

ADDENDUM NO. 2

DUPLIN COUNTY DETENTION CENTER

DUPLIN COUNTY  
KENANSVILLE, NORTH CAROLINA

Architect's Project Number: 621373

Prepared by

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***DATE OF ISSUE – JANUARY 11, 2024***

**DUPLIN COUNTY DETENTION CENTER**  
**KENANSVILLE, NC**

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**GENERAL:**

Planholders are requested to insert this Addendum in the front of their Project Manual. Inform all concerned that the Bidding Documents are modified by this Addendum.

The following modifications and clarifications are hereby made a part of the Bidding Documents and supersede or otherwise modify the provisions of the published *Project Manual* and *Drawings*, dated December 12, 2023.

Refer to the Drawings, Specification Sections, or other Documents, if any, attached to this Addendum, which are hereby made a part of this Addendum.

**MODIFICATIONS TO THE PROJECT MANUAL:**

SECTION 000110 – T.O.C.

REPLACE this entire section

SECTION 083313 – COILING COUNTER DOORS

REPLACE this entire section

SECTION 087100 – DOOR HARDWARE

REPLACE this entire section

SECTION 089100 – LOUVERS

REPLACE this entire section

SECTION 102123 – CUBICAL CURTAINS & TRACKS

ADD this entire section

SECTION 105626 – MOBILE STORAGE SHELVING

REPLACE this entire section

SECTION 238124 – DUCTLESS MINI-SPLITS AIR CONDITIONING UNITS

ADD this entire section.

SECTION 271100 – COMMUNICATIONS EQUIPMENT ROOM FITTINGS

REPLACE this entire section.

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**36    MODIFICATIONS TO THE DRAWINGS:**

37

38        SHEET C3.01

39        REPLACE with attached

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41        SHEET C5.00

42        REPLACE with attached

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44        SHEET A2.1.0

45        REPLACE with attached

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47        SHEET A3.1.1

48        REPLACE with attached

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50        SHEET A7.1.1

51        REPLACE with attached

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53        SHEET A9.1.1

54        REPLACE with attached

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56        SHEET A10.1.1

57        REPLACE with attached

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59        SHEET E0.1

60        REPLACE with attached

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64 **ATTACHMENTS:**

65 SPECIFICATIONS:

66 000110

67 083313

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Prebid Question Form: (Use on-line process. To access go to [www.moseleyarchitects.com](http://www.moseleyarchitects.com), at the top of the page select the “Bidding” link, find the appropriate project, and select the “Submit a Question” link).

Geotechnical Report: Available by request. Submit the form in this project manual to request a copy.

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**SECTION 083313**  
**COILING COUNTER DOORS (\*AD 02)**

**PART 1 GENERAL**

**1.01 REFERENCE STANDARDS**

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2023.
- D. ITS (DIR) - Directory of Listed Products Current Edition.
- E. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.
- F. UL (DIR) - Online Certifications Directory Current Edition.
- G. UL 1784 - Standard for Air Leakage Tests of Door Assemblies Current Edition, Including All Revisions.

**1.02 SUBMITTALS**

- A. Product Data: Submit manufacturer's standard literature showing materials and details of construction and finish. Include data on electrical operation.
- B. Shop Drawings: Indicate rough and actual opening dimensions, anchorage methods, hardware locations, and installation details.
- C. Samples: Submit manufacturer's color charts indicating standard range of powder coat finishes.
- D. Project Record Documents: Include as-built electrical diagrams for electrical operation and connection to fire alarm system.

**1.03 WARRANTY**

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Manufacturer Warranty: Provide two-year manufacturer warranty for materials and workmanship for all components of coiling doors. Complete forms in Owner's name and register with manufacturer.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Coiling Counter Doors:
  - 1. Alpine Overhead Doors, Inc.
  - 2. Amarr.
  - 3. C.H.I. Overhead Doors.
  - 4. Clopay Building Products.
  - 5. Cornell Iron Works, Inc.
  - 6. Hörmann High Performance Doors.
  - 7. McKeon Rolling Steel Door Co., Inc
  - 8. Overhead Door Corporation.
  - 9. Raynor Garage Doors

10. The Cookson Company.
11. Wayne-Dalton, a Division of Overhead Door Corporation.
12. Substitutions: See Section 016000 - Product Requirements.

## 2.02 COILING COUNTER DOORS (\*AD 02)

- A. Coiling Counter Doors, Non-Fire-Rated: Galvanized steel slat curtain.
  1. Mounting: Between jambs, within prepared opening.
  2. Location: At Detention Window for Housing Unit "D" in Central Control CR001 (\*AD 02)
  3. Nominal Slat Size: Manufacturer's standard.
  4. Slat Profile: Flat.
  5. Finish, Galvanized Steel: Factory powder coated.
  6. Color: To be selected by Architect from manufacturer's standard range.
  7. Guides: Formed track; same material and finish unless otherwise indicated.
  8. Hood Enclosure: Manufacturer's standard; galvanized steel. Finish to match slats.
  9. Manual push up operation.
  10. Locking Devices: Slide bolt on non-secure side. (Padlocks NIC).
  11. Integral Counter/Sill: Not required. Coordinate coiling door height so that doors will close to the top of indicated stainless steel detention counters.
- B. Coiling Counter Metal Doors, Fire-Rated: Galvanized steel slat curtain.
  1. Mounting: Between jambs, within prepared opening. Mount on Non-Inmate side of window. (\*AD 02)
  2. Location: Detention Window 120B, Detention Window 123. (\*AD 02)
  3. Fire Rating: 3/4 hour at Window 120B ; comply with NFPA 80. (\*AD 02)  
3/4 hour at Window 123 ; comply with NFPA 80. (\*AD 02)
    - a. Provide product listed and labeled by ITS (DIR) or UL (DIR) as suitable for the purpose specified and indicated.
  4. Smoke Control: Provide doors tested to UL 1784, with maximum air-leakage rate of 3.0 cfm/sq. ft. at 0.10-inch wg. Doors shall be listed and labeled by UL (DIR) with letter "S" designating smoke-control.
  5. Nominal Slat Size: Manufacturer's standard.
  6. Slat Profile: Flat.
  7. Finish, Galvanized Steel: Factory powder coated.
  8. Color: To be selected by Architect from manufacturer's standard range.
  9. Guides: Formed track; same material and finish unless otherwise indicated.
  10. Hood Enclosure: Manufacturer's standard; galvanized steel. Finish to match slats.
  11. Fire Release Mechanism: Automatic door release device, actuated by fire alarm and smoke detection systems, with manual reset.
  12. Integral Counter/Sill: Not required. Coordinate coiling door height so that doors will close to the top of indicated stainless steel counters. Where no counter is indicated provide full height door and guides so that coiling door closes to floor.

## 2.03 COMPONENTS

- A. Metal Curtain Construction: Interlocking, single-thickness slats.
  1. Slat Ends: Alternate slats fitted with end locks to act as wearing surface in guides and to prevent lateral movement.

2. Curtain Bottom: Fitted with angles to provide reinforcement and positive contact in closed position; neoprene astragal along bottom edge.
  3. Steel Slats: ASTM A653/A653M galvanized steel sheet, with minimum G60/Z180 coating; minimum thickness 16 gauge, 0.06 inch.
- B. Guide Construction: Continuous, of profile to retain door in place, with mounting brackets of same metal.
1. Guides for Galvanized Curtains: ASTM A36/A36M steel angles, size as indicated, hot-dip galvanized per ASTM A123/A123M.
- C. Hood Enclosure: Internally reinforced to maintain rigidity and shape.
- D. Lock Hardware:
1. For fire-rated (fire shutter) units, additional lock or latching mechanisms are not required.
  2. Slide Bolt: Provide on single-jamb side, extending into slot in guides, for padlocking. Padlocks NIC (shall be provided by Owner)
- E. Roller Shaft Counterbalance: Steel pipe and torsion steel spring system, capable of producing torque sufficient to ensure smooth operation of curtain from any position and capable of holding position at mid-travel; with adjustable spring tension; requiring 25 lb nominal force to operate.
1. Provide fire-rated doors with auxiliary counterbalance spring to allow for operation of fire release mechanism without tension release of main counterbalance spring.
- F. Smoke Seals/Gasketing: Provide fire-rated doors with continuous smoke seal gaskets around perimeter of door in accordance with requirements of UL-tested and -listed assembly.

#### **2.04 ELECTRIC OPERATION**

- A. Operator, Controls, Actuators, and Safeties: Listed and classified by ITS (DIR), UL (DIR), or testing agency acceptable to authorities having jurisdiction (AHJ) as suitable for purpose specified and indicated.
1. Fire Release Mechanism: Provide fire-rated door with a constantly energized release device with governor unit and battery backup; complying with NFPA 80; 110/120V. Release device shall be designed to activate upon fire-alarm or smoke-detection system activation. Connection and wiring of release device to fire-alarm and smoke-detection system shall be by Division 26.
    - a. Release device shall allow for testing and manual resetting without retensioning the counterbalance spring system.
    - b. Release device shall have replaceable fusible link above the door designed to activate release at 165 degrees F, as backup in the event of fire-alarm/smoke-detection failure.
    - c. Provide additional mounting hardware and accessories as required for a complete assembly.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that adjacent construction is suitable for door installation.
- B. Verify that electrical services have been installed and are accessible.
- C. Verify that door opening is plumb, header is level, and dimensions are correct.
- D. Notify Architect of any unacceptable conditions or varying dimensions.
- E. Commencement of installation indicates acceptance of substrate and door opening conditions.

### **3.02 INSTALLATION**

- A. Install units in accordance with manufacturer's instructions.
- B. Install fire-rated doors in accordance with NFPA 80.
- C. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- D. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.
- E. Fit and align assembly including hardware; level and plumb, to provide smooth operation.
- F. Coordinate installation of electrical service with Division 26, including wiring from fire-alarm and smoke-detection systems.
- G. Complete wiring from disconnect to unit components.
- H. Complete wiring from fire alarm system .

### **3.03 TOLERANCES**

- A. Maintain dimensional tolerances and alignment with adjacent work.
- B. Maximum Variation From Plumb: 1/16 inch.
- C. Maximum Variation From Level: 1/16 inch.
- D. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch per 10 ft straight edge.

### **3.04 ADJUSTING**

- A. Adjust operating assemblies for smooth and noiseless operation.

### **3.05 CLEANING**

- A. Clean installed components.
- B. Remove labels and visible markings.

**END OF SECTION 083313**

SECTION 087100 – DOOR HARDWARE (\*AD 02)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
1. Swinging doors.
- B. Door hardware includes, but is not necessarily limited to, the following:
1. Mechanical door hardware.
  2. Electromechanical door hardware.
  3. Cylinders specified for doors in other sections.
- C. Related Sections:
1. Division 08 Section "Hollow Metal Doors and Frames".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
  2. ICC/IBC - International Building Code.
  3. NFPA 70 - National Electrical Code.
  4. NFPA 80 - Fire Doors and Windows.
  5. NFPA 101 - Life Safety Code.
  6. NFPA 105 - Installation of Smoke Door Assemblies.
  7. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:
1. ANSI/BHMA Certified Product Standards - A156 Series.
  2. UL10C – Positive Pressure Fire Tests of Door Assemblies.
  3. CAN/ULC-S104 – Standard Method for Fire Tests of Door Assemblies.
  4. ANSI/UL 294 – Access Control System Units.
  5. ULC-S319 - Electronic Access Control Systems.
  6. ULC-60839-11-1, Alarm and Electronic Security Systems - Part 11-1: Electronic Access Control Systems - System and Components Requirements.
  7. CAN-ULC-S132 -- Standard Method of Tests for Emergency Exit and Emergency Fire Exit Hardware.
  8. CAN-ULC-S533 - Egress Door Securing and Releasing Devices.
  9. UL 305 – Panic Hardware.
  10. ULC-S132, Emergency Exit and Emergency Fire Exit Hardware.
  11. ULC-S533 – Egress Door Securing and Releasing Devices.
  12. ANSI/UL 437- Key Locks.

13. ULC-S328, - Burglary Resistant Key Locks.

- F. Registrations: All hardware specified herein shall be registered with the following agencies, as applicable:
1. Federal Communications Commission (FCC).
  2. Industry Canada (IC).
  3. California State Fire Marshall.
  4. Florida Department of Business & Professional Regulation.
  5. New York State Office of Mental Health (OMH).

### 1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
  2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
  3. Content: Include the following information:
    - a. Type, style, function, size, label, hand, and finish of each door hardware item.
    - b. Manufacturer of each item.
    - c. Fastenings and other pertinent information.
    - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    - e. Explanation of abbreviations, symbols, and codes contained in schedule.
    - f. Mounting locations for door hardware.
    - g. Door and frame sizes and materials.
    - h. Warranty information for each product.
  4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:
1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access



control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

- a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
  - b. Complete (risers, point-to-point) access control system block wiring diagrams.
  - c. Wiring instructions for each electronic component scheduled herein.
2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:
1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
- F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

#### 1.4 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
- C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
  2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
1. Function of building, purpose of each area and degree of security required.
  2. Plans for existing and future key system expansion.
  3. Requirements for key control storage and software.
  4. Installation of permanent keys, cylinder cores and software.
  5. Address and requirements for delivery of keys.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
  2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
  3. Review sequence of operation narratives for each unique access controlled opening.
  4. Review and finalize construction schedule and verify availability of materials.
  5. Review the required inspecting, testing, commissioning, and demonstration procedures
- I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.
- 1.5 DELIVERY, STORAGE, AND HANDLING
- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
  - B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
  - C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
  - 1. Structural failures including excessive deflection, cracking, or breakage.
  - 2. Faulty operation of the hardware.
  - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
  - 1. Ten years for mortise locks and latches.
  - 2. Twenty five years for manual overhead door closer bodies.
  - 3. Five years for motorized electric latch retraction exit devices.
  - 4. Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

## PART 2 - PRODUCTS

### 2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
  - 1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

### 2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
  - 1. Quantity: Provide the following hinge quantity:
    - a. Two Hinges: For doors with heights up to 60 inches.
    - b. Three Hinges: For doors with heights 61 to 90 inches.
    - c. Four Hinges: For doors with heights 91 to 120 inches.
    - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
  - 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
    - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
    - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
  - 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
    - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
    - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
  - 4. Hinge Options: Comply with the following:

- a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
5. Manufacturers:
- a. Hager Companies (HA).
  - b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK).
  - c. Stanley Hardware (ST).
- B. Continuous Pin in Barrel Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous pin in barrel hinge (geared type hinges are not acceptable). Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical options.
1. Hinges to be stainless steel type unless scheduled otherwise.
  2. Manufacturers:
    - a. Markar Products.
    - b. Gallery.
    - c. Hager.

### 2.3 POWER TRANSFER DEVICES

- A. Electrified Quick Connect Transfer Hinges: Provide electrified transfer hinges with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
1. Manufacturers:
    - a. Hager Companies (HA) - ETW-QC (# wires) Option.
    - b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - QC (# wires) Option.
    - c. Stanley Hardware (ST) – C Option.
- B. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
1. Manufacturers:
    - a. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE) – EL-CEPT Series.
    - b. Securitron (SU) - EL-CEPT Series.
    - c. Von Duprin (VD) - EPT-10 Series.

- C. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.
1. Provide one each of the following tools as part of the base bid contract:
    - a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Electrical Connecting Kit: QC-R001.
    - b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Connector Hand Tool: QC-R003.
  2. Manufacturers:
    - a. Hager Companies (HA) - Quick Connect.
    - b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) – QC-C Series.
    - c. Stanley Hardware (ST) – WH Series.

#### 2.4 DOOR OPERATING TRIM

- A. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
  2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
  3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
  4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
  5. Manufacturers:
    - a. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    - b. Hager Companies
    - c. Trimco (TC).

#### 2.5 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) year's experience designing secured master key systems and have on record a published security keying system policy.
- B. Cylinders: Original manufacturer cylinders complying with the following:
1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.

2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
  3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
  4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
  5. Keyway: SC1
  6. Manufacturers:
    - a. Corbin Russwin, An ASSA ABLOY company
    - b. Sargent, an ASSA ABLOY company
    - c. Schlage, an Allegion Company
- C. Keying System: Each type of lock and cylinders to be factory keyed.
1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
  2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
  3. Existing System: Field verify and key cylinders to match Owner's existing system.
- D. Key Quantity: Provide the following minimum number of keys:
1. Change Keys per Cylinder: Two (2)
  2. Master Keys (per Master Key Level/Group): Five (5).
  3. Construction Keys (where required): Ten (10).
- E. Key Registration List (Bitting List):
1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
  2. Provide transcript list in writing or electronic file as directed by the Owner.

## 2.6 KEY CONTROL

- A. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.
1. Manufacturers:
    - a. Lund Equipment (LU).
    - b. MMF Industries (MM).
    - c. Telkee (TK).

## 2.7 MECHANICAL LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.
1. Where specified, provide status indicators with highly reflective color and wording for "locked/unlocked" or "vacant/occupied" with custom wording options if required. Indicator to be located above the cylinder with the inside thumb-turn not blocking the visibility of

the indicator status. Indicator window size to be a minimum of 2.1" x 0.6" with a curved design allowing a 180 degree viewing angle with protective covering to prevent tampering.

2. Manufacturers:
  - a. Corbin Russwin Hardware (RU) – ML2000 Series.
  - b. Sargent Manufacturing (SA) – 8200 Series.
  - c. Schlage - L Series.

## 2.8 AUXILIARY LOCKS

- A. Mortise Deadlocks, Large Case: ANSI/BHMA A156.13, Series 1000, Grade 1, certified large case mortise type deadlocks constructed of heavy gauge wrought corrosion resistant steel. One piece stainless steel bolts with a 1" throw. Deadlocks to be products of the same source manufacturer and keyway as other locksets.

1. Manufacturers:
  - a. Corbin Russwin Hardware (RU) - ML2000 Series.
  - b. Sargent Manufacturing (SA) - 8200 Series.
  - c. Schlage – L Series.

## 2.9 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

- B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

## 2.10 EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:



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1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
  2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
  3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
  4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
  5. Energy Efficient Design: Provide lock bodies which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.
  6. Electromechanical Options: Subject to same compliance standards and requirements as mechanical exit devices, electrified devices to be of type and design as specified in hardware sets. Include any specific controllers when conventional power supplies are not sufficient to provide the proper inrush current.
  7. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
    - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
  8. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
  9. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
  10. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
  11. Rail Sizing: Provide exit device rails factory sized for proper door width application.
  12. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Security Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed rim panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be constructed of high grade, heat treated, corrosion resistant nickel steel alloy, and have a full 3/4" throw projection with slide action positive deadlocking.

1. Static Load Force Resistance: Minimum 3000 lbs certified independent tested.
2. Manufacturers:
  - a. Corbin Russwin Hardware (RU) - ED4000S / ED5000S Series.
  - b. Sargent – 80 Series.
  - c. Von Duprin 98 Series.

## 2.11 DOOR CLOSERS

### A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

### B. Door Closers: ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.

1. Manufacturers:
  - a. Corbin Russwin Hardware (RU) – DC6000 Series.
  - b. Norton Door Controls (NO) – 7500 Series.
  - c. LCN – 4040XP Series.

## 2.12 ARCHITECTURAL TRIM

### A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
4. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:
  - a. Stainless Steel: 300 grade, 050-inch thick.
5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
6. Manufacturers:
  - a. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
  - b. Hager Companies.
  - c. Trimco (TC).

#### 2.13 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
  1. Manufacturers:
    - a. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    - b. Hager Companies.
    - c. Trimco (TC).

#### 2.14 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
  - 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
  - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
  - 1. Hager Companies.
  - 2. National Guard Products (NG).
  - 3. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).

#### 2.15 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

#### 2.16 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

### 3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

### 3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
  - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
  - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
  - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
  - 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

#### 3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Section "Closeout Procedures" for project punch and reporting requirements including compliance with approved submittals and verification door hardware is properly installed, operating and adjusted.

#### 3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

#### 3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

#### 3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

#### 3.8 DOOR HARDWARE SETS (\*AD 02)

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
  - 1. Quantities listed are for each pair of doors, or for each single door.
  - 2. The supplier is responsible for handling and sizing all products.

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3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

B. Manufacturer's Abbreviations:

1. MK – McKinney
2. MR – Markar
3. RO – Rockwood
4. SA – SARGENT
5. RF – Rixson
6. NO – Norton
7. PE – Pemko
8. OT – Other
9. SU – Securitron

**Hardware Sets**

**Set: 1.0**

2 Elect Continuous Hinge	ETAP EL FM100	628	MR
1 Exit Device	ED5800 K157ET M92 MELR	630	RU
1 Exit Device	ED5800 EO M92 MELR	630	RU
1 Cylinder	AS REQUIRED	630	RU
2 Door Pull	RM3310-12 Mtg-Type 12HD	US32D	RO
2 Surface Closer	DC6210 A11 x BRKTS REQ'D	689	RU
1 Threshold	171A		PE
1 Weatherstrip	BY DOOR MANUFACTURER		OT
2 ElectroLynx Harness	QC-C1500P (@ JAMB)		MK
2 ElectroLynx Harness	QC-C000P x LAR		MK
1 Wiring Diagram	WD-SYSPK		RU
1 Card Reader	FURNISHED IN OTHER SECTION		OT
2 DPDT Door Position Switch	BEA SERIES AS REQUIRED		OT
1 Power Supply	AQD AS REQUIRED		SU

OPERATION: DOORS NORMALLY CLOSED AND LOCKED. PRESENTATION OF AUTHORIZED CREDENTIAL SIGNALS LATCH RETRACTION AND ALLOWS INGRESS. EGRESS BY EXIT DEVICE PUSH BAR AT ALL TIMES.

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**Set: 2.0**

1 Continuous Hinge	ETAP EL FM300	630	MR
1 Exit Device	ED5200 K157ET M92 MELR	630	RU
1 Cylinder	AS REQUIRED	630	RU
1 Door Pull	RM3310-12 Mtg-Type 12HD	US32D	RO
1 Surface Closer	DC6210 A4	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Threshold	2005AT		PE
1 Set Weatherstrip	303AS		PE
1 Rain Guard	346C		PE
1 Door Bottom Sweep	3452CNB		PE
1 ElectroLynx Harness	QC-C1500P (@ JAMB)		MK
1 ElectroLynx Harness	QC-C000P x LAR		MK
1 Wiring Diagram	WD-SYSPK		RU
1 Card Reader	FURNISHED IN OTHER SECTION		OT
1 DPDT Door Position Switch	BEA SERIES AS REQUIRED		OT
1 Power Supply	AQD AS REQUIRED		SU

OPERATION: DOORS NORMALLY CLOSED AND LOCKED. PRESENTATION OF AUTHORIZED CREDENTIAL SIGNALS LATCH RETRACTION AND ALLOWS INGRESS. EGRESS BY EXIT DEVICE PUSH BAR AT ALL TIMES.

**Set: 3.0**

1 Continuous Hinge	FM300	630	MR
1 Exit Device	ED5200A L957ET	630	RU
1 Cylinder	AS REQUIRED	630	RU
1 Surface Closer	DC6210 A4	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Threshold	2005AT		PE
1 Set Weatherstrip	303AS		PE
1 Rain Guard	346C		PE
1 Door Bottom Sweep	3452CNB		PE
1 DPDT Door Position Switch	BEA SERIES AS REQUIRED		OT



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**Set: 4.0**

1	Continuous Hinge	ETAP EL FM300	630	MR
1	Electrified Lock	ML20906-SEC LWA M92	630	RU
1	Surface Closer	DC6210 A4	689	RU
1	Kick Plate	K1050 8" high CSK	US32D	RO
1	Threshold	2005AT		PE
1	Set Weatherstrip	303AS		PE
1	Rain Guard	346C		PE
1	Door Bottom Sweep	3452CNB		PE
1	ElectroLynx Harness	QC-C1500P (@ JAMB)		MK
1	ElectroLynx Harness	QC-C000P x LAR		MK
1	Wiring Diagram	WD-SYSPK		RU
1	Card Reader	FURNISHED IN OTHER SECTION		OT
1	DPDT Door Position Switch	BEA SERIES AS REQUIRED		OT
1	Power Supply	AQD AS REQUIRED		SU

OPERATION: DOOR NORMALLY CLOSED AND LOCKED. PRESENTATION OF AUTHORIZED CREDENTIAL UNLOCKS OUTSIDE LEVER AND ALLOWS INGRESS. EGRESS BY INSIDE LEVER AT ALL TIMES.

**Set: 5.0**

2	Continuous Hinge	FM300	630	MR
1	Exit Device	ED5800 L957ET	630	RU
1	Exit Device	ED5800 EO	630	RU
1	Cylinder	AS REQUIRED	630	RU
2	Surface Closer	DC6210 A4	689	RU
2	Kick Plate	K1050 8" high CSK	US32D	RO
1	Threshold	2005AT		PE
1	Set Weatherstrip	303AS		PE
1	Rain Guard	346C		PE
2	Door Bottom Sweep	3452CNB		PE
1	Set Astragal	18041CNB		PE
2	DPDT Door Position Switch	BEA SERIES AS REQUIRED		OT

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**Set: 6.0**

2 Elect Continuous Hinge	ETAP EL FM100	628	MR
1 Exit Device	ED5800 K157ET M92 MELR	630	RU
1 Exit Device	ED5800 EO M92 MELR	630	RU
1 Cylinder	AS REQUIRED	630	RU
2 Door Pull	RM3310-12 Mtg-Type 12HD	US32D	RO
2 Surface Closer	DC6210 A11 x BRKTS REQ'D	689	RU
1 Set Door Seals	BY DOOR MANUFACTURER		OT
2 ElectroLynx Harness	QC-C1500P (@ JAMB)		MK
2 ElectroLynx Harness	QC-C000P x LAR		MK
1 Wiring Diagram	WD-SYSPK		RU
1 Card Reader	FURNISHED IN OTHER SECTION		OT
2 DPDT Door Position Switch	BEA SERIES AS REQUIRED		OT
1 Power Supply	AQD AS REQUIRED		SU

OPERATION: DOORS NORMALLY CLOSED AND LOCKED. PRESENTATION OF AUTHORIZED CREDENTIAL SIGNALS LATCH RETRACTION AND ALLOWS INGRESS. EGRESS BY EXIT DEVICE PUSH BAR AT ALL TIMES.

**Set: 7.0**

Hinge	TA2714	US26D	MK
1 Exit Device	ED5470B L957ET M55	630	RU
1 Exit Device	ED5470B EO M55	630	RU
1 Cylinder	AS REQUIRED	630	RU
2 Surface Closer	DC6210 A4	689	RU
2 Kick Plate	K1050 8" high CSK	US32D	RO
1 Set Door Seals	S88BL		PE
1 Set Astragal	18041CNB		PE
2 DPDT Door Position Switch	BEA SERIES AS REQUIRED		OT

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**Set: 8.0**

Hinge	TA2714	US26D	MK
Electric Hinge	TA2714 x QC	US26D	MK
1 Electrified Lock	ML20906-SEC LWA M92	630	RU
1 Surface Closer	DC6200	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Door Stop	409/441CU	US26D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE
1 ElectroLynx Harness	QC-C1500P (@ JAMB)		MK
1 ElectroLynx Harness	QC-C000P x LAR		MK
1 Wiring Diagram	WD-SYSPK		RU
1 Card Reader	FURNISHED IN OTHER SECTION		OT
1 DPDT Door Position Switch	BEA SERIES AS REQUIRED		OT
1 Power Supply	AQD AS REQUIRED		SU

OPERATION: DOOR NORMALLY CLOSED AND LOCKED. PRESENTATION OF AUTHORIZED CREDENTIAL UNLOCKS OUTSIDE LEVER AND ALLOWS INGRESS. EGRESS BY INSIDE LEVER AT ALL TIMES.

