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ISSUE DATE: June 25, 2018
PROJECT: **NAC Equestrian Center Expansion**
1000 Ability Way
Park City, UT 84060

RESPONSE TO: Contractor Requests for Information
OWNER'S PROJECT #: N/A
ARCHITECT'S PROJECT #: 17179.00

PAGES: 2 + Attachments

This Addendum forms a part of the Contract Documents and modifies the original Bid Documents as noted below. Acknowledge receipt of this Addendum in the space identified as Addendum #1 on the Bid Form. Failure to do so may subject the Bidder to disqualification. This Addendum includes all attachments noted, included herein by reference.

RFIs:

#	Question	Response
1.1	The door hardware groups and specification appear to be missing. Please indicate where these are located or provide.	Door hardware specifications have been added, and set input into the schedule. See attached.
1.2	Exterior Storefront Type J is missing on sheet A602. Please provide.	Type J is on sheet A602, but was tagged as type K. Type K was missing a tag on sheet A602. This has been clarified. See revised sheet A602, attached.
1.3	Sheet A151A note 06:PW3 calls for a higher-grade plywood to be used at the exposed ceiling areas (interior and exterior). It seems that AC or CDX plywood would be the correct application. CDX plywood would be the lesser cost. Please indicate the structural plywood grade and species that is to be used at the interior/exterior exposed ceilings (see also A151C, A5/A511, and B3/A513).	<i>This will be addressed in Addendum 2.</i>
1.4	On sheet S302 it shows that the existing rod bracings are to stay in place. In some cases, these rods are located at the new window locations. Please confirm that it is acceptable for the to obstruct the view through the new windows, as it may be costly to remove the existing rod bracing.	Existing bracing in front of new windows is acceptable between the existing arena and the new expansion.
1.5	On sheet A151B between grids D – F / 4 -6 callout 06:LVL requires 11-7/8" LVL sistered to glu-lam on both sides as rain gutter support. Please indicate if these LVL's are to be left exposed or if a finish is to be applied to the LVL's (see also A3/A511).	All exposed, exterior wood is to be sealed. See Specification Section 062013, paragraph 2.3 C.
1.6	Based on a preliminary site visit it appears that the existing All West Telephone Service and RMP Transformer are in a different location than currently shown on the plans. Please review and revise if appropriate.	We have located the existing service in the correction location per the civil drawings. The site was updated to show the new location of the transformer and pedestal for all west service.

- 1.7 Sheet A121 shows a 1.5/12 pitch on the lower roof with exposed fasteners. Would it be more appropriate to possibly switch to a standing seam and mechanical seam at this shallow pitch? *This will be addressed in Addendum 2.*

SPECIFICATION AMENDMENTS:

S1. Specifications:

<u>Item #</u>	<u>Section</u>	<u>Page/Para</u>	<u>Amendment</u>
S1.00	-	TOC	REVISE table of contents to include door hardware. See attached.
S1.01	087100	Section	ADD Specification section for Door Hardware. See attached.
S1.02	230810	Section	ADDED Variable Frequency Drives Specification Section.

DRAWING AMENDMENTS:

D1. General:

<u>Item #</u>	<u>Sheet(s)</u>	<u>Drawing/Detail</u>	<u>Amendment</u>
D1.01	G002	Sheet Index	REVISE sheet index to match sheets issued. See revised sheet, attached.

D2. Civil:

<u>Item #</u>	<u>Sheet(s)</u>	<u>Drawing/Detail</u>	<u>Amendment</u>
D2.01			None Noted

D3. Landscape:

<u>Item #</u>	<u>Sheet(s)</u>	<u>Drawing/Detail</u>	<u>Amendment</u>
D3.01			None Noted

D4. Structural:

<u>Item #</u>	<u>Sheet(s)</u>	<u>Drawing/Detail</u>	<u>Amendment</u>
D4.01			None Noted

D5. Architectural:

<u>Item #</u>	<u>Sheet(s)</u>	<u>Drawing/Detail</u>	<u>Amendment</u>
D5.01	A601	Door Schedule	REVISED Hardware set numbers. See revised sheet, attached.
D5.02	A602	Storefront Types	REVISED storefront type J and K tags. See revised sheet, attached.

D6. Mechanical:

<u>Item #</u>	<u>Sheet(s)</u>	<u>Drawing/Detail</u>	<u>Amendment</u>
D6.01	M101C	Level 1 Mechanical Floor Plan – Area 'C'	ADDED additional size requirements for fresh air plenum to makeup air unit (MAU-1). ADDED 1" drain connection to fresh air plenum serving (MAU-1).
D6.03	M601	Mechanical Schedules	ADDED vent material, type, and connection sizes to Make Up Air Unit Schedule (MUA) ADDED vent type and connection sizes to Gas Fired Unit Heater Schedule (UH)
D6.03	P101C	Level 1 Plumbing Floor Plan – Area 'C'	ADDED 1" drain from fresh air plenum at makeup air unit (MAU-1) to floor sink.

D7. Electrical:

<u>Item #</u>	<u>Sheet(s)</u>	<u>Drawing/Detail</u>	<u>Amendment</u>
D7.01	-	-	See electrical addendum write up (5 pages), and associated revised sheets (19 sheets)

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SECTION 087100 - DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Door hardware for swinging doors and other doors to the extent indicated.
- B. Cylinders and hardware for special doors as scheduled in hardware sets.
- C. Electro-mechanical devices and access control components as specified herein.

1.02 RELATED REQUIREMENTS

- A. Section 08 1113 - Hollow Metal Doors and Frames.
- B. Section 08 1416 - Flush Wood Doors.
- C. Section 08 4313 - Aluminum-Framed Storefronts and Entrances.

1.03 REFERENCED STANDARDS

- A. American National Standards Institute (ANSI):
 - 1. International Code Council (ICC): ANSI/ICC A117.1: Accessible and Usable Buildings and Facilities, edition as adopted by local Authority Having Jurisdiction (AHJ).
 - 2. Builders Hardware Manufacturer's Association (BHMA)
 - a. ANSI/BHMA A156.1; Butts & Hinges; 2013 edition
 - b. ANSI/BHMA A156.2; Bored and Preassembled Locks and Latches; 2011 edition
 - c. ANSI/BHMA A156.16; Auxiliary Hardware; 2013 edition
 - d. ANSI/BHMA A156.18; Materials and Finishes; 2012 edition
 - e. ANSI/BHMA A156.36; Auxiliary Locks; 2010 edition
- B. Door and Hardware Institute (DHI)
 - 1. Keying Systems and Nomenclature, 2003 edition
 - 2. Sequence and Format for the Hardware Schedule, 2001 edition

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate layout, templating, and installation of work with other sections as required. Provide templates, product information, schedules, and diagrams required to fully coordinate the work.
 - 1. Coordinate blocking for wall stops and other wall mounted hardware with Section 06 1053 - Miscellaneous Rough Carpentry.

2. Coordinate hardware locations and templating with the appropriate Division 08 door and frame sections.
 3. Coordinate conduit, raceways, wiring, and connection as required for electrical and pneumatic hardware items with the appropriate electrical, access control, intrusion detection, and fire alarm sections.
- B. Pre-installation Meeting: Upon approval of hardware schedule and wiring diagram submittals and before hardware installation, conduct a pre-installation meeting to discuss special installation requirements, coordinate electrical rough-in and other preparatory work performed by other trades, review sequence of operation for each electrified door opening, and review required testing, inspecting, and certifying procedures.
- C. Keying Conference: Prior to ordering hardware, conduct meeting to coordinate key system requirements and layout of keying with owner, contractor, and supplier.

1.05 SUBMITTALS

- A. General:
1. Provide submittals in accordance with Section 01 6000 - Product Requirements.
 2. Advise architect within the submittal package of incompatibility or issues which may detrimentally affect the work of this section.
 3. Submittals shall be prepared by or under the supervision of Architectural Hardware Consultant. Stamp submittals with the DHI certification seal and signature of the supervising Architectural Hardware Consultant.
 4. Submittal sequence: Submit product data, hardware schedule, samples, and qualification data concurrently. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in project construction schedule. Upon approval of first submittal package, submit wiring diagrams and key schedule.
- B. Product Data: Submit manufacturer's technical product data for each item of door hardware. Highlight relevant product information such as model, function, trim, finish, options, electrical requirements, and accessories.
- C. Hardware Schedule:
1. Submit hardware schedule detailing fabrication and assembly of door hardware as well as procedures and diagrams. Coordinate the final door hardware sets with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 2. Format schedule complying with the vertical format in DHI's "Sequence and Format for the Hardware Schedule" publication.
 - a. Use same door numbers as found in contract documents and group doors with like hardware under a single heading.
 - b. Identify each heading with the submitted heading number and Architect's specified hardware set number.
 - c. Each heading shall include a list of applicable openings with information as follows: Architect's specified door number, to/from location, maximum door swing, handing

- information, door and frame sizes and materials, applicable ratings, and other information that may impact the door hardware.
- d. Each heading shall also include complete designations of every item including: quantity per opening, manufacturer, description of item, and complete model number designating type, style, function, size, finish, fasteners, and other options required for the provision of hardware. Indicate non-standard installation requirements or mounting heights, operational narratives of electrified openings, and list related door devices specified in other sections.
- D. Keying Schedule: Submit keying schedule detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations complying with DHI's "Keying Systems and Nomenclature" publication.
- E. Shop Drawings:
1. Elevation Diagrams: For each electrified application, provide an elevation diagram depicting the locked side of the door. In title block of diagram, reference the applicable opening number and/or hardware set number as specified by the architect. Depict visible hardware items using solid lines and hidden hardware items using dashed lines and identify each electrified hardware item. Depict required electrical wiring and identify the required quantity and gage of wires for each component. Include narrative of opening operation.
 2. Point to Point Diagrams: For each electrified application, provide a point to point schematic diagram that depicts each wiring connection point on each component. Depict the required wiring from component to component and indicate each wire's start point, termination point, color, and requirements for each conductor's gage, twist type, shielding, maximum length, and plenum rating as required by hardware manufacturer and/or applicable codes.
- F. Samples: Submit a sample of each type of hardware requested by the architect. Provide samples of same finish, style, and function as specified herein and tag with location and full description for coordination with the schedule. Samples will be returned to supplier in like-new condition. Items that are acceptable to the architect may, after final check of operations, be incorporated into the work, within the limitations of the keying requirements.
- G. Manufacturer's Templates: After final approval of the hardware schedule, provide templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to ensure that adequate provisions are made for locating and installing door hardware to comply with indicated requirements. Provide additional templates, template lists, hardware schedules, and product information to other trades upon request.
- H. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, provide reports for locks, latches, delayed egress locks, electro-mechanical hardware, and door closers. Certify that products are approved for use on each type and size of labeled fire door and meet the requirements specified herein for fire rated openings.

1.06 CLOSE OUT SUBMITTALS

- A. General: Upon substantial completion, provide two (2) copies of the closeout submittals complying with Section 01 7800 - Closeout Submittals.
- B. Operation And Maintenance Data: Provide operation and maintenance manuals that include the following for each hardware item:
 - 1. Project information including contact information for architect, contractor, supplier, installer, Architectural Hardware Consultant, and local representative of each hardware manufacturer
 - 2. Copies of approved product data, hardware schedule, keying schedule, shop drawings, and manufacturer's templates submittals. Submittals shall be updated to reflect as-built conditions.
 - 3. Complete information on care, maintenance, adjustment, repair and replacement of parts, and preservation of finishes

1.07 QUALITY ASSURANCE

- A. Qualifications
 - 1. Supplier Qualifications:
 - a. Supplier shall have documented experience in the supply of door hardware for five (5) years or for three (3) prior projects similar in scope, size, and quality. Supplier shall be a certified direct distributor and be a full sales and service organization for the manufacturer(s) listed. Supplier shall have warehousing facilities within 75 miles of the project site.
 - b. During the course of the work, supplier shall make available an Architectural Hardware Consultant (AHC) or Architectural Openings Consultant (AOC), as certified by DHI and enrolled in the DHI Continuing Education Program, to consult with contractor, architect, and owner about door hardware and keying.
 - 2. Installer Qualifications: Installer shall have documented experience in the installation of door hardware for five (5) years or for three (3) prior projects similar in scope, size, and quality. Installer shall be employee of the supplying company.
 - 3. Manufacturer Sourcing Qualifications:
 - a. Obtain each type of door hardware (hinges, latch and locksets, exit devices, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Marking and Packaging: Package hardware items manufacturer's standard packaging, clearly marked with hardware set number correlating to door hardware schedule and architect's door number.
- B. Delivery and Acceptance: Coordinate with construction schedule and deliver packaged hardware items to place of installation (e.g. project site, fabrication shop). Upon delivery, inspect and inventory door hardware. Immediately notify supplier of defective or missing items.

1. Deliver keys and cores to owner by registered mail or overnight package service. Ship keys separately from cores.
- C. Storage and Handling:
1. Provide secure, dry storage area for door hardware delivered to the project site, but not yet installed. Store items on shelves or pallets to prevent damage.
 2. Control handling and installation of hardware items that are not immediately replaceable so that completion of work will not be delayed by hardware losses both before and after installation.

1.09 WARRANTY

- A. General Warranty: Warrant door hardware against defects in material and workmanship as set forth in Section 01 7000 - Execution and Closeout Requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Approved Manufacturer's: Products by manufacturers listed under acceptable substitutions may be incorporated into the work contingent upon the provided product complying with all requirements indicated within this section.

	<u>Basis of Design</u>	<u>Acceptable Substitutions</u>
1. Hinges:	Ives (IVE)	Any BHMA Equivalent.
2. Locks & Latches:	Falcon (FAL)	Sargent (SAR), Best (BES).
3. Cylinders & Keying:	Schlage (SCH)	Sargent (SAR), Best (BES).
4. Exit Devices:	Falcon (FAL)	Sargent (SAR), Precision (PRE).
5. Mechanical Closers:	Falcon (FAL)	Sargent (SAR), Stanley (STA).
6. Automatic Operators	LCN (LCN)	Besam (BES), Stanley (STA).
7. Door Stops & Holders:	Ives (IVE)	Any BHMA Equivalent.
8. Thresholds & Gasketing:	Zero (ZER)	Any BHMA Equivalent.

2.02 GENERAL MATERIALS

- A. Fasteners: Provide fasteners for each hardware item and application as recommended by the hardware manufacturer. Finish of fasteners shall match adjacent hardware and shall be concealed wherever possible. Where sets indicate hardware is to be supplied with security screws, provide manufacturer's recommended fastener with a torx-drive head.

2.03 HINGES

- A. Provide knuckle hinges for exterior doors to be constructed of either stainless steel or brass with stainless steel pins. Hinges for interior doors shall be constructed of either steel or stainless steel. Provide hinge with grade, number of knuckles, and type (e.g. full mortise) as scheduled. Provide hinge with non-removable pin (NRP) at reverse-handed doors scheduled with locking hardware.

- B. Provide hinges meeting ANSI/BHMA A156 grade 2 or 3 as scheduled. Provide minimal hinge width required to allow hinge barrel to clear jamb and trim and allow door to swing 180 degrees. Provide hinge height and grade as follows except where hardware schedules specifically call out sizing or hinge grade:
1. Residence Unit Interior Doors: 3-1/2 inch hinge, Grade 3
 2. Interior Doors, up to 36 inches wide: 4-1/2 inch hinge, Grade 2
 3. Interior Doors, over 36 inches wide: 5 inch hinge, Grade 1
 4. Exterior Doors, up to 36 inches wide: 4-1/2 inch hinge, Grade 1
 5. Exterior Doors, over 36 inches wide: 5 inch hinge, Grade 1
- C. Provide a minimum of 2 hinges per door leaf. For door leafs exceeding 60 inches in height, provide a minimum of 1 hinge for every 30 inches or portion thereof.
- D. Basis of Design Products:
1. Grade 1: Ives 5BB1HW.
 2. Grade 2: Ives 5BB1.
 3. Grade 3: Ives 5PB1.

2.04 LOCKS & LATCHES

- A. General:
1. Provide locks and latches at fire rated doors with a minimum listing by UL or other testing agency as matches the required opening rating.
 2. Locks and latches shall all comply with accessibility requirements and shall not require tight grasping, pinching, or turning of the wrist.
 3. Provide keyed locks with cylinder preparations that are compatible with the cylinder / core types specified within this section.
 4. Provide locks with standard ANSI strike plates with curved lips (extended as appropriate to extend just beyond face of frame/trim).
 5. Provide Mortise locks and latches that meet ANSI/BHMA A156.13, Series 1000, and Grade 1.
 6. Provide cylindrical/tubular locks and latches that meet the indicated ANSI/BHMA A156.2, Series 4000 grade.
- B. Basis of Design Products:
1. Mortise Locks: Falcon MA Series w/ Occupancy Indicator.
 2. Grade 1 Cylindrical Locks: Falcon T Series.

2.05 EXIT DEVICES & ACCESSORIES

- A. Provide conventional push pad type exit device complying with ANSI A156.3 Grade 1. Where scheduled at doors exceeding 36 inches in width, provide device designed for wide doors. Where scheduled at fire rated doors, provide device labeled as "Fire Exit Hardware". Where required by the stile-width, provide narrow-stile type device.
- B. Basis of Design Products

1. Falcon 25 Series (24 Series where required for narrow/medium stile doors).

2.06 CYLINDERS & KEYING

- A. Construction Key System: Provide temporary, keyed-alike, construction cores at exterior doors for the duration of the construction period. Provide sufficient keys that access to site for necessary construction activity and personnel will not be impeded. Construction cores will remain property of the contractor and will be returned upon installation of permanent key system at substantial completion.
- B. Permanent Key System: Provide a new key system utilizing lock manufacturer's restricted 6-pin, interchangeable core type cylinder housings of type and tailpiece/cam required for compatibility with locking hardware. Provide permanent cores that are factory keyed with utility patented and factory restricted keyway requiring authorized signature for key duplication. Provide cores with concealed permanent markings designating the appropriate key symbol. Provide 2 cut keys for every core provided. Keys shall all be stamped with appropriate key symbol and master keys shall also be stamped with the key system registry number. Design key system as directed by owner's representative in keying meeting. Keys and cores shall be shipped directly from the factory to the owner's representative in separate shipments.
 1. Installation of Permanent Key System: Upon substantial completion, contractor shall assist owner in removal of construction cores and installation of permanent key system.
- C. Basis of Design Products:
 1. Schlage Everest 29T Series FSIC.

2.07 SURFACE DOOR CLOSERS

- A. Provide surface closers certified to ANSI/BHMA A156.4 Grade 1, with body constructed of cast iron or cast aluminum. Closers shall not use Pressure Relief Valves. Provide closer with universal screw packs that include through-bolts, wood screws, and template machine screws.
- B. Basis of Design Products:
 1. Falcon SC70 Series.

2.08 AUTOMATIC OPERATORS & ACCESSORIES

- A. Electro-Mechanical Operators: Provide low-energy electro-mechanical type automatic operator complying with ANSI/BHMA A156.19. Operator shall operate via DC motor through reduction gears. Manual, hydraulic, or chain drive operators are not permitted. Provide operator that can be manually operated without damage to the unit. Operator shall have variable adjustments for opening and closing speed.
 1. Provide units with manual on/off/hold open switch, electric lock delay, hold-open delay adjustable from 2 to 30 seconds, logic terminal to interface with accessories and sensors.
 2. Unit shall have power boost feature to compensate for high stack pressures or high wind pressure.

3. Provide brackets, adapters, or any other required installation accessories for compatibility with mounting details.
 4. Provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of automatic operator for each individual leaf.
- B. Actuators & Switches: Provide pressure plate type, hardwired actuator switches. Where actuator mounts on bollard or wall, provide 4-1/2 inch square actuator. Where actuator switch mounts to mullions or door frames, provide narrow actuator. At exterior locations, provide actuator with weather ring.
- C. Basis of Design Products:
1. Automatic Operator: LCN Senior Swing 9500 Series.
 2. Actuator Switches: LCN 8310 Series.

2.09 DOOR STOPS & HOLDERS

- A. Wall Stop: Where door swings against wall that is reinforced with blocking for stop, provide wall-mounted stop.
1. Exception: Do not provide wall stops where stop would mount to an exterior facing wall.
 2. Provide wall stops with convex rubber bumper at locksets with push and/or turn buttons within the lever. Otherwise, provide concave rubber bumpers.
- B. Floor Stop: Provide floor stop where conditions do not comply with requirements for wall stop, and floor stop can be mounted such that a tripping hazard is not created while door is closed.
1. Exception: Do not provide floor stops in locations where flooring is tile or rubber resilient flooring or where floor stop would mount in areas exposed to snowy or icy weather.
 2. Where floor stop requires riser at threshold locations, provide floor stop with appropriate riser.
- C. Overhead Stops: Where conditions are not appropriate for wall stops or floor stops, provide overhead stops.
1. Unless otherwise scheduled, provide surface mounted overhead stops at hollow metal, wood, and fiberglass type doors and concealed overhead stops at storefront type doors.
 2. Where door is to have both surface overhead stops and push-side mounted door closers, compression stop type closer arm may be provided in lieu of surface overhead stop except in doors with frames manufactured of aluminum.
- D. Basis of Design Products:
1. Interior Wall Stops: Ives WS406/407 Series.
 2. Exterior Floor Stops: Ives FS444 Series.
 3. Interior Floor Stops: Ives FS439 Series.
 4. Exterior Concealed Overhead Stops: Glynn Johnson 100 ADJ Series.
 5. Exterior Surface Overhead Stops: Glynn Johnson 90 Series.
 6. Interior Concealed Overhead Stops: Glynn Johnson 410 Series.
 7. Interior Surface Overhead Stops: Glynn Johnson 450 Series.

2.10 THRESHOLDS & GASKETING

- A. Where scheduled, provide the indicated gasketing with length sufficient to provide a continuous seal around the opening. Where doors and frames are provided as a pre-hung assembly, provide assembly manufacturer's standard gasketing.
- B. Provide thresholds and gasketing as scheduled or any BHMA equivalent product.

PART 3 EXECUTION

- A. General
 - 1. Install door hardware as detailed in the approved hardware schedule using only approved fasteners and in accordance with manufacturer's recommended procedures and methods.
 - 2. Install hardware and signage at fire rated openings in accordance with NFPA 80 requirements.
- B. Maximum Gap Clearance: Install doors and frames such that gap clearances do not exceed the measurements listed below for any application. These clearances comply with NFPA requirements for smoke and fire rated openings:
 - 1. Between Door and Frame Head and Jambs: 1/8 inch for wood doors, 3/16 inch for metallic doors.
 - 2. Between Paired Door Meeting Stiles: 1/8 inch.
 - 3. Door Undercut: 3/4 inch.
- C. Hardware Mounting Heights: Mount door hardware units at hollow metal door manufacturer's standard heights.
- D. Surface Mounted Door Closers: Install surface mounted door closers on room side of openings, except where prohibited by scheduled hardware. Use appropriate arms, spacers, brackets, and accessories to properly install surface mounted door closers. Adjust spring power to the appropriate setting to ensure the doors reliably close under normal operating conditions. Utilize the following installation methods to install closers:
 - 1. Metallic doors: Drill and tap holes and install closers using template machine screws. Self-drilling and tapping screws are prohibited.
 - 2. Reinforced wood doors and wood frames: Drill pilot holes and install closers using threaded to the head wood screws. Self-piloting screws are prohibited.
 - 3. Non-Reinforced wood doors: Drill holes and install closers using through bolt fasteners.
- E. Protection Plates: Where plates greater than 16 inches in height are to be installed on fire rated openings, install using plate manufacturer's recommended adhesive in lieu of mechanical fasteners.
- F. Wall Mounted Door Stops And Holders
 - 1. Locate wall mounted door stops at the appropriate height and location to properly contact protruding door trim.
 - 2. Where indicated in the HW Sets, mount floor stops at exterior doors as a wall stop.

- G. Gasketing: Install gasketing to provide a continuous seal around the perimeter of the opening. Install soffit mounted hardware using the proper brackets, spacers, and accessories to allow proper installation without cutting or notching gasketing material or mounting channels.
- H. Overlapping Astragals
 - 1. Install astragals at exterior doors using thru-bolts.
 - 2. Where overlapping astragals are scheduled on out-swinging doors, provide for mounting on the pull-side of the active leaf. Otherwise, provide for mounting on the push-side of the inactive leaf.
 - 3. Notching astragal is not acceptable. Where strike lip conflicts with astragal, provide strike as specified in "Locks and Latches" article of this section.
- I. Thresholds and Saddles: Trim, cut, and notch thresholds and saddles neatly to minimally fit the profile of the door frame. Thresholds and saddles shall be set in full bed of butyl-rubber or polyisobutylene mastic sealant.

3.02 FIELD QUALITY CONTROL

- A. Architectural Hardware Consultant: Architect will engage a qualified Architectural Hardware Consultant to perform inspections and to prepare inspection reports.
- B. Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.03 ADJUSTING

- A. After building HVAC system is balanced and adjusted, conduct final adjustment of door closers. Verify spring power of the surface mounted door closer is properly adjusted to close and latch the door and to comply with the opening force requirements of ANSI A117.1 as follows:
 - 1. Doors with Closers shall take five (5) seconds to close from 90 degrees to 12 degrees.
 - 2. Interior, non-fire rated swinging doors shall open with a maximum of 5 lbs of pressure.
 - 3. Exterior doors and fire rated doors shall open with the minimum amount of pressure required to positively close and latch the door.

3.04 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

Hardware Group No. 100

1 SET	EXTERIOR HINGE(S)	5BB1HW SERIES	630	IVE
1 EA	KEY PAD LOCK	CO-100-CY-70-KP-RHO-JD	626	SCE
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	OVERHEAD STOP	90S	630	GLY
1 EA	SURFACE CLOSER	SC71A DS	689	FAL
1 SET	CLOSER BRACKET(S)	AS REQUIRED TO INSTALL CLOSER	689	FAL
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1 EA	GASKETING	429 SERIES	719	ZER
1 EA	DOOR SWEEP	39 SERIES	719	ZER
1 EA	THRESHOLD	656 SERIES	719	ZER
1 EA	RAIN DRIP	142 SERIES	719	ZER

Hardware Group No. 101

1 SET	EXTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	630	IVE
1 EA	STOREROOM LOCK	T581J DANE	626	FAL
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	SURFACE CLOSER	SC81A SS	689	FAL
1 EA	GASKETING	429 SERIES	719	ZER
1 EA	DOOR SWEEP	39 SERIES	719	ZER
1 EA	THRESHOLD	656 SERIES	719	ZER

Hardware Group No. 102

1 SET	EXTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	630	IVE
1 EA	STOREROOM LOCK	T581J DANE	626	FAL
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	SURFACE CLOSER	SC81A RW/PA	689	FAL
1 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 EA	GASKETING	429 SERIES	719	ZER
1 EA	DOOR SWEEP	39 SERIES	719	ZER
1 EA	THRESHOLD	656 SERIES	719	ZER

Hardware Group No. 103

1 SET	EXTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	630	IVE
1 EA	ENTRY / OFFICE LOCK	T511J DANE	626	FAL
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	SURFACE CLOSER	SC71A SSHO	689	FAL
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1 EA	GASKETING	429 SERIES	719	ZER
1 EA	DOOR SWEEP	39 SERIES	719	ZER
1 EA	THRESHOLD	656 SERIES	719	ZER

Hardware Group No. 104

1 SET	EXTERIOR HINGE(S)	5BB1HW SERIES	630	IVE
1 EA	PANIC HARDWARE	CD-25-R-NL	626	FAL
1 SET	FSIC CYLINDER HOUSING(S)	AS REQUIRED BY LOCKING HARDWARE	626	SCH
SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	SURFACE CLOSER	SC71A SS	689	FAL
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
EA	GASKETING	429 SERIES	719	ZER
1 EA	DOOR SWEEP	39 SERIES	719	ZER
EA	THRESHOLD	656 SERIES	719	ZER

Hardware Group No. 201

1 SET	INTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	652	IVE
1 EA	PUSH PLATE	8200 6" X 16"	630	IVE
1 EA	PULL PLATE	8303 10" 4" X 16"	630	IVE
1 EA	AUTOMATIC OPERATOR	9542 MS	✓ 628	LCN
1 EA	TOUCHLESS ACTUATOR	8310-813	✓ 630	LCN
1 EA	INTERIOR ACTUATOR	8310-853T	✓ 630	LCN
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 EA	SILENCER SET	SR60 SERIES	GRY	IVE
1 EA	120VAC POWER	BY DIVISION 26	✓	B/O
1 SET	CONDUIT & RACEWAY	BY DIVISION 26 / DIVISION 28	✓	B/O
1 SET	WIRING & CONNECTIONS	BY DIVISION 26 / DIVISION 28	✓	B/O
1 SET	WIRING DIAGRAMS	RISER/ELEVATION & SCHEMATIC	✓	DLR

A) BOTH ACTUATORS ALWAYS ENABLED.

Hardware Group No. 202

1 SET	INTERIOR HINGE(S)	5BB1HW SERIES	652	IVE
1 EA	PANIC HARDWARE	CD-25-R-L-DANE	626	FAL
1 EA	T-TURN DOGGING CYL.	09-900 NH XB11-720	626	SCH
1 SET	FSIC CYLINDER HOUSING(S)	AS REQUIRED BY LOCKING HARDWARE	626	SCH
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	SURFACE CLOSER	SC71A HW/PA	689	FAL
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 EA	GASKETING	488S SERIES	BK	ZER

Hardware Group No. 203

2 SET	INTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	652	IVE
1 EA	MANUAL FLUSH BOLT	FB458 / FB358	626	IVE
1 EA	STOREROOM LOCK	T581J DANE	626	FAL
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
2 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 SET	REMAINING HARDWARE	BY DOOR/FRAME MANUFACTURER		B/O

Hardware Group No. 204

1 SET	INTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	652	IVE
1 EA	STOREROOM LOCK	T581J DANE	626	FAL
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	SURFACE CLOSER	SC71A RW/PA	689	FAL
1 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 SET	REMAINING HARDWARE	BY DOOR/FRAME MANUFACTURER		B/O

Hardware Group No. 205

1 SET	INTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	652	IVE
1 EA	STOREROOM LOCK	T581J DANE	626	FAL
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	SURFACE CLOSER	SC71A RW/PA	689	FAL
1 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 EA	GASKETING	488S SERIES	BK	ZER

Hardware Group No. 206

1 SET	INTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	652	IVE
1 EA	STOREROOM LOCK	T581J DANE	626	FAL
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 EA	SILENCER SET	SR60 SERIES	GRY	IVE

Hardware Group No. 207

1 SET	INTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	652	IVE
1 EA	ENTRY / OFFICE LOCK	T511J DANE	626	FAL
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	OH STOP	450S	630	GLY
1 EA	SURFACE CLOSER	SC71A RW/PA	689	FAL
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1 EA	SILENCER SET	SR60 SERIES	GRY	IVE

Hardware Group No. 208

1 SET	INTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	652	IVE
1 EA	ENTRY / OFFICE LOCK	T511J DANE	626	FAL
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	SURFACE CLOSER	SC71A RW/PA	689	FAL
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 EA	SILENCER SET	SR60 SERIES	GRY	IVE

Hardware Group No. 209

1 SET	INTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	652	IVE
1 EA	ENTRY / OFFICE LOCK	T511J DANE	626	FAL
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	SURFACE CLOSER	SC71A HW/PA	689	FAL
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 EA	GASKETING	488S SERIES	BK	ZER

Hardware Group No. 210

1 SET	INTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	652	IVE
1 EA	PRIVACY LOCK	MA321 OCCUPIED/VACANT DGM	626	FAL
1 EA	SURFACE CLOSER	SC81A RW/PA	689	FAL
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 EA	GASKETING	488S SERIES	BK	ZER

Hardware Group No. 211

1 SET	INTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	652	IVE
1 EA	PASSAGE SET	T101S DANE	626	FAL
1 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 EA	GASKETING	488S SERIES	BK	ZER

Hardware Group No. 212

1 SET	INTERIOR HINGE(S)	5BB1 SERIES (HW AS REQ'D)	652	IVE
1 EA	PASSAGE SET	T101S DANE	626	FAL
1 EA	SURFACE CLOSER	SC81A RW/PA	689	FAL
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1 EA	DOOR STOP	WS407 SERIES / FS439	630	IVE
1 EA	GASKETING	488S SERIES	BK	ZER

Hardware Group No. AS-101

1 EA	CONTINUOUS HINGE	112HD	628	IVE
1 EA	CONTINUOUS HINGE	112HD TWP	✓ 628	IVE
1 EA	PANIC HARDWARE	CD-24-C-EO	626	FAL
1 EA	PANIC HARDWARE	LM-CD-24-C-C-718	✓ 626	FAL
2 EA	T-TURN DOGGING CYL.	09-900 NH XB11-720	626	SCH
1 SET	FSIC CYLINDER HOUSING(S)	AS REQUIRED BY LOCKING HARDWARE	626	SCH
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
2 EA	OFFSET PULL	8190HD 10" STD	630	IVE
1 EA	AUTOMATIC OPERATOR	9553 REG2 MS	✓ 628	LCN
2 EA	NARROW STILE ACTUATOR	8310-818T	✓ 630	LCN
1 SET	HEAD & JAMB GASKET	STOREFRONT MFR STD	TBD	B/O
1 SET	MEETING EDGE GASKET	STOREFRONT MFR STD	TBD	B/O
2 EA	DOOR SWEEP	8192 SERIES	628	ZER
1 EA	THRESHOLD	654 SERIES	719	ZER
1 EA	120VAC POWER	BY DIVISION 26	✓	B/O
1 SET	CONDUIT & RACEWAY	BY DIVISION 26 / DIVISION 28	✓	B/O
1 SET	WIRING & CONNECTIONS	BY DIVISION 26 / DIVISION 28	✓	B/O
1 SET	WIRING DIAGRAMS	RISER/ELEVATION & SCHEMATIC	✓	DLR

A) LM SWITCH IN PANIC HARDWARE DISABLES BOTH ACTUATORS WHEN DOOR IS LATCHED.

Hardware Group No. AS-102

2 EA	CONTINUOUS HINGE	112HD	628	IVE
2 EA	MORTISE CYLINDER	250	626	FAL
2 EA	OFFSET PULL	8190HD 10" STD	630	IVE
1 EA	AUTOMATIC OPERATOR	9553 REG2 MS	✓ 628	LCN
2 EA	NARROW STILE	8310-818T	✓ 630	LCN
	ACTUATOR			
1 SET	HEAD & JAMB GASKET	STOREFRONT MFR STD	TBD	B/O
1 SET	MEETING EDGE GASKET	STOREFRONT MFR STD	TBD	B/O
1 EA	120VAC POWER	BY DIVISION 26	✓	B/O
1 SET	CONDUIT & RACEWAY	BY DIVISION 26 / DIVISION 28	✓	B/O
1 SET	WIRING &	BY DIVISION 26 / DIVISION 28	✓	B/O
	CONNECTIONS			
1 SET	WIRING DIAGRAMS	RISER/ELEVATION & SCHEMATIC	✓	DLR

A) BOTH ACTUATORS ARE ALWAYS ENABLED.

Hardware Group No. AS-103

1 EA	CONTINUOUS HINGE	112HD	628	IVE
1 EA	PANIC HARDWARE	CD-24-R-NL-OP	626	FAL
1 EA	MONITOR STRIKE	4263 SERIES	✓ 626	VON
1 EA	T-TURN DOGGING CYL.	09-900 NH XB11-720	626	SCH
1 SET	FSIC CYLINDER	AS REQUIRED BY LOCKING	626	SCH
	HOUSING(S)	HARDWARE		
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION	23-030-ICX	626	SCH
	CORE(S)			
1 EA	OFFSET PULL	8190HD 10" STD	630	IVE
1 EA	AUTOMATIC OPERATOR	9542 MS	✓ 628	LCN
2 EA	NARROW STILE	8310-818T	✓ 630	LCN
	ACTUATOR			
1 SET	HEAD & JAMB GASKET	STOREFRONT MFR STD	TBD	B/O
1 EA	DOOR SWEEP	8192 SERIES	628	ZER
1 EA	THRESHOLD	654 SERIES	719	ZER
1 EA	120VAC POWER	BY DIVISION 26	✓	B/O
1 SET	CONDUIT & RACEWAY	BY DIVISION 26 / DIVISION 28	✓	B/O
1 SET	WIRING &	BY DIVISION 26 / DIVISION 28	✓	B/O
	CONNECTIONS			
1 SET	WIRING DIAGRAMS	RISER/ELEVATION & SCHEMATIC	✓	DLR

A) LM SWITCH IN PANIC HARDWARE DISABLES BOTH ACTUATORS WHEN DOOR IS LATCHED.

Hardware Group No. AS-104

1 EA	CONTINUOUS HINGE	112HD	628	IVE
1 EA	DUMMY PUSH BAR	250DT	626	FAL
1 EA	OFFSET PULL	8190HD 10" STD	630	IVE
1 EA	AUTOMATIC OPERATOR	9542 MS	⚡ 628	LCN
2 EA	NARROW STILE	8310-818T	⚡ 630	LCN
	ACTUATOR			
1 SET	HEAD & JAMB GASKET	STOREFRONT MFR STD	TBD	B/O
1 EA	120VAC POWER	BY DIVISION 26	⚡	B/O
1 SET	CONDUIT & RACEWAY	BY DIVISION 26 / DIVISION 28	⚡	B/O
1 SET	WIRING & CONNECTIONS	BY DIVISION 26 / DIVISION 28	⚡	B/O
1 SET	WIRING DIAGRAMS	RISER/ELEVATION & SCHEMATIC	⚡	DLR

A) BOTH ACTUATORS ARE ALWAYS ENABLED.

Hardware Group No. AS-105

1 EA	CONTINUOUS HINGE	112HD	628	IVE
1 EA	CLASSROOM LOCK	8845 SERIES X SCHLAGE 06A TRIM	626	ACC
1 SET	FSIC CYLINDER	AS REQUIRED BY LOCKING	626	SCH
	HOUSING(S)	HARDWARE		
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	ELECTRIC STRIKE	6211 FSE 24VDC	⚡ 630	VON
1 EA	AUTOMATIC OPERATOR	9542 MS	⚡ 628	LCN
2 EA	NARROW STILE	8310-818T	⚡ 630	LCN
	ACTUATOR			
1 SET	HEAD & JAMB GASKET	STOREFRONT MFR STD	TBD	B/O
1 EA	DOOR SWEEP	8192 SERIES	628	ZER
1 EA	THRESHOLD	654 SERIES	719	ZER
1 EA	KEY SWITCH	653-04 L2	630	SCE
1 EA	120VAC POWER	BY DIVISION 26	⚡	B/O
1 SET	CONDUIT & RACEWAY	BY DIVISION 26 / DIVISION 28	⚡	B/O
1 SET	WIRING & CONNECTIONS	BY DIVISION 26 / DIVISION 28	⚡	B/O
1 SET	WIRING DIAGRAMS	RISER/ELEVATION & SCHEMATIC	⚡	DLR

A) ELECTRIC STRIKE POWERED BY POWER TRANSFORMER ON BOARD AUTOMATIC OPERATOR.

B) KEYSWITCH ENABLES/DISABLES BOTH ACTUATORS.

