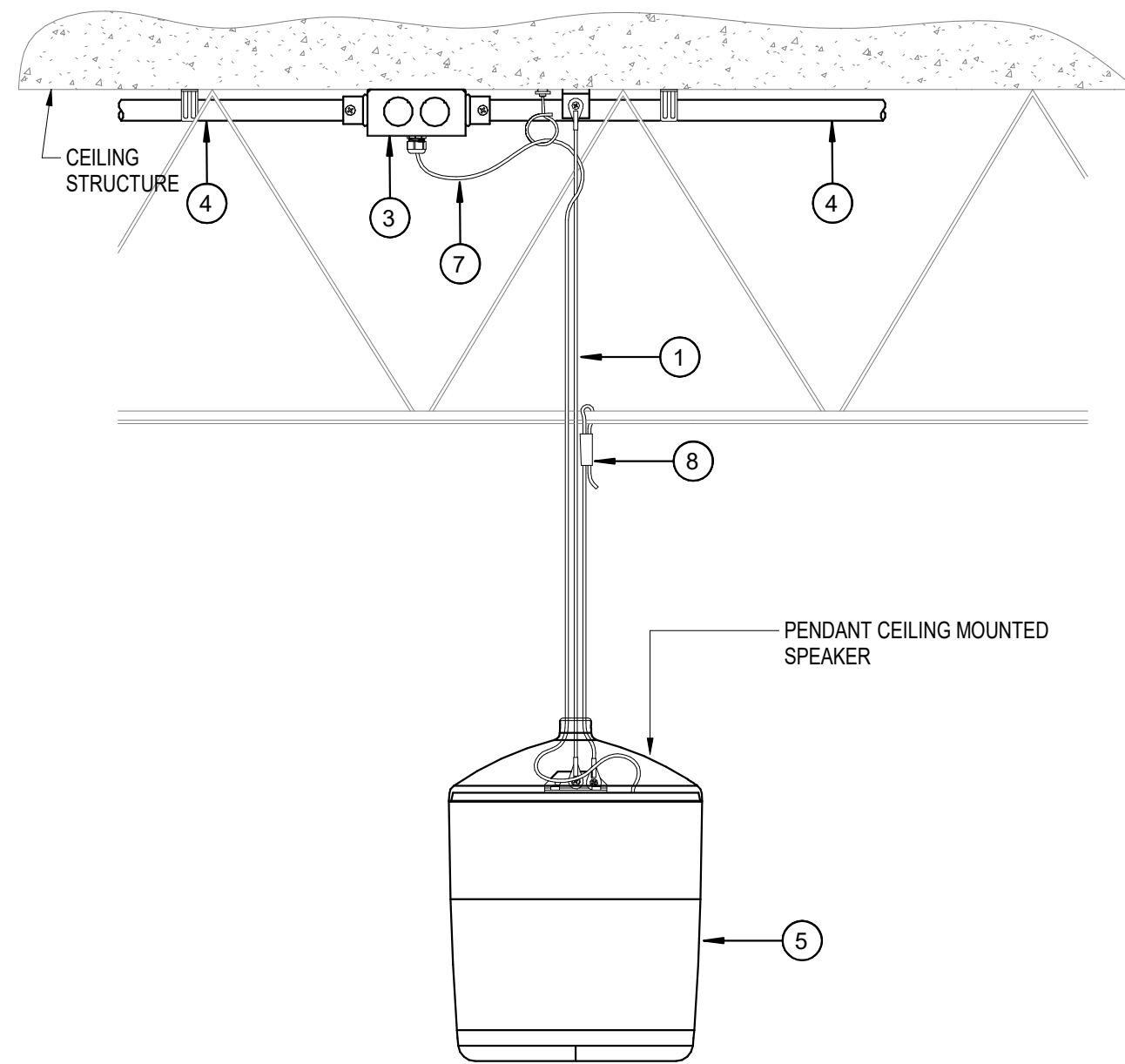
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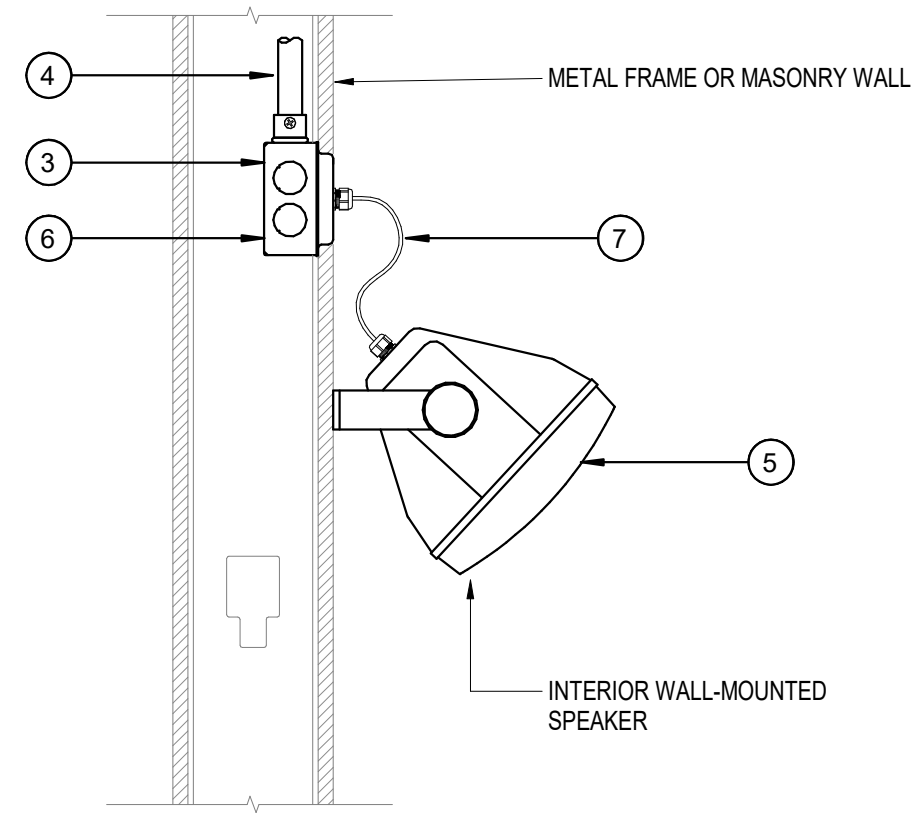
1 INTERIOR FLUSH-MOUNTED CEILING SPEAKER  
N.T.S. SYMBOL:



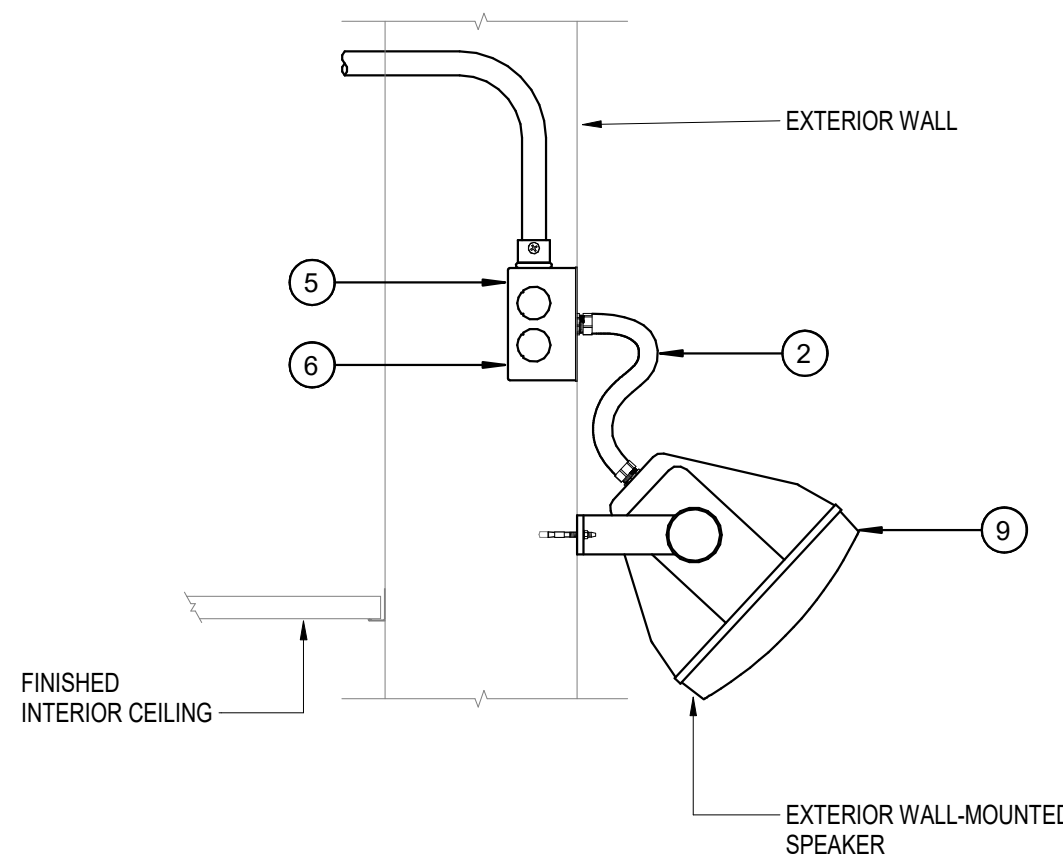
2 INTERIOR SURFACE-MOUNTED CEILING SPEAKER  
N.T.S. SYMBOL:



3 INTERIOR PENDANT-MOUNTED CEILING SPEAKER  
N.T.S. SYMBOL:



4 INTERIOR SURFACE-MOUNTED WALL SPEAKER  
N.T.S. SYMBOL:



6 EXTERIOR FLUSH-MOUNTED WALL SPEAKER  
N.T.S. SYMBOL:

#### GENERAL NOTES

- REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS RELATED TO PUBLIC ADDRESS SYSTEM (PA) REQUIREMENTS AND SCOPE.
- THE PA SPEAKER AND DEVICE DETAILS ARE DIAGRAMMATIC IN NATURE AND SHOW GENERAL INSTALLATION REQUIREMENTS PER DEVICE. VERIFY FIELD CONDITIONS PER LOCATION PRIOR TO CONSTRUCTION.
- ALL CONDUIT TO BE RUN CONCEALED UNLESS NOTED OTHERWISE. LOCATE JUNCTION BOXES ABOVE CEILING IN ACCESSIBLE LOCATION. SUPPORT ALL CONDUIT AND SPEAKERS FROM BUILDING STRUCTURE. SPEAKER SHALL NOT BE SUPPORTED SOLELY BY THE FALSE CEILING.
- PROVIDE SPEAKER, SPEAKER COMPONENTS, AND MOUNTING HARDWARE, AND MOUNT AS INDICATED ON PLANS AND IN SPECIFICATIONS. PROVIDE ALL MOUNTING AND SUPPORT HARDWARE AS REQUIRED BY THE MANUFACTURER. PROVIDE ALL CONNECTIONS OF FLEXIBLE CONDUIT AND/OR CABLE TO JUNCTION BOX.
- EXPOSED CONDUIT AND HARDWARE MAY BE REQUIRED TO LOCATE SPEAKER CORRECTLY AND PROVIDE ACCESS TO ACCESSIBLE CEILING FOR CONDUIT RUN TO THE JUNCTION BOX. PROVIDE JUNCTION BOXES AS NEEDED. REFER TO PROJECT SPECIFICATIONS REGARDING PAINTING REQUIREMENTS FOR EXPOSED CONDUIT AND MOUNTING HARDWARE.
- FINISHED CEILING, WALL, AND STRUCTURAL DECK CONSTRUCTION SHOWN FOR REFERENCE ONLY. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DETAILED INFORMATION.

#### # PAS DETAIL KEYED NOTES

- SUPPORT SPEAKER FROM RIGID STRUCTURE.
- MINIMUM 20mm (3/4-IN) FLEXIBLE METAL CONDUIT. SUPPORT ANY FLEXIBLE CONDUIT LENGTH IN EXCESS OF 914mm (36-IN) TO THE DECK.
- PROVIDE JUNCTION BOX. FOR CEILING-MOUNTED SPEAKERS, LOCATE JUNCTION BOX ABOVE ACCESSIBLE CEILING.
- PROVIDE MINIMUM 25mm (1-IN) RIGID CONDUIT AND PA CABLE TO NEXT SPEAKER, TELECOMMUNICATION ROOM, OR PA ENCLOSURE.
- MOUNT SPEAKER MINIMUM 3.5 METERS (12FT) AFF UNLESS OTHERWISE NOTED ON PLAN.
- JUNCTION BOX AND ASSOCIATED CONDUIT MAY BE SURFACE MOUNTED TO THE FINISHED WALL IF FLUSH MOUNTING IS NOT FEASIBLE (MASONRY WALL, SECURE WALL, ETC.). IN SUCH INSTANCES, OBTAIN ENGINEER AND ARCHITECT APPROVAL PRIOR TO ROUGH-IN ON A CASE-BY-CASE BASIS.
- PROVIDE FLEXIBLE STRANDED SPEAKER CABLE FROM JUNCTION BOX TO SPEAKER WITH WEATHER TIGHT CABLE GLANDS. SUPPORT CABLE TO CEILING STRUCTURE IN CEILING-MOUNTED APPLICATIONS.
- PROVIDE SECONDARY SAFETY SUPPORT CONNECTION TO CEILING STRUCTURE.
- PROVIDE JUNCTION BOX. FOR CEILING-MOUNTED AMBIENT NOISE SENSOR (ANS), LOCATE JUNCTION BOX ABOVE ACCESSIBLE CEILING.
- PROVIDE MINIMUM 25MM (1-IN) RIGID CONDUIT AND PA CABLE TO NEXT ANS, TELECOMMUNICATION ROOM, OR PA ENCLOSURE.