**Set: 9.0**

Hinge	TA2714	US26D	MK
Electric Hinge	TA2714 x QC	US26D	MK
1 Electrified Lock	ML20906-SEC LWA M92	630	RU
1 Surface Closer	DC6210 A3	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Door Stop	409/441CU	US26D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE
1 ElectroLynx Harness	QC-C1500P (@ JAMB)		MK
1 ElectroLynx Harness	QC-C000P x LAR		MK
1 Wiring Diagram	WD-SYSPK		RU
1 DPDT Door Position Switch	BEA SERIES AS REQUIRED		OT
1 Card Reader/Keypad	FURNISHED IN OTHER SECTION		OT
1 Power Supply	AQD AS REQUIRED		SU

OPERATION: DOOR TO BE CLOSED AND LOCKED AT ALL TIMES. AUTHORIZED CREDENTIAL UNLOCKS OUTSIDE LEVER ALLOWING INGRESS. EGRESS AT ALL TIMES BY INSIDE LEVER.

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**Set: 10.0**

Hinge	TA2714	US26D	MK
Electric Hinge	TA2714 x QC	US26D	MK
1 Electrified Lock	ML20906-SEC LWA M92	630	RU
1 Surface Closer	DC6210 A4	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE
1 ElectroLynx Harness	QC-C1500P (@ JAMB)		MK
1 ElectroLynx Harness	QC-C000P x LAR		MK
1 Wiring Diagram	WD-SYSPK		RU
1 Card Reader	FURNISHED IN OTHER SECTION		OT
1 DPDT Door Position Switch	BEA SERIES AS REQUIRED		OT
1 Power Supply	AQD AS REQUIRED		SU

OPERATION: DOOR NORMALLY CLOSED AND LOCKED. PRESENTATION OF AUTHORIZED CREDENTIAL UNLOCKS OUTSIDE LEVER AND ALLOWS INGRESS. EGRESS BY INSIDE LEVER AT ALL TIMES.

**Set: 11.0**

Hinge	TA2714	US26D	MK
1 Passage Latch	ML2010 LWA	630	RU
1 Door Stop	409/441CU	US26D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 12.0**

Hinge	TA2714	US26D	MK
1 Passage Latch	ML2010 LWA	630	RU
1 Overhead Stop	10 SERIES	630	RF
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 13.0**

Hinge	TA2714	US26D	MK
1 Passage Latch	ML2010 LWA	630	RU
1 Surface Closer	DC6210 A4	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

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**Set: 14.0**

Hinge	TA2714	US26D	MK
1 Passage Latch	ML2010 LWA	630	RU
1 Surface Closer	DC6210 A4	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Set Door Seals	S773BL		PE
1 Door Bottom	411ARL		PE

**Set: 15.0**

Hinge	TA2714	US26D	MK
1 Privacy Lock	ML2060 LWA M34	630	RU
1 Door Stop	409/441CU	US26D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 16.0**

Hinge	TA2314	US32D	MK
1 Privacy Lock	ML2060 LWA M34 V21	630	RU
1 Door Stop	409/441CU	US26D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 17.0**

Hinge	TA2714	US26D	MK
1 Privacy Lock	ML2060 LWA M34 V21	630	RU
1 Surface Closer	DC6200	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Door Stop	409/441CU	US26D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 18.0**

Hinge	TA2714	US26D	MK
1 Privacy Lock	ML2060 LWA M34 V21	630	RU
1 Surface Closer	DC6210 A3	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Door Stop	409/441CU	US26D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 19.0**

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Hinge	TA2714	US26D	MK
1 Privacy Lock	ML2060 LWA M34 V21	630	RU
1 Surface Closer	DC6210 A4	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 20.0**

Hinge	TA2714	US26D	MK
1 Hotel Lock	ML2029 LWA M34 V21	630	RU
1 Surface Closer	DC6210 A4	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 21.0**

Hinge	TA2714	US26D	MK
1 Office Lock	ML2051 LWA	630	RU
1 Door Stop	409/441CU	US26D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 22.0**

Hinge	TA2714	US26D	MK
1 Office Lock	ML2051 LWA	630	RU
1 Overhead Stop	10 SERIES	630	RF
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 23.0**

Hinge	TA2714	US26D	MK
1 Classroom Lock	ML2055 LWA	630	RU
1 Door Stop	409/441CU	US26D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 24.0**

Hinge	TA2714	US26D	MK
1 Classroom Lock	ML2055 LWA	630	RU
1 Overhead Stop	10 SERIES	630	RF
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

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**Set: 25.0**

Hinge	TA2714	US26D	MK
1 Classroom Lock	ML2055 LWA	630	RU
1 Surface Closer	DC6210 A3	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Door Stop	409/441CU	US26D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 26.0**

Hinge	TA2714	US26D	MK
1 Classroom Lock	ML2055 LWA	630	RU
1 Surface Closer	DC6210 A4	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 27.0**

Hinge	TA2714	US26D	MK
1 Classroom Lock	ML2055 LWA	630	RU
1 Surface Closer	DC6210 A4	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Set Door Seals	S773BL		PE
1 Door Bottom	411ARL		PE

**Set: 28.0**

Hinge	TA2714	US26D	MK
1 Storeroom Lock	ML2057 LWA	630	RU
1 Door Stop	409/441CU	US26D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 29.0**

Hinge	TA2714	US26D	MK
1 Storeroom Lock	ML2057 LWA	630	RU
1 Overhead Stop	10 SERIES	630	RF
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

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**et: 30.0**

Hinge	TA2714	US26D	MK
1 Storeroom Lock	ML2057 LWA	630	RU
1 Surface Closer	DC6210 A4	689	RU
1 Kick Plate	K1050 8" high CSK	US32D	RO
1 Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

**Set: 31.0**

Hinge, Spring	1502	US26D	MK
Hinge	TA2714	US26D	MK
1 Storeroom Lock	ML2057 LWA M30	630	RU
1 Flush Pull	94L TORX	US32D	RO
1 Overhead Stop	10 SERIES	630	RF
1 Set Door Seals	S88BL		PE

**Set: 32.0**

Hinge	TA2714	US26D	MK
1 Set Combo Flush Bolts	2845/2945	US26D	RO
1 Dust Proof Strike	570	US26D	RO
1 Storeroom Lock	ML2057 LWA	630	RU
2 Surface Closer	DC6210 A4	689	RU
2 Kick Plate	K1050 8" high CSK	US32D	RO
1 Set Door Seals	S88BL		PE
1 Set Astragal	18041CNB		PE
2 DPDT Door Position Switch	BEA SERIES AS REQUIRED		OT

**Set: 33.0**

1 Hardware	SEE NOTE BELOW		OT
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NOTE: OVERHEAD DOOR - ALL HARDWARE TO BE SUPPLIED BY DOOR MANUFACTURER.



**Set: 34.0 (\*AD 02)**

Hinge	FM100	628	MR
1 Classroom Lock	ML2055 LWA	630	RU
1 Cylinder	As Required	630	RU
1 Surface Closer	DC6210 A4	689	RU
1 Set Door Seals/Silencers	By Door Manufacturer		PE

END OF SECTION 087100

**SECTION 089100**  
**LOUVERS (\*AD 02)**

**PART 1 GENERAL**

**1.01 REFERENCE STANDARDS**

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- B. AMCA 500-L - Laboratory Methods of Testing Louvers for Rating 2023.
- C. AMCA 511 - Certified Ratings Program Product Rating Manual for Air Control Devices 2021, with Editorial Revision (2022).
- D. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- E. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.

**1.02 SUBMITTALS**

- A. Product Data: Provide data describing design characteristics, maximum recommended air velocity, design free area, materials and finishes.
- B. Shop Drawings: Indicate louver layout plan and elevations, opening and clearance dimensions, and tolerances; head, jamb and sill details; blade configuration, screens, blank-off areas required, and frames.
- C. Samples: Manufacturer's color charts indicating full range of available colors.
- D. Test Reports: Independent agency reports showing compliance with specified performance criteria.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

**1.03 WARRANTY**

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Provide five year manufacturer's warranty against distortion, metal degradation, and connection failures of louver components.
  - 1. Finish: Include twenty year coverage against degradation of exterior finish.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Louvers:
  - 1. Airline Louvers.
  - 2. AiroLite Company, LLC.
  - 3. American Warming and Ventilating.
  - 4. Construction Specialties, Inc.
  - 5. Greenheck Fan Corporation.
  - 6. Industrial Louvers, Inc.
  - 7. NCA, a brand of Metal Industries Inc.

8. Pottorff.
9. Reliable Products, Inc.
10. Ruskin.
11. United Enertech.
12. Substitutions: See Section 016000 - Product Requirements.

## 2.02 LOUVERS

- A. Louvers, **General: All louvers shall be factory** ~~Factory~~ fabricated and assembled, complete with frame, mullions, and accessories; AMCA Certified in accordance with AMCA 511; provide AMCA Certified seal/markings on all louvers. **(\*AD 02)**
  1. ~~Wind Load Resistance: Design to resist positive and negative wind load of 25 psf without damage or permanent deformation.~~
  2. ~~Intake Louvers: Design to allow maximum of 0.01 oz/sq ft water penetration at calculated intake design velocity based on design air flow and actual free area, when tested in accordance with AMCA 500-L.~~
  3. ~~Drainable Blades: Continuous rain stop at front or rear of blade aligned with vertical gutter recessed into both jambs of frame.~~
  4. ~~Screens: Provide insect screens at intake louvers and at non-ducted louvers, and provide bird screens at exhaust louvers.~~ **(\*AD 02)**
- B. Storm-Resistant/Wind-Driven Rain Resistant Louvers: Horizontal blade, extruded aluminum construction.
  1. Basis-of-Design Product: Construction Specialties; RS-5300.
  2. Free Area: 47 percent, minimum.
  3. Pressure Drop: 0.10 inches of water gauge maximum per square foot of free area at velocity of 500 fpm, when tested in accordance with AMCA 500-L, test unit size 48 inch by 48 inch.
  4. Wind-Driven Rain Performance: AMCA certified Class A; 99 percent effectiveness when tested at a rainfall rate of 3.0 inches per hour, wind speed of 29 mph, and nominal core ventilation rate of 300 ft/min (1.5 m/s).
  5. Blades: Inverted V-shaped, drainable. Provide with integral gutters to direct water to the exterior.
  6. Frame: 5 inches deep, channel profile; corner joints mitered, with continuous recessed caulking channel each side.
  7. Aluminum Thickness: Frame 0.080 inch minimum; blades 0.060 inch minimum.
  8. Aluminum Finish: Superior performing organic coatings; finish welded units after fabrication.

## 2.03 MATERIALS

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

## 2.04 FINISHES

- A. Superior Performing Organic Coatings System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of aluminum extrusion and panels surfaces having minimum total dry film thickness (DFT) of 1.2 mils, 0.0012 inch.
- B. Color: To be selected by Architect from manufacturer's full range .

## **2.05 ACCESSORIES**

- A. Blank-Off Panels: Aluminum face and back sheets, polyisocyanurate foam core, 1-1/2 inch thick, painted black on exterior side; provide where duct connected to louver is smaller than louver frame, sealing off louver area outside duct.
- B. Screens: Frame of same material as louver, with reinforced corners; removable, screw attached; installed on inside face of louver frame.
- C. Bird Screen: Interwoven wire mesh of steel, 14 gauge, 0.0641 inch diameter wire, 1/2 inch open weave, diagonal design.
- D. Insect Screen: 18 x 16 size aluminum mesh.
- E. Fasteners: Concealed type; stainless steel. If exposed fasteners are unavoidable, provide color-matched heads to match framing color.
- F. Flashings: Of same material as louver frame, formed to required shape, single length in one piece per location.
- G. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

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

### **3.02 INSTALLATION**

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

### **3.03 CLEANING**

- A. Strip protective finish coverings.
- B. Clean surfaces and components.

**END OF SECTION 089100**

**SECTION 102123**  
**CUBICLE CURTAINS AND TRACK (\*AD 02)**

**PART 1 GENERAL**

**1.01 REFERENCE STANDARDS**

- A. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films 2023, with Errata.

**1.02 SUBMITTALS**

- A. Product Data: Provide data for curtain fabric characteristics and for curtain track.
  - 1. Fire Test Data: Provide data indicating fabric is identical to that which has passed NFPA 701 and is inherently and permanently flame resistant.
- B. Shop Drawings: Indicate a reflected ceiling plan view of curtain track, hangers and suspension points, attachment details, schedule of curtain sizes. Include above ceiling blocking.
- C. Selection Samples: Manufacturer's pattern and color charts for curtain and mesh fabrics.
- D. Verification Samples: Submit 12 by 12 inch sample patches of curtain and mesh cloth with representative top, bottom, and edge hem stitch detail, heading with reinforcement and carrier attachment to curtain header.
- E. Maintenance Data: Include recommended cleaning methods and materials and stain removal methods.

**PART 2 PRODUCTS**

**2.01 TRACKS AND TRACK COMPONENTS**

- A. Tracks: Extruded aluminum sections; minimum 0.050-inch aluminum thickness; fabricated in one piece per track run, to greatest extent possible.
  - 1. Profile: Channel, nominal 1-1/4 inches wide by 3/4 inch high.
  - 2. Mounting: Surface.
  - 3. Structural Performance: Capable of supporting vertical test load of 50 lbs without visible deflection of track or damage to supports, safely supporting moving loads, and sufficiently rigid to resist visible deflection and without permanent set.
  - 4. Track End Stop: To fit track section.
  - 5. Track Bends: Minimum 12 inch radius; fabricated without deformation of track section or impeding movement of carriers.
  - 6. Finish on Exposed Surfaces: Clear anodized.
  - 7. Products:
    - a. Construction Specialties; Traditional 6062 Track + 1062N carrier with ball chain/hook.
    - b. Inpro; Clickeze CE5000 track + CE5038 carrier with ball chain/hook.
    - c. Imperial Fastener Co.; IFC-98 track + IFC-100 carrier with ball chain/hook.
    - d. Salsbury Industries; 19100 series track + 19103 carrier with ball chain/hook.
- B. Curtain Carriers: Nylon rollers and 6 inch long beaded chain with aluminum hooks, size and type compatible with track; designed to eliminate bind when curtain is pulled; fitted to curtain to prevent accidental curtain removal.
- C. Installation Accessories: Types required for specified mounting method and substrate conditions.

1. Provide stainless steel fasteners for exposed locations, and hot-dip galvanized fasteners for concealed locations.

## **2.02 CURTAINS**

### **A. Cubicle Curtains:**

1. Inherently flame resistant or flameproofed; capable of passing NFPA 701 test.
  - a. Fabric shall include identification markings from testing agency.
2. Material: Close weave polyester; anti-bacterial, stain resistant, self deodorizing, sanitized, and preshrunk.
3. Open Mesh Cloth: Open weave to permit air circulation; flameproof material, to be selected by Architect from manufacturer's full range.
4. Attachment of Curtain Fabric to Open Mesh Cloth: Manufacturer's standard sewn seam.
5. Products:
  - a. INVISTA; Avora FR.
  - b. Trevira; Trevira CS.
6. Color/Pattern: To be selected by Architect from manufacturer's full range.

### **B. Curtain Fabrication:**

1. Width of curtain to be 10 percent wider than track length.
2. Length of curtain to end 15 inches above finished floor.
3. Pattern match fabric with vertical seams.
4. Include open mesh cloth at top 20 inches of curtain for room air circulation, attached to curtain as specified above.
5. Curtain Heading: Web reinforced band of open mesh cloth with metal grommet holes for carriers spaced 6 inches on center.
6. Seams and Hems: Manufacturer's standard fabrication method for securely sewn and finished seams and hems.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that surfaces and supports above ceiling are ready to receive work of this Section.
- B. Verify that field measurements are as indicated.

### **3.02 INSTALLATION**

- A. Install curtain track to be secure, rigid, and true to ceiling line, per manufacturer's installation instructions.
- B. Secure track to ceiling system.
  1. Secure with mechanical fasteners to ceiling grids, not to exceed manufacturer's recommended spacing.
- C. Install end caps and stop devices, and provide splices and connector accessories as required for layout indicated.
- D. Install curtains on carriers ensuring smooth operation.

## **END OF SECTION 102123**

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**SECTION 105626**  
**MOBILE STORAGE SHELVING (\*AD 02)**

**PART 1 GENERAL**

**1.01 REFERENCE STANDARDS**

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. ISO 9001 - Quality Management Systems — Requirements 2015.

**1.02 SUBMITTALS**

- A. Product Data: Submit manufacturer's data sheets on each product to be used, including:
  - 1. System components.
  - 2. Accessories.
  - 3. Substrate preparation instructions and recommendations.
  - 4. Storage and handling requirements and recommendations.
- B. Shop Drawings: Indicate location, type, and layout of mobile storage shelving system, including lengths, heights, and aisle layout, and relationship to adjacent construction.
  - 1. Indicate location and configuration of rails.
  - 2. Indicate method of installation and configuration for shelving mounted on carriages.
  - 3. Provide location and details of anchorage devices to be embedded in or fastened to the structure.
- C. Selection Samples: For each finish product specified, provide color chips representing manufacturer's full range of available colors and finishes.
- D. Manufacturer's Qualification Statement.
- E. Installer's Qualification Statement.
- F. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

**1.03 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, ISO 9001 certified for quality control standards for design, production, and installation of complete high density storage system assemblies.
- B. Installer Qualifications: Company specializing in performing the work of this section; certified or authorized by manufacturer for installation of specified products.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Inspect for dents, scratches, or other damage. Replace damaged components.
- B. Store in manufacturer's unopened packaging until ready for installation.
- C. Store under cover and elevated above grade, in an enclosed, weatherproof location.

**1.05 FIELD CONDITIONS**

- A. Field Measurements: Verify field measurements for locations of mobile storage shelving before preparation of shop drawings and before fabrication to ensure proper dimensions, clearances, and installation.

## 1.06 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty covering defects of manufacturing and workmanship and rust and corrosion.

## PART 2 PRODUCTS

### 2.01 MOBILE STORAGE SHELVING SYSTEMS - GENERAL

- A. System Description: High-density movable shelving system consisting of shelving units mounted on rail-guided wheeled carriages.
  - 1. Carriage Operation: Mechanically assisted.
  - 2. Carriage Capacity: 1000 pounds per lineal foot.
  - 3. Rail Mounting: Surface mounted directly on floor without grout, plywood, or shims.
  - 4. System Layout: Refer to Drawings, and to Shelving Size Schedule below. Size carriages and system to manufacturer's standards to accommodate shelving units required.
  - 5. Overall System Height: Nominal 84 inches.
- B. Accessibility Requirements: Comply with ADA Standards.
- C. Components:
  - 1. Carriages: Rectangular steel frames of type and size required for selected system.
    - a. Provide fixed end carriage at each wall and the remainder movable carriages at each system. Fixed end carriage shall be anchored to rails. Exposed back panel of fixed carriage shall match construction and finish of other exposed panels.
    - b. Carriage frames shall be steel and shall be welded or bolted. Galvanized components and riveted construction are unacceptable.
    - c. Finish: Powder coat paint; color to match shelving.
  - 2. Wheels: Cold rolled steel; dual flanged.
  - 3. Rails: Cold rolled steel; type and size to carry loads imposed by system.
  - 4. Anti-Tip Device: Provide manufacturer's standard rail device to prevent tipping of system.
  - 5. Shelving Units in Property Storage: Provide manufacturer's standard four-post steel shelving that integrally interlocks into carriage. Provide shelving with 2 levels (bottom shelf and 1 intermediate shelf) and accessories for hanging bag storage.
    - a. Shelving Size Schedule:
      - 1) Shelving at Fixed Carriage:
        - (a) 48 inch wide by 24 inch deep (single-sided) shelving.
      - 2) Shelving at Movable Carriages:
        - (a) 48 inch wide by 24 inch deep (two-sided) shelving.
  - 6. **Shelving Units in Records/Office: Provide manufacturer's standard four-post steel shelving that integrally interlocks into carriage. Provide 4 file drawers and 2 intermediate shelves with slots. Provide dividers every 6 inches. (\*AD 02)**
    - a. Shelving Size Schedule:
      - 1) Shelving at Fixed Carriage:
        - (a) 42 inch wide by 15 inch deep (single-sided) shelving.
        - (b) 36 inch wide by 15 inch deep (single-sided) shelving.
      - 2) Shelving at Movable Carriages:
        - (a) 42 inch wide by 15 inch deep (single-sided) shelving.



- (b) 36 inch wide by 15 inch deep (single-sided) shelving.
  - 7. Floor Panels: Underlayment grade plywood, 3/4 inch thick.
  - 8. Ramps: Steel; 4.76 degrees maximum slope (do not exceed 1:12 for accessibility compliance).
    - a. Do not exceed 1/8 inch vertical lip where ramps transition to adjacent finish floor.
  - 9. Floor Covering: Coordinate with flooring installer to provide vinyl tile. Coordinate to ensure flooring installation does not affect operation of system.
  - 10. Face Panels: High pressure laminate; full height and width of shelving.
    - a. Color: To be selected from shelving manufacturer's full range of available options
  - 11. **Shelves: Provide shelf units capable of supporting 40 pounds per lineal foot (18kg/305MM) with maximum deflection of L/140. Shelves shall exhibit no permanent deflection under fully loaded conditions. (\*AD 02)**
    - a. **Provide slotted shelves with dividers and backstops where indicated.**
  - 12. **File Drawers: Minimum 16-gauge cold rolled steel for the drawer body 16-gauge cold rolled steel for the drawer front and reinforcement channels, as required. (\*AD 02)**
    - a. **Drawer front shall include (1) nickel-plated label holder that allows insertion of a 1-inch-high x 2.75-inch-wide note card. Label holder to capture the card on three sides with top access. Label holder to be centered widthwise and riveted to the drawer front.**
    - b. **Drawer front shall include (2) nickel-plated handles of 0.5-inch nominal height and 2 inch minimum width. (1) handle shall be located to the left of the label holder and (1) handle shall be located to the right of the label holder widthwise. Handles shall be riveted to the drawer front.**
    - c. **Drawers shall have the ability to support a uniformly distributed load of 100 pounds without impeding the smooth operation of the drawer.**
    - d. **Drawer slides shall provide full-extension and soft-close functionality and consist of ball bearing drawer slides with built-in detents.**
    - e. **Color: To be selected from shelving manufacturer's full range of available options**
- D. Accessories:
- 1. Anchors and Leveling Screws: Types and sizes recommended by manufacturer for specified rail mounting and floor system.
  - 2. Bumpers: Manufacturer's standard rubber stops.
  - 3. Label Holders: Manufacturer's standard type, attached to face panel at end of each shelving unit.
  - 4. **Provide dividers and backstops, backs and back holders, file rails, and rod or rail for hanging bag storage. (\*AD 02)**

## 2.02 MECHANICALLY ASSISTED MOBILE STORAGE SHELVING SYSTEMS (\*AD 01)

- A. Basis of Design: Spacesaver; Mechanical Assist High Density Mobile Storage System.
- B. Other Acceptable Manufacturers:
  - 1. Borroughs Corporation; Aisle-Saver; Synergy Series.
  - 2. Montel; Mobilex Mechanical Assist Storage.
  - 3. **Space File International, Inc.; SDS Mechanical Assist. (\*AD 01)**
  - 4. Substitutions: See Section 016000 - Product Requirements.
- C. Drive System: Provide uniform movement of the carriage without drifting or jerking.

1. Chain and sprocket system with full length torque resistant steel shaft.
  2. Provide two wheels per rail for each carriage, direct-driven on one side.
- D. Control: Three-spoke operating handle with manual locking latch.
1. Minimum Gear Ratio: 1 lbf to move a load of 6000 lbs.
- E. Safety System: Mechanical safety brake at toe level the full length of the carriage. Light pressure of 1.5 lbf on aluminum bar activates safety mechanism to stop carriage movement.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated on shop drawings.
- B. Verify that substrate is in proper condition to install rails and flooring system per manufacturer's requirements.
1. Do not begin installation until concrete floor slabs are fully cured and prepared, finishes in the space are complete, and the space is conditioned at occupancy levels.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

#### **3.02 INSTALLATION**

- A. General: Install system components and accessories in accordance with manufacturer's printed instructions.
- B. Position system components level and plumb within manufacturer's specified tolerances.
- C. Anchor rails directly to concrete subfloor.
- D. Extend rails under stationary shelving units.
- E. Position carriages ensuring wheels align properly on rails. Fasten multiple carriages together forming a single movable base.
- F. Install shelving with shelf surfaces level and vertical supports plumb; fasten to carriage supports with vibration-proof fasteners.

#### **3.03 ADJUSTING**

- A. Adjust mobile storage shelving components and accessories to provide for smooth operation of system.

#### **3.04 CLEANING**

- A. Clean shelving and surrounding area after installation.

#### **3.05 CLOSEOUT ACTIVITIES**

- A. Demonstration: Demonstrate proper operation of system to Owner, and correct deficiencies or make adjustments as directed.
- B. Training: Train Owner's personnel on operation, adjustment, and maintenance of system.
1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
  2. Location: At project site.

#### **3.06 PROTECTION**

- A. Protect installed system from subsequent construction operations.

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B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

**END OF SECTION 105626**

SECTION 238124 – DUCTLESS MINI-SPLIT AIR-CONDITIONING UNITS (\*AD 02)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes ductless mini-split air-conditioning units consisting of separate evaporator-fan and compressor-condenser components. Evaporator fan units are designed for ceiling or wall mounting. The compressor-condenser unit shall be remote and located on the roof where indicated on the Drawings.

1.3 DEFINITIONS

- A. Evaporator-Fan Unit: The part of the ductless mini-split air-conditioning unit that contains a coil for cooling and a fan to circulate air to conditioned space.
- B. Compressor-Condenser Unit: The part of the ductless mini-split air-conditioning unit that contains a refrigerant compressor and a coil for condensing refrigerant.

1.4 SUBMITTALS

- A. Product Data: Include rated capacities; shipping, installed, and operating weights; furnished specialties; and accessories for each type of product indicated. Include performance data in terms of capacities, outlet velocities, static pressures, sound power characteristics, motor requirements, and electrical characteristics.
- B. Shop Drawings: Diagram power, signal, and control wiring and differentiate between manufacturer-installed and field-installed wiring.
- C. Maintenance Data: For ductless mini-split air-conditioning units to include in maintenance manuals specified in Division 1.
- D. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Product Options: Drawings indicate size, profiles, and dimensional requirements of ductless mini-split units and are based on the specific system indicated. Other manufacturers' systems with equal performance characteristics may be considered.

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- B. Units shall be tested by a Nationally Recognized Testing Laboratory and shall bear the ETL label.
- C. All wiring shall be in accordance with the governing version of the National Electrical Code.
- D. Units shall be rated in accordance with ARI Standard 210 and bear the ARI Certification label.
- E. Units shall be precharged with refrigerant for 70 feet of refrigerant tubing.
- F. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- G. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1-2007.

1.6 COORDINATION

- A. Coordinate size, location, and connection details with roof curbs, equipment supports, and roof penetrations specified in Division 7 Section "Sheet Metal, Flashings and Roofing Accessories."

1.7 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: One year from date of Final Acceptance. If, during this period, any part should fail to function properly due to defects in workmanship or material, it shall be replaced or repaired at the discretion of the manufacturer. Warranty does not include labor.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Liebert Corporation
  - 2. Mitsubishi Electronics America, Inc.; HVAC Division.
  - 3. Sanyo HVAC.
  - 4. LG
  - 5. Daikin Mcquay.

2.2 WALL-MOUNTED, EVAPORATOR-FAN COMPONENTS

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- A. The evaporator section shall be designed to be wall-mounted by means of a factory supplied mounting plate. Air distribution shall be integral to the wall-mounted unit.
- B. Cabinet and Chassis: Cabinet shall be high strength molded plastic with front panel access for the filter. Cabinet color shall be white. Include drain pan with drain connection. Indoor unit shall be factory assembled, wired and tested. Contained within unit shall be all factory wiring and internal piping, control circuit board and fan motor. The unit in conjunction with the wall mounted controller shall have a self-diagnostic function, three minute time delay mechanism, an auto restart function, and a test run switch. Indoor unit and refrigerant piping shall be purged with dry nitrogen before shipment from the factory.
- C. Refrigerant Coil: Evaporator coil shall be nonferrous construction with pre-coated aluminum fins on copper tubing. All tube joints shall be brazed with silver alloy. Coils shall be pressure tested at the factory. A condensate pan and drain shall be provided under the coil.
- D. Fan and Motor: Evaporator fan shall be double inlet, forward curved, direct drive fan with a single motor. The fan shall be statically and dynamically balanced and run on a motor with permanently lubricated bearings. The indoor fan shall have two speeds: low and high.
- E. Vane: Unit shall include a motorized horizontal vane to automatically direct air flow in a horizontal and downward direction for uniform air distribution. The horizontal vane shall significantly decrease downward air resistance for lower noise levels and shall close when unit stops.
- F. Filters: Return air shall be filtered with a removable and washable filter.