Hardware Group No. AS-201

1 EA	CONTINUOUS HINGE	112HD	628	IVE
1 EA	CLASSROOM LOCK	8845 SERIES X SCHLAGE 06A TRIM	626	ACC
1 SET	FSIC CYLINDER HOUSING(S)	AS REQUIRED BY LOCKING HARDWARE	626	SCH
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 EA	ELECTRIC STRIKE	6211 FSE 24VDC	✓ 630	VON
1 EA	AUTOMATIC OPERATOR	9542 MS	✓ 628	LCN
2 EA	NARROW STILE ACTUATOR	8310-818T	✓ 630	LCN
1 SET	HEAD & JAMB GASKET	STOREFRONT MFR STD	TBD	B/O
1 EA	KEY SWITCH	653-04 L2	630	SCE
1 EA	120VAC POWER	BY DIVISION 26	✓	B/O
1 SET	CONDUIT & RACEWAY	BY DIVISION 26 / DIVISION 28	✓	B/O
1 SET	WIRING & CONNECTIONS	BY DIVISION 26 / DIVISION 28	✓	B/O
1 SET	WIRING DIAGRAMS	RISER/ELEVATION & SCHEMATIC	✓	DLR

A) ELECTRIC STRIKE POWERED BY POWER TRANSFORMER ON BOARD AUTOMATIC OPERATOR.

B) KEYSWITCH ENABLES/DISABLES BOTH ACTUATORS.

Hardware Group No. FLD-200

1 SET	ALL HARDWARE	DOOR MFR STD		B/O
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Hardware Group No. OHD-100

1 SET	FSIC CYLINDER HOUSING(S)	AS REQUIRED BY LOCKING HARDWARE	626	SCH
1 SET	PERMANENT CORE(S)	23-030 CKC EV29T	626	SCH
1 SET	CONSTRUCTION CORE(S)	23-030-ICX	626	SCH
1 SET	REMAINING HARDWARE	BY DOOR/FRAME MANUFACTURER		B/O

END SECTION

SECTION 230810 - VARIABLE FREQUENCY DRIVE

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. The contractor shall furnish and install a complete Variable Frequency Drive and Energy Efficient motor system on the following equipment as described in this specification and as indicated on the drawings.
 - 1. Air handler supply fans
- B. The Variable Frequency Drive shall convert 208 volt, three phase, 60 Hz utility power to adjustable voltage and frequency, three phase, A-C power for stepless motor control from 6 to 60 Hz.
- C. This contractor shall coordinate motor selection with Variable Frequency Drive.
- D. Variable Frequency Drive Systems shall be compatible with any standard NEMA B or C design 3-phase induction motor. Variable Frequency Drive Systems shall be sized to insure the motor full load amps does not exceed the controller continuous RMS amps at project altitude (7500 ft.).

1.2 QUALITY ASSURANCE

- A. The equipment supplied under this specification shall conform to the latest applicable codes and standards of the following:
 - 1. NEC – (NFPA 70) – National Electric Code.
 - 2. ANSI/NEMA ICS 6 – Enclosures for Industrial Controls and Systems.
 - 3. NEMA AB1 – Molded Case Circuit Breakers.
 - 4. NEMA ICS 2 – Industrial Control Devices, Controllers, and Assemblies.
 - 5. IEEE Standard 519-1992 – Recommended Practices for Harmonic Control in Electrical Power Systems.
 - 6. ANSI C37 – Standards for Circuit Breakers, Switchgear, Relays, Substations and Fuses.
 - 7. ANSI C57 – Distribution, Power, and Regulating Transformers (includes Reactors).
 - 8. UL 508C – Power Conversion Equipment.
 - 9. NEMA ICS 3.1 – Safety Standards for Construction and Guide for Selection, Installation, and Operation of Variable Frequency Drive Systems.
 - 10. FCC CFR 47 Part 15 subpart B.
- B. The VFDs shall be UL listed for conformance to UL-508C. An equivalent safety labeling program by ETL or CSA documenting compliance with these industry standards will be acceptable.

- C. The Division 23 Contractor shall coordinate and assume system responsibility and compatibility between the various approved suppliers' equipment and services required to meet these specifications.
- D. The VFD system vendor shall provide a complete parts and labor warranty (including travel and shipping expenses) for one (1) year from the date of substantial completion. The warranty shall cover the entire VFD system including power devices, controllers, harmonics, mitigation devices, communications interface, etc. furnished as part of the system package.
- E. The mechanical contractor shall coordinate the mounting location of the VFD with the electrical contractor to be certain that it is not mounted in the airstream of unfiltered exhaust air; i.e. in a parking garage application.

1.3 SUBMITTALS

- A. Shop Drawings: Submit shop drawings and product data in accordance with Section 230500 – Basic Mechanical Requirements.
 - 1. VFD: Product data sheets, functional descriptions, performance ratings, dimensions, conduit entry/exit locations, installation instructions, complete wiring diagrams for power, controls, etc.
 - 2. Control System Interface: Furnish complete documentation of the controls system interface including bus specification, object list, wiring diagrams, XIF or configuration files, etc.
 - 3. Derate calculation for installation altitude above 3300 ft. and ambient temperature above 40°C.
- B. Operating Instructions and Maintenance Data: Submit printed operating instructions and maintenance data in accordance with Section 230500 – Basic Mechanical Requirements.
 - 1. VFD: Operating and Maintenance instructions, programming instructions, spare parts lists, troubleshooting instructions.
 - 2. Factory test reports.
 - 3. Start-up and commissioning reports.

PART 2 - PRODUCTS

2.1 APPROVED MANUFACTURERS

- A. The following manufacturers are acceptable, submit alternates for prior approval in accordance with the General Conditions and Division 1 Requirements.
 - 1. ABB
 - 2. Yaskawa
 - 3. Graham/Danfoss
 - 4. Mitsubishi

5. Grundfos Inc.
6. Toshiba

2.2 CONSTRUCTION, VARIABLE FREQUENCY DRIVE

- A. The Variable Frequency Inverter(s) shall be PWM type using IGBTs, rated for the motor type, horsepower, and voltage as indicated on drawings.
- B. The Inverter shall be altitude compensated and sized for the elevation at which the unit will be installed. The inverter shall operate in an ambient temperature of -10°C to 50°C humidity of 0-90% non-condensing.
- C. The VFD system manufacturer shall integrate all components and equipment required to meet these specification features and functions as a single UL (or equivalent) labeled system. Vendors providing equipment requiring panel shop or job site modifications or additions that would not be valid under the original equipment manufacturer's (OEM's) safety labeling will not be acceptable.
- D. Pre-integrated equipment shall include but not be limited to incoming line filters, rectifier units, inverter units, control circuitry, operator interfaces, protective equipment, and other accessories and auxiliary items necessary to meet the highest standards for the type of service specified herein.
- E. All VFD system components shall be housed in a grounded, dead front, free-standing or wall mounted, NEMA 1 enclosure. The VFD system size shall not exceed the size allotments specified on the drawings nor shall any portion of the system exceed a height of 90 inches. Entry shall be provided for incoming line and load cables as required or as shown on the drawings.
- F. VFD systems mounted indoors shall be properly ventilated and sized to operate continuously at the job site elevation in an ambient environment of 0°C to 40°C , 0-90% RH. VFD systems mounted outdoors shall include environment control provisions as required (or as shown on the plans) to operate in an ambient of -30°C to 50°C , 0-100% RH.
- G. All components of the VFD system shall be selected to operate continuously without any system trip or damage based on the nominal power specifications and requirements shown on the drawings or schedules. The above conditions must be maintained under the following expected variations:
 1. Plus or minus 10% voltage fluctuation.
 2. Plus or minus 3% frequency variation (5% if served by a back-up generator).
 3. Distorted voltage waveform with up to 7% total voltage harmonic distortion.
- H. The VFD system shall employ voltage sag ride-through coordination under normal operating (average load) conditions to prevent nuisance trips with the following utility interruptions:
 1. 0% voltage for 1 cycle.

2. 60% voltage for 10 cycles.
 3. 87% voltage continuous.
-
- I. The VFD system shall employ door mounted industrial control operator devices, programming unit, and other devices as required to meet all functional and feature requirements of this specification. Operator pilot lights or LEDs, switches and pushbuttons (if required) shall be industrial oil tight industry standard devices.
 - J. Control voltages shall be 120 volts or less supplied by machine tool type transformers employing both primary and secondary fusing.
 - K. The VFD system factory wiring shall be permanently marked with hot emboss stamping or an equivalent marking system. All devices shall be labeled and identified with correct setting selections. All component identification and wiring shall be documented in the operation and maintenance manual.
 - L. The VFD system shall be capable of starting and continuously driving the specified maximum motor load as identified on the drawings and schedules.
 - M. VFD's driving variable torque loads shall be programmed to optimize load patterns which maximize system efficiency and minimize motor heating and stresses. VFD's driving constant torque or other loads shall be programmed to optimize load patterns for system or process performance as required.
 - N. All VFD systems shall have an overload capacity of a minimum of 120% for one minute.
 - O. The VFD solid state converter and inverter power switching components and control shall be selected to achieve a 0.95 efficiency or better at full load and speed. Other auxiliary devices required on the drawings or in these specifications including filters, line reactors, cooling or heating devices etc. shall be of a design to optimize efficiency as intended under this specification.
 - P. The entire true system power factor (as measured at the input to the VFD system) shall be 0.95 or better across the operational speed and load range. Power factor that becomes leading under light load conditions (due to PF correction) is acceptable only if voltage rise is prevented from backfeeding to the rest of the system (meaning PF correction must act like a synchronous condenser). The voltage tolerance at the main VFD system input terminals shall not be compromised as a result of power factor correction techniques.
 - Q. Short circuit protection shall be provided to the VFD system through an externally operated, door interlocked fused disconnect, circuit breaker or motor circuit protector (MCP). VFD shall have a minimum short circuit rating of 65,000 amps RMS (100,000 amps RMS with DC bus reactor) without additional input fusing. The door interlocked handle must be capable of being locked off to meet NEC.
 - R. Overcurrent protection shall be provided in the VFD system through electronic motor overload (MOL) circuits with instantaneous trip, inverse time trip, and current limit functions. These shall be adjustable and optimized for the application.

- S. In addition to the overcurrent protection above, the VFD system shall provide over and under voltage protection, over temperature protection, ground fault protection, and control or microprocessor fault protection. These protective circuits shall cause an orderly shutdown of the VFD, provide indication of the fault condition, and require a manual reset (except undervoltage) before restart. Undervoltage from a power loss shall be set to automatically restart after return to normal. The history of the previous three faults shall remain in memory for future review.
- T. The VFD system customer terminations shall be clearly identified with terminal numbers and a permanent wiring diagram located in the VFD system enclosure. Coordinate all control work with Section 230900 Contractor.
- U. VFD shall meet the requirements for Radio Frequency Interference as specified by FCC Regulations, Part 15, Subpart J, Class A devices.

2.3 FEATURES, VARIABLE FREQUENCY DRIVES

- A. The following operator control and indication features shall be provided standard (unless shown differently on the drawings) as part of each VFD system:
 - 1. Hand-Off-Auto (local start at VFD, remote start with contact closure).
 - 2. Local-Remote speed control (local speed control at VFD, remote speed control through speed reference signal).
 - 3. Frequency (speed) indication.
 - 4. Motor voltage indication.
 - 5. Motor current indication.
 - 6. VFD run indication.
 - 7. VFD fault and diagnostic indication.
- B. The following customer connections and interface terminations shall be provided standard (unless shown differently on the drawings) as part of each VFD system:
 - 1. VFD remote start/stop connection.
 - 2. External safeties connection.
 - 3. VFD run annunciation.
 - 4. VFD fault annunciation.
 - 5. VFD speed reference input connection (4-20mA or as shown on drawings).
 - 6. Minimum of three (3) programmable digital inputs.
 - 7. Minimum of two (2) 4-20mA input signals to integral controller.
- C. The following parameter adjustments shall be available to tune the VFD system:
 - 1. Minimum and maximum speeds.
 - 2. Acceleration and deceleration times.
 - 3. Overcurrent trip point.
 - 4. Current limit response to overload.
 - 5. Maximum base motor voltage.
 - 6. Input speed reference signal gain and bias.
 - 7. Output speed reference signal gain and bias.

8. Critical frequency avoidance.
 9. Multiple preset speed programming.
 10. Integral PI controller programming.
- D. The VFD shall be capable of starting into a rotating motor at any speed and rotation direction.
- E. The VFD shall auto restart after a power failure.
- F. For maintenance purposes, the VFD system shall be capable of starting, stopping, and running with stable operation with the motor completely disconnected (no load).
- G. VFD shall include an integral locking disconnect.
- H. VFD shall include an integral PI controller capable of closed loop control of motor speed based on external analog speed reference signals or programmed digital input signals.
- I. VFD shall include an integral bypass motor starter. Include motor thermal overload and circuit breaker protection for bypass operation, and door-mounted selector switch.

2.4 FACTORY TEST, VARIABLE FREQUENCY DRIVE

- A. Prior to shipping any equipment, the manufacturer shall individually test and certify each unit to document compliance. This certification report shall be submitted as part of the operation and maintenance manual and include the following minimum testing:
1. A visual inspection shall be made consisting of all system components, wiring connections, and safety mechanisms.
 2. High pot testing shall be conducted on the completed VFD system including all accessory power components as a complete package. This test shall be conducted per UL 508C (two times the rated voltage plus 1000 volts AC for 60 seconds) using regularly calibrated high pot test equipment.
 3. A system run test shall be conducted using an actual motor accelerated and decelerated through the entire speed range.
 4. All control panel devices, including switches, pilot lamps, keypad and special control devices shall be functional tested.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Field start-up service shall be provided by an authorized factory representative. The supplier shall provide warranty and authorized factory services including field start-up and training. The following adjustments and tests shall be performed as a minimum with certified copies included in the operation and maintenance manual:
1. Verify that the input voltage is within the manufacturer's specification tolerances.

2. Verify that the motor rotation is correct in all modes of operation.
 3. Verify all operator devices, programming, and monitoring functions to be fully operational.
 4. Verify operation of all field signal control connections.
 5. Measure and record system output voltage and current at 50% and 100% speed. Tune the output voltage to correspond to motor nameplate rating at full speed. Check full load current measurements against nameplate data.
 6. Make all parameter adjustments to tune and optimize the VFD system to the application. Record all configuration values as part of this report.
 7. Conduct harmonic tests as identified in this specification. Measurements shall be recorded for each unit with the VFD system off, running at 50% speed, and running at full speed and load.
- B. Owner training shall be provided for each model and type of VFD system provided. Training shall consist of both classroom and actual equipment hands-on training.
- C. Installation shall be in accordance with manufacturer's printed instructions.
- D. The mechanical contractor shall coordinate the mounting location of the VFD with the electrical contractor to be certain that it is not mounted in the airstream of unfiltered exhaust air; i.e. in a parking garage application. If no location is feasible to meet this location criteria, the VFD may be mounted inside a NEMA 3R enclosure in the dirty air location.

3.2 SPARE PARTS

- A. Furnish one spare main logic board, key pad, and power supply board. Furnish one set of spare parts for each unique VFD design supplied.

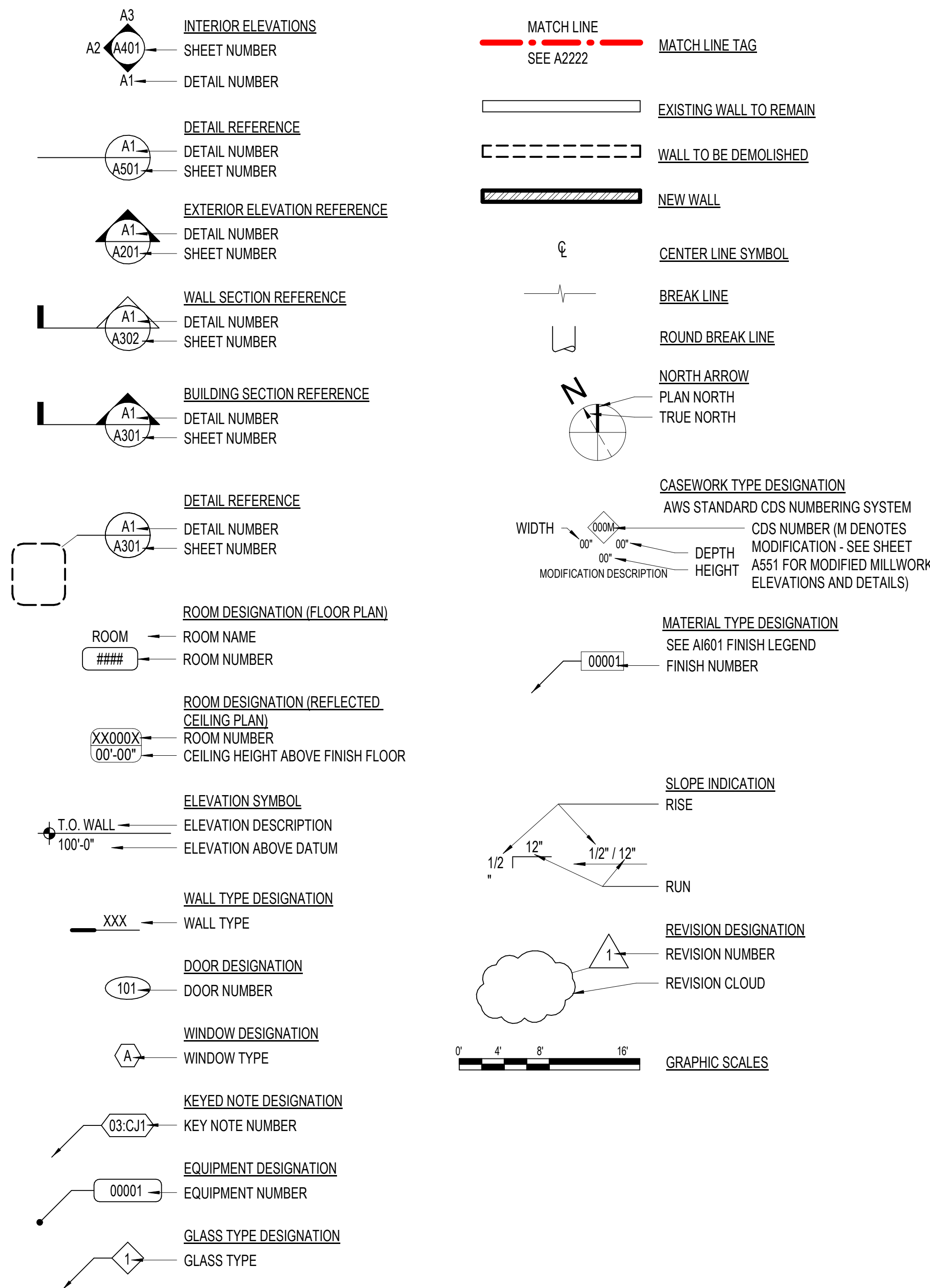
END OF SECTION 230810

LIST OF ABBREVIATIONS

A A/C AD AFC AFF AHU ALUM ANOD ARCH @	AIR CONDITIONING AREA DRAIN ABOVE FINISHED CEILING ABOVE FINISHED FLOOR AIR HANDLING UNIT ALUMINUM ANODIZED ARCHITECT AT
B BD BLDG BO	BOARD BUILDING BOTTOM OF
C C CH CFCI	CELSIUS COAT HOOK CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CG CI CJ CL CLG CLO CLR CMU COL CONC CONT CORR CT CTJ CUH	CORNER GUARD CONTINUOUS INSULATION CONTROL JOINT CENTERLINE CEILING CLOSET CLEAR CONCRETE MASONRY UNIT COLUMN CONCRETE CONTINUOUS CORRIDOR CERAMIC TILE CONSTRUCTION JOINT CABINET UNIT HEATER
D D DEG DEMO DF DIA DIM DN DS DWGS	DEEP DEGREE DEMOLITION DRINKING FOUNTAIN DIAMETER DIMENSION DOWN DOWNSPOUT DRAWINGS
E EA EJ EIFS EL ELEC ELEV EOS ERD EQ EQUIP EWC EXIST EXT	EACH EXPANSION JOINT EXTERIOR INSULATION AND FINISH SYSTEM ELEVATION ELECTRICAL ELEVATOR EDGE OF SLAB EXISTING ROOF DRAIN EQUAL EQUIPMENT ELECTRIC WATER COOLER EXISTING EXPOSED EXTERIOR
F F FA FACP FDC FD FEC FE FG FHC FIN FLR FND FO FOM FOS FOW FRG FSP FT FV	FAHRENHEIT FIRE ALARM FIRE ALARM CONTROL PANEL FIRE DEPARTMENT CONNECTION FLOOR DRAIN FIRE EXTINGUISHER CABINET FIRE EXTINGUISHER FINISH GRADE FIRE HOSE CABINET FINISH FLOOR FOUNDATION FINISHED OPENING FACE OF CONCRETE FACE OF MASONRY FACE OF STUD FACE OF WALL FIBER REINFORCED GYPSUM FIRE STANDPIPE FEET FIELD VERIFY
G GA GALV GFRG GL GWB GYP	GAUGE GALVANIZED GLASS-FIBER-REINFORCED CONCRETE GLASS-FIBER-REINFORCED GYPSUM GLASS GYPSUM WALL BOARD GYPSUM
H H HB HDR HM HPT HR HT	HIGH HOSE BIBB HEADER HOLLOW METAL HIGH POINT HOUR HEIGHT
I ID IN INFO INT	INSIDE DIAMETER; INSIDE DIMENSION INCH INFORMATION INTERIOR
J JAN	JANITOR
K (NOT USED)	
L LAB LAV LBS LLH LLV LPT	LABORATORY LAVATORY POUNDS LONG LEG HORIZONTAL LONG LEG VERTICAL LOW POINT
M MACH RM MAX MFR MECH MEZZ MIN MO	MACHINE ROOM MAXIMUM MANUFACTURER MECHANICAL MEZZANINE MINIMUM MASONRY OPENING
N N/A NIC NOM NTS	NOT APPLICABLE NOT IN CONTRACT NOMINAL NOT TO SCALE
O OC OD OFD OH DR OPH OPP ORIG	ON CENTER OUTSIDE DIAMETER; OUTSIDE DIMENSION OVERFLOW DRAIN OVERHEAD DOOR OPPOSITE HAND OPPOSITE ORIGINAL
P P LAM PLAS PLUMB PR PSI PSF PVC	PLASTIC LAMINATE PLASTER PLUMBING PAIR POUNDS PER SQUARE INCH POUNDS PER SQUARE FOOT POLYVINYL CHLORIDE
Q QT	QUARRY TILE
R R RAD RCP RD REF REQD REV RH RM RO RTU RWL	RISER OR RADIUS RADIUS RADIUS REFLECTED CEILING PLAN ROOF DRAIN REFRIGERATOR REQUIRED REVISION RELATIVE HUMIDITY ROOM ROUGH OPENING ROOF TOP UNIT RAIN WATER LEADER
S S SAM SCHED SECT SIM SPEC SS STD STRUCT	SMOKE DETECTOR SELF ADHESIVE MEMBRANE SCHEDULE SECTION SIMILAR SPECIFICATION STAINLESS STEEL STANDARD STRUCTURAL
T T TEL TEMP THK TOC TOM TOP TOS TOW TYP TO	TREAD TELEPHONE TEMPORARY THICK TOP OF CONCRETE TOP OF MASONRY TOP OF PARAPET TOP OF SLAB; TOP OF STEEL TOP OF WALL TYPICAL TOP OF
U UL UNO	UNDERWRITER'S LABORATORIES UNLESS NOTED OTHERWISE
V VCT VERT VEST VIF	VINYL COMPOSITE TILE VERTICAL VESTIBULE VERIFY IN FIELD
W W/ W/O WD WH WP WRB	WITH WITHOUT WOOD WALL HYDRANT WORKING POINT WEATHER RESISTIVE BARRIER
X,Y,Z (NOT USED)	

THE PRECEDING LIST OF ABBREVIATIONS IS PRESENTED AS A GENERAL GUIDE AND DOES NOT NECESSARILY SHOW ALL ABBREVIATIONS USED. OTHER GENERALLY ACCEPTED ABBREVIATIONS MAY BE FOUND AMONG THE DRAWINGS - SOME ABBREVIATIONS SHOWN ABOVE MAY NOT BE USED WITHIN THIS DRAWING SET.

DRAWING SYMBOL LEGEND



HATCH LEGEND

NOTE: HATCHING ANGLES MAY VARY DUE TO ANGLE OF WALL DRAWN, WHILE HATCHING PATTERN REMAINS SIMILAR.

	CAST-IN-PLACE CONCRETE		CONTINUOUS MATERIAL
	CONCRETE MASONRY UNIT (BLOCKING)		NON CONTINUOUS MATERIAL (BLOCKING)
	PRECAST CONCRETE / GLASS FIBER REINFORCED CONCRETE (GFRG)		GYPSUM BOARD
	STEEL STUDS		PLYWOOD
	WOOD STUDS		EXTERIOR SHEATHING
	BRICK VENEER		GRAVEL
	RIGID INSULATION		UNDISTURBED EARTH
	BATT INSULATION		BACKFILL OR FILL

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GENERAL:	
G001	COVER SHEET
G002	GENERAL INFORMATION
G101	LEVEL 01 EXISTING AND OCCUPANCY PLAN
G102	LEVEL 02 EXISTING AND OCCUPANCY PLAN
G501	ASSEMBLY TYPES
G502	ACCESSIBILITY COMPLIANCE
CIVIL:	
C1	OVERALL & EXISTING CONDITIONS
C2	SITE & GRADING PLAN
C3	UTILITY PLAN
C4	PLAN & PROFILE
C5	CONSTRUCTION MITIGATION PLAN
C6	DETAILS
LANDSCAPE:	
DS101	SITE DEMOLITION PLAN
AS101	ARCHITECTURAL SITE PLAN
AS601	SITE IMPROVEMENTS, MATERIALS AND FINISHES SCHEDULE
AS701	SITE DETAILS
L1101	IRRIGATION PLAN
L1601	IRRIGATION LEGEND
L1701	IRRIGATION DETAILS
L1702	IRRIGATION DETAILS
L1703	IRRIGATION DETAILS
LP101	PLANTING PLAN (GROUND PLANE)
LP111	PLANTING PLAN
LP601	PLANTING LEGEND
LP701	PLANTING DETAILS
STRUCTURAL:	
S001	STRUCTURAL NOTES
S002	SCHEDULES
S003	SCHEDULES
S101	FOOTING AND FOUNDATION PLAN
S102	MAIN LEVEL SHEAR WALL & HOLDOWN PLAN
S103	LEVEL 2 FLOOR & ROOF FRAMING PLANS
S201	DETAILS
S202	DETAILS
S203	DETAILS
S204	DETAILS
S205	DETAILS
S301	DETAILS
S302	ELEVATIONS
S303	ELEVATIONS
S401	SCHEMATIC REFERENCE
ARCHITECTURAL:	
AD101	DEMOLITION PLAN
A101	LEVEL 01 - OVERALL FLOOR PLAN
A101A	LEVEL 01 FLOOR PLAN - AREA 'A'
A101B	LEVEL 01 FLOOR PLAN - AREA 'B'
A101C	LEVEL 01 FLOOR PLAN - AREA 'C'
A102	LEVEL 02 - OVERALL FLOOR PLAN
A102C	LEVEL 02 FLOOR PLAN - AREA 'C'
A121	ROOF PLAN
A122	ROOF DETAILS
A151A	LEVEL 01 REFLECTED CEILING PLAN - AREA 'A'
A151B	LEVEL 01 REFLECTED CEILING PLAN - AREA 'B'
A151C	LEVEL 01 REFLECTED CEILING PLAN - AREA 'C'
A152C	LEVEL 02 REFLECTED CEILING PLAN - AREA 'C'
A201	BUILDING ELEVATIONS
A251	INTERIOR ELEVATIONS
A252	INTERIOR ELEVATIONS
A253	INTERIOR ELEVATIONS
A301	BUILDING SECTIONS
A351	WALL SECTIONS
A352	WALL SECTIONS
A353	WALL SECTIONS
A354	WALL SECTIONS
A355	CANOPY SECTIONS AND DETAILS
A451	ENLARGED STAIR AND ELEVATOR PLANS AND DETAILS
A452	ENLARGED STAIR PLANS AND DETAILS
A501	PLAN DETAILS
A511	SECTION DETAILS
A512	SECTION DETAILS
A513	SECTION DETAILS
A521	EXPANSION JOINT DETAILS
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A601	DOOR SCHEDULE AND TYPES
A602	EXTERIOR STOREFRONT TYPES
A603	INTERIOR STOREFRONT TYPES
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A1601	FINISH AND EQUIPMENT SCHEDULES

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M011	LEVEL 1 MECHANICAL ZONE PLAN
M012	LEVEL 2 MECHANICAL ZONE PLAN
FP100	FIRE PROTECTION PLANS
M101	LEVEL 1 OVERALL MECHANICAL FLOOR PLAN
M101A	LEVEL 1 MECHANICAL FLOOR PLAN - AREA 'A'
M101B	LEVEL 1 MECHANICAL FLOOR PLAN - AREA 'B'
M101C	LEVEL 1 MECHANICAL FLOOR PLAN - AREA 'C'
M102C	LEVEL 2 OVERALL MECHANICAL FLOOR PLAN
M201	MECHANICAL VIEW ISO
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M502	MECHANICAL DETAILS
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PLUMBING:	
P101	LEVEL 1 OVERALL PLUMBING FLOOR PLAN
P101A	LEVEL 1 PLUMBING FLOOR PLAN - AREA 'A'
P101B	LEVEL 1 PLUMBING FLOOR PLAN - AREA 'B'
P101C	LEVEL 1 PLUMBING FLOOR PLAN - AREA 'C'
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P201	WASTE & VENT SCHEMATIC AND GAS SCHEMATIC
P401	ENLARGED RESTROOM PLANS
P501	PLUMBING DETAILS
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ELECTRICAL:	
E001	SYMBOLS, SCHEDULES AND NOTES
E002	SCHEDULES
E101	ELECTRICAL SITE PLAN
E201	LEVEL 01 LIGHTING PLAN
E202	LEVEL 02 LIGHTING PLAN
E301	LEVEL 01 POWER PLAN
E302	LEVEL 02 POWER PLAN
E303	LEVEL 01 MECHANICAL POWER PLAN
E304	LEVEL 02 MECHANICAL POWER PLAN
E401	LEVEL 01 SYSTEMS PLAN
E402	LEVEL 02 SYSTEMS PLAN
E501	ONE-LINE DIAGRAM
E601	PANEL BOARD SCHEDULES
E701	ELECTRICAL DIAGRAMS
E702	ELECTRICAL DIAGRAMS
E703	ELECTRICAL DIAGRAMS
ET001	AV SYMBOLS, SCHEDULES AND NOTES
ET301	LEVEL 01 AV PLAN
ET501	AUDIOVISUAL DIAGRAMS



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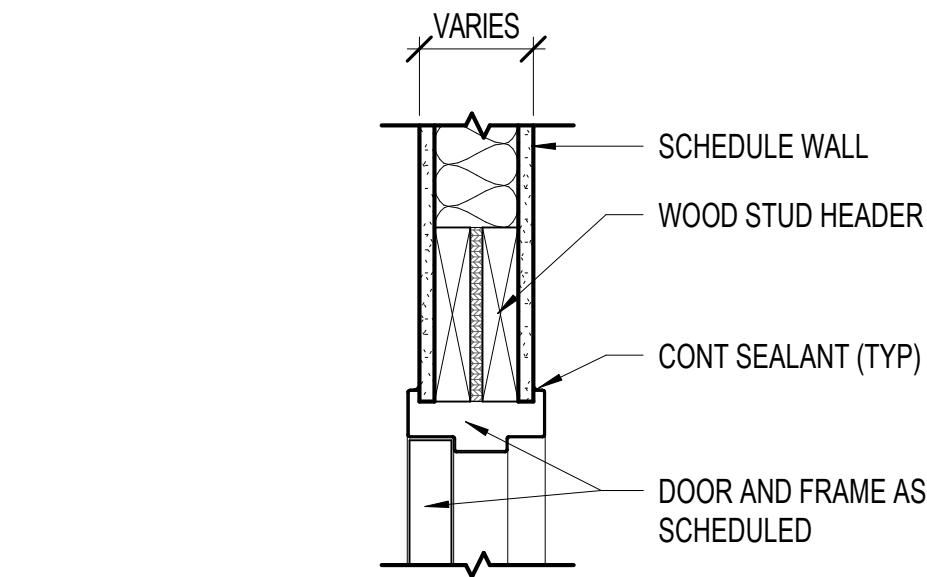
NATIONAL ABILITY CENTER
EQUESTRIAN CENTER EXPANSION
1000 ABILITY WAY
PARK CITY, UTAH 84060

#	Date	Revision
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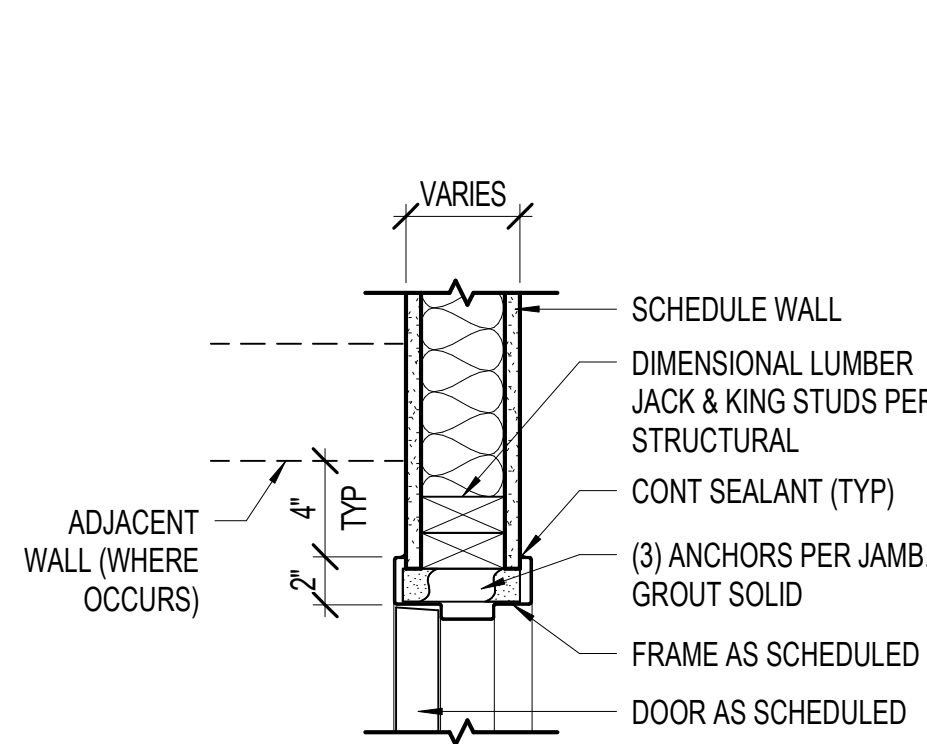
CONSTRUCTION DOCUMENTS

NEXUS PROJ. #: 17179
CHECKED BY: KH
DRAWN BY: JPA
DATE: 06.08.18

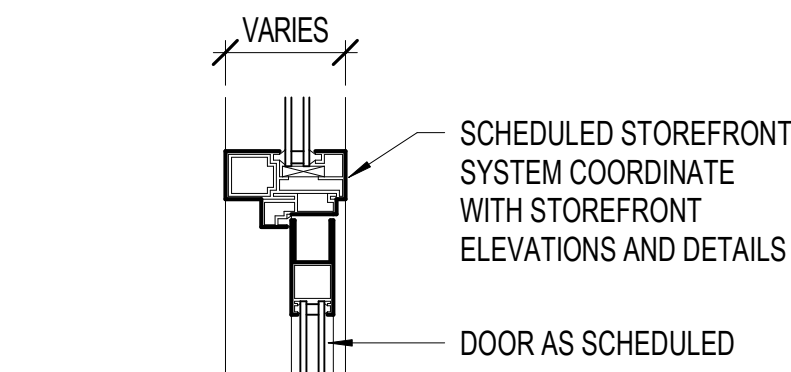
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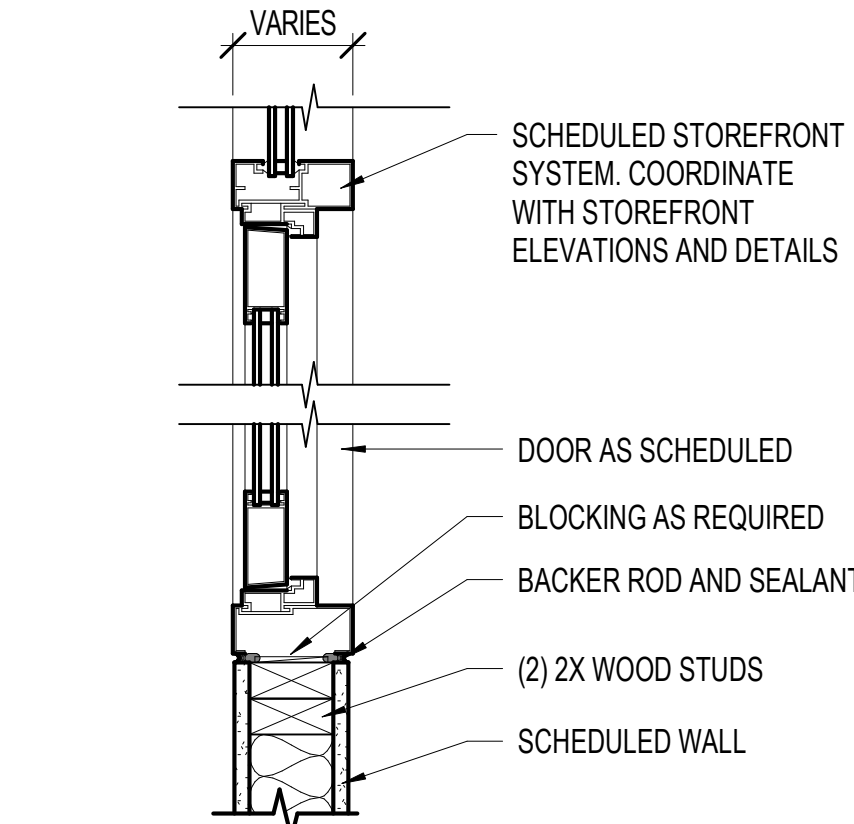
E1 HEAD DETAIL
A601 1 1/2" = 1'-0"



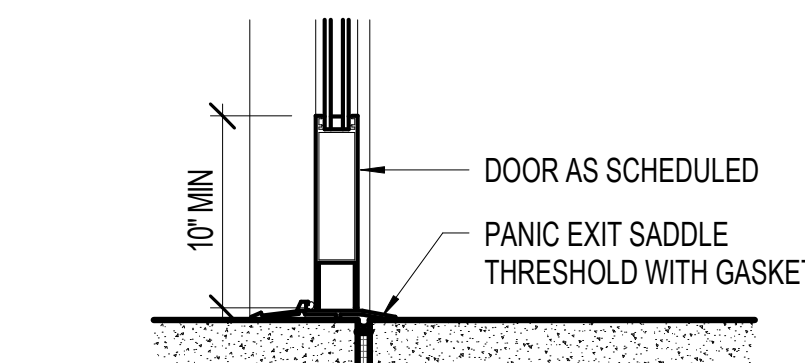
D1 JAMB DETAIL
A601 1 1/2" = 1'-0"



E2 HEAD DETAIL - STOREFRONT DOOR
A601 1 1/2" = 1'-0"