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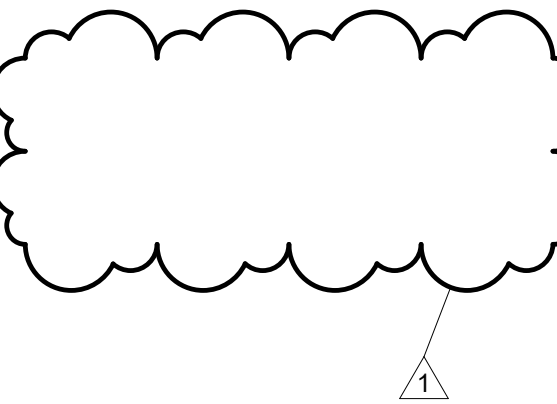
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**ENERGY MODEL**  
ANDELMANLELEX  
1408 PROVIDENCE HWY, NORWOOD, MA 02062



#### PROJECT



**WORCESTER SOUTH  
DIVISION FIRE  
STATION PROJECT**  
25 MADISON ST  
WORCESTER, MA 01608

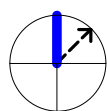


**CITY OF WORCESTER**

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WORCESTER, MA 01605

#### KEY PLAN

ADDENDUM #4 1/9/26 7/25/25



#### ISSUE CHART

1	ADDENDUM #4	1/9/26
ISSUE	DATE	

Job Number 157132.000

TITLE


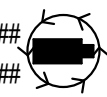
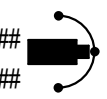

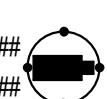

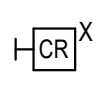

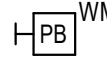




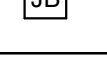
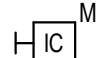
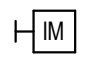
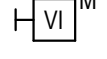


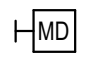
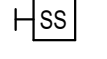

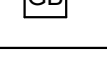
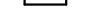
**STATION ALERTING /  
PAGING SYSTEM  
DETAILS**

SHEET NUMBER

**T-504**

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SECURITY SYSTEM LEGEND										
				BY SECURITY SYSTEM CONTRACTOR			ROUGH-IN AND SUPPORT BY ELECTRICAL CONTRACTOR			
SYMBOL	DESCRIPTION	DETAIL	MOUNTING HEIGHT ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE ON PLANS	SECURITY CABLING	NOTES	PROVIDE BACKBOX	PROVIDE PLASTER RING	PROVIDE CONDUIT	NOTES	
VIDEO SURVEILLANCE										
XX##-## 	FIXED IP SECURITY CAMERA XX=CAMERA ROUGH-IN TYPE (REFER TO CAMERA SCHEDULE) ##=CAMERA NUMBER +## = HEIGHT IF WALL MOUNTED ONLY (REFER TO CAMERA SCHEDULE)	REFER TO CAMERA SCHEDULE AND DETAILS		LOW VOLTAGE POWER IF REQUIRED FOR EXTERIOR HEATER / BLOWER	PROVIDE CAMERA AND ENCLOSURE. REFER TO CAMERA SCHEDULE.		SEE NOTE		REFER TO CAMERA SCHEDULE AND DETAILS FOR ROUGH-IN REQUIREMENTS.	
XX##-## 	PTZ IP SECURITY CAMERA XX=CAMERA ROUGH-IN TYPE (REFER TO CAMERA SCHEDULE) ##=CAMERA NUMBER +## = HEIGHT IF WALL MOUNTED ONLY (REFER TO CAMERA SCHEDULE)	REFER TO CAMERA SCHEDULE AND DETAILS		LOW VOLTAGE POWER IF REQUIRED FOR EXTERIOR HEATER / BLOWER	PROVIDE CAMERA AND ENCLOSURE. REFER TO CAMERA SCHEDULE.		SEE NOTE		REFER TO CAMERA SCHEDULE AND DETAILS FOR ROUGH-IN REQUIREMENTS.	
XX##-## 	180 DEGREE IP SECURITY CAMERA XX=CAMERA ROUGH-IN TYPE (REFER TO CAMERA SCHEDULE) ##=CAMERA NUMBER +## = HEIGHT IF WALL MOUNTED ONLY (REFER TO CAMERA SCHEDULE)	REFER TO CAMERA SCHEDULE AND DETAILS		LOW VOLTAGE POWER IF REQUIRED FOR EXTERIOR HEATER / BLOWER	PROVIDE CAMERA AND ENCLOSURE. REFER TO CAMERA SCHEDULE.		SEE NOTE		REFER TO CAMERA SCHEDULE AND DETAILS FOR ROUGH-IN REQUIREMENTS.	
XX##-## 	270 DEGREE IP SECURITY CAMERA XX=CAMERA ROUGH-IN TYPE (REFER TO CAMERA SCHEDULE) ##=CAMERA NUMBER +## = HEIGHT IF WALL MOUNTED ONLY (REFER TO CAMERA SCHEDULE)	REFER TO CAMERA SCHEDULE AND DETAILS		LOW VOLTAGE POWER IF REQUIRED FOR EXTERIOR HEATER / BLOWER	PROVIDE CAMERA AND ENCLOSURE. REFER TO CAMERA SCHEDULE.		SEE NOTE		REFER TO CAMERA SCHEDULE AND DETAILS FOR ROUGH-IN REQUIREMENTS.	
XX##-## 	360 DEGREE IP SECURITY CAMERA XX=CAMERA ROUGH-IN TYPE (REFER TO CAMERA SCHEDULE) ##=CAMERA NUMBER +## = HEIGHT IF WALL MOUNTED ONLY (REFER TO CAMERA SCHEDULE)	REFER TO CAMERA SCHEDULE AND DETAILS		LOW VOLTAGE POWER IF REQUIRED FOR EXTERIOR HEATER / BLOWER	PROVIDE CAMERA AND ENCLOSURE. REFER TO CAMERA SCHEDULE.		SEE NOTE		REFER TO CAMERA SCHEDULE AND DETAILS FOR ROUGH-IN REQUIREMENTS.	
ACCESS CONTROL AND ALARMS										
 XX-TYPE##	◆ HIGHER SECURITY LEVEL ◇ LOWER SECURITY LEVEL XX-TYPE## = ACCESS CONTROL DOOR TYPE IDENTIFIER	REFER TO ACS SCHEDULE AND DOOR DETAILS	--	--	REFER TO ACCESS CONTROL SCHEDULE (ACS) AND DOOR DETAILS.	--	--	--	--	
 X	ACCESS CONTROL CARD READER X = TYPE, NO TAG = STANDARD CARD READER DEVICE PER SPECIFICATIONS "KP" = CARD READER WITH KEYPAD "AL" = ANTI-LIQUATURE CARD READER "M" = MULLION MOUNTED CARD READER	REFER TO ACS SCHEDULE AND DOOR DETAILS	+44"	(1) COMMPOWER CABLE FOR CARD READER, (1) COMM CABLE FOR DPS, (1) COMMPOWER CABLE FOR REX, (1) POWER CABLE FOR LOCK	PROVIDE CARD READER, DOOR POSITION SWITCH, REQUEST-TO-EXIT DEVICE (IF NOT INTEGRATED INTO DOOR HARDWARE) AND CABLE, DOOR HARDWARE, LOCAL POWER SUPPLIES AND AUTOMATIC OPERATORS BY HARDWARE SUPPLIER.		SEE NOTE		REFER TO DOOR DETAILS FOR ROUGH-IN REQUIREMENTS.	
 PB	PANIC BUTTON - MOUNTED UNDER DESK	--	BOX AT 18" BUTTON MOUNTED TO WORKSURFACE 2" FROM FRONT EDGE	(1) COMM / POWER CABLE	PROVIDE BUTTON AND CABLE, ROUTE CABLE THROUGH FRONT OF FACEPLATE (USE GROMMET) AND SECURE TO UNDERSIDE OF COUNTER.	2-GANG	1-GANG	(1) 3/4"	MOUNT BOX AT 18" A.F.F. PROVIDE CONDUIT FROM BOX UP INTO NEAREST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 WM	PANIC BUTTON - WALL MOUNTED	--	+44"	(1) COMM / POWER CABLE	PROVIDE BUTTON, COVER AND CABLE.	2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 DC	DOOR CONTACT / POSITION SWITCH	--	AT DOOR	(1) COMM CABLE FOR DPS, (1) COMMPOWER CABLE FOR REX AS REQUIRED	PROVIDE DPS AND CABLE, PROVIDE ASSOCIATED REX AS REQUIRED. REFER TO THE DOOR DETAILS AND ACCESS CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.		SEE NOTE		REFER TO DOOR DETAILS FOR ROUGH-IN REQUIREMENTS.	
 EL	ELECTRIC LOCK LOCATION	--	AT DOOR	(1) COMM CABLE TO TRIGGER LOCK FROM ACCESS CONTROL SYSTEM, ADDITIONAL CABLING PER SCHEDULE.	PROVIDE CABLE AND CONNECTIONS BETWEEN ACCESS CONTROL SYSTEM AND LOCK, DOOR HARDWARE PROVIDED BY OTHERS.		SEE NOTE		REFER TO DOOR DETAILS FOR ROUGH-IN REQUIREMENTS.	
 DE	DELAYED EGRESS LOCK LOCATION	--	AT DOOR	(1) COMM CABLE TO TRIGGER LOCK FROM ACCESS CONTROL SYSTEM, ADDITIONAL CABLING PER SCHEDULE.	PROVIDE CABLE AND CONNECTIONS BETWEEN ACCESS CONTROL SYSTEM AND LOCK, DOOR HARDWARE PROVIDED BY OTHERS.		SEE NOTE		REFER TO DOOR DETAILS FOR ROUGH-IN REQUIREMENTS.	
 IFP	INTELLIGENT FIELD PANEL	--	--	--	PROVIDE PANELS AND POWER SUPPLIES IN TELECOM ROOMS. PROVIDE SHOP DRAWING OF WALL ELEVATION FOR APPROVAL PRIOR TO INSTALLATION.		SEE NOTE		REFER TO DETAILS FOR ROUGH-IN REQUIREMENTS.	
 JB	JUNCTION BOX	--	ABOVE ACCESSIBLE CEILING	--	--		SEE NOTE		REFER TO DOOR DETAILS FOR ROUGH-IN REQUIREMENTS.	
SECURITY COMMUNICATION										
 IC	AUDIO INTERCOM SUBSTATION "M" = MULLION MOUNTED AUDIO INTERCOM STATION	--	+44"	CABLES AS REQUIRED TO REMOTE RELEASE DOOR	PROVIDE STATION, INTEGRATE STATION WITH ASSOCIATED ACCESS CONTROL DOOR TO ALLOW MASTER STATION TO REMOTE RELEASE DOOR AS NOTED ON DRAWINGS.	2-GANG	1-GANG	(1) 1"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 IM	AUDIO INTERCOM MASTER STATION	--	BOX AT 18". DEVICE ON DESK	CABLES AS REQUIRED TO REMOTE RELEASE DOOR	PROVIDE STATION, INTEGRATE STATION TO AUDIO INTERCOM SUBSTATION AS NOTED ON DRAWINGS. CONFIGURE TO UNLOCK DOOR WHERE SUBSTATION IS LOCATED.	2-GANG	1-GANG	(1) 1"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 VI	VIDEO INTERCOM SUBSTATION "M" = MULLION MOUNTED VIDEO INTERCOM STATION	--	+44"	CABLES AS REQUIRED TO REMOTE RELEASE DOOR	PROVIDE STATION, INTEGRATE STATION WITH ASSOCIATED ACCESS CONTROL DOOR TO ALLOW MASTER STATION TO REMOTE RELEASE DOOR AS NOTED ON DRAWINGS.	2-GANG	1-GANG	(1) 1"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 VM	VIDEO INTERCOM MASTER STATION	--	BOX AT 18". DEVICE ON DESK	CABLES AS REQUIRED TO REMOTE RELEASE DOOR	PROVIDE STATION, INTEGRATE STATION TO VIDEO INTERCOM SUBSTATION AS NOTED ON DRAWINGS. CONFIGURE TO UNLOCK DOOR WHERE SUBSTATION IS LOCATED.		SEE NOTE		REFER TO STRUCTURED CABLING LEGEND FOR DEVICE ROUGH-IN REQUIREMENTS.	
INTRUSION DETECTION										
 KP	INTRUSION SYSTEM ARMING KEYPAD	--	+44"	(1) COMMPOWER CABLE	PROVIDE KEYPAD AND CONFIGURE KEYPAD TO OVERRIDE THE INTRUSION DETECTION SYSTEM ALARM.	2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 MD	INTRUSION SYSTEM MOTION DETECTOR - WALL MOUNTED	--	+44"	CABLES AS REQUIRED BY SYSTEM	CONFIGURE MOTION DETECTOR TO ALARM WHEN ARMED BY THE INTRUSION DETECTION SYSTEM.	2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 SS	INTRUSION SYSTEM SECURITY SIREN - WALL MOUNTED	--	+120" OR AS NOTED ON DRAWINGS	CABLES AS REQUIRED BY SYSTEM	CONFIGURE SECURITY SIREN TO ALARM WHEN ARMED BY THE INTRUSION DETECTION SYSTEM.	2-GANG	1-GANG	(1) 3/4"	PROVIDE CONDUIT FROM BOX INTO CLOSEST ACCESSIBLE CEILING SPACE AND CAP WITH NYLON BUSHING. PROVIDE PULL STRING.	
 MD	INTRUSION SYSTEM MOTION DETECTOR	--	FLUSH IN CEILING	CABLES AS REQUIRED BY SYSTEM	CONFIGURE MOTION DETECTOR TO ALARM WHEN ARMED BY THE INTRUSION DETECTION SYSTEM.	--	--	--	--	
 GB	INTRUSION SYSTEM GLASS BREAK SENSOR	--	FLUSH IN CEILING	CABLES AS REQUIRED BY SYSTEM	CONFIGURE GLASS BREAK SENSOR TO ALARM WHEN ARMED BY THE INTRUSION DETECTION SYSTEM.	--	--	--	--	
 AL	INTRUSION SYSTEM SECURITY ALARM	--	FLUSH IN CEILING	CABLES AS REQUIRED BY SYSTEM	CONFIGURE SIREN TO ALARM UPON DOOR FORCED ALARM OR MOTION DETECTION ALARM.	--	--	--	--	