2.3 FOUR-WAY CEILING-RECESSED CASSETTE WITH GRILLE

- 1. General
  - a. Unit shall be a four-way cassette style indoor unit that recesses into the ceiling with a ceiling grille. The indoor unit shall be factory assembled, wired and run tested. Contained within the unit shall be all factory wiring, piping, electronic modulating linear expansion device, control circuit board and fan motor. The unit shall have a self-diagnostic function, 3-minute time delay mechanism, an auto restart function, an emergency operation function and a test run switch. Indoor unit and refrigerant pipes shall be charged with dehydrated air before shipment from the factory.
- 2. Unit Cabinet:
  - a. The cabinet shall be a compact 22-7/16" wide x 22-7/16" deep so it will fit within a standard 24" square suspended ceiling grid.
  - b. The cabinet panel shall have provisions for a field installed filtered outside air intake.
  - c. Four-way grille shall be fixed to bottom of cabinet allowing two, three or four-way blow.
- 3. Fan:
  - a. The indoor fan shall be an assembly with a turbo fan direct driven by a single motor.

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- b. The indoor fan shall be statically and dynamically balanced to run on a motor with permanently lubricated bearings.
  - c. The indoor fan shall consist of three (3) speeds, Low, Mid, and High.
  - d. The indoor unit shall have an adjustable air outlet system offering 4-way airflow, 3-way airflow, or 2-way airflow.
  - e. The auto air swing vanes shall be capable of automatically swinging up and down for uniform air distribution.
4. Filter:
- a. Return air shall be filtered by means of a long-life washable filter.
5. Coil:
- a. The indoor coil shall be of nonferrous construction with smooth plate fins on copper tubing.
  - b. The tubing shall have inner grooves for high efficiency heat exchange.
  - c. All tube joints shall be brazed with phos-copper or silver alloy.
  - d. The coils shall be pressure tested at the factory.
  - e. A condensate pan and drain shall be provided under the coil.
  - f. The unit shall be provided with an integral condensate lift mechanism that will be able to raise drain water 19-3/4" inches above the condensate pan.
  - g. Both refrigerant lines to the indoor units shall be insulated in accordance with the installation manual.
6. Controls:
- a. This unit shall use controls provided by the manufacturer to perform functions necessary to operate the system.
  - b. Indoor unit shall compensate for the higher temperature sensed by the return air sensor compared to the temperature at level of the occupant when in HEAT mode. Disabling of compensation shall be possible for individual units to accommodate instances when compensation is not required.
  - c. Control board shall include contacts for control of external heat source. External heat may be energized as second stage with 1.8°F – 9.0°F adjustable deadband from set point.
  - d. Indoor unit shall include no less than four (4) digital inputs capable of being used for customizable control strategies.
  - e. Indoor unit shall include no less than three (3) digital outputs capable of being used for customizable control strategies.

#### 2.4 AIR-COOLED, COMPRESSOR-CONDENSER COMPONENTS

- A. General: Outdoor unit shall be the same capacity as the indoor unit and include a control board that interfaces with the indoor unit to perform all necessary operation functions. Outdoor unit shall be capable of operating at 0°F ambient temperature without additional low ambient controls. Outdoor unit shall be able to operate with a maximum height difference of 100 feet from indoor unit to outdoor unit and a maximum refrigerant tubing length of 165 feet between the indoor and outdoor unit without the need for line size changes, traps, or additional oil
- B. Casing: Casing shall be galvanized steel plate coated with an electrostatically applied thermally fused acrylic or polyester powder coating. The fan grille shall be ABS plastic.

- C. Compressor: The compressor shall be a DC rotary compressor with variable compressor speed inverter technology. The compressor shall be driven by inverter circuitry to control compressor speed. Compressor speed shall be varied to match space load. Outdoor unit shall include an accumulator and high pressure safety switch. The compressor shall be mounted to avoid the transmission of vibration.
- D. Refrigerant Coil: Condenser coil shall be copper tubing with aluminum fins. The coil shall be protected with an integral metal guard. Refrigerant flow from the condenser shall be controlled by means of linear expansion valve (LEV) metering orifice. The LEV shall be controlled by a microprocessor-controlled step motor.
- E. Fan: The fan motor bearings shall be permanently lubricated. The fan shall have horizontal discharge airflow. The fan shall be mounted in front of the coil. The fan shall include a raised guard to prevent contact with moving parts.

## 2.5 ACCESSORIES

- 1. Control: The control system shall be microprocessor-based and include one microprocessor on the outdoor unit and one on the indoor unit. Wall-mounted controller shall have a liquid crystal display indicating operating status and alarm condition and shall include a temperature sensor. A membrane keypad shall be included for program control and set point adjustment.
  - 2. The controller shall consist of On/Off button, increase/decrease set temperature buttons, a cool/dry/fan mode selector, timer menu button, timer on/off button, set time buttons, fan speed selector, vane position selector, a ventilation button, a test run button, and a check mode button.
  - 3. The controller shall display operating conditions such as set temperature, room temperature, pipe temperatures (i.e. liquid, discharge, indoor and outdoor), compressor operating conditions (including running current, frequency, input voltage, On/Off status and operating time), LEV opening pulses, sub-cooling and discharge super heat.
  - 4. Normal operation of the controller shall provide individual system control in which one controller and one indoor unit are installed in the same room.
  - 5. The control voltage from the controller to the indoor unit shall be 12 volts, DC. The control signal between the indoor and outdoor unit shall be pulse signal 24 volts DC. Up to two wired controllers shall be able to be used to control one unit.
  - 6. Control system shall control the continued operation of the air sweep louvers, as well as provide On/Off and mode switching. The controller shall have the capability to provide sequential starting with up to fifty seconds delay.
- B. Refrigerant Line Sets: Soft-annealed copper suction and liquid lines factory cleaned, dried, pressurized, and sealed; factory-insulated suction line with flared fittings at both ends. Pre-charge line sets in proper lengths for application. Final length shall be field verified. Refer to section "Refrigerant Piping" for additional requirements.
  - C. Factory-installed and –wired disconnect to be provided under this Section.

## PART 3 - EXECUTION



3.1 INSTALLATION

- A. Install units level and plumb, firmly anchored, in accordance with the manufacturer's written recommendations.
- B. Install evaporator-fan components using manufacturer's standard mounting devices securely fastened to building structure.
- C. Install roof-mounted compressor-condenser components on equipment supports specified in Division 7 Section "Sheet Metal, Flashings and Roofing Accessories." Anchor units to supports with removable, cadmium-plated fasteners.
- D. Install compressor-condenser components on Elastomeric pads. Refer to Division 23 Section "Vibration Control for HVAC."
- E. Connect pre-charged refrigerant tubing to component's quick-connect fittings. Install tubing to allow access to unit.

3.2 CONNECTIONS

- A. Piping installation requirements are specified in other Division 23 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Connect condensate drain piping. Unit drain shall be internally trapped.
- C. Install piping adjacent to unit to allow service and maintenance.
- D. Unless otherwise indicated, connect piping with unions and shutoff valves to allow units to be disconnected without draining piping. Refer to piping system Sections for specific valve and specialty arrangements.
- E. Ground equipment.
  - 1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.3 FIELD QUALITY CONTROL

- A. Installation Inspection: Engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including piping and electrical connections, and to prepare a written report of inspection.
- B. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
- C. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation. Remove malfunctioning units, replace with new components, and retest.

- D. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

#### 3.4 COMMISSIONING

- A. Engage a factory-authorized service representative to perform startup service.
- B. Verify that units are installed and connected according to the Contract Documents.
- C. Lubricate bearings, adjust belt tension, and change filters.
- D. Perform startup checks according to manufacturer's written instructions and do the following:
  - 1. Fill out manufacturer's checklists.
  - 2. Check for unobstructed airflow over coils.
  - 3. Check operation of condenser capacity-control device.
  - 4. Verify that vibration isolation devices and flexible connectors dampen vibration transmission to structure.

#### 3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain units.
  - 1. Train Owner's maintenance personnel on procedures and schedules for starting and stopping, troubleshooting, servicing, and maintaining units.
  - 2. Review data in maintenance manuals. Refer to Division 1 Section "Closeout Procedures."

END OF SECTION 238124

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SECTION 271100 - COMMUNICATIONS EQUIPMENT ROOM FITTINGS (\*AD 01) (\*AD 02)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Telecommunications mounting elements.
2. Backboards.
3. Telecommunications equipment racks and cabinets.
4. Telecommunications service entrance pathways.
5. Grounding.

- B. Related Sections:

1. Division 26 Section "Underground Ducts and Raceways for Electrical Systems" for conduits that serve communication cabling.
2. Division 26 Section "Raceways and Boxes for Electrical Systems" for conduits that serve communication cabling.
3. Division 28 Section "Conductors and Cables for Electronic Safety and Security" for voice and data cabling associated with system panels and devices.

1.3 DEFINITIONS

- A. BICSI: Building Industry Consulting Service International.
- B. LAN: Local area network.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for equipment racks and cabinets. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Shop Drawings:
1. For each data room, security electronics room, telephone room or similar communications equipment room. provide plans detailing the layout of the room utilizing the dimensions of the actual equipment to be supplied. Provide elevations, sections, details, and

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attachments to supplement the plans as required to ensure the installation is coordinated with the work of other trades.

2. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Equipment Racks and Cabinets: Include workspace requirements and access for cable connections.
4. Grounding: Indicate location of grounding bus bar and its mounting detail showing standoff insulators and wall mounting brackets.

#### 1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Telecommunications Pathways and Spaces: Comply with TIA/EIA-569-A. Requirements of this standard include but are not limited to minimum 1/8" per foot slope for drainage of underground communication ductbank conduits; coordinate with Division 26 conduit installation.
- C. Grounding: Comply with ANSI-J-STD-607-A.

#### 1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install equipment frames and cable trays until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and work above ceilings is complete.

#### 1.7 COORDINATION

- A. Coordinate layout and installation of communications equipment with Owner's telecommunications and LAN equipment and service suppliers. Coordinate service entrance arrangement with local exchange carrier.
  1. Meet jointly with telecommunications and LAN equipment suppliers, local exchange carrier representatives, and Owner to exchange information and agree on details of equipment arrangements and installation interfaces.
  2. Record agreements reached in meetings and distribute them to other participants.
  3. Adjust arrangements and locations of distribution frames, cross-connects, and patch panels in equipment rooms to accommodate and optimize arrangement and space requirements of telephone switch and LAN equipment.
  4. Adjust arrangements and locations of equipment with distribution frames, cross-connects, and patch panels of cabling systems of other communications, electronic safety and security, and related systems that share space in the equipment room.
- B. Coordinate location of power raceways and receptacles with locations of communications equipment requiring electrical power to operate.

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PART 2 - PRODUCTS

2.1 PATHWAYS

- A. General Requirements: Comply with TIA/EIA-569-A.
- B. Cable Support: NRTL labeled. Cable support brackets shall be designed to prevent degradation of cable performance and pinch points that could damage cable. Cable tie slots fasten cable ties to brackets.
  - 1. Comply with NFPA 70 and UL 2043 for fire-resistant and low-smoke-producing characteristics.
  - 2. Support brackets with cable tie slots for fastening cable ties to brackets.
  - 3. Lacing bars, spools, J-hooks, and D-rings.
  - 4. Straps and other devices.
- C. Cable Trays:
  - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Cable Management Solutions, Inc.
    - b. Cablofil Inc.
    - c. Cooper B-Line, Inc.
    - d. Cope - Tyco/Allied Tube & Conduit.
    - e. GS Metals Corp.
  - 2. Cable Tray Materials: Basket type metal, suitable for indoors and protected against corrosion by electroplated zinc galvanizing, complying with ASTM B 633, Type 1, not less than 0.000472 inch (0.012 mm) thick or hot-dip galvanizing, complying with ASTM A 123/A 123M, Grade 0.55, not less than 0.002165 inch (0.055 mm) thick.
- D. Conduit and Boxes: Comply with requirements in Division 26 Section "Raceway and Boxes for Electrical Systems." Flexible metal conduit shall not be used.
  - 1. Outlet boxes shall be no smaller than 2 inches (50 mm) wide, 3 inches (75 mm) high, and 2-1/2 inches (64 mm) deep.

2.2 BACKBOARDS

- A. Backboards: Plywood, fire-retardant treated, 3/4 by 48 by 96 inches (19 by 1220 by 2440 mm). Comply with requirements for plywood backing panels specified in Division 06 Section "Rough Carpentry."

**DUPLIN COUNTY DETENTION CENTER**  
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2.3 EQUIPMENT FRAMES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. ADC.
  2. Aim Electronics; a brand of Emerson Electric Co.
  3. AMP; a Tyco International Ltd. company.
  4. Cooper B-Line, Inc.
  5. Hubbell Premise Wiring.
  6. KRONE Incorporated.
  7. Leviton Voice & Data Division.
  8. Middle Atlantic Products, Inc.
  9. Nordex/CDT; a subsidiary of Cable Design Technologies.
  10. Ortronics, Inc.
  11. Panduit Corp.
  12. Siemon Co. (The).
- B. General Frame Requirements:
1. Distribution Frames: Freestanding ~~four post~~, [AD1] modular-steel units designed for telecommunications terminal support and coordinated with dimensions of units to be supported.
  2. Module Dimension: Width compatible with EIA 310 standard, 19-inch (480-mm) panel mounting.
  3. Finish: Manufacturer's standard, baked-polyester powder coat.
- C. Floor-Mounted Racks: Modular-type, aluminum construction.
1. Vertical and horizontal cable management channels, top and bottom cable troughs, grounding lug, and a power strip.
  2. Baked-polyester powder coat finish.
- D. Cable Management for Equipment Frames:
1. Metal, with integral wire retaining fingers.
  2. Baked-polyester powder coat finish.
  3. Vertical cable management panels shall have front and rear channels, with covers.
  4. Provide horizontal crossover cable manager at the top of each relay rack, with a minimum height of two rack units each.
- E. Patch Panel: Modular panels housing multiple-numbered jack units with IDC-type connectors at each jack for permanent termination of pair groups of installed cables.
1. Number of Jacks per Field: One for each four-pair UTP cable installed plus 20% spares and blank positions.

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**2.4 POWER STRIPS (\*AD 01)**

- A. Power Strips: Comply with UL 1363.
  - 1. Rack mounting.
  - 2. Six, 20-A, 120-V ac, NEMA WD 6, Configuration 5-20R receptacles.
  - 3. LED indicator lights for power and protection status.
  - 4. LED indicator lights for reverse polarity and open outlet ground.
  - 5. Circuit Breaker and Thermal Fusing: Unit continues to supply power if protection is lost.
  - 6. Cord connected with 15-foot (4.5-m) line cord.
  - 7. Rocker-type on-off switch, illuminated when in on position.
  - 8. Peak Single-Impulse Surge Current Rating: 33 kA per phase.
  - 9. Protection modes shall be line to neutral, line to ground, and neutral to ground. UL 1449 clamping voltage for all 3 modes shall be not more than 330 V.
  
- B. Provide two power strips per rack [AD1]

**2.5 GROUNDING**

- A. Comply with requirements in Division 26 Section "Grounding and Bonding for Electrical Systems." for grounding conductors and connectors.
  
- B. Telecommunications Main Grounding Busbar (TMGB and TMG):
  - 1. Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.
  - 2. Ground Bus Bar: Copper, minimum 1/4 inch thick as detailed on drawing E4.1.
  - 3. Stand-Off Insulators: Comply with UL 891 for use in switchboards, 600 V. Lexan or PVC, impulse tested at 5000 V.
  
- C. Comply with ANSI-J-STD-607-A.

**2.6 LABELING**

- A. Comply with TIA/EIA-606-A and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

**PART 3 - EXECUTION**

**3.1 ENTRANCE FACILITIES**

- A. Contact telecommunications service provider and arrange for installation of demarcation point, protected entrance terminals, and a housing when so directed by service provider.
  
- B. Install underground pathways complying with recommendations in TIA/EIA-569-A, "Entrance Facilities" Article.

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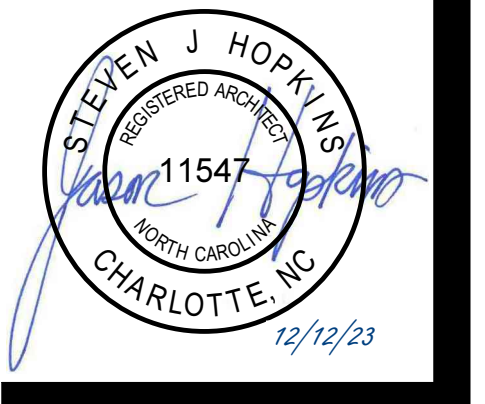
- 3.2 Install underground entrance pathway complying with Division 26 Section "Raceway and Boxes for Electrical Systems." **INSTALLATION**
- A. Comply with NECA 1.
  - B. Comply with BICSI TDMM for layout and installation of communications equipment rooms.
  - C. Bundle, lace, and train conductors and cables to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
- 3.3 **FIRESTOPPING**
- A. Comply with requirements in Division 07 Section "Penetration Firestopping. "Comply with TIA/EIA-569-A, Annex A, "Firestopping."
  - B. Comply with BICSI TDMM, "Firestopping Systems" Article.
- 3.4 **GROUNDING**
- A. Install grounding according to BICSI TDMM, "Grounding, Bonding, and Electrical Protection" Chapter.
  - B. Comply with ANSI-J-STD-607-A.
  - C. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall allowing at least 2-inch (50-mm) clearance behind the grounding bus bar. Connect grounding bus bar with a minimum No. 4 AWG grounding electrode conductor from grounding bus bar to suitable electrical building ground.
  - D. Bond metallic equipment to the grounding bus bar, using not smaller than No. 6 AWG equipment grounding conductor.
    - 1. Bond the shield of shielded cable to the grounding bus bar in communications rooms and spaces.
- 3.5 **IDENTIFICATION**
- A. Identify system components, wiring, and cabling complying with TIA/EIA-606-A. Comply with requirements in Division 26 Section "Identification for Electrical Systems. "Comply with requirements in Division 09 Section "Interior Painting" for painting backboards. For fire-resistant plywood, do not paint over manufacturer's label.
  - B. Labels shall be preprinted or computer-printed type.

END OF SECTION 271100









PROJECT NO.	DATE
821373	December 12, 2023
REVISIONS	
DATE	DESCRIPTION
01-11-24	AD 02

**FLOOR PLAN GENERAL NOTES**

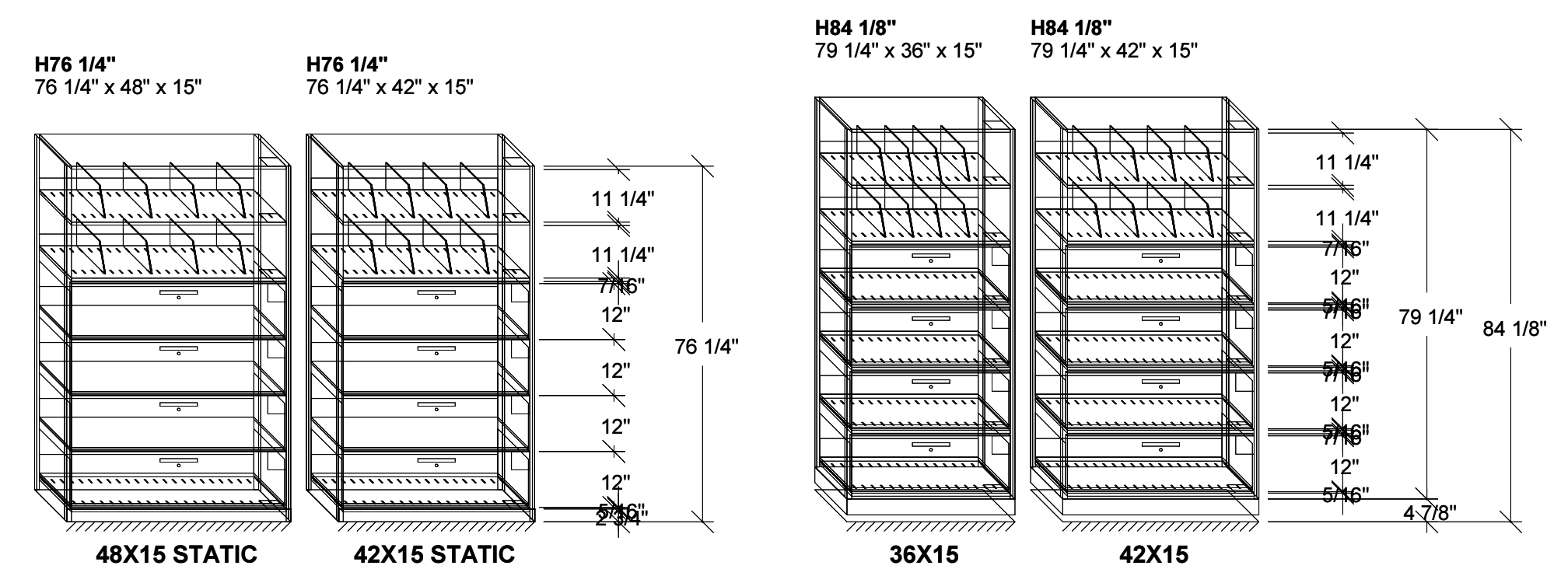
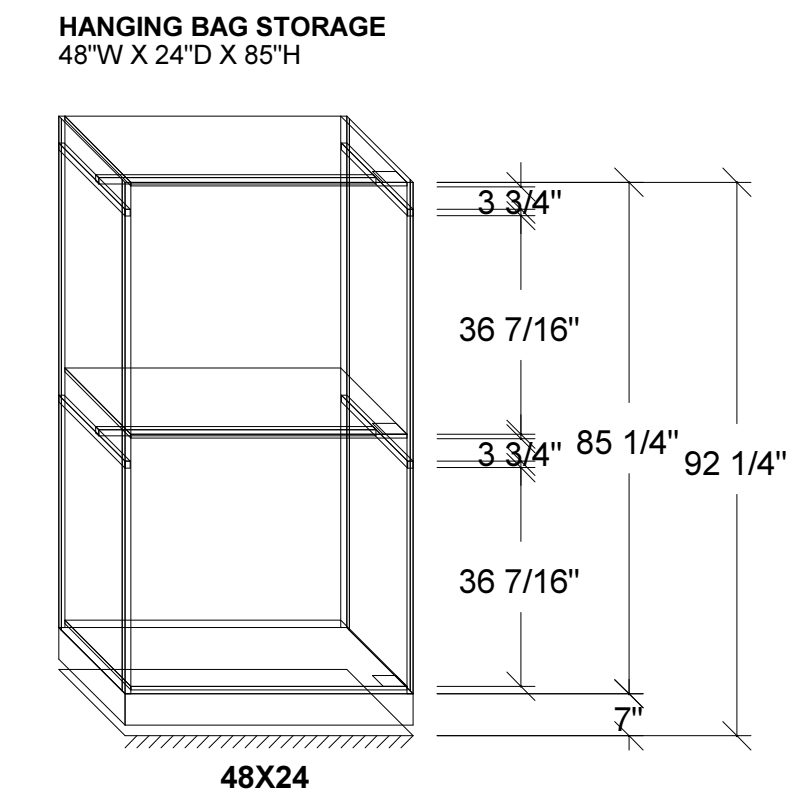
A. PROVIDE CONT SEALANT AT ALL DOOR FRAMES WHERE GYP BOARD AND FRAMES MEET BEFORE PAINTING OCCURS.

B. PROVIDE PAINTED METAL FINISH ON ALL CEILING AND WALL ACCESS PANELS FOR ACCESS TO MECHANICAL, PLUMBING, AND ELECTRICAL SPACES.