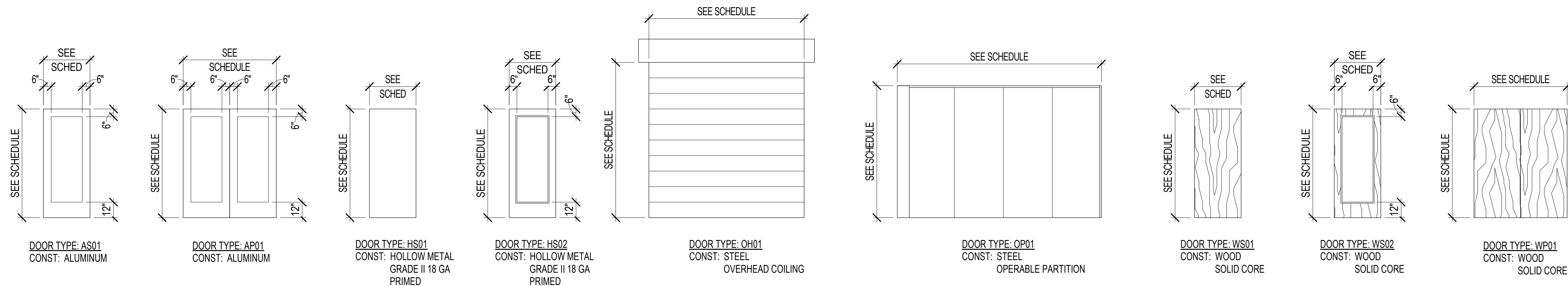


D2 JAMB DETAIL - STOREFRONT DOOR
A601 1 1/2" = 1'-0"



C2 SILL DETAIL - STOREFRONT DOOR
A601 1 1/2" = 1'-0"

A2 DOOR TYPES
A601 1/4" = 1'-0"



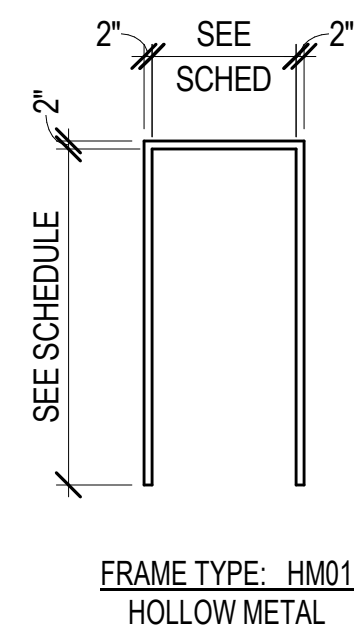
DOOR SCHEDULE														
DOOR #	DOOR				FRAME				FIRE RATING	GLAZING	HARDWARE GROUP	NOTES	NUMBER	
	WIDTH	HEIGHT	TYPE	FINISH	HEAD	JAMB	THRESH	TYPE						FINISH
100a	3'-4"	7'-0"	HS01	PX1	-	D5/A604	-	HM01	PX1	-	-	104	5	100a
100b	3'-5"	7'-0"	HS01	PX1	-	D5/A604	-	HM01	PX1	-	-	104	5	100b
100c	12'-0"	14'-0"	OH01	PF	-	D3/A604	-	-	-	-	-	OHD-100	1	100c
100d	3'-5"	7'-0"	HS01	PX1	-	D5/A604	-	HM01	PX1	-	-	104	5	100d
101a	6'-0"	7'-8"	AP01	AL	C5/A604 SIM	D2/A601 SIM	B2/A601	F	AL	-	G2	AS-101	3,4	101a
101b	6'-0"	7'-8"	AP01	AL	E2/A601	D2/A601	-	IG	AL	-	G6	AS-102	4	101b
102a	2'-6"	6'-8"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	45 MIN	-	205	-	102a
103	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	206	-	103
108	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	210	-	108
109	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	204	-	109
110	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	204	-	110
112a	3'-6"	7'-8"	AS01	AL	C5/A604 SIM	B5/A604 SIM	B2/A601	K	AL	-	G2	AS-201	3,4	112a
112b	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	208	-	112b
112c	3'-0"	7'-8"	AS01	AL	D1/A604 SIM	C1/A604 SIM	-	IL	AL	-	G4	AS-105	-	112c
113	3'-6"	7'-8"	HS01	PX1	-	D2/A604	-	HM01	PX1	-	-	102	-	113
115a	6'-0"	7'-8"	AP01	AL	D1/A604 SIM	C1/A604 SIM	-	IC	AL	-	G4	AS-101	4	115a
115b	6'-0"	7'-8"	AP01	AL	D1/A604 SIM	C1/A604 SIM	-	IA	AL	-	G4	AS-101	4	115b
116	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	201	4	116
116a	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	210	-	116a
117	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	201	4	117
117a	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	210	-	117a
118a	3'-0"	7'-8"	WS02	WD	E2/A601	D2/A601	-	IF	AL	-	G6	209	-	118a
118b	3'-0"	7'-8"	WS02	WD	E2/A601	D2/A601	-	IF	AL	-	G6	209	-	118b
119a	3'-0"	7'-8"	HS03	PX2	-	C4/A604	-	HM01	PX2	-	-	103	-	119a
119b	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	207	-	119b
121	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	210	-	121
122	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	210	-	122
123a	6'-0"	7'-8"	AP01	AL	C5/A604 SIM	D2/A601	B2/A601	C	AL	-	G2	AS-101	3,4	123a
123b	6'-0"	7'-8"	AP01	AL	E2/A601	D2/A601	-	IE	AL	-	G6	AS-102	4	123b
124a	3'-0"	7'-8"	WS02	WD	E2/A601	D2/A601	-	ID	AL	-	G6	202	-	124a
124b	3'-0"	7'-8"	WS02	WD	E2/A601	D2/A601	-	ID	AL	-	G6	202	-	124b
124c	3'-0"	7'-8"	WS02	WD	E2/A601	D2/A601	-	ID	AL	-	G6	202	-	124c
124d	3'-0"	7'-8"	WS02	WD	E2/A601	D2/A601	-	ID	AL	-	G6	202	-	124d
124e	3'-0"	7'-8"	WS02	WD	E2/A601	D2/A601	-	ID	AL	-	G6	202	-	124e
124f	3'-0"	7'-8"	WS02	WD	E2/A601	D2/A601	-	ID	AL	-	G6	202	-	124f
124g	29'-1"	8'-4"	OP01	-	A4/A512	-	-	-	-	-	-	FLD-200	2	124g
124h	29'-1"	8'-4"	OP01	-	A4/A512	-	-	-	-	-	-	FLD-200	2	124h
125	6'-0"	7'-0"	WP01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	203	-	125
126a	3'-0"	7'-8"	AS01	AL	C5/A604 SIM	B5/A604 SIM	B2/A601	A	AL	-	G2	AS-103	3,4	126a
126b	3'-0"	7'-8"	AS01	AL	E2/A601	D2/A601	-	IR	AL	-	G6	AS-104	4	126b
127	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	204	-	127
128	3'-0"	7'-8"	HS01	PX2	-	C4/A604 SIM	-	HM01	PX2	-	-	101	-	128
204	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	210	-	204
205	3'-0"	7'-0"	WS01	WD	E1/A601	D1/A601	-	HM01	PT2	-	-	210	-	205
206	3'-0"	7'-0"	WS02	WD	E1/A601	D1/A601	-	HM01	PT2	-	G6	100	-	206
206a	3'-6"	7'-5"	HS02	PX2	-	C4/A604 SIM	-	HM01	PX2	-	-	212	3,6	206a
207	3'-0"	7'-0"	WS02	WD	E1/A601	D1/A601	-	HM01	PT2	-	G6	211	-	207
208	3'-0"	7'-0"	WS02	WD	E1/A601	D1/A601	-	HM01	PT2	-	G6	211	-	208
209	3'-0"	7'-0"	HS01	PX1	-	D2/A604	-	HM01	PX1	-	-	204	-	209

DOOR SCHEDULE NOTES	
1	OVERHEAD COILING DOOR, BASIS OF DESIGN: CORNELL; ROLLING DOOR, SERVICE DOOR ESD10, FRAME AND HARDWARE BY MANUFACTURER
2	OPERABLE PARTITION, BASIS OF DESIGN: MODERNFOLD; ACOUSTI-SEAL, ENCORE - PAIRED PANEL; STC 52; FINISH TO BE SELECTED
3	PROVIDE ACCESS CONTROL
4	PROVIDE DOOR ACTUATOR AND AUTO OPENER
5	NEW HOLLOW METAL DOOR AND FRAME TO MATCH EXISTING ARENA DOOR AND PANEL SYSTEM. OPENING SIZE TO FIT WITHIN EXISTING PANEL. FIELD VERIFY
6	DOOR HEIGHT TO ALIGN WITH EXTERIOR FIBER CEMENT BATTEN. FIELD VERIFY
-	

DOOR FINISH LEGEND	
AL	ALUMINUM, ANODIZED, COLOR TO BE SELECTED
PT	PAINT, REFER TO FINISH DRAWINGS
PX	PAINT, EXTERIOR, COLOR TO BE SELECTED
PF	PRE-FINISHED BY MANUFACTURER
WD	WOOD, STAINED, COLOR TO BE SELECTED
-	

GLAZING SCHEDULE	
G1	1" INSULATED, CLEAR
G2	1" INSULATED, TEMPERED, CLEAR
G3	1" INSULATED, ONE-WAY MIRROR GLASS
G4	1" INSULATED, TEMPERED, ONE-WAY MIRROR GLASS
G5	1/4" CLEAR
G6	1/4" TEMPERED, CLEAR
-	

B6 FRAME TYPES - HOLLOW METAL
A601 1/4" = 1'-0"



- GENERAL NOTE - DOOR & WINDOW**
- A. FIELD VERIFY ALL DIMENSIONS PRIOR TO SHOP DRAWING SUBMITTAL & SUBSEQUENT FABRICATION OF ALL DOOR AND WINDOW FRAMES
- B. PROVIDE CLEARANCE REQUIRED BY ACCESSIBILITY CODES ANSI A117.1 AND ADAAG AT ALL DOORS
- C. DOOR LITE DIMENSIONS SHOWN REPRESENT THE FINISHED CLEAR GLAZED OPENING BETWEEN TRIM KIT ELEMENTS

**GENERAL NOTE -
DOOR & WINDOW**

- A. FIELD VERIFY ALL DIMENSIONS PRIOR TO SHOP DRAWING SUBMITTAL & SUBSEQUENT FABRICATION OF ALL DOOR AND WINDOW FRAMES
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GLAZING SCHEDULE	
G1	1" INSULATED, CLEAR
G2	1" INSULATED, TEMPERED, CLEAR
G3	1" INSULATED, ONE-WAY MIRROR GLASS
G4	1" INSULATED, TEMPERED, ONE-WAY MIRROR GLASS
G5	1/4" CLEAR
G6	1/4" TEMPERED, CLEAR
-	



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#	Date	Revision
1	06/25/18	Addendum 1

CONSTRUCTION DOCUMENTS

NEXUS PROJ. #: 17179
CHECKED BY: KH
DRAWN BY: JPA
DATE: 06.08.18

EXTERIOR STOREFRONT TYPES

A602

6/25/2018 5:26:39 PM

E

D

C

B

A

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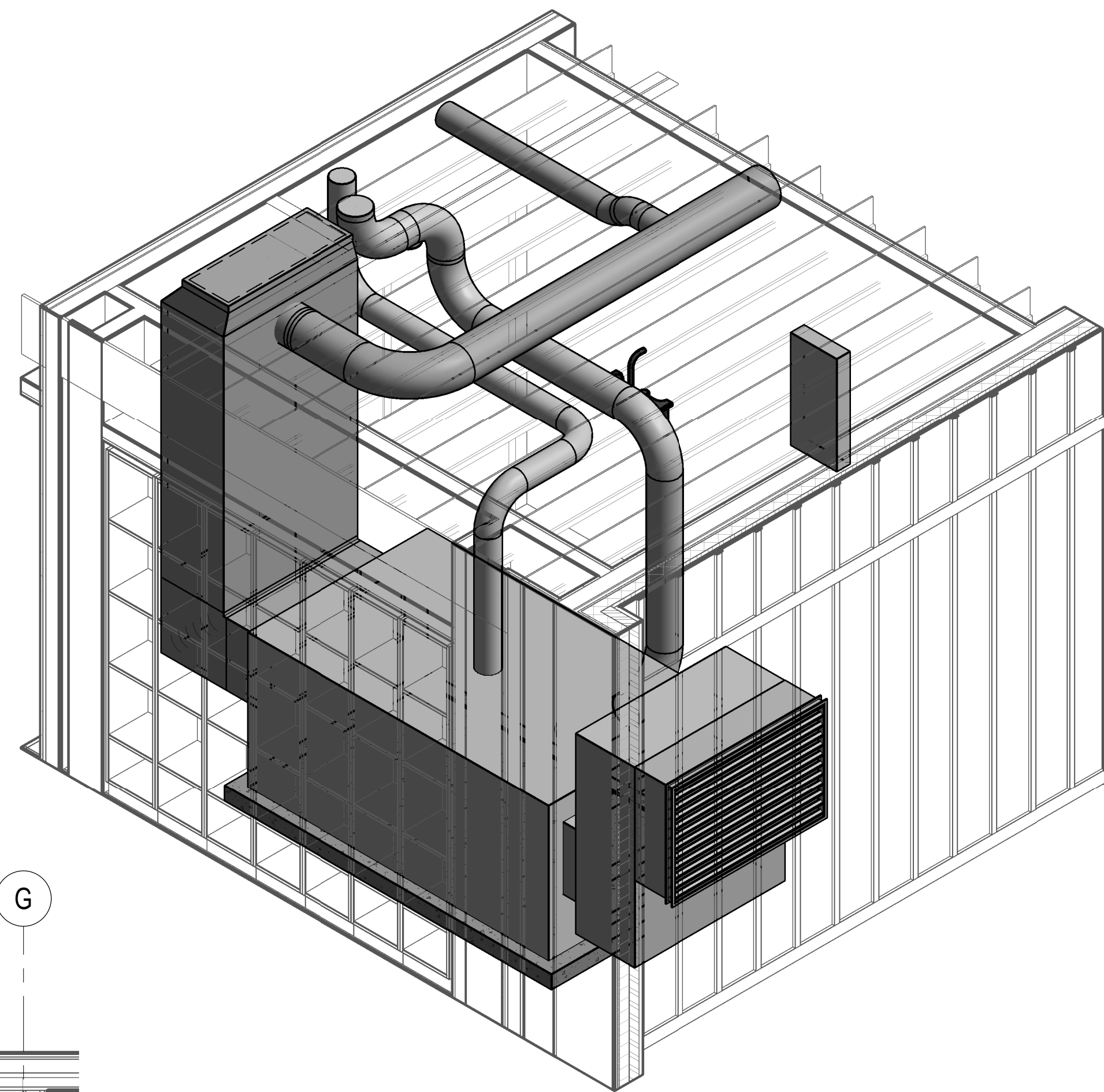
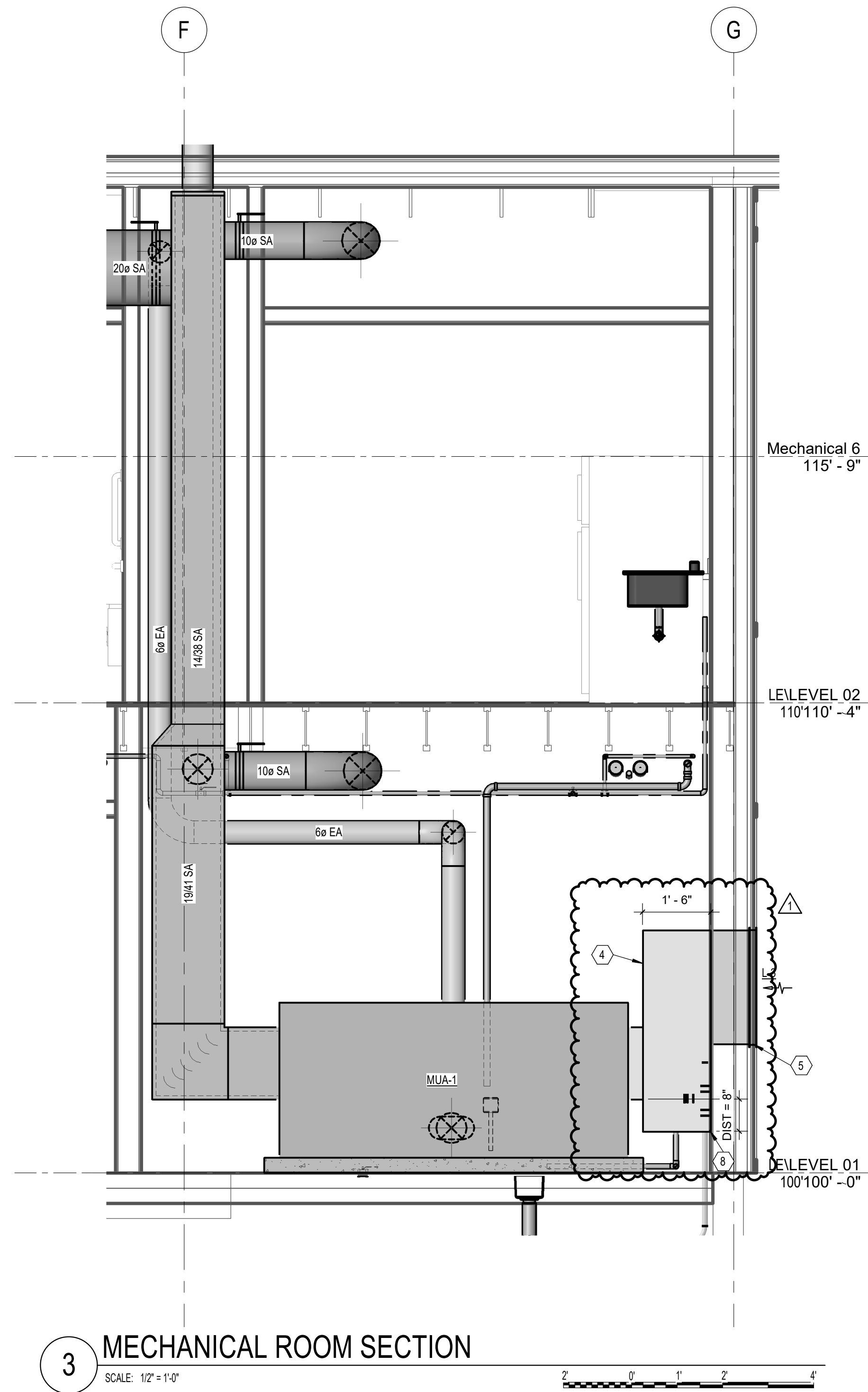
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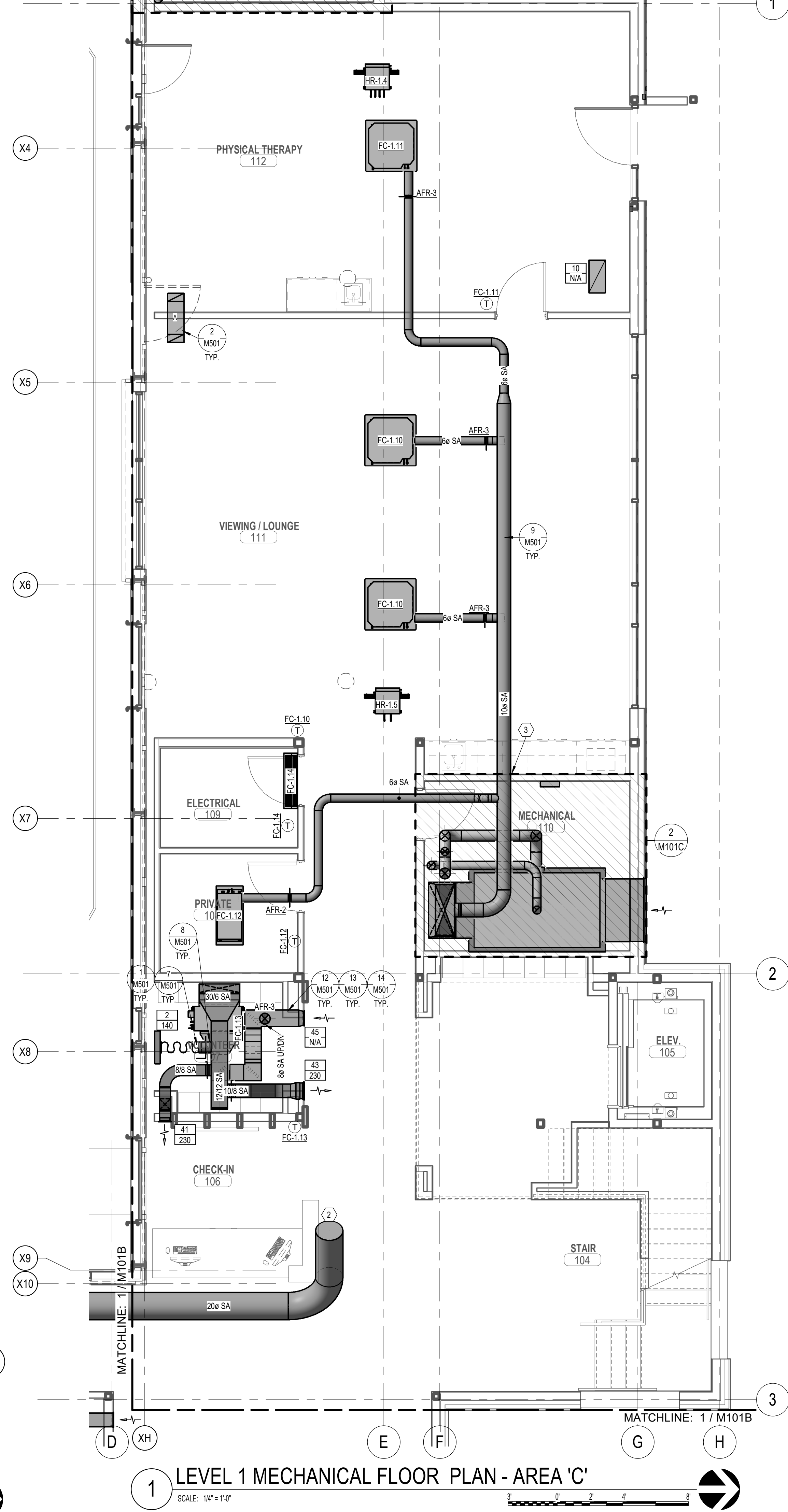
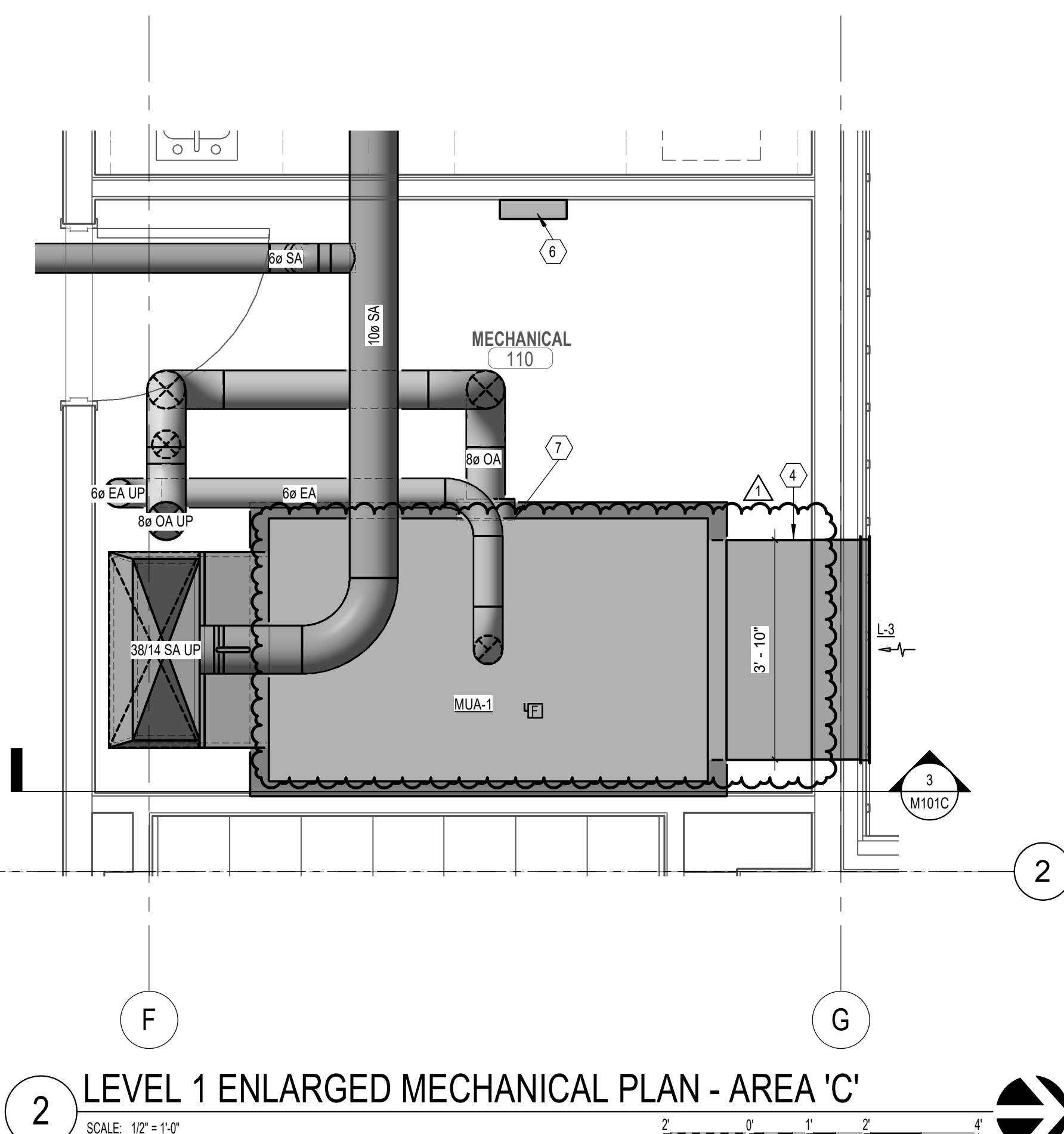
C

B

A



4 MECHANICAL ROOM VIEW AREA 'C'
SCALE: 1" = 1'-0"



KEYED NOTES

1

HOUSEKEEPING PAD FOR NATURAL GAS METER. SEE PLUMBING DRAWINGS FOR DETAILS.

2

OUTSIDE AIR DUCT CONTINUES TO SECOND LEVEL.

3

COORDINATE ALL PENETRATIONS AT SHEAR WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR SHEAR WALL LOCATIONS.

4

PROVIDE PLENUM BOX WITH DIMENSIONS AS LISTED FOR OUTSIDE AIR SUPPLY TO THE DOSS UNIT.

5

BOTTOM OF COVER SHALL BE 1" ABOVE GRADE MINIMUM.

6

ATC PANEL.

7

PROVIDE TRANSITION FITTINGS FROM EQUIPMENT OVAL DUCT.

8

EXTEND PLENUM BASE TO 8" BELOW FRESH AIR INTAKE OF MAKE UP AIR UNIT. SLOPE BASE OF PLENUM TO CENTER AND PROVIDE 1" DRAIN CONNECTION.

GENERAL NOTES

A

COORDINATE DUCT ROUTING WITH PLUMBING AND MECHANICAL PIPING. PROVIDE OFFSETS AS REQUIRED.

B

COORDINATE LOCATION OF DIFFUSERS AND GRILLES WITH ARCHITECTURAL REFLECTED CEILING DRAWINGS.

C

INSTALL ALL MECHANICAL SYSTEMS PER MANUFACTURERS RECOMMENDATIONS.

D

NO FLEX DUCT ABOVE HARD CEILINGS.

E

PLENUM TO PLENUM AIR TRANSFERS DUCTS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH DETAIL 5MMH02 FOR TRANSFERS A-G.



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Date Revision
1 6/21/18 ADD 01

CONSTRUCTION
DOCUMENTS

NEXUS PROJ. #: 17179
CHECKED BY: BRC
DRAWN BY: CEA
DATE: 06.08.18

LEVEL 1
MECHANICAL
FLOOR PLAN -
AREA 'C'

M101C

EXHAUST FAN SCHEDULE (EF)																
PLAN CODE	AREA SERVED	TYPE	CFM @ ELEV	ESP @ ELEV	FAN RPM	MOTOR				SONES	DAMPER (GRAVITY OR MOTOR)	METHOD OF CONTROL	OPENING SIZE	MAX OPERATING WT (LBS)	MANUFACTURER & MODEL NO	REMARKS
						BHP	HP	EFFICIENCY %	VOLTI/PH							
EF-1	LEVEL 1 GENERAL	ROOFTOP DOWNBLAST	950	.55	1355	1/6	.136	N/A	115/1	8.9	MOTOR	OCCUPANCY	15.5'X15.5'	76	COOK ACED-EC 120C17D	-
EF-2	LEVEL 2 GENERAL	ROOFTOP DOWNBLAST	150	.46	1472	1/6	.04	N/A	115/1	5.3	MOTOR	OCCUPANCY	13.5'X13.5'	52	COOK ACED-EC 90C17DEC	-

MAKE UP AIR UNIT SCHEDULE (MUA)																	
PLAN CODE	CFM @ ELEV	EXTERNAL SP (IN WC)	FAN			HEATING		MAXIMUM DIMENSIONS ①				COMBUSTION VENTINTAKE ②				MANUFACTURER & MODEL NO	REMARKS
			HP	VOL/T/PH	VFD	TYPE	OUTPUT MBH	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	WEIGHT (LBS)	VENT DIA (IN)	VENT TYPE	INTAKE DIA (IN)	INTAKE TYPE		
MUA-1	4000	2	2.87	208/3	3 HP	NG	222	92	55	41	1042	6	SINGLE WALL	6	SINGLE WALL	STERLING DESSA6B01J43410AB8E39H4UK5R2	-

② SINGLE WALL VENT PIPE TO BE 26 GAUGE GALVANIZED STEEL OR MATERIAL OF EQUIVALENT DURABILITY AND CORROSION RESISTANCE FOR VENT SYSTEM. SEAL ALL VENT PIPE JOINTS AND SEAMS TO PREVENT LEAKAGE. USE GENERAL ELECTRIC RTV-108 OR DOW CORNING RTV-732 SILICONE SEALANT OR 3M 4425 ALUMINUM FOIL TAPE OR EQUIVALENT.

GAS FIRED UNIT HEATER SCHEDULE (UH)																			
PLAN CODE	SPECIFIED UNIT CAPACITY (MBH)			CFM (STD)	THROW AT 18' MOUNTING (FT)	ELECTRICAL				MAX DIMENSIONS				COMBUSTION VENT INTAKE				MANUFACTURER & MODEL NO	REMARKS
	INPUT (SL)	OUTPUT (SL)	OUTPUT 7,000 FT			VOLTS/PH	FAN HP	MOTOR AMPS	TOTAL AMPS	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	WEIGHT (LBS)	VENT DIA (IN)	VENT TYPE	INTAKE DIA (IN)	INTAKE TYPE		
UH-1	300	246	196.8	4545	69	120/1	1/2	7	8.11	42.53	22.05	31.31	270	6	B-VENT	6	SINGLE WALL	MOORE PTS 300	-
UH-2	300	246	196.8	4545	69	120/1	1/2	7	8.11	42.53	22.05	31.31	270	6	B-VENT	6	SINGLE WALL	MOORE PTS 300	-

ELECTRIC HEATER SCHEDULE (EH) ①										
PLAN CODE	ELECTRICAL				CFM (ALT)	MOUNTING	QUANTITY	MANUFACTURER & MODEL NO	REMARKS	
	TYPE	TOTAL KW	VOLTI PH	MAX AMPS						
EH-1	WALL MOUNT	4	208/1	19.2	100	Z AFF	3	QMARK AWH4408F	-	
EH-2	WALL MOUNT	2	208/1	9.6	100	Z AFF	2	QMARK AWH4408F	-	
EH-3	CEILING	NA	120/1	8.3	65	CEILING	8	QMARK QCH1101F	-	

① THERMOSTAT IS INTEGRAL TO THE UNIT.

LOUVER SCHEDULE (L)					
PLAN CODE	CFM	VELOCITY (FPM)	FREE AREA (SF)	MAX DIMENSIONS (WxH) (IN)	MANUFACTURER & MODEL NO
L-1	33,900	350	95	146 x 156	RUSKIN ELF6375DX
L-2	11,300	900	20.6	44 x 70	RUSKIN ELF6375DX
L-3	4,000	800	5	46 x 30	RUSKIN ELF6375DX

VAV COOLING ONLY						
PLAN CODE	INLET SIZE (IN)	DESIGN INLET SP (IN WC)	MAX CFM	MAX NC	MAX SP DROP (IN WC)	MIN CONTROL CFM
6C	6	1.0	500	34	0.22	80
8C	8	1.0	900	33	0.05	150
10C	10	1.0	1200	34	0.05	230
12C	12	1.0	1600	34	0.05	325
14C	14	1.0	2800	35	0.07	450
16C	16	1.0	3400	35	0.05	580
24C	24	1.0	5000	35	0.05	1400

MOTORIZED DAMPER SCHEDULE (D)					
PLAN CODE	CFM	VELOCITY (FPM)	FREE AREA (SF)	MAX DIMENSIONS (WxH) (IN)	DUTY
D-1	33,900	350	95	146 x 156	FULLY OPEN/CLOSE
D-2	11,300	900	20.6	44 x 70	FULLY OPEN/CLOSE
D-3	11,300	900	20.6	44 x 70	FULLY OPEN/CLOSE

AIR DEVICE SCHEDULE											PLAN CODE		GRILLE CFM
PLAN CODE	TYPE & DUTY	FACE SIZE	NECK SIZE	CEILING TYPE ②	MAX CFM	MAX TP (IN WC)	NC LEVEL MAX	MIN TH+ROW (FT) (T50)	4-WAY MIN THROW (T50)	2-WAY MIN THROW (T50)	MANUFACTURER & MODEL NO	REMARKS	
1	LINEAR-SUPPLY	24"L	8"D	MATCH CEILING	80	0.08	32	12	-	-	TEMPO L.D.	1 @ 1' SLOT	
2	LINEAR-SUPPLY	24"L	8"D	MATCH CEILING	160	0.09	33	13	-	-	TEMPO L.D.	2 @ 1' SLOT	
3	LINEAR-SUPPLY	24"L	8"D	MATCH CEILING	240	0.10	34	14	-	-	TEMPO L.D.	3 @ 1' SLOT	
4	LINEAR-SUPPLY	24"L	10"D	MATCH CEILING	320	0.11	35	15	-	-	TEMPO L.D.	4 @ 1' SLOT	
5	LINEAR-SUPPLY	48"L	8"D	MATCH CEILING	160	0.08	32	12	-	-	TEMPO L.D.	1 @ 1' SLOT	
6	LINEAR-SUPPLY	48"L	10"D	MATCH CEILING	320	0.09	33	13	-	-	TEMPO L.D.	2 @ 1' SLOT	
7	LINEAR-SUPPLY	48"L	12"D	MATCH CEILING	480	0.10	34	14	-	-	TEMPO L.D.	3 @ 1' SLOT	
8	LINEAR-SUPPLY	48"L	12"D	MATCH CEILING	640	0.11	35	15	-	-	TEMPO L.D.	4 @ 1' SLOT	
9	PERFORATED RETURN	24" X 24"	22" X 22"	MATCH CEILING	1200	0.05	17	-	-	-	TITUS PAR	-	
10	PERFORATED RETURN	24" X 12"	22" X 10"	MATCH CEILING	600	0.06	10	-	-	-	TITUS PAR	-	
11	PERFORATED EXHAUST	24" X 24"	22" X 22"	MATCH CEILING	1200	0.05	17	-	-	-	TITUS PAR	-	
12	PERFORATED EXHAUST	24" X 12"	22" X 10"	MATCH CEILING	600	0.06	10	-	-	-	TITUS PAR	-	
13	PERFORATED EXHAUST GRILLE	8" X 8"	6" X 6"	MATCH CEILING	120	0.12	10	-	-	-	TITUS 8F	-	
14	PERFORATED EXHAUST GRILLE	10" X 10"	8" X 8"	MATCH CEILING	225	0.12	12	-	-	-	TITUS 8F	-	
15	PERFORATED EXHAUST GRILLE	12" X 12"	10" X 10"	MATCH CEILING	360	0.12	14	-	-	-	TITUS 8F	-	
16	PERFORATED EXHAUST GRILLE	14" X 14"	12" X 12"	MATCH CEILING	550	0.12	16	-	-	-	TITUS 8F	-	
17	PERFORATED EXHAUST GRILLE	16" X 16"	14" X 14"	MATCH CEILING	750	0.12	17	-	-	-	TITUS 8F	-	
18	PERFORATED EXHAUST GRILLE	20" X 20"	18" X 18"	MATCH CEILING	1250	0.12	19	-	-	-	TITUS 8F	-	
19	PERFORATED EXHAUST GRILLE	24" X 24"	22" X 22"	MATCH CEILING	1900	0.12	21	-	-	-	TITUS 8F	-	
20	PERFORATED EXHAUST GRILLE	32" X 32"	30" X 30"	SURFACE	3600	0.12	24	-	-	-	TITUS 8F	-	
21	RADIAL BLADE DIFFUSER	12"□	8"D	SURFACE	210	0.14	29	8 ①	-	-	AIR DIFFUSION PRODUCTS DNR	-	
22	RADIAL BLADE DIFFUSER	15"□	10"D	SURFACE	330	0.14	29	10 ①	-	-	AIR DIFFUSION PRODUCTS DNR	-	
23	RADIAL BLADE DIFFUSER	18"□	12"D	SURFACE	470	0.14	30	12 ①	-	-	AIR DIFFUSION PRODUCTS DNR	-	
24	RADIAL BLADE DIFFUSER	21"□	14"D	SURFACE	640	0.14	30	14 ①	-	-	AIR DIFFUSION PRODUCTS DNR	-	
25	RADIAL BLADE DIFFUSER	24"□	16"D	SURFACE	840	0.14	30	15 ①	-	-	AIR DIFFUSION PRODUCTS DNR	-	
26	RADIAL BLADE DIFFUSER	24" X 24"	8"D	GRID	210	0.14	29	8 ①	-	-	AIR DIFFUSION PRODUCTS DNR	-	
27	RADIAL BLADE DIFFUSER	24" X 24"	10"D	GRID	330	0.14	29	10 ①	-	-	AIR DIFFUSION PRODUCTS DNR	-	
28	RADIAL BLADE DIFFUSER	24" X 24"	12"D	GRID	470	0.14	30	12 ①	-	-	AIR DIFFUSION PRODUCTS DNR	-	
29	RADIAL BLADE DIFFUSER	24" X 24"	14"D	GRID	640	0.14	30	14 ①	-	-	AIR DIFFUSION PRODUCTS DNR	-	
30	RADIAL BLADE DIFFUSER	24" X 24"	16"D	GRID	840	0.14	30	15 ①	-	-	AIR DIFFUSION PRODUCTS DNR	-	
31	ADJUSTABLE LOUVERED	24" X 24"	8"D	MATCH CEILING	170	0.13	25	ADJUSTABLE	11	18	TITUS TDOA	18" x 18" CORE	
32	ADJUSTABLE LOUVERED	24" X 24"	8"D	MATCH CEILING	310	0.13	27	ADJUSTABLE	14	24	TITUS TDOA	18" x 18" CORE	
33	ADJUSTABLE LOUVERED	24" X 24"	10"D	MATCH CEILING	440	0.13	28	ADJUSTABLE	17	26	TITUS TDOA	18" x 18" CORE	
34	ADJUSTABLE LOUVERED	24" X 24"	12"D	MATCH CEILING	600	0.14	28	ADJUSTABLE	21	33	TITUS TDOA	18" x 18" CORE	
35	ADJUSTABLE LOUVERED	24" X 24"	14"D	MATCH CEILING	800	0.13	29	ADJUSTABLE	24	39	TITUS TDOA	18" x 18" CORE	
36	ADJUSTABLE LOUVERED	24" X 24"	16"D	MATCH CEILING	950	0.11	29	ADJUSTABLE	26	41	TITUS TDOA	18" x 18" CORE	
37	BAR FLOOR DIFFUSER	2 1/2"	2 1/2" x L	-	80FT	0.10	24	-	-	-	TITUS CT-480	-	
38	BAR FLOOR DIFFUSER	4"	4" x L	-	150FT	0.10	28	-	-	-	TITUS CT-480	-	
39	BAR FLOOR DIFFUSER	6"	6" x L	-	230FT	0.09	28	-	-	-	TITUS CT-480	-	
40	THERMALLY CONTROLLED DIFFUSER	24" X 24"	8"D	GRID	280	0.15	35	-	-	-	THERMAFUSER	-	
41	SIDE WALL SUPPLY	8" X 8"	8" X 8"	-	-	-	30	-	-	-	TITUS 300FS	-	
42	SIDE WALL SUPPLY	10" X 10"	10" X 10"	-	-	-	30	-	-	-	TITUS 300FS	-	
43	SIDE WALL SUPPLY	12" X 12"	12" X 12"	-	-	-	30	-	-	-	TITUS 300FS	-	
44	SIDE WALL RETURN	10" X 10"	10" X 10"	-	-	-	30	-	-	-	TITUS 350FS	-	
45	SIDE WALL RETURN	12" X 12"	12" X 12"	-	-	-	30	-	-	-	TITUS 350FS	-	

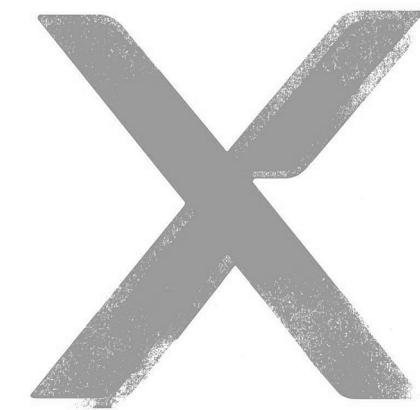
①

RECOMMENDED MINIMUM DISTANCE BETWEEN DIFFUSERS IN 9' CEILING

②

VERIFY FRAME TYPE OF ALL AIR DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLAN BEFORE ORDERING.

