



**DIVISION 01 – GENERAL REQUIREMENTS**

**013000 – ADMINISTRATIVE REQUIREMENTS**

- Contractor shall be responsible for verification and coordination of sub-contractors work to secure compliance with the drawings and specifications.
- Safety: In accordance with generally accepted construction practices, Contractor will be solely and completely responsible for conditions of job site, including safety of all persons and property during performance of this work. This requirement will apply continuously and not be limited to normal working hours.
- The Architect shall not be responsible for the means, methods, techniques, sequences or procedures of construction selected by the Contractor.
- All dimensions are to face of concrete, face of masonry, face of stud or column centerline unless noted otherwise. Any dimension noted as "CLEAR" or "CLR" is from finished face to finished face.

**014000 – QUALITY REQUIREMENTS**

- The Contractor shall obtain and pay for all required permits and inspections unless indicated otherwise.
- All work shall conform to the current building code and all applicable laws, rules, regulations and ordinances or governing authorities. In case of conflict the most restrictive shall not limit their applicability.
- The term "provide" when used shall mean "furnish and install" unless noted otherwise.
- Provide blocking in walls, ceilings, etc. wherever items will be attached to these surfaces (i.e. toilet accessories, wall mounted door stops, fixtures, casework, handrails, AV equipment, etc.)
- Provide freestopping at all locations required by governing codes and authorities. Contact building inspector for inspection of all freestopping prior to installation of any material which may conceal the freestopping.
- All steel exposed to the exterior shall be galvanized and painted, unless noted to be stainless steel or galvanized (unpainted).

**015000 – TEMPORARY FACILITIES AND CONTROLS**

- Contractor is responsible for providing any temporary water, electrical service, heating and trash removal as needed to complete the work.
- Contractor shall collect and remove all rubbish, surplus material, tools and scaffolding pertaining to his work on a regular basis throughout the construction in order to maintain an orderly working environment.
- Temporarily brace structural components as required to maintain stability until complete and functioning as a designed unit.
- Fumes and dust shall be controlled so as to prevent any harmful or undesirable effects in the surrounding area.

**DIVISION 02 – EXISTING CONDITIONS**

**022000 – ASSESSMENT**

- Commencement of work by the Contractor or Trade shall signify the acceptance of the site conditions.
- Area and dimensions: It shall be the responsibility of the Contractor(s) or Trade(s) to verify all area takeoffs and dimensions by making their own field measurements before starting work or ordering materials.
- The Contractor shall verify at the job site, all dimensions and conditions shown on the drawings and within the Contract Documents and shall notify the Architect of any discrepancies, omissions and/or conflicts before proceeding with the project. All discrepancies shall be resolved before starting work or ordering materials.
- The Contractor shall not scale drawings, verify dimensions shall govern. Large scale drawings shall govern over small scale drawings. Field verify existing conditions where no dimensions exist.
- All dimensions to existing construction are to the finished face. All dimensions to new construction are to face of concrete, face of masonry, face of stud or column centerline unless noted otherwise. Any dimension noted as "CLEAR" or "CLR" is from finished face to finished face.
- Contractor shall verify location of all existing utilities. Take precautions as necessary to protect them. Repair all utilities damaged during construction at no cost to the Owner.
- Contractor shall replace topsoil and re-seed lawn areas disturbed by construction.
- The removal and installation of mechanical, electrical, plumbing and architectural items may require the penetrations or removal of existing floors, ceilings, and walls. Patch and finish all existing surfaces that are disturbed during construction unless noted otherwise.

**DIVISION 03 – CONCRETE**

**033000 – CAST-IN-PLACE CONCRETE**

- Concrete mixtures (normal aggregate) shall be as follows (f'c based on 28 day unless noted otherwise):
  - Footings: f'c = 3000 psi
  - Foundation and retaining walls: f'c = 4000 psi, 4.5%-7.5% entrained air, maximum water/cementitious ratio = 0.50
  - Interior floor slabs: f'c = 4000 psi, maximum water/cementitious ratio = 0.50
  - Exterior flatwork: f'c = 4000 psi, 4.5%-7.5% entrained air, maximum water/cementitious ratio = 0.45
  - Reinforcing steel: ASTM A615/60 KSI yield (deformed bars and ASTM A185 mesh, flat sheets only)
  - Interior floor slabs shall be placed over 10 mil vapor barrier over compacted granular base.
- Interior floor slabs are to be trowel finished and shall meet specified overall value of flatness of F1-25 and levelness F1-20; minimum local value of flatness F1-17 and levelness F1-15. Maximum gap under 10 ft. unweaved straightedge = 1/2".
- Control joints in interior slabs on grade shall be located at 15'-0" o.c. maximum unless noted otherwise with a maximum aspect ratio of 1-1/2 to 1. Control joints shall be sawn and shall be a minimum 1/4" of the slab thickness. Where brittle floor finishes are to be applied to floor slabs, coordinate control joint locations with floor finish joint locations and Architect.
- Exterior flatwork shall receive a broom finish. Provide control joints at 5'-0" o.c. maximum and expansion joints at 20'-0" o.c. maximum unless noted otherwise. Slope all concrete to drain away from the building 1/4" per 1'-0".
- Concrete mix designs shall be in accordance with ACI 301 Section 3.9 or 3.10
- Lap splice reinforcing bars as follows unless noted otherwise:
  - Bars with more than 12" of concrete below – 48 bar diameters.
  - Bars with less than 12" of concrete below – 40 bar diameters.
- At corners and intersections of footings, grade beams and walls, provide bent bars of equal size and at same spacing as typical reinforcing around corner and/or onto abutting footing, grade beam, or wall. Bars shall have embedment of 30 diameters (18" min.)

**DIVISION 04 – MASONRY**

**042000 – UNIT MASONRY**

- Concrete masonry units to be normal weight with minimum average net-area compressive strength of 1900 psi
- Brick masonry shall have minimum average net-area compressive strength of 3500 psi.
- Control/expansion joints in concrete masonry units and brick shall be 3/8" wide and installed at 24'-0" o.c. max. unless indicated otherwise on the drawings. Joints shall receive backing rod and caulk.
- Mortar type shall be per the following applications:
  - Masonry below grade or in contact with earth, use Type M
  - Reinforced masonry, use Type S
  - Exterior, above-grade, load bearing and non-load bearing walls; interior load bearing and non-load bearing walls; and other applications where another type is not indicated, use Type N.
- Horizontal joint reinforcing for single wythe concrete masonry to be hot dip galvanized 9 gage ladder type placed at 16" o.c. vertically unless noted otherwise. Lap reinforcing 6" minimum. Discontinue reinforcing at movement joints.
- Adjustable masonry-veneer anchor/ties to be hot dip galvanized. Attach through wall sheathing to wall framing. Anchors shall allow vertical adjustment but resist tension and compression forces. Size wire ties to extend at least halfway through veneer but with at least 5/8-inch cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches parallel to face of veneer.
- Through-wall flashing shall be asphalt-coated copper 7" x 2 1/2" x 1/8".
  - At masonry veneer walls, extend flashing through veneer, across at space and up face of sheathing at least 4 inches with upper edge tucked under building wrap/paper, lapping at least 4 inches.
  - At multi-wythe masonry wall, including cavity walls, extend flashing through outer wythe, turned up a minimum of 4 inches, and extend 1'-2 inches into the inner wythe
  - At lintels and shelf angles, extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
  - Install stainless steel drip edge beneath flexible flashing at exterior face of wall. Metal drip edge shall extend no less than 3 inches into the wall and be set in mastic or sealant. Stop flexible flashing 1/2 inch back from outside face of wall and adhere flexible flashing to top of metal drip edge. Metal drip edge shall be turned down 1/2 inch.
- Provide free draining mesh material ("Mortar Net" by Heckman Building Products or equal) at all thru-wall flashing locations.
- Weep/Vent Products: Install at 24" o.c. using one of the following, unless otherwise indicated:
  - Wicking material: Absorbent rope, made from cotton, 1/4 to 3/8 inch in diameter, in length required to extend 18 inches in cavity between wythes. Cut flush with exterior face of masonry.
  - Cellular Plastic Weep/Vent: One piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth 1/8" less than depth of outer wythe, in color selected from manufacturer's standard.
- Masonry construction and materials shall conform to all requirements of "Specifications for Masonry Structures (ACI 530.1/ASCE 6-88)" except as modified by the requirements of these contract documents.
- Grout for bond beams and for filling hollow block. Concrete grout complying with ASTM C476 with fine aggregate and with minimum compressive strength of 3000 psi at 28 days. Place grout carefully around and reinforcing to fill all voids.
- Reinforcing steel: ASTM A615, 60 ksi yield. Size and number of bars in bond beams as shown on drawings. Lap all bars a length equal to 48 bar diameters minimum.
- Provide prefabricated "L" and "T" shaped horizontal joint reinforcing at wall intersections.
- Running bond pattern shall be used for all masonry work. Tool all joints concave.
- Unless noted otherwise on plans, under lintels, bearing plates, beams, etc., fill cells with Grout, 3 courses minimum below bearing.
- All reinforcing steel shall be supported and fastened to approved positioners located at 192 bar diameters maximum spacing to prevent displacement during the placement of grout.
- Provide lap splices of length equal to 48 bar diameters for all reinforcing unless noted otherwise.
- All masonry control joints, use concrete masonry units with sash notch in ends aligned vertically over each notch in ends of units below. Install hard rubber control joint strip vertically in notched block to tie the two sides of the joint together. Rake mortar from the vertical control joints for caulking.
- All pre-cast concrete sills, heads, copings, etc. rake each joint and caulk.

**DIVISION 05 – METALS**

**051000 – STRUCTURAL METAL FRAMING**

- All miscellaneous metal fabrications, lintels, structural steel, etc. exposed to the exterior shall be galvanized unless noted otherwise.
- All anchor bolts and expansion bolts shall be galvanized steel bolts of the sizes shown on drawings or, if not shown, as required to carry superimposed loads.
- Framing connectors specified on the drawings shall be galvanized steel metal connectors manufactured by the Simpson Strong Tie Company and shall be fastened as specified in the Simpson Product and Instruction Manual to carry the maximum allowable load of the connectors.

**0521 – PIPE AND TUBE RAILINGS**

- At exterior locations, core drill and set pipe in non-shrink, non-metallic grout, minimum 6" embedment. Make sure drilled hole is dust free. Prep hole with Acryl 60 primer. Provide sloping silicone sealant around pipe penetrations to keep water out.

**DIVISION 06 – WOOD, PLASTICS AND COMPOSITES**

**061000 – ROUGH CARPENTRY**

- Framing lumber shall be as follows:
  - 2x6 and larger: No. 1 grade or better Southern Pine, kiln dried
  - 2x4: Stud grade or better Spruce, Pine, Fir kiln dried
  - 2x6: No. 2 grade or better Spruce, Pine, Fir kiln dried
  - CCA or C2C pressure treat piece in contact with foundation, exposed to weather and as noted on the drawings.
- Wood sheathing/sulfloor on floors, walls, and roof shall be APA Rated Exposure 1 for the respective application and span. All sheathing to be nailed with 8d nails at 6" on center at panel edges and 12" on center at intermediate supports. Wood sulfloor shall be tongue & groove and gused and nailed/screwed to joists. Final sulfloor shall be level to receive finish floor.
- Air and water membrane building wrap/paper shall be attached and lapped per manufacturer's recommendations with seams, edges, fasteners, and penetrations taped.
- Provide underlayment in nominal thickness indicated or, if not indicated, not less than 1/2" inch. DOC PS 1, Exterior A-C with fully sanded face.
- Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacturer.
  - Nails, brads and staples: ASTM F 1629
  - Power-driven fasteners: NES-NER-272
  - Wood Screws: ASME B18.6.1
  - Lag Bolts: ASME B18.2.1
  - Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- Adhesive formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

**062000 – FINISH CARPENTRY**

- Provide and install a minimum of four (4) cabinet screws per cabinet. The use of drywall screws is strictly forbidden. Provide blocking as required to support cabinet.
- Install cabinets without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unobstructed operation. Complete installation of hardware and accessory items as indicated.
- Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
- Complete fabrication, including assembly, finishing and hardware application, to maximum extent possible before shipment to project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming and fitting.
- Laminate cladding for exposed surfaces: High-pressure decorative laminate GRADE HGS. Color as selected by Owner from laminate manufacturer's matte, suede or equivalent finish.
- Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the work. Proceed with installation only after unsatisfactory conditions have been corrected.
- Install woodwork level, plumb, true and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches.
- Scribe and cut woodwork to fit adjoining work, refinish cut surfaces and repair damaged finish at cuts.
- Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails or finishing.
- Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 60 inches long, except where shorter single-length pieces are necessary. Scarf turning joints and stagger in adjacent and related members.

**DIVISION 07 – THERMAL AND MOISTURE PROTECTION**

**072000 – THERMAL AND MOISTURE PROTECTION**

- Insulation shall have a flame-spread index of not more than 25 and a smoke-developed rating of not more than 450 for both concealed and exposed installations. In concealed applications of Type III, IV, or V construction, insulation facing is not required to comply flame spread and smoke developed ratings where insulation is in direct contact with the surface material of the wall, floor, or ceiling.