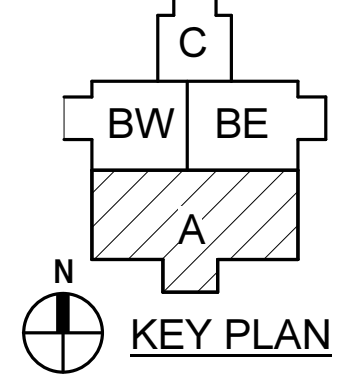
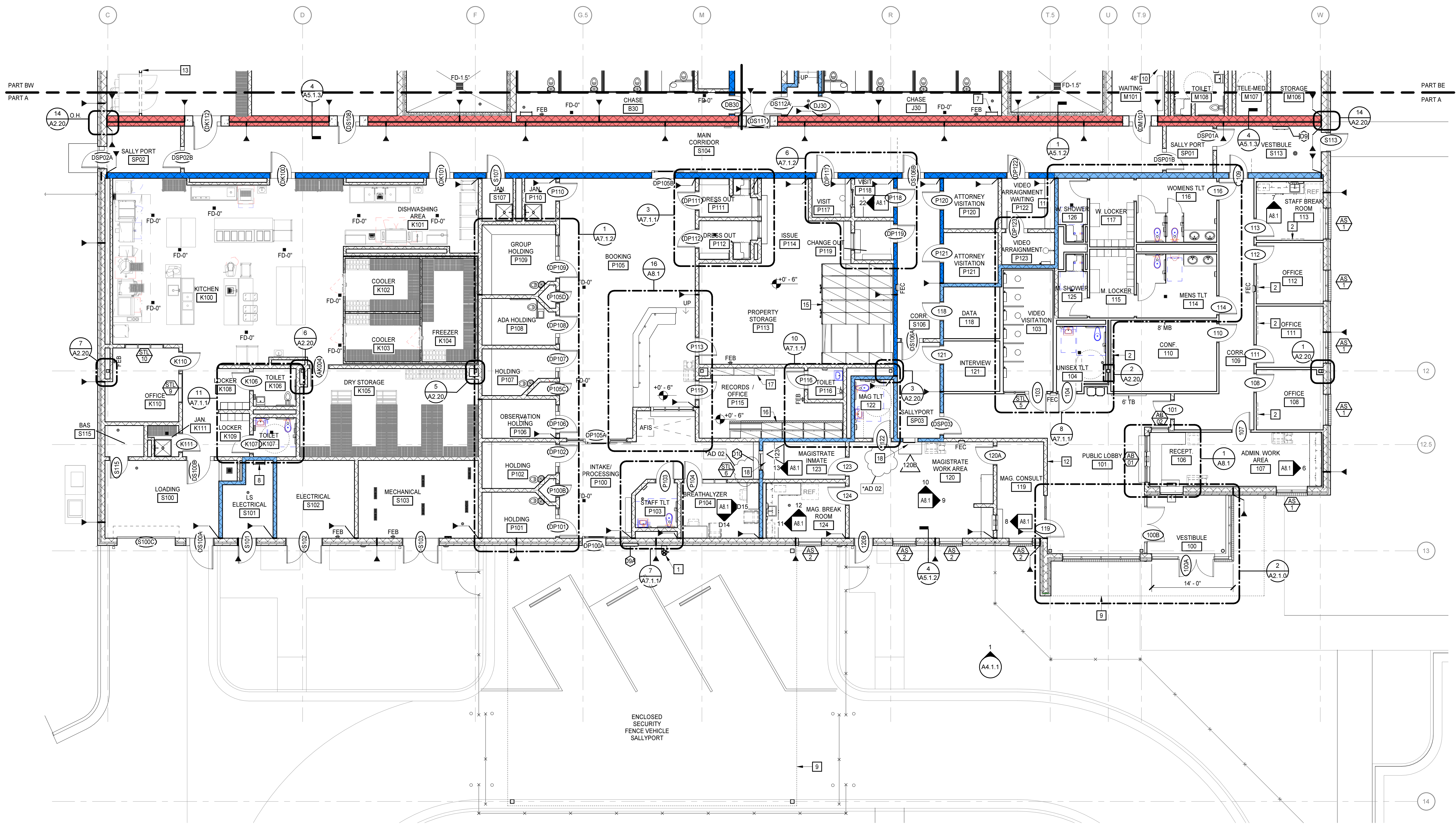
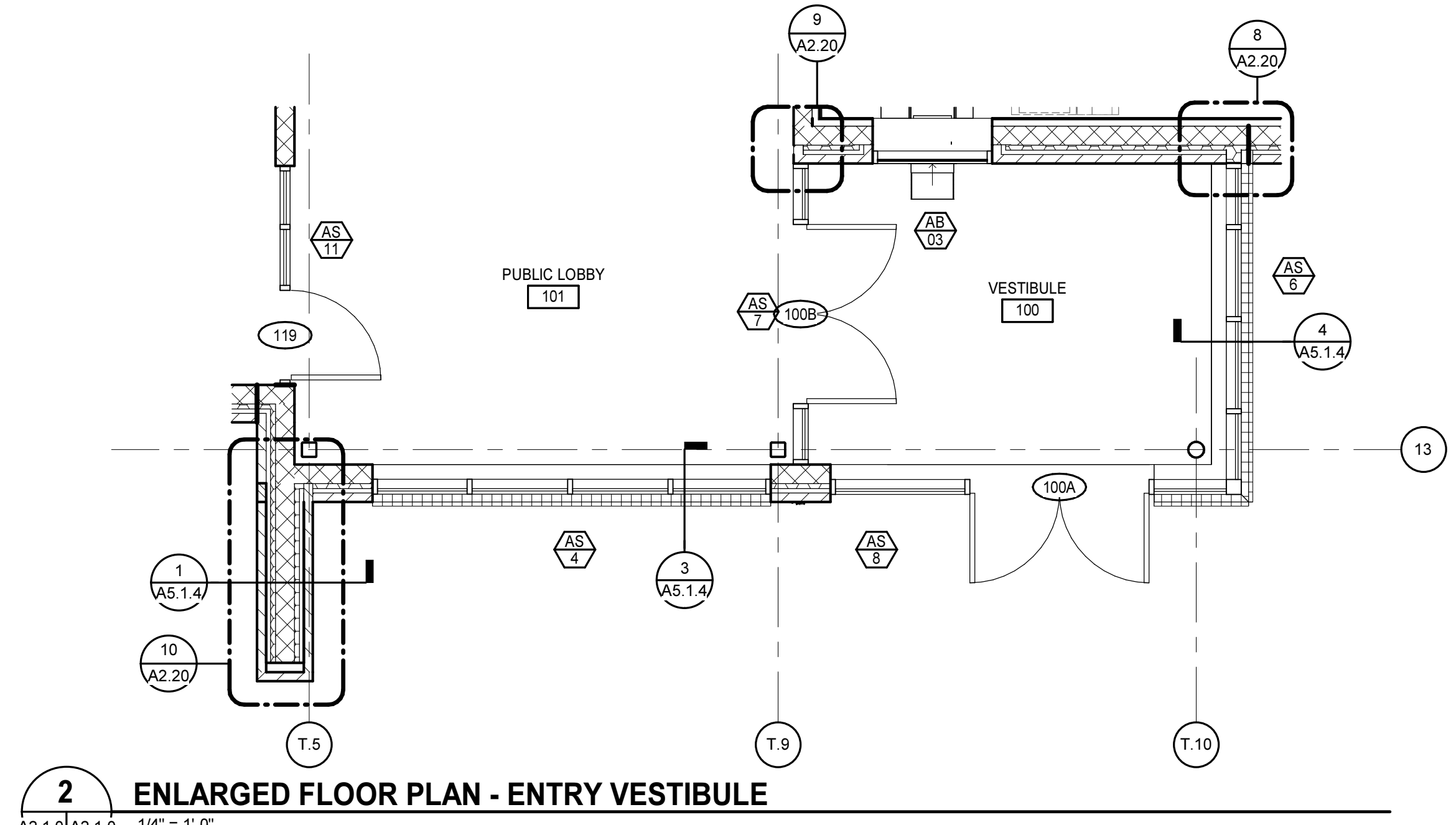
C. "MIN" FOR DIMENSIONS INDICATES MINIMUM ACCEPTABLE DIMENSION. IF "MIN" DIMENSIONS FALL SHORT OF WHAT IS INDICATED ON DRAWINGS, I. C. SHALL NOTIFY ARCHITECT IMMEDIATELY SO AS TO NOT DELAY THE PROJECT.

**FLOOR PLAN KEYNOTES**  
 REPRESENTED BY [Symbol]

- EMERGENCY EYEWASH - REFERENCE P-SERIES DRAWINGS
- TV BRACKET LOCATION - MOUNT AT 66" AFF TO CENTER OF SCREEN
- INMATE PHONE LOCATION (N.I.C.)
- KIOSK (N.I.C.)
- TV BRACKET LOCATION - MOUNT AT 152" AFF TO CENTER OF SCREEN
- 5'x5' CONCRETE PAD
- WALL MOUNTED STEEL LADDER
- ROOF LADDER
- LINE OF ROOF ABOVE
- LOW WALL - REFER TO DETAIL 3/AS.2.1
- CONCRETE BENCH - REFER TO DETAIL 4/AS.2.1
- TV BRACKET LOCATION - MOUNT AT 72" AFF TO CENTER OF SCREEN
- INSULATED WALL TO ROOF DECK ABOVE
- CURTAIN - CEILING MOUNTED
- MOBILE STORAGE SHELVING SYSTEM - REFER TO ELEVATION ON A2.1.0
- MOBILE BI-FILE STORAGE SHELVING SYSTEM - REFER TO ELEVATION ON A2.1.0
- STATIC FILE STORAGE SHELVING PROVIDED BY MOBILE STORAGE MANUFACTURER - REFER TO ELEVATION ON A2.1.0
- AUTOMATIC FIRE SHUTTER

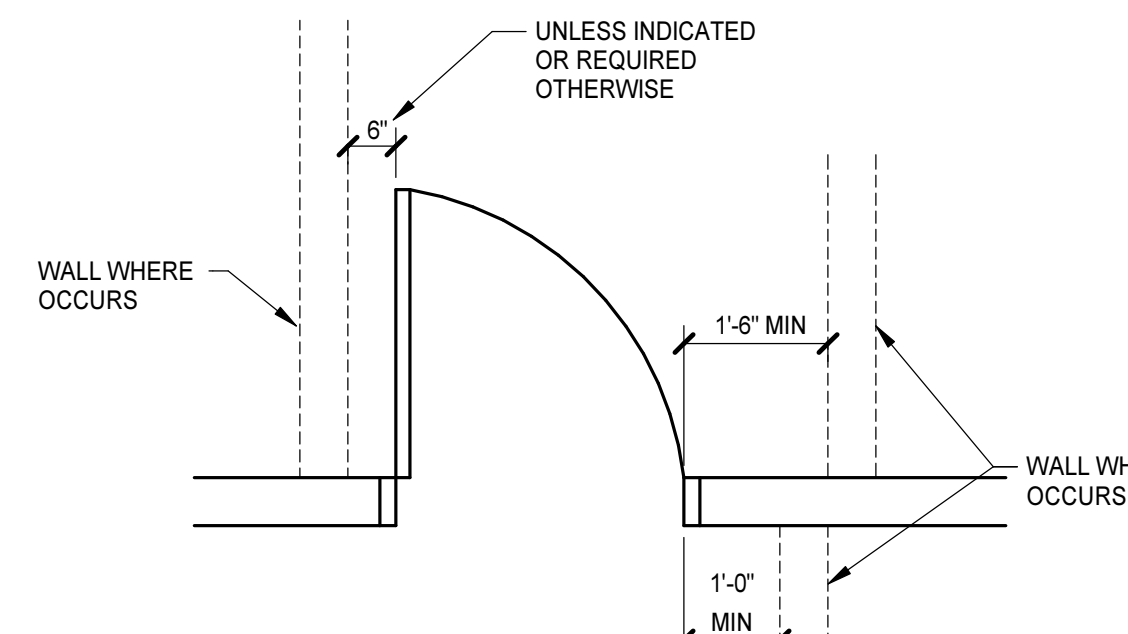
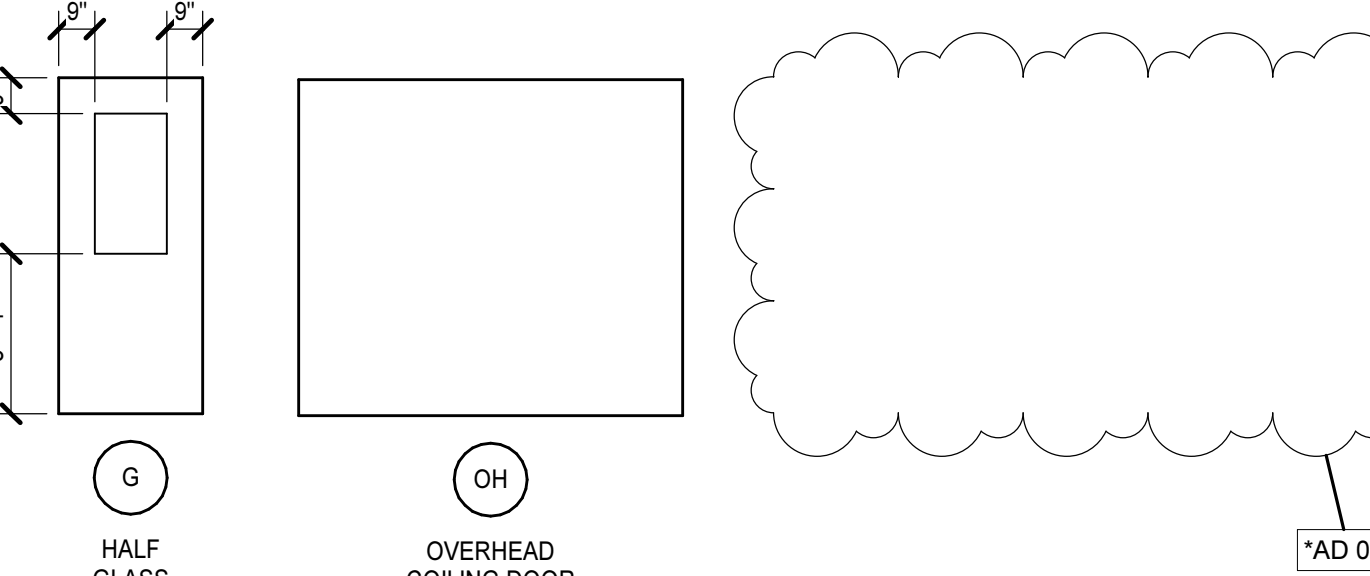
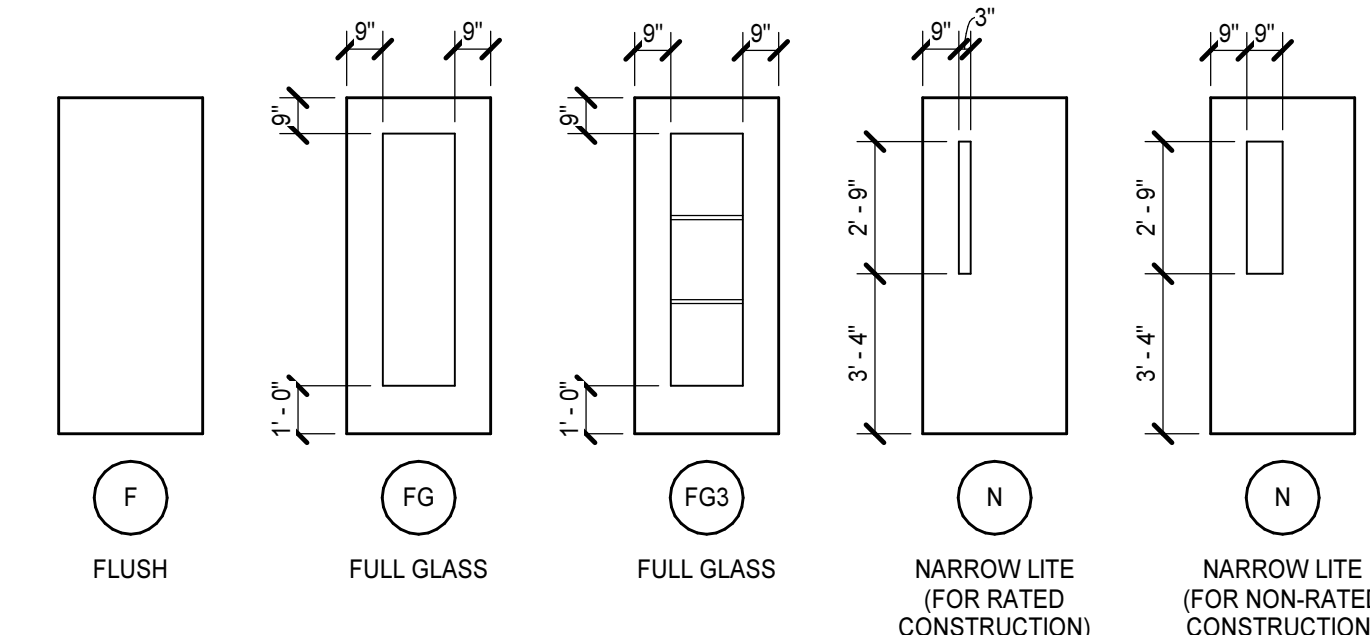


**SHELVING SYSTEM - PROPERTY STORAGE**  
 NO SCALE



**DOOR SCHEDULE - BASE BID**

DOOR NUMBER	TYPE	DOOR			FRAME				HDWR SET	FIRE RATING	NOTES				
		SIZE (NOMINAL)	MATL	LOUVER	UC	GLAZING TYPE	TYPE	NUMBER				SECTIONS			
100A	FG	2 @ 3'-0"x7'-0"x2"	ALUM			G2	AS	8	PER MFR	PER MFR	PER MFR	PER MFR	1.0		
100B	FG	2 @ 3'-0"x7'-0"x2"	ALUM			G1	AS	7	PER MFR	PER MFR	PER MFR	PER MFR	6.0		
101	F	3'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		10.0		
103	F	3'-0"x7'-0"x1-3/4"	STL				STL	6	3/A3.2.1	3/A3.2.1	3/A3.2.1		43.0		
104	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		19.0		
107	N	3'-0"x7'-0"x1-3/4"	WD			G1	STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		25.0		
108	N	3'-0"x7'-0"x1-3/4"	WD			G1	STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		21.0		
109	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	2	2/A3.2.1	2/A3.2.1	2/A3.2.1		26.0	20 MIN	
110	N	3'-0"x7'-0"x1-3/4"	WD			G1	STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		24.0		
111	N	3'-0"x7'-0"x1-3/4"	WD			G1	STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		21.0		
112	N	3'-0"x7'-0"x1-3/4"	WD			G1	STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		21.0		
113	N	3'-0"x7'-0"x1-3/4"	WD			G1	STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		11.0		
114	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		13.0	20 MIN	
115	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1				CASED OPENING
116	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		13.0	20 MIN	
117	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1				CASED OPENING
118	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		30.0	20 MIN	
119	F	3'-0"x7'-0"x1-3/4"	ALUM			G1	AS	11	PER MFR	PER MFR	PER MFR	PER MFR	34.0		
120A	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		8.0		
120B	F	3'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		4.0		
121	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		27.0	20 MIN	
122	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		17.0		
123	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		23.0		
124	F	3'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		11.0		
125	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		16.0		
126	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		16.0		
AK004	F	3'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		23.0		
CR023	F	2'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		31.0		
CR003	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		20.0	20 MIN	
G23	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		31.0		
H23	F	2'-6"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		31.0		
K106	F	3'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		18.0		
K107	F	3'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		23.0		
K110	F	3'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		22.0		
K111	F	3'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		29.0		
K112	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		29.0		
M103	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		9.0		
M106	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		29.0		
M107	N	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		12.0		
M108	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		19.0		
P100B	F	2'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		31.0		
P103	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		20.0	20 MIN	
P104	F	3'-0"x7'-0"x1-3/4"	STL				STL	6	3/A3.2.1	3/A3.2.1	3/A3.2.1		12.0		
P105C	F	2'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		31.0		
P105D	F	2'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		31.0		
P110	F	3'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		29.0		
P113	F	3'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		6.0		
P115	F	3'-0"x7'-0"x1-3/4"	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		22.0		
P116	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	3/A3.2.1	3/A3.2.1	3/A3.2.1		15.0		
P118	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		14.0	20 MIN	
P120	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		14.0	20 MIN	
P121	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		14.0	20 MIN	
S100C	OH	10'-0" x 10'-0"	STL				STL	--	15/A3.1.3	16/A3.1.3	16/A3.1.3	14/A3.1.3	33.0		
S101	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	2B	3/A3.2.1	3/A3.2.1	3/A3.2.1		3.0	20 MIN	PANIC HARDWARE
S102	F	2 @ 3'-0"x7'-0"x1-3/4"	STL				STL	3	2/A3.2.1	2/A3.2.1	2/A3.2.1		5.0		PANIC HARDWARE
S103	F	2 @ 3'-0"x7'-0"x1-3/4"	STL				STL	3	2/A3.2.1	2/A3.2.1	2/A3.2.1		5.0		
S107	F	3'-0"x7'-0"x1-3/4" (20 MIN.)	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		30.0	20 MIN	
S109	F	2 @ 3'-0"x7'-0"x1-3/4" (4" HEAD) 20 MIN	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		32.0	20 MIN	
S110	F	2 @ 3'-0"x7'-0"x1-3/4" (4" HEAD) 20 MIN	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		7.0	20 MIN	
S113	F	3'-0"x7'-0"x1-3/4" (4" HEAD)	STL				STL	1	2/A3.2.1	2/A3.2.1	2/A3.2.1		2.0		
S115	F	3'-0"x7'-0"x1-3/4" (4" HEAD)	STL				STL	1	3/A3.2.1	3/A3.2.1	3/A3.2.1		28.0		

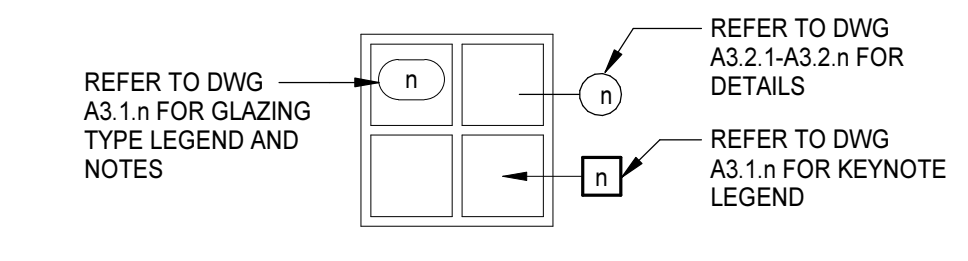


**MANEUVERING CLEARANCE AT DOORS**

**DOOR AND FRAME GENERAL NOTES**

- A. UNLESS INDICATED OTHERWISE, ALL DETAIL NUMBERS IN THE DOOR AND FRAME SCHEDULE FOR HEAD, JAMB AND SILL CONDITIONS REFER TO DRAWINGS A3.2.1 - A3.2.n.
- B. DOOR AND FRAME DETAILS INDICATE GENERAL CHARACTERISTICS OF DOOR AND FRAME SIZES AND COMPONENTS AND MAY NOT INDICATE EXACT FIELD CONDITIONS OR REQUIREMENTS. COORDINATE DETAILS WITH OTHER DRAWINGS AND SPECS TO DETERMINE ALL COMPONENTS (E.G. SEALANTS, ANCHORS, HARDWARE, LINTELS, CLIPS) REQUIRED FOR COMPLETE AND FUNCTIONAL INSTALLATION.
- C. DOOR SWINGS ON FLOOR PLANS TAKE PRECEDENCE OVER SWINGS INDICATED ELSEWHERE (E.G., ELEVATIONS).

**DOOR, FRAME, & GLAZING TYPE GENERAL NOTES**



**GLAZING TYPES**  
REPRESENTED BY (n)

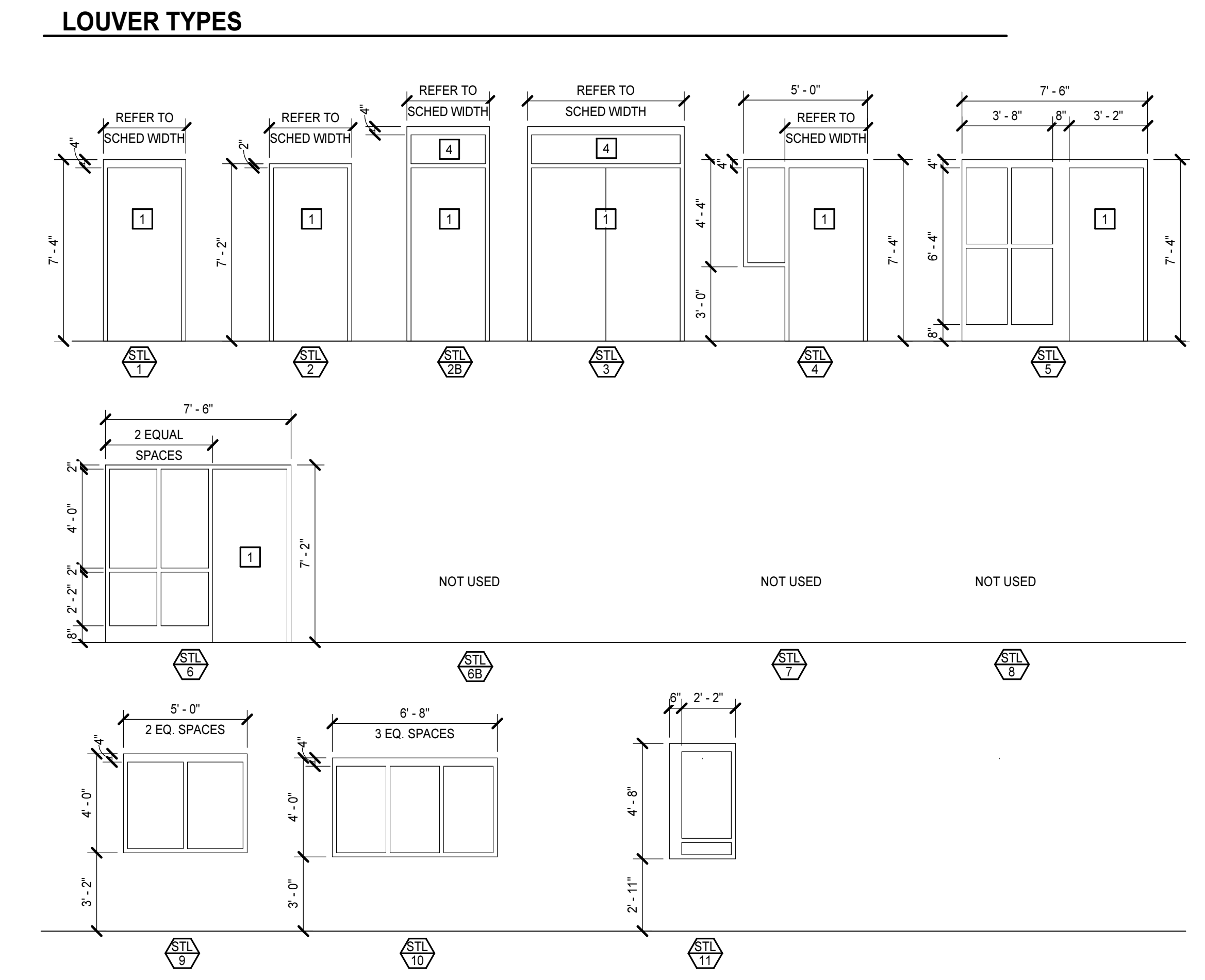
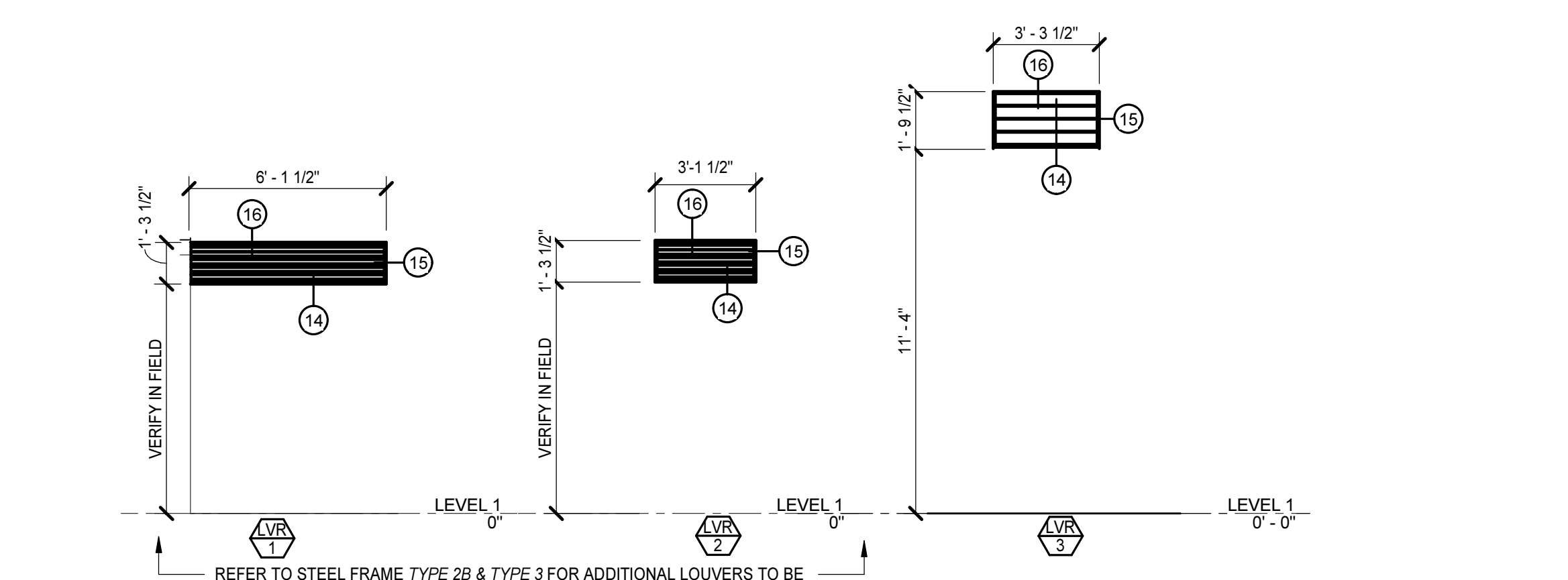
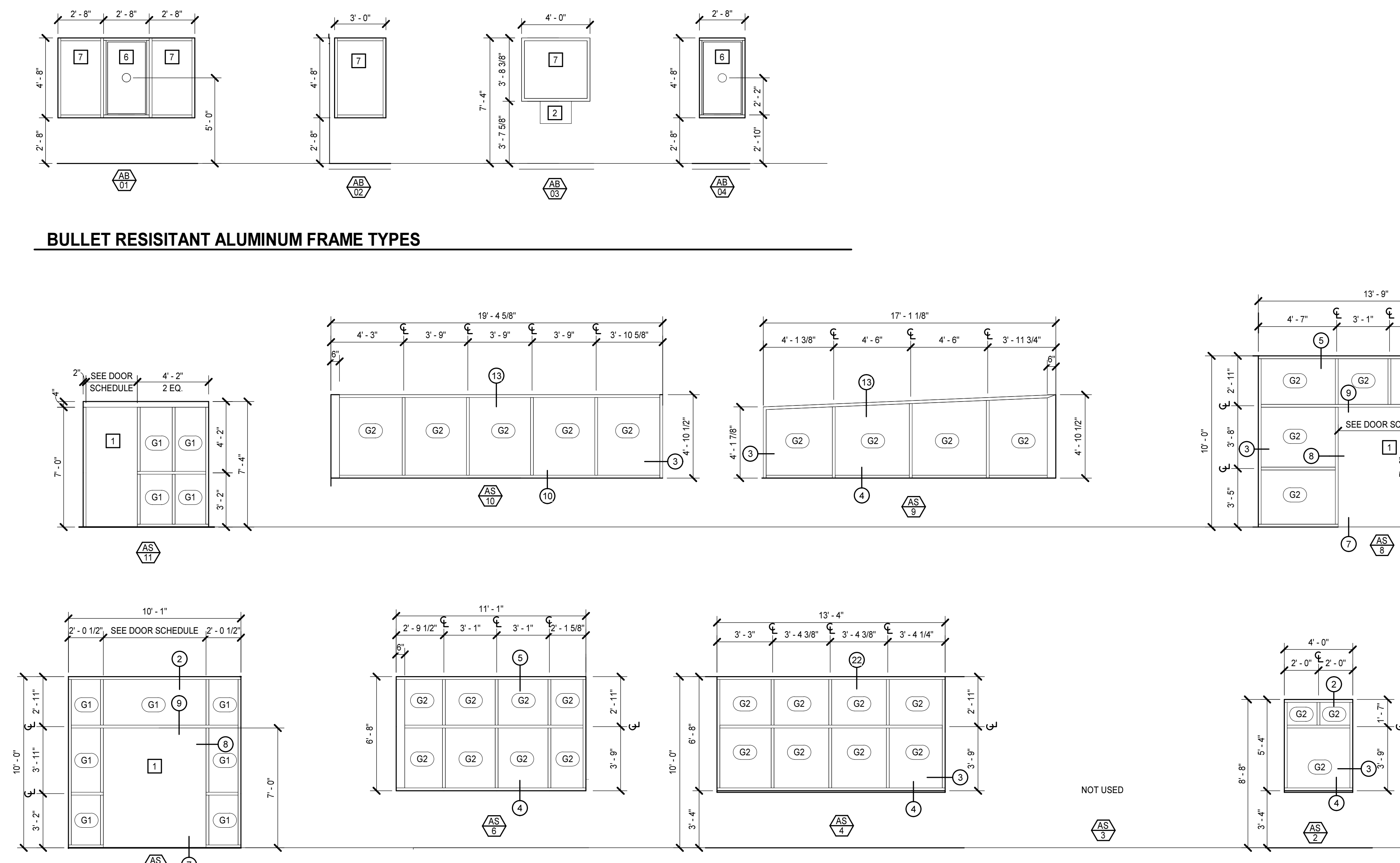
- G1: 1/4" CLEAR
  - G2: 1" TINTED INSULATING
  - G3: 1" SPANDREL PANEL
  - G4: .....
- NOTES:  
1. ALL GLAZING IN INTERIOR FRAMES SHALL BE TYPE 1, UNO  
2. ALL GLAZING IN EXTERIOR FRAMES SHALL BE TYPE 2, UNO  
3. GLAZE ALL OPENINGS IN FRAMES UNLESS SPECIFICALLY INDICATED OTHERWISE  
4. ALL GLAZING SHALL BE SAFETY GLASS UNLESS INDICATED OTHERWISE