① RECOMMENDED MINIMUM DISTANCE BETWEEN DIFFUSERS IN 9' CEILING.
② VERIFY FRAME TYPE OF ALL AIR DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLAN BEFORE ORDERING.



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Date Revision
1 6/21/18 ADD 01

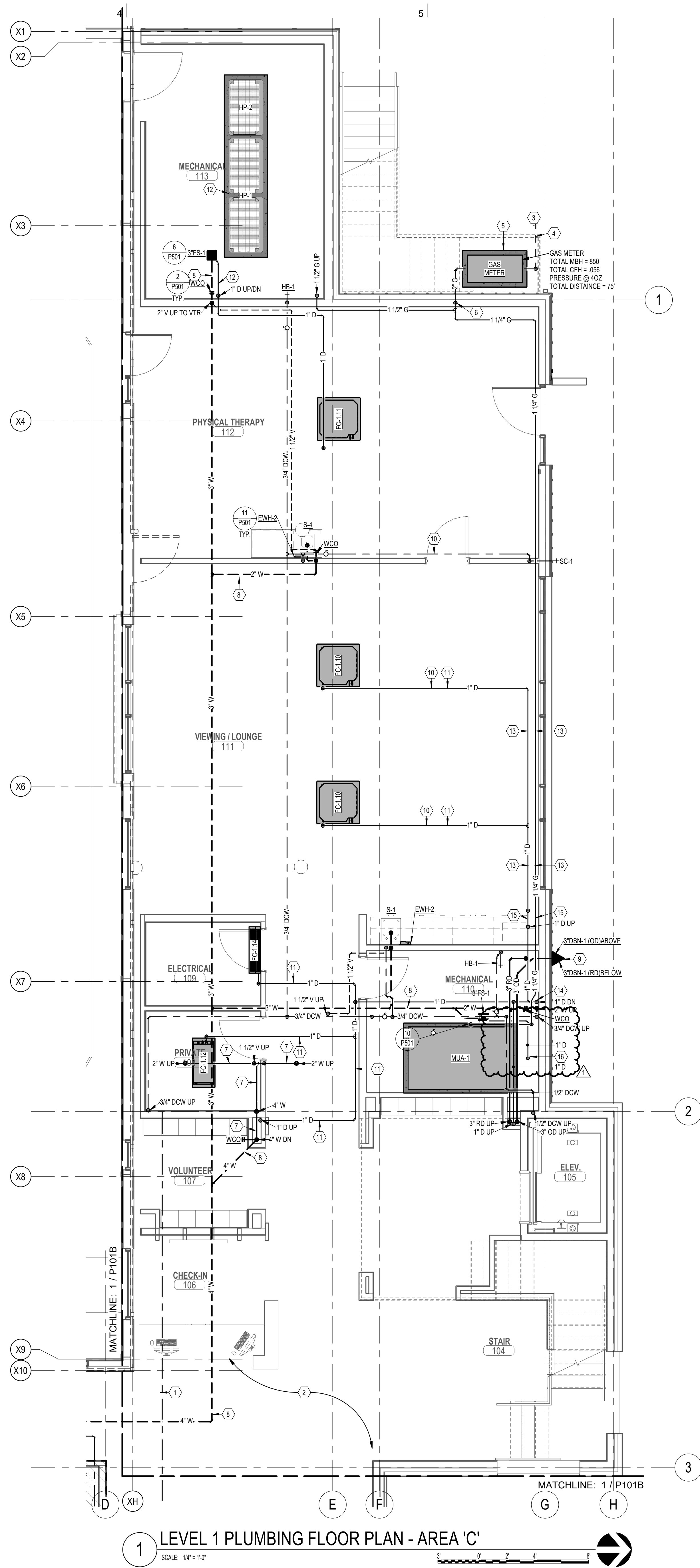
CONSTRUCTION DOCUMENTS

NEXUS PROJ. #: 17179
CHECKED BY: BRC
DRAWN BY: CEA
DATE: 06.08.18

MECHANICAL SCHEDULES

AGENCY APPROVAL

M601



- ### KEYED NOTES
- ROUTE DOWN LINE OVER LOBBY SPACE AND WITHIN TRUSS SPACE. COORDINATE AND ROUTE LINE WITHIN THE SAME BAY AS THE REFRIGERANT PIPING. REFER TO MECHANICAL DRAWINGS.
 - COORDINATE ALL PENETRATIONS AT SHEAR WALLS. REFER TO STRUCTURAL DRAWINGS FOR SHEAR WALL LOCATIONS.
 - NATURAL GAS FEED. SEE CIVIL DRAWINGS FOR CONTINUATION.
 - UNDERGROUND PIPE AT MINIMUM DEPTH OF 48" BELOW FINISH GRADE.
 - PROVIDE 4" CONCRETE PAD FOR GAS METER. COORDINATE SIZE AND LOCATION WITH GAS COMPANY AND EQUIPMENT.
 - ROUTE NATURAL GAS PIPE UP IN STUD WALL.
 - OVERHEAD SANITARY SEWER PIPE SERVING RESTROOM ABOVE.
 - UNDERGROUND SANITARY SEWER PIPE (TYPICAL).
 - INSTALL ROOF DRAIN DOWNSPOUT NOZZLE (3" DSN-1) AT 18" ABOVE GRADE AND OVERFLOW DRAIN DOWNSPOUT NOZZLE (3" DSN-1) AS HIGH AS POSSIBLE AND BELOW SECOND FRAMING ABOVE ROOF DRAIN DOWNSPOUT NOZZLE. PROVIDE SPLASH BLOCK.
 - ROUTE PIPE THROUGH OPEN WEB JOIST (TYPICAL).
 - ROUTE CONDENSATE DRAIN AS HIGH AS POSSIBLE. COORDINATE LIFT ELEVATION WITH MECHANICAL EQUIPMENT CONDENSATE PUMP.
 - ROUTE CONDENSATE DRAIN LINE ACROSS FLOOR AND TO FLOOR SINK. COORDINATE LOCATION TO MAINTAIN OPEN FLOOR SPACE AND ACCESS REQUIREMENTS OF MECHANICAL EQUIPMENT.
 - ROUTE PIPE BETWEEN STRUCTURAL JOISTS.
 - DROP AND SUPPORT CONDENSATE DRAIN LINE AGAINST WALL AND DOWN TO FLOOR. ROUTE DRAIN LINE ACROSS FLOOR AND TO FLOOR SINK. COORDINATE LOCATION TO MAINTAIN OPEN FLOOR SPACE AND ACCESS REQUIREMENTS OF MECHANICAL EQUIPMENT.
 - EXTEND DRAIN FROM BASE OF FRESH AIR PLenum TO FLOOR SINK.
- ### GENERAL NOTES
- COORDINATE PLUMBING PIPE ROUTING AND LOCATION WITH ALL TRADES BEFORE STARTING ANY WORK.
 - ALL SANITARY WASTE PIPING 2 1/2" AND SMALLER TO BE RUN AT 1/4" PER FOOT SLOPE. PIPE 3" AND LARGER RUN AT 1/8" PER FOOT SLOPE. PROVIDE ACCESS DOORS TO ALL MIXING VALVES, SHUTOFF VALVES, ETC.
 - WHERE INDIVIDUAL OUTLET PIPING SIZE IS NOT SHOWN, SEE PLUMBING SCHEDULE SIZE.
 - ALL CONDENSATE DRAINS TO BE RUN AT 1/8" PER FOOT SLOPE UNLESS NOTED OTHERWISE.
 - PROVIDE PROSET TRAP GUARD FOR ALL FLOOR SINKS AND FLOOR DRAINS.
 - PLUMBING CONTRACTOR IS RESPONSIBLE TO MAKE ALL FINAL CONNECTIONS TO PLUMBING FIXTURES.
 - FINISH FLOOR ELEVATION TO REFERENCE ARCHITECTURAL FINISH FLOOR ELEVATION OF 100.00.
 - COORDINATE ALL PENETRATIONS AT SHEAR WALLS. REFER TO STRUCTURAL DRAWINGS FOR SHEAR WALL LOCATIONS.



NATIONAL ABILITY CENTER EQUESTRIAN CENTER EXPANSION 1000 ABILITY WAY PARK CITY, UTAH 84060

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LEVEL 1 PLUMBING FLOOR PLAN - AREA 'C'

P101C

18045 NAC EQUESTRIAN CENTER

Electrical Addendum #1

Issue Date: 06/25/2018

GENERAL NOTES:

1. Floor plan scale on level 2 for power and lighting sheets has been scaled to 3/16" = 1'-0" for clarity on the drawings. Carefully review the scale for each floor plan when measuring off the drawings.

CHANGES TO THE SPECIFICATIONS:

SPECIFICATION #27 4100 AUDIOVISUAL SYSTEMS

1. Section 2.4 EQUIPMENT REQUIRED PER ROOM TYPE

DMeeting Room

- i. Add DRAWER, PULL OUT RACK MOUNT, LATCHING, 2 RU – MIDDLE ATLANTIC – D2.

SPECIFICATION #28 2205 ACCESS CONTROL SYSTEMS

1. Added PST as an approved installer.
2. Updated section 1.6 SUBMITTALS A-C:

- A. ~~PRODUCT DATA: Submit manufacturer's data sheets including specifications, installation instructions, and general recommendation for each type of equipment specified.~~ Refer to specification 26 0500 for shop drawing submittal requirements. The following items shall be included in the shop drawings submittal. Submittals to be reviewed and approved prior to ordering equipment.**

1. All submittals shall be submitted in a digital format with bookmarks for each section of equipment. Any submittals that are partial or incomplete shall be rejected and count as one submittal against the submittal allowance. No hand-written documentation is allowed.
2. Provide a complete bill of materials for all components, accessories and hardware to be provided in order to assemble a complete and working system as described within the contract documents.
3. Submit manufacturer's data and installation details for all devices, panels, cables and head-end equipment. Product data showing multiple options, products and/or models shall be clearly marked identifying the specific options, products and/or models being provided.
4. Submit dimensioned drawings and device wiring layouts for all equipment.
5. Submit equipment rack elevation diagrams (if applicable).
6. Submit network switch port count and power requirements. Port count and POE switch requirements should be broken out per IDF/MDF closet.
7. Submit manufacturer certifications for all systems provided. Certifications must be from local office providing the install.

- B. Provide the Owner the following upon project completion:**

1. A complete set of shop drawings indicating: Locations of all panels, power supplies and controllers; point-to-point wiring diagrams for all devices.
2. A complete equipment list identifying: Type; model; manufacturer; manufacturer's data sheets.

18045 NAC EQUESTRIAN CENTER

Electrical Addendum #1

Issue Date: 06/25/2018

3. ~~Contractor to provide a list of IP address, username and passwords for network devices coordinated with door name and/or location. A list of IP and MAC addresses, username and passwords for network devices coordinated with door name and/or location.~~
4. Serial and model numbers for all major components.
5. Installation manuals and user manuals for all systems listed in these specifications.

~~SHOP DRAWINGS: Submit dimensioned drawings and wiring layout for any changes in wiring from the layout on the drawings.~~

3. Updated Section 2.2 with approved power supplies.

4 Door Power Supply ACS Enclosure Life Safety Power FPO75-B100C4D8PE2M

8 Door Power Supply ACS Enclosure Life Safety Power FPO150-B100C8D8PE4M1

16 Door Power Supply ACS Enclosure Life Safety Power FPO150/250-2C82D8PE8M2

CHANGES TO THE DRAWINGS:

SHEET E001

1. Added description to the DP symbol.
2. Adjusted the sheet index to reflect new sheet numbering
3. Fixed general notes and electrical utility coordination.
4. Review drawings for all changes.

SHEET E002

1. Added access control schedule.
2. Revised Light Fixture Schedule.
3. Adjusted the disconnect notes in the equipment schedule.
4. Changed the unit heater voltage from 208 to a 120 and adjusted the HP rating.
5. Added fixtures to the fixture schedule.
6. Adjusted fixtures catalog numbers and descriptions.
7. Added a floor box schedule.
8. Review drawings for all changes.

SHEET E101

1. Updated site to show correct location of existing pull boxes and utility services.
2. Added keynotes for clarity.
3. Re-routed new feeds for utility services to the building.
4. Refer to sheet for all changes.

SHEET E201

1. Added emergency lighting throughout.
2. Added exit signage throughout.
3. Annotated light switches.
4. Added MS# lighting switches at check-in desk.

18045 NAC EQUESTRIAN CENTER

Electrical Addendum #1

Issue Date: 06/25/2018

5. Relocated suspended lighting fixtures to the second floor.
6. Review drawings for all changes.

SHEET E202

1. Added emergency lighting throughout.
2. Removed 4X2 lighting fixtures in the mechanical room and added the relocated suspended lighting fixtures to new location.
3. Review drawings for all changes.

SHEET E301

1. Add AV data symbol 'TP7' to south wall of Multi-Purpose Room 124.
2. Repositioned ADA actuators on all doors. Moved to pedestals on doors 101, 123, and 126.
3. Added ADA to Door 112C.
4. Added telephone boards and outlets in the electrical room.
5. Added junction boxes and circuiting for ADA doors.
6. Adjusting receptacle locations in the warming kitchen and the meeting room.
7. Added power and data outlets for multi-purpose area.
8. Review drawings for all changes.

SHEET E302

1. Adjusted junction boxes and data location and connections in the open office.
2. Review drawings for all changes.

SHEET E303

1. Adjusted disconnects configurations for mechanical equipment.
2. Adjusted circuit numbers for disconnects.
3. Review drawings for all changes.

SHEET E304

1. Repositioned card readers on all doors. Moved to pedestals on doors 101, 123, and 126.
2. Tagged doors to reference diagrams for rough-in.
3. Review drawings for all changes.

SHEET E401

1. Repositioned card readers on all doors. Moved to pedestals on doors 101, 123, and 126.
2. Tagged doors to reference diagrams for rough-in.
3. Review drawings for all changes.

SHEET E402

1. Added floor plan of existing stable and equestrian arena to include fire alarm layout.
2. Refer to sheet for all changes.

SHEET E403

3. Re-assigned sheet from E402 to E403
4. Repositioned card readers on all doors. Moved to pedestals on doors 101, 123, and 126.
5. Tagged doors to reference diagrams for rough-in.
6. Review drawings for all changes.

18045 NAC EQUESTRIAN CENTER

Electrical Addendum #1

Issue Date: 06/25/2018

SHEET E501

1. Updated one-line diagram to show correct service entrance configuration and match the site changes. Refer to sheet for all changes.

SHEET E601

1. Added spare circuit breakers.
2. Changed the 1lm1 panel from a 42-circuit panel to a 84 circuit panel
3. Adjusted load amounts on the panels.
4. Added Control Relay Schedule
5. Review drawings for all changes.

SHEET E704

1. Added door diagrams to show rough-in for access control and door hardware.
2. Added Lighting Control Switch diagrams.
3. Review drawings for all changes.

SHEET ET301

1. Add reference Sheet Keynote:
 - a. 'T1' to room scheduling device, 'RS7', located just outside Meeting Room 11B.
 - b. 'T8' to the south side of the Multi-Purpose Room 124 in three locations, center, southeast corner, and southwest corner.
2. Change reference Sheet Keynote:
 - a. 'T2' located adjacent 'TP7' device to 'T1'.
3. Change 'RxH' devices located adjacent to projectors 'P1' to 'Rx'.
4. Move newly changed 'Rx' located in northern part of Multi-Purpose Room 124 next to projector 'P1'.
5. Add all room tags in each room. Room tags are exact same as shown on E301.
6. Change reference Sheet Keynote 'T9' to 'T7'.
7. Add new Sheet Keynote 'T8', which should read, "ADD 'AT' DEVICE TO THIS LOCATION AT 96" A.F.F. AND CABLE WITH (1) AT TO THE EQUIPMENT RACK 'R1'. SEPARATE THE WIRELESS MICROPHONES ANTENNAS BY A MINIMUM OF 12'-0". PLACE THE ALS ANTENNA IN THE MIDDLE OF THE WIRELESS MICROPHONE ANTENNAS."

SHEET ET501

1. Remove the wording, "ZONE 1," from text next to loudspeakers in V202.

PRIOR APPROVAL OF MANUFACTURERS OF ELECTRICAL EQUIPMENT

The following items, trade names, products and manufacturers are approved for bidding. Approval does not relieve the bidder from satisfying the intent of the requirements of drawings, specifications and addenda in every respect. Failure to conform to the design quality and standards specified, established and required may result in later disapproval. If equipment must be disapproved after bidding, supplier shall supply specified equipment at no extra cost to the Owner.

Items are listed generally and specific model number, etc. shall be as submitted. Items submitted but not approved, either did not satisfy the requirements, or showed insufficient data, or arrived after the 8-day deadline established for submittals.]

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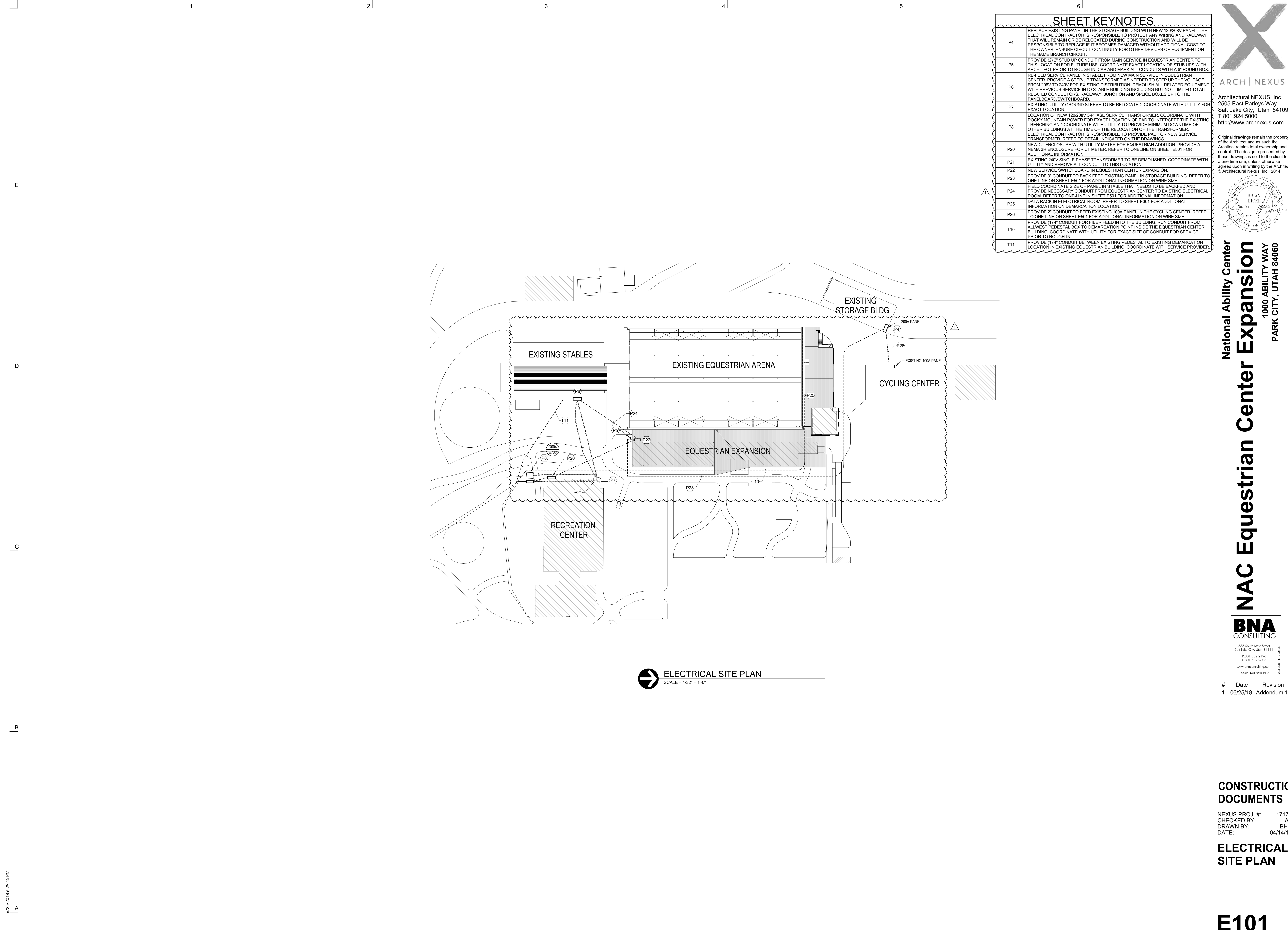
Electrical Addendum #1

Issue Date: 06/25/2018

<u>TYPE</u>	<u>SPECIFIED</u>	<u>JRC APPROVED</u>	<u>RMLC APPROVED</u>
A1	PHILIPS DAY-BRITE	LITHONIA	COLUMBIA
A1E	PHILIPS DAY-BRITE	LITHONIA*	COLUMBIA*
A2	FOCAL POINT	FOCAL POINT	ELB ELECTRONICS
A2a	FOCAL POINT	FOCAL POINT	ELB ELECTRONICS*
A2E	FOCAL POINT	FOCAL POINT	ELB ELECTRONICS
A2Ea	FOCAL POINT	FOCAL POINT	ELB ELECTRONICS*
A3	PHILIPS DAY-BRITE	LITHONIA	COLUMBIA
A3E	PHILIPS DAY-BRITE	LITHONIA*	COLUMBIA*
D1	CONTECH LIGHTING	LITHONIA	CONTECH LIGHTING
D1E	CONTECH LIGHTING	LITHONIA*	CONTECH LIGHTING*
D2	CONTECH LIGHTING	LITHONIA	CONTECH LIGHTING
D3	PHILIPS CALCULITE	INDY	PRESCOLITE ARCHITEKTUR
D3E	PHILIPS CALCULITE	INDY*	PRESCOLITE ARCHITEKTUR*
F1E	COOPER METALUX	LITHONIA	COLUMBIA*
L1Es	PINNACLE	MARK ARCHITECTURAL*	LUMENWERX*
L1Ew	PINNACLE	MARK ARCHITECTURAL*	LUMENWERX*
L1s	PINNACLE	MARK ARCHITECTURAL	LUMENWERX
L1w	PINNACLE	MARK ARCHITECTURAL	LUMENWERX
OD1	CONTECH LIGHTING	LITHONIA	CONTECH LIGHTING
OD1E	CONTECH LIGHTING	LITHONIA*	CONTECH LIGHTING*
P1	TECH LIGHTING	TECH LIGHTING	-
P2	MODERN FORMS	MODERN FORMS	-
P3	MODERN FORMS	MODERN FORMS	-
S1Es	PHILIPS DAY-BRITE	LITHONIA*	LUMAX*
S1s	PHILIPS DAY-BRITE	LITHONIA	LUMAX
S2s	PHILIPS DAY-BRITE	LITHONIA	LUMAX
W1	PRUDENTIAL LIGHTING	ALW	LUMENWERX
X1	LITHONIA	LITHONIA	BEGHELLI

* INDICATES THAT FIXTURE MUST BE PROVIDE WITH EMERGENCY BATTERY BACKUP AS INDICATED IN THE LIGHT FIXTURE SCHEDULE TO BE CONSIDERED APPROVED

END OF ELECTRICAL ADDENDUM



SHEET KEYNOTES	
P4	REPLACE EXISTING PANEL IN THE STORAGE BUILDING WITH NEW 120/208V PANEL. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROTECT ANY WIRING AND RACEWAY THAT WILL REMAIN OR BE RELOCATED DURING CONSTRUCTION AND WILL BE RESPONSIBLE TO REPLACE IF IT BECOMES DAMAGED WITHOUT ADDITIONAL COST TO THE OWNER. ENSURE CIRCUIT CONTINUITY FOR OTHER DEVICES OR EQUIPMENT ON THE SAME BRANCH CIRCUIT.
P5	PROVIDE (2) 2" STUB UP CONDUIT FROM MAIN SERVICE IN EQUESTRIAN CENTER TO THIS LOCATION FOR FUTURE USE. COORDINATE EXACT LOCATION OF STUB UPS WITH ARCHITECT PRIOR TO ROUGH-IN. CAP AND MARK ALL CONDUITS WITH A 6" ROUND BOX.
P6	RE-FEED SERVICE PANEL IN STABLE FROM NEW MAIN SERVICE IN EQUESTRIAN CENTER. PROVIDE A STEP-UP TRANSFORMER AS NEEDED TO STEP UP THE VOLTAGE FROM 208V TO 240V FOR EXISTING DISTRIBUTION. DEMOLISH ALL RELATED EQUIPMENT WITH PREVIOUS SERVICE INTO STABLE BUILDING INCLUDING BUT NOT LIMITED TO ALL RELATED CONDUCTORS, RACEWAY, JUNCTION AND SPLICE BOXES UP TO THE PANELBOARD/SWITCHBOARD.
P7	EXISTING UTILITY GROUND SLEEVE TO BE RELOCATED. COORDINATE WITH UTILITY FOR EXACT LOCATION.
P8	LOCATION OF NEW 120/208V 3-PHASE SERVICE TRANSFORMER. COORDINATE WITH ROCKY MOUNTAIN POWER FOR EXACT LOCATION OF PAD TO INTERCEPT THE EXISTING TRENCHING AND COORDINATE WITH UTILITY TO PROVIDE MINIMUM DOWNTIME OF OTHER BUILDINGS AT THE TIME OF THE RELOCATION OF THE TRANSFORMER. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE PAD FOR NEW SERVICE TRANSFORMER. REFER TO DETAIL INDICATED ON THE DRAWINGS.
P20	NEW CT ENCLOSURE WITH UTILITY METER FOR EQUESTRIAN ADDITION. PROVIDE A NEMA 3R ENCLOSURE FOR CT METER. REFER TO ONELINE ON SHEET E501 FOR ADDITIONAL INFORMATION.
P21	EXISTING 240V SINGLE PHASE TRANSFORMER TO BE DEMOLISHED. COORDINATE WITH UTILITY AND REMOVE ALL CONDUIT TO THIS LOCATION.
P22	NEW SERVICE SWITCHBOARD IN EQUESTRIAN CENTER EXPANSION.
P23	PROVIDE 3" CONDUIT TO BACK FEED EXISTING PANEL IN STORAGE BUILDING. REFER TO ONE-LINE ON SHEET E501 FOR ADDITIONAL INFORMATION ON WIRE SIZE.
P24	FIELD COORDINATE SIZE OF PANEL IN STABLE THAT NEEDS TO BE BACKFED AND PROVIDE NECESSARY CONDUIT FROM EQUESTRIAN CENTER TO EXISTING ELECTRICAL ROOM. REFER TO ONE-LINE IN SHEET E501 FOR ADDITIONAL INFORMATION.
P25	DATA RACK IN ELELCTRICAL ROOM. REFER TO SHEET E301 FOR ADDITIONAL INFORMATION ON DEMARCATION LOCATION.
P26	PROVIDE 2" CONDUIT TO FEED EXISTING 100A PANEL IN THE CYCLING CENTER. REFER TO ONE-LINE ON SHEET E501 FOR ADDITIONAL INFORMATION ON WIRE SIZE.
T10	PROVIDE (1) 4" CONDUIT FOR FIBER FEED INTO THE BUILDING. RUN CONDUIT FROM ALLWEST PEDESTAL BOX TO DEMARCATION POINT INSIDE THE EQUESTRIAN CENTER BUILDING. COORDINATE WITH UTILITY FOR EXACT SIZE OF CONDUIT FOR SERVICE PRIOR TO ROUGH-IN.
T11	PROVIDE (1) 4" CONDUIT BETWEEN EXISTING PEDESTAL TO EXISTING DEMARCATION LOCATION IN EXISTING EQUESTRIAN BUILDING. COORDINATE WITH SERVICE PROVIDER.



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#	Date	Revision
1	06/25/18	Addendum 1

CONSTRUCTION DOCUMENTS

NEXUS PROJ. #:

17179

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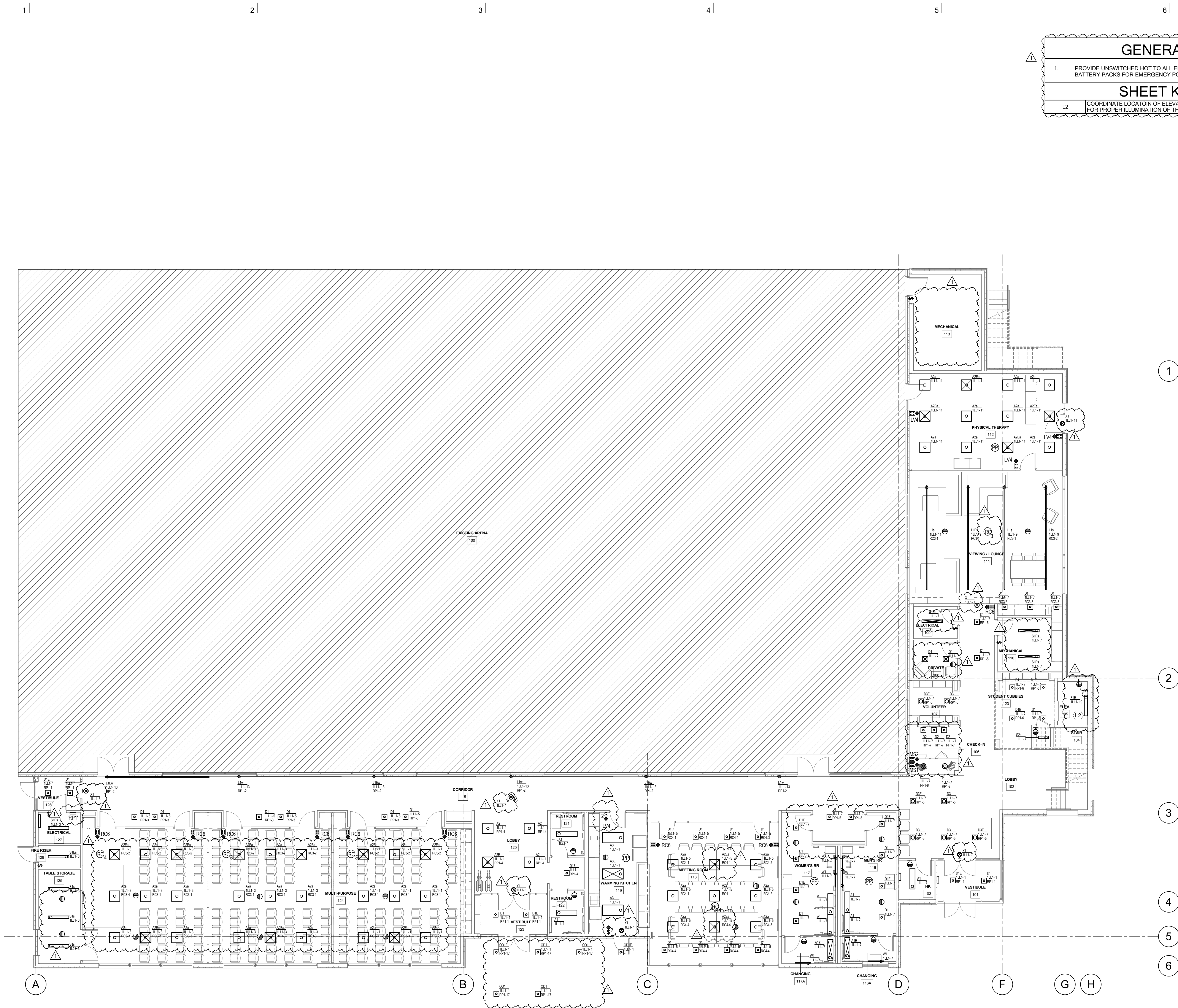
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DATE:

04/14/18

ELECTRICAL SITE PLAN

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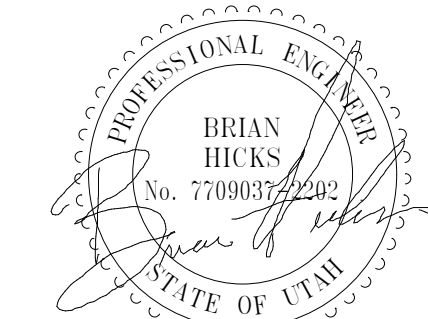


GENERAL NOTES	
1.	PROVIDE UNSWITCHED HOT TO ALL EMERGENCY LIGHTS AND LIGHT FIXTURES WITH BATTERY PACKS FOR EMERGENCY POWER.
SHEET KEYNOTES	
L2	COORDINATE LOCATION OF ELEVATOR PIT FIXTURES WITH ELEVATOR SHOP DRAWINGS FOR PROPER ILLUMINATION OF THE PIT. LOCATION OF SWITCH AT ACCESS DOOR.

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LEVEL 01 LIGHTING PLAN

E201

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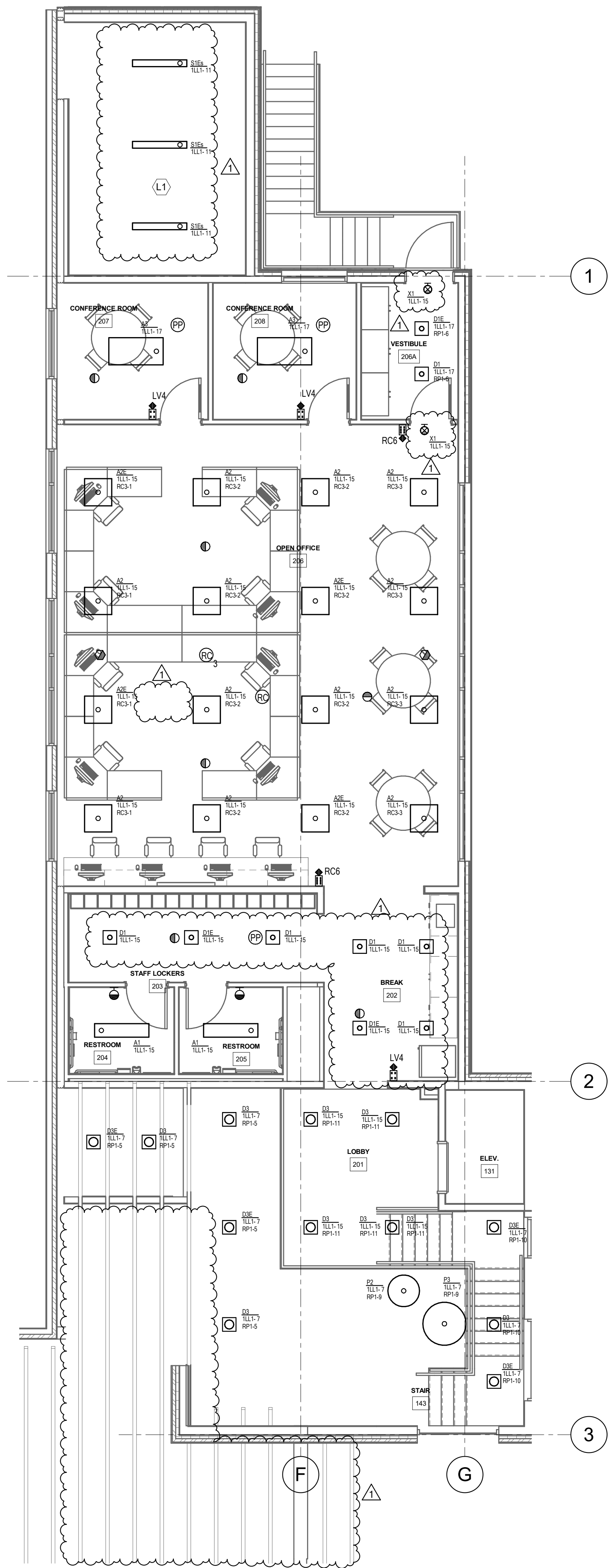
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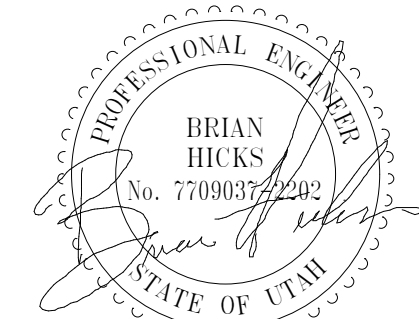
LEVEL 02 LIGHTING PLAN
SCALE = 3/16" = 1'-0"

GENERAL NOTES	
1. PROVIDE UNSWITCHED HOT TO ALL EMERGENCY LIGHTS AND LIGHT FIXTURES WITH BATTERY PACKS FOR EMERGENCY POWER.	
SHEET KEYNOTES	
L1	FIXTURE LAYOUT FOR REFERENCE ONLY. ADJUST LOCATION TO PROVIDE EVEN ILLUMINATION AND TO AVOID OBSTRUCTION OF ILLUMINATION BY PIPES, DUCTS, EQUIPMENT, ETC. SUSPEND FISTURES ON CHAINS OR SURFACE MOUNT TO UNISTRUT AS REQUIRED.