**075000 – MEMBRANE ROOFING**

- The EPDM membrane roof warranty shall cover a 15-year minimum full system warranty which includes material and installation. The roof shall be inspected and approved for warranty by the roofing manufacturer representative. The proper documentation shall be submitted to the Owner.

**076000 – FLASHING AND SHEET METAL**

- All prefinished metal flashing, counter-flashing, drip edges, valley flashing, etc. shall be .032 inch aluminum.
- Install step flashing and counter-flashing as required at all masonry intersections with different materials (i.e. chimneys). Let counter-flashing into track.

**077000 – ROOF SPECIALTIES**

- Gutters shall be residential aluminum with ogee profile with concealed support straps at 24" o.c. maximum, 5" wide. Provide expansion joint at maximum 30'-0" o.c. Gutters shall be painted with Kynar paint - 10 year finish warranty. Downspouts shall be residential aluminum with support brackets at maximum 6'-0" o.c. vertically, 2" x2" profile. Downspouts shall be painted with Kynar paint. Provide concrete splash block.

**078000 – FIRE AND SMOKE PROTECTION**

- Provide penetration firestopping that is produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrate and with the penetrating openings, and with penetrating items if any.
- Install penetration firestopping to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.
- Where required, provide fire-resistive joint systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assemblies in or between which fire-resistive joint systems are installed. Fire-resistive joint systems shall accommodate building movements without impairing their ability to resist the passage of fire and hot gases.

**079000 – JOINT PROTECTION**

- For interior joints to be painted such as around door frames and where different materials to be painted meet: Acrylic latex caulking by Porter, Tremco or Dap
  - For exterior joints and for interior and exterior joints around louvers, windows, masonry control joints, etc.: Tremco Dymonic or Somabon Solostick; NP 1 sealant. At control joints in masonry and elsewhere as required, install foam backer rod behind sealants.
  - Exterior Joints: (B.O.D. Dow Corning or equal)
    - Perimeters of exterior openings where frames meet exterior facade (i.e. precast, masonry, EIFS, stucco, etc.): Dow Corning 795 Silicone Building Sealant OR Dow Corning 756 SMS Silicone Building Sealant.
    - Expansion and control joints (for exterior surfaces indicated):
      - Cast-in-place concrete: Dow Corning 790 Silicone Building Sealant
      - Architectural precast: Dow Corning 790 Silicone Building Sealant
      - Unit masonry walls: Dow Corning 790 Silicone Building Sealant OR Dow Corning 795 Silicone Building Sealant.
      - Architectural composite metal panels (ACM): Dow Corning 756 SMS Building Sealant.
      - Granite or Limestone: Dow Corning 790 Silicone Building Sealant OR Dow Corning 795 SMS Building Sealant OR Dow Corning 795 Silicone Building Sealant.
      - Marble or sensitive stone surfaces: Dow Corning 756 SMS Building Sealant.
      - Coping joints and Coping-to-facade joints: Dow Corning 795 Silicone Building Sealant OR Dow Corning 756 SMS Building Sealant.
      - Cornice and wash: Dow Corning 795 Silicone Building Sealant.
    - Expansion/control joints in Exterior Insulation Finish Systems (EIFS): Dow Corning 790 Silicone Building Sealant.
    - Joints between EIFS and adjacent non-porous materials: Dow Corning 795 Silicone Building Sealant OR Dow Corning 791 Silicone Waterproofing Sealant.
  - Exterior joints in horizontal concrete surfaces:
    - Precast and Cast-in-Place Concrete: Dow Corning NS (non-sag) Parking Structure Sealant OR Dow Corning FC (fast-cure) Parking Structure Sealant (also self-leveling) OR Dow Corning SI (self-leveling) Parking Structure Sealant
    - Unit Pavers, Granite Pavers, Block Masonry Pavers: Dow Corning 790 Silicone Building Sealant OR Dow Corning Contractors Concrete Sealant.
  - Control Joints:
    - Controlled internal metal-to-metal seals (i.e. flashings, formed metal copings, curtain/wall systems, etc.): Dow Corning 791 Silicone Weatherproofing Sealant OR Dow Corning 795 Silicone Building Sealant.
  - Interior Joints: (B.O.D. Dow Corning or equal)
    - Interior perimeters of exterior openings: Dow Corning 791 Silicone Waterproofing Sealant.
    - Expansion or control joints: On the interior of the following exterior elements:
      - Cast-in-place concrete walls: Dow Corning 790 Silicone Building Sealant OR Dow Corning Contractors Concrete Sealant
      - Architectural precast: Dow Corning 790 Silicone Building Sealant OR Dow Corning Contractors Concrete Sealant.
    - Unit masonry walls: Dow Corning 795 Silicone Building Sealant
    - Expansion and control joints in interior floor surfaces: Dow Corning NS (non-sag) Parking Structure Sealant OR flexible epoxy joint filler for wheeled traffic on industrial floors.
    - Joints of underside of precast of cast-in-place concrete: Dow Corning 790 Silicone Building Sealant
    - Perimeters of interior frames: Dow Corning 791 Silicone Weatherproofing Sealant OR Dow Corning Contractors Weatherproofing Sealant
    - Interior masonry vertical control joints: Dow Corning 795 Silicone Building Sealant OR Dow Corning Contractors Concrete Sealant.
    - Bath, tile, tub and shower enclosures and fixtures: Dow Corning 786 Mildew Resistant Silicone Sealant
    - Exposed control joints in gypsum board: siliconized/acrylic latex sealant.
    - Exposed and non-exposed acoustical applications in gypsum board: acoustical sealant.
- Caulking
  - Caulk the following locations:
    - 1a. Joints between wood trim and wall surfaces
    - 1b. Joints between abutting pieces of wood trim where not tight.
    - 1c. Perimeter joints of exterior openings.
    - 1d. Open cracks at intersecting walls.
    - 1e. Joints between plumbing fixtures and adjoining walls, floors and counters.
    - 1f. Joints between dissimilar materials.
    - 1g. Other joints where indicated or necessary for weather/tight/water/light/airtight installation.
    - 1h. Under all window stools to drywall
  - Provide caulking with the following characteristics:
    - 2a. All interior locations unless noted otherwise: Latex caulk complying with ASTM C 834, Type P, Grade NF or better.
    - 2b. All bathrooms, kitchen counters and exterior locations: Single-Component Mildew-Resistant Acid-Curing Silicone Sealant (Dow Corning 786 Mildew Resistant, GE Silicone Sanitary SC51700 or equal)
  - Provide backing materials where recommended, or required, by caulking manufacturer.
- Provide joint sealants, backings and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- Provide sealant backings of material that are non-staining, are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- Interior joints in vertical surfaces and horizontal nontraffic surfaces: Latex
- Mildew resistant interior joints in vertical surfaces and horizontal nontraffic surfaces: Mildew resistant, single component, nonsag, neutral curing, Silicone.
- Caulk colors shall be similar to adjacent material. Consult architect on final color selection.

**DIVISION 08 – OPENINGS**

**081000 – DOORS AND FRAMES**

- Metal door frames shall be galvanized (at exterior locations), primed and painted 16 gage steel frames fabricated of full-welded unit construction with exposed welds ground smooth. Face of frames shall be 2" at joints and 4" at heads to work with masonry coursing. Reinforce frames as required for hardware and furnish all required anchors. Install frames in accordance with manufacturer's recommendations.

**082000 – GLAZING**

- Safety glazing shall be installed in the following locations:
  - Glazing in swinging doors except glassless.
  - Glazing in fixed and sliding panels of sliding door assemblies and panels in sliding and bifold closet door assemblies.
  - Glazing in storm doors.
  - Glazing in unframed swinging doors.
  - Glazing in doors and enclosures for hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers. Glazing in any part of a building wall enclosing these compartments where the bottom exposed edge of the glazing is less than 60 inches measured vertically above any standing or walking surface.
  - Glazing in an individual fixed or operable panel adjacent to a door where the nearest vertical edge is within a 24-inch arc of the door in a closed position and whose bottom edge is less than 60 inches above the floor or walking surface.
  - Glazing in an individual fixed or operable panel, other than those locations described in Items 5 and 6 above, that meets all of the following conditions:
    - Exposed area of an individual pane larger than 9 square feet.
    - Bottom edge less than 18 inches above the floor.
    - Top edge more than 36 inches above the floor.
    - One or more walking surfaces within 36 inches horizontally of the glazing.
  - All glazing in railings regardless of an area or height above a walking surface. Included are structural baluster panels and nonstructural infill panels.
  - Glazing adjacent to stairways, landings and ramps within 36 inches horizontally of a walking surface when the exposed surface of the glass is less than 60 inches above the plane of the adjacent walking surface.
  - Glazing adjacent to stairways within 60 inches horizontally of the bottom tread of a stairway in any direction when the exposed surface of the glass is less than 60 inches above the nose of the tread.
- All bedroom windows shall have the minimum criteria:
  - The window shall have a minimum net clear opening of 5.7 square feet.
  - The window shall have a minimum net clear opening height of 24 inches.
  - The window shall have a minimum net clear opening width of 20 inches.
  - The window shall be operational from the inside of the room without the use of keys, tools or special knowledge.
  - The window sill shall not be higher than 44" inches AFF.
- All gaps between the window frame/unit and the adjacent wall shall be filled with low-rise expanding foam insulation.

**DIVISION 09 – FINISHES**

**092000 – PLASTER AND GYPSUM BOARD**

- All drywall joints shall be laped with paper tape, open mesh tape is not permitted.
- Provide continuous metal edge (USG #801-A) at all exposed panel edges and intersection with non-gypsum surfaces. J-stop moldings are not permitted.
- Provide gypsum board control joint at 20'-0" o.c. maximum, unless noted otherwise, in continuous wall or ceiling lengths
- Finish gypsum panels to levels indicated below:
  - Level 1: Ceiling/plenum areas, concealed areas, and where indicated.
  - Level 2: Panels that are substrate for tile
  - Level 4: Panel surfaces exposed to view storage rooms, mechanical rooms, and janitor rooms.
  - Level 5: All other panel surfaces exposed to view.
- Water-resistant gypsum board must be used at all walls in the bathroom and within six horizontal feet of wall surfaces where the drywall can be splashed such as kitchen, sink, next to water heater and/or washing machine.
- Install fiberglass reinforced concrete board behind all areas to receive tile.
- Gypsum board shall comply with ASTM C36
- Screws in types and lengths as recommended by drywall manufacturer. No nails allowed.
- All purpose, ready-mixed compound with reinforcing tape at seams.
- Casing beads, corner beads, etc. shall be metal (plastic or vinyl is not permitted).
- Steel drill screws: ASTM C 1002.
- NO NAILS ARE PERMITTED.
- Install gypsum board continuous behind all bulkheads and drop down ceilings.

**093100 – THIN-SET TILING**

- Install a crack isolation membrane under subsurface of thin-set tile. Follow manufacturer's recommendations for proper installation Refer to ANSI A118.12 for additional guidelines (RedGard Waterproofing and Crack Prevention Membrane)
- Install movement joints in ceramic tile under the following guidelines:
  - a.) Interior – 20'-0" to 25'-0" in each direction.
  - b.) Interior tilework exposed to direct sunlight or moisture – 8'-0" – 12'-0" in each direction
  - c.) Where tilework abuts restraining surfaces
- All expansion, control, construction, cold and seismic joints in the structure should continue through the tilework, including such joints at vertical surfaces. Joints through structural joints must never be narrower than the structural joint.