SECURITY EQUIPMENT LABELING NOTES

1. FURNISH AND INSTALL LABELS FOR ALL CAMERAS, CARD READERS, PIRS, CONTACTS, ANNUNCIATORS, INTERCOMS, AND OTHER SECURITY EQUIPMENT.

2. FURNISH AND INSTALL LABELS FOR ALL CABLES. ALL SECURITY EQUIPMENT CABLE SHALL HAVE A LABEL ATTACHED AT EACH CABLE END.

3. LABELS ARE TO BE GENERATED USING COMPUTER GENERATED SOFTWARE PACKAGE. ALL LABELS ARE TO BE PRINTED.

4. ALL LABELS ARE TO BE PRINTED ON POLYESTER FILM OR AS APPROVED.

5. BEFORE ANY LABELS ARE PRINTED THE CONTRACTOR MUST SUBMIT TO OWNER FOR APPROVAL OF THE FOLLOWING:

A. PRINT OUT EXAMPLES OF LABELS AND LABELING SCHEME

B. PHYSICAL EXAMPLE OF LABELS

6. ACCESS CONTROL SUBSYSTEM

A. DOOR - AAA-DOOR NUMBER CORRESPONDS WITH ARCHITECT PLANS

B. DOOR RELATED DEVICES - AAA-BB. USE DOOR NUMBER PLUS DEVICE TYPE SUFFIX:

• LOCK: AAA-L

• CARD READER IN: AAA-CR (IF 2 CR: AAA-CR1 = NON-SECURE SIDE, AAA-CR2 = SECURE SIDE)

• CONTACT: AAA-DPS

• REQUEST-TO-EXIT: AAA-REX

• DOOR ACTUATOR: AAA-PP1, AAA-PP2

• EMERGENCY RELEASE BUTTON: AAA-ERB

• REMOTE RELEASE BUTTON: AAA-RR

7. IP CAMERA (VSS) SUBSYSTEM

A. VSS DEVICES: CAM-## USE UNIQUE DEVICE NUMBER FROM SCHEDULE/FLOOR PLANS.

• CAMERA UTP CABLE LABELING BY CABLING CONTRACTOR

• LABEL AT PATCH PANEL SHALL REFERENCE CAMERA NUMBER (DDD)AS SHOWN ON SCHEDULE/FLOOR PLANS.

• POWER (IF REQUIRED): PS-DDD

CABLE LABEL EXAMPLE:

026-CR

DEVICE CODE

DOOR NUMBER

CAM-GS101

ROOM NUMBER

FIRE ALARM INTERFACE NOTES

1. ALL DOORS THAT LOCK IN A REQUIRED PATH OF EGRESS SHALL BE PROVIDED WITH FAIL-SAFE SECURITY HARDWARE.

2. ALL MAG-LOCKS SHALL BE FAIL-SAFE AND:

A. CONFIGURED TO RELEASE ON LOSS OF POWER TO ANY DEVICE CONTROLLING MAG-LOCK.

B. CONFIGURED TO RELEASE ON ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM.

C. IF REQUIRED BY DOOR HARDWARE, PROVIDE WITH A SEPARATE MANUAL RELEASE PULL STATION CONFIGURED TO BREAK POWER TO THE MAG-LOCK UNTIL RESET.

3. THE SECURITY SYSTEM SHALL BE INTERFACED TO THE FIRE ALARM SYSTEM FOR EMERGENCY OVERRIDE. THE FIRE ALARM SYSTEM PROVIDER SHALL PROVIDE ALL FIRE ALARM INTERFACES. SECURITY CONTRACTOR SHALL CONNECT TO THE FIRE ALARM INTERFACE AND RUN CABLE TO THE SECURITY SYSTEM BACKBOARD(S) LOCATED IN THE TDR ROOMS AND ELEVATOR MACHINE ROOMS.

4. SECURITY CONTRACTOR SHALL PROVIDE RELAY INTERFACE IN SECURITY PANELS AND COORDINATE FIRE ALARM CONNECTION WITH FIRE ALARM SYSTEM PROVIDER.

24V RELAY MOUNTED IN ENCLOSURE.

TO FIRE ALARM DEVICE GIVING 24V UPON ALARM CONDITION FOR FLOOR WHERE DOOR IS LOCATED. COORDINATE WITH FIRE ALARM SYSTEM CONTRACTOR.

TO DOOR LOCK POWER.

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ENERGY MODEL  
ANDELMAN/LELEX  
1408 PROVIDENCE HWY., NORWOOD, MA 02062

PROJECT

WORCESTER SOUTH DIVISION FIRE STATION PROJECT

25 MADISON ST  
WORCESTER, MA 01608

CITY OF WORCESTER

455 MAIN STREET  
WORCESTER, MA 01605

KEY PLAN

ISSUE CHART

1	ADDENDUM #4	10/26
DATE	ISSUE	DATE
Job Number	157132.000	
TITLE		
SECURITY SYSTEMS LEGEND		
SHEET NUMBER		
TY-010		
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ADDENDUM #4 10/26 7/25/25



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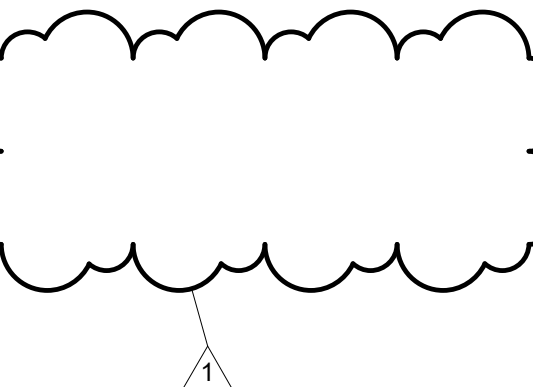
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**CODE**  
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1408 PROVIDENCE HWY, NORWOOD, MA 02062



**PROJECT**

  
**WORCESTER SOUTH  
DIVISION FIRE  
STATION PROJECT**  
25 MADISON ST  
WORCESTER, MA 01608

  
**CITY OF WORCESTER**

455 MAIN STREET  
WORCESTER, MA 01605

**KEY PLAN**



**ISSUE CHART**

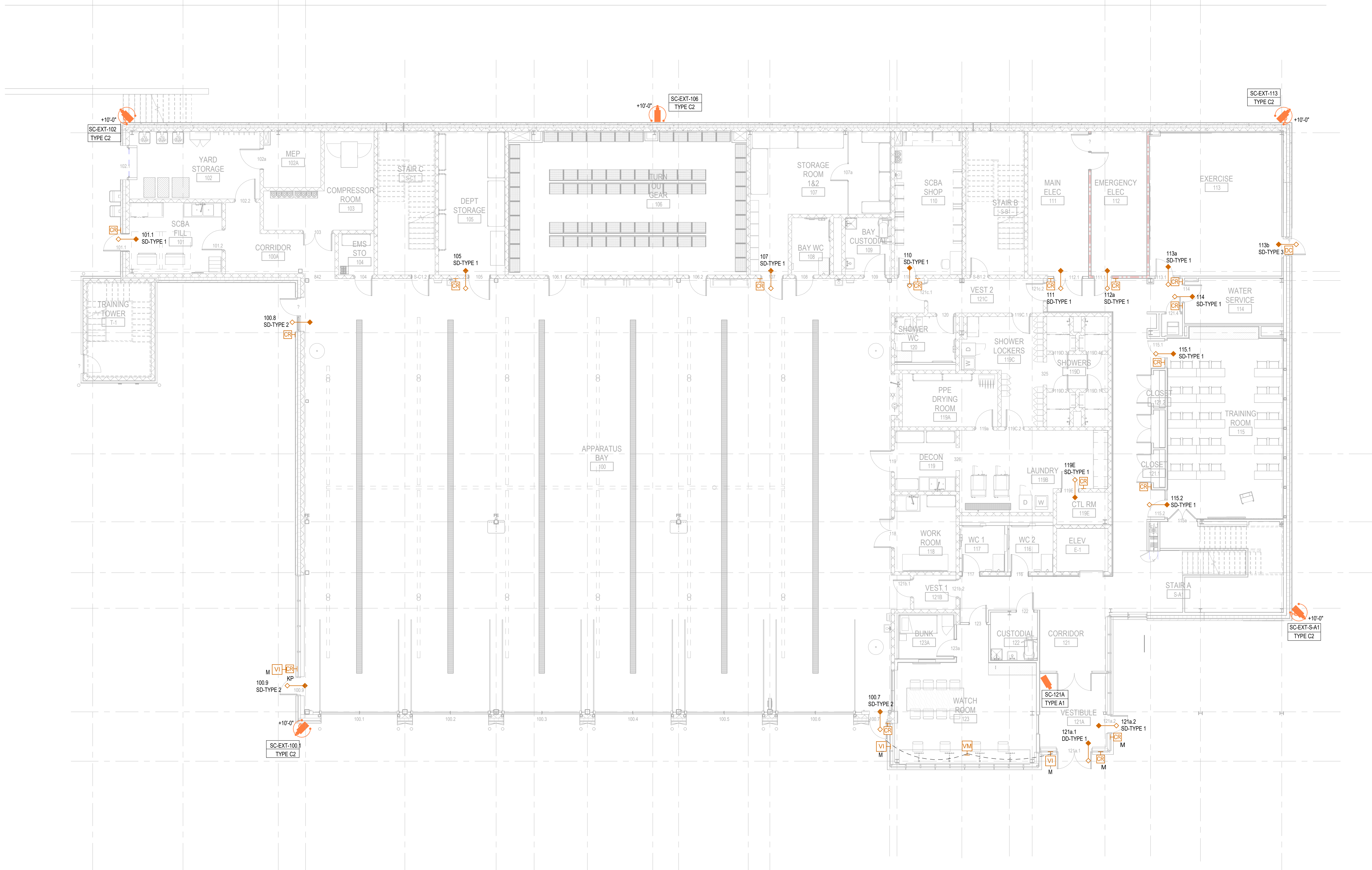
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DATE	DATE	DATE
Job Number	157132.000	TITLE

**SECURITY FLOOR PLAN  
- LEVEL 01**

**SHEET NUMBER**

**TY-200**

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**1 LEVEL 01 - SECURITY FLOOR PLAN**  
1/8" = 1'-0"

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1 LEVEL 02 - SECURITY FLOOR PLAN  
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**CODE**  
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**ENERGY MODEL**  
ANDELMAN/LEIX  
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### PROJECT



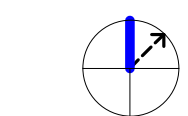
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STATION PROJECT**  
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**CITY OF WORCESTER**