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LEVEL 02 LIGHTING PLAN

E202

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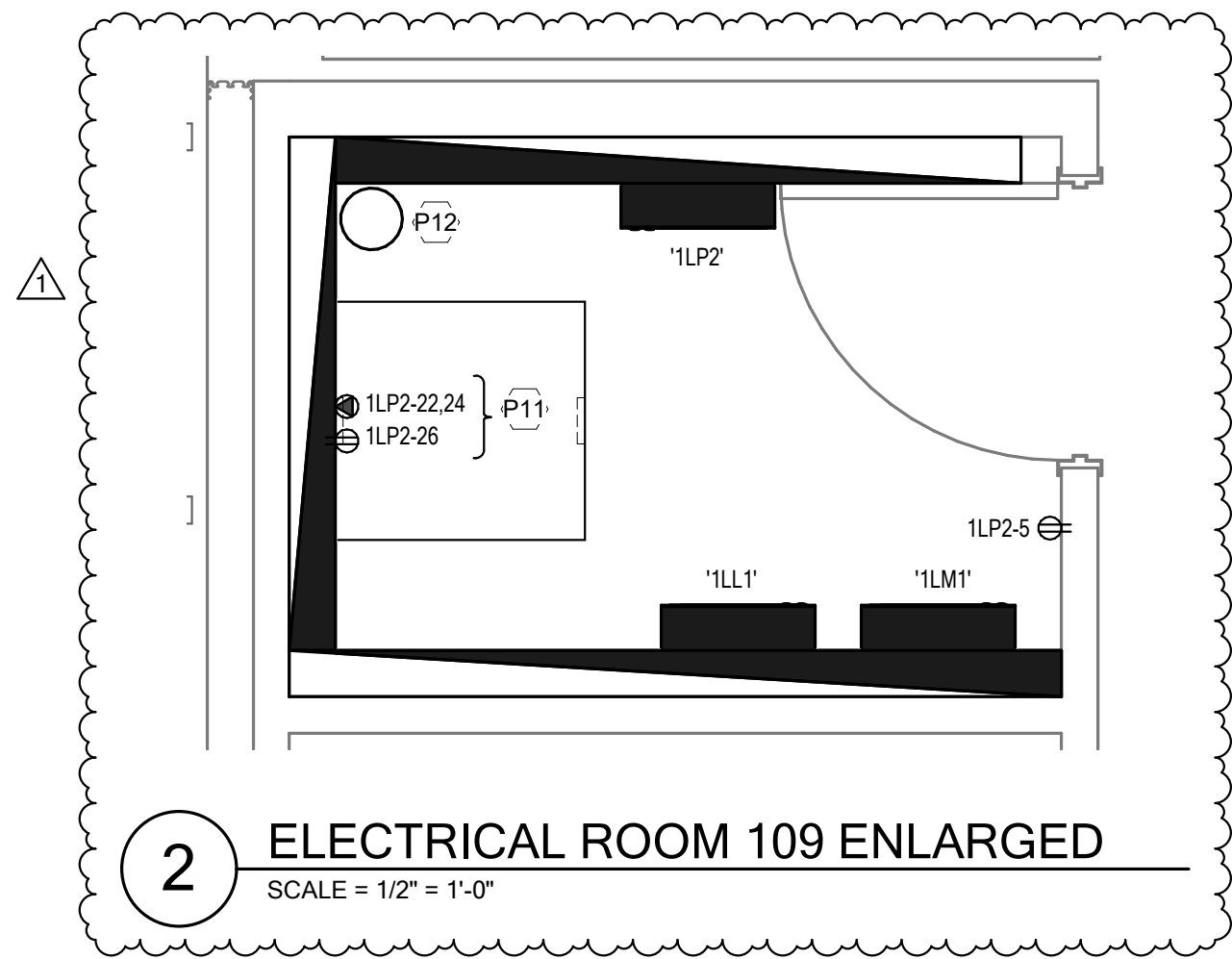
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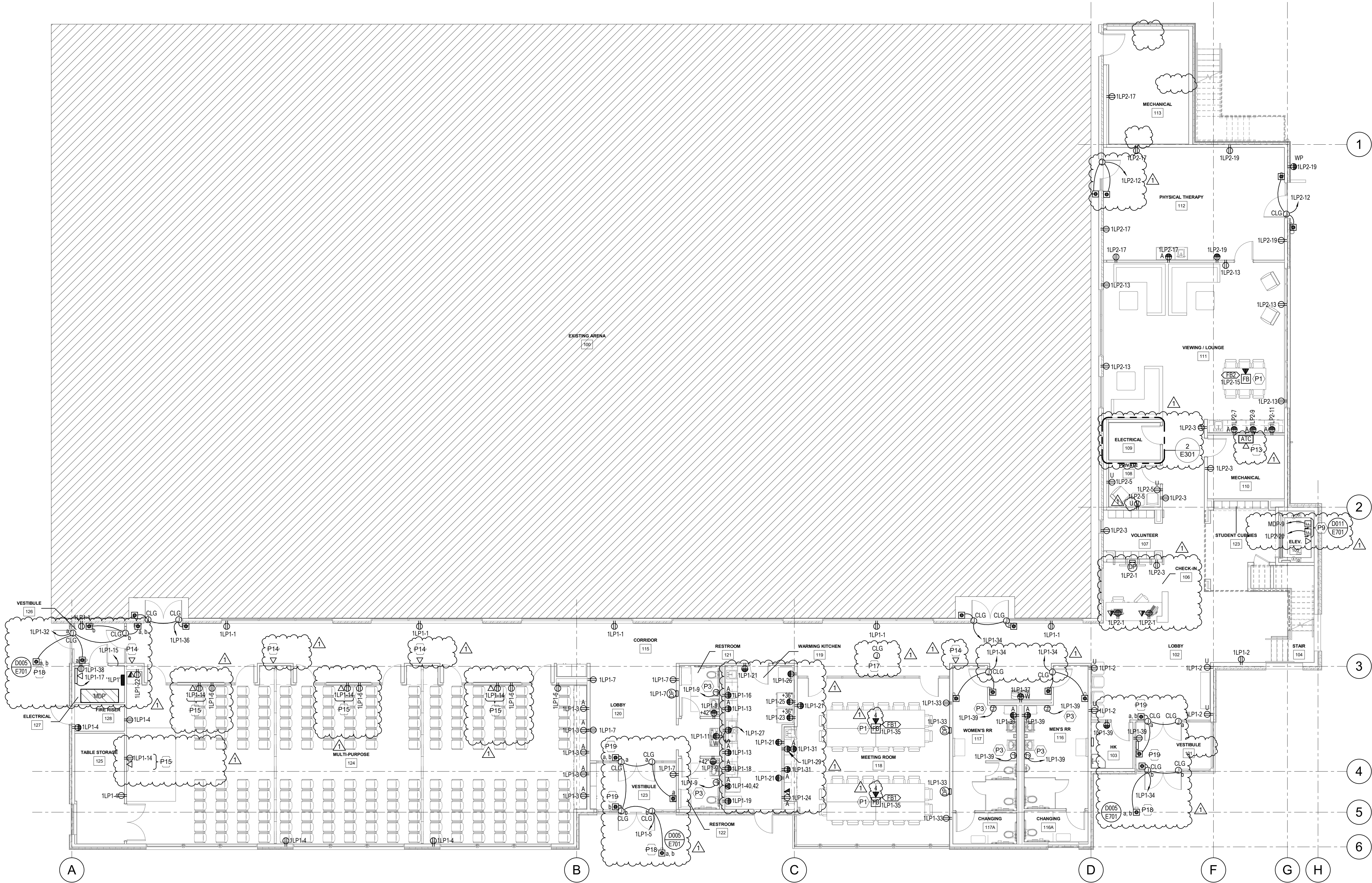
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SHEET KEYNOTES	
P1	COORDINATE EXACT LOCATION OF INDICATED DEVICES WITH ARCHITECT AND FURNITURE SHOP DRAWINGS PRIOR TO ROUGH-IN.
P3	PROVIDE POWER CONNECTION TO AUTOMATIC FIRE TOWER SENSER. COORDINATE EXACT LOCATION WITH ARCHITECT AND ALL REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN.
P9	COORDINATE EXACT ELECTRICAL REQUIREMENTS WITH ELEVATOR MANUFACTURER AND SHOP DRAWINGS PRIOR TO ROUGH-IN.
P11	PROVIDE (1) NEMA 1B-30R, 200V TWIST LOCK RECEPTACLE. FIELD DETERMINE EXACT LOCATION OF RECEPTACLES WITH EQUIPMENT RACK.
P12	PROVIDE (1) 4" CONDUIT IN TELECOM ROOM FROM UTILITY PEDESTAL ON SITE. REFER TO SHEET E101 FOR ADDITIONAL INFORMATION. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
P13	PROVIDE 120V AND A SINGLE DATA CABLE FOR ATC PANEL. COORDINATE EXACT LOCATION OF CONTROL PANEL WITH CONTROLS CONTRACTOR TO ROUGH-IN.
P14	DEVICE INDICATED IS FOR ROOM SCHEDULING SOFTWARE THAT IS PROVIDED BY OWNER. COORDINATE EXACT HEIGHT OF DEVICE WITH A/V DRAWINGS PRIOR TO ROUGH-IN. REFER TO SHEET ET301 FOR ADDITIONAL INFORMATION.
P15	POWER AND DATA FOR WALL MOUNTED PROJECTOR. REFER TO AUDIOVISUAL DRAWINGS ON SHEET ET301 FOR INFORMATION ON LOCATION PRIOR TO ROUGH-IN.
P17	PROVIDE 120V 1 PHASE CIRCUIT TO VAV BOX ABOVE THE CEILING. COORDINATE EXACT LOCATION OF THE JUNCTION BOX WITH MECHANICAL ENGINEER PRIOR TO ROUGH-IN.
P18	PROVIDE PEDESTAL FOR ADA AND ACCESS CONTROL DEVICES. MOUNT ADA PUSH BUTTON TO PEDESTAL. COORDINATE MOUNTING REQUIREMENTS WITH SHOP DRAWINGS PRIOR TO ROUGH-IN.
P19	MULLION MOUNTED ADA PUSH BUTTON. COORDINATE WITH ARCHITECT PRIOR TO ROUGH-IN FOR PROPER MOUNTING HEIGHT.

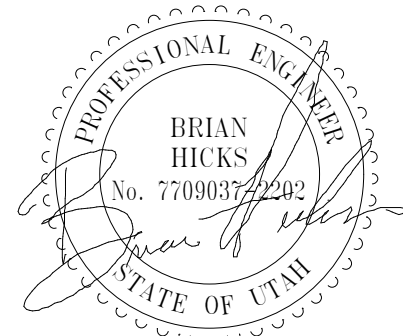


LEVEL 01 POWER PLAN
SCALE = 1/8" = 1'-0"

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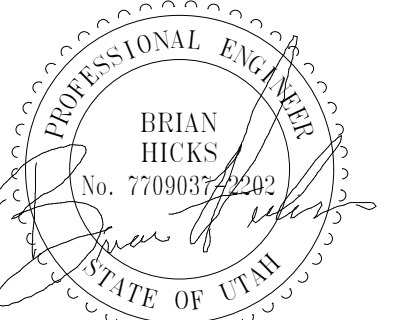
NEXUS PROJ. #: 17179
CHECKED BY: AL
DRAWN BY: BHH
DATE: 04/14/18

LEVEL 01
POWER PLAN

E301

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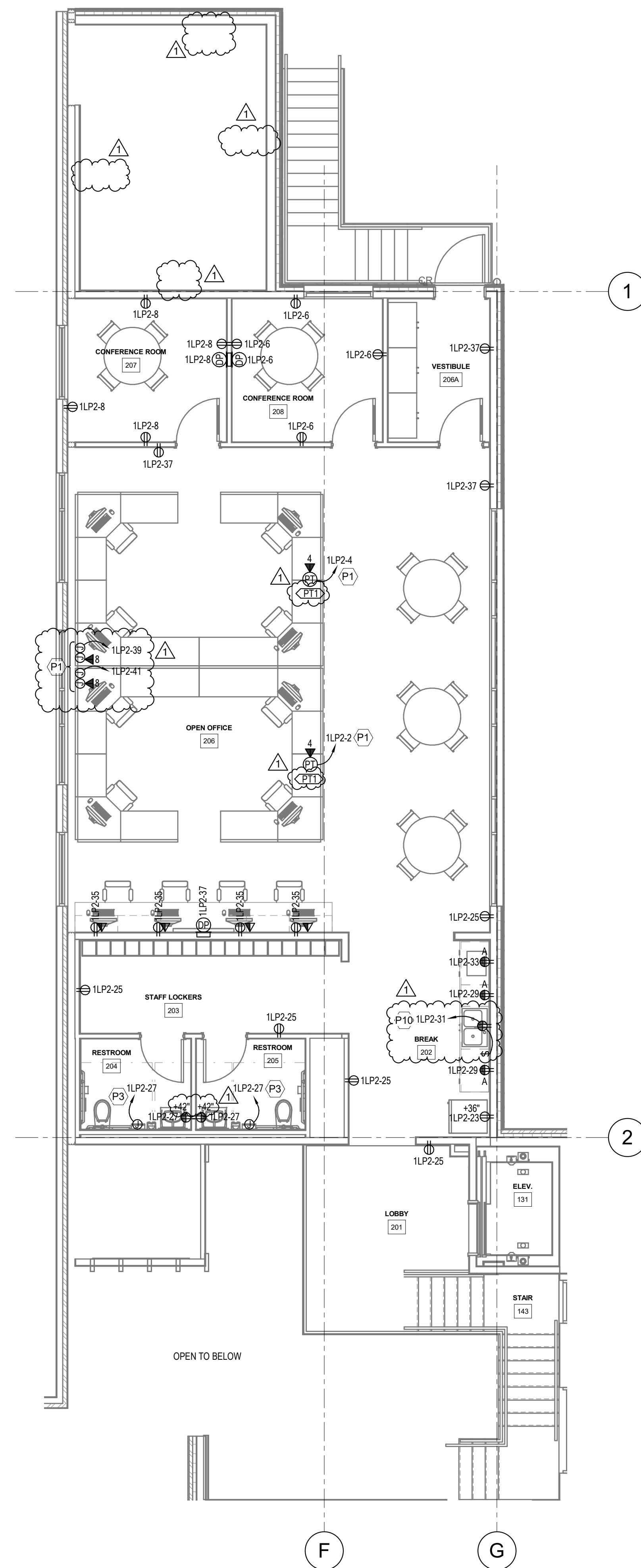
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LEVEL 02

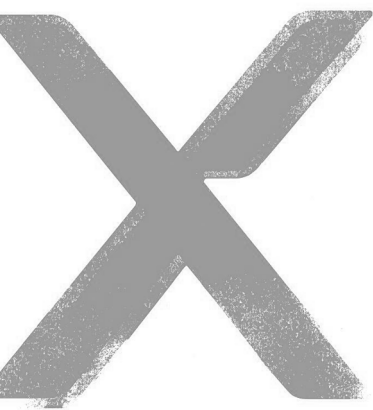
POWER PLAN

E302

SHEET KEYNOTES	
P1	COORDINATE EXACT LOCATION OF INDICATED DEVICES WITH ARCHITECT AND FURNITURE SHOP DRAWINGS PRIOR TO ROUGH-IN.
P3	PROVIDE POWER CONNECTION TO AUTOMATIC PAPER TOWEL DISPENSER. CONFIRM FINAL LOCATION WITH ARCHITECT AND ALL REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION.
P10	PROVIDE GFCI RECEPTACLE FOR GARBAGE DISPOSAL.



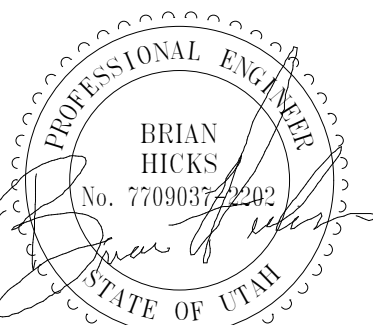
 LEVEL 02 POWER PLAN
SCALE = 3/16" = 1'-0"



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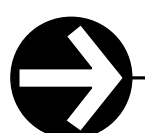
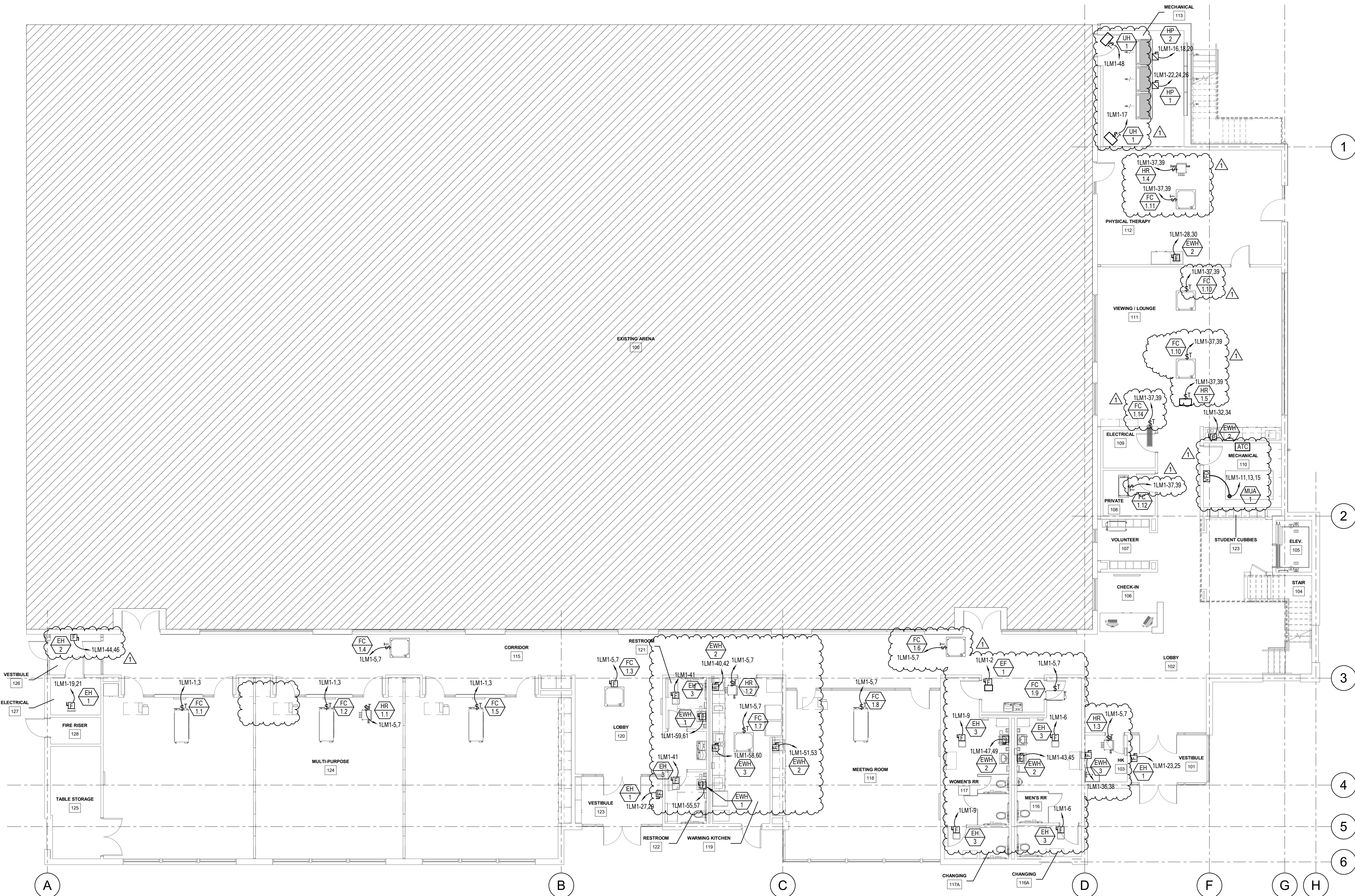
Date Revision
1 06/25/18 Addendum 1

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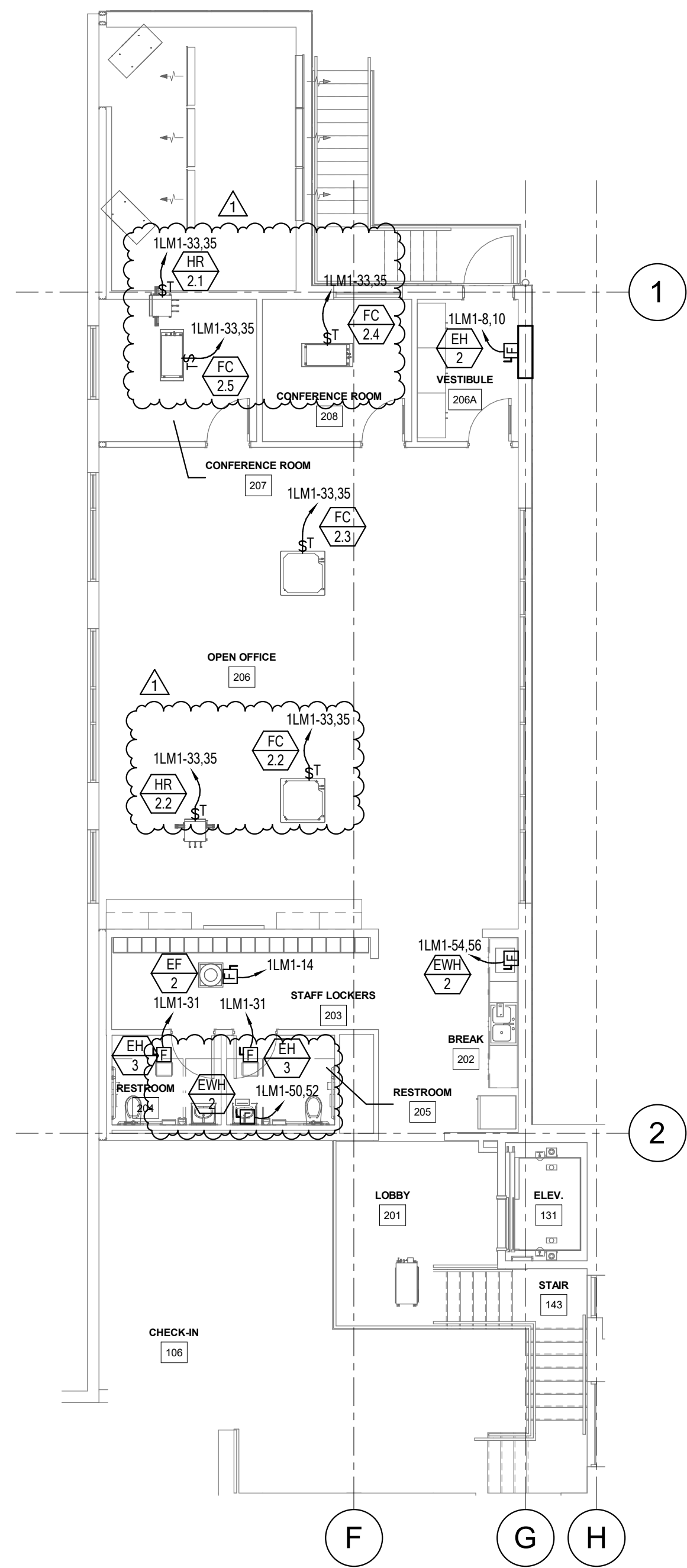
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LEVEL 01 MECHANICAL POWER PLAN

E303

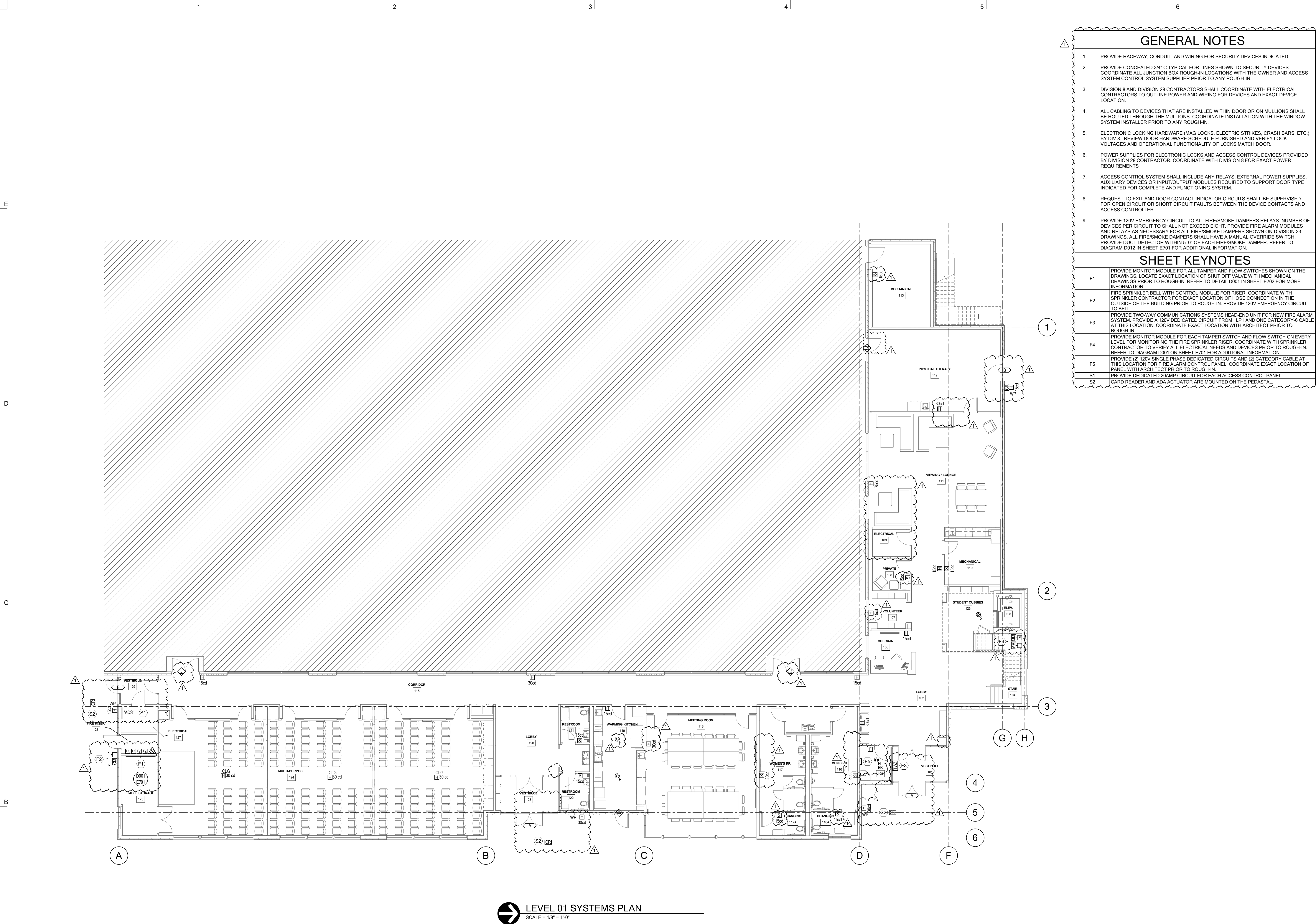


LEVEL 01 MECHANICAL POWER PLAN
SCALE = 1/8" = 1'-0"



 **LEVEL 02 MECHANICAL POWER PLAN**
SCALE = 1/8" = 1'-0"

6/25/2018 6:29:54 PM



GENERAL NOTES

1. PROVIDE RACEWAY, CONDUIT, AND WIRING FOR SECURITY DEVICES INDICATED.
2. PROVIDE CONCEALED 3/4" C TYPICAL FOR LINES SHOWN TO SECURITY DEVICES. COORDINATE ALL JUNCTION BOX ROUGH-IN LOCATIONS WITH THE OWNER AND ACCESS SYSTEM CONTROL SYSTEM SUPPLIER PRIOR TO ANY ROUGH-IN.
3. DIVISION 8 AND DIVISION 28 CONTRACTORS SHALL COORDINATE WITH ELECTRICAL CONTRACTORS TO OUTLINE POWER AND WIRING FOR DEVICES AND EXACT DEVICE LOCATION.
4. ALL CABLING TO DEVICES THAT ARE INSTALLED WITHIN DOOR OR ON MULLIONS SHALL BE ROUTED THROUGH THE MULLIONS. COORDINATE INSTALLATION WITH THE WINDOW SYSTEM INSTALLER PRIOR TO ANY ROUGH-IN.
5. ELECTRONIC LOCKING HARDWARE (MAG LOCKS, ELECTRIC STRIKES, CRASH BARS, ETC.) BY DIV 8. REVIEW DOOR HARDWARE SCHEDULE FURNISHED AND VERIFY LOCK VOLTAGES AND OPERATIONAL FUNCTIONALITY OF LOCKS MATCH DOOR.
6. POWER SUPPLIES FOR ELECTRONIC LOCKS AND ACCESS CONTROL DEVICES PROVIDED BY DIVISION 28 CONTRACTOR. COORDINATE WITH DIVISION 8 FOR EXACT POWER REQUIREMENTS.
7. ACCESS CONTROL SYSTEM SHALL INCLUDE ANY RELAYS, EXTERNAL POWER SUPPLIES, AUXILIARY DEVICES OR INPUT/OUTPUT MODULES REQUIRED TO SUPPORT DOOR TYPE INDICATED FOR COMPLETE AND FUNCTIONING SYSTEM.
8. REQUEST TO EXIT AND DOOR CONTACT INDICATOR CIRCUITS SHALL BE SUPERVISED FOR OPEN CIRCUIT OR SHORT CIRCUIT FAULTS BETWEEN THE DEVICE CONTACTS AND ACCESS CONTROLLER.
9. PROVIDE 120V EMERGENCY CIRCUIT TO ALL FIRE/SMOKE DAMPERS RELAYS. NUMBER OF DEVICES PER CIRCUIT TO SHALL NOT EXCEED EIGHT. PROVIDE FIRE ALARM MODULES AND RELAYS AS NECESSARY FOR ALL FIRE/SMOKE DAMPERS SHOWN ON DIVISION 23 DRAWINGS. ALL FIRE/SMOKE DAMPERS SHALL HAVE A MANUAL OVERRIDE SWITCH. PROVIDE DUCT DETECTOR WITHIN 5'-0" OF EACH FIRE/SMOKE DAMPER. REFER TO DIAGRAM D012 IN SHEET E701 FOR ADDITIONAL INFORMATION.

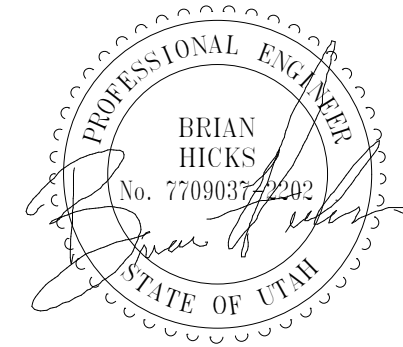
SHEET KEYNOTES

F1	PROVIDE MONITOR MODULE FOR ALL TAMPER AND FLOW SWITCHES SHOWN ON THE DRAWINGS. LOCATE EXACT LOCATION OF SHUT OFF VALVE WITH MECHANICAL DRAWINGS PRIOR TO ROUGH-IN. REFER TO DETAIL D001 IN SHEET E702 FOR MORE INFORMATION.
F2	FIRE SPRINKLER BELL WITH CONTROL MODULE FOR RISER. COORDINATE WITH SPRINKLER CONTRACTOR FOR EXACT LOCATION OF HOSE CONNECTION IN THE OUTSIDE OF THE BUILDING PRIOR TO ROUGH-IN. PROVIDE 120V EMERGENCY CIRCUIT TO BELL.
F3	PROVIDE TWO-WAY COMMUNICATIONS SYSTEMS HEAD-END UNIT FOR NEW FIRE ALARM SYSTEM. PROVIDE A 120V DEDICATED CIRCUIT FROM 1L/P1 AND ONE CATEGORY-6 CABLE AT THIS LOCATION. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
F4	PROVIDE MONITOR MODULE FOR EACH TAMPER SWITCH AND FLOW SWITCH ON EVERY LEVEL FOR MONITORING THE FIRE SPRINKLER RISER. COORDINATE WITH SPRINKLER CONTRACTOR TO VERIFY ALL ELECTRICAL NEEDS AND DEVICES PRIOR TO ROUGH-IN. REFER TO DIAGRAM D001 ON SHEET E701 FOR ADDITIONAL INFORMATION.
F5	PROVIDE (2) 120V SINGLE PHASE DEDICATED CIRCUITS AND (2) CATEGORY CABLE AT THIS LOCATION FOR FIRE ALARM CONTROL PANEL. COORDINATE EXACT LOCATION OF PANEL WITH ARCHITECT PRIOR TO ROUGH-IN.
S1	PROVIDE DEDICATED 20AMP CIRCUIT FOR EACH ACCESS CONTROL PANEL.
S2	CARD READER AND ADA ACTUATOR ARE MOUNTED ON THE PEDASTAL.

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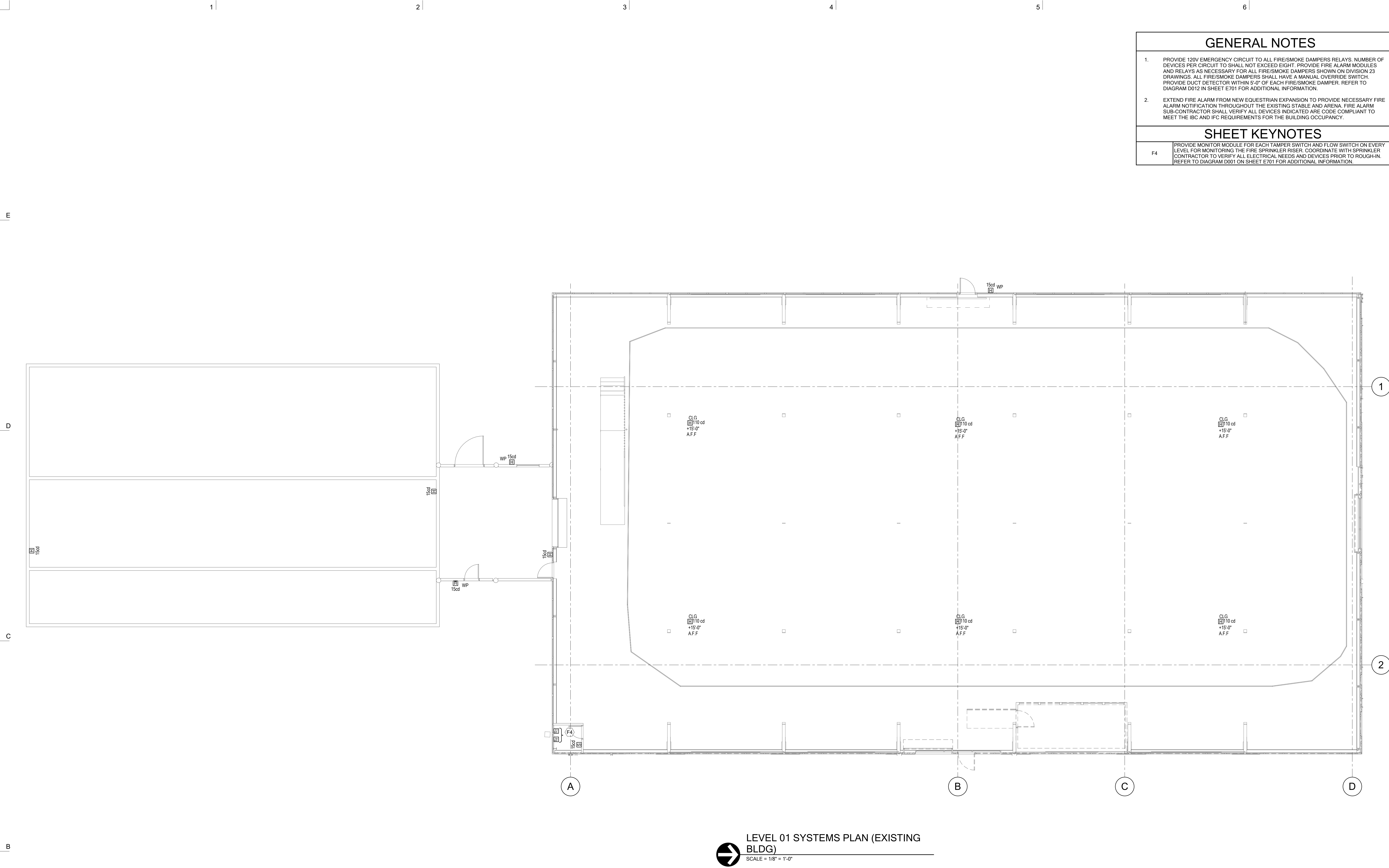
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LEVEL 01
SYSTEMS PLAN

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GENERAL NOTES	
1.	PROVIDE 120V EMERGENCY CIRCUIT TO ALL FIRE/SMOKE DAMPERS RELAYS. NUMBER OF DEVICES PER CIRCUIT TO SHALL NOT EXCEED EIGHT. PROVIDE FIRE ALARM MODULES AND RELAYS AS NECESSARY FOR ALL FIRE/SMOKE DAMPERS SHOWN ON DIVISION 23 DRAWINGS. ALL FIRE/SMOKE DAMPERS SHALL HAVE A MANUAL OVERRIDE SWITCH. PROVIDE DUCT DETECTOR WITHIN 5'-0" OF EACH FIRE/SMOKE DAMPER. REFER TO DIAGRAM D012 IN SHEET E701 FOR ADDITIONAL INFORMATION.
2.	EXTEND FIRE ALARM FROM NEW EQUESTRIAN EXPANSION TO PROVIDE NECESSARY FIRE ALARM NOTIFICATION THROUGHOUT THE EXISTING STABLE AND ARENA. FIRE ALARM SUB-CONTRACTOR SHALL VERIFY ALL DEVICES INDICATED ARE CODE COMPLIANT TO MEET THE IBC AND IFC REQUIREMENTS FOR THE BUILDING OCCUPANCY.
SHEET KEYNOTES	
F4	PROVIDE MONITOR MODULE FOR EACH TAMPER SWITCH AND FLOW SWITCH ON EVERY LEVEL FOR MONITORING THE FIRE SPRINKLER RISER. COORDINATE WITH SPRINKLER CONTRACTOR TO VERIFY ALL ELECTRICAL NEEDS AND DEVICES PRIOR TO ROUGH-IN. REFER TO DIAGRAM D001 ON SHEET E701 FOR ADDITIONAL INFORMATION.