**095000 – PAINTING AND COATING**

- All surfaces to be painted shall be prepped in accordance with the paint manufacturer's recommendations to full coverage. Prime all surfaces in accordance with the paint manufacturer's recommendations. All surfaces to receive one primer coat and two finish coats.
- Painting work includes applying a paint coating as scheduled on drawings to walls, doors, frames, trim, etc. Paint all surfaces. Products shall be high quality products as manufactured by Porter, Benjamin Moore, Glidden or Sherwin Williams. Colors shall be selected from color charts of manufacturer.
- Paint shall be applied in separate coats. Sand between coats as required for smooth finish. Apply additional topcoats if required to provide a smooth even finish or if required to provide complete coverage of substrates.
- Apply paint in accordance with manufacturer's recommendations. Take care to avoid danger of fire. Remove oil or solvent coated rags daily. Mask adjoining surfaces, protect against areas from damage and touch up all paint as required.
- Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- Use applicators and techniques suited for paint and substrate indicated.
- Provide materials for use with each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- Interior doors/trim shall have one of the following finishes: Painted – primed once, with two-coat satin or semi-gloss finish on all sides and faces.
- Interior walls shall be primed once, with two-coat finish with eggshell finish unless noted otherwise. Use gloss, semi-gloss or satin finish for bathrooms, laundry and kitchens.
- Interior ceilings paint/shell shall be flat unless noted otherwise.
- All paints and coatings to be low VOC



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EXPIRATION DATE 12/31/2025

**The Crossroads Center**  
2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
	PERMIT SET	08/09/24

**SPECIFICATIONS**

23-056

**G001**



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CROSSROADS CENTER HEADQUARTERS  
CINCINNATI, OH

SECTION 080671 - DOOR HARDWARE SCHEDULE

PART 1 - PRODUCTS

1.1 SCHEDULED DOOR HARDWARE

A. Refer to "PART 3 - EXECUTION" for required specification sections.

PART 2 -

1. MK - McKinney
2. PE - Pemko
3. SU - Securitron
4. RO - Rockwood
5. YA - ASSA ABLLOY ACCENTRA
6. OT - Other
7. RF - Rixson
8. SA - SARGENT

**Hardware Sets**

**Set: 1.0**

Doors: 100A			
2 Continuous Hinge	CFM_SLF-HDI-M PT		PE
2 Electric Power Transfer	EL-CEPT	630	SU
1 Exit Device (CVR, nightlatch)	6160 B P S 121NL	630	YA
1 Exit Device (exit only)	6100 B EO	630	YA
1 SFIC	Match/expand as required		OT
2 Door Pull	RM3311	US32D	RO
2 Cone Overhead Stop	6-X36	630	RF
2 Surface Closer	5801 (mount as req'd)	689	YA
1 Weatherseal	BY ALUMINUM DOOR SUPPLIER		
2 Sweep	18061CNB	Alum	PE
1 Wiring Diagram	By Security Contractor		SA
2 Door Harness	QC-Cxxx		MK
2 Frame Harness	QC-C3000P		MK

DOOR HARDWARE SCHEDULE 080671 - 1

CROSSROADS CENTER HEADQUARTERS  
CINCINNATI, OH

3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Storeroom or Closet Lock	AU 4705LN	626	YA
1 SFIC	Match/expand as required		OT
1 Surf Overhead Stop	10-x36	630	RF
1 Gasketing	S88D		PE

**Set: 10.0**

Doors: 102A, 131A, 132, 156, 160, 234, 235, 321, 328, 330			
3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Storeroom or Closet Lock	AU 4705LN	626	YA
1 SFIC	Match/expand as required		OT
1 Surf Overhead Stop	10-x36	630	RF
1 Surface Closer	5801 (mount as req'd)	689	YA
1 Kick Plate	K1050 - 10" x 2" LDW x 4BE x CSK	US32D	RO
1 Gasketing	S88D		PE
3 Silencer	608 / 609		RO

**Set: 11.0**

Doors: 107, 114, 115, 116, 119, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 150, 158, 162, 201, 202, 203, 204, 205, 206, 207, 212, 217, 301, 303, 304, 305, 311, 312, 313, 314, 315, 316, 317, 318, 320, 322, 323

3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Entry/Office Lock	AU 4704LN	626	YA
1 SFIC	Match/expand as required		OT
1 Wall Stop	400 Series	US32D	RO
1 Gasketing	S88D		PE

**Set: 12.0**

Doors: 109A, 109B, 111A, 111B, 131B, 151, 213, 224, 327, 339			
3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Classroom Lock	AU 4708LN	626	YA
1 SFIC	Match/expand as required		OT
1 Wall Stop	400 Series	US32D	RO

DOOR HARDWARE SCHEDULE 080671 - 6

CROSSROADS CENTER HEADQUARTERS  
CINCINNATI, OH

2 Position Switch	DPS		SU
1 Access Control Reader	By Security Contractor		OT
1 Power Supply	AQL (Amperage & relays as req'd)		SU

Notes:

Coordinate with security and consolidate power supplies as req'd.  
Doors are normally closed and locked.  
Presenting a valid credential to the reader will momentarily retract latch of exit device allowing manual entry via pull on active leaf.  
Keyed cylinder provided for emergency entry.  
Free egress at all times by pressing rail of either exit device and exiting.  
Doors monitored for forced entry and door ajar.

**Set: 2.0**

Doors: 117A, 118B, 130A, 149A, 155			
1 Continuous Hinge	CFM_HDI-M PT		PE
1 Electric Power Transfer	EL-CEPT	630	SU
1 Exit Device (rim, nightlatch)	6100 B P 121NL	630	YA
1 SFIC	Match/expand as required		OT
1 Door Pull	RM3311	US32D	RO
1 Cone Overhead Stop	1-x36	630	RF
1 Surface Closer	5801 (mount as req'd)	689	YA
1 Kick Plate	K1050 - 10" x 2" LDW x 4BE x CSK	US32D	RO
1 Head Gasketing	2891AS		PE
1 Jamb Gasketing Set	290AS		PE
1 Wiring Diagram	By Security Contractor		SA
1 Door Harness	QC-Cxxx		MK
1 Frame Harness	QC-C3000P		MK
1 Access Control Reader	By Security Contractor		OT
1 Power Supply	AQL (Amperage & relays as req'd)		SU

Notes:

Door is normally closed and locked.  
Presenting a valid credential to reader will retract latch, allowing entry via pull.  
Entry also by key in cylinder.  
Free egress at all times.  
As loss of power doors remain locked (fail secure).

Coordinate with security and consolidate power as req'd.

DOOR HARDWARE SCHEDULE 080671 - 2

CROSSROADS CENTER HEADQUARTERS  
CINCINNATI, OH

1 Gasketing	S88D		PE
-------------	------	--	----

**Set: 13.0**

Doors: 306			
3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Classroom Lock	AU 4708LN	626	YA
1 SFIC	Match/expand as required		OT
1 Surf Overhead Stop	10-x36	630	RF
1 Gasketing	S88D		PE

**Set: 14.0**

Doors: 104, 108, 124, 125, 127, 210, 211, 216, 219, 221, 223, 229, 230, 231, 233, 302, 308, 325, 326, 331, 332, 333, 334, 340, 342, 343

3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Privacy	AU YPL02	626	YA
1 Surface Closer	5801 (mount as req'd)	689	YA
1 Kick Plate	K1050 - 10" x 2" LDW x 4BE x CSK	US32D	RO
1 Wall Stop	400 Series	US32D	RO
1 Gasketing	S88D		PE
1 Coat Hook	RM802	US32D	RO

**Set: 15.0**

Doors: 153, 154			
3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Privacy	AU YPL02	626	YA
1 Surf Overhead Stop	10-x36	630	RF
1 Surface Closer	5801 (mount as req'd)	689	YA
1 Kick Plate	K1050 - 10" x 2" LDW x 4BE x CSK	US32D	RO
1 Gasketing	S88D		PE
1 Coat Hook	RM802	US32D	RO

**Set: 16.0**

Doors: 159, 161, 209			
3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK

DOOR HARDWARE SCHEDULE 080671 - 7

CROSSROADS CENTER HEADQUARTERS  
CINCINNATI, OH

**Set: 3.0**

Doors: 117B, 149B, 208, 215, 226, 300, 307, 337

1 Electric Hinge (heavy weight)	TA43786_QC_ (Size per spec)	US26D	MK
2 Hinge (heavy weight)	TA43786 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Electrified Rim Exit, Fail Safe	6100FED B AU690F	630	YA
1 SFIC	Match/expand as required		OT
1 Surface Closer	5801 (mount as req'd)	689	YA
1 Kick Plate	K1050 - 10" x 2" LDW x 4BE x CSK	US32D	RO
1 Wall Stop	400 Series	US32D	RO
1 Gasketing	S88D		PE
1 Wiring Diagram	By Security Contractor		SA
1 Door Harness	QC-Cxxx		MK
1 Frame Harness	QC-C3000P		MK
1 Access Control Reader	By Security Contractor		OT
1 Power Supply	AQL (Amperage & relays as req'd)		SU

Notes:

Door is normally closed and locked.  
Presenting a valid credential to reader will allow entry via lever.  
Entry also by key in cylinder.  
Free egress at all times.  
As loss of power doors be unlocked (fail safe).

Coordinate with security and consolidate power as req'd.

**Set: 4.0**

Doors: 100B			
2 Continuous Hinge	CFM_SLF-HDI-M PT		PE
2 Electric Power Transfer	EL-CEPT	630	SU
1 Exit Device (CVR, nightlatch)	6160 B P S 121NL	630	YA
1 Exit Device (exit only)	6100 B EO	630	YA
1 SFIC	Match/expand as required		OT
2 Door Pull	RM3311	US32D	RO
2 Cone Overhead Stop	6-X36	630	RF

DOOR HARDWARE SCHEDULE 080671 - 3

CROSSROADS CENTER HEADQUARTERS  
CINCINNATI, OH

1 Passage Latch	req'd		
1 Wall Stop	AU 4701LN	626	YA
1 Gasketing	400 Series	US32D	RO
	S88D		PE

**Set: 17.0**

Doors: 105			
3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Passage Latch	AU 4701LN	626	YA
1 Wall Stop	400 Series	US32D	RO
1 Gasketing	S88D		PE

Notes:

Size hinges for 180 swing to wall.

**Set: 18.0**

Doors: 220, 344			
3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Passage Latch	AU 4701LN	626	YA
1 Surf Overhead Stop	10-x36	630	RF
1 Gasketing	S88D		PE

**Set: 19.0**

Doors: B			
3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Privacy Lock	AU 4702LN	626	YA
1 Wall Stop	400 Series	US32D	RO
1 Gasketing	S88D		PE
1 Coat Hook	RM802	US32D	RO

Notes:

**Set: 20.0**

Doors: A

DOOR HARDWARE SCHEDULE 080671 - 8

CROSSROADS CENTER HEADQUARTERS  
CINCINNATI, OH

2 Surface Closer	5801 (mount as req'd)	689	YA
1 Weatherseal	BY ALUMINUM DOOR SUPPLIER		
2 Sweep	18061CNB	Alum	PE
1 Threshold	252-3JAFG		PE
1 Wiring Diagram	By Security Contractor		SA
2 Door Harness	QC-Cxxx		MK
2 Frame Harness	QC-C3000P		MK
2 Position Switch	DPS		SU
1 Access Control Reader	By Security Contractor		OT
1 Power Supply	AQL (Amperage & relays as req'd)		SU

Notes:

Coordinate with security and consolidate power supplies as req'd.  
Doors are normally closed and locked.  
Presenting a valid credential to the reader will momentarily retract latch of exit device allowing manual entry via pull on active leaf.  
Keyed cylinder provided for emergency entry.  
Free egress at all times by pressing rail of either exit device and exiting.  
Doors monitored for forced entry and door ajar.

**Set: 5.0**

Doors: 130B			
3 Hinge (heavy weight)	TA43786 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Rim Exit Device, Classroom/Storeroom	6100ED AU426F	630	YA
1 SFIC	Match/expand as required		OT
1 Surface Closer	5801 (mount as req'd)	689	YA
1 Kick Plate	K1050 - 10" x 2" LDW x 4BE x CSK	US32D	RO
1 Wall Stop	400 Series	US32D	RO
1 Gasketing	S88D		PE

Notes:

**Set: 6.0**

Doors: 118A, 325

DOOR HARDWARE SCHEDULE 080671 - 4

CROSSROADS CENTER HEADQUARTERS  
CINCINNATI, OH

3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Entry/Office Lock	AU 4704LN	626	YA
1 Surface Closer	5801DL	689	YA
1 Wall Stop	400 Series	US32D	RO
1 Gasketing	S88D		PE
2 Viewer	622		STNN

Notes:

Mount 2 viewers for ADA compliance as req'd.