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### KEY PLAN



### ISSUE CHART

1	ADDENDUM #4	19/26
DATE	DATE	DATE
Job Number	157132.000	TITLE

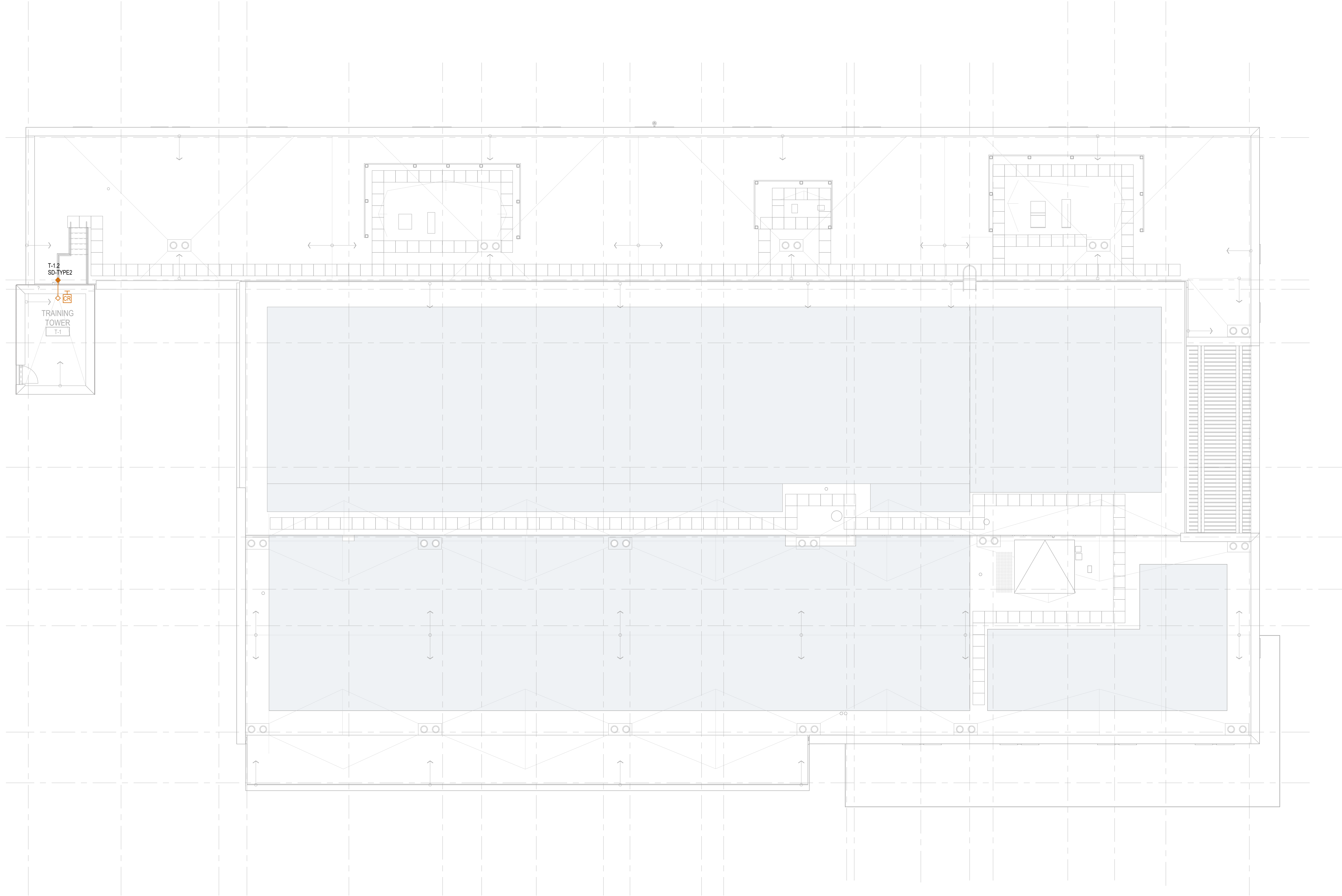
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- LEVEL 02**

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1 ROOF - SECURITY FLOOR PLAN  
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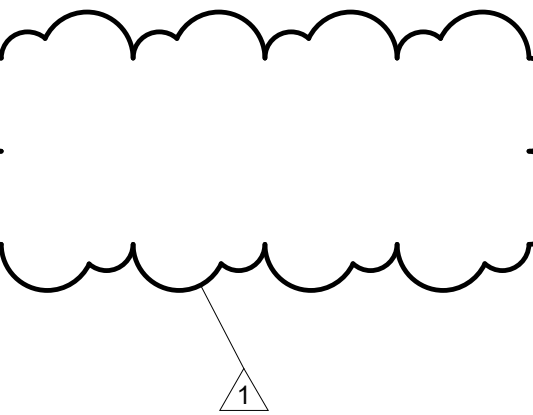
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## PROJECT



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**CITY OF WORCESTER**

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## KEY PLAN

ADDENDUM #4 1/9/26 7/25/25

## ISSUE CHART

1	ADDENDUM #4	1/9/26
ISSUE	ISSUE	DATE
Job Number	157132.000	TITLE

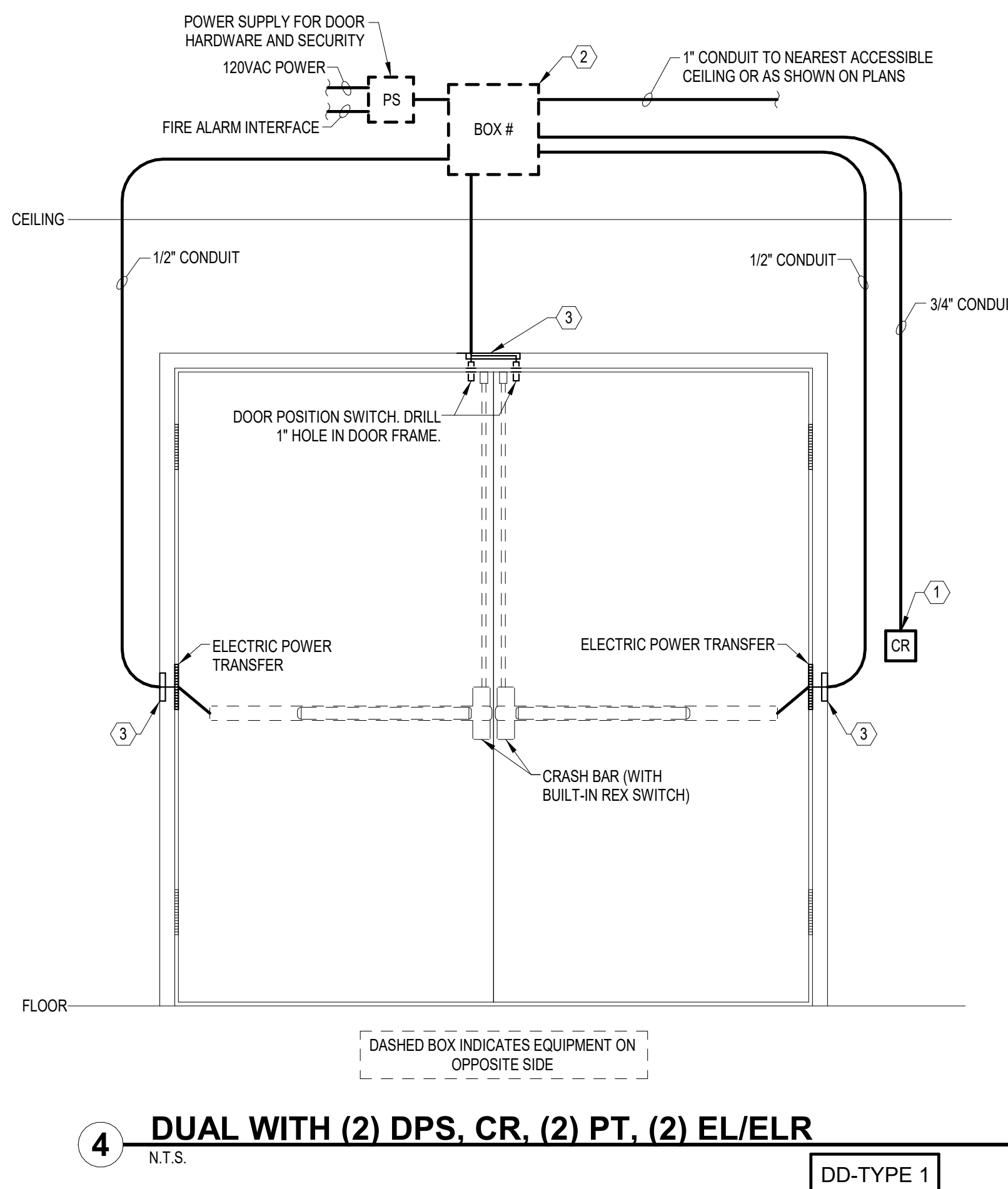
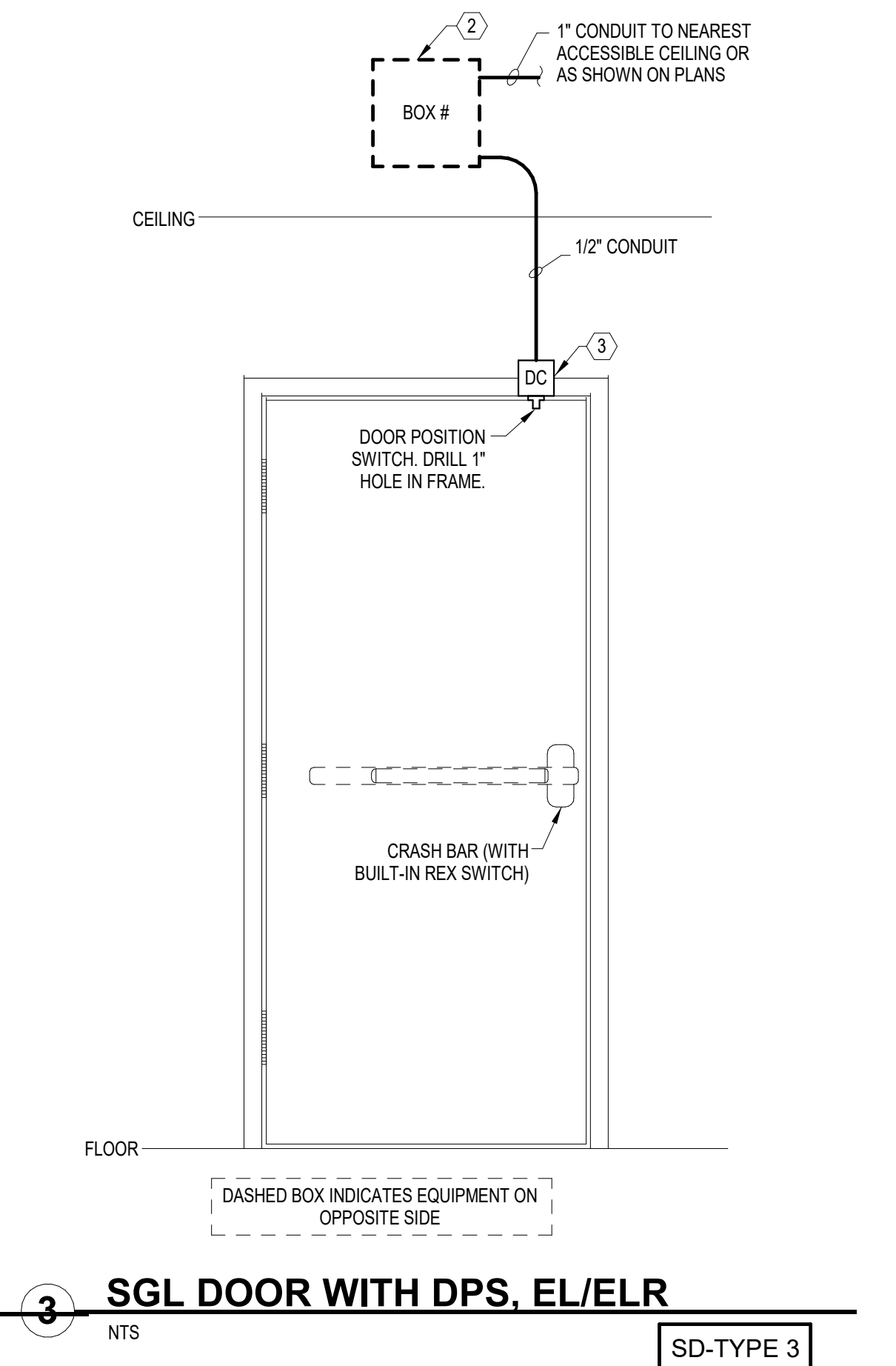
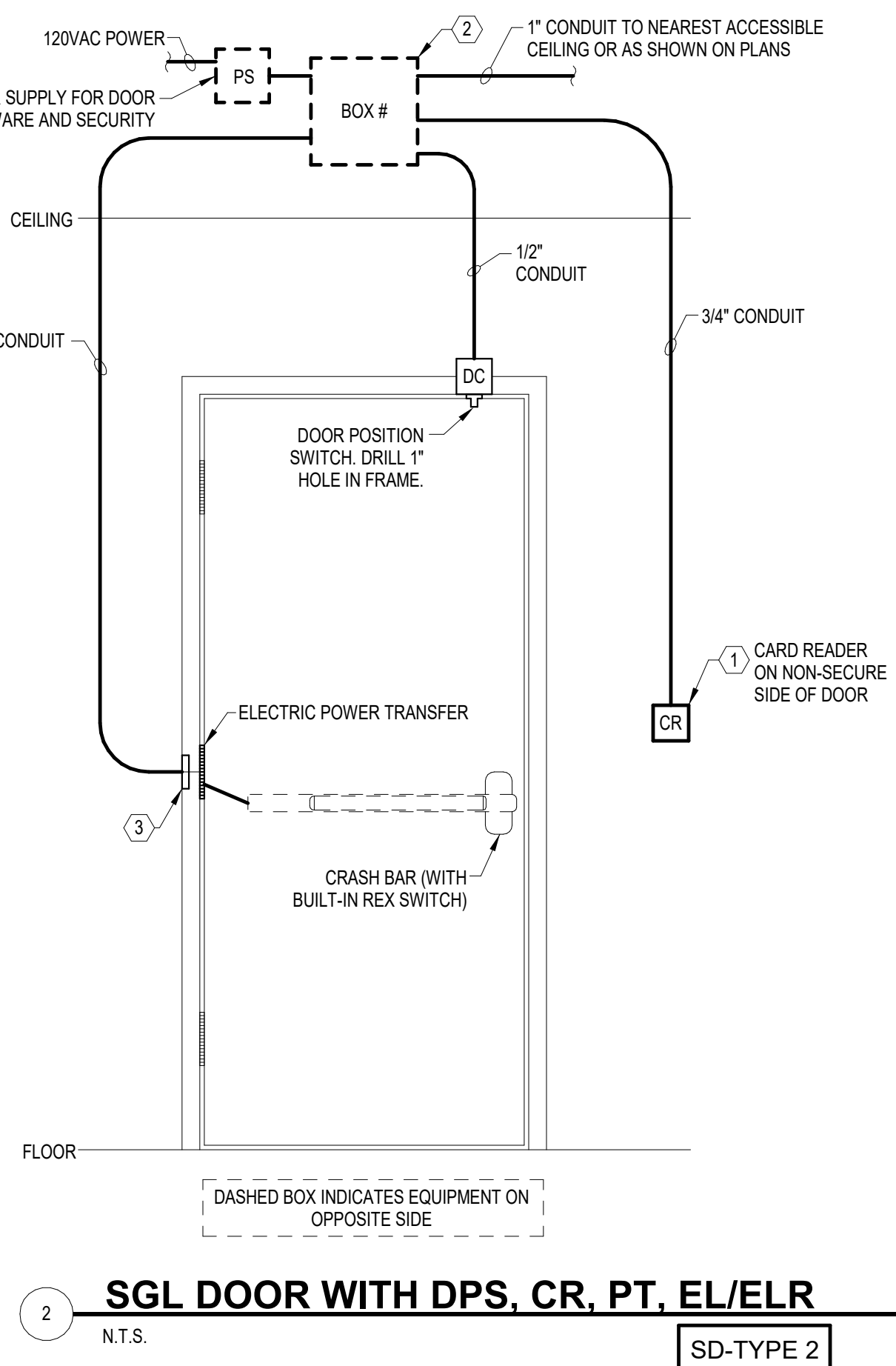
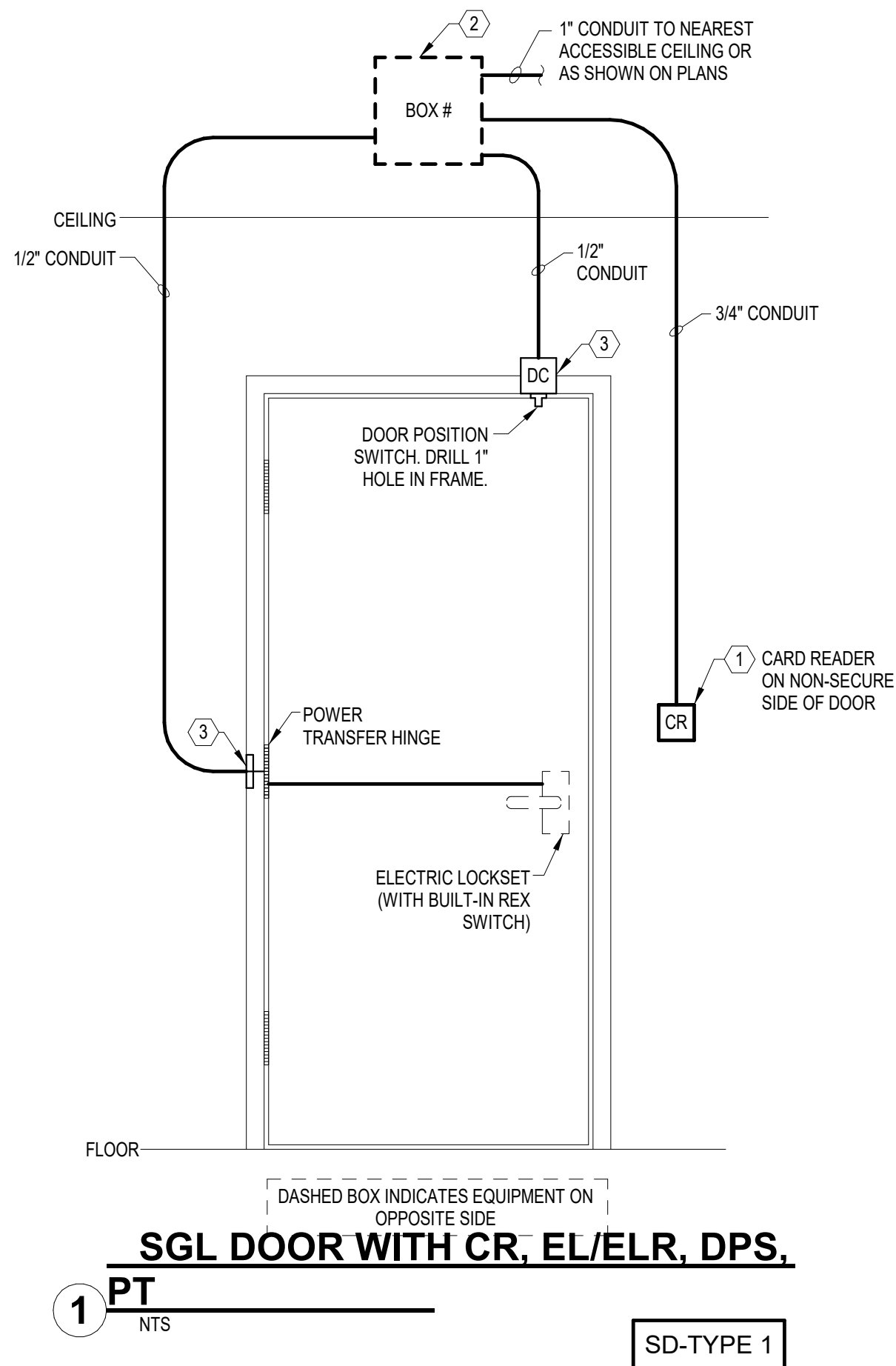
**SECURITY FLOOR PLAN  
- ROOF**