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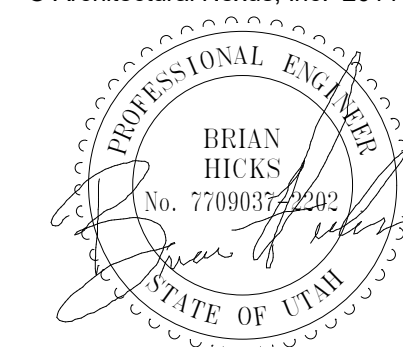
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LEVEL 01
SYSTEMS PLAN
(EXIST. BLDG)



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NAC Equestrian Center



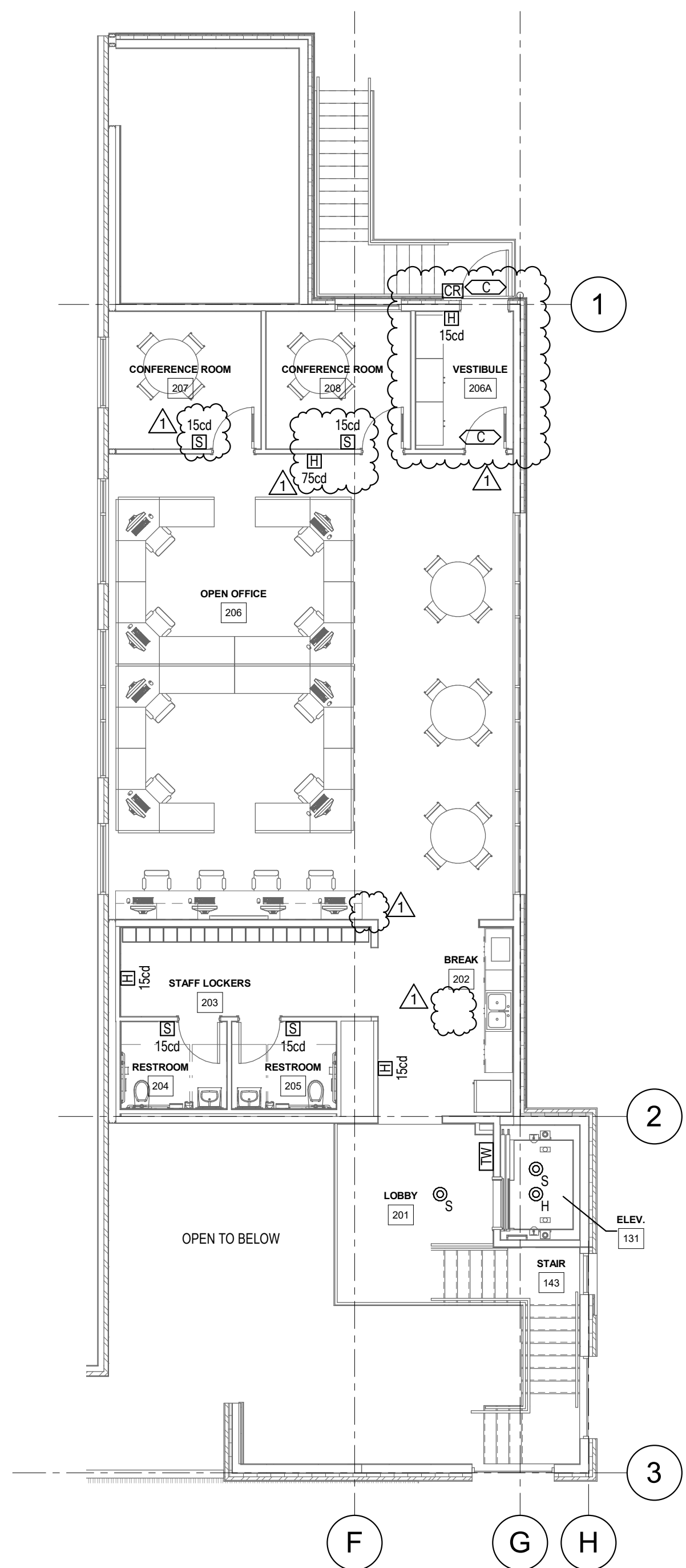
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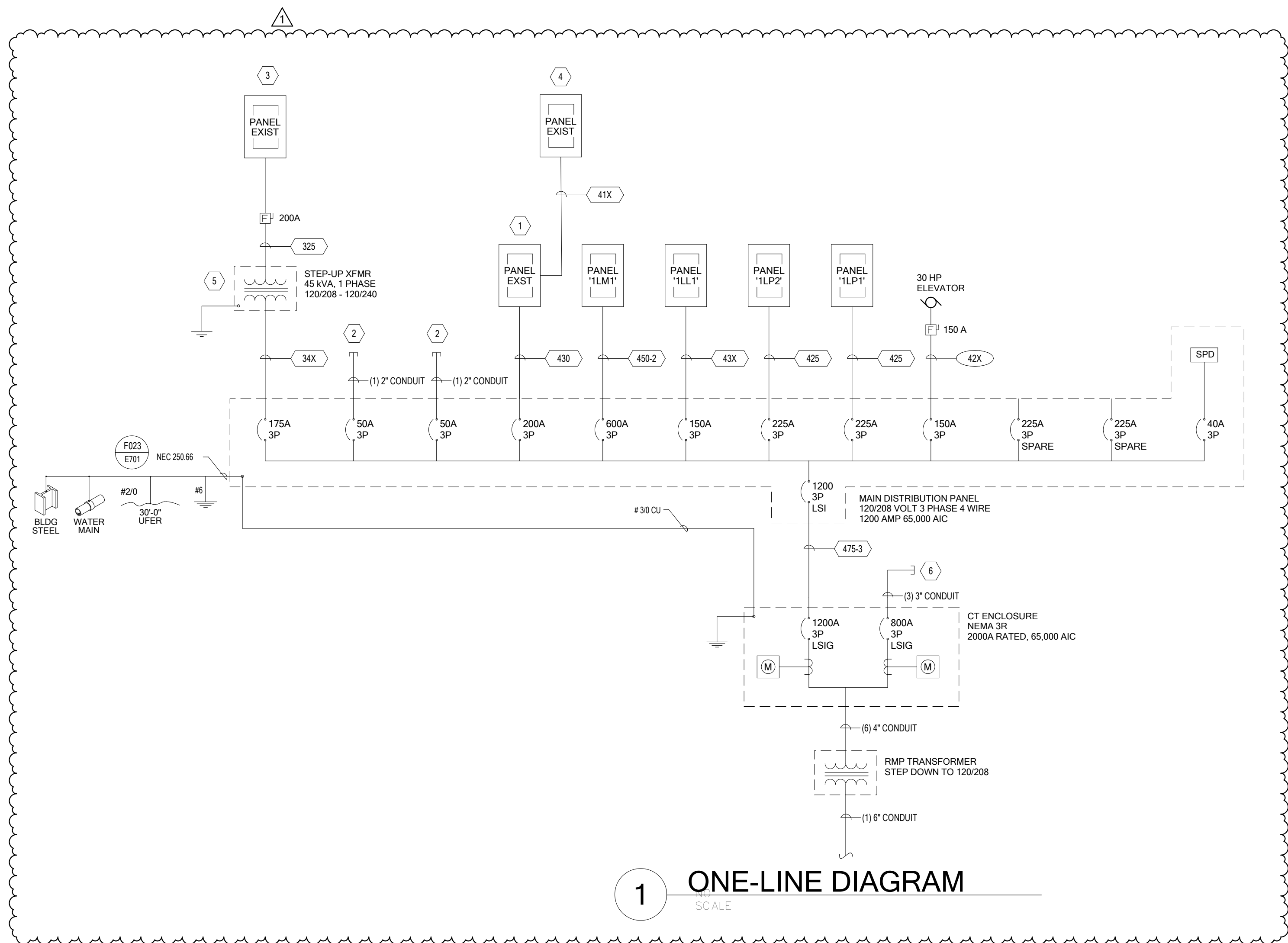
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LEVEL 02 SYSTEMS PLAN

E403



 LEVEL 02 SYSTEM PLAN
SCALE = 1/8" = 1'-0"



1 ONE-LINE DIAGRAM
SCALE

ONE-LINE GENERAL NOTES

1. PROVIDE PROTECTION DEVICE STUDY AS OUTLINED ON 26-0573 FOR THE NORMAL ELECTRICAL BRANCHES PRIOR TO SUBMITTAL OF PANELS.

2. PROVIDE DOOR-IN-DOOR COVERS FOR ALL PANELBOARDS.

3. SEE PLANS LOCATIONS OF PANELBOARDS, SWITCHBOARDS, TRANSFER SWITCHES, BUSWAY, TRANSFORMERS/DISCONNECTS, ETC. PROVIDE NEMA 1 (INDOOR) OR NEMA 3R (OUTDOOR) ENCLOSURES AS REQUIRED.

4. SUBMIT DIMENSIONED DRAWINGS OF ALL ELECTRICAL ROOMS WITH PANELBOARDS, SWITCHBOARDS, TRANSFER SWITCHES, SURGE PROTECTION, BUSWAY TRANSFORMERS, DISCONNECTS ETC. CLEARLY IDENTIFIED. DIMENSIONED DRAWINGS SHALL BE BASED ON THE FOLLOWING:

5. PROVIDE ARC FAULT REDUCTION SWITCH FOR ALL CIRCUIT BREAKERS RATED 1200 AMPS OR LARGER.

6. PROVIDE ELECTRONIC TRIP CIRCUIT BREAKER FOR ALL CIRCUIT BREAKERS 400A AND ABOVE. REFER TO THE OVERCURRENT PROTECTION SPECIFICATION SECTION FOR ADDITIONAL REQUIREMENTS.

SHEET KEYNOTES

1 EXISTING PANEL IN THE BARN TO BE REPLACED FOR A NEW 200A PANEL.

2 STUB-UPS LOCATED IN THE EXTERIOR OF THE BUILDING. PROVIDE 50A BREAKER FROM SWITCHBOARD AND NECESSARY RACEWAY TO LOCATION SHOWN IN SITE PLAN. FOR ADDITIONAL INFORMATION REFER TO SHEET E101.

3 EXISTING PANEL IN THE BARN TO BE RE-FED FROM NEW EQUESTRIAN CENTER BUILDING SERVICE. PROVIDE A BULK-BOOST TRANSFORMER AS NEEDED IN ORDER TO PROVIDE NECESSARY VOLTAGE DISTRIBUTION TO BUILDING. REFER TO SHEET E101 FOR ADDITIONAL INFORMATION.

4 EXISTING PANEL IN BIKE SHOP TO BE RE-FED FROM PANEL IN THE BARN.

5 COORDINATE EXACT LOCATION OF NEW STEP-UP TRANSFORMER IN EXISTING BUILDING WITH OWNER PRIOR TO ROUGH-IN.

6 PROVIDE (3) 3" STUB UP CONDUIT FROM CT FOR FUTURE REC CENTER. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN. MARK AND CAP CONDUITS WITH 6" ROUND BOX.

ALUMINUM CONDUCTOR & CONDUIT SCHEDULE									
TYPE	AMP.	COND. SIZE	CONDUCTOR QUAN.	CONDUCTOR SIZE	INSUL-ATION	EQ. GND. COND. (AL)			
31X	120	2"	3	1/0	XHHW-2	4			
41X	120	2"	4	1/0	XHHW-2	4			
51X	120	2"	5 *	1/0	XHHW-2	4			
32X	135	2"	3	2/0	XHHW-2	4			
42X	135	2"	4	2/0	XHHW-2	4			
52X	135	2"	5 *	2/0	XHHW-2	4			
33X	155	2"	3	3/0	XHHW-2	4			
43X	155	2"	4	3/0	XHHW-2	4			
53X	155	3"	5 *	3/0	XHHW-2	4			
34X	180	2"	3	4/0	XHHW-2	4			
44X	180	3"	4	4/0	XHHW-2	4			
54X	180	3"	5 *	4/0	XHHW-2	2			
325	205	2"	3	250	XHHW-2	2			
425	205	3"	4	250	XHHW-2	2			
525	205	3"	5 *	250	XHHW-2	2			
330	230	3"	3	300	XHHW-2	2			
430	230	3"	4	300	XHHW-2	2			
530	230	3"	5 *	300	XHHW-2	2			
335	250	3"	3	350	XHHW-2	2			
435	250	3"	4	350	XHHW-2	2			
535	250	3"	5 *	350	XHHW-2	2			
340	270	3"	3	400	XHHW-2	2			
440	270	3"	4	400	XHHW-2	2			
540	270	3"	5 *	400	XHHW-2	2			
350	310	4"	3	500	XHHW-2	1			
450	310	4"	4	500	XHHW-2	1			
550	310	4"	5 *	500	XHHW-2	1			
375	385	4"	3	750	XHHW-2	1			
475	385	4"	4	750	XHHW-2	1			
575	385	4"	5 *	750	XHHW-2	1			

ALUMINUM CONDUCTOR & CONDUIT SCHEDULE FOR PARALLEL RUNS									
TYPE	MAX. O.C. PROT.	COND. AMPS	SETS	CONDUCTOR QUAN.	CONDUCTOR SIZE	CONDUIT SIZE	EQ. GND. COND. (AL)		
325-2	400	410	2	3	250	2.5"	2/0		
425-2	400	410	2	4	250	2.5"	2/0		
525-2	400	410	2	5 *	250	2.5"	2/0		
350-2	600	620	2	3	500	3"	2/0		
450-2	600	620	2	4	500	3"	2/0		
550-2	600	620	2	5 *	500	4"	2/0		
375-2	800	770	2	3	750	3"	3/0		
475-2	800	770	2	4	750	4"	3/0		
575-2	800	770	2	5 *	750	4"	3/0		
340-3	800	810	3	3	400	2.5"	3/0		
440-3	800	810	3	4	400	3"	3/0		
540-3	800	810	3	5 *	400	3"	3/0		
375-3	1000	1155	3	3	750	4"	4/0		
475-3	1000	1155	3	4	750	4"	4/0		
575-3	1000	1155	3	5 *	750	4"	4/0		
350-4	1200	1240	4	3	500	4"	250		
450-4	1200	1240	4	4	500	4"	250		
550-4	1200	1240	4	5 *	500	4"	250		
340-6	1600	1620	6	3	400	4"	350		
440-6	1600	1620	6	4	400	4"	350		
540-6	1600	1620	6	5 *	400	4"	350		
475-6	2000	2310	6	4	750	4"	400		
475-7	2500	2695	7	4	750	5"	600		
475-8	3000	3080	8	4	750	5"	600		
475-11	4000	4235	11	4	750	5"	750		

NOTES

IN PARALLEL RUNS SIZE GND. COND. IN ACCORDANCE WITH NEC PARA. 250.122.

GND. CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS

* 200% NEUTRAL

** COPPER CONDUCTOR (XHHW)

PROVIDE COMPACT STRANDED ALUMINUM ASSOCIATION 8000 SERIES ALLOY CONDUCTORS.

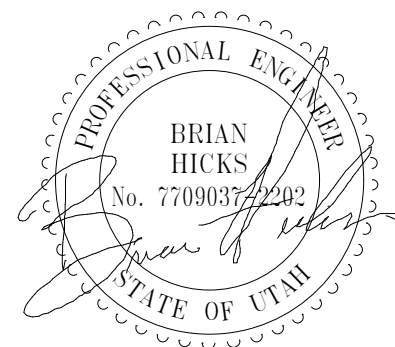
PROVIDE TERMINATION FOR ALUMINUM-ALLOY CONDUCTORS OF HYDRAULIC COMPRESSION TYPE ONLY LISTED UNDER UL 486-B MARKED "AL7CU" FOR 75° RATED CIRCUITS.

PROVIDE ALL ELECTRICAL EQUIPMENT WITH PROPER SIZING TO ACCOMMODATE ALUMINUM CONDUCTORS, COORDINATE WITH EQUIPMENT SUPPLIER.

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ONE-LINE DIAGRAM

E501

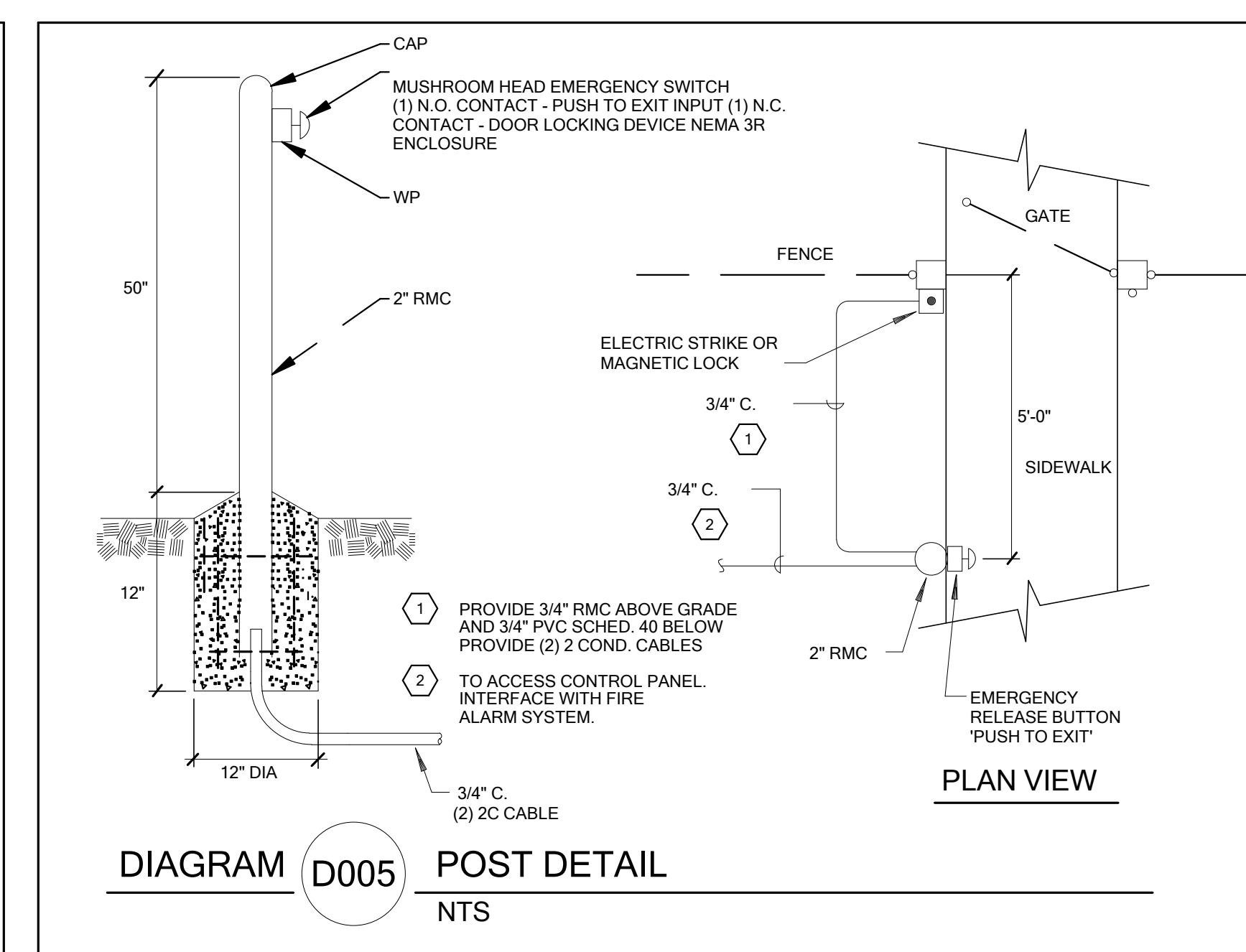
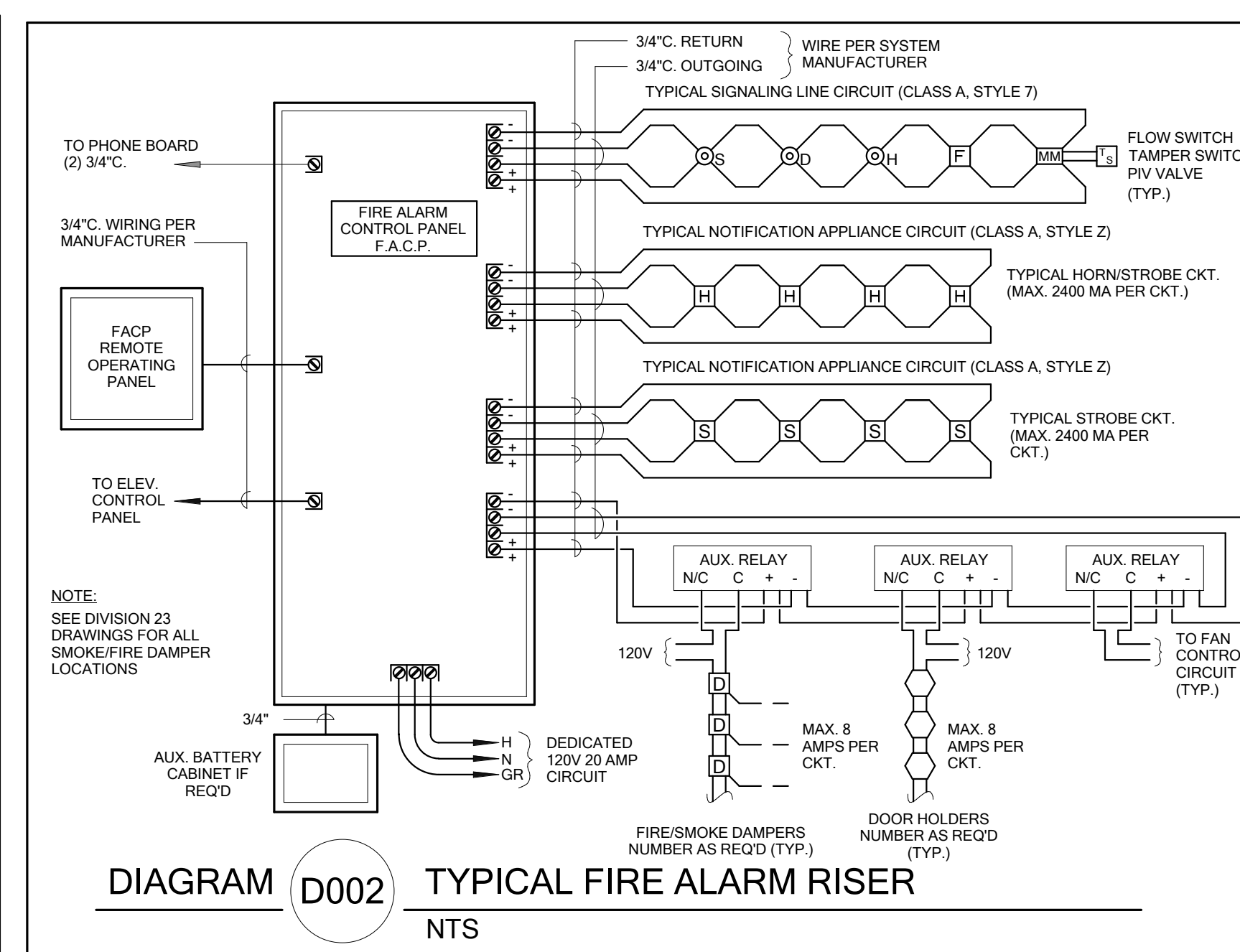
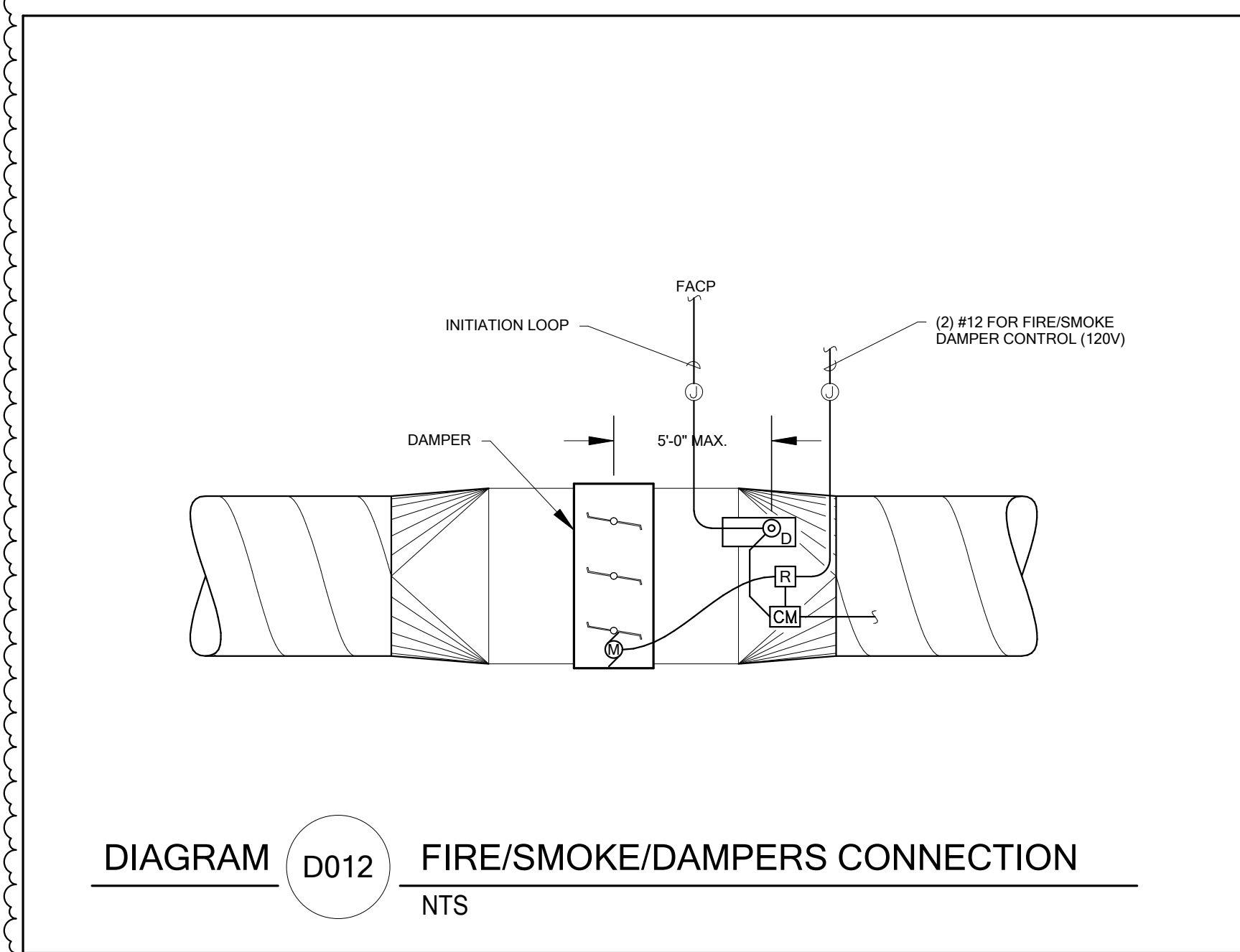
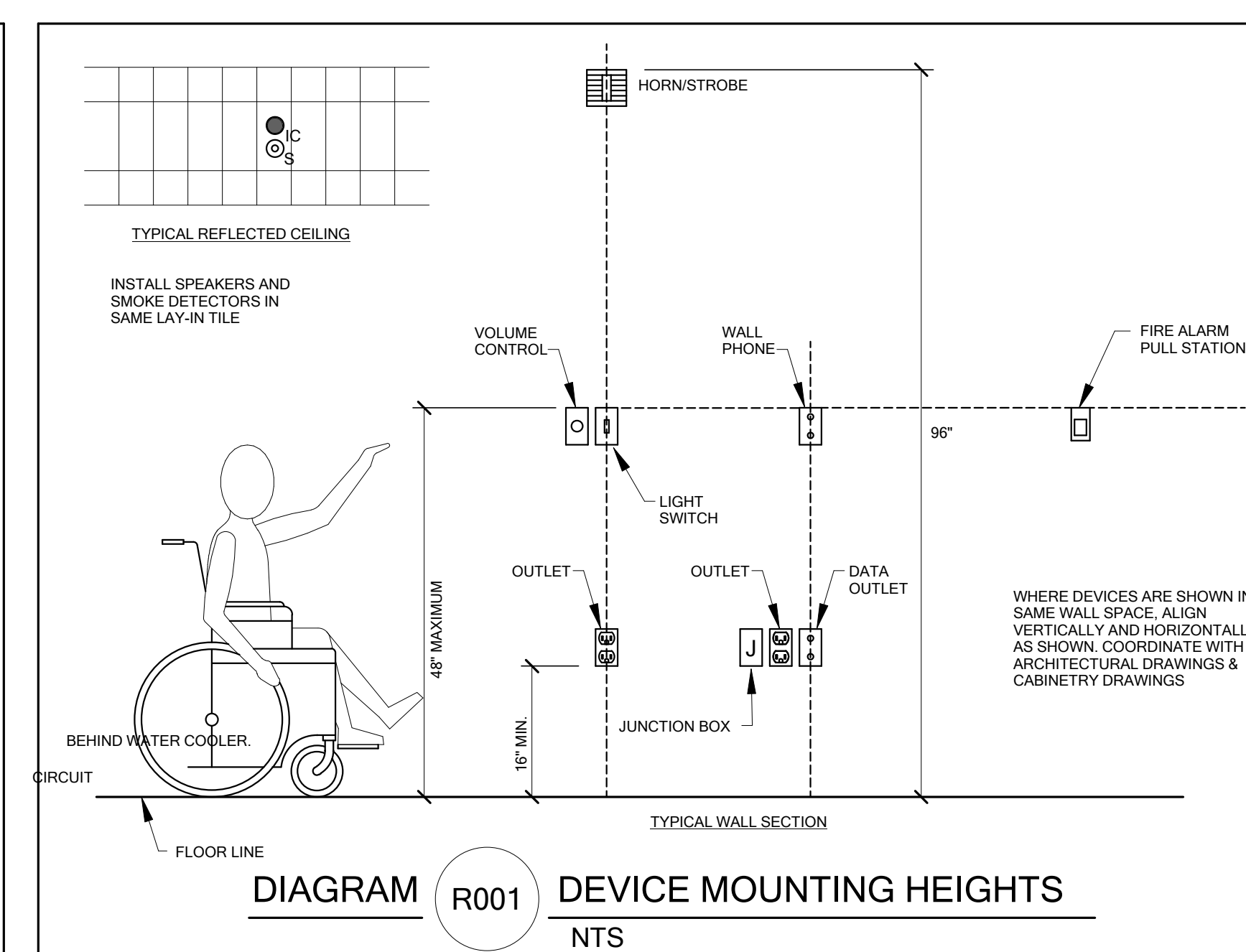
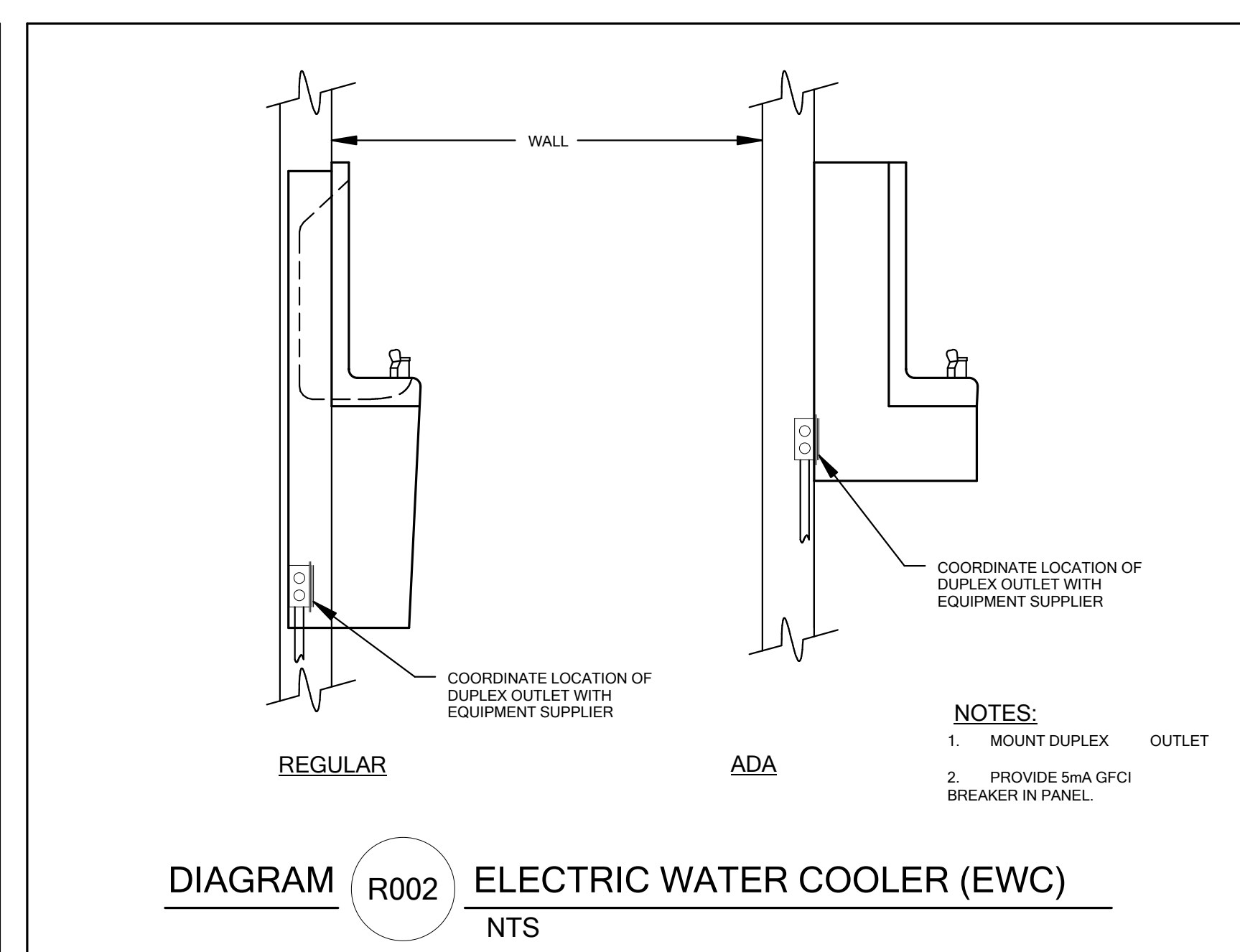
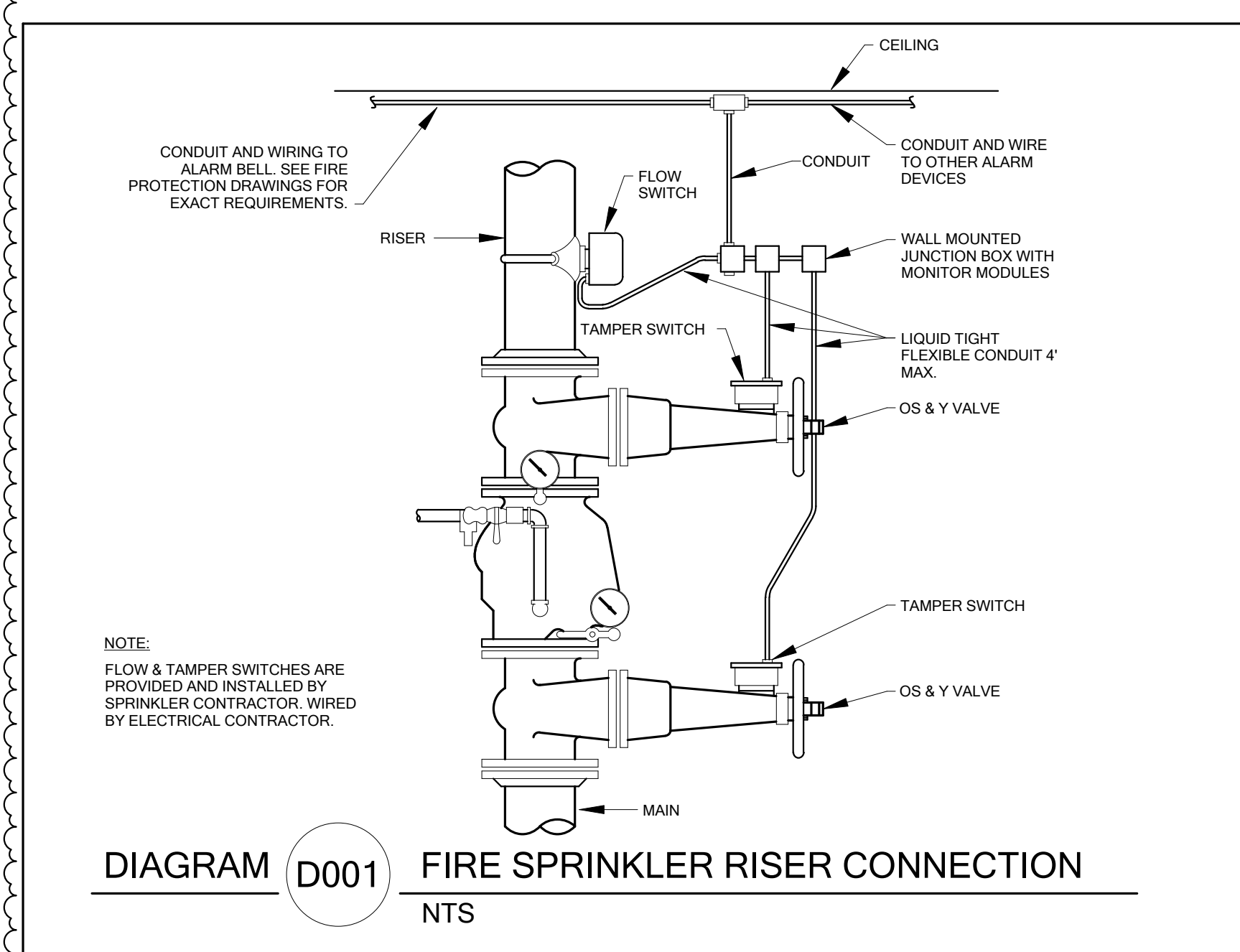
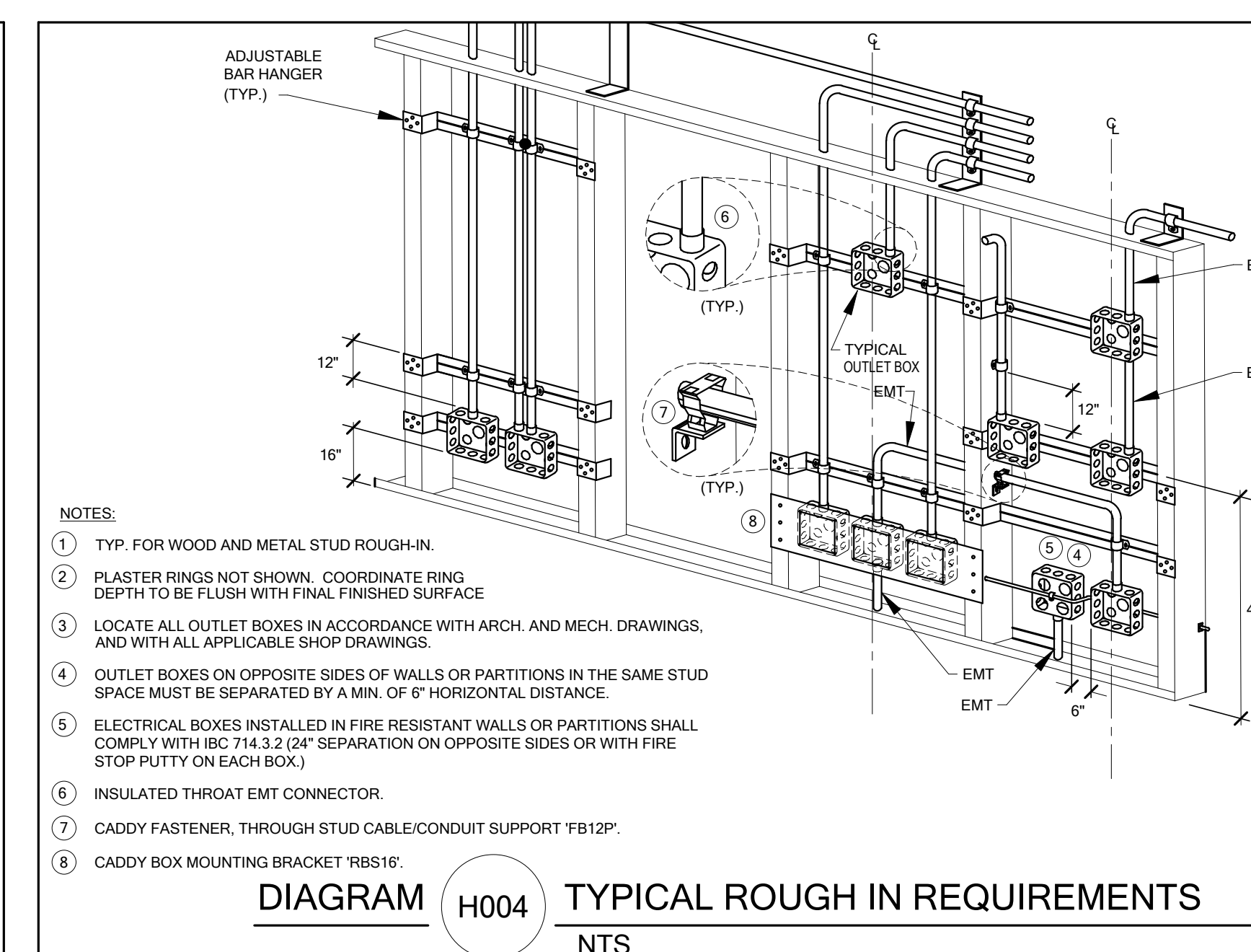
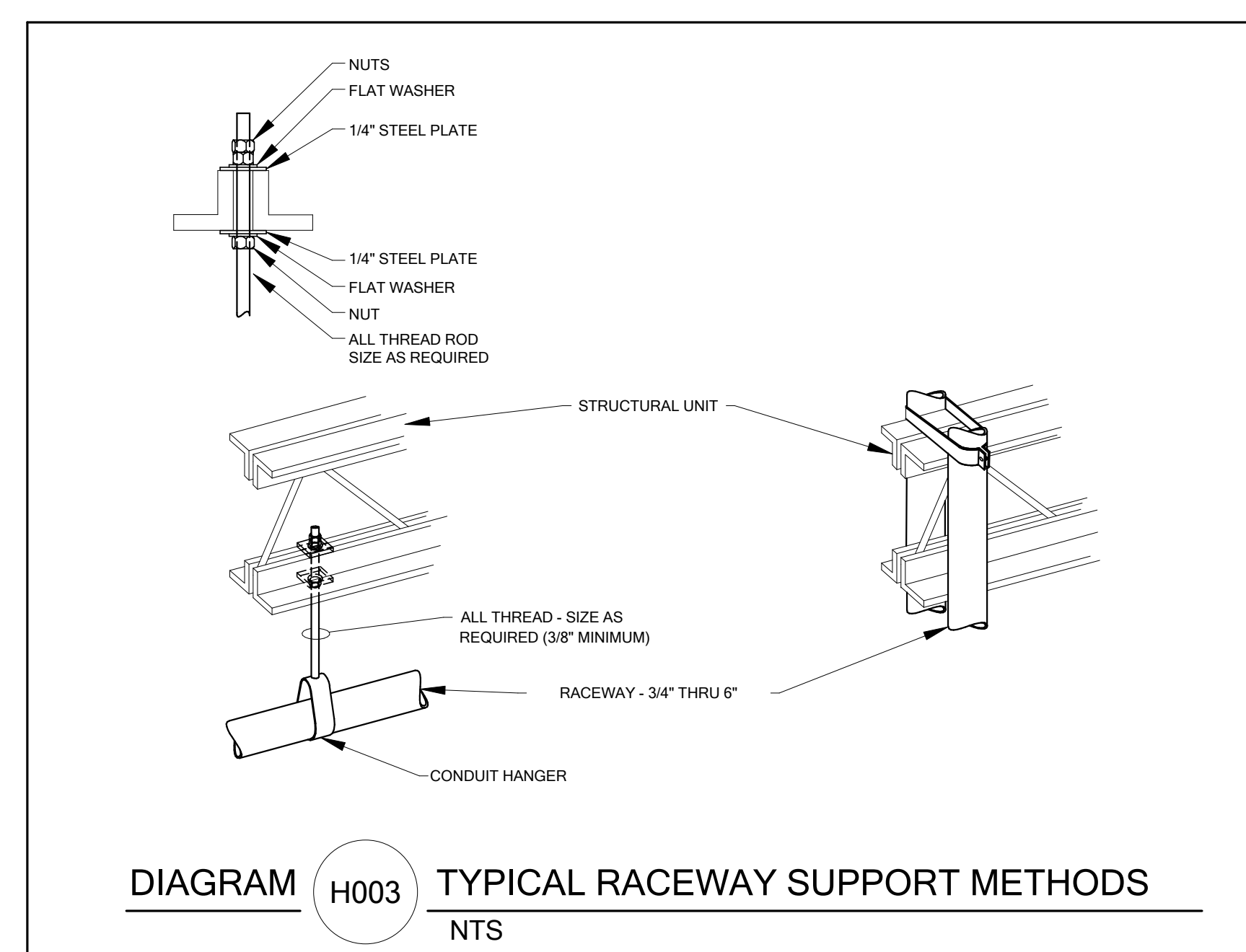
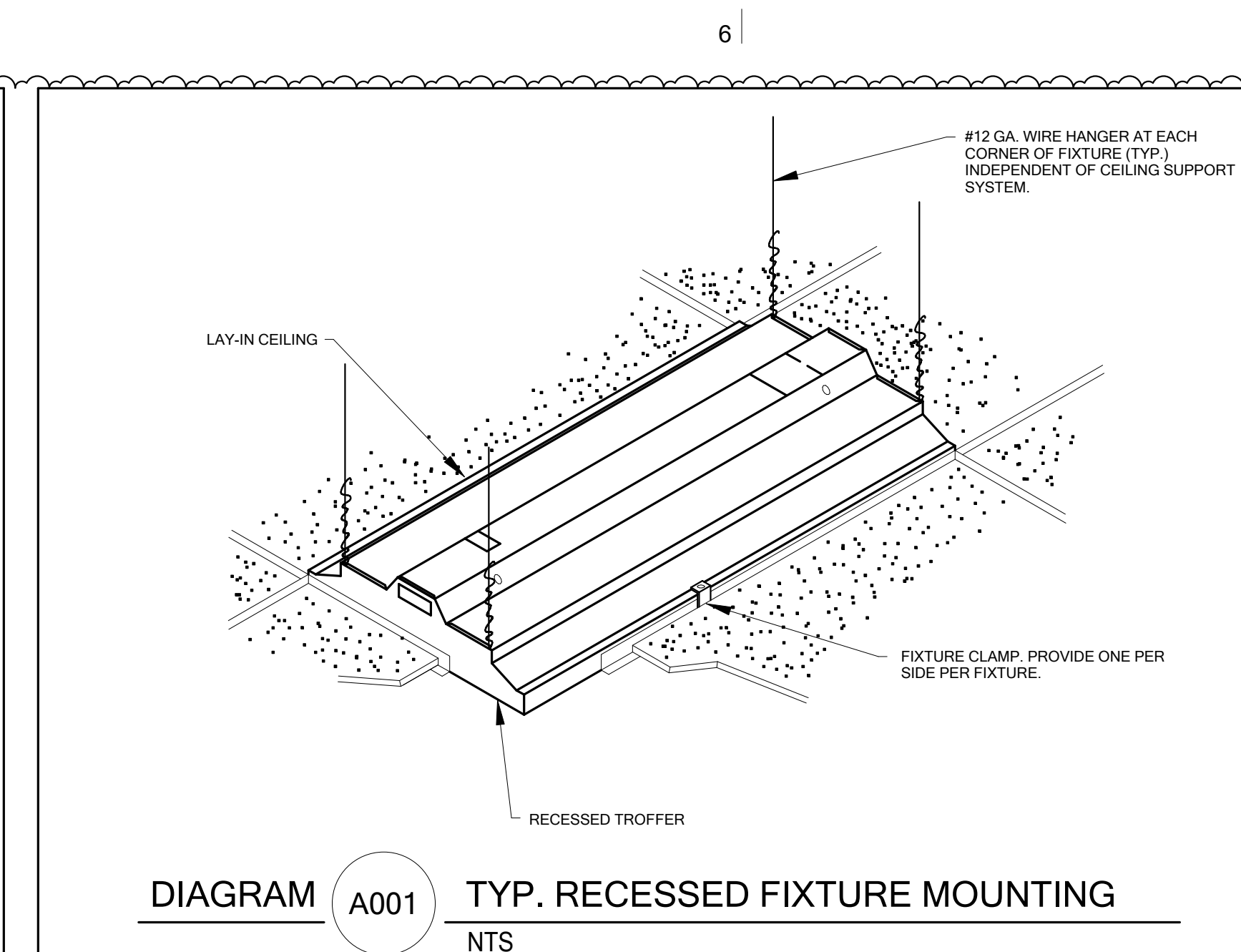
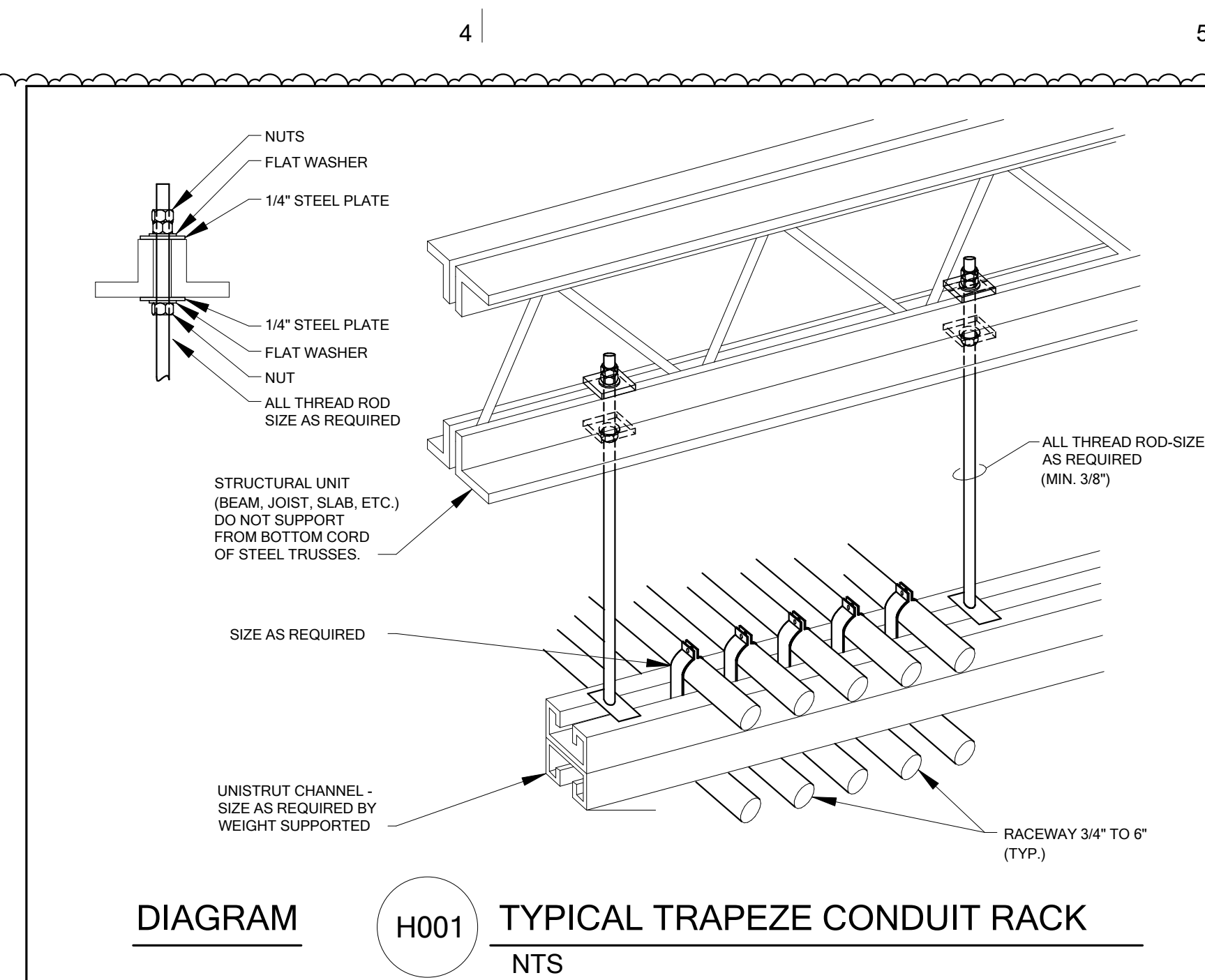
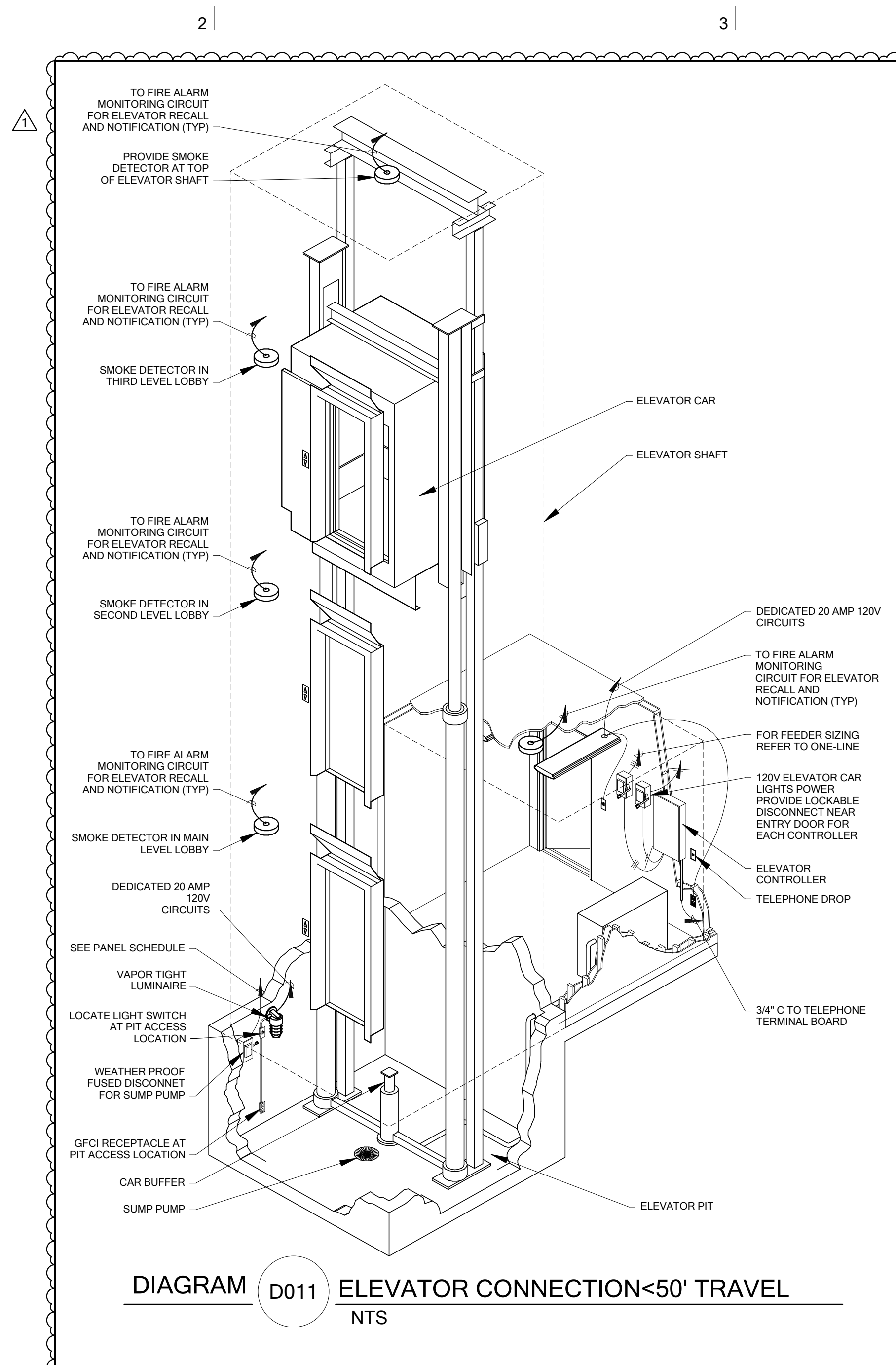
CONTROL RELAY SCHEDULE					
Panel Name: RP1					
Location: ELECTRICAL 127					
Mounting: Surface					
Nema Type: Type 1					
Transformer Voltage: 120V					
Control Circuit: SEE POWER PLAN					
AIC Rating: 22,000 A					
Relay #	Description	Panel Circuit	Control Switch	Dimming Type	Programming
1	LTG - VESTIBULES LEVEL 1	SEE LTG PLAN	MS#	0-10V	PER OWNER
2	LTG - CORRIDOR 115 LINEAR	SEE LTG PLAN	MS#	0-10V	PER OWNER
3	LTG - CORRIDOR 115 DWNLTG	SEE LTG PLAN	MS#	0-10V	PER OWNER
4	LTG - LOBBY 120	SEE LTG PLAN	MS#	0-10V	PER OWNER
5	LTG - LOBBY 102	SEE LTG PLAN	MS#	0-10V	PER OWNER
6	LTG - VESTIBULE 206A	SEE LTG PLAN	MS#	0-10V	PER OWNER
7	LTG - CHECK-IN 106 WALL WASH	SEE LTG PLAN	MS#	0-10V	PER OWNER
8	LTG - CHECK-IN 106 PENDANTS	SEE LTG PLAN	MS#	ELV OR MLV	PER OWNER
9	LTG - LOBBY 102 PENDANTS	SEE LTG PLAN	MS#	0-10V	PER OWNER
10	LTG - STAIRS 143	SEE LTG PLAN	MS#	0-10V	PER OWNER
11	LTG - LOBBY 201	SEE LTG PLAN	MS#	0-10V	PER OWNER
12	SPACE ONLY	--	--	--	--
13	SPACE ONLY	--	--	--	--
14	SPACE ONLY	--	--	--	--
15	SPACE ONLY	--	--	--	--
16	SPACE ONLY	--	--	--	--
Notes:					