**Set: 21.0**

Doors: 126A, 126B, 133A, 133B, 200			
3 Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Entry/Office Lock	AU 4704LN	626	YA
1 SFIC	Match/expand as required		OT
1 Surface Closer	5801 (mount as req'd)	689	YA
1 Gasketing	S88D		PE
1 Door Bottom	2343AV		PE
1 Threshold	EV232BL		PE

Notes:

END OF SECTION 080671

DOOR HARDWARE SCHEDULE 080671 - 9

CROSSROADS CENTER HEADQUARTERS  
CINCINNATI, OH

3 Hinge (heavy weight)	TA43786 (Qty & size per spec, NRP as req'd)	US26D	MK
1 Rim Exit Device, Classroom/Storeroom	6100ED AU426F	630	YA
1 Surface Closer	5801 (mount as req'd)	689	YA
1 Kick Plate	K1050 - 10" x 2" LDW x 4BE x CSK	US32D	RO
1 Wall Stop	400 Series	US32D	RO
1 Gasketing	S88D		PE

**Set: 7.0**

Doors: 121C			
6 Hinge, Full			

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**Area Based Occupant Load - First Floor (for Egress Design)**

#	Name	Area	Occ/SF	OLF GrossNet	Persons
100	VESTIBULE	78 SF	100 SF	Gross	1
101A	FAMILY WAITING	108 SF	100 SF	Gross	2
101B	WAITING	166 SF	100 SF	Gross	2
102	RECEPTION	288 SF	100 SF	Gross	3
103	CHECK-IN	254 SF	100 SF	Gross	3
104	PUBLIC RR	52 SF	0 SF		
105	WAITING	166 SF	100 SF	Gross	2
107	PRIVATE CHECK-IN	54 SF	100 SF	Gross	1
108	PATIENT RESTROOM	53 SF	0 SF		
109	CLINICAL GROUP RM	476 SF	15 SF	Net	32
110	CORRIDOR	513 SF	0 SF		
111	IOP GROUP ROOM	506 SF	15 SF	Net	34
112	STORAGE	41 SF	300 SF	Gross	1
113	CORRIDOR	467 SF	0 SF		
114	INTAKE OFFICE	137 SF	100 SF	Gross	2
115	INTAKE ASSESS OFFICE	127 SF	100 SF	Gross	2
116	INTAKE COORD OFFICE	130 SF	100 SF	Gross	2
117	STAIR	173 SF	0 SF		
118	RECEIVING	211 SF	300 SF	Gross	1
119	IOP COUNSELOR	101 SF	100 SF	Gross	2
120	DOSING	274 SF	100 SF	Gross	3
121	DOSING/ PHARMACY	477 SF	100 SF	Gross	5
122	STORAGE	36 SF	300 SF	Gross	1
123	ESR	46 SF	300 SF	Gross	1
124	STAFF TOILET	58 SF	0 SF		
125	STAFF TOILET	58 SF	0 SF		
126	RESIDENT CORRIDOR	316 SF	0 SF		
127	PATIENT RR	55 SF	0 SF		
128	ELECTRIC / DATA	91 SF	300 SF	Gross	1
129	MEP	81 SF	300 SF	Gross	1
130	DINING ROOM	527 SF	15 SF	Net	36
130A	OUTDOOR PATIO	224 SF	15 SF	Net	15
131	SERVERY	224 SF	200 SF	Gross	2
132	DATA	26 SF	300 SF	Gross	1
133	CORRIDOR	730 SF	0 SF		
134	OFFICE	120 SF	100 SF	Gross	2
135	OFFICE	120 SF	100 SF	Gross	2
136	OFFICE	103 SF	100 SF	Gross	2
137	CONSULT	104 SF	100 SF	Gross	2
138	CARE COORDINATOR	104 SF	100 SF	Gross	2
139	OFFICE MANAGER	104 SF	100 SF	Gross	2
140	CONSULT	101 SF	100 SF	Gross	1
141	PEER SUPPORT	104 SF	100 SF	Gross	2
142	CONSULT	101 SF	100 SF	Gross	2
143	CONSULT	104 SF	100 SF	Gross	2
144	CONSULT	101 SF	100 SF	Gross	2
145	CONSULT	104 SF	100 SF	Gross	2
146	CONSULT	103 SF	100 SF	Gross	2
147	CONSULT	104 SF	100 SF	Gross	2
148	CONSULT	105 SF	100 SF	Gross	2
149	STAIR	176 SF	0 SF		
150	OFFICE	97 SF	100 SF	Gross	1
151	COPY RM / WORK RM	95 SF	100 SF	Gross	1
152	STORAGE	30 SF	300 SF	Gross	1
153	PATIENT RESTROOM	53 SF	0 SF		
154	PATIENT RESTROOM	53 SF	0 SF		
155	CORRIDOR	303 SF	0 SF		
156	LAB / BLOOD DRAW	117 SF	100 SF	Gross	2
157	STORAGE	23 SF	300 SF	Gross	1
158	CONSULT	105 SF	100 SF	Gross	2
159	EXAM	115 SF	100 SF	Gross	2
160	CLEAN STORAGE	7 SF	300 SF	Gross	1
161	EXAM	105 SF	100 SF	Gross	2
162	CONSULT	109 SF	100 SF	Gross	2

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**GENERAL NOTES - CODE PLAN**

- A. ALL FIRE RATED PARTITIONS IN DWELLING UNIT CORRIDOR AND DWELLING UNIT SEPARATION WALLS SHALL BE 5/8" TYPE "X" GYPSUM BOARD, EACH SIDE, OVER 2x4 OR 2x6 WOOD STUDS. (1) HOUR PER UL U327 OR U305
- B. ALL FIRE RATED STAIR AND ELEVATOR SHAFT WALLS SHALL BE 6" CMU AND RATED FOR (1) HOUR PER UL U305.
- C. ALL FLOOR-CEILING ASSEMBLIES ABOVE AND BELOW DWELLING UNITS SHALL BE RATED FOR (1) HOUR PER UL L528

**SHEET KEYNOTES**

- 10K FIRE EXTINGUISHER IN SEMI RECESSED FIRE EXTINGUISHER CABINET

**CODE INFORMATION**

**APPLICABLE CODES**

Building: Cincinnati Building Code  
 2024 Ohio Building Code  
 Fire Safety: Ohio Fire Code  
 Mechanical: 2024 Ohio Mechanical Code  
 Electric: 2024 National Electric Code  
 Plumbing: 2024 Ohio Plumbing Code  
 Accessibility: 2024 Ohio Building Code & 2017 ICC A117.1  
 Zoning: Cincinnati Zoning Code

**BUILDING DEPARTMENT:**

City of Cincinnati, Ohio

**Chapter 3**

Section 302: Classification

First Floor = B Business

Second Floor = B Business

R-2 Residential (Boarding House [nontransient] and SRO [single room occupancy, nontransient])  
 • Residential occupants are permanent in nature as described in Section 310.3. The average length of stay for residential occupants is over 30 days.

Third Floor = B Business

R-2 Residential (Boarding House [nontransient] and SRO [single room occupancy, nontransient])  
 • Residential occupants are permanent in nature as described in Section 310.3. The average length of stay for residential occupants is over 30 days.

Non-Separated Mixed Use

**Chapter 5**

Section 504: Building Height:

Table 504.3 Allowable Height

Allowable = 60'-0" Proposed = 52'-0"

Section 504: Building Number of Stories:

Table 504.4 Stories above Grade Plane

Allowable = 3 Stories Proposed = 3 Stories

Section 506: Building Area:

Table 506.2 Allowable area per floor

Allowable = 21,000 sf  
 Proposed:  
 First floor = 11,280 sf  
 Second floor = 9,057 sf  
 Third floor = 9,027 sf

**Chapter 6**

Section 601 Construction Type:

Type VB

Fire Resistance Rating Requirements for Building Elements:

Table 601

Primary Structural Frame: 0 Hours  
 Bearing Walls Exterior: 0 Hours  
 Bearing Walls Interior: 0 Hours  
 Nonbearing Exterior Walls: 0 Hours  
 Nonbearing Interior Walls: 0 Hours  
 Floor Construction: 0 Hours  
 Roof Construction: 0 Hours

**Chapter 7**

Section 705.5 Fire-Resistance Ratings:

Table 705.5 Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance

0 Hour rated 10 ≤ X < 30 fire separation distance

Section 705.6 Openings:

Table 705.6 Maximum Area of Exterior Wall Openings Based on Fire Separation Distance and Degree of Opening Protection

Where exterior wall is 10 to less than 15 ft, openings are less than 45% of wall. All other walls with openings have no limit.

Section 708 Fire Partitions:

Dwelling Unit Separation Walls: Required 30 Minutes; Provided 1 Hr  
 Dwelling Unit Corridor Walls: Required 30 Minutes; Provided 1 Hr

Section 711.2 Horizontal Assemblies:

Horizontal Assemblies between Dwelling Units: Required 30 Minutes per the 711.2.4.3 Exception; Provided 1 Hr

Section 713: Shaft Enclosures

1 Hour where connecting three stories

**Chapter 9**

Section 903 Fire Suppression:

NFPA 13 Fire Suppression will be provided throughout the building. Concealed combustible interstitial spaces for the floor/ceiling and roof/ceiling assemblies shall be protected in accordance with NFPA 13 to comply with the draftstopping exceptions in 718.3 and 718.4.

Section 906 Portable Fire Extinguishers:

A portable Fire Extinguisher will be provided in each unit.

Section 907 Fire Alarm and Detection Systems:

A fire alarm system will be provided throughout the building

**Chapter 10**

Table 1006.2.1 Spaces With One Exit or One Exit Access Doorway

Maximum common path of travel

R-1 use: 75'-0"

Business use: 100'-0"

Section 1009.3 Stairways

Accessible stair width (48" clear) and area of refuge DO NOT apply due to automatic sprinkler system exception

Section 1020.5 Dead Ends

Max 50'-0" dead end corridor with NFPA 13 sprinkler

Section 1023 Interior Exit Stairways & Ramps

Stair Enclosures: 1 Hour where connecting three stories

Section 1031 Emergency Escape and Rescue

R-2 Sleeping rooms below 4th floor to have emergency escape and rescue opening (window with 5.7 sf clear opening)

**LIFE SAFETY PLAN LEGEND**

- FIRE PARTITION - 1/2 HOUR REQUIRED (1 HOUR PROVIDED) TYPICAL BETWEEN RESIDENTIAL UNITS & CORRIDORS
- FIRE BARRIER - 1 HOUR
- NON RATED ASSEMBLY - PARTITION WALL
- (X - X) EGRESS PATH - (X - X) EQUALS TRAVEL DISTANCE
- MAXIMUM EXIT ACCESS TRAVEL DISTANCE DOES NOT EXCEED = 250'
- SEE ELECTRICAL PLANS FOR EXIT LIGHTS

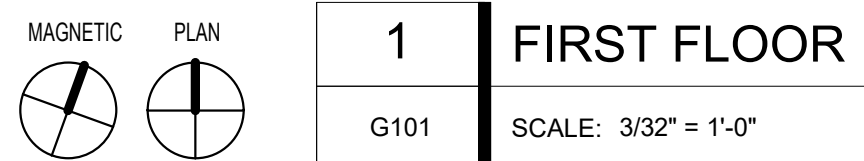
**UNIT MATRIX:**

TOTAL UNITS = 16  
 (THIRD FLOOR = 6)  
 (SECOND FLOOR = 10)  
 (FIRST FLOOR = 0)

SINGLE - TYPE 'A' UNITS = 2  
 (THIRD FLOOR = 1)  
 (SECOND FLOOR = 1)  
 (FIRST FLOOR = 0)

SINGLE UNITS (TYPE 'B') = 4  
 (THIRD FLOOR = 1)  
 (SECOND FLOOR = 3)  
 (FIRST FLOOR = 0)

DOUBLE UNITS = 10  
 (THIRD FLOOR = 4)  
 (SECOND FLOOR = 6)  
 (FIRST FLOOR = 0)



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 (859)431-8612 Newport, KY 41071



EMMA ADKISSON, LIC# 2118357  
 EXPIRATION DATE 12/31/2025

**The Crossroads Center**  
 2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
PERMIT SET		08/09/24

**LIFE SAFETY PLANS**

23-056

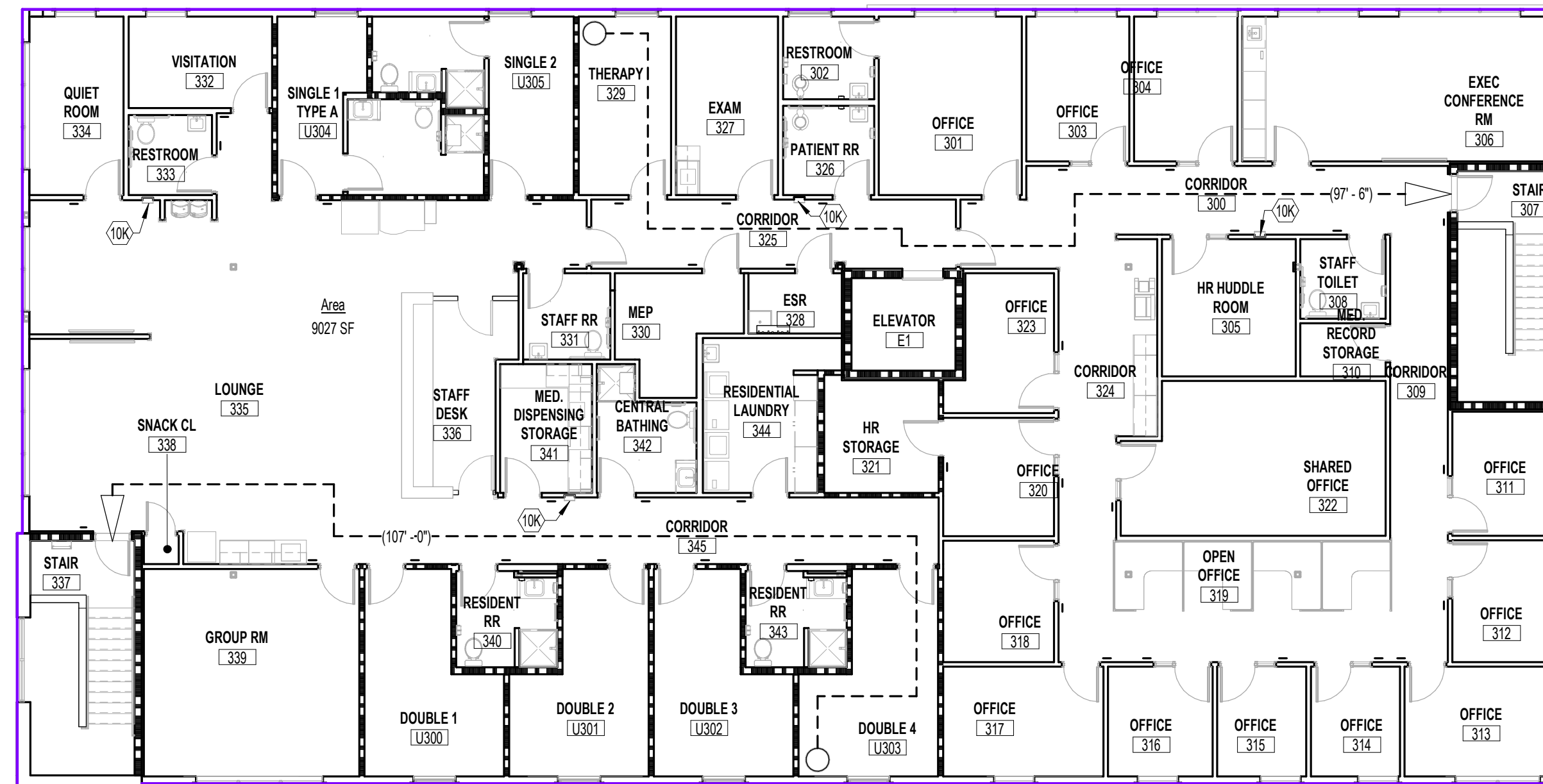
**G101**

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Area Based Occupant Load - Third Floor (for Egress Design)