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## ACCESS CONTROL LEGEND:

CR	CARD READER
DPS	DOOR POSITION SWITCH
IML	INTEGRATED INTO MAGLOCK
IDH	INTEGRATED INTO DOOR HARDWARE
FLUSH	MOUNTED FLUSH IN DOOR FRAME
SURFACE	MOUNTED ON THE EXTERIOR OF THE DOOR
RTE	REQUEST-TO-EXIT (SHUNTS DOOR ALARMS)
IDH	INTEGRATED INTO DOOR HARDWARE
MS	MOTION SENSOR
AD	DOOR ACTUATOR BUTTON FOR OPERATOR
DOOR TYPE	
SGL	SINGLE DOOR
PR	PAIR OF DOORS, SAME SWING DIRECTION
DUAL	DUAL EGRESS PAIR OF DOORS
SLDG	AUTOMATIC SLIDING DOOR
RVL	AUTOMATIC REVOLVING DOOR
OHD	OVERHEAD COILING DOOR
LOOK	ELECTRIC LOCKING DOOR HARDWARE
EL	ELECTRIC LOCKSET WITH RTE BUILT IN
WEL	WIRELESS LOCKSET WITH RTE BUILT IN
IEL	INTERGRATED ELECTRIC LOCKSET (CR BUILT IN)
ES	ELECTRIC STRIKE
ELT	PANIC HARDWARE WITH ELECTRIC TRIM WITH RTE BUILT IN
ELR	PANIC HARDWARE WITH ELECTRIC LATCH RETRACTION WITH RTE BUILT IN
IML	MAGLOCK WITH DPS FEATURE
DEML	DELAYED EGRESS MAGLOCK WITH DPS
DECB	DELAYED EGRESS CRASH BAR WITH RTE BUILT IN (CHEXIT)
LM	LOCKING MECHANISM INSIDE AUTOMATIC SLIDING DOOR
MPD	MECHANICAL PANIC DEVICE
FS	FAIL-SAFE (LOSS OF POWER = UNLOCKED)
FSE	FAIL-SECURE (LOSS OF POWER = LOCKED)
120 VAC	YES INDICATES 120VAC REQUIRED AT DOOR FOR HARDWARE