4

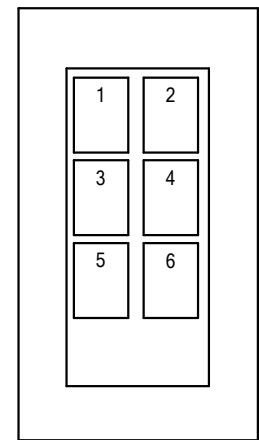
PANELBOARD SCHEDULE															
PANEL: 1LL1				TYPE: Type 1		VOLTS: 120/208 Wye			PHASE: 3		WIRES: 4				
MOUNTING: SURFACE				LOCATION: ELECTRICAL 109				MAINS: MCB				SUBFEED LUGS			
				FED FROM: MDP								ISO GROUND			
				AMP: 150 A								200% NEUTRAL			
												SPD			
BRANCH BREAKERS															
ITEM	AMPS	POLE	WIRE SIZE	CIR. NO.	A	B	C	A	B	C	CIR. NO.	WIRE SIZE	POLE	AMPS	ITEM
LTG - MULTI-PURPOSE-1 124-1	20 A	1	12	1	964 VA			0 VA			2	--	1	20 A	SPARE
LTG - TABLE STORAGE 125	20 A	1	12	3		1010 VA		0 VA	0 VA		4	--	1	20 A	SPARE
LTG - CORRIDOR-1 115-1	20 A	1	12	5			601 VA			0 VA	6	--	1	20 A	SPARE
LTG - WOMEN'S RR 117	20 A	1	12	7	1553 VA			0 VA			8	--	1	20 A	SPARE
LTG - VIEWING / LOUNGE 111	20 A	1	12	9		558 VA		0 VA			10	--	1	20 A	SPARE
LTG - PHYSICAL THERAPY 112	20 A	1	12	11			822 VA		0 VA	0 VA	12	--	1	20 A	SPARE
LTG - CORRIDOR-1 115-1	20 A	1	12	13	1116 VA			0 VA			14	--	1	20 A	SPARE
LTG - OPEN OFFICE	20 A	1	12	15		901 VA		0 VA			16	--	1	20 A	SPARE
LTG - MEETING	20 A	1	12	17			107 VA		0 VA	0 VA	18	--	1	20 A	SPARE
LTG-RCPT - Elevator	20 A	1	12	19	32 VA			0 VA			20	--	1	20 A	SPARE
SPARE	20 A	1	--	21		0 VA		0 VA			22	--	1	20 A	SPARE
SPARE	20 A	1	--	23		0 VA		0 VA	0 VA		24	--	1	20 A	SPARE
SPARE	20 A	1	--	25	0 VA			0 VA			26	--	1	20 A	SPARE
SPARE	20 A	1	--	27		0 VA		0 VA	0 VA		28	--	1	20 A	SPARE
SPARE	20 A	1	--	29		0 VA	0 VA		0 VA	30	--	1	20 A	SPARE	
SPARE	20 A	1	--	31	0 VA			0 VA			32	--	1	20 A	SPARE
SPARE	20 A	1	--	33		0 VA		0 VA	0 VA		34	--	1	20 A	SPARE
SPARE	20 A	1	--	35		0 VA	0 VA		0 VA	36	--	1	20 A	SPARE	
SPARE	20 A	1	--	37	0 VA		0 VA	0 VA			38	--	1	20 A	SPARE
SPARE	20 A	1	--	39		0 VA		0 VA	0 VA		40	--	1	20 A	SPARE
SPARE	20 A	1	--	41			0 VA		0 VA	42	--	1	20 A	SPARE	
					3665	2470	1530	TOTAL (VA)			CONNECTED LOAD TOTAL				
					32 A	22 A	13 A	AMPS/PHASE			7664 VA				
Legend:															
* PROVIDE 5mA GFCI CIRCUIT BREAKER															
										AIC RATING		10,000		AMPS RMS SYSM.	

PANELBOARD SCHEDULE															
PANEL: 1LP1				TYPE: Type 1		VOLTS: 120/208 Wye				PHASE: 3		WIRES: 4			
MOUNTING: SURFACE						LOCATION: ELECTRICAL 127						MAINS: MLO			
						FED FROM: MDP						SUBFEED LUGS			
						AMP: 225 A						ISO GROUND			
												200% NEUTRAL			
												SPD			
BRANCH BREAKERS															
ITEM	AMPS	POLE	WIRE SIZE	CIR. NO.	A	B	C	A	B	C	CIR. NO.	WIRE SIZE	POLE	AMPS	ITEM
RECEPTACLE Room 109, 180	20 A	1	12	1	1080 VA			900 VA			2	12	1	20 A	RECEPTACLE
RECEPTACLE	20 A	1	12	3		900 VA			900 VA		4	12	1	20 A	RECEPTACLE Space 168
POWER Space 170	20 A	1	12	5			1000 VA			720 VA	6	12	1	20 A	RECEPTACLE Space 168
Other Space 169	20 A	1	12	7	720 VA			0 VA			8	--	1	20 A	SPARE
RECEPTACLE Space 161	20 A	1	12	9		420 VA			0 VA		10	--	1	20 A	SPARE
LEVEL 1 EWC *	20 A	1	12	11			1500 VA			0 VA	12	--	1	20 A	SPARE
RCPT - 119 GENERAL	20 A	1	12	13	360 VA			720 VA			14	12	1	20 A	POWER Space 168
RP1	20 A	1	12	15		0 VA			1500 VA		16	12	1	20 A	RCPT - 119 COFFEE MAKER
TLL1	20 A	1	12	17			0 VA			1500 VA	18	12	1	20 A	RCPT - 119 MICROWAVE
RCPT - 119 WARMING CAB	20 A	1	12	19	1440 VA			0 VA			20	--	1	20 A	SPARE
RCPT - 119 GENERAL	20 A	1	12	21		720 VA			180 VA		22	12	1	20 A	RECEPTACLE
RCPT - 119 REFRIGERATOR	20 A	1	12	23		1200 VA			180 VA	24	12	1	20 A	RECEPTACLE Space 159	
RCPT - 119 REFRIGERATOR	20 A	1	12	25	1200 VA			840 VA			26	12	1	20 A	RCPT - 119 ICE MAKER
RECEPTACLE WARMING...	20 A	1	12	27		180 VA			0 VA		28	--	1	20 A	SPARE
RCPT - 118 JUC REFRIG.	20 A	1	12	29			180 VA		0 VA	30	--	1	20 A	SPARE	
RECEPTACLE Space 171	20 A	1	12	31	360 VA			0 VA			32	12	1	20 A	POWER VESTIBULE 126
RECEPTACLE Space 171	20 A	1	12	33		360 VA			1000 VA		34	12	1	20 A	POWER
RECEPTACLE Space 171	20 A	1	12	35		360 VA			0 VA	36	12	1	20 A	POWER	
RECEPTACLE Space 109	20 A	1	12	37	1500 VA			180 VA			38	12	1	20 A	RCPT - 127 GENERAL
RECEPTACLE Space 158	20 A	1	12	39		840 VA			5750 VA	40	6	2	50 A	RCPT - 119 TURBO CHEF	
SPARE	20 A	1	--	41			0 VA			5750 VA	42	--	--	--	--
					9300	12750	12390	TOTAL (VA)		CONNECTED LOAD TOTAL					
					78 A	110 A	107 A	AMPS/PHASE		34440 VA					
Legend:															
* PROVIDE 5mA GFCI CIRCUIT BREAKER															
AIC RATING												22,000		AMPS RMS SYSTEM	

PANELBOARD SCHEDULE																
PANEL: 1LP2				TYPE: Type 1		VOLTS: 120/208 Wye			PHASE: 3		WIRES: 4					
MOUNTING: SURFACE				LOCATION: ELECTRICAL 109						MAINS: MCB						
				FED FROM: MDP						SUBFEED LUGS						
				AMP: 225 A						ISO GROUND						
										200% NEUTRAL						
										SPD						
BRANCH BREAKERS																
ITEM	AMPS	POLE	WIRE SIZE	CIR. NO.	A	B	C	A	B	C	CIR. NO.	WIRE SIZE	POLE	AMPS	ITEM	
Other Space 129	20 A	1	12	1	360 VA			180 VA			2	12	1	20 A	RECEPTACLE Space 149	
RECEPTACLE Space 129	20 A	1	12	3		900 VA			180 VA		4	12	1	20 A	RECEPTACLE Space 149	
RECEPTACLE Space 179	20 A	1	12	5			720 VA			720 VA	6	12	1	20 A	RECEPTACLE	
RECEPTACLE Space 183	20 A	1	12	7	180 VA				180 VA		8	12	1	20 A	Other	
RECEPTACLE Space 183	20 A	1	12	9		180 VA				180 VA	10	12	1	20 A	ATC PANEL	
RECEPTACLE Space 183	20 A	1	12	11		180 VA		0 VA			14	--	1	20 A	POWER	
RECEPTACLE Space 183	20 A	1	12	15		180 VA		0 VA			16	--	1	20 A	SPARE	
RECEPTACLE Space 181	20 A	1	12	17		900 VA			0 VA		18	--	1	20 A	SPARE	
RECEPTACLE Space 181	20 A	1	12	19	720 VA			0 VA			20	12	1	20 A	POWER LEVEL 109	
SPARE	20 A	--	21		0 VA			750 VA			22	12	2	20 A	RECEPT ELECTRICAL 109	
RECEPTACLE Space 149	20 A	1	12	23		180 VA			750 VA		24	--	--		--	
RECEPTACLE Space 149	20 A	1	12	25	900 VA			180 VA			26	--	1	20 A	RECEPTACLE ELECTRICAL 109	
RECEPTACLE	20 A	1	12	27		420 VA			0 VA		28	--	1	20 A	SPARE	
RECEPTACLE Space 149	20 A	1	12	29		360 VA			0 VA		30	--	1	20 A	SPARE	
RECEIPT	20 A	1	12	31	1500 VA			0 VA			32	--	1	20 A	SPARE	
RECEPTACLE Space 149	20 A	1	12	33		180 VA			0 VA		34	--	1	20 A	SPARE	
RECEPTACLE Space 149	20 A	1	12	35		720 VA			0 VA		36	--	1	20 A	SPARE	
Other Space 149	20 A	1	12	37	540 VA			0 VA			38	--	1	20 A	SPARE	
POWER Space 149	20 A	1	12	39		1500 VA			0 VA		40	--	1	20 A	SPARE	
POWER Space 149	20 A	1	12	41		1500 VA				0 VA	42	--	1	20 A	SPARE	
					6180	4470	6030	TOTAL (VA)								CONNECTED LOAD TOTAL
					54 A	37 A	52 A	AMPS/PHASE								16680 VA
Legend: * PROVIDE 5mA GFCI CIRCUIT BREAKER																
AIC RATING												10,000		AMPS RMS SYS.		



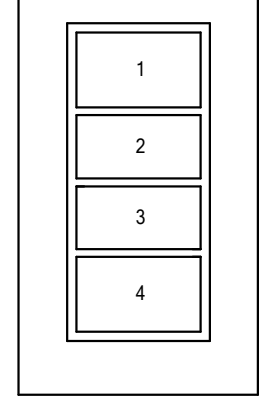
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WALLSTATION 'RC6' CONFIGURATION		
BUTTON	ENGRAVING	PROGRAMMING
1	ALL ON	BUTTON SHALL TURN ALL LIGHTS ON ALL DIMMING ZONES TO 100%.
2	ALL OFF	BUTTON SHALL TURN ALL LIGHTS OFF.
3	RAISE	PRESS AND HOLD - BUTTON SHALL INCREASE ALL DIMMING ZONE LEVELS.
4	LOWER	PRESS AND HOLD - BUTTON SHALL DECREASE ALL DIMMING ZONE LEVELS.
5	SCENE 1	COORDINATE SPECIFIC PROGRAMMING REQUIREMENTS WITH OWNER.
6	SCENE 2	COORDINATE SPECIFIC PROGRAMMING REQUIREMENTS WITH OWNER.

CONTROL SEQUENCE

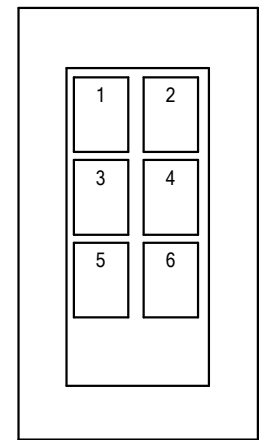
UPON ENTERING THE SPACE, THE OCCUPANCY SENSOR SHALL TURN LIGHTING ON TO 50% OUTPUT. OCCUPANT MAY THEN CONTROL THE LIGHTING MANUALLY. OCCUPANCY SENSOR SHALL TURN LIGHTS OFF AFTER VACANCY TIME-OUT.



WALLSTATION 'LV4' CONFIGURATION		
BUTTON	ENGRAVING	PROGRAMMING
1	ALL ON	BUTTON SHALL TURN ALL LIGHTS ON ALL DIMMING ZONES TO 100%.
2	RAISE	PRESS AND HOLD - BUTTON SHALL INCREASE ALL DIMMING ZONE LEVELS.
3	LOWER	PRESS AND HOLD - BUTTON SHALL DECREASE ALL DIMMING ZONE LEVELS.
4	ALL OFF	BUTTON SHALL TURN ALL LIGHTS OFF.

CONTROL SEQUENCE

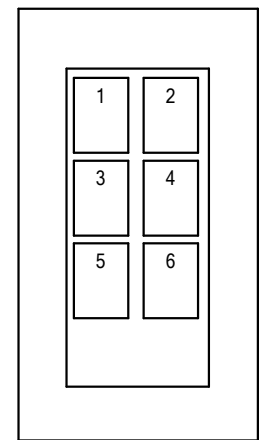
UPON ENTERING THE SPACE, THE OCCUPANCY SENSOR SHALL TURN LIGHTING ON TO 50% OUTPUT. OCCUPANT MAY THEN CONTROL THE LIGHTING MANUALLY. OCCUPANCY SENSOR SHALL TURN LIGHTS OFF AFTER VACANCY TIME-OUT.



WALLSTATION 'MS' CONFIGURATION		
BUTTON	ENGRAVING	PROGRAMMING
1	ALL ON	BUTTON SHALL TURN ALL LIGHTS ON ALL DIMMING ZONES TO 100%.
2	ALL OFF	BUTTON SHALL TURN ALL LIGHTS OFF.
3	-	-
4	-	-
5	-	-
6	-	-

CONTROL SEQUENCE

* COORDINATE ENGRAVING AND PROGRAMMING WITH OWNER.