#	Name	Area	Occ/SF	OLF GrossNet	Persons
300	CORRIDOR	268 SF	0 SF		
301	OFFICE	192 SF	100 SF	Gross	2
302	RESTROOM	57 SF	0 SF		
303	OFFICE	112 SF	100 SF	Gross	2
304	OFFICE	113 SF	100 SF	Gross	2
305	HR HUDDLE ROOM	138 SF	15 SF	Net	10
306	EXEC CONFERENCE RM	349 SF	15 SF	Net	24
307	STAIR	175 SF	0 SF		
308	STAFF TOILET	51 SF	0 SF		
309	CORRIDOR	131 SF	0 SF		
310	MED. RECORD STORAGE	34 SF	300 SF	Gross	1
311	OFFICE	103 SF	100 SF	Gross	2
312	OFFICE	101 SF	100 SF	Gross	1
313	OFFICE	130 SF	100 SF	Gross	2
314	OFFICE	74 SF	100 SF	Gross	1
315	OFFICE	74 SF	100 SF	Gross	1
316	OFFICE	86 SF	100 SF	Gross	1
317	OFFICE	132 SF	100 SF	Gross	2
318	OFFICE	101 SF	100 SF	Gross	2
319	OPEN OFFICE	360 SF	100 SF	Gross	4
320	OFFICE	99 SF	100 SF	Gross	1
321	HR STORAGE	98 SF	300 SF	Gross	1
322	SHARED OFFICE	290 SF	100 SF	Gross	3
323	OFFICE	99 SF	100 SF	Gross	1
324	CORRIDOR	184 SF	0 SF		
325	CORRIDOR	189 SF	0 SF		
326	PATIENT RR	61 SF	0 SF		
327	EXAM	137 SF	100 SF	Gross	2
328	ESR	42 SF	300 SF	Gross	1
329	THERAPY	124 SF	100 SF	Gross	2
330	MEP	81 SF	300 SF	Gross	1
331	STAFF RR	57 SF	0 SF		
332	VISITATION	99 SF	100 SF	Gross	1
333	RESTROOM	50 SF	0 SF		
334	QUIET ROOM	126 SF	100 SF	Gross	2
335	LOUNGE	1139 SF	15 SF	Net	76
336	STAFF DESK	131 SF	100 SF	Gross	2
337	STAIR	178 SF	0 SF		
338	SNACK CL	7 SF	0 SF		
339	GROUP RM	336 SF	15 SF	Net	23
340	RESIDENT RR	70 SF	0 SF		
341	MED. DISPENSING STORAGE	89 SF	300 SF	Gross	1
342	CENTRAL BATHING	79 SF	0 SF		
343	RESIDENT RR	70 SF	0 SF		
344	RESIDENTIAL LAUNDRY	138 SF	300 SF	Gross	1
345	CORRIDOR	267 SF	0 SF		
U300	DOUBLE 1	176 SF	50 SF	Gross	4
U301	DOUBLE 2	175 SF	50 SF	Gross	4
U302	DOUBLE 3	176 SF	50 SF	Gross	4
U303	DOUBLE 4	175 SF	50 SF	Gross	4
U304	SINGLE 1 - TYPE A	197 SF	200 SF	Gross	1
U305	SINGLE 2	185 SF	200 SF	Gross	1

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MAGNETIC PLAN  
**2** THIRD FLOOR  
 G102 SCALE: 3/32" = 1'-0"

GENERAL NOTES - CODE PLAN

- A. ALL FIRE RATED PARTITIONS IN DWELLING UNIT CORRIDOR AND DWELLING UNIT SEPARATION WALLS SHALL BE 5/8" TYPE "X" GYPSUM BOARD, EACH SIDE. OVER 2x4 OR 2x6 WOOD STUDS. (1) HOUR PER UL U305
- B. ALL FIRE RATED STAIR AND ELEVATOR SHAFT WALLS SHALL BE 8" CMU AND RATED FOR (1) HOUR PER UL U905.
- C. ALL FLOOR-CEILING ASSEMBLIES ABOVE AND BELOW DWELLING UNITS SHALL BE RATED FOR (1) HOUR PER UL L526

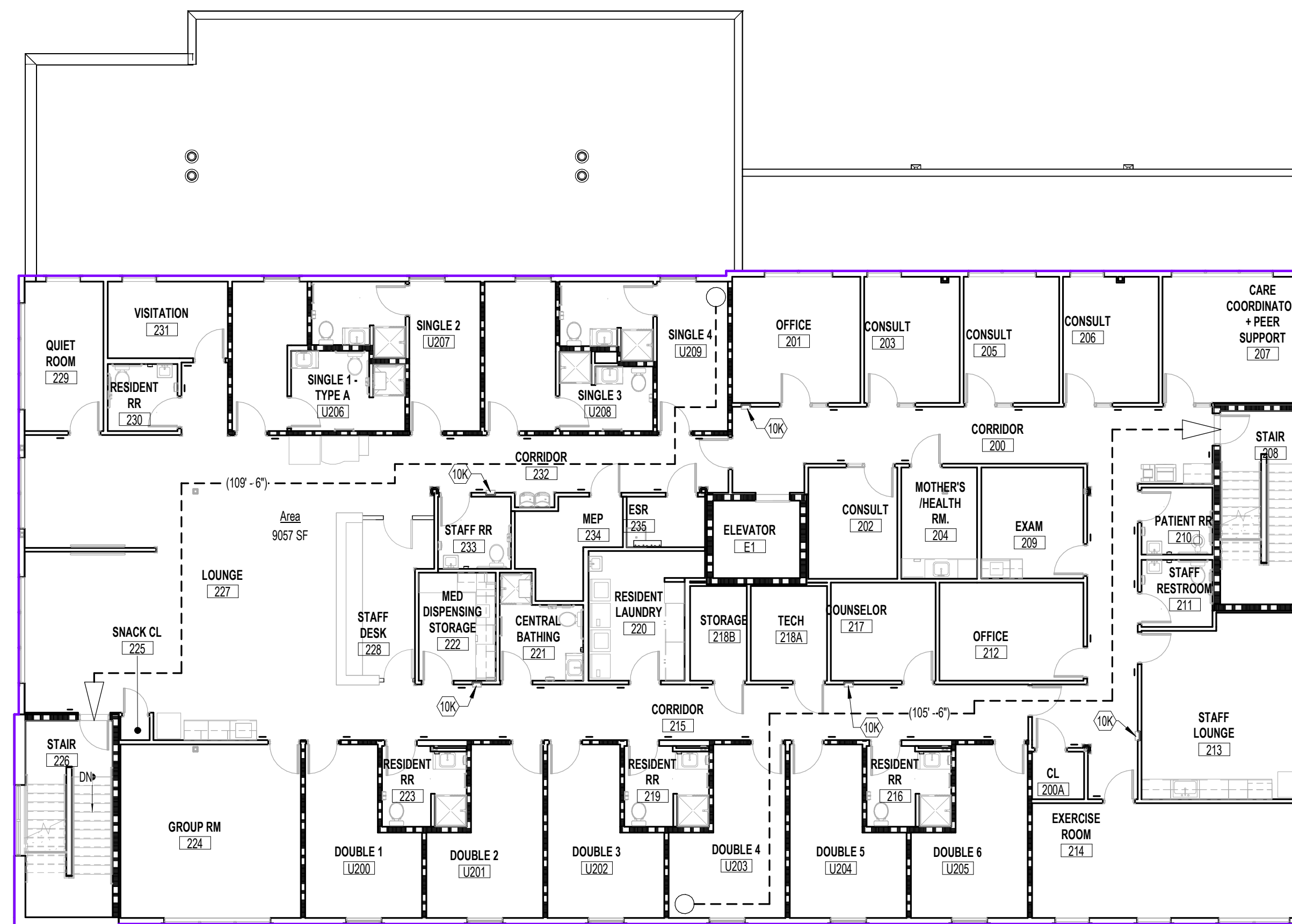
SHEET KEYNOTES

10K FIRE EXTINGUISHER IN SEMI RECESSED FIRE EXTINGUISHER CABINET

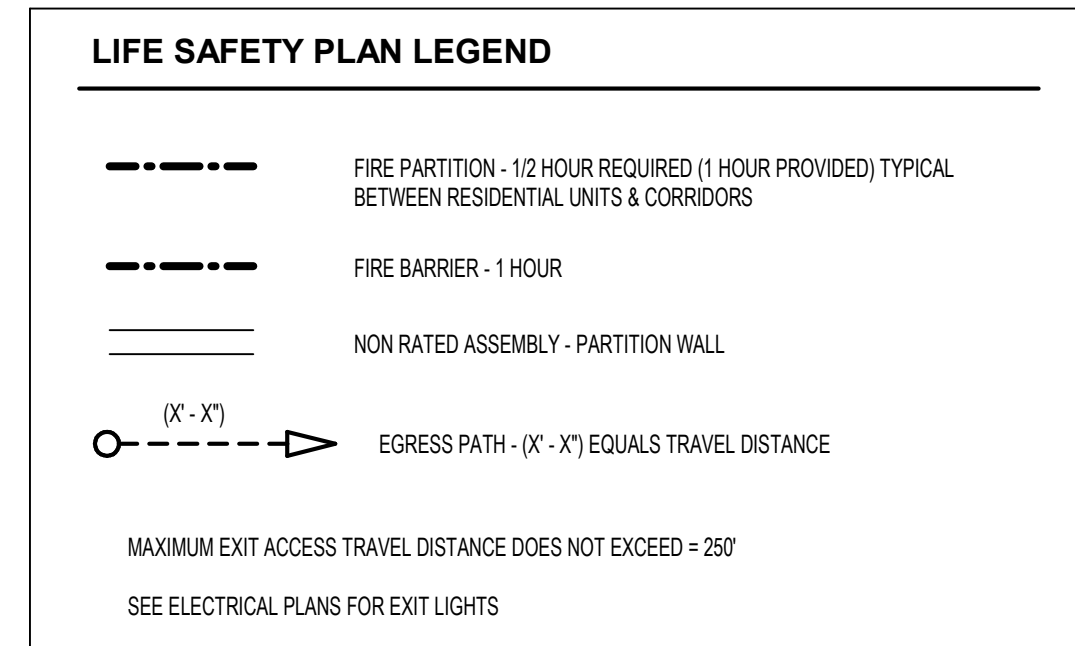
Area Based Occupant Load - Second Floor (for Egress Design)