**DOOR, FRAME AND GLAZING TYPE KEYNOTES**  
APPLIES TO DRAWINGS A3.1.1 - A3.1.n  
REPRESENTED BY (n)

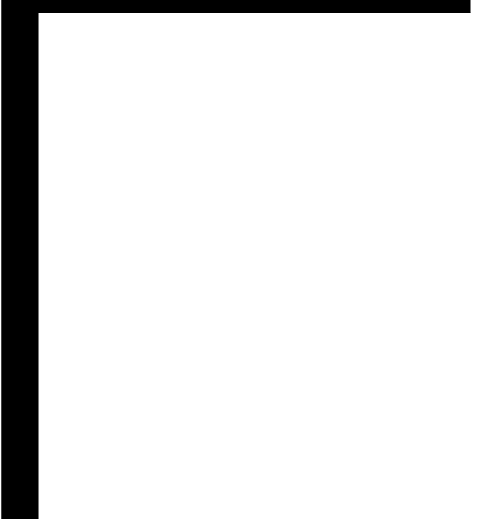
1. SIZE AS REQUIRED TO ACCOMMODATE DOOR, HARDWARE AND FRAME COMPONENTS.
2. COORDINATE LOCATION OF PACKAGE PASS WHERE REQUIRED
3. COORDINATE LOCATION OF SCOOP TRAY
4. LOUVER LOCATION
5. PAPER PASS
6. BULLET-RESISTANT SECURITY WINDOW WITH SPEAK-THROUGH AND PASS-THROUGH
7. BULLET-RESISTANT SECURITY WINDOW - REFER TO SECTION 065653

**DOOR SCHEDULE - ADD ALTERNATE**

DOOR NUMBER	TYPE	DOOR			FRAME				HDWR SET	FIRE RATING	Alternate	NOTES			
		SIZE (NOMINAL)	MATL	LOUVER	UC	GLAZING TYPE	TYPE	NUMBER					SECTIONS		
E23	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	2/A3.2.1	2/A3.2.1	2/A3.2.1		31.0		YES
F23	F	3'-0"x7'-0"x1-3/4"	STL				STL	2	2/A3.2.1	2/A3.2.1	2/A3.2.1		31.0		YES



**MOSELEY ARCHITECTS**  
6210 ARDREY HELL ROAD, THE HUB AT WAVERLY SUITE 425 CHARLOTTE, NC 28277  
PHONE (704) 546-3785 FAX (704) 546-3784  
MOSELEY ARCHITECTS.COM

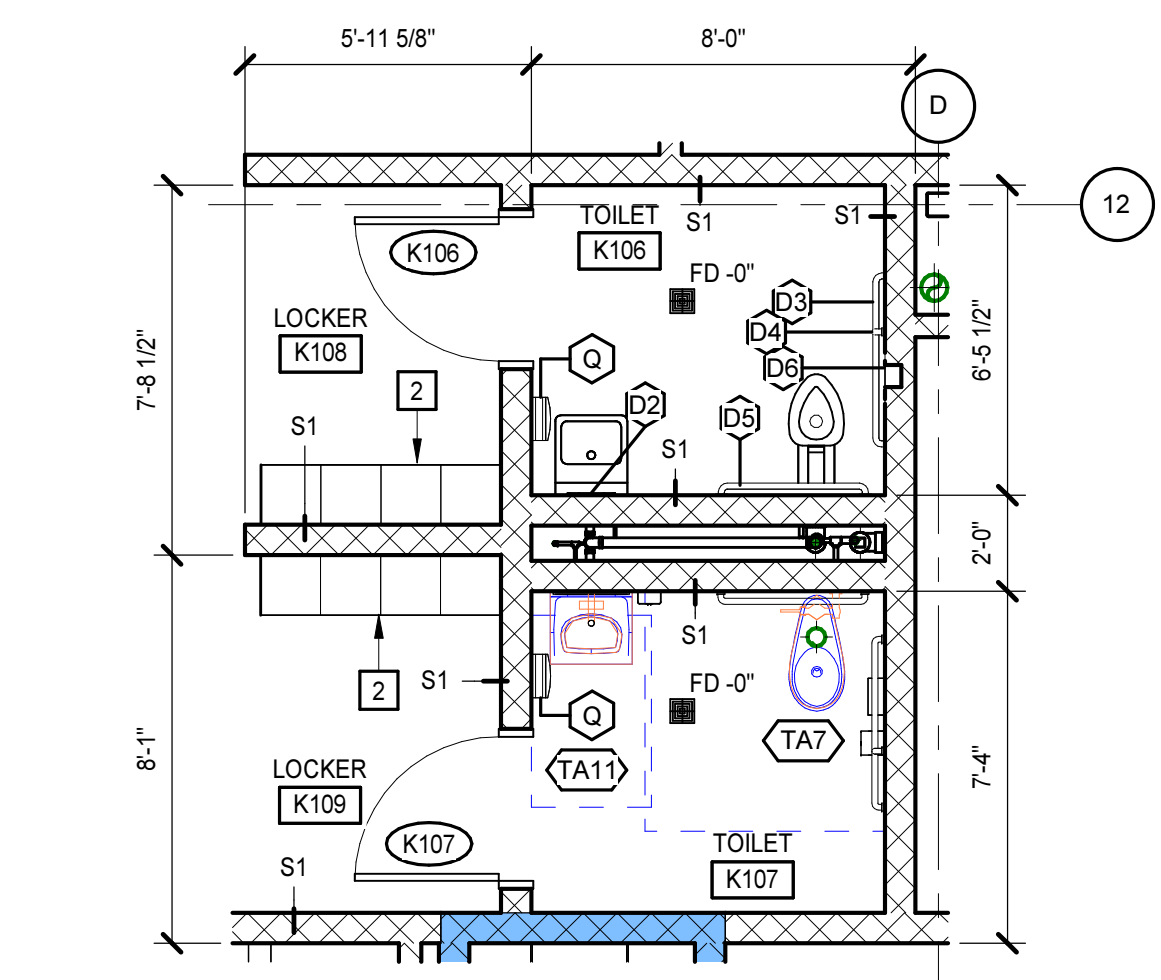


**DUPLIN COUNTY DETENTION CENTER**  
DHSR# - J-378 / FID# 230464  
DUPLIN COUNTY  
325 FAIRGROUNDS DRIVE, KENANSVILLE NC 28349

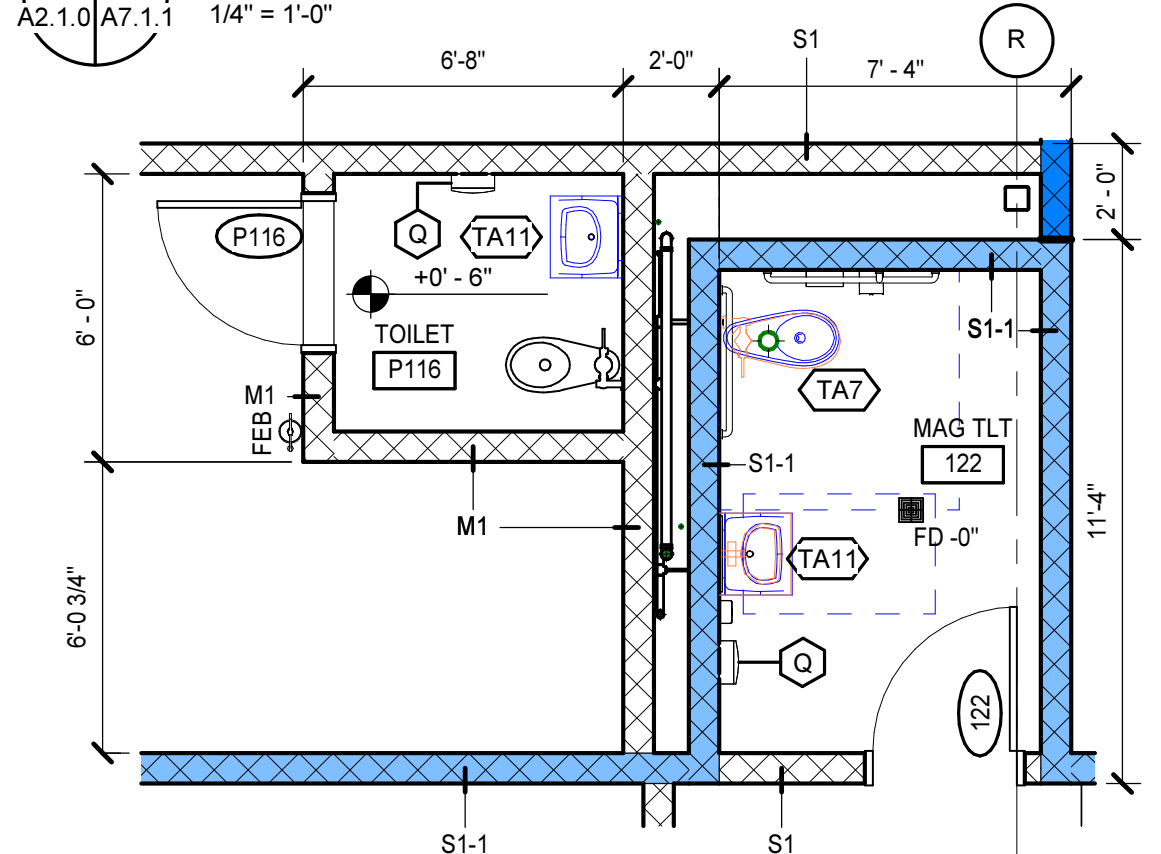
PROJECT NO	DATE	
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**DOOR AND FRAME SCHEDULE**

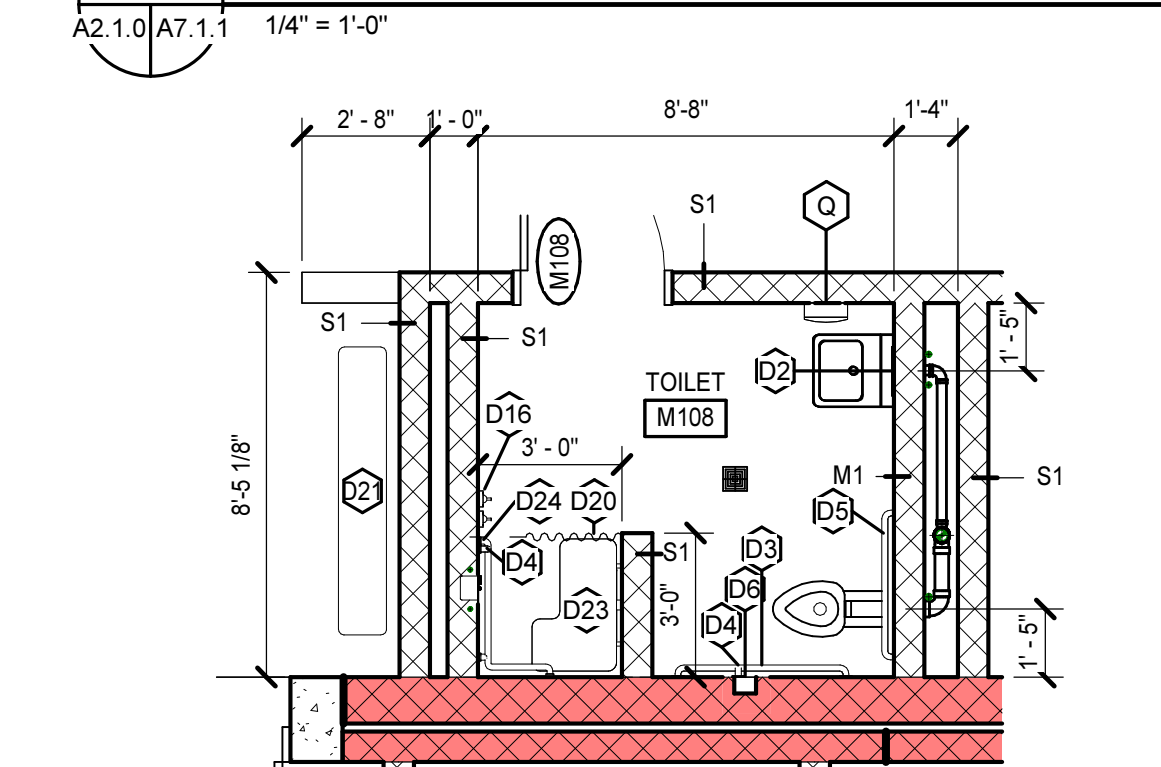
**A3.1.1**



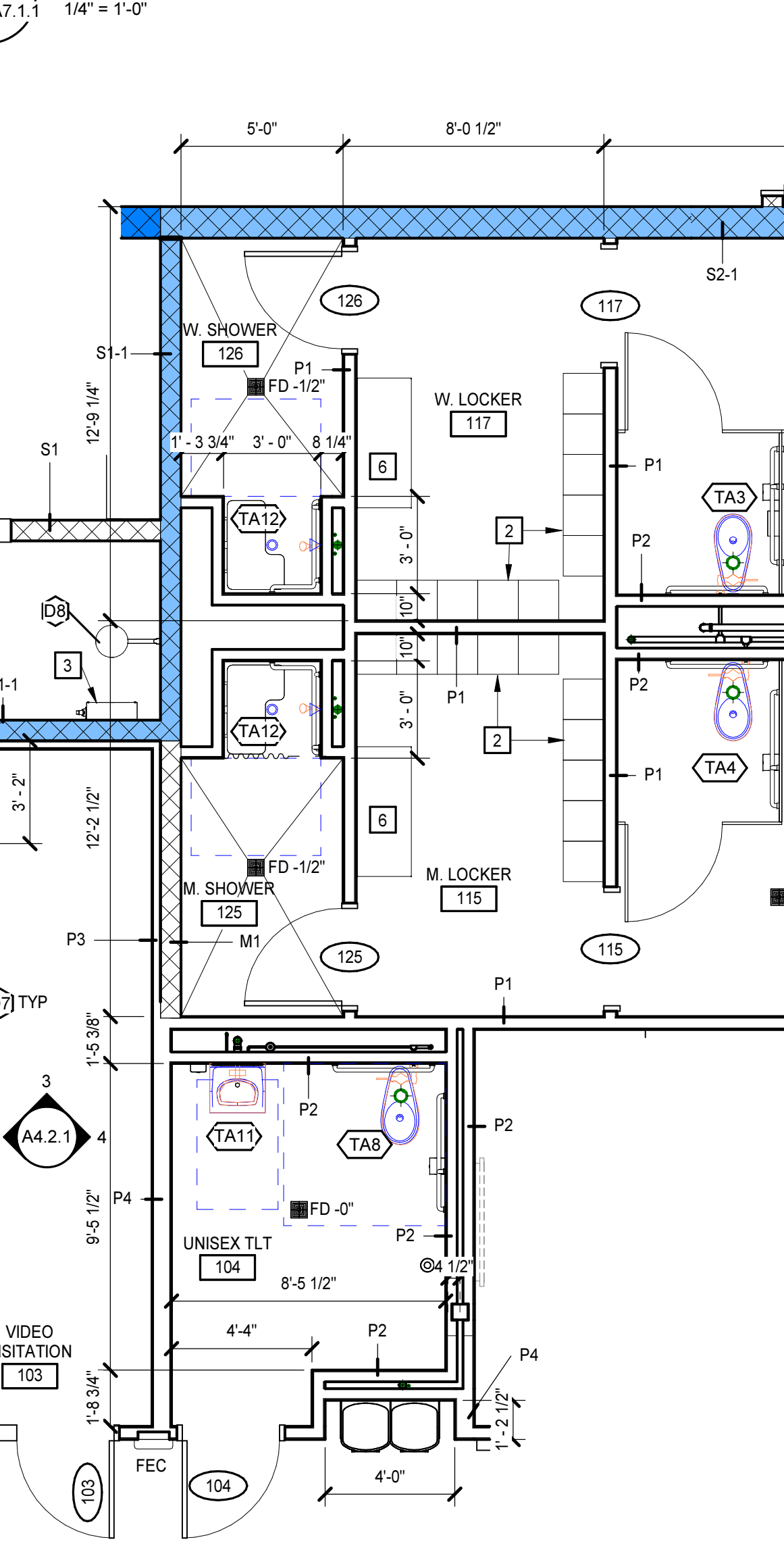
11 ENLARGED TOILET PLAN



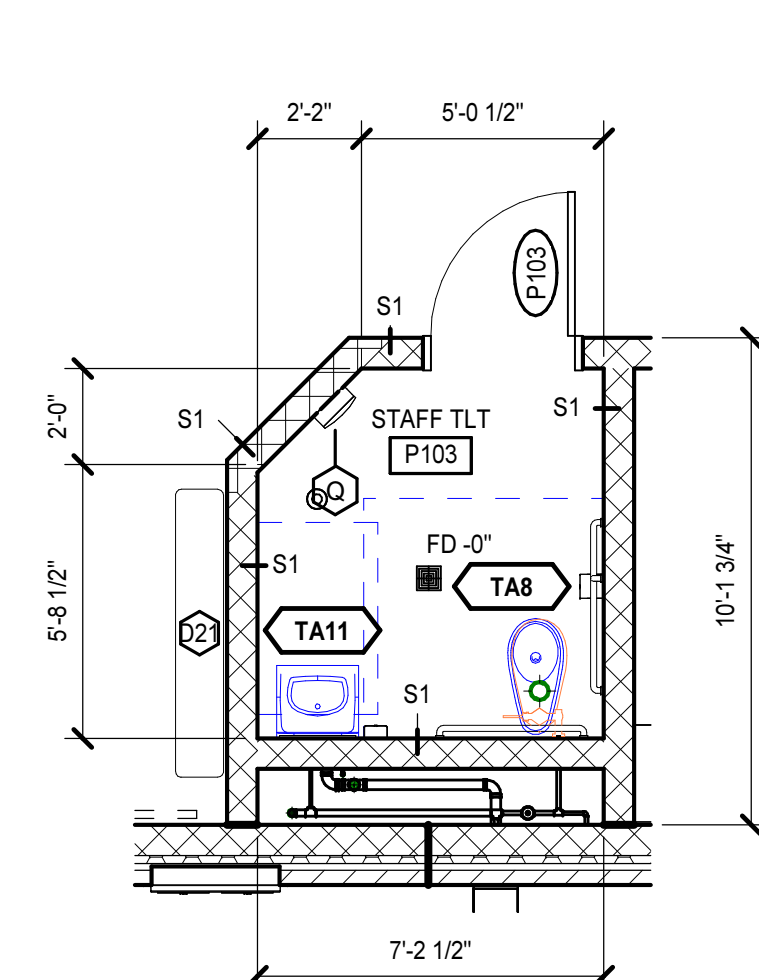
10 ENLARGED TOILET PLAN



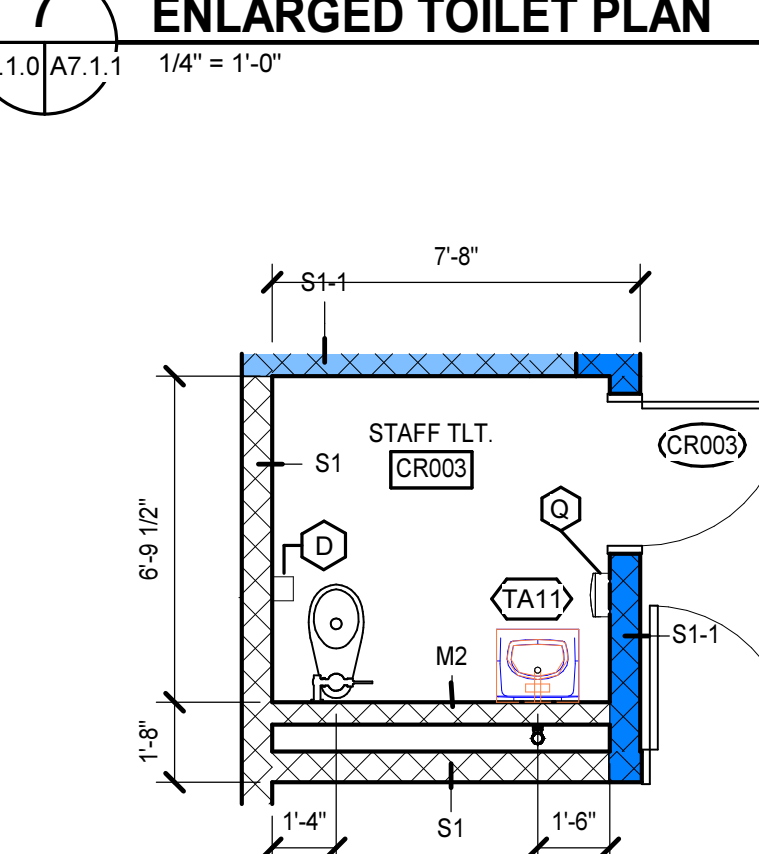
9 ENLARGED TOILET PLAN



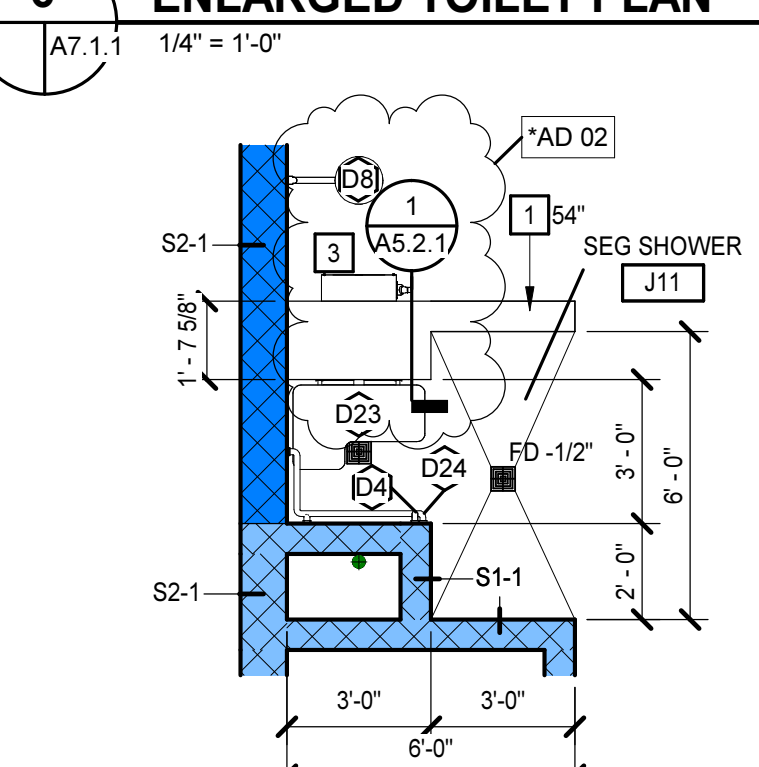
8 ENLARGED LOCKER ROOM PLAN AND VIDEO VISITATION