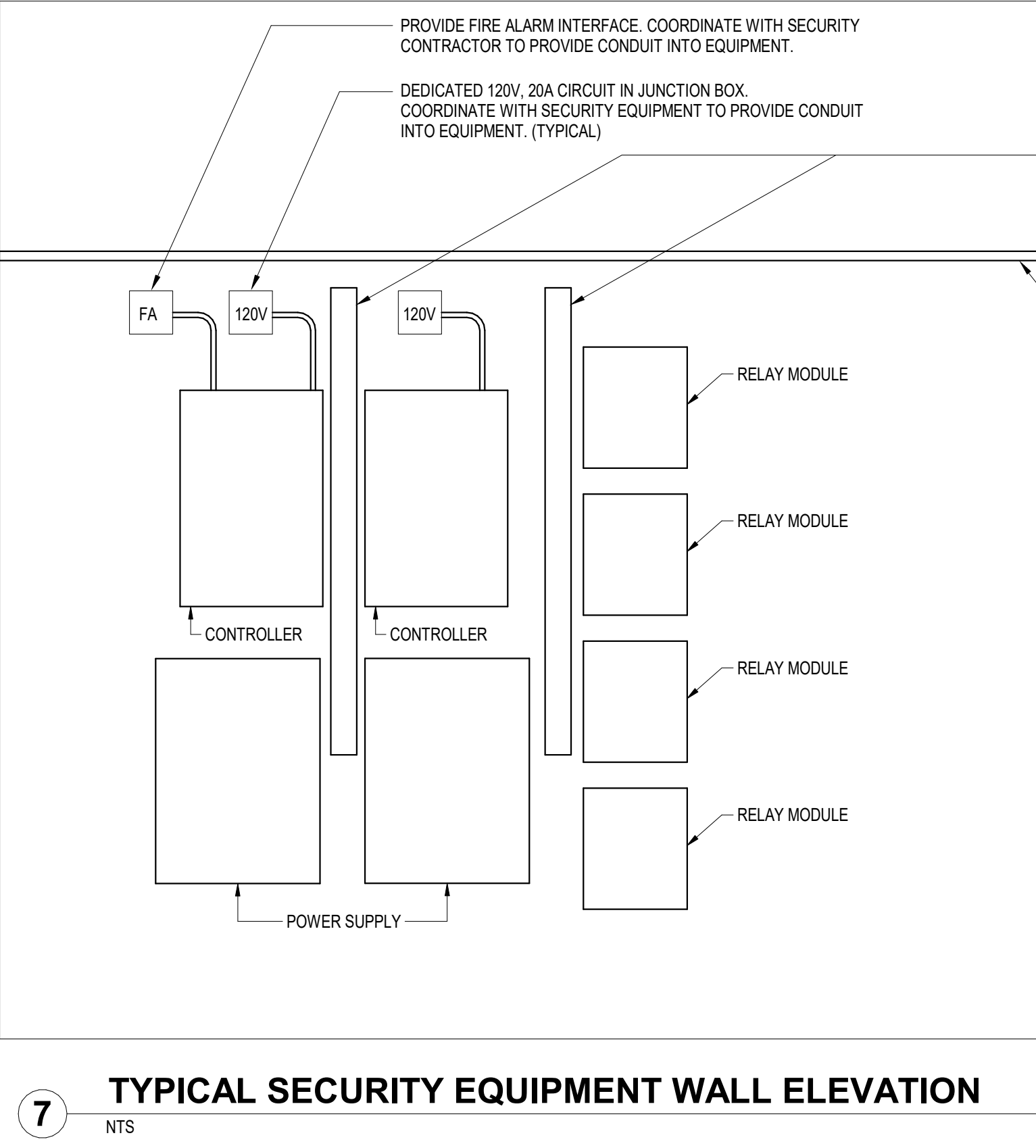
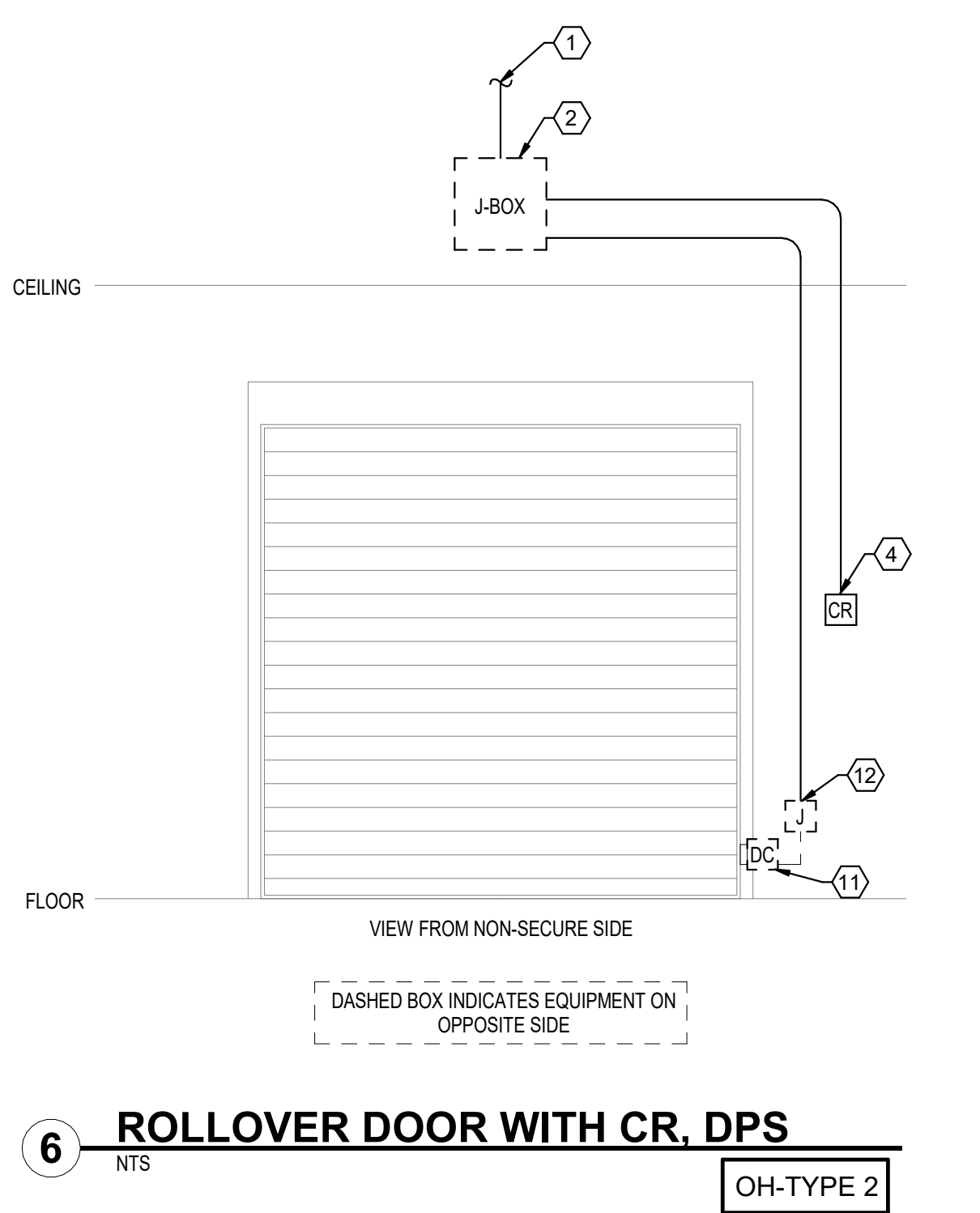
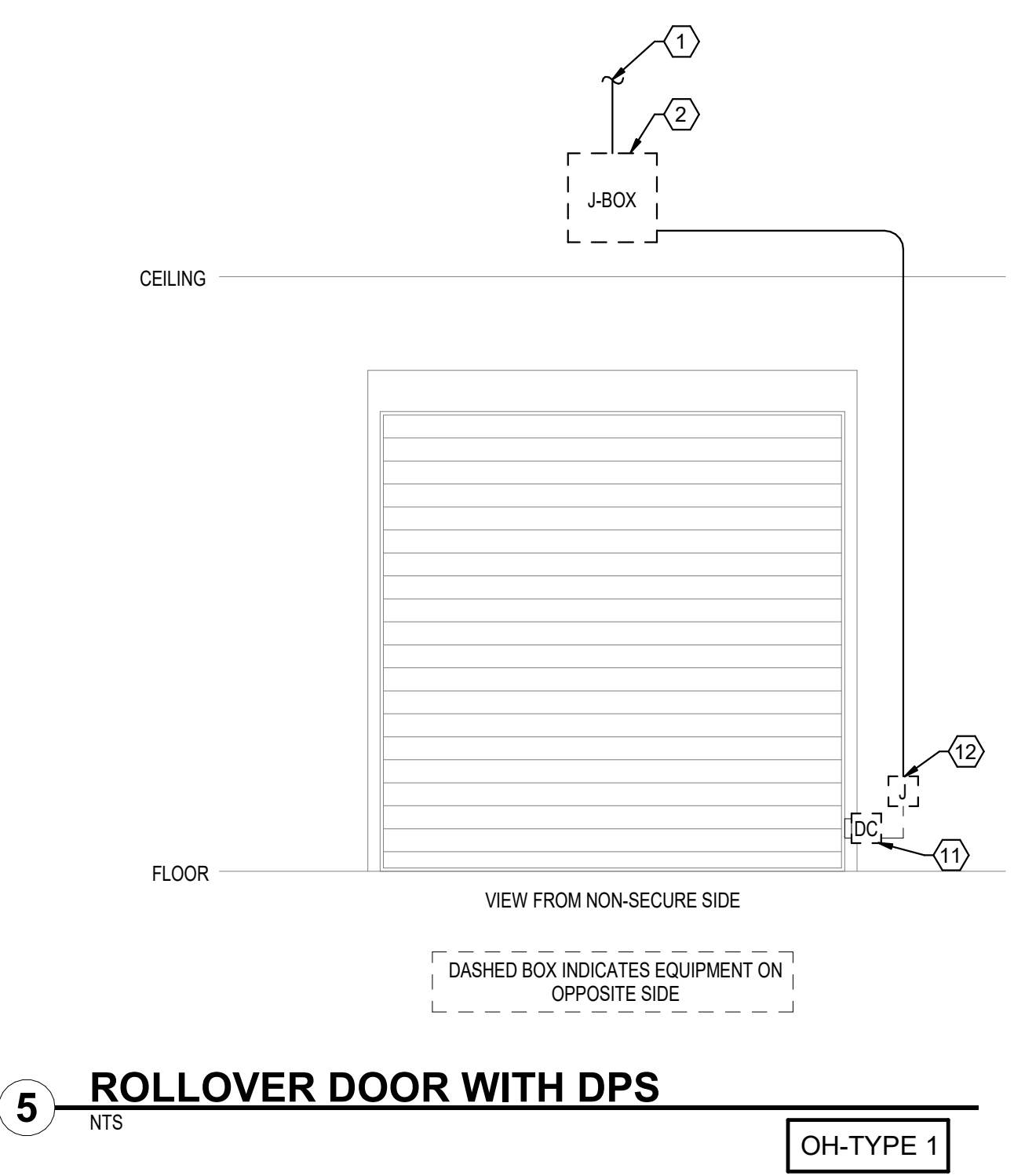
## GENERAL NOTES:

- REFER TO ACCESS CONTROL SCHEDULE FOR QUANTITY AND TYPES OF DEVICES FOR EACH CONTROLLED DOOR.
- LOCATE JUNCTION BOXES ON THE SECURED SIDE OF THE DOOR (OPPOSITE SIDE OF THE CARD READER LOCATION.)
- LOCATE CARD READERS AS SHOWN ON PLANS.
- LOCATE DOOR ACTUATOR BUTTONS AS SHOWN ON PLANS. IF BUTTON IS FURTHER THAN 24" FROM DOOR OPENING, SIGNAGE MAY BE REQUIRED TO NOTIFY PERSONNEL AS TO WHICH BUTTON OPENS WHICH DOOR.
- COORDINATE AUTO OPERATOR PUSH PAD QUANTITY AND LOCATION WITH ARCHITECTURAL PLANS. INTERFACE DOOR LOCKING DEVICES WITH AUTO OPERATORS, HOLD OPENS, AND HANDICAP ASSIST DOOR OPENERS ON SECURITY DOORS.
- CONFIGURE AUTO OPERATORS AS A REX INPUT TO THE SECURITY SYSTEM.
- ALL CONDUIT AND CABLING SHALL BE CONCEALED.
- PROVIDE ADDITIONAL CONDUIT WHERE INDICATED ON PLAN DRAWINGS.
- ALL CONDUIT 1/2" UNLESS OTHERWISE NOTED.

## KEYED NOTES:

- PROVIDE 2-GANG BACKBOX WITH 1-GANG PLASTER RING.
- PROVIDE 12" X 12" X 6" NEMA 1 JUNCTION BOX WITH HINGED COVER. MOUNT ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR. COORDINATE LOCATION WITH SLEEVES AND OTHER EQUIPMENT PRIOR TO INSTALLATION.
- PROVIDE MORTAR GUARD AT CORE AND SHELL DOORS WHERE FRAMES ARE FILLED WITH MORTAR.

THESE DOOR DETAIL ROUGH-IN DIAGRAMS SHALL BE USED AS A BASIS OF DESIGN FOR PRICING ONLY. THE INSTALLING CONTRACTOR SHALL PROVIDE COORDINATED DRAWINGS DETAILING REQUIREMENTS FOR EACH DOOR AS REQUIRED FOR THE DOOR OPERATORS, LOCKING MECHANISM, AND ACCESS CONTROL SYSTEM TO OPERATE AND FUNCTION. THESE SHALL BE COORDINATED WITH THE DOOR HARDWARE SPECIFICATIONS, ACCESS CONTROL SYSTEM REQUIREMENTS, AND FIRE ALARM SYSTEM REQUIREMENTS FOR EACH DOOR.



## NOTE

THIS IS AN EXAMPLE WALL ELEVATION FOR PLANNING PURPOSES. SUBMIT A LAYOUT FOR APPROVAL PRIOR TO INSTALLATION.

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## ENERGY MODEL

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## PROJECT

**WORCESTER SOUTH DIVISION FIRE STATION PROJECT**  
25 MADISON ST  
WORCESTER, MA 01608

## CITY OF WORCESTER

455 MAIN STREET  
WORCESTER, MA 01605

## KEY PLAN

## ISSUE CHART

ADDENDUM #4	19/26
DATE	DATE
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## SECURITY ACCESS CONTROL DETAILS

## SHEET NUMBER

# TY-500



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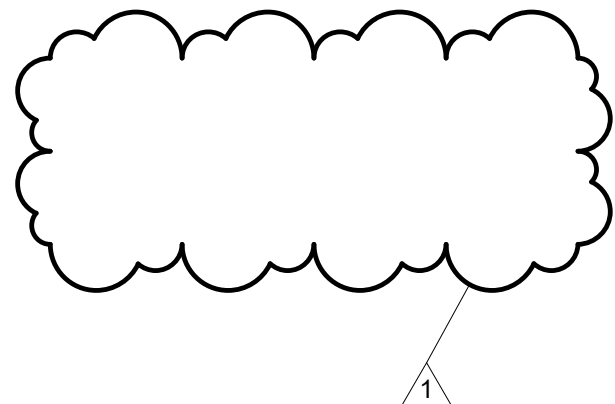
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SHEET NOTES

1. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS RELATED TO CAMERA REQUIREMENTS AND SCOPE.
2. THE CAMERA AND DEVICE DETAILS ARE DIAGRAMMATIC IN NATURE AND SHOW GENERAL INSTALLATION REQUIREMENTS PER DEVICE. VERIFY FIELD CONDITIONS PER LOCATION PRIOR TO CONSTRUCTION.
3. ALL CONDUIT TO BE RUN CONCEALED UNO. LOCATE JUNCTION BOX ABOVE CEILING IN ACCESSIBLE LOCATION. SUPPORT ALL CONDUIT AND CAMERA FROM STRUCTURE.
4. PROVIDE VSS CAMERA, LENS, DOME ENCLOSURE AND MOUNT AS INDICATED ON PLANS AND SPECIFICATIONS. PROVIDE ALL MOUNTING AND SUPPORT HARDWARE AS REQUIRED BY THE MANUFACTURER. PROVIDE ALL CONNECTIONS OF FLEXIBLE CONDUIT AND CABLING TO VSS JUNCTION BOX.
5. EXPOSED CONDUIT AND HARDWARE MAY BE REQUIRED TO LOCATE CAMERA CORRECTLY AND PROVIDE ACCESS TO ACCESSIBLE CEILING FOR CONDUIT RUN TO THE JUNCTION BOX. PROVIDE JUNCTION BOXES AS NEEDED. REFER TO PROJECT SPECIFICATIONS REGARDING PAINTING REQUIREMENTS FOR EXPOSED CONDUIT AND MOUNTING HARDWARE.
6. FINISHED CEILING, WALL, AND STRUCTURAL DECK CONSTRUCTION SHOWN FOR REFERENCE ONLY. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS DETAILED INFORMATION.