#	Name	Area	Occ/SF	OLF GrossNet	Persons
200	CORRIDOR	550 SF	0 SF		
200A	CL	27 SF	0 SF		
201	OFFICE	173 SF	100 SF	Gross	2
202	CONSULT	106 SF	100 SF	Gross	2
203	CONSULT	129 SF	100 SF	Gross	2
204	MOTHER'S HEALTH RM.	90 SF	100 SF	Gross	1
205	CONSULT	129 SF	100 SF	Gross	2
206	CONSULT	129 SF	100 SF	Gross	2
207	CARE COORDINATOR + PEER SUPPORT	197 SF	100 SF	Gross	2
208	STAIR	175 SF	0 SF		
209	EXAM	121 SF	100 SF	Gross	2
210	PATIENT RR	51 SF	0 SF		
211	STAFF RESTROOM	51 SF	0 SF		
212	OFFICE	151 SF	100 SF	Gross	2
213	STAFF LOUNGE	319 SF	15 SF	Net	22
214	EXERCISE ROOM	340 SF	50 SF	Gross	7
215	CORRIDOR	413 SF	0 SF		
216	RESIDENT RR	70 SF	0 SF		
217	COUNSELOR	110 SF	100 SF	Gross	2
218A	TECH	77 SF	300 SF	Gross	1
218B	STORAGE	58 SF	300 SF	Gross	1
219	RESIDENT RR	70 SF	0 SF		
220	CENTRAL LAUNDRY	139 SF	300 SF	Gross	1
221	CENTRAL BATHING	79 SF	0 SF		
222	MED DISPENSING STORAGE	89 SF	300 SF	Gross	1
223	RESIDENT RR	70 SF	0 SF		
224	GROUP RM	336 SF	15 SF	Net	23
225	SNACK CL	7 SF	0 SF		
226	STAIR	178 SF	0 SF		
227	LOUNGE	1022 SF	15 SF	Net	69
228	STAFF DESK	131 SF	100 SF	Gross	2
229	QUIET ROOM	126 SF	100 SF	Gross	2
230	RESIDENT RR	50 SF	0 SF		
231	VISITATION	99 SF	100 SF	Gross	1
232	CORRIDOR	268 SF	0 SF		
233	STAFF RR	57 SF	0 SF		
234	MEP	84 SF	300 SF	Gross	1
235	ESR	42 SF	300 SF	Gross	1
U200	DOUBLE 1	176 SF	50 SF	Gross	4
U201	DOUBLE 2	175 SF	50 SF	Gross	4
U202	DOUBLE 3	176 SF	50 SF	Gross	4
U203	DOUBLE 4	175 SF	50 SF	Gross	4
U204	DOUBLE 5	176 SF	50 SF	Gross	4
U205	DOUBLE 6	175 SF	50 SF	Gross	4
U206	SINGLE 1 - TYPE A	197 SF	200 SF	Gross	1
U207	SINGLE 2	185 SF	200 SF	Gross	1
U208	SINGLE 3	186 SF	200 SF	Gross	1
U209	SINGLE 4	186 SF	200 SF	Gross	1

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MAGNETIC PLAN  
**1** SECOND FLOOR  
 G102 SCALE: 3/32" = 1'-0"



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 (859)431-8612 Newport, KY 41071



EMMA ADKISSON, LIC# 2118357  
 EXPIRATION DATE 12/31/2025

**The Crossroads Center**  
 2114 Reading Road, Cincinnati, Ohio

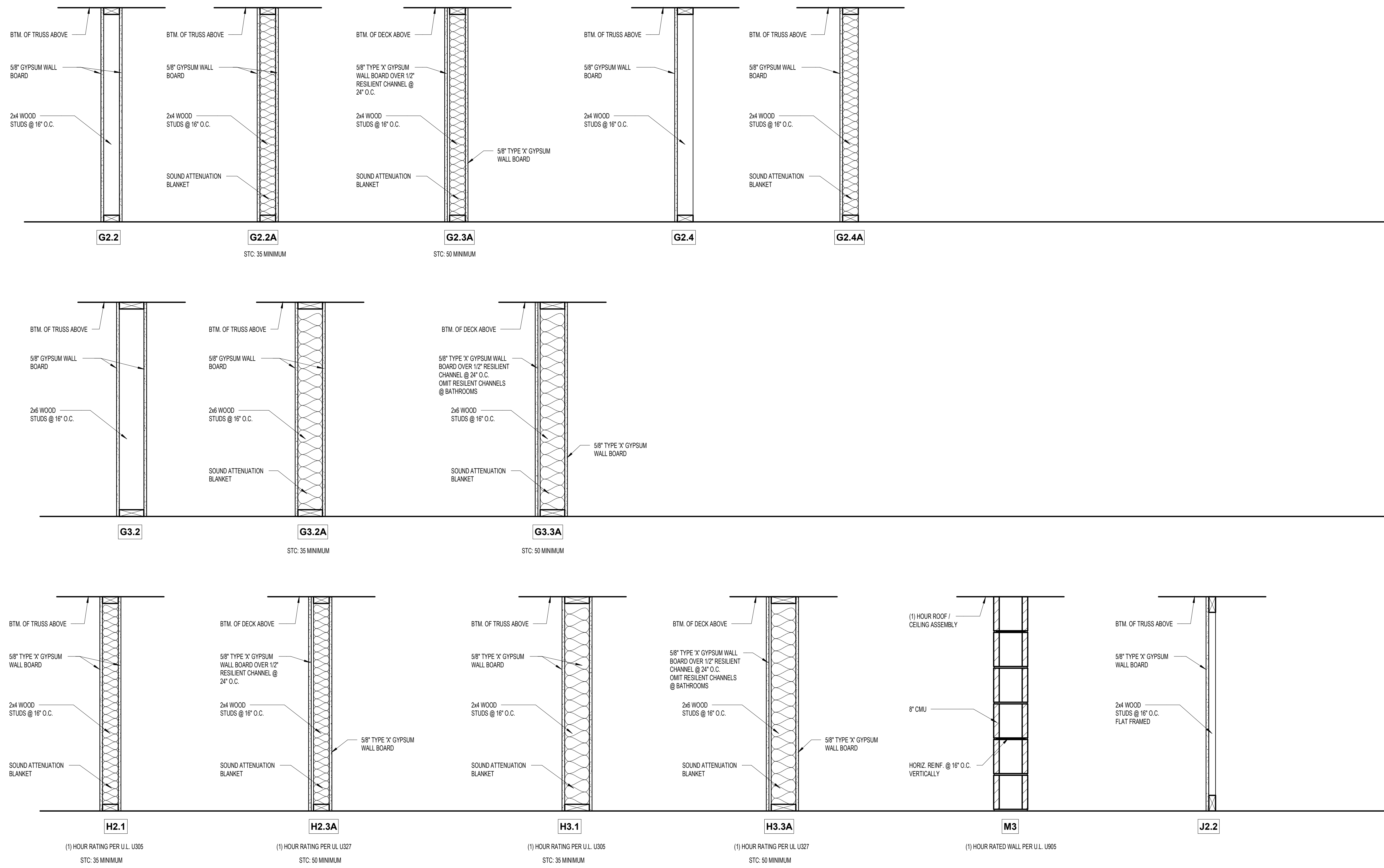
NO.	DESCRIPTION	DATE
	PERMIT SET	08/09/24

LIFE SAFETY PLANS

23-056

**G102**

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**1** WALL TYPE SECTIONS  
G103 SCALE: 1" = 1'-0"



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2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
	PERMIT SET	08/09/24

WALL TYPES AND UL ASSEMBLIES

23-056

**G103**

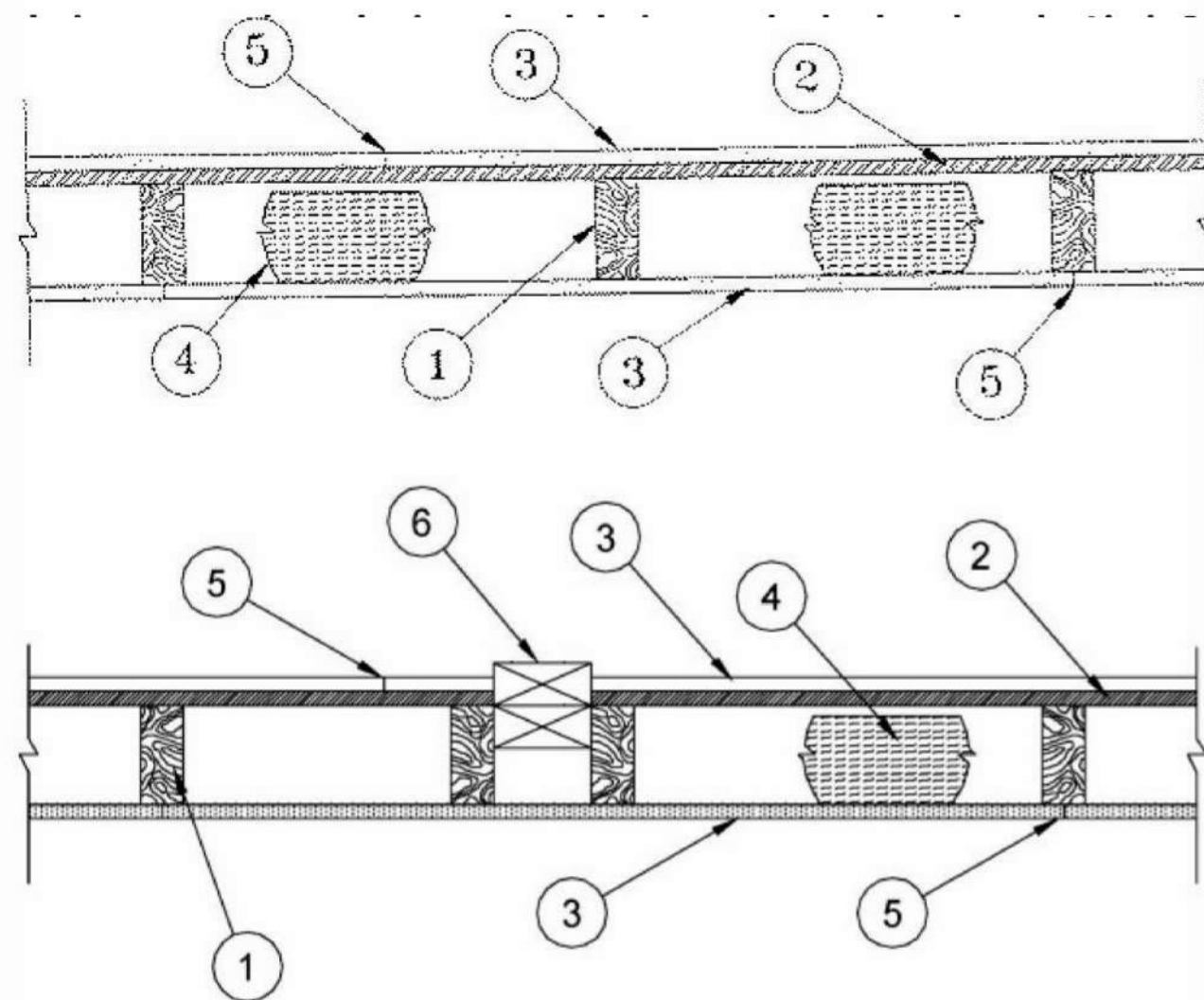
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## ONE HOUR WALL ASSEMBLY: U.L. #U327

Design No. U327

November 20, 2019

**Bearing Wall Rating — 1 Hr**  
**Finished Rating — 23 Min**



- Wood Studs** — Nom 2 by 4 in. spaced 16 or 24 in. OC. Effectively cross braced.
- Furring Channel** — Resilient, 25 MSG galv steel. Furring channels spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long diamond shaped point, double lead Phillips head steel screws.
- Gypsum Board\*** — 5/8 in. thick, 4 ft wide applied vertically. Screw attached one side to furring channels with 1 in. long, self-drilling, self-tapping Type S or S-12 steel screws spaced 8 in. OC, vertical joints located midway between studs. Wallboard attached on other side directly to studs with 1-1/4 in. long diamond shaped point, double lead Phillips head steel screws spaced 12 in. OC, vertical joints located over studs.  
**AMERICAN GYPSUM CO** — Types AGX-1, M-Glass, AG-C, LightRoc  
**CGC INC** — Types C, SCX, SHX, FRX-G, IP-X1, IP-X2, IPC-AR, ULIX, ULX  
**PANEL REY S A** — Type PRX  
**UNITED STATES GYPSUM CO** — Types C, SCX, SHX, ULIX, ULLX, FRX-G, IP-X1, IP-X2, IPC-AR
- Batts and Blankets\*** — 3-1/2 in. thick mineral wool batts, placed to fill interior of wall, attached to the 4 in. face of the studs with staples placed 24 in. OC.  
**ROCKWOOL** — Type SAFESOUND  
**THERMAFIBER INC** — Type SAFB, SAFB FF
- Glass Fiber Insulation** — (As an alternate to Item 4) — 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, friction-fitted to fill the interior of the wall.  
See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.
- Joints and Screw Heads** — Gypsum board joints covered with paper tape and joint compound. Screw heads covered with joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape.

GA FILE NO. RC 2601	GENERIC	1 HOUR FIRE
<b>GYPSUM WALLBOARD, WOOD JOISTS, ROOF COVERING</b>		
Base layer 5/8" type X gypsum wallboard applied at right angles to 2 x 10 wood joists 24" o.c. with 1 1/4" Type W or S drywall screws 24" o.c. Face layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to joists with 17/8" Type W or S drywall screws 12" o.c. at joints and intermediate joints and 1 1/2" Type G drywall screws 12" o.c. placed 2" back on either side of end joints. Joints offset 24" from base layer joints. Wood joists supporting 1/2" plywood with exterior glue applied at right angles to joists with 8d nails. Appropriate roof covering. <b>Ceiling provides one hour fire resistance protection for framing, including trusses.</b>		
		 Approx. Ceiling Weight: 5 psf Fire Test: FM FC 172, 2-25-72; ITS, 8-6-98

FM FC-172	UL L505
4 1 hr. FM FC-172 GA FC 5406 GA RC 2601 GA RC 2602	5 2 hr. UL L505 GA FC 5724
Base layer 5/8" (15.9 mm) Fire-Shield Wallboard attached with screws 24" o.c. (610 mm) to wood joists or trusses 24" o.c. (610 mm). Second layer 5/8" (15.9 mm) Fire-Shield Wallboard or 5/8" (15.9 mm) F.S. Soffit Board screw attached 12" o.c. (305 mm). 1/2" (12.7 mm) plywood floor. <b>Ceiling provides one hour fire resistance protection for wood framing.</b>	
5/8" (15.9 mm) Fire-Shield C Gypsum Wallboard, base layer nailed at right angles to 2 x 10 (38 mm x 241 mm) wood joists spaced 16" o.c. (406 mm), resilient furring channels spaced 24" o.c. (610 mm) and nailed through base board into and at right angles to joists. Face layer of 5/8" (15.9 mm) Fire-Shield C board screwed to furring channel. Nominal 1" (25.4 mm) T & G sub and finish floor. Optional floor systems consist of Floor Topping Mixture over plywood. Rating also applies with 5/8" (15.9 mm) Fire-Shield C Kal-Kore plaster base.	