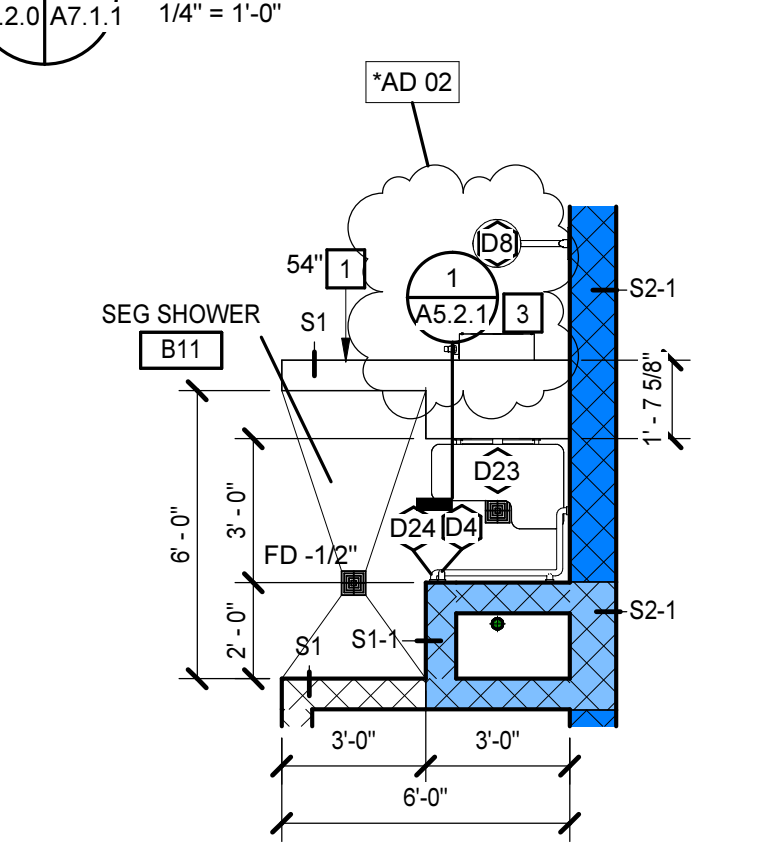
7 ENLARGED TOILET PLAN



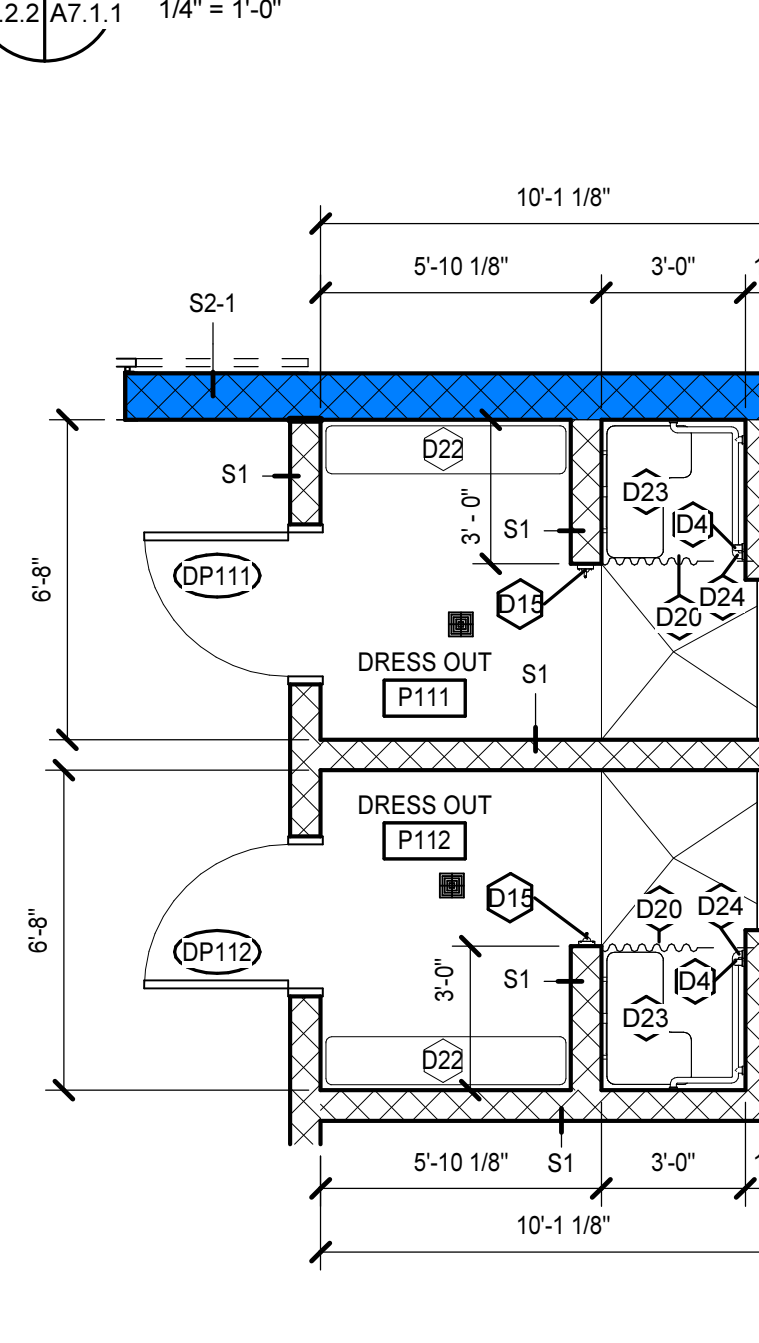
6 ENLARGED TOILET PLAN



5 ENLARGED SHOWER PLAN



4 ENLARGED SHOWER PLAN

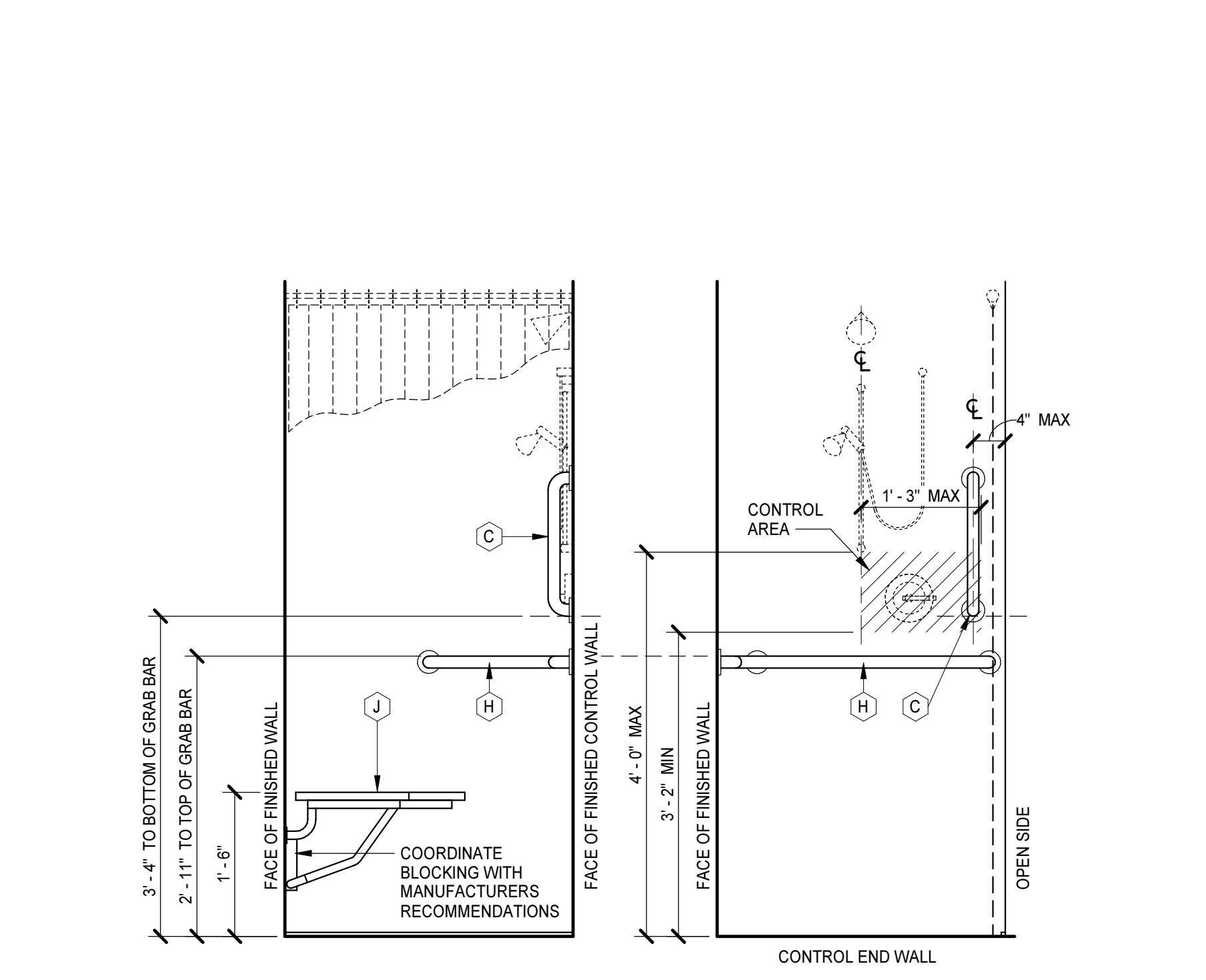


3 ENLARGED FLOOR PLAN

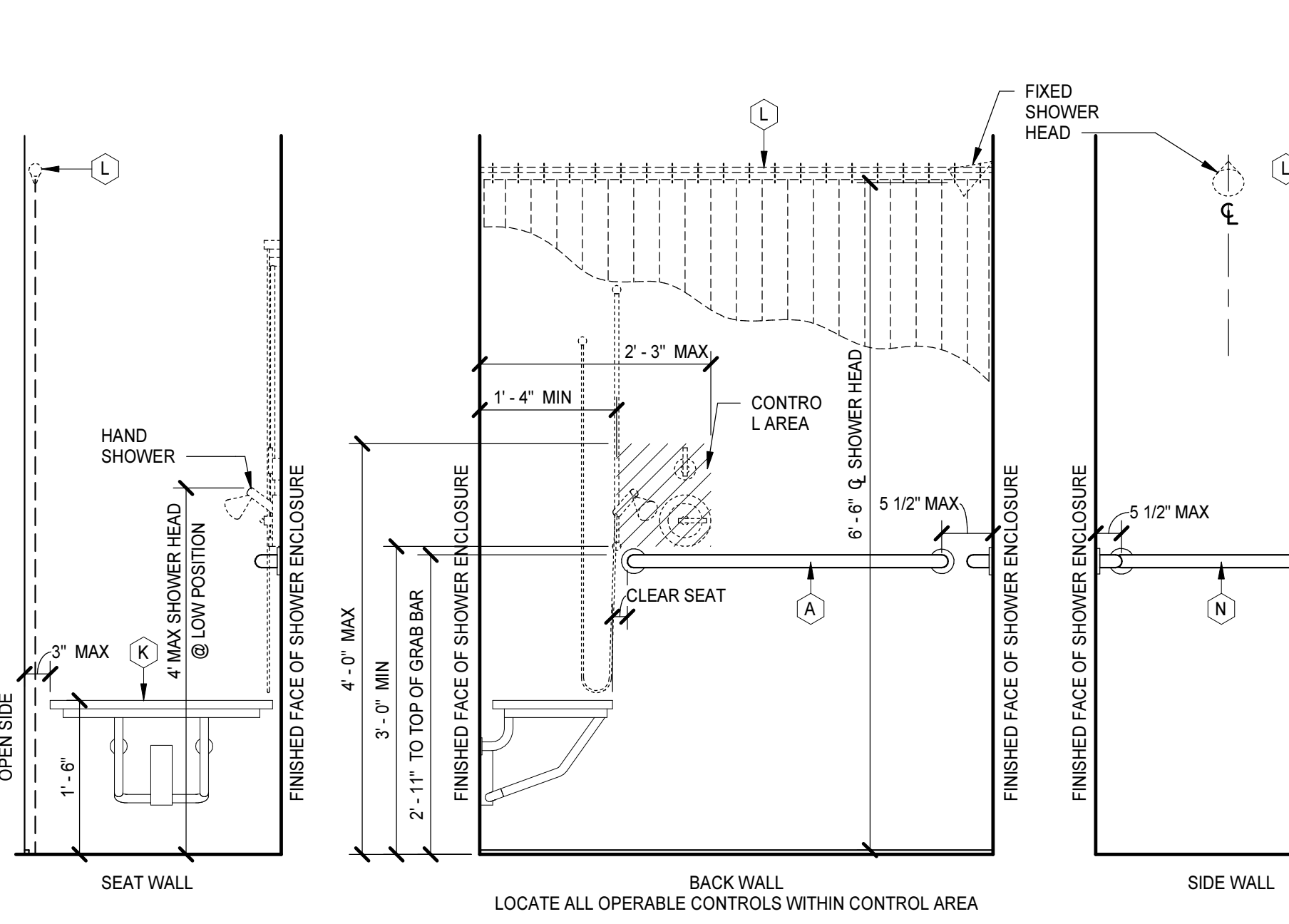
TOILET ASSEMBLIES, SCHEDULE AND ENLARGED PLAN GENERAL NOTES
A. PLAN DIMENSIONS ARE TO FACE OF WALL OR PARTITION...

DETENTION EQUIPMENT SCHEDULE table with columns: NO, DESCRIPTION, MOUNTING HEIGHT, NOTES

ENLARGED TOILET PLAN KEYNOTES table with columns: NO, DESCRIPTION



TRANSFER-TYPE SHOWER ELEVATIONS

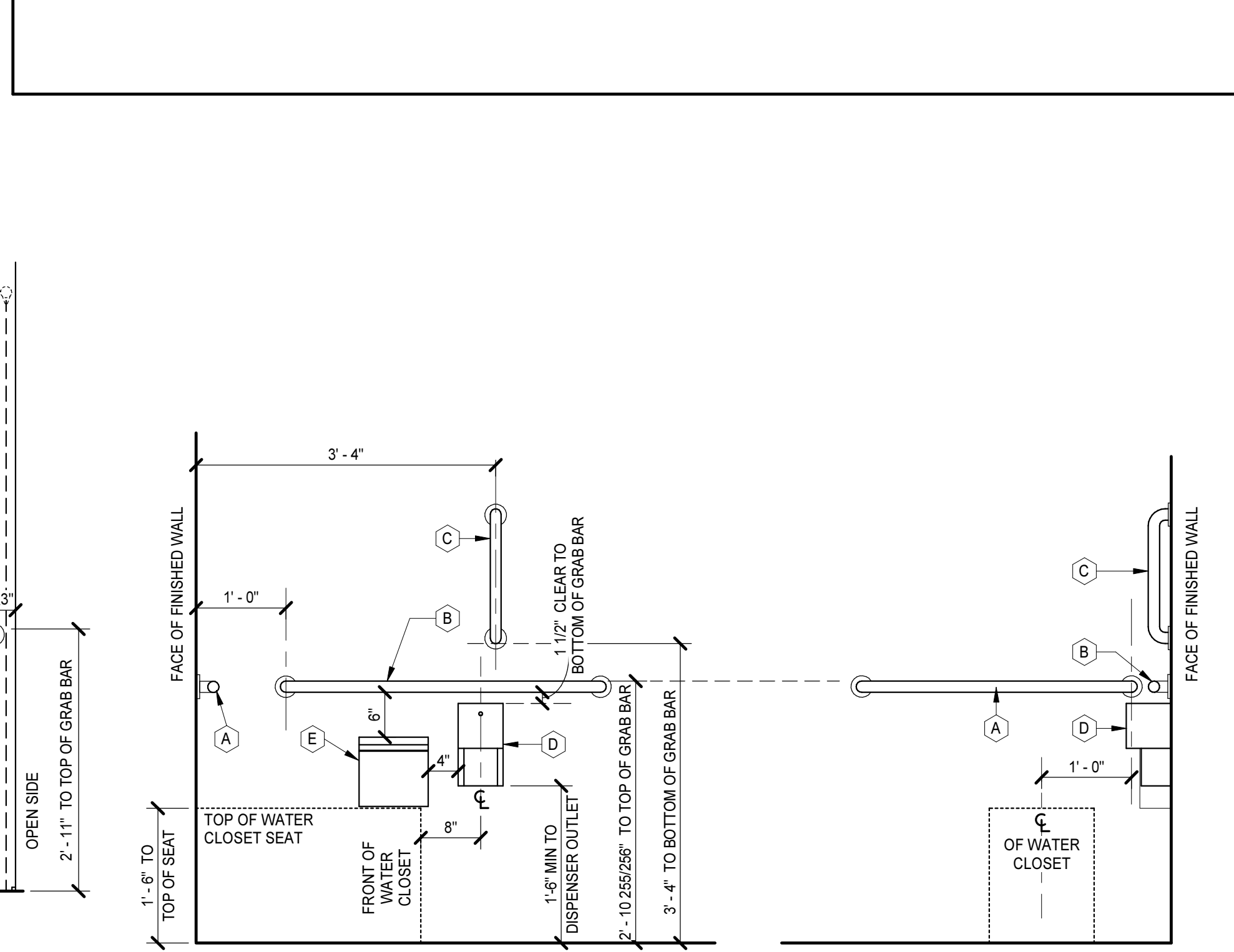


ROLL-IN SHOWER ELEVATIONS

TOILET ASSEMBLIES table with columns: MARK, REMARKS, PLAN, showing details for TA1 through TA15.

TOILET ACCESSORIES SCHEDULE table with columns: MARK, DESCRIPTION, MOUNTING HEIGHT, REMARKS

- 1. ACCESSORY ITEMS ARE IDENTIFIED BY CIRCLES ON PLANS...
2. ACTUAL DIMENSIONS OF ACCESSORIES MAY VARY...



WATER CLOSET ELEVATIONS

MOSELEY ARCHITECTS logo and address: 6210 ADRURY KELL ROAD, THE HUB AT WAVERLY SUITE 425 CHARLOTTE, NC 28277

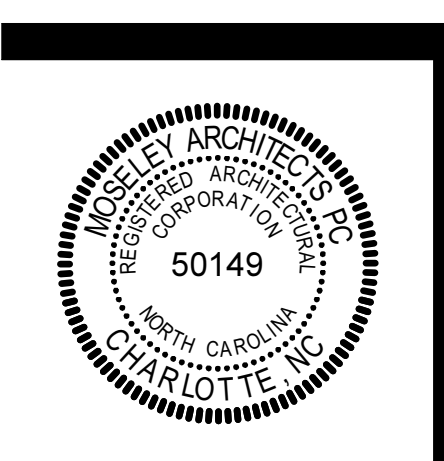
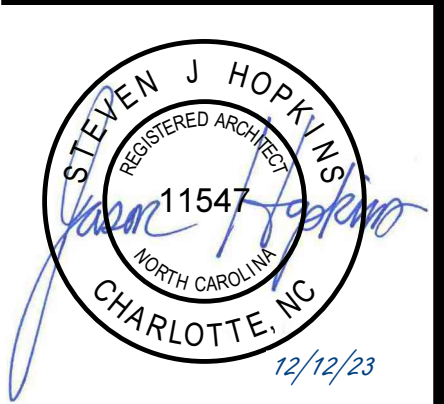
STEVEN J. HOPKINS ARCHITECTS logo and address: 11547 WOODHOLLOW DRIVE, CHARLOTTE, NC 28226

MOSELEY ARCHITECTS logo and address: 50149 WOODHOLLOW DRIVE, CHARLOTTE, NC 28226

DUPLIN COUNTY DETENTION CENTER
DHSR# - J-378 / FID# 230464
DUPLIN COUNTY
325 FAIRGROUNDS DRIVE, KENANSVILLE NC 28349

REVISIONS table with columns: DATE, REVISIONS, DESCRIPTION

TOILET ASSEMBLIES, SCHEDULE & ENLARGED PLANS A7.1.1



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**REFLECTED CEILING PLAN/DETAIL GENERAL NOTES**

A. ALL CEILING HEIGHTS SHALL BE 9'-0" AFF UNLESS INDICATED OTHERWISE.

B. DRAWINGS INDICATE GRID LAYOUT DIAGRAMMATICALLY. REFER TO SPECIFICATIONS FOR SPECIFIC GRID LAYOUT CRITERIA AT PERIMETER CONDITIONS THAT MAY DIFFER FROM GRID LAYOUT INDICATED ON DRAWINGS.

C. CENTER CEILING MOUNTED ITEMS WITHIN CEILING PANELS, UNLESS INDICATED OTHERWISE.

D. IF ADDITIONAL SPRINKLER HEADS ARE REQUIRED TO SATISFY CODE OR COVERAGE DENSITIES (OTHER THAN THOSE THAT MAY BE INDICATED), PROVIDE ADDITIONAL SPRINKLER HEADS AT NO ADDITIONAL COST AND OBTAIN APPROVAL OF ARCHITECT FOR LOCATION OF SUCH HEADS, IF ANY.

E. SEE SPEC SECTION 083100 FOR MORE INFORMATION REGARDING CEILING ACCESS DOORS.

F. SECURITY RATED ACCESS PANELS SHALL BE REQUIRED FOR ALL SECURITY RATE CEILINGS.

G. COORDINATE LOCATION OF VERTICAL ACCESS PANELS FOR ACCESS ABOVE NON-ACCESSIBLE CEILINGS WITH MECHANICAL DRAWINGS.

**REFLECTED CEILING PLAN KEYNOTES**  
 REPRESENTED BY [ ]

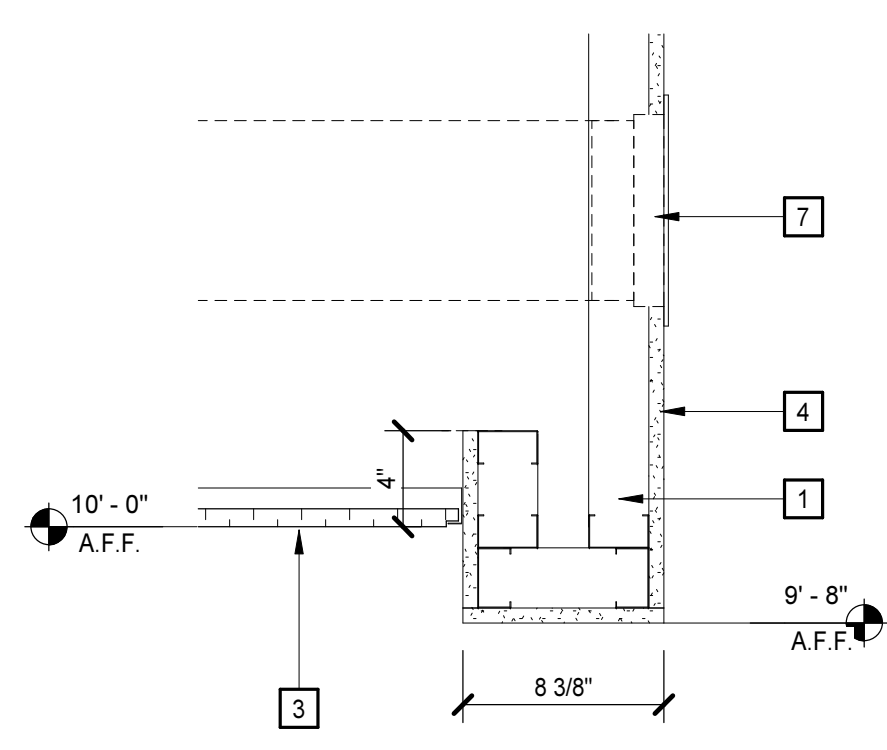
1	CFSF-S FRAMING
2	5/8" GYP BD, TERMINATE 4" ABV FIN CLG
3	CEILING PER A-9 SERIES
4	5/8" GYP BD, EXTEND FULL HEIGHT, UNLESS INDICATED OTHERWISE
5	ROOF LADDER
6	ALIGN
7	COORDINATE DIFFUSER / DUCT LOCATION WITH MECHANICAL DRAWINGS
8	KITCHEN HOOD - COORDINATE OPENING WITH FOOD SERVICE DRAWINGS
10	HEAD HEIGHT OF OPENING IS @ 8'-0" AFF
11	SHADED HATCH INDICATES AREA INCLUDED IN BASE BID SCOPE
12	CEILING MOUNTED CURTAIN TRACK
13	AUTOMATIC FIRE SHUTTER

**REFLECTED CEILING PLAN LEGEND**  
 APPLIES TO DRAWINGS A9.1.1 - A9.1.1  
 REFER TO M, E & FP DRAWINGS FOR REFLECTED CEILING PLAN SYMBOLS NOT INDICATED BELOW.

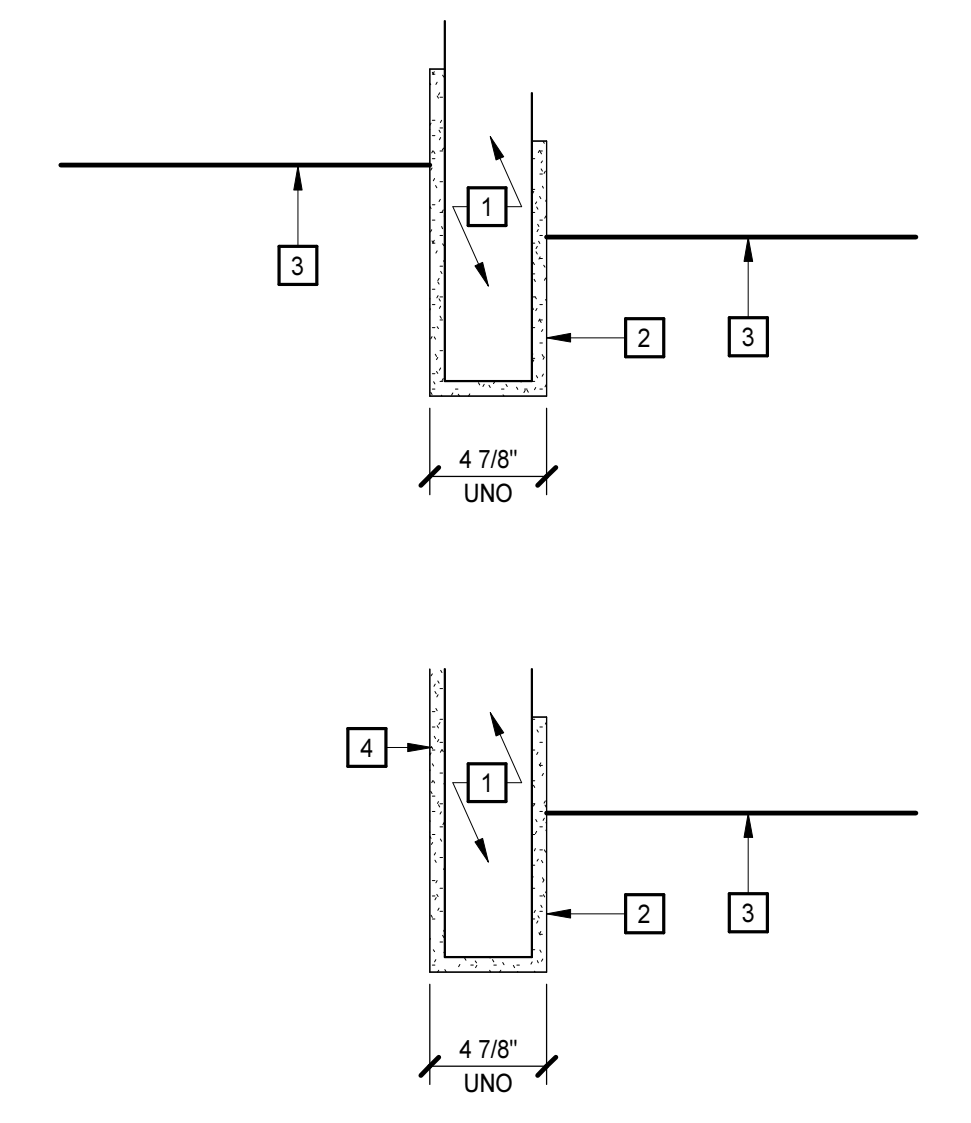
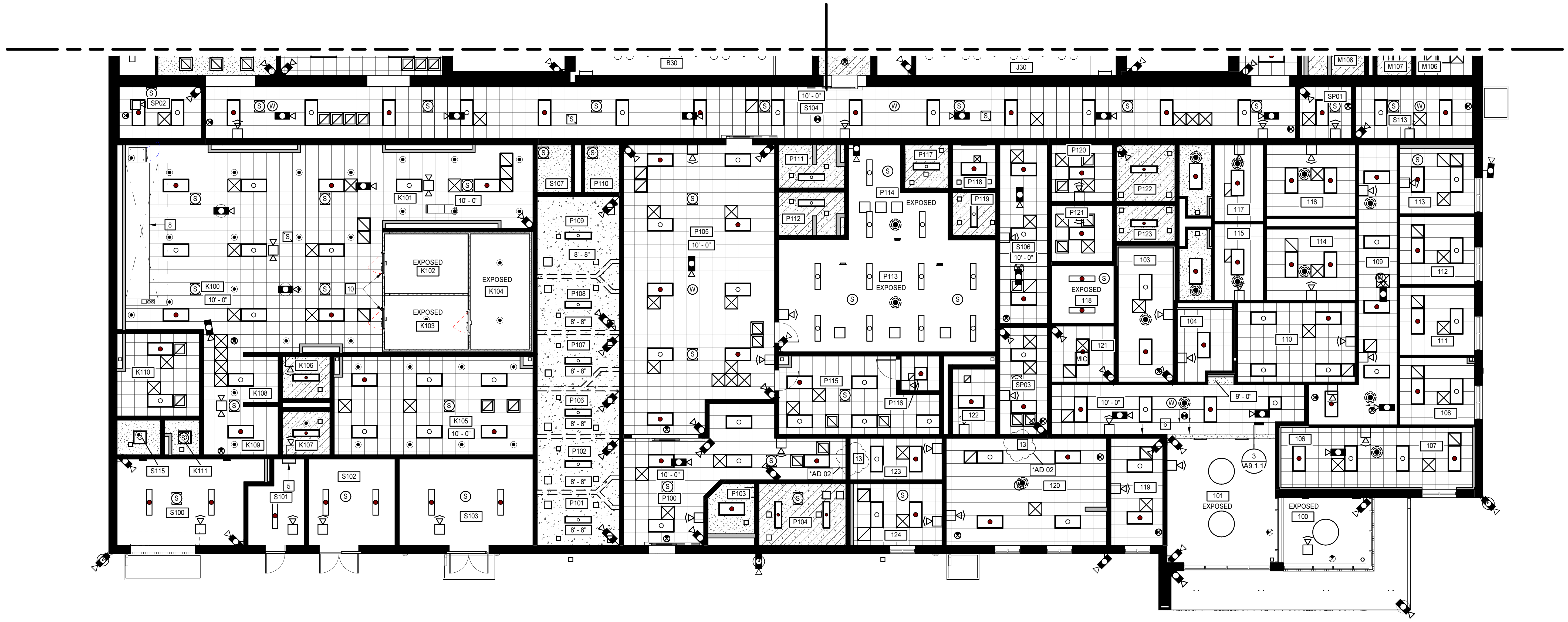
[A101]	SPACE NUMBER
[10'-0"]	CEILING HEIGHT, AFF UNO
[Pattern]	INTERIOR APPLICATIONS: GYPSUM BOARD CEILING
[Pattern]	EXTERIOR APPLICATIONS: GYPSUM SOFFIT BOARD OR GYPSUM SHEATHING
[Pattern]	2'-0" x 2'-0" LAY-IN ACOUSTICAL CEILING PANELS IN SUSPENDED GRID
[Pattern]	SECURE GYPSUM CEILING, BY DIVISION 05 GYPSUM BOARD SECURITY ASSEMBLIES
[Pattern]	METAL CEILING, BY DIVISION 12 STEEL CELL MFR
[Pattern]	12 GA METAL PLATE UNDER TIER, BY DIVISION 05 METAL FABRICATIONS
[Pattern]	STEEL WIRE MESH
[Pattern]	CONCRETE CEILING CAP