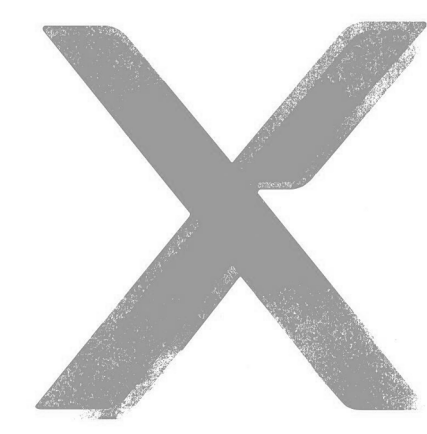
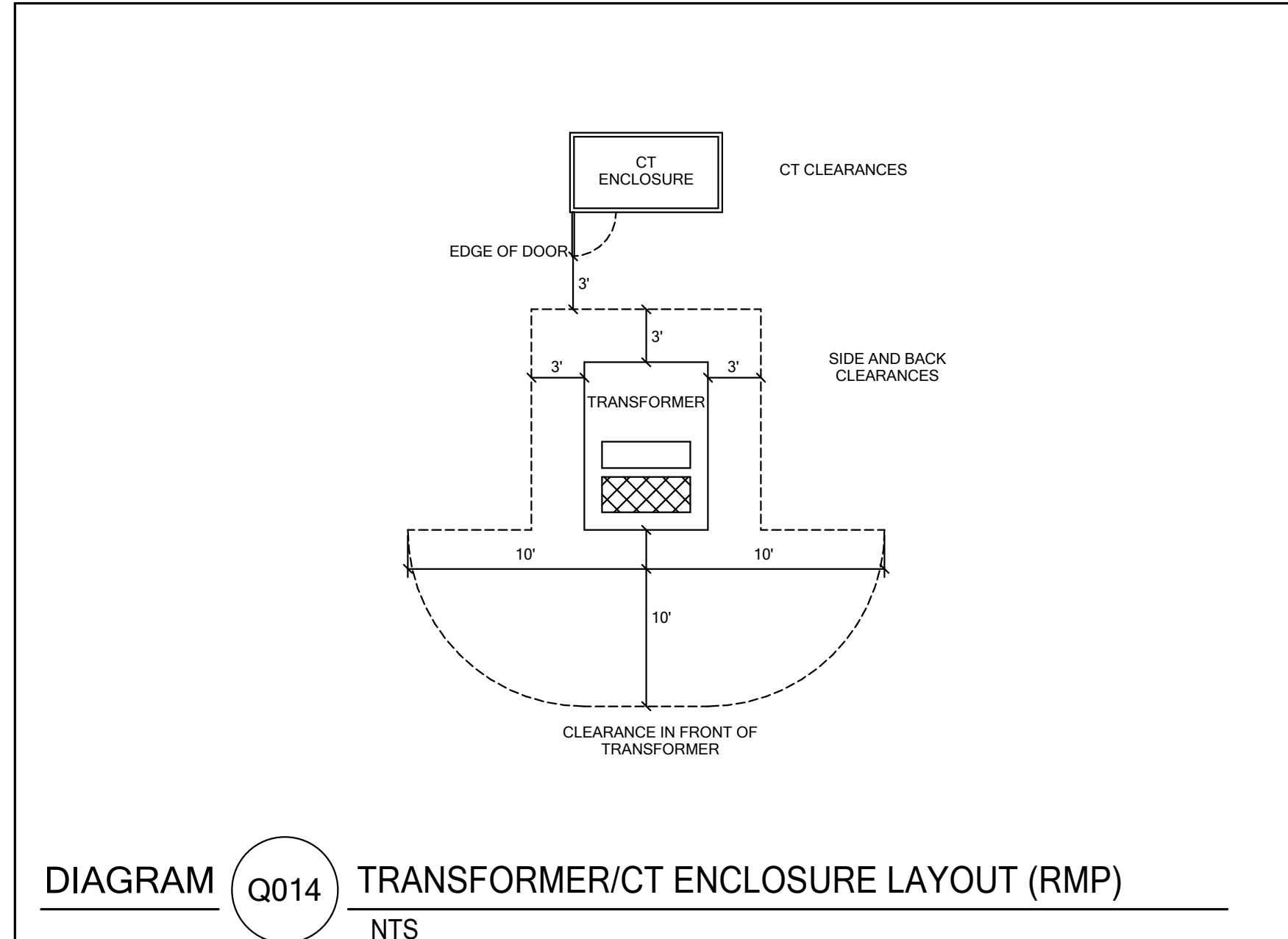
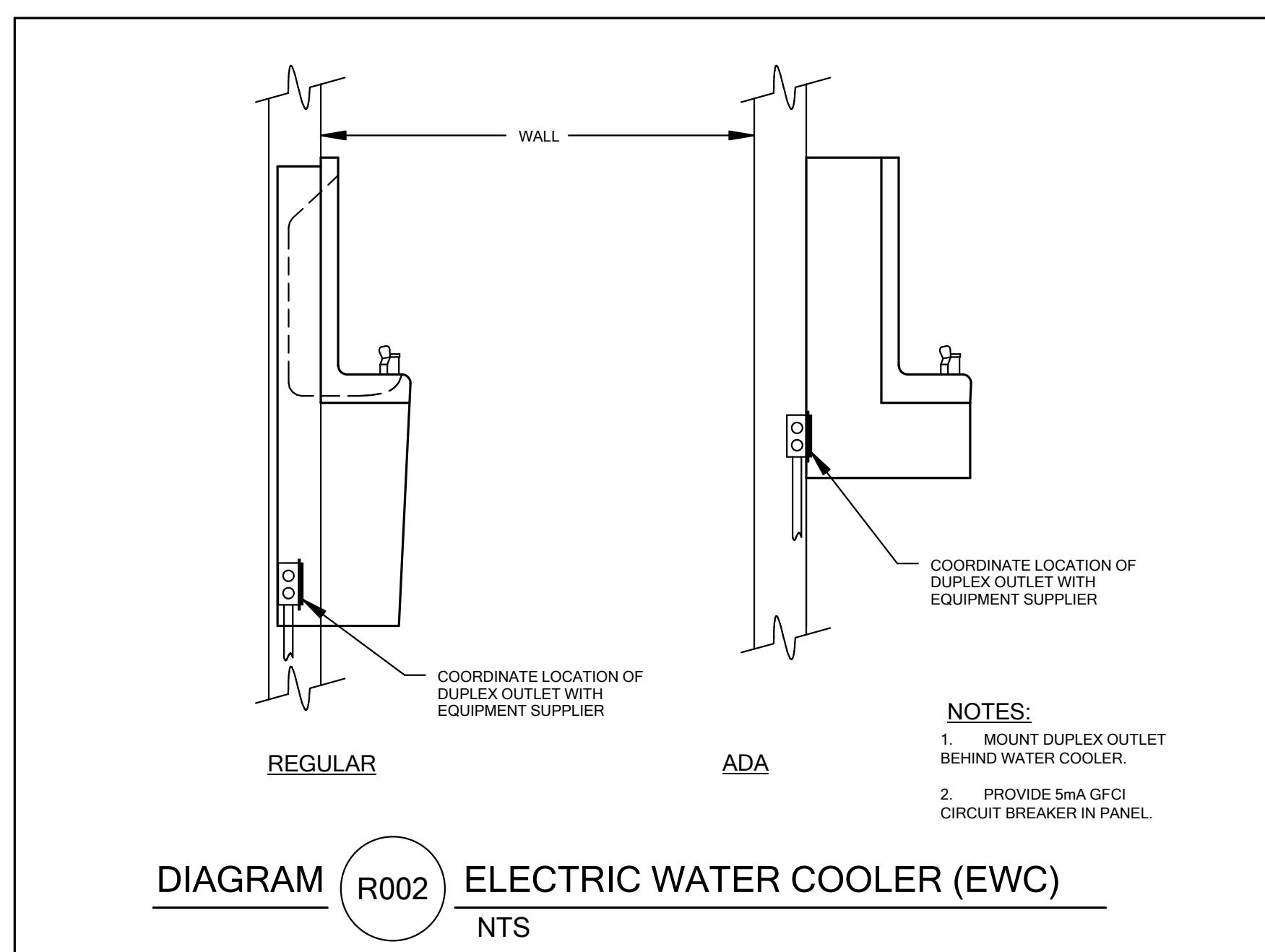
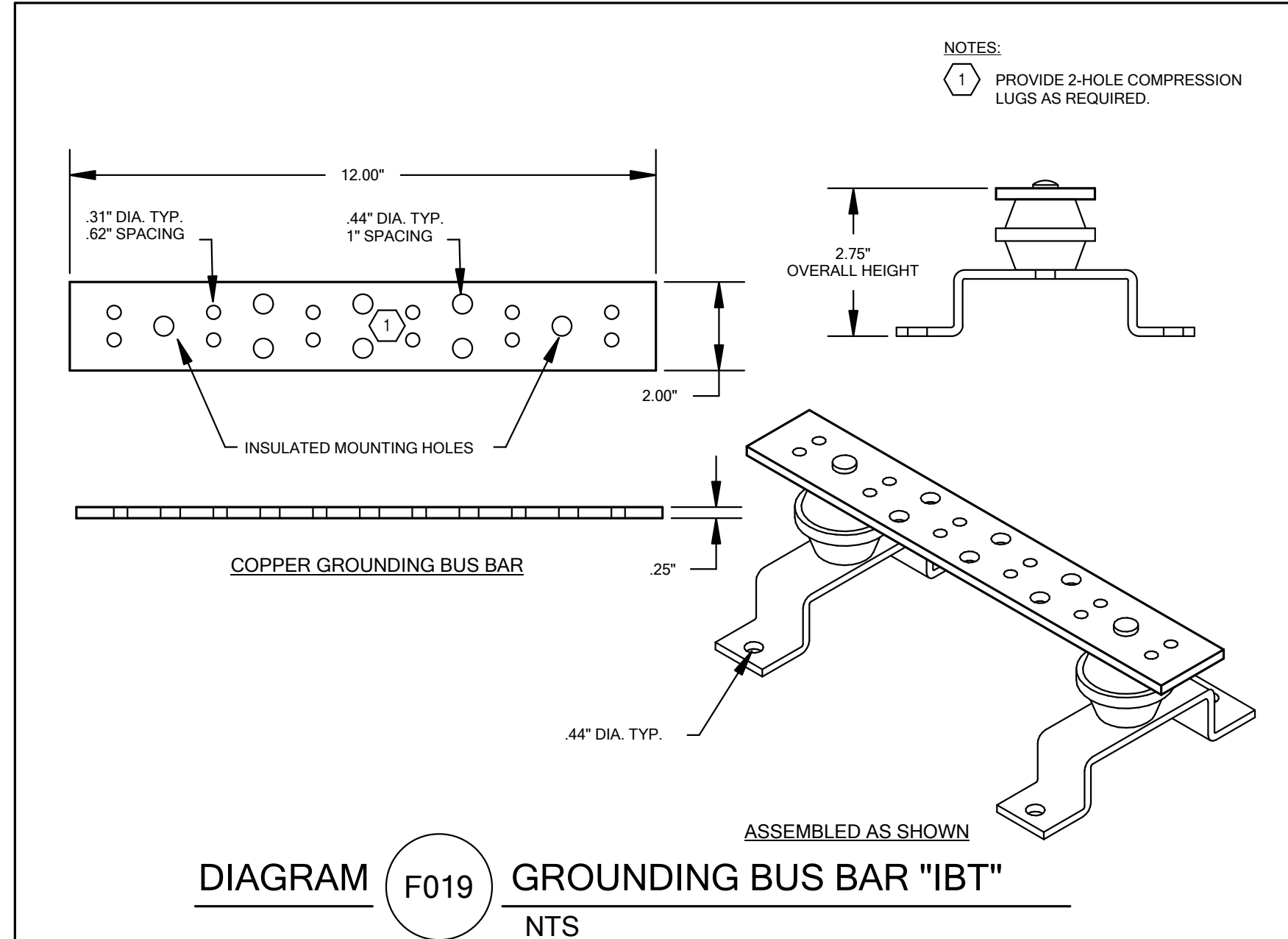
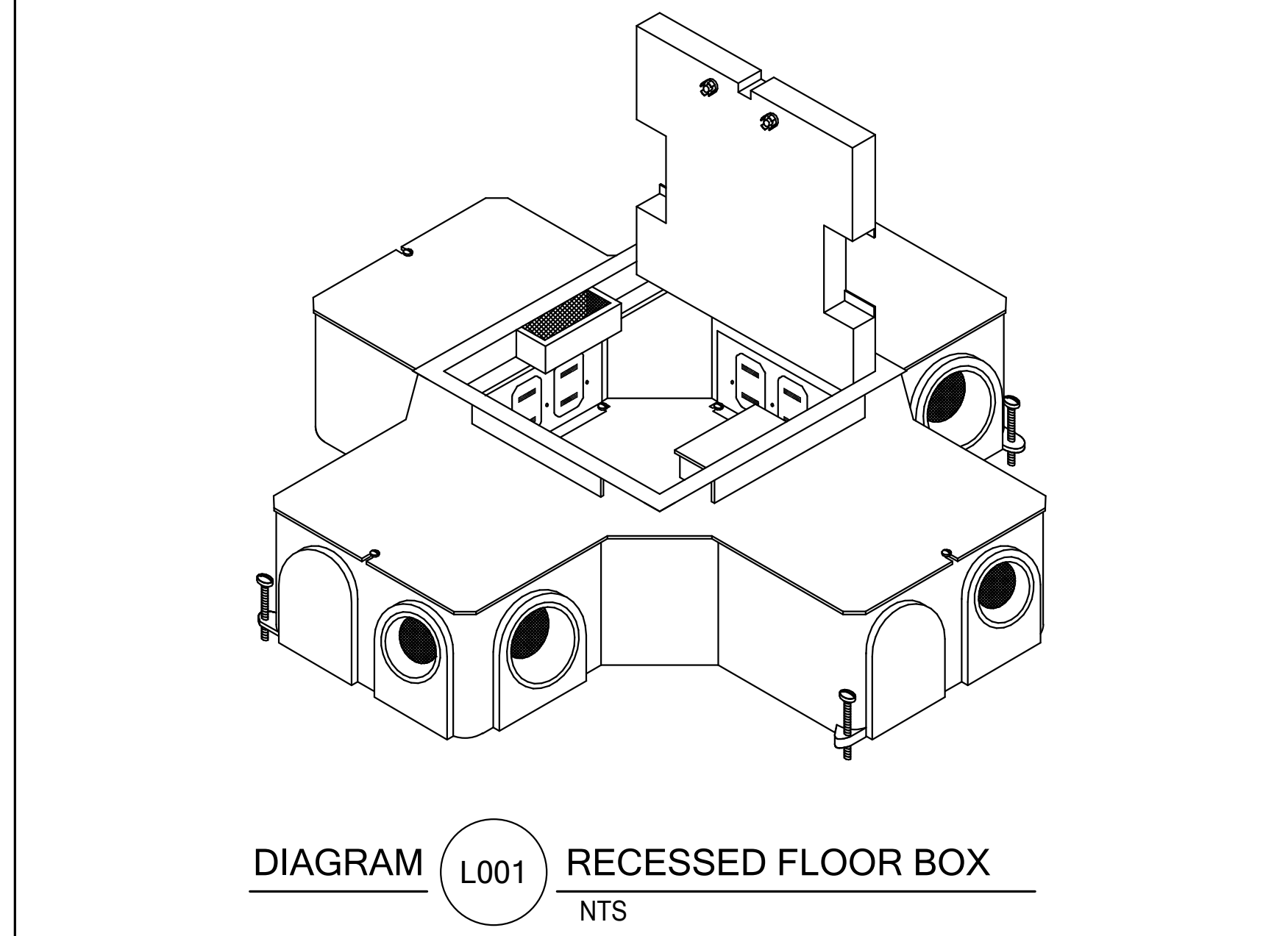
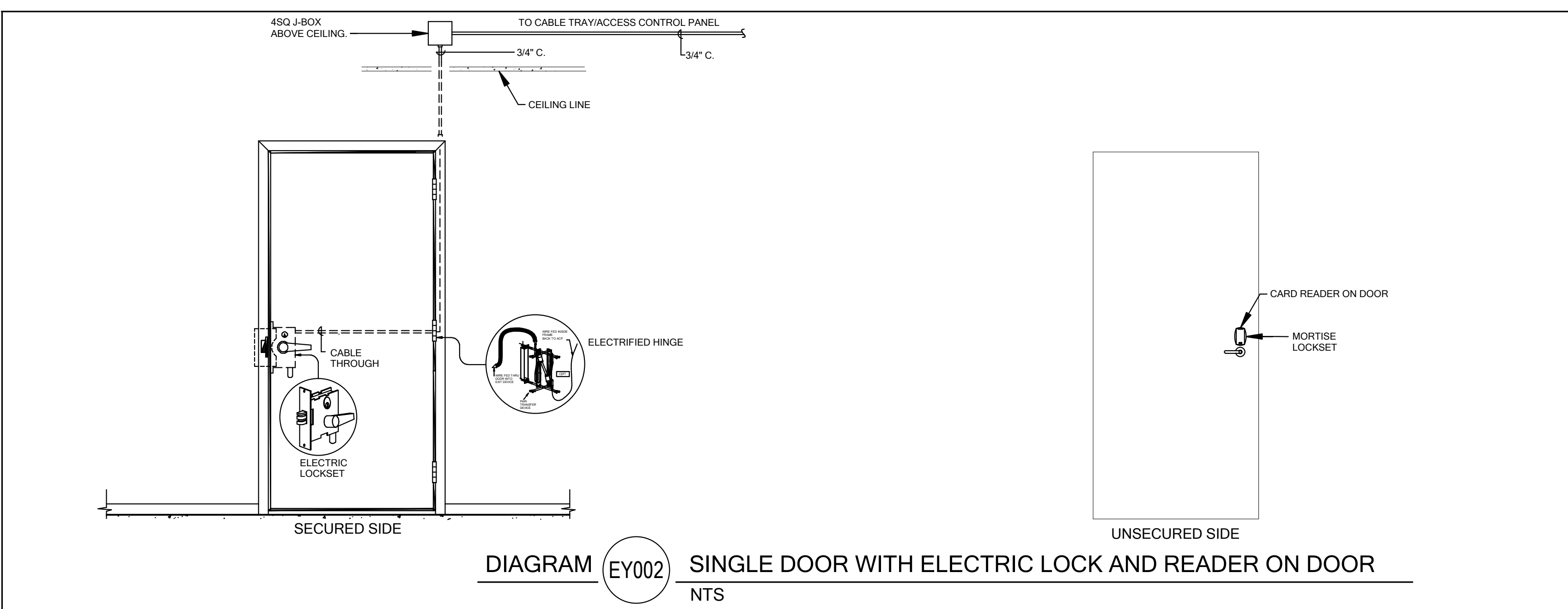
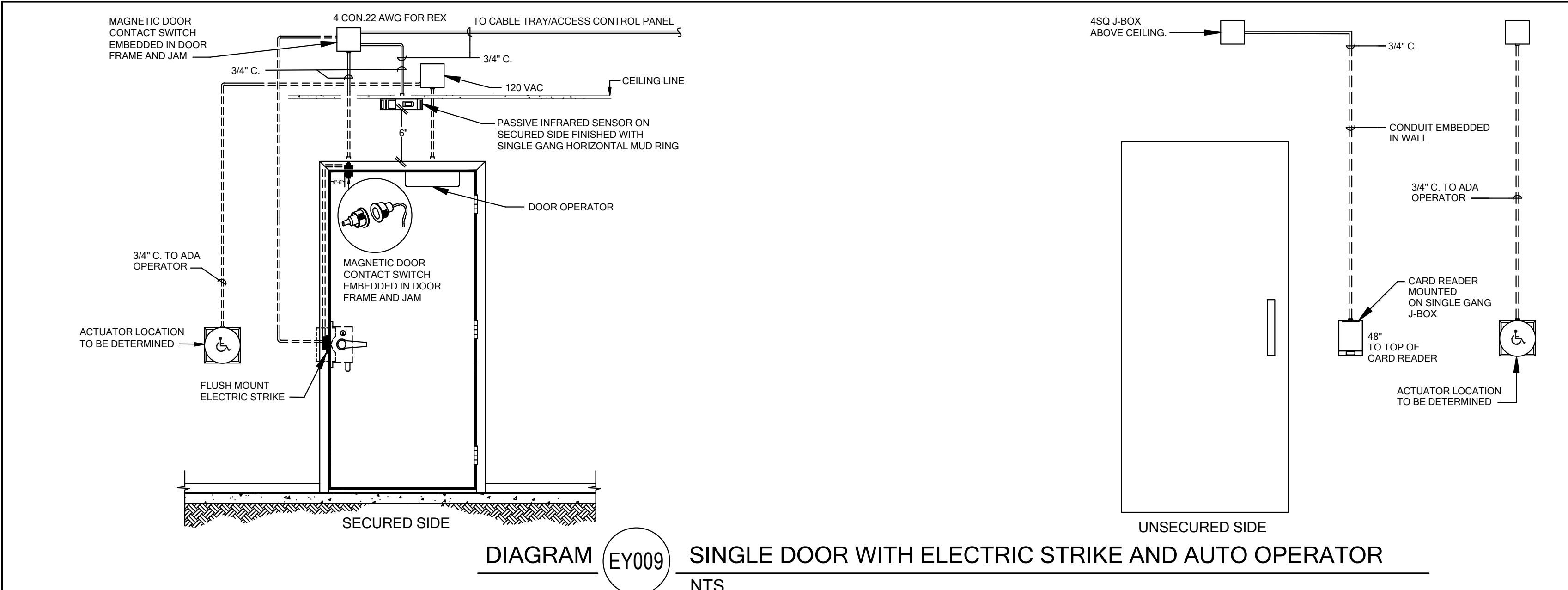
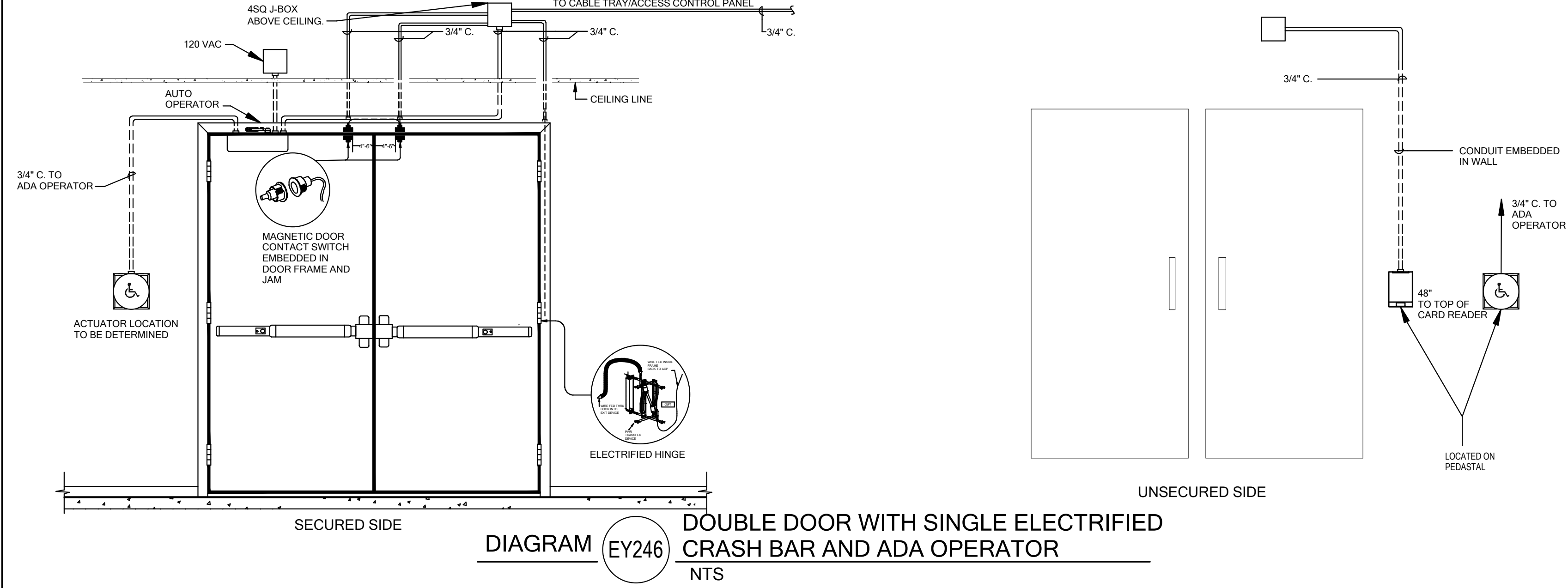
WALLSTATION 'MS' CONFIGURATION		
BUTTON	ENGRAVING	PROGRAMMING
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

CONTROL SEQUENCE

* COORDINATE ENGRAVING AND PROGRAMMING WITH OWNER.

- GENERAL DIAGRAM NOTES:
- ALL PROGRAMMING SHALL MEET THE REQUIREMENTS OF THE IECC 2015 OR CURRENT ENERGY CODE APPLIED TO THE PROJECT. DAYLIGHT ZONE CONTROL SHALL BE PROVIDED PER THE REQUIREMENTS OF C405.2.2.3.
 - THE LIGHTING CONTROLS AS SHOWN ARE BASED UPON EATON LIGHTING CONTROLS. PRIOR APPROVAL IS REQUIRED BEFORE BIDDING THIS PROJECT. SEE PRIOR APPROVAL NOTES.
 - COORDINATE ALL INSTALLATION REQUIREMENTS, CONNECTIONS AND CABLE TYPE WITH THE SUPPLIER PRIOR TO ANY INSTALLATION.
 - PROVIDE INTUITIVE BUTTON LABELING TO MATCH APPLICATION AND LOAD/RELAY CONTROLS. PROVIDE FACTORY ENGRAVED LABELING FOR ALL INDIVIDUAL PUSH-BUTTONS. DEVICE AND COVER/PLATE COLORS AS SELECTED BY ARCHITECT.
 - PROGRAM OF ALL LIGHTING CONTROL SYSTEMS AS INDICATED AND/OR AS DIRECTED BY THE ELECTRICAL ENGINEER AND/OR OWNER. MEET WITH THE ELECTRICAL ENGINEER AT THEIR OFFICE PRIOR TO PREPARATION OF SHOP DRAWINGS TO DISCUSS SPECIFIC PROGRAMMING AND ZONING REQUIREMENTS OF SYSTEMS. EACH NETWORKED OR STANDALONE SYSTEM SHALL BE PROGRAMMED TO REVERT BACK TO ITS NORMAL "ON" POSITION ONE HOUR AFTER SELECTING A SCENE OR RAISING OR LOWERING A LIGHTING ZONE.

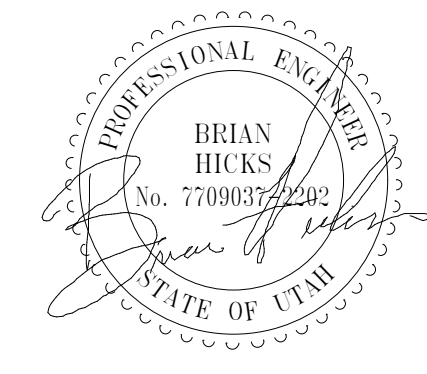
DIAGRAM L001 LIGHTING CONTROL SWITCH CONFIGURATIONS
NTS



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2505 East Parleys Way
Salt Lake City, Utah 84109
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http://www.archnexus.com

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National Ability Center
NAC Equestrian Center Expansion
1000 ABILITY WAY
PARK CITY, UTAH 84060



Date Revision
1 06/25/18 Addendum 1

CONSTRUCTION DOCUMENTS

NEXUS PROJ. #: 17179
CHECKED BY: Checker
DRAWN BY: Author
DATE: 04/14/18

ELECTRICAL DIAGRAMS

E703

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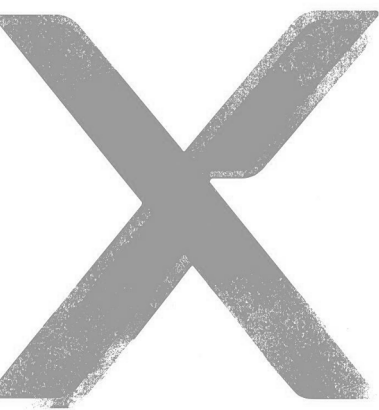
B

A

SHEET KEYNOTES	
T1	COORDINATE WITH OWNER ON EXACT LOCATION OF DEVICES.
T2	LOCATE EQUIPMENT CABINET ON SOUTH WALL. COORDINATE WITH OWNER ON EXACT LOCATION.
T4	MOUNT DEVICES AT 24" A.F.F.
T5	ROOM SCHEDULING SOFTWARE PROVIDED BY OWNER.
T6	REFER TO VIM FOR TABLE TOP DEVICES AND CONNECTIONS. HOMERUN (2) HDMI AND (2) DATA CABLES TO THE EQUIPMENT CABINET 'R2'.
T7	COORDINATE WITH OWNER ON PLACEMENT AND ALIGNMENT OF PROJECTOR AND WHITE BOARD PAINT.
T8	ADD 'AT' DEVICE TO THIS LOCATION AT 96" A.F.F. AND CABLE WITH (1) AT TO THE EQUIPMENT RACK 'R1'. SEPARATE THE WIRELESS MICROPHONES ANTENNAS BY A MINIMUM OF 12-0". PLACE THE ALS ANTENNA IN THE MIDDLE OF THE WIRELESS MICROPHONE ANTENNAS.



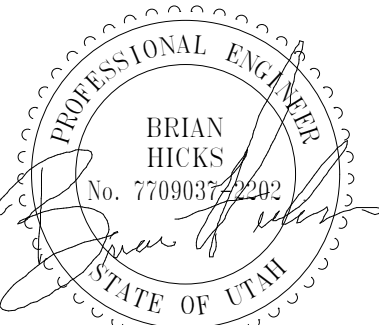
LEVEL 01 AV PLAN
SCALE = 1/8" = 1'-0"



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NEXUS PROJ. #: 17179
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DRAWN BY: Author
DATE: 04/14/18

LEVEL 01 AV
PLAN

ET301

DIAGRAM NOTES:

- ① DEVICE(S) IS(ARE) LOCATED ON THE EAST CONFERENCE ROOM TABLE.
- ② DEVICE(S) IS(ARE) LOCATED ON THE WEST CONFERENCE ROOM TABLE.
- ③ DEVICE IS LOCATED IN THE EQUIPMENT CABINET.
- ④ REFER TO FLOOR PLAN FOR EXACT LOCATION OF DEVICE(S).
- ⑤ PROVIDE A CONTROL CABLE FROM THE RECEIVER TO DISPLAY. MOUNT RECEIVER TO THE REAR OF THE DISPLAY.
- ⑥ SECURE DEVICE UNDER CONFERENCE ROOM TABLE.
- ⑦ DATA CONNECTIONS LOCATED IN FURNITURE BOXES. (2) CONNECTIONS PER BOX.

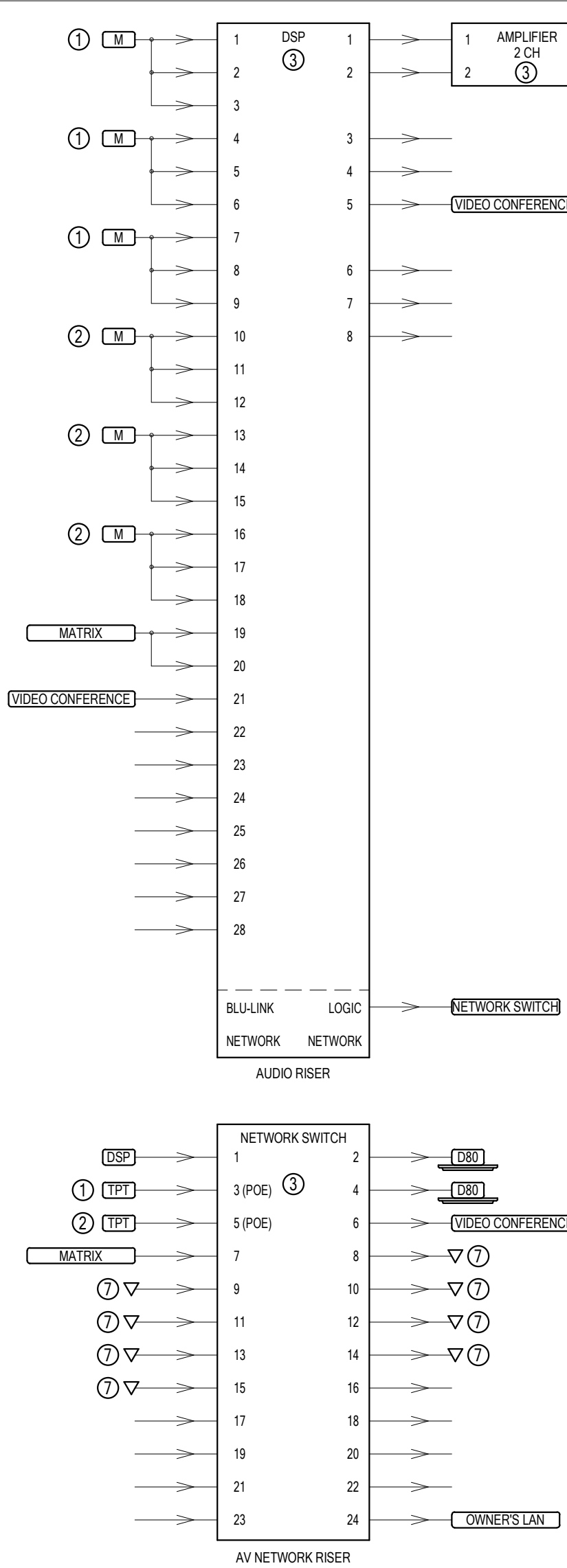


DIAGRAM V202 MEETING ROOM AV RISER NTS

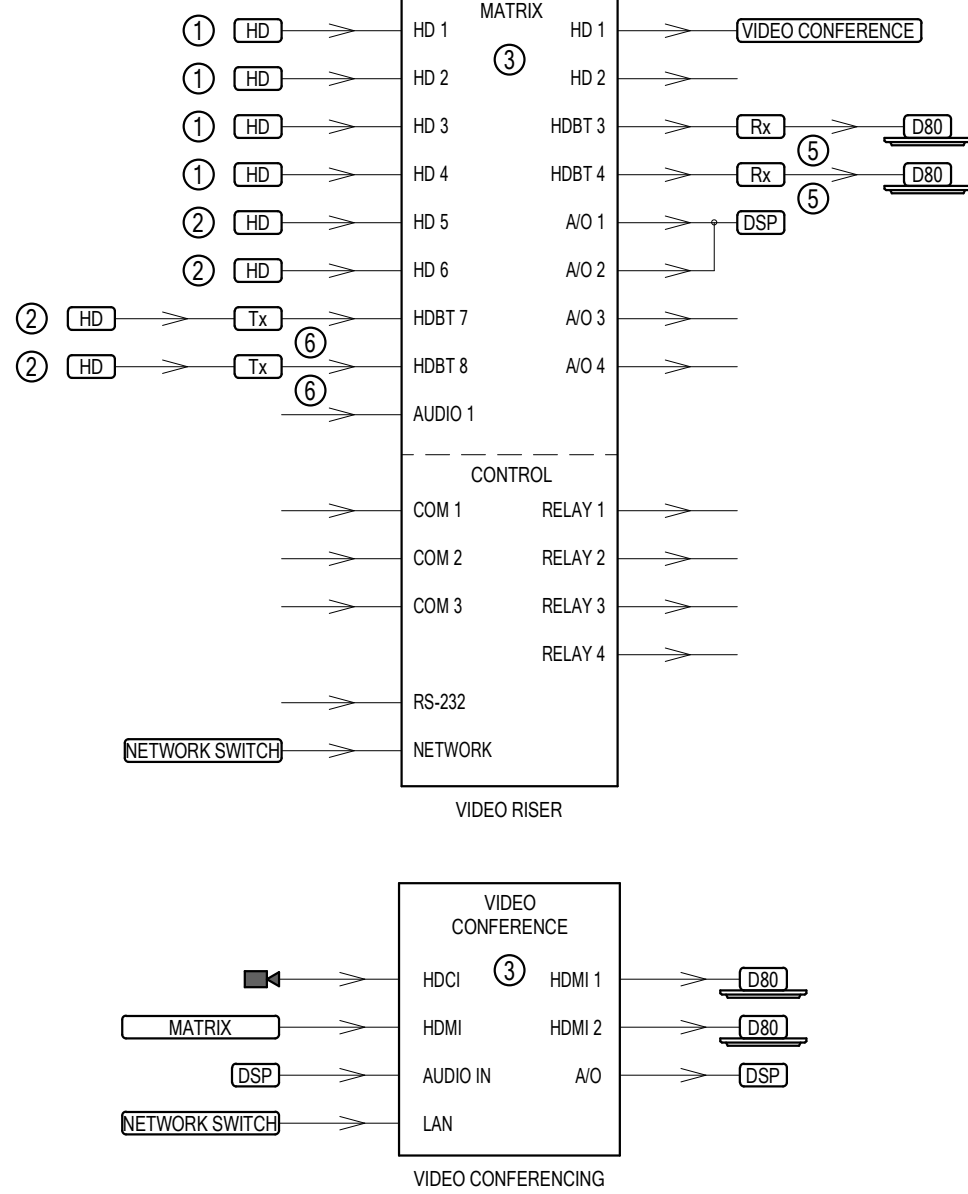


DIAGRAM V022 FLAT PANEL DISPLAY WALL BOX NTS

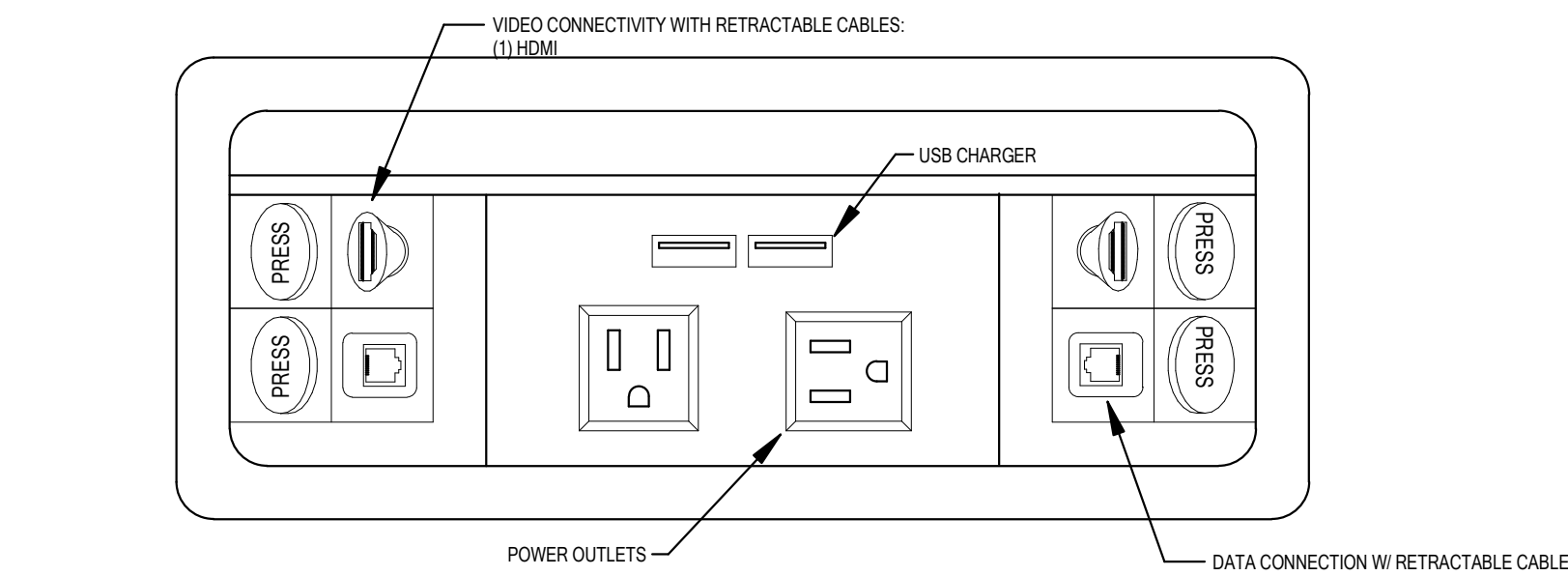


DIAGRAM V104 FURNITURE BOX 1 (FB1) NTS

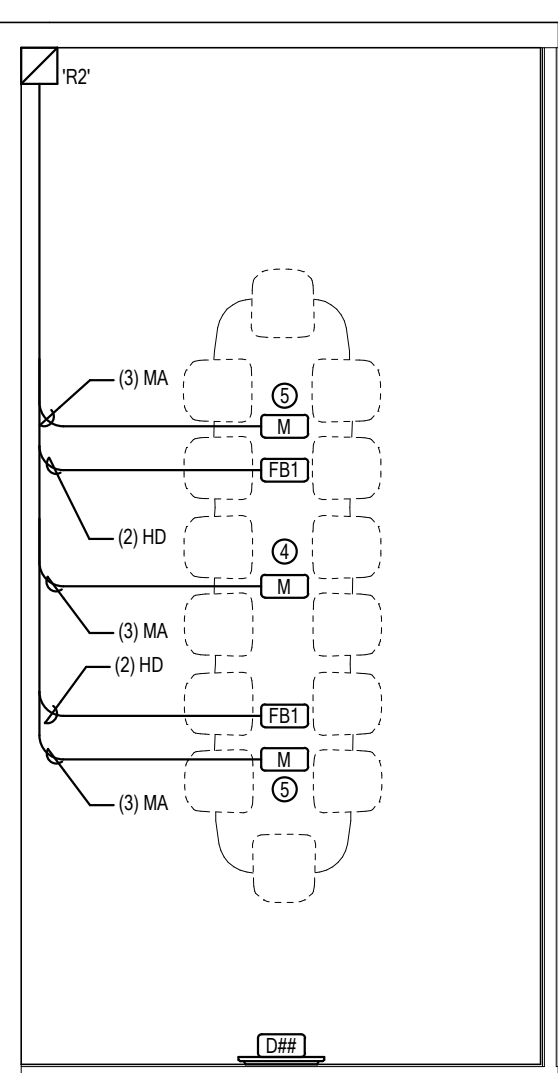


DIAGRAM V203 MEETING ROOM AV NTS

DIAGRAM NOTES:

- ① DEVICES SHALL BE MOUNTED WITHIN FLOOR BOX. PROVIDE (1) 12' HDMI CABLE AND (1) 12' CONTROL CABLE FOR CONNECTION FROM FLOOR BOX TO OWNER PROVIDED FURNITURE.
- ② PROVIDE (1) 1" CONDUIT FROM EQUIPMENT CABINET R2' TO DISPLAY BACK BOX.
- ③ SECURE CABLEING TO THE BOTTOM OF THE TABLE TOP. RUN CABLEING IN THE LEGS OF THE CONFERENCE ROOM TABLE SO THAT NO CABLES ARE SHOWN. CONTRACTOR IS RESPONSIBLE FOR CO-ORDINATING WITH TABLE MANUFACTURER AND INSTALLER PRIOR TO ROUGH IN.
- ④ DUAL COVERAGE AT 130 DEG. INSTALL MICROPHONE ACCORDING TO MANUFACTURER'S INSTRUCTIONS FOR BEST COVERAGE. COORDINATE WITH OWNER ON EXACT LOCATION OF DEVICE.
- ⑤ TRI COVERAGE AT 300 DEG. INSTALL MICROPHONE ACCORDING TO MANUFACTURER'S INSTRUCTIONS FOR BEST COVERAGE. COORDINATE WITH OWNER ON EXACT LOCATION OF DEVICE.

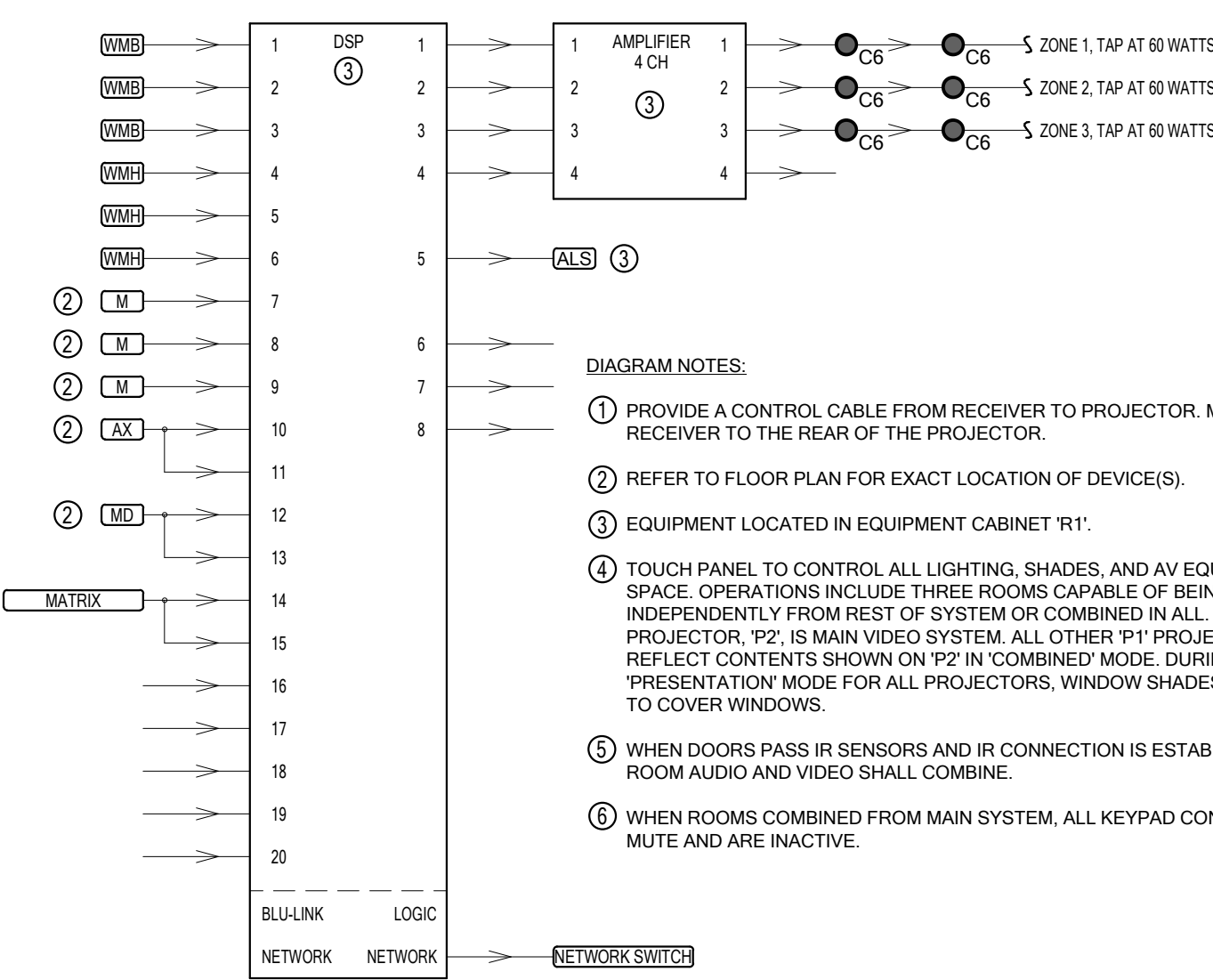
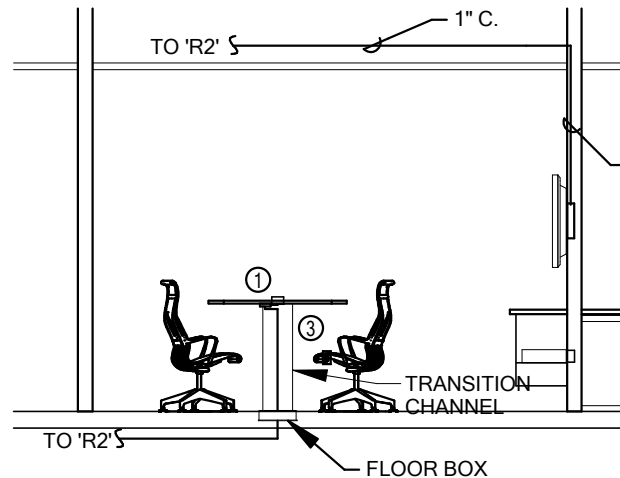


DIAGRAM V201 MULTI-PURPOSE ROOM AV RISER NTS