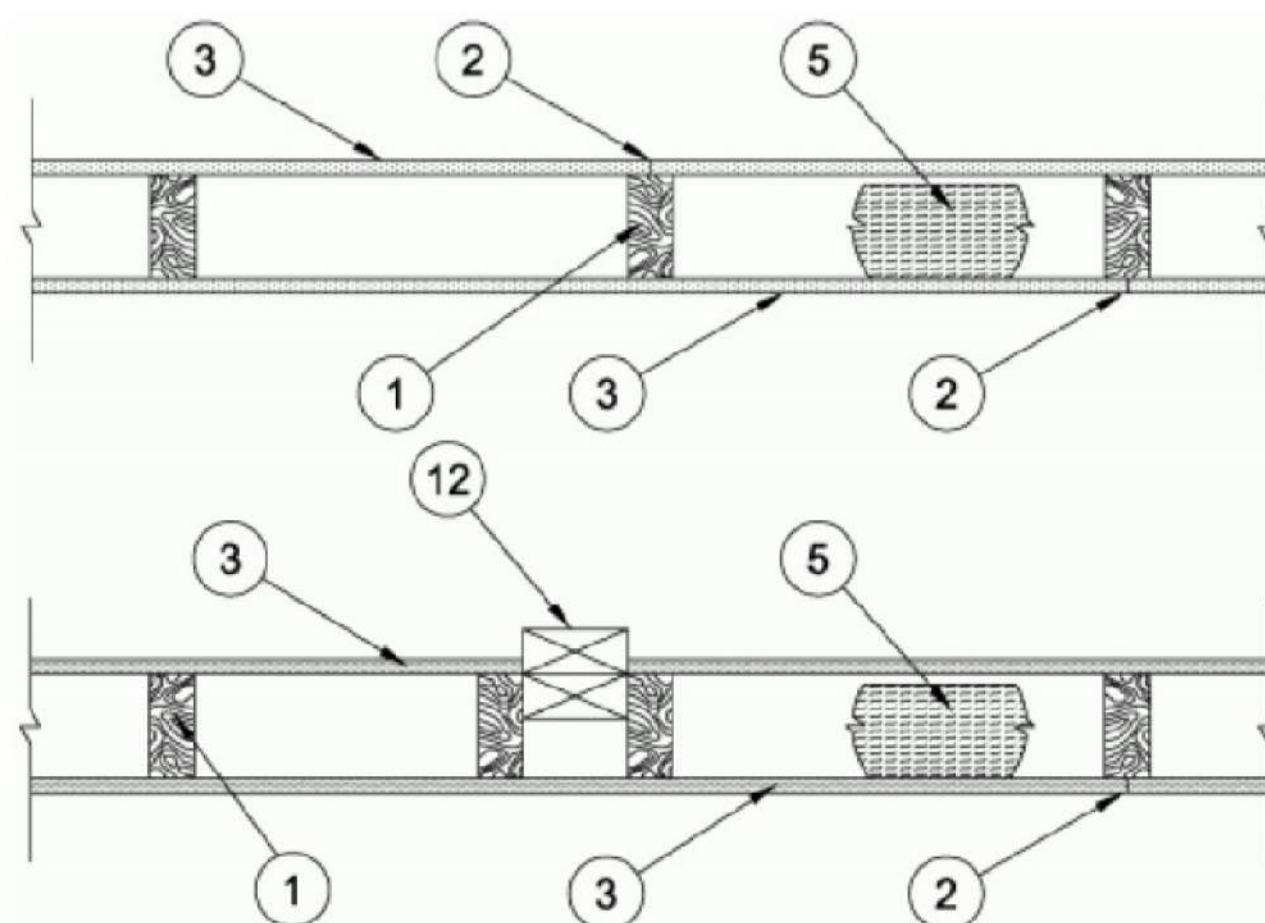
Design No. U305

May 27, 2022

**Bearing Wall Rating — 1 Hr**  
**Finish Rating — See Items 3, 3A, 3D, 3E, 3F, 3G, 3H, 3J and 3L.**  
**STC Rating - 56 (See Item 9)**

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUVZ

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



- Wood Studs** — Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.
- Joints and Nail-Heads** — Joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape. Nailheads exposed or covered with joint compound.
- Gypsum Board\*** — 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally. For an alternate method of attachment of gypsum panels, refer to Items 6 through 6F. **Steel Framing Members\***, are used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.  
When Item 6A, **Steel Framing Members\***, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC. Face layer attached to furring channels with 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC. All joints in face layers staggered with joints in base layers. One layer of gypsum board attached to opposite side of wood stud without furring channels as described in Item 3.  
When Item 7, resilient channels are used, 5/8 in. thick, 4 ft wide gypsum panels applied vertically. Screw attached furring channels with 1 in. long, self-drilling, self-tapping Type S or S-12 steel screws spaced 8 in. OC, vertical joints located midway between studs.

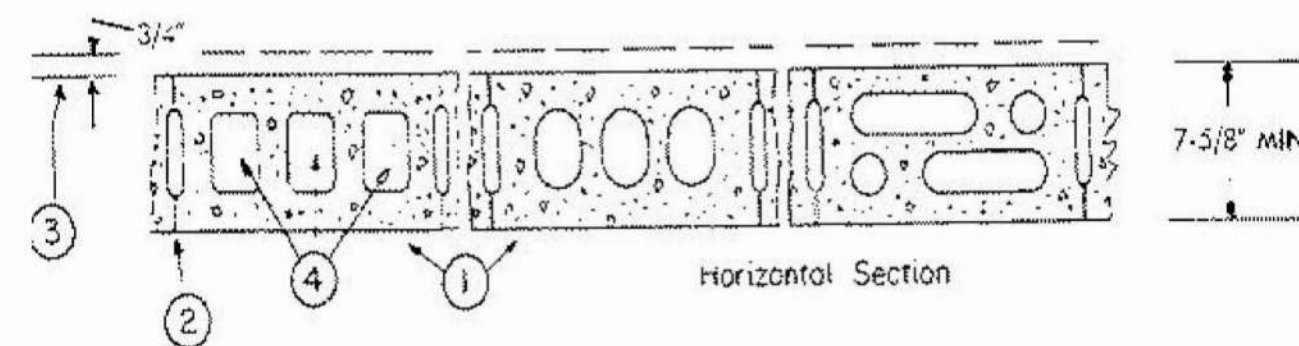
## TWO HOUR WALL ASSEMBLY: U.L. #U905

**Bearing Wall Rating — 2 HR.**

**Nonbearing Wall Rating — 2 HR**

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUVZ

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



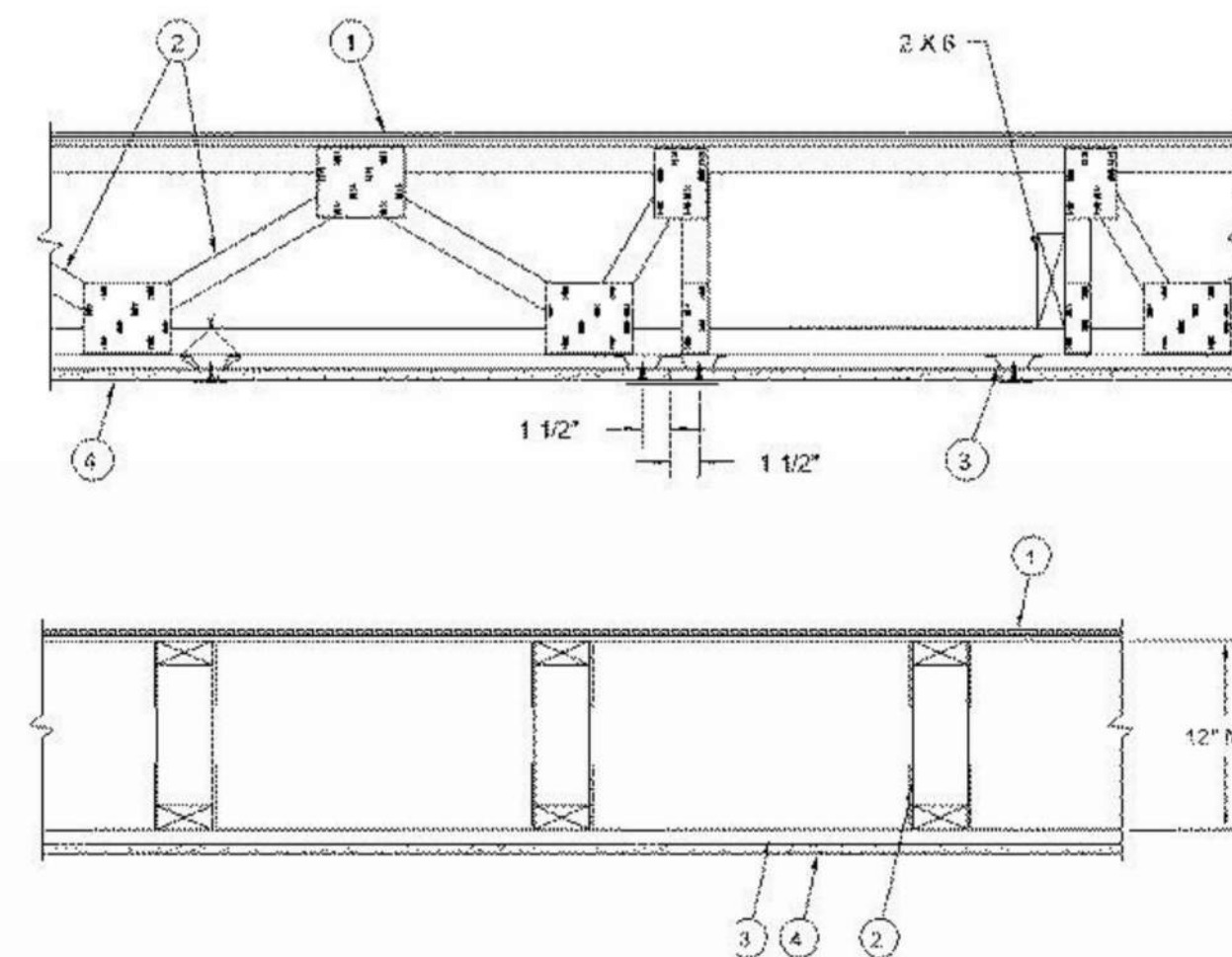
See **Concrete Blocks** category for list of eligible manufacturers.

- Mortar** — Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.
- Portland Cement Stucco or Gypsum Plaster** — Add 1/2 hr to classification if used. Where combustible members are framed in wall, plaster or stucco must be applied on the face opposite framing to achieve a max. Classification of 1-1/2 hr. Attached to concrete blocks (Item 1).
- Loose Masonry Fill** — If all core spaces are filled with loose dry expanded slag, expanded clay or shale (Rotary Klin Process), water repellent vermiculite masonry fill insulation, or silicone treated perlite loose fill insulation add 2 hr to classification.

Design No. L528

November 12, 2020

**Unrestrained Assembly Rating - 1 Hr.**  
**Finish Rating - 22 Min.**



1. **Flooring System** — The flooring system shall consist of one of the following:

**System No. 2**

- Subflooring** — Min 23/32 in. thick T & G wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with end joints staggered 4 ft. Panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.
- Vapor Barrier** — (Optional) — Commercial asphalt saturated felt, 0.030 in. thick.
- Vapor Barrier** — (Optional) — Nom 0.010 in. thick commercial rosin-sized building paper.
- Finish Flooring** — Min 3/4 in. thickness of lightweight insulating concrete with **Perlite Aggregate\*** or **Vermiculite Aggregate\***, or gypsum concrete.
- See **Perlite Aggregate** (CFFX) and **Vermiculite Aggregate** (CJZZ) categories for names of manufacturers.