[Symbol]	EXTERIOR WALL
[Symbol]	INTERIOR WALL/PARTITION TO UNDERSIDE OF DECK
[Symbol]	INTERIOR WALL/PARTITION TO CAP ABOVE OR TERMINATES ADJACENT TO A RATED HORIZONTAL ASSEMBLY
[Symbol]	INTERIOR WALL/PARTITION 4" MIN ABOVE HIGHEST ADJACENT CEILING. IF NECESSARY TO ACHIEVE RESULTS DESIRED, EXTEND WALL HEIGHT SO WALL BRACING IS NOT EXPOSED TO VIEW IN FINISHED SPACES
[Symbol]	INTERIOR WALL/PARTITION TO UNDERSIDE OF CEILING EXISTING TO REMAIN. VERIFY VERTICAL EXTENTS WHERE THE HEIGHT IMPACTS THE WORK

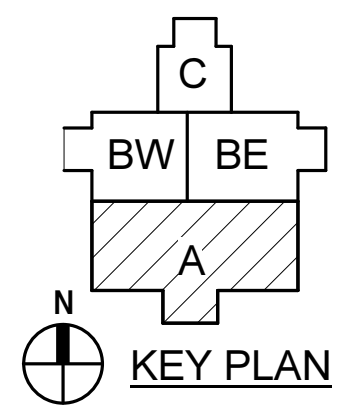
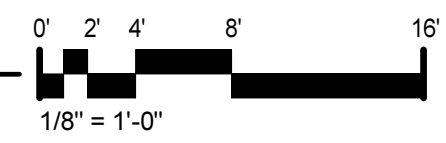


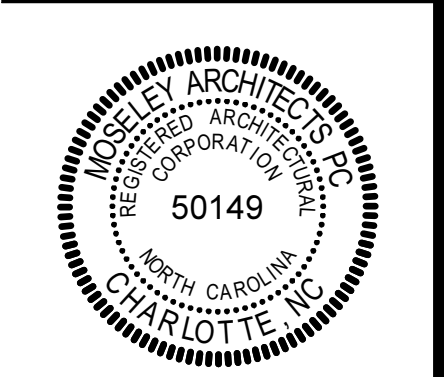
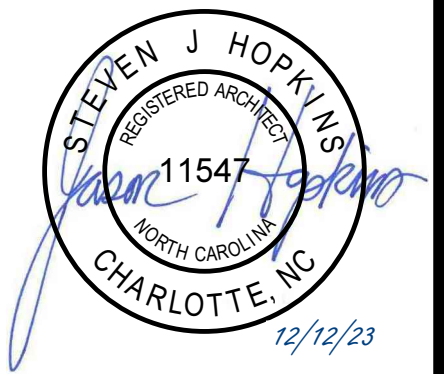
**3 ENLARGED DETAIL**  
 A9.1.1 A9.1.1 1/12" = 1'-0"



**BULKHEAD DETAILS**  
 NO SCALE

**REFLECTED CEILING PLAN - FIRST FLOOR PLAN - PART A**  
 1/8" = 1'-0"

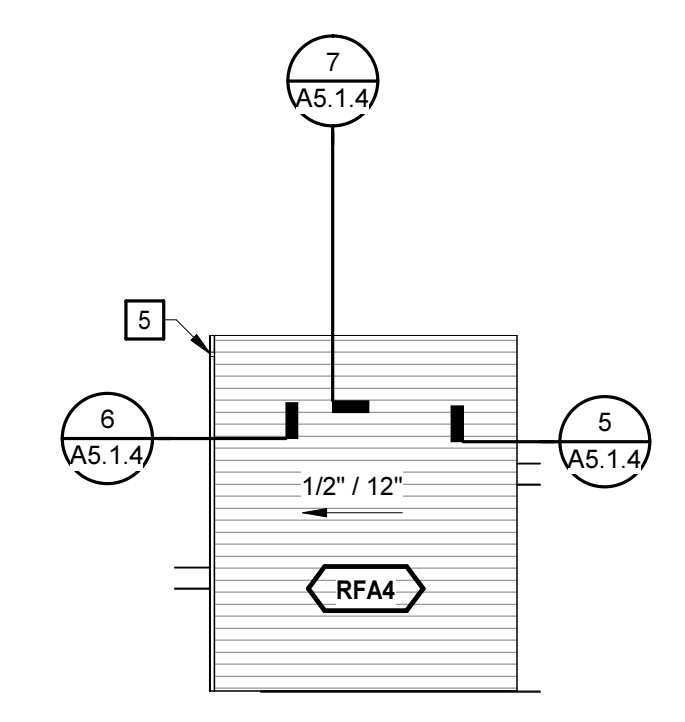




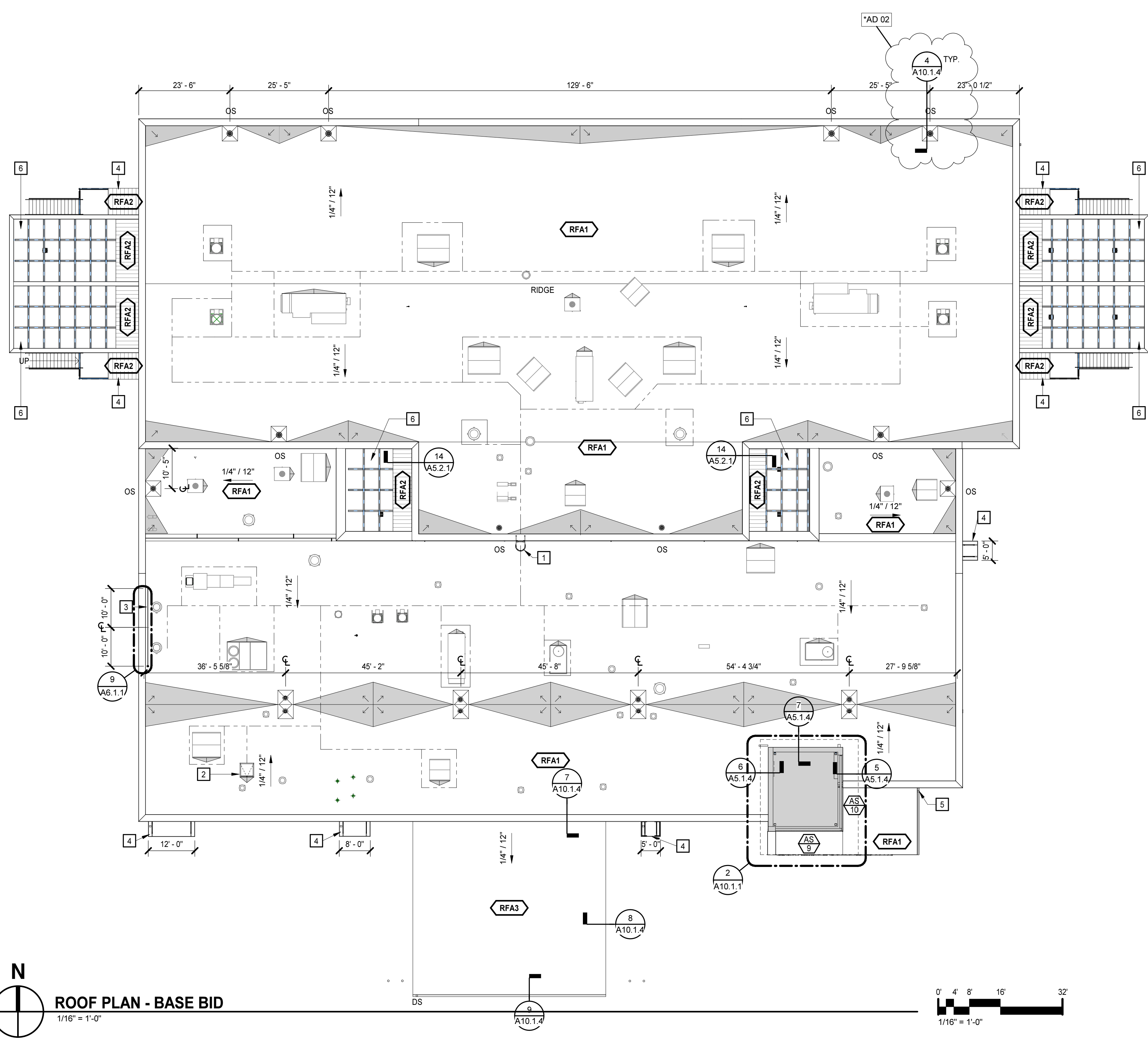
ROOF PLAN KEYNOTES	
REPRESENTED BY [Symbol]	
1	ROOF LADDER WITH CAGE
2	ROOF ACCESS HATCH
3	FREE STANDING FALL PREVENTION GUARDRAIL
4	PRE-ENGINEERED PROTECTIVE COVER WITH DOWNSPOUT
5	GUTTER WITH DOWNSPOUT
6	MESH COVERING OVER RECREATION YARD - TYP.

ROOF PLAN LEGEND	
APPLIES TO DRAWINGS A10.1.1 - A10.1.n	
REFER TO M. E. & FP DRAWINGS FOR ROOF SYMBOLS NOT INDICATED BELOW	
	PRIMARY ROOF DRAIN AND SUMP
	SECONDARY/EMERGENCY OVERFLOW (WHERE OCCURS)
	GUTTER AND DOWNSPOUT (RECTANGULAR SHOWN, MAY BE ROUND IF SPECIFIED)
	ROOF ACCESS HATCH
	OVER FLOW SCUPPER (OS)
	CRICKET
	WALKWAY PATH
	INDICATES DIRECTION OF ROOF ASSEMBLY SLOPE

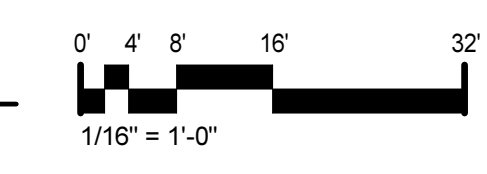
ROOF PLAN GENERAL NOTES	
A.	ALL ROOF ASSEMBLIES: RFA1, UNO.
B.	ROOF PLAN DOES NOT INDICATE ALL EQUIPMENT AND PENETRATIONS. REFER TO OTHER DISCIPLINE'S DRAWINGS FOR QUANTITIES AND LOCATIONS OF ROOFTOP EQUIPMENT AND ASSOCIATED PENETRATIONS.
C.	COORDINATE LOCATION AND SIZE OF ROOF OPENINGS AND ASSOCIATED PENETRATIONS WITH STRUCTURE.
D.	ROOF DETAILS MAY NOT ENTIRELY REPRESENT ACTUAL CONSTRUCTION CONDITIONS. ACTUAL DETAIL ASSEMBLIES SHALL BE APPROVED BY ROOFING MANUFACTURER.
E.	ROOF PLAN DOES NOT INDICATE ALL ROOFING DETAILS (INCLUDING BUT NOT LIMITED TO ROOF DRAINS, VTR, CURBS, EXPANSION JOINTS, ROOF HATCHES). PROVIDE MFR'S DETAILS AS REQUIRED TO SUIT SPECIFIC APPLICATION AND SPECIFICATIONS.
F.	PROVIDE CRICKETS AT DRAINS, WALLS, CURBS, MECHANICAL EQUIPMENT, AND OTHER OBSTRUCTIONS SUCH THAT 1/4" PER FOOT MINIMUM POSITIVE DRAINAGE SLOPE IS MAINTAINED AT ALL SUCH AREAS.
G.	PROVIDE DOUBLE-LAYER OF MEMBRANE ROOFING MATERIAL UNDER SPLASH BLOCKS.
H.	CENTER ALL PENETRATIONS BETWEEN RIBS OF METAL ROOFING. PIPING, DUCTWORK AND CURBS SHALL BE OFFSET AS REQUIRED TO ACHIEVE PENETRATIONS CENTERED BETWEEN RIBS.
I.	ROOF DRAINS TO BE LOCATED AND DESIGNED PER PLUMBING DRAWINGS. ROOF DRAINS ARE ONLY SHOWN ON ARCHITECTURAL ROOF PLAN FOR REFERENCE.



**2 HIGH ROOF PLAN**  
 A10.1.1 | A10.1.1 1/16" = 1'-0"



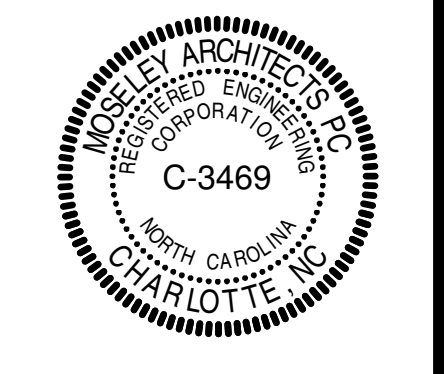
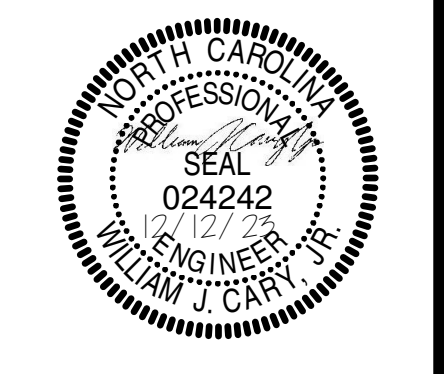
**ROOF PLAN - BASE BID**  
 1/16" = 1'-0"



ROOF ASSEMBLIES			
APPLIES TO A10.1.1 AND A10.1.2 SERIES OF DRAWINGS REPRESENTED BY (RFA <sub>n</sub> )			
MARK	FIRE RATED ASSEMBLY (REFER TO LS1.1 FOR LEGEND)	REMARKS	INFORMATION
RFA1	○		
RFA2	○		
RFA3	○		
RFA4	○		

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**ROOF PLAN - BASE BID**



NO:	821373	DATE:	DECEMBER 12, 2023
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
1/5/2024	'AD 01		
1/11/2024	'AD 02		

LEGENDS,  
ABBREVIATIONS  
AND GENERAL  
NOTES

### GENERAL NOTES

A. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE BETTER QUALITY. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE GREATER QUANTITY OF WORK.

B. FOLLOW MOUNTING HEIGHTS INDICATED IN THE ELECTRICAL LEGEND UNLESS OTHERWISE INDICATED. MEASURE ALL MOUNTING HEIGHTS FROM THE DEVICE CENTER LINE UNLESS OTHERWISE INDICATED.

C. FIELD VERIFY EXACT FEEDER LOCATIONS FOR MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN.

D. EQUIPMENT CONNECTIONS ARE INDICATED IN THEIR APPROXIMATE LOCATIONS. VERIFY EXACT LOCATIONS OF ALL CONNECTIONS WITH OTHER TRADES SUPPLYING EQUIPMENT TO AVOID CONFLICTS AT INSTALLATION.

E. LOCATED ALL SWITCHES FOR LOCAL CONTROL OF LIGHTING ON STRIKE SIDE OF SINGLE DOORS UNLESS OTHERWISE INDICATED.

F. PROVIDE SPECIFIC BREAKER ARRANGEMENT FOR THE PANEL BOARDS WHEREVER PHYSICALLY POSSIBLE. PROVIDE AS-BUILT DRAWINGS INDICATING ACTUAL BRANCH CIRCUIT ARRANGEMENT. PROVIDE TYPE WRITTEN PANELBOARD DIRECTORIES INDICATING ACTUAL BRANCH CIRCUIT ARRANGEMENT.

G. PROVIDE AS-BUILT DRAWINGS INDICATING ACTUAL BRANCH CIRCUIT ARRANGEMENT. PROVIDE TYPE WRITTEN PANELBOARD DIRECTORIES INDICATING ACTUAL BRANCH CIRCUIT ARRANGEMENT. HAND WRITTEN SCHEDULES ARE NOT ACCEPTABLE.

H. ALL CONDUIT RUNS INDICATED ARE DIAGRAMMATIC. COORDINATE ROUTING IN ALL SPACES WITH OTHER TRADES.

I. ALL PANELBOARDS INDICATED ARE HOUSED IN A SINGLE WIDTH ENCLOSURE. UNO, THE CONTRACTOR SHALL FIELD VERIFY ROOM LAYOUT AND ADJUST ACCORDINGLY, AT NO COST TO THE OWNER, IF PROVIDING ANY PANELBOARD ENCLOSURES.

J. WHERE POWER AND COMMUNICATION OUTLETS ARE INDICATED IN CLOSE PROXIMITY ON THE DRAWINGS, FIELD COORDINATE THE LOCATIONS TO PLACE THE OUTLETS ADJACENT TO EACH OTHER.

K. ALL EXTERIOR RECEPTACLES SHALL BE LABELED "WV" - WEATHER RESISTANT.

L. WHEN GROUPING MULTIPLE LINE TO NEUTRAL BRANCH CIRCUITS IN A CONDUIT, PROVIDE DEDICATED COLOR CODED NEUTRAL CONDUCTORS FOR EACH CIRCUIT. DO NOT USE BREAKER TIES AND SHARED NEUTRALS EVEN THOUGH PERMITTED BY NEC.

M. PROVIDE A 2" WIDE YELLOW LINE PAINTED ON THE FLOOR INDICATING THE ELECTRICAL WORKING SPACE. IN FRONT OF ALL ELECTRICAL PANELS IN ELECTRICAL ROOMS, REFER TO PLANS FOR ELECTRICAL WORKING SPACE DETAILS. STENCIL "NO STORAGE IN 2" HIGH, YELLOW LETTERS CENTERED IN THE OUTLINED AREA.

### ABBREVIATIONS

1P	SINGLE PHASE
3P	THREE PHASE
3R	WEATHERPROOF (NEMA 3R)
A	AMPS
AF	ABOVE FINISHED FLOOR
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
BFC	BELOW FINISHED CEILING
BFG	BELOW FINISHED GRADE
BRK	BREAKER
C	CONDUIT
CATV	COMMUNITY ANTENNA TELEVISION (CABLE)
CB	CIRCUIT BREAKER
CB	CABLE
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
CLR	CLEAR
CO	COMPANY
COMB	COMBINATION
COMM	COMMUNICATIONS
CU	COPPER
DIA	DIAMETER
DISC	DISCONNECT
DIV	DIVISION
DWG	DRAWING
EBH	ELECTRIC BASEBOARD HEATER
EC	EMPTY CONDUIT
ECSS	EMERGENCY COMMUNICATIONS STATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EPO	EMERGENCY POWER OFF
EQ	EQUIPMENT
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EX	EXISTING
EXT	EXTERIOR
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FAGP	FIRE ALARM GRAPHIC PANEL
FAXP	FIRE ALARM EXTENDER PANEL
FFSCP	FIRE FIGHTERS SMOKE CONTROL PANEL
FLA	FULL LOAD AMPS
FFMR	FUSE PER MANUFACTURERS REQUIREMENTS/RECOMMENDATIONS
FPND	FUSE PER NAMEPLATE DATA
G	GROUND
GE	GROUND FAULT PROTECTION FOR EQUIPMENT, 6.50mA PER NEC 472.22 (PROVIDE ACCESSORY FOR INDICATED BREAKER)
GFCI	GROUND FAULT CIRCUIT INTERRUPT
GFP	GROUND FAULT PROTECTION FOR PERSONNEL, 4-6mA (PROVIDE ACCESSORY FOR INDICATED BREAKER)
HKP	HOUSEKEEPING PAD
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HZ	HERTZ
IAW	IN ACCORDANCE WITH
IG	ISOLATED GROUND
J-BOX	JUNCTION BOX
KHFS	KITCHEN HOOD FIRE SUPPRESSION SYSTEM
KHZ	KILOHERTZ
KVA	KILOVOLT AMPS
KW	KILOWATTS
KWH	KILOWATT HOURS
L	LOOKOUT TO PREVENT UNAUTHORIZED SWITCHING (PROVIDE ACCESSORY FOR INDICATED BREAKER)
LC	ROUTE CIRCUIT TO LOAD VIA LIGHTING CONTACTOR, REFER TO LC SCHEDULE
LED	LIGHT EMITTING DIODE
LTG	LIGHTING
LTS	LIGHTS
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	METAL HALIDE
MHZ	MEGAHERTZ
MIN	MINIMUM
ML	MAINTENANCE LOCK (PROVIDE ACCESSORY FOR INDICATED BREAKER)
MLO	MAIN LUG ONLY
MMS	MASS NOTIFICATION SYSTEM
MOSP	MAXIMUM OVER CURRENT PROTECTION
MTD	MOUNTED
N	NEUTRAL
N/C	NORMALLY CLOSED
NO	NORMALLY OPEN
NO	NUMBER
OCPI	OWNER FURNISHED CONTRACTOR INSTALLED
P	PILOT LIGHT (AT THE SWITCH HANDLE)
PBD	PANELBOARD
PD	PROTECTIVE DEVICE
RCPT	RECEPTACLE
REC	RECEPTACLE
SEC	SECURITY
SFD	SURGE PROTECTIVE DEVICE
SPEC.	SPECIFICATIONS
SLT	SHUNT TRIP, 120V COIL (PROVIDE ACCESSORY FOR INDICATED BREAKER)
SW	SWITCH
SWBD	SWITCHBOARD
TB	TELECOMMUNICATIONS BONDING BACKBONE
TO	TELECOMMUNICATIONS CLOSET
TELECOM	TELECOMMUNICATIONS
TGB	TELECOMMUNICATIONS GROUNDING BUS BAR
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUS BAR
TYP	TYPICAL
UNO	UNLESS NOTED (INDICATED) OTHERWISE
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
W	WITH
WG	WIRE GUARD
WP	WEATHERPROOF
XFER	TRANSFER
XMR	TRANSFORMER

### COMMUNICATIONS LEGEND

**SYMBOL DESCRIPTION**

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE ONE IN DETAIL:

- ▽ X TELECOMMUNICATIONS OUTLET, WHERE INDICATED, SUBSCRIPT NUMBER INDICATES OUTLET TYPE. REFER TO DETAIL ON E4 SERIES DRAWINGS.
- TMGB TELECOMMUNICATIONS GROUND BUS BAR.
- TMGB TELECOMMUNICATIONS MAIN GROUND BUS BAR.

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE TWO IN DETAIL:

- ▽ X TELECOMMUNICATIONS OUTLET, WHERE INDICATED, SUBSCRIPT NUMBER INDICATES OUTLET TYPE. REFER TO DETAIL ON E4 SERIES DRAWINGS.

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE THREE IN DETAIL:

- INTERCOM STATION WITH PUSHBUTTON.
- MASTER INTERCOM STATION.
- PUSHBUTTON SWITCH.

NOTE: MOUNT THE FOLLOWING DEVICES AS NOTED:

- ▽ MISC COMMUNICATIONS OUTLET. REFER TO DETAIL ON E4 SERIES DRAWINGS.
- ▽ RECESSED FLOOR MOUNT DEVICE COMPLETE WITH FITTINGS FOR FLOOR COVERING. REFER TO DETAIL ON E4 SERIES DRAWINGS.
- ▽ RECESSED FLOOR MOUNT DEVICE COMPLETE WITH FITTINGS FOR FLOOR COVERING. REFER TO DETAIL ON E4 SERIES DRAWINGS.
- ↑ CATV OUTLET. COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS.
- ↑ MISC CATV OUTLET. COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS.

○ SOUND SYSTEM SPEAKER, RECESS CEILING MOUNT.

○ WIRELESS ACCESS POINT. TERMINATE A CAT 6A DATA CABLE AT THE LOCATION. EQUIPMENT PROVIDED BY THE OWNER.

○ 2 POST TELECOMMUNICATIONS EQUIPMENT RACK.

○ 4 POST TELECOMMUNICATIONS EQUIPMENT RACK.

○ 2" EMT CONDUIT SLEEVE WITH NYLON BUSHING EACH END UNO, THRU WALL AT +6" ABOVE FINISHED CEILING.

○ 24" WIDE CABLE TRAY.

### LIGHTING LEGEND

**SYMBOL DESCRIPTION**

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS.

- § LIGHT SWITCH, RATED 120/277 VOLTS, 20-AMPS.
- §§ LIGHT SWITCHES WIRED FOR INBOARD/OUTBOARD SWITCHING, RATED 120/277 VOLTS, 20-AMPS.

SUBSCRIPT/SUPERSCRIPIT LETTERS, NUMBERS, AND SYMBOLS INDICATES SWITCH TYPE AS FOLLOWS:

3	INDICATES 3-WAY LIGHT SWITCH
4	INDICATES 4-WAY LIGHT SWITCH
D	INDICATES DIMMER SWITCH
D3	INDICATES 3-WAY DIMMER LIGHT SWITCH
D4	INDICATES 4-WAY DIMMER LIGHT SWITCH
K	INDICATES KEY OPERATED LIGHT SWITCH
K3	INDICATES KEY OPERATED 3-WAY LIGHT SWITCH
K4	INDICATES KEY OPERATED 4-WAY LIGHT SWITCH
LV	INDICATES LOW VOLTAGE LIGHT SWITCH
OS	INDICATES SWITCH WITH INTEGRAL OCCUPANCY SENSOR
OD	INDICATES DIMMER SWITCH WITH INTEGRAL OCCUPANCY SENSOR
P	INDICATES PILOT LIGHT, ON WHEN SWITCH IS ON
T	INDICATES TIMER LIGHT SWITCH
VS	INDICATES SWITCH WITH INTEGRAL VACANCY SENSOR
VD	INDICATES DIMMER SWITCH WITH INTEGRAL VACANCY SENSOR

LOWER CASE LETTER INDICATES LIGHT FIXTURE CONTROL DESIGNATION

- OMNI-DIRECTIONAL LIGHTING CONTROL OCCUPANCY DETECTOR, CEILING MOUNT.
- DIRECTIONAL LIGHTING CONTROL OCCUPANCY DETECTOR, WALL MOUNT AT 6" BELOW FINISHED CEILING.
- OMNI-DIRECTIONAL LIGHTING CONTROL VACANCY DETECTOR, CEILING MOUNT.
- DIRECTIONAL LIGHTING CONTROL VACANCY DETECTOR, WALL MOUNT AT 6" BELOW FINISHED CEILING.
- PHOTOCELL SENSOR FOR LIGHTING CONTROL, WALL MOUNT AT +10'-0" AFF. AIM NORTH.
- LIGHT FIXTURE, CEILING MOUNT.
- LIGHT FIXTURE ON EMERGENCY POWER, CEILING MOUNT.
- LIGHT FIXTURE, WALL MOUNT, HEIGHT AS INDICATED.
- LIGHT FIXTURE ON EMERGENCY POWER, WALL MOUNT, HEIGHT AS INDICATED.
- EXIT SIGN, CEILING MOUNT. DIRECTIONAL ARROWS AS INDICATED. SHADING INDICATES FACE(S) OF SIGN.
- EXIT SIGN, WALL MOUNT. DIRECTIONAL ARROWS AS INDICATED. SHADING INDICATES FACE(S) OF SIGN.
- LIGHT FIXTURE, POLE MOUNT.