SHEET KEYED NOTES ①

1. SUPPORT CAMERA FROM RIGID STRUCTURE PER MANUFACTURER RECOMMENDATIONS.
2. PROVIDE (1) 1" CONDUIT TO ACCESSIBLE CEILING. REFER TO FLOOR PLANS FOR ADDITIONAL INFORMATION.
3. CAMERA JUNCTION BOX: PROVIDE 4"x4"x2-1/8" FLUSH MOUNTED BOX WITH SINGLE GANG MUD RING OR MASONRY EQUIVALENT.
4. PATCH CABLE: PROVIDE DATA PATCH CORD TO CONNECT CAMERA.
5. (1) 3/4" FLEXIBLE OR EMT CONDUIT. FOR EXTERIOR CAMERAS, PROVIDE LIQUID TIGHT CONDUIT.
6. PENDANT CEILING MOUNT. LENGTH OF PIPE SHALL BE SO THAT THE DOME PORTION OF THE CAMERA IS SET BELOW ANY ADJACENT ELECTRICAL FIXTURES OR MECHANICAL SYSTEMS. THE BASE OF THE CAMERA SHALL MAINTAIN A MINIMUM OF 8'-6" A.F.F. TO MEET THE MINIMUM ADA MOUNTING REQUIREMENTS. CONTRACTOR TO FIELD COORDINATE WITH OTHER TRADES TO ENSURE THE CAMERA'S FIELD OF VIEW IS NOT OBSTRUCTED.
7. CAMERA JUNCTION BOX FOR EXTERIOR MOUNTED CAMERA: LOCATE JUNCTION BOX ABOVE ACCESSIBLE INTERIOR CEILING. PROVIDE SURGE PROTECTION WITHIN THE JUNCTION BOX FOR ALL COPPER CONDUCTORS.



PROJECT



WORCESTER SOUTH  
DIVISION FIRE  
STATION PROJECT  
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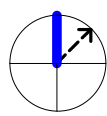


CITY OF WORCESTER

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KEY PLAN

ADDENDUM #4 1/9/26 7/25/25



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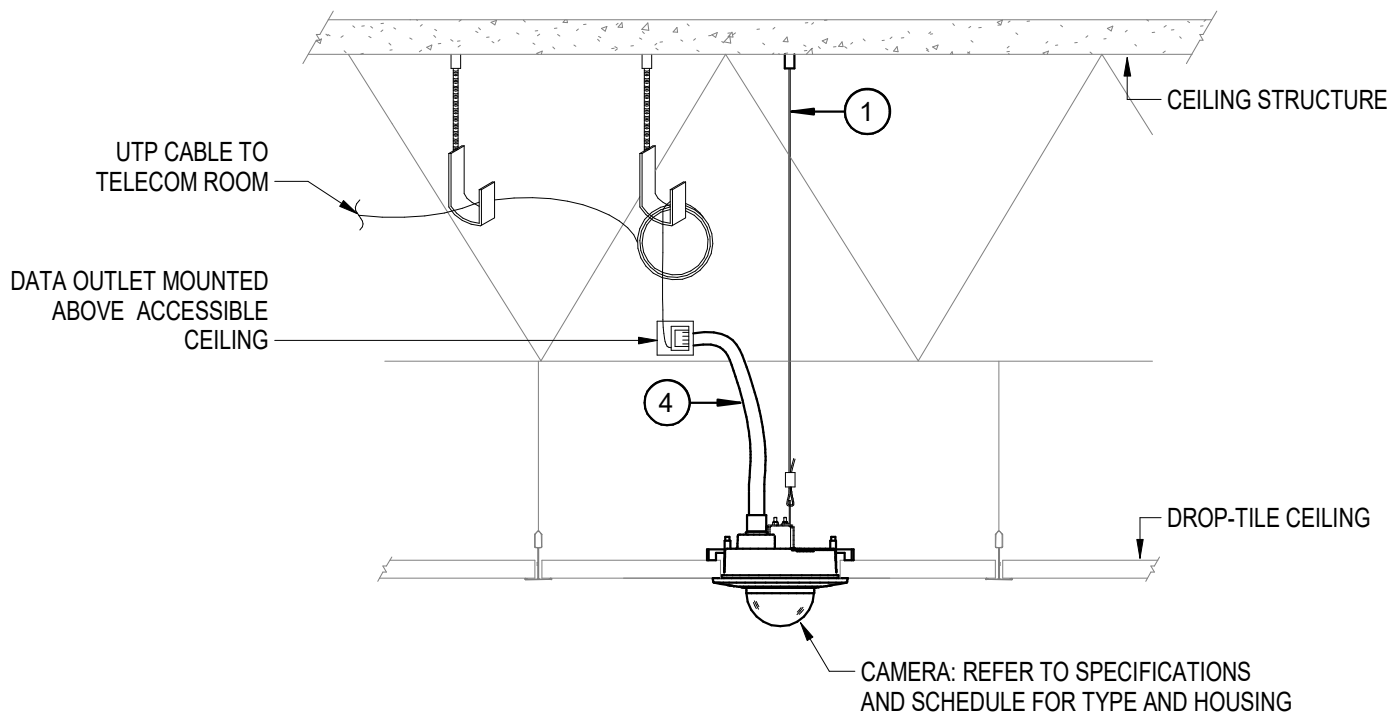
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Job Number	157132.000	

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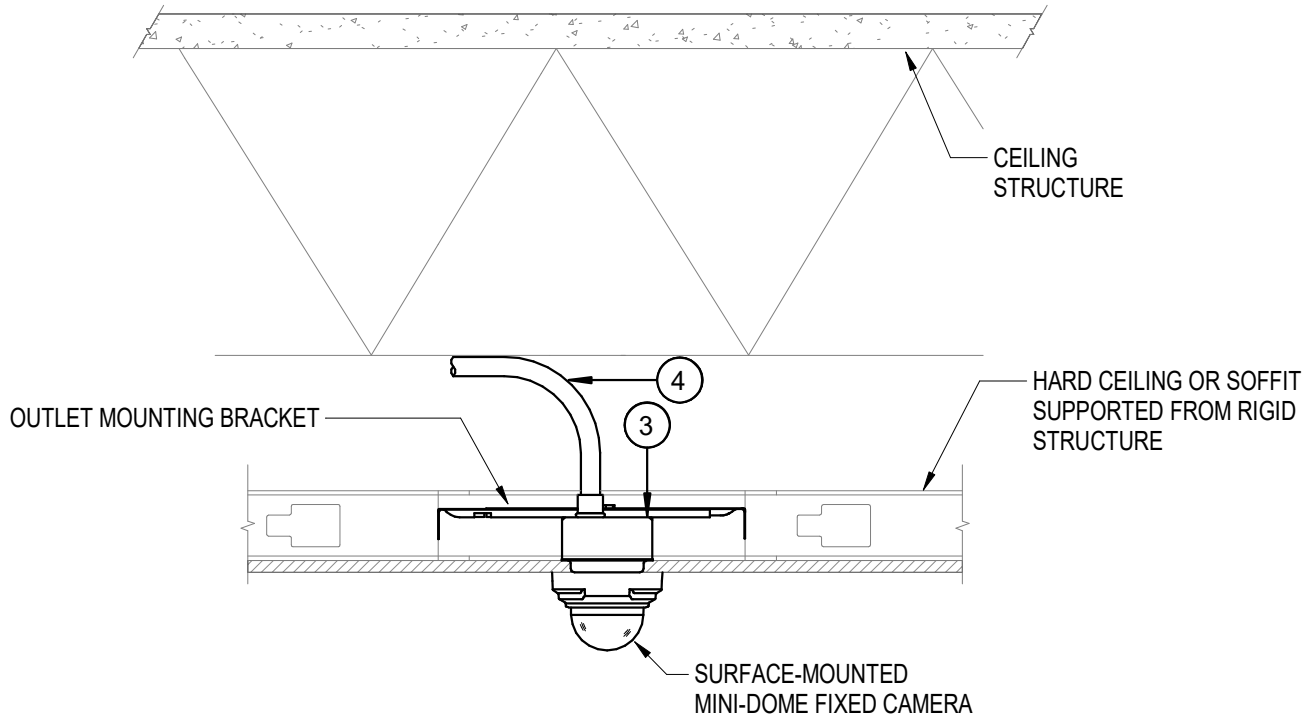
SECURITY VSS CAMERA  
DETAILS

SHEET NUMBER

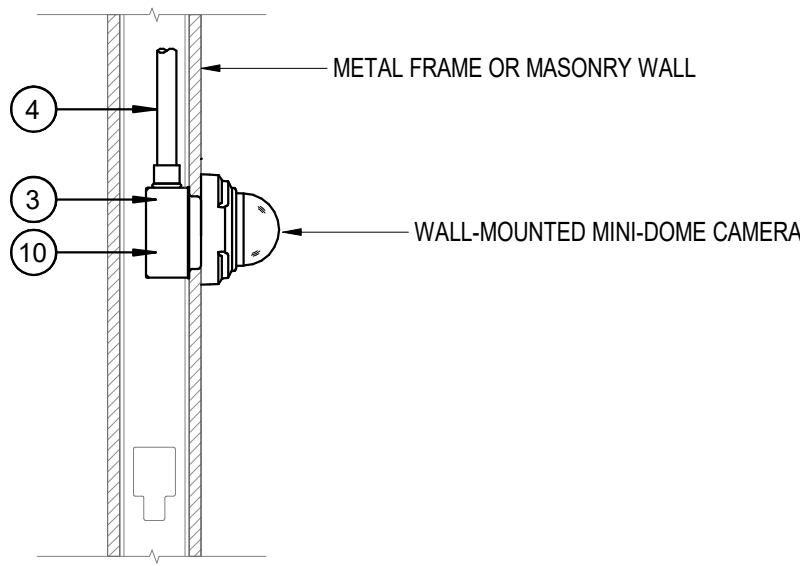
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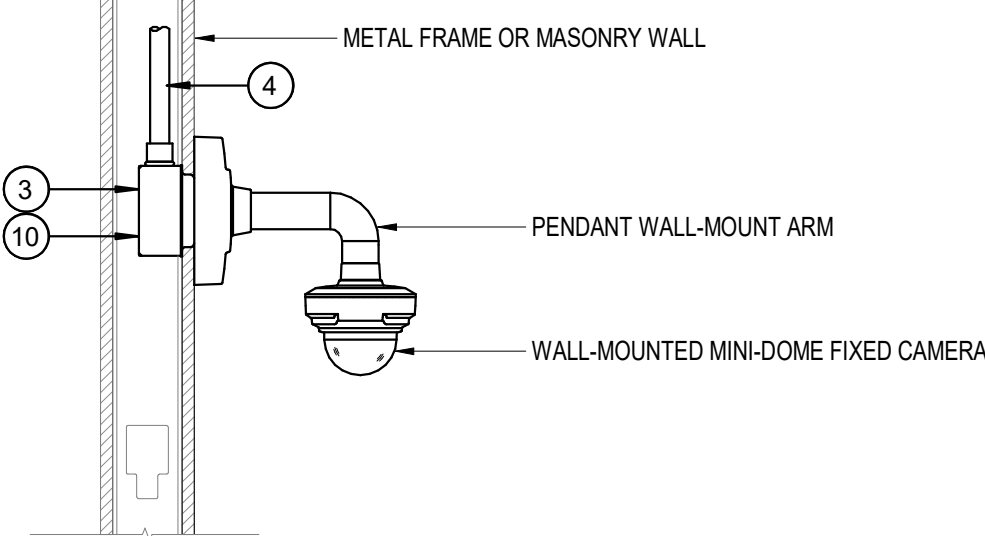
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N.T.S. TYPE A1