### FIRE ALARM LEGEND

**SYMBOL DESCRIPTION**

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS.

- ▽ FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE. NUMBER INDICATES STROBE CANDELA RATING.
- ▽ FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE. NUMBER INDICATES STROBE CANDELA RATING.
- ▽ FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE. CEILING MOUNTED. NUMBER INDICATES STROBE CANDELA RATING.
- ▽ FIRE ALARM VISUAL NOTIFICATION DEVICE. CEILING MOUNTED. NUMBER INDICATES STROBE CANDELA RATING.
- F FIRE ALARM MANUAL PULL STATION.
- FM FIRE ALARM KEY OPERATED MANUAL PULL STATION.
- CM CARBON MONOXIDE DETECTOR, CEILING MOUNT.
- CS COMBINATION SMOKE DETECTOR / CARBON MONOXIDE, CEILING MOUNT.
- CS HEAT DETECTOR, CEILING MOUNT.
- CS SINGLE DETECTOR, CEILING MOUNT.
- CS FIRE ALARM DUCT SMOKE DETECTOR, FURNISH AND CONNECT UNDER DIVISION 28. INSTALL UNDER DIVISION 23. VERIFY LOCATION WITH DIVISION 23 PRIOR TO ROUGH-IN. PROVIDE ACCESSIBLE KEY OPERATED REMOTE TEST SWITCH FOR EACH DETECTOR.
- CS FIRE ALARM TAMPER SWITCH, PROVIDE UNDER DIVISION 21, FURNISH AND CONNECT MONITOR MODULE TO MONITOR UNDER DIVISION 28.
- CS FIRE ALARM FLOW SWITCH, PROVIDE UNDER DIVISION 21, FURNISH AND CONNECT MONITOR MODULE TO MONITOR UNDER DIVISION 28.
- CS POST INDICATOR VALVE SWITCH, PROVIDE UNDER DIVISION 21, FURNISH AND CONNECT MONITOR MODULE TO MONITOR UNDER DIVISION 28.
- CS FIRE ALARM PRESSURE SWITCH, PROVIDE UNDER DIVISION 21, FURNISH AND CONNECT MONITOR MODULE TO MONITOR UNDER DIVISION 28.
- CS FIRE ALARM REMOTE INDICATOR, CEILING MOUNT.
- CS FIRE ALARM MONITOR MODULE. NOT ALL MONITOR MODULES ARE INDICATED ON DRAWINGS. PROVIDE QUANTITY AND IN LOCATIONS REQUIRED TO ACCOMPLISH SPECIFIED MONITORING FUNCTIONS.
- CS FIRE ALARM CONTROL MODULE. NOT ALL CONTROL MODULES ARE INDICATED ON DRAWINGS. PROVIDE QUANTITY AND IN LOCATIONS REQUIRED TO ACCOMPLISH SPECIFIED CONTROL FUNCTIONS.
- CS FIRE ALARM SPRINKLER BELL, MOUNT AT +10'-0" AFF. PROVIDE CONCEALED 120-VOLT POWER CONNECTION
- M FIRE ALARM MAGNETIC DOOR HOLDER, WALL MOUNT. PROVIDE HINGED MAGNETIC CATCH PLATE ON DOOR TO MATE WITH DEVICE. COORDINATE LOCATION AND LENGTH WITH DIVISION 08. PROVIDE CONCEALED 24-VOLT POWER CONNECTION AND FIRE ALARM CONTROL MODULE IF REQUIRED FOR PROPER OPERATION.
- M FIRE ALARM MAGNETIC DOOR HOLDER, FLOOR MOUNT. PROVIDE HINGED MAGNETIC CATCH PLATE ON DOOR TO MATE WITH DEVICE. COORDINATE LOCATION AND LENGTH WITH DIVISION 08. PROVIDE CONCEALED 24-VOLT POWER CONNECTION AND FIRE ALARM CONTROL MODULE IF REQUIRED FOR PROPER OPERATION.
- M FIRE ALARM POWER CONNECTION TO DIVISION 23 SMOKE OR FIRE/SMOKE DAMPER. COORDINATE WITH DIVISION 23. REFER TO TYPICAL FIRE/SMOKE DAMPER DIAGRAM.

**SYMBOL VARIATIONS DESCRIPTION**

- ▽ WIRE GUARD FOR FIRE ALARM NOTIFICATION DEVICE. TYPE OF NOTIFICATION DEVICE MAY VARY.
- ▽ DEVICE COVER FOR FIRE ALARM NOTIFICATION DEVICE. NUMBER INDICATES STROBE SETTING AND REDUCED EFFECTIVE OUTPUT WHEN DEVICE COVER IS PRESENT. TYPE OF NOTIFICATION DEVICE MAY VARY.
- ▽ WIRE GUARD FOR FIRE ALARM INITIATION DEVICE. TYPE OF INITIATION DEVICE MAY VARY.
- ▽ SOUNDER BASE FOR FIRE ALARM INITIATION DEVICE. TYPE OF INITIATION DEVICE MAY VARY.
- ▽ FIRE ALARM WALL MOUNTED INITIATION DEVICE. TYPE OF INITIATION DEVICE MAY VARY.

### ONE LINE DIAGRAM LEGEND

**SYMBOL DESCRIPTION**

- CIRCUIT BREAKER
- FUSED SWITCH
- TRANSFORMER
- TRANSFER SWITCH
- FEEDER DESIGNATION
- CT CURRENT TRANSFORMER
- PT POTENTIAL TRANSFORMER

### RECEPTACLE DEVICE LEGEND

**SYMBOL DESCRIPTION**

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE ONE IN DETAIL:

- APPLIANCE RECEPTACLE. PROVIDE NEMA CONFIGURATION TO MATCH PLUG FOR EQUIPMENT SERVED.
- DUPLEX RECEPTACLE, NEMA 5-20R.
- DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R.
- GFCI DUPLEX RECEPTACLE, NEMA 5-20R.
- SINGLE RECEPTACLE, NEMA 5-20R.
- SWITCHED DUPLEX RECEPTACLE WITH SPLIT YOLK, THE BOTTOM OUTLET IS SWITCHED & THE TOP OUTLET IS UNSWITCHED, NEMA 5-15R.

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE TWO IN DETAIL:

- DUPLEX RECEPTACLE, NEMA 5-20R.
- DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R.
- GFCI DUPLEX RECEPTACLE, NEMA 5-20R.
- SINGLE RECEPTACLE, NEMA 5-20R.

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE FOUR IN DETAIL:

- DUPLEX RECEPTACLE, NEMA 5-20R.
- GFCI DUPLEX RECEPTACLE, NEMA 5-20R.
- GFCI DUPLEX RECEPTACLE, NEMA 5-20R.
- SINGLE RECEPTACLE, NEMA 5-20R.
- DUPLEX RECEPTACLE, NEMA 5-20R, CEILING MOUNT.
- DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, CEILING MOUNT.
- DUPLEX RECEPTACLE, NEMA 5-20R, RECESS FLOOR MOUNT.
- DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, RECESS FLOOR MOUNT.
- CORD REEL OUTLET, CEILING MOUNT.

**SYMBOL VARIATIONS DESCRIPTION**

- RECEPTACLE CONNECTED TO EMERGENCY POWER, PROVIDE RED DEVICE. TYPE OF RECEPTACLE MAY VARY.
- GFCI RECEPTACLE CONNECTED TO EMERGENCY POWER, PROVIDE RED DEVICE. TYPE OF RECEPTACLE MAY VARY.
- PROTECTIVE COVER FOR RECEPTACLE. PROVIDE NEMA 3R "WHILE IN USE" ENCLOSURE FOR ALL EXTERIOR LOCATIONS. TYPE OF RECEPTACLE MAY VARY.
- PLUG LOAD CONTROLLED RECEPTACLE. TYPE OF RECEPTACLE MAY VARY.
- RECEPTACLE WITH USB PORTS. TYPE OF RECEPTACLE MAY VARY.

### POWER / COMMUNICATION DEVICE LEGEND

**SYMBOL DESCRIPTION**

- POWER/COMMUNICATIONS RECESSED FLOOR BOX. WHERE INDICATED, SUBSCRIPT NUMBER INDICATES OUTLET TYPE. REFER TO DETAIL ON E4 SERIES DRAWINGS.
- POWER/COMMUNICATIONS POKE THRU FLOOR BOX. WHERE INDICATED, SUBSCRIPT NUMBER INDICATES OUTLET TYPE. REFER TO DETAIL ON E4 SERIES DRAWINGS.
- SYSTEM FURNITURE FLEX POWER CABLE CONNECTION VIA FLOOR BOX WITH COVER SUITABLE FOR SYSTEM FURNITURE CONNECTION. REFER TO DETAIL ON E4 SERIES DRAWINGS. COORDINATE W/ SYSTEM FURNITURE PROVIDER PRIOR TO ROUGH-IN.
- SYSTEM FURNITURE FLEX POWER CABLE CONNECTION VIA FLUSH WALL BOX MOUNTED 4" AFF. REFER TO DETAIL ON E4 SERIES DRAWINGS. COORDINATE W/FURNITURE PROVIDER PRIOR TO ROUGH-IN.
- RECEPTACLE MOUNTED BESIDE TELECOMMUNICATION OUTLET. PROVIDE RECEPTACLE BASED ON "P" IN LEFT SYMBOL BOX. "P" INSIDE LEFT SYMBOL BOX SHALL BE ONE OF THE SYMBOLS FROM RECEPTACLE DEVICE LEGEND. PROVIDE TELECOMMUNICATION OUTLET BASED ON "T" IN RIGHT SYMBOL BOX. "T" INSIDE RIGHT SYMBOL BOX SHALL BE ONE OF THE SYMBOLS FROM COMMUNICATIONS LEGEND.
- RECEPTACLE AND TELECOMMUNICATION OUTLET MOUNTED INSIDE WALL MOUNTED FLAT DISPLAY BOX. PROVIDE RECEPTACLE BASED ON "P" IN LEFT SYMBOL BOX. "P" INSIDE LEFT SYMBOL BOX SHALL BE ONE OF THE SYMBOLS FROM RECEPTACLE DEVICE LEGEND. COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS.

**SYMBOL VARIATIONS DESCRIPTION**

- POWER/COMMUNICATIONS RECESSED FLOOR BOX OR POKE THRU CONNECTED TO EMERGENCY POWER, PROVIDE RED DEVICES.
- PROTECTIVE COVER FOR RECEPTACLE AND TELECOMMUNICATION OUTLET. PROVIDE NEMA 3R "WHILE IN USE" ENCLOSURE FOR ALL EXTERIOR LOCATIONS. TYPE OF RECEPTACLE AND TELECOMMUNICATION OUTLET MAY VARY.
- PLUG LOAD CONTROLLED RECEPTACLE MOUNTED BESIDE TELECOMMUNICATION OUTLET. TYPE OF RECEPTACLE AND TELECOMMUNICATION OUTLET MAY VARY.
- RECEPTACLE WITH USB PORTS MOUNTED BESIDE TELECOMMUNICATION OUTLET. TYPE OF RECEPTACLE AND TELECOMMUNICATION OUTLET MAY VARY.

### POWER DEVICE / EQUIPMENT LEGEND

**SYMBOL DESCRIPTION**

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE TWO IN DETAIL:

- OVERHEAD DOOR CONTROLLER.
- DOORBELL PUSH BUTTON.
- EMERGENCY POWER OFF (E.P.O) SWITCH.
- HANDICAP DOOR OPERATOR SWITCH.

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE THREE IN DETAIL:

- NON-FUSIBLE DISCONNECT SWITCH.
- FUSIBLE DISCONNECT SWITCH.
- ENCLOSED CIRCUIT BREAKER, CHARACTERISTICS AS INDICATED.
- MANUAL MOTOR STARTER, OVERLOAD PROTECTION AS REQUIRED PER NAME PLATE RATINGS. WITH INDICATOR PILOT LIGHT.
- MAGNETIC MOTOR STARTER, OVERLOAD RELAYS AS REQUIRED TO SERVE MANUFACTURER REQUIREMENTS OF EQUIPMENT SERVED. PROVIDE WITH HAND-OFF-AUTOMATIC SELECTOR SWITCH AND INDICATOR LIGHTS.
- COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH, OVERLOAD ELEMENTS AND FUSING AS REQUIRED TO SERVE MANUFACTURER REQUIREMENTS OF EQUIPMENT SERVED. PROVIDE WITH HAND-OFF-AUTOMATIC SELECTOR SWITCH AND INDICATOR LIGHTS.

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE FOUR IN DETAIL:

- DOORBELL CHIME, WALL MOUNTED.

NOTE: MOUNT THE FOLLOWING DEVICES AS NOTED:

- FLUSH VALVE TRANSFORMER POWER CONNECTION. PROVIDE A 4"x4" RECESSED JB AND MOUNT POWER SUPPLY PROVIDED BY DIV 22. COORDINATE CONNECTION WITH DIV 22. PROVIDE A 2"x4" JB AT EACH TOILET, SINK AND WATER CLOSET AS RECOMMENDED BY THE MANUFACTURER. PROVIDE 2" #14 IN 1/2" C "DAISY CHAINED" BETWEEN UP TO EIGHT BOXES AND TERMINATING AT POWER SUPPLY.
- ISOLATION VALVE. REFER TO ISOLATION VALVE CONTROL DETAIL ON DRAWING E4 SERIES DRAWING.
- EQUIPMENT POWER CONNECTION.
- JUNCTION BOX, CONCEALED ABOVE CEILING, UNO.
- JUNCTION BOX, WALL MOUNTED. MOUNTING HEIGHT AS INDICATED ON PLANS.
- MOTOR POWER CONNECTION.
- MOTOR RATED SWITCH WITH OVERLOAD PROTECTION.
- LINE VOLTAGE THERMOSTAT, DIVISION 23 FURNISH, DIVISION 26 INSTALL. REFER TO DIVISION 23 DRAWINGS FOR LOCATIONS AND QUANTITY.
- POWER FOR DIV 23 MOTORIZED DAMPER. REFER TO DIVISION 23 DRAWINGS FOR LOCATIONS AND QUANTITY.
- NON-METALLIC SURFACE RACEWAY, DEVICES AS INDICATED, MOUNTING HEIGHT INDICATED ON PLANS.
- PANELBOARD OR SWITCHBOARD. PROVIDE 8 INCH CONCRETE HOUSEKEEPING PAD FOR ALL GROUND MOUNTED EQUIPMENT UNLESS NOTED OTHERWISE. DENOTED BY PANELBOARD/SWITCHBOARD TAG PER ONE-LINE DIAGRAM.
- TRANSFORMER. PROVIDE 4 INCH CONCRETE HOUSEKEEPING PAD UNLESS NOTED OTHERWISE. DENOTED BY TRANSFORMER TAG PER ONE-LINE DIAGRAM.
- UTILITY METER. MOUNT PER UTILITY STANDARDS, UNO.
- FEEDER TAG. REFER TO FEEDER SCHEDULE ON DWG E5.1.

(FOR MULTI-FAMILY HOUSING PROJECTS ONLY)  
RESIDENTIAL UNIT METERCENTER IDENTIFICATION TAG. IDENTIFIES THE METERCENTER THAT PROVIDES POWER TO THE RESIDENTIAL UNIT LOADCENTER.

(FOR SENIOR LIVING PROJECTS ONLY)  
RESIDENTIAL UNIT PANELBOARD DESIGNATION TAG. IDENTIFIES THE PANELBOARD & CIRCUIT THAT PROVIDES POWER TO THE RESIDENTIAL UNIT LOADCENTER.

○ BRANCH CIRCUIT RUN CONCEALED, UNO. DASHED INDICATES CIRCUITRY REQUIRED TO BE RUN BELOW SLAB.

○ BRANCH CIRCUIT HOME RUN TO PANELBOARD AND CIRCUIT INDICATED.

### POWER DEVICE / EQUIPMENT LEGEND

**SYMBOL DESCRIPTION**

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE TWO IN DETAIL:

- OVERHEAD DOOR CONTROLLER.
- DOORBELL PUSH BUTTON.
- EMERGENCY POWER OFF (E.P.O) SWITCH.
- HANDICAP DOOR OPERATOR SWITCH.

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE THREE IN DETAIL:

- NON-FUSIBLE DISCONNECT SWITCH.
- FUSIBLE DISCONNECT SWITCH.
- ENCLOSED CIRCUIT BREAKER, CHARACTERISTICS AS INDICATED.
- MANUAL MOTOR STARTER, OVERLOAD PROTECTION AS REQUIRED PER NAME PLATE RATINGS. WITH INDICATOR PILOT LIGHT.
- MAGNETIC MOTOR STARTER, OVERLOAD RELAYS AS REQUIRED TO SERVE MANUFACTURER REQUIREMENTS OF EQUIPMENT SERVED. PROVIDE WITH HAND-OFF-AUTOMATIC SELECTOR SWITCH AND INDICATOR LIGHTS.
- COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH, OVERLOAD ELEMENTS AND FUSING AS REQUIRED TO SERVE MANUFACTURER REQUIREMENTS OF EQUIPMENT SERVED. PROVIDE WITH HAND-OFF-AUTOMATIC SELECTOR SWITCH AND INDICATOR LIGHTS.

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE FOUR IN DETAIL:

- DOORBELL CHIME, WALL MOUNTED.

NOTE: MOUNT THE FOLLOWING DEVICES AS NOTED:

- FLUSH VALVE TRANSFORMER POWER CONNECTION. PROVIDE A 4"x4" RECESSED JB AND MOUNT POWER SUPPLY PROVIDED BY DIV 22. COORDINATE CONNECTION WITH DIV 22. PROVIDE A 2"x4" JB AT EACH TOILET, SINK AND WATER CLOSET AS RECOMMENDED BY THE MANUFACTURER. PROVIDE 2" #14 IN 1/2" C "DAISY CHAINED" BETWEEN UP TO EIGHT BOXES AND TERMINATING AT POWER SUPPLY.
- ISOLATION VALVE. REFER TO ISOLATION VALVE CONTROL DETAIL ON DRAWING E4 SERIES DRAWING.
- EQUIPMENT POWER CONNECTION.
- JUNCTION BOX, CONCEALED ABOVE CEILING, UNO.
- JUNCTION BOX, WALL MOUNTED. MOUNTING HEIGHT AS INDICATED ON PLANS.
- MOTOR POWER CONNECTION.
- MOTOR RATED SWITCH WITH OVERLOAD PROTECTION.
- LINE VOLTAGE THERMOSTAT, DIVISION 23 FURNISH, DIVISION 26 INSTALL. REFER TO DIVISION 23 DRAWINGS FOR LOCATIONS AND QUANTITY.
- POWER FOR DIV 23 MOTORIZED DAMPER. REFER TO DIVISION 23 DRAWINGS FOR LOCATIONS AND QUANTITY.
- NON-METALLIC SURFACE RACEWAY, DEVICES AS INDICATED, MOUNTING HEIGHT INDICATED ON PLANS.
- PANELBOARD OR SWITCHBOARD. PROVIDE 8 INCH CONCRETE HOUSEKEEPING PAD FOR ALL GROUND MOUNTED EQUIPMENT UNLESS NOTED OTHERWISE. DENOTED BY PANELBOARD/SWITCHBOARD TAG PER ONE-LINE DIAGRAM.
- TRANSFORMER. PROVIDE 4 INCH CONCRETE HOUSEKEEPING PAD UNLESS NOTED OTHERWISE. DENOTED BY TRANSFORMER TAG PER ONE-LINE DIAGRAM.
- UTILITY METER. MOUNT PER UTILITY STANDARDS, UNO.
- FEEDER TAG. REFER TO FEEDER SCHEDULE ON DWG E5.1.

(FOR MULTI-FAMILY HOUSING PROJECTS ONLY)  
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(FOR SENIOR LIVING PROJECTS ONLY)  
RESIDENTIAL UNIT PANELBOARD DESIGNATION TAG. IDENTIFIES THE PANELBOARD & CIRCUIT THAT PROVIDES POWER TO THE RESIDENTIAL UNIT LOADCENTER.

○ BRANCH CIRCUIT RUN CONCEALED, UNO. DASHED INDICATES CIRCUITRY REQUIRED TO BE RUN BELOW SLAB.

○ BRANCH CIRCUIT HOME RUN TO PANELBOARD AND CIRCUIT INDICATED.

### POWER DEVICE / EQUIPMENT LEGEND

**SYMBOL DESCRIPTION**

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE TWO IN DETAIL:

- OVERHEAD DOOR CONTROLLER.
- DOORBELL PUSH BUTTON.
- EMERGENCY POWER OFF (E.P.O) SWITCH.
- HANDICAP DOOR OPERATOR SWITCH.

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE THREE IN DETAIL:

- NON-FUSIBLE DISCONNECT SWITCH.
- FUSIBLE DISCONNECT SWITCH.
- ENCLOSED CIRCUIT BREAKER, CHARACTERISTICS AS INDICATED.
- MANUAL MOTOR STARTER, OVERLOAD PROTECTION AS REQUIRED PER NAME PLATE RATINGS. WITH INDICATOR PILOT LIGHT.
- MAGNETIC MOTOR STARTER, OVERLOAD RELAYS AS REQUIRED TO SERVE MANUFACTURER REQUIREMENTS OF EQUIPMENT SERVED. PROVIDE WITH HAND-OFF-AUTOMATIC SELECTOR SWITCH AND INDICATOR LIGHTS.
- COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH, OVERLOAD ELEMENTS AND FUSING AS REQUIRED TO SERVE MANUFACTURER REQUIREMENTS OF EQUIPMENT SERVED. PROVIDE WITH HAND-OFF-AUTOMATIC SELECTOR SWITCH AND INDICATOR LIGHTS.

NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE FOUR IN DETAIL:

- DOORBELL CHIME, WALL MOUNTED.

NOTE: MOUNT THE FOLLOWING DEVICES AS NOTED:

- FLUSH VALVE TRANSFORMER POWER CONNECTION. PROVIDE A 4"x4" RECESSED JB AND MOUNT POWER SUPPLY PROVIDED BY DIV 22. COORDINATE CONNECTION WITH DIV 22. PROVIDE A 2"x4" JB AT EACH TOILET, SINK AND WATER CLOSET AS RECOMMENDED BY THE MANUFACTURER. PROVIDE 2" #14 IN 1/2" C "DAISY CHAINED" BETWEEN UP TO EIGHT BOXES AND TERMINATING AT POWER SUPPLY.
- ISOLATION VALVE. REFER TO ISOLATION VALVE CONTROL DETAIL ON DRAWING E4 SERIES DRAWING.
- EQUIPMENT POWER CONNECTION.
- JUNCTION BOX, CONCEALED ABOVE CEILING, UNO.
- JUNCTION BOX, WALL MOUNTED. MOUNTING HEIGHT AS INDICATED ON PLANS.
- MOTOR POWER CONNECTION.
- MOTOR RATED SWITCH WITH OVERLOAD PROTECTION.
- LINE VOLTAGE THERMOSTAT, DIVISION 23 FURNISH, DIVISION 26 INSTALL. REFER TO DIVISION 23 DRAWINGS FOR LOCATIONS AND QUANTITY.
- POWER FOR DIV 23 MOTORIZED DAMPER. REFER TO DIVISION 23 DRAWINGS FOR LOCATIONS AND QUANTITY.
- NON-METALLIC SURFACE RACEWAY, DEVICES AS INDICATED, MOUNTING HEIGHT INDICATED ON PLANS.
- PANELBOARD OR SWITCHBOARD. PROVIDE 8 INCH CONCRETE HOUSEKEEPING PAD FOR ALL GROUND MOUNTED EQUIPMENT UNLESS NOTED OTHERWISE. DENOTED BY PANELBOARD/SWITCHBOARD TAG PER ONE-LINE DIAGRAM.
- TRANSFORMER. PROVIDE 4 INCH CONCRETE HOUSEKEEPING PAD UNLESS NOTED OTHERWISE. DENOTED BY TRANSFORMER TAG PER ONE-LINE DIAGRAM.
- UTILITY METER. MOUNT PER UTILITY STANDARDS, UNO.
- FEEDER TAG. REFER TO FEEDER SCHEDULE ON DWG E5.1.

(FOR MULTI-FAMILY HOUSING PROJECTS ONLY)  
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(FOR SENIOR LIVING PROJECTS ONLY)  
RESIDENTIAL UNIT PANELBOARD DESIGNATION TAG. IDENTIFIES THE PANELBOARD & CIRCUIT THAT PROVIDES POWER TO THE RESIDENTIAL UNIT LOADCENTER.

○ BRANCH CIRCUIT RUN CONCEALED, UNO. DASHED INDICATES CIRCUITRY REQUIRED TO BE RUN BELOW SLAB.

○ BRANCH CIRCUIT HOME RUN TO PANELBOARD AND CIRCUIT INDICATED.

### POWER / COMMUNICATION DEVICE LEGEND

**SYMBOL DESCRIPTION**

- POWER/COMMUNICATIONS RECESSED FLOOR BOX. WHERE INDICATED, SUBSCRIPT NUMBER INDICATES OUTLET TYPE. REFER TO DETAIL ON E4 SERIES DRAWINGS.
- POWER/COMMUNICATIONS POKE THRU FLOOR BOX. WHERE INDICATED, SUBSCRIPT NUMBER INDICATES OUTLET TYPE. REFER TO DETAIL ON E4 SERIES DRAWINGS.
- SYSTEM FURNITURE FLEX POWER CABLE CONNECTION VIA FLOOR BOX WITH COVER SUITABLE FOR SYSTEM FURNITURE CONNECTION. REFER TO DETAIL ON E4 SERIES DRAWINGS. COORDINATE W/ SYSTEM FURNITURE PROVIDER PRIOR TO ROUGH-IN.
- SYSTEM FURNITURE FLEX POWER CABLE CONNECTION VIA FLUSH WALL BOX MOUNTED 4" AFF. REFER TO DETAIL ON E4 SERIES DRAWINGS. COORDINATE W/FURNITURE PROVIDER PRIOR TO ROUGH-IN.
- RECEPTACLE MOUNTED BESIDE TELECOMMUNICATION OUTLET. PROVIDE RECEPTACLE BASED ON "P" IN LEFT SYMBOL BOX. "P" INSIDE LEFT SYMBOL BOX SHALL BE ONE OF THE SYMBOLS FROM RECEPTACLE DEVICE LEGEND. PROVIDE TELECOMMUNICATION OUTLET BASED ON "T" IN RIGHT SYMBOL BOX. "T" INSIDE RIGHT SYMBOL BOX SHALL BE ONE OF THE SYMBOLS FROM COMMUNICATIONS LEGEND.
- RECEPTACLE AND TELECOMMUNICATION OUTLET MOUNTED INSIDE WALL MOUNTED FLAT DISPLAY BOX. PROVIDE RECEPTACLE BASED ON "P" IN LEFT SYMBOL BOX. "P" INSIDE LEFT SYMBOL BOX SHALL BE ONE OF THE SYMBOLS FROM RECEPTACLE DEVICE LEGEND. COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS.

**SYMBOL VARIATIONS DESCRIPTION**

- POWER/COMMUNICATIONS RECESSED FLOOR BOX OR POKE THRU CONNECTED TO EMERGENCY POWER, PROVIDE RED DEVICES.
- PROTECTIVE COVER FOR RECEPTACLE AND TELECOMMUNICATION OUTLET. PROVIDE NEMA 3R "WHILE IN