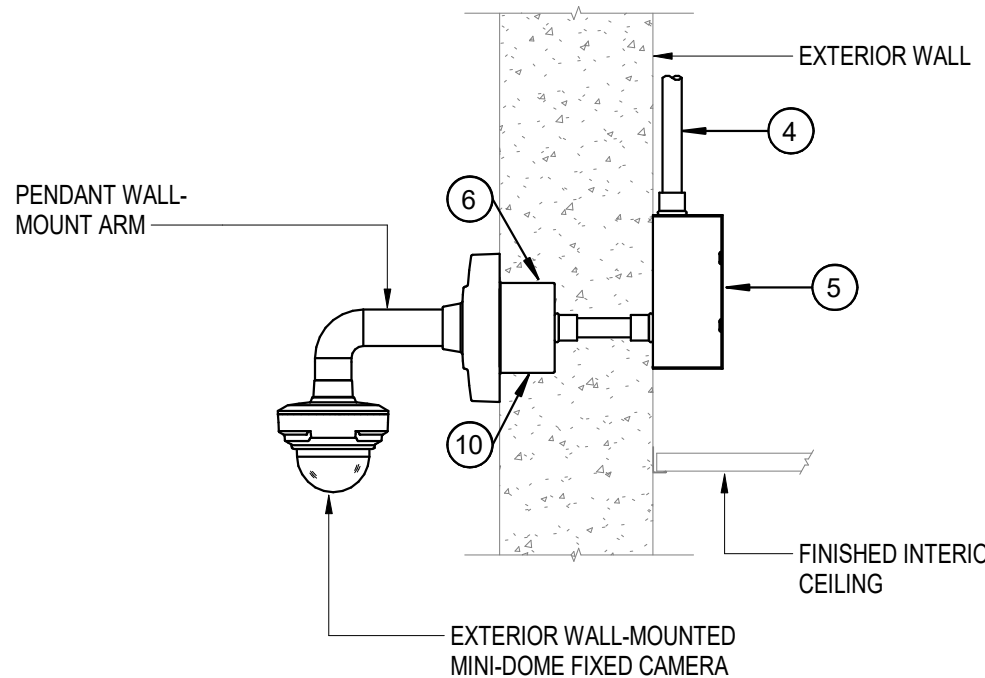
2 INTERIOR FIXED SURFACE CEILING CAMERA  
N.T.S. TYPE A2



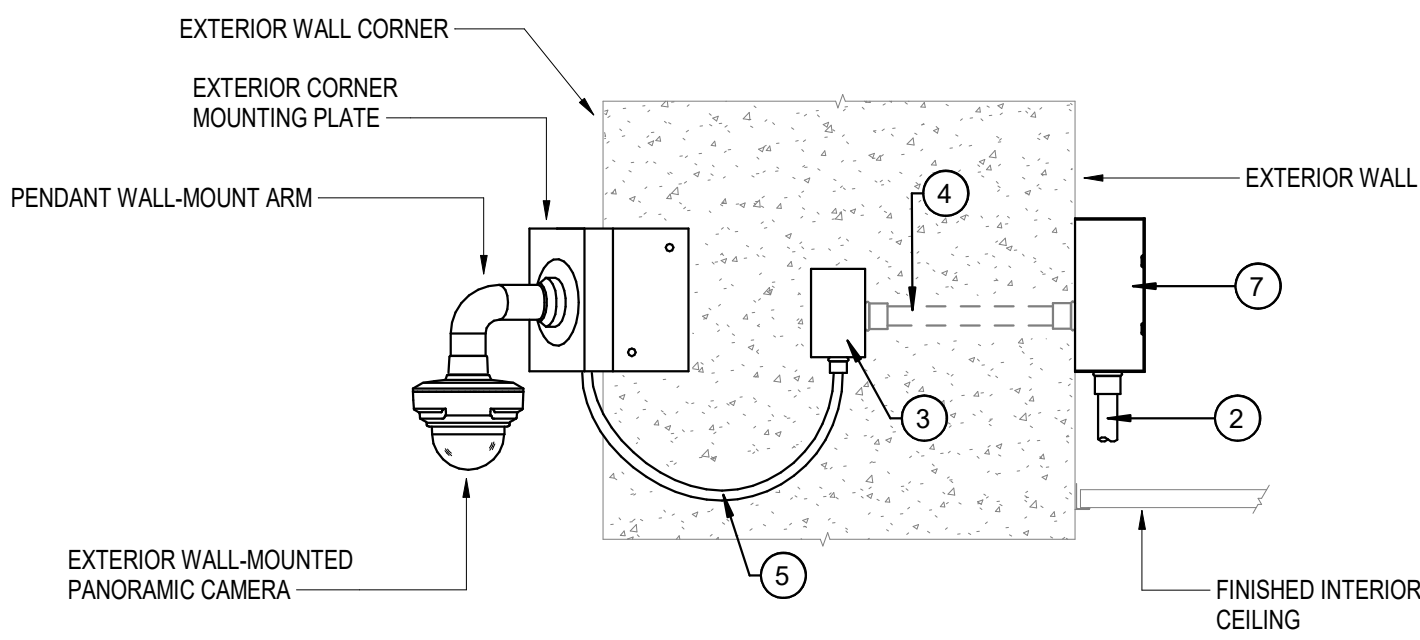
3 INTERIOR FIXED SURFACE WALL MOUNTED DOME  
N.T.S. TYPE B1



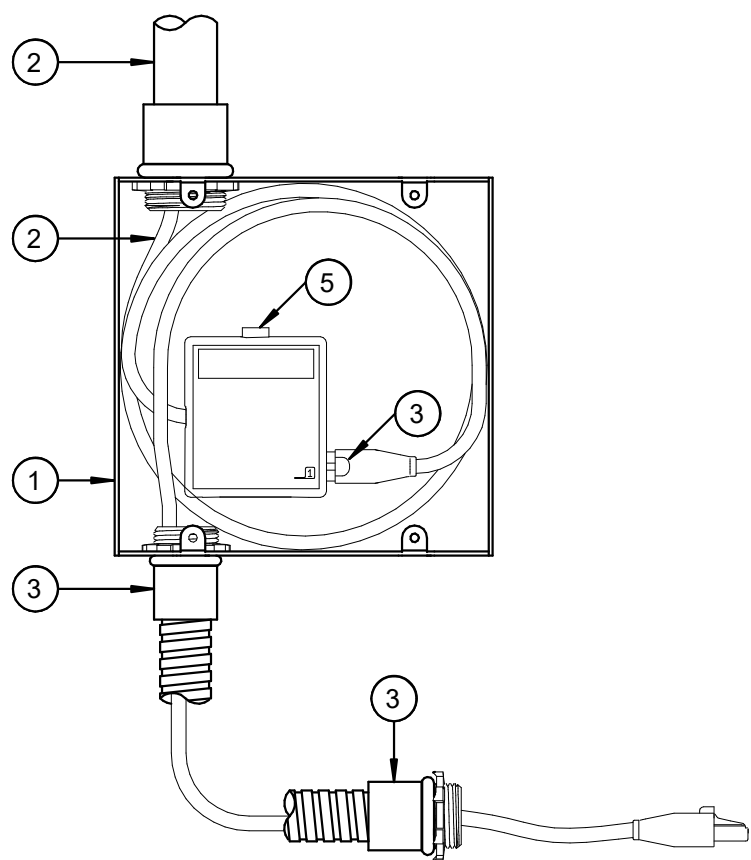
4 INTERIOR FIXED WALL MOUNTED DOME WITH EXT. ARM  
N.T.S. TYPE B2



5 EXTERIOR FIXED WALL MOUNTED DOME WITH EXT. ARM  
N.T.S. TYPE C1



6 EXTERIOR CORNER CAMERA ARM MOUNT  
N.T.S. TYPE C2



# DETAIL NOTES:

1. VSS JUNCTION BOX. MINIMUM 150mm (6-IN) SQUARE X 75mm (3-IN) DEEP. PROVIDE COVER AND SECURE TO ENCLOSURE WITH TAMPER RESISTANT SCREWS.
2. PROVIDE (1) CAT6A UTP DATA CABLE IN 25mm (1-IN) RIGID CONDUIT TO ASSOCIATE TR OR SECURITY CABINET. COIL MINIMUM 150mm (6-IN) OF SLACK FOR INSTALLED HORIZONTAL CABLE IN JUNCTION BOX.
3. PROVIDE CAT6A PATCH CORD TO CAMERA IN 20mm (3/4-IN) FLEXIBLE CONDUIT TO SURVEILLANCE CAMERA. TERMINATE CONDUIT VIA LISTED FITTING AT CAMERA OR JUNCTION BOX. CAMERA OMITTED FROM DETAIL FOR CLARITY. SIZE PATCH CORD AS NEEDED TO REACH CAMERA. COIL EXCESS IN JUNCTION BOX.
4. TERMINATE HORIZONTAL CABLING TO DIRECT-ATTACH FIELD MOUNT PLUG.
5. 1-PORT SURFACE OUTLET. FIX IN PLACE INSIDE JUNCTION BOX. LOCATE AS NECESSARY TO MAINTAIN MAXIMUM CABLE BEND RADIUS.

7 INTERIOR TERMINATED 1-DATA IN 6x6  
N.T.S.

SECURITY ACCESS CONTROL SCHEDULE									
LEVEL	SHEET#	DOOR #	ROOM #	ROOM NAME	CARD READER	DPS	DOOR TYPE	DRAWING/ DETAIL#	COMMENTS
LEVEL 01	TY-200	100.7	100	APPARATUS BAY	1	1	SD-TYPE2	2/TY-500	
LEVEL 01	TY-200	100.8	100	APPARATUS BAY	1	1	SD-TYPE2	2/TY-500	
LEVEL 01	TY-200	100.9	100	APPARATUS BAY	1	1	SD-TYPE1	2/TY-500	CARD READER WITH KEYPIN CODE ACCESS
LEVEL 01	TY-200	101.1	100	SCBA FILL	1	1	SD-TYPE1	2/TY-500	
LEVEL 01	TY-200	105	105	DEPT STORAGE	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	107	107	STORAGE ROOM 1&2	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	110	110	SCBA SHOP	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	111	111	EMERGENCY ELEC	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	112a	112	MAIN ELEC	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	113a	113	EXERCISE	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	113b	113	EXERCISE	0	1	SD-TYPE3	3/TY-500	
LEVEL 01	TY-200	113c	113c	CTL ROOM	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	113m	115	TRAINING ROOM	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	114	114	WATER SERVICE	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	115.2	115	TRAINING ROOM	1	1	SD-TYPE1	1/TY-500	
LEVEL 01	TY-200	121a.1	121A	VESTIBULE	1	2	DD-TYPE1	1/TY-500	
LEVEL 01	TY-200	121a.2	121A	VESTIBULE	1	1	SD-TYPE1	2/TY-500	
LEVEL 01: 17									
LEVEL 02	TY-201	217	217	SERVER	1	1	SD-TYPE1	1/TY-500	
LEVEL 02: 1									
ROOF		T-1.2	ROOF		1	1	SD-TYPE2	2/TY-500	
ROOF: 1									
Grand total: 19									

VIDEO SURVEILLANCE SYSTEM IP CAMERA SCHEDULE								
LEVEL	SHEET #	CAMERA #	ROOM #	ROOM NAME	CAMERA TYPE	CAMERA MOUNT	MOUNTING DRAWING/DETAIL #	COMMENTS
LEVEL 01	TY-200	SC-121A	121A	SERVER	TYPE A1	FLUSH CEILING MOUNT	1/TY-501	
LEVEL 01	TY-200	SC-EXT-100.1	100	APPARATUS BAY	TYPE C2	EXTERIOR WALL CORNER MOUNT	6/TY-501	
LEVEL 01	TY-200	SC-EXT-102	102	YARD STORAGE	TYPE C2	EXTERIOR WALL CORNER MOUNT	6/TY-501	
LEVEL 01	TY-200	SC-EXT-106	106	TURN OUT GEAR	TYPE C2	EXTERIOR WALL CORNER MOUNT	6/TY-501	
LEVEL 01	TY-200	SC-EXT-113	113	EXERCISE	TYPE C2	EXTERIOR WALL CORNER MOUNT	6/TY-501	
LEVEL 01	TY-200	SC-EXT-S-A1	S-A1	STAIR A	TYPE C2	EXTERIOR WALL CORNER MOUNT	6/TY-501	
LEVEL 01: 6								
LEVEL 02	TY-201	SC-217	217	SERVER	TYPE A1	FLUSH CEILING MOUNT	1/TY-501	
LEVEL 02: 1								

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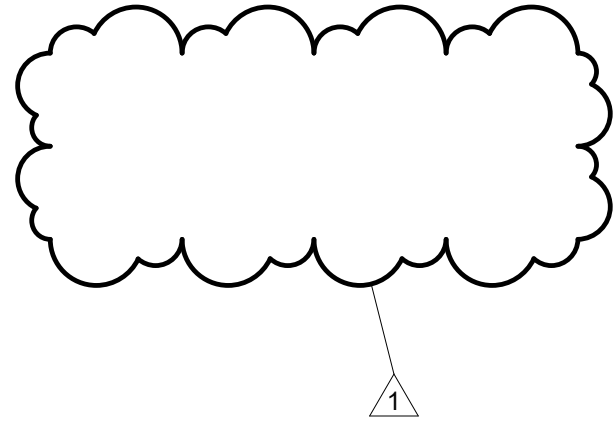
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KEY PLAN



1	ADDENDUM #4	1/9/26
MARK	ISSUE	DATE
Job Number		157132.000
		TITLE

**SECURITY SYSTEM  
SCHEDULES**

SHEET NUMBER

**TY-600**

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