- Trusses** — Parallel chord trusses, spaced a max 24 in. OC, fabricated from nom 2 by 4 in. lumber with lumber oriented vertically or horizontally. Min truss depth is 12 in. when item 9 is not employed. Min truss depth is 18 in. when item 9 is employed. Truss members secured together with min No. 20 MSG galv steel truss plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split-tooth-type plate. Each tooth has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each tooth has a twist for stiffness. The pairs are repeated on approx 7/8 in. centers with four rows of teeth per in. of plate width.
- Furring Channels** — Furring channels, 7/8 in. deep by 2-9/16 in. or 2-11/16 in. or 2-23/32 in. wide at the base and 1-7/16 in. wide at the face, formed from No. 25 ga galv steel, spaced 24 in. OC perpendicular to trusses. Channels secured to trusses with double strand of No. 18 SWG galv steel wire spaced 48 in. OC. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Two furring channels used at end joints of gypsum board (Item 4), each extending a min of 6 in. beyond both side edges of the board.
- Resilient Channels** — (Not Shown) — As an alternate to Item 3, resilient channel formed from No. 26 MSG galv steel, spaced 16 in. OC perpendicular to trusses. Channels secured to each truss with 1-1/4 in. long No. 6 Type S bugle head steel screw. Channels overlapped at splices 4 in. Two resilient channels used at end joints of gypsum board (Item 4), each extending a min of 6 in. beyond both side edges of the board.
- Gypsum Board\*** — One layer of nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to furring or resilient channels. Gypsum board secured with 1 in. long No. 6 Type S bugle head steel screws spaced 12 in. OC and located a min of 1-1/2 in. from side and end joints. End joints secured to both resilient channels as shown in the end joint detail.

**AMERICAN GYPSUM CO** — Type AG-C

**CERTAINTED GYPSUM INC** — Type C

**CGC INC** — Types C, IP-X2, IPC-AR

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** — Type LGFC-C/A

**GEORGIA-PACIFIC GYPSUM L L C** — Types 5, DAPC, TG-C

**NATIONAL GYPSUM CO** — Types eXP-C, FSK-C, FSW-C, FSW-G

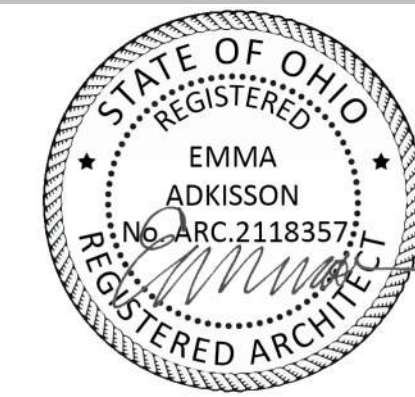
**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** — Type C

**THAI GYPSUM PRODUCTS PCL** — Type C

**UNITED STATES GYPSUM CO** — Types C, IP-X2, IPC-AR



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EMMA ADKISSON, LIC# 2118357  
EXPIRATION DATE 12/31/2025

**The Crossroads Center**  
2114 Reading Road, Cincinnati, Ohio

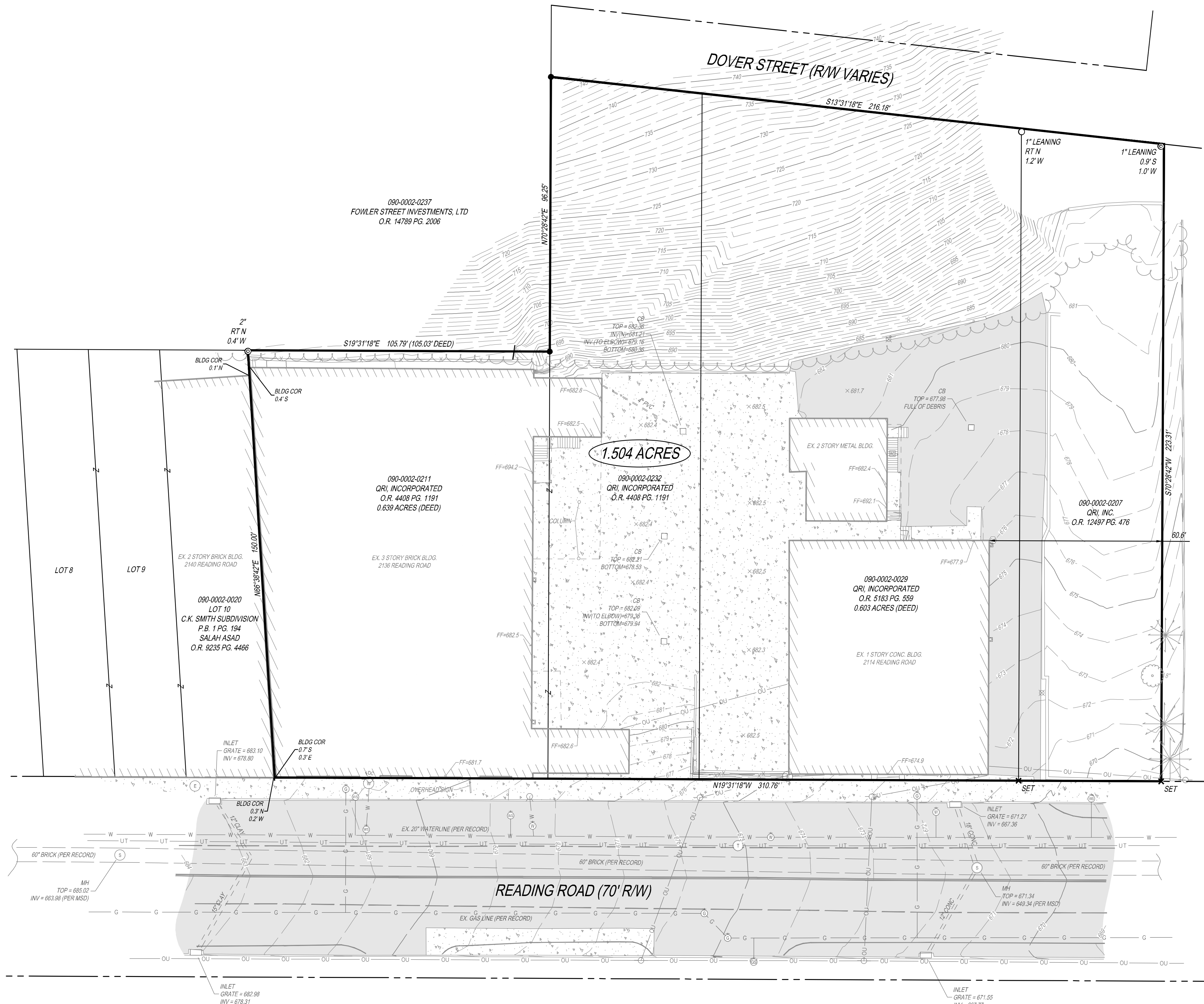
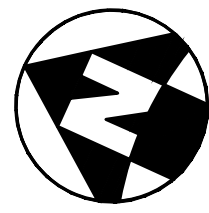
NO.	DESCRIPTION	DATE
PERMIT SET		08/09/24

UL ASSEMBLIES

23-056

**G104**





VICINITY MAP  
N.T.S.

**LEGEND**

- ✕ CROSS NOTCH
- I NOTCH FOUND
- ⊗ PIPE FOUND (SIZE AS NOTED)
- IRON PIN FOUND (SIZE AS NOTED)
- 5/8" IRON PIN SET (KLEINGERS)
- CATCH BASIN
- ▣ DOWNSPOUT
- INLET
- ⊙ SANITARY MANHOLE
- ⊞ AIR CONDITIONING UNIT
- ⊕ ELECTRIC MANHOLE
- UTILITY POLE
- ⊙ SATELLITE DISH
- ⊙ GAS SERVICE
- ⊙ GAS VALVE
- ⊙ FIRE DEPARTMENT CONNECTION
- ⊙ FIRE HYDRANT
- ⊙ WATER MANHOLE
- ⊙ WATER SERVICE
- ⊙ WATER VALVE
- ⊙ TELEPHONE MANHOLE
- ⊙ FENCE POST
- ⊙ GUARD POST
- ⊙ SIGN (SINGLE POST)
- FENCE LINE
- TREE LINE
- OU OVERHEAD UTILITY
- UT UNDERGROUND TELEPHONE
- G GAS LINE
- W WATER LINE
- SANITARY SEWER
- STORM SEWER
- ASPHALT
- CONCRETE

**NOTES:**

1. SOURCE DOCUMENTS AS NOTED.
2. OCCUPATION IN GENERAL FITS SURVEY.
3. MONUMENTATION IS IN GOOD CONDITION UNLESS OTHERWISE NOTED.
4. ALL IRON PINS SET ARE 5/8" DIAMETER x 30" IRON REBAR WITH ID CAP STAMPED "KLEINGERS".
5. DISTANCE UNITS ARE BASED ON THE US SURVEY FOOT DEFINITION (1' = 1200/3837 METERS, OR APPROXIMATELY 1' = 0.30480061 METERS)
6. BEARINGS ARE BASED ON OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, AS DERIVED FROM THE OHIO DEPARTMENT OF TRANSPORTATION'S REAL TIME NETWORK (RTN) . (NAD 83 - 2011)
7. ELEVATIONS ARE BASED ON NGVD 29, AS REFERENCED TO CITY OF CINCINNATI BENCHMARK NO. 7046 WITH AN ELEVATION OF 807.80.
8. SITE BENCHMARK AS SHOWN HEREON.

CIVIL ENGINEERING SURVEYING LANDSCAPE ARCHITECTURE  
www.kleingers.com  
6219 Centre Park Dr. West Chester, OH 45069  
513.779.7851

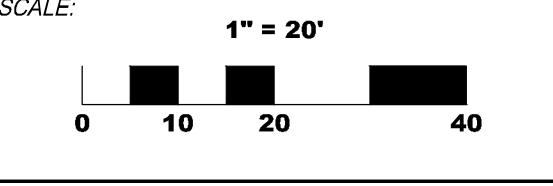
SEAL:

07/23/2024

NO.	DATE	DESCRIPTION
1	08/15/23	BASEMAP - KLJ
2	05/15/24	ADDITIONAL TOPO - ARI

**BOUNDARY AND TOPOGRAPHIC SURVEY**  
**1.504 ACRES**  
SECTION 7, TOWN 3, FR 2, MP  
CITY OF CINCINNATI  
HAMILTON COUNTY, OHIO  
FOR: PERSPECTUS

PROJECT NO: 230835VSD000  
DATE: 08/15/2023



SHEET NAME:  
**CROSSROADS CENTER**

SHEET NO.  
**1 OF 1**

**NOTE:**  
UNDERGROUND UTILITIES ARE PLOTTED FROM A COMPILATION OF AVAILABLE RECORD INFORMATION AND SURFACE INDICATIONS OF UNDERGROUND STRUCTURES AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY PROTECTION SERVICE AT 811 OR 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.



1:230835VSD000 - PROJECT INFORMATION CENTER (PAC) - 08/15/2023 11:12:12 AM

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Plot time: Aug 09, 2024 - 1:46pm  
Drawing name: J:\2023\23-0200\C\VDWG\23-0200 CD.dwg - Layout Tab: C100 - Site Notes

## SITE GENERAL NOTES

- WORK SHALL FOLLOW THE SPECIFICATIONS OF THE 2017 OHIO BUILDING CODE.
- CONTRACTOR SHALL FIELD-VERIFY THE DEPTH & LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK.
- ALL WORK SHALL BE COMPLETED ACCORDING TO CITY OF CINCINNATI DOTE STANDARDS OR ODOT C&M SPECIFICATIONS. IF A CONFLICT EXISTS, CITY STANDARDS PREVAIL.
- ITEM NUMBERS REFER TO THE CURRENT EDITION OF THE OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION & MATERIAL SPECIFICATIONS.
- SEE ARCHITECT'S PLANS FOR BUILDING FEATURES & FOUNDATION DIMENSIONS.

## SITE DEMOLITION NOTES

- THE TOPOGRAPHIC AND UTILITY INFORMATION SHOWN IS BASED ON A SURVEY PREPARED BY KLEINGERS GROUP, DATED AUGUST 2023. THE CONTRACTOR SHALL OBTAIN A COMPLETE COPY OF THE FINAL BASE MAP PRIOR TO BEGINNING WORK.
- APPROPRIATE UTILITY COMPANIES AND OHIO UTILITIES PROTECTION SERVICE (1-800-362-2764) SHALL BE NOTIFIED AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO BREAKING GROUND FOR THE PURPOSE OF VERIFYING BY FIELD INSPECTION THE EXACT LOCATION OF THE UNDERGROUND UTILITY.
- REMOVAL AND/OR RELOCATION OF ANY UTILITIES SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY AND SHALL BE DISCONNECTED PER THE ASSOCIATED UTILITY AGENCY'S REQUIREMENTS.
- THESE PLANS, AS PREPARED BY BAYER BECKER, DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE DEMOLITION/CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF BAYER BECKER'S REGISTERED PROFESSIONAL ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY U.S. OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
- ALL CONTRACTORS INCLUDING, BUT NOT LIMITED TO, THE DEMOLITION, EXCAVATION, PAVING, PLUMBING, ELECTRICAL, SIGN, FIRE PROTECTION, AND HVAC CONTRACTORS SHALL BE UNDER THE DIRECTION OF THE GENERAL CONTRACTOR OR OWNER WHO WILL BE HELD RESPONSIBLE FOR THE COORDINATION OF ALL WORK ON THIS PROJECT AND THE PROPER EXECUTION OF THE SAME.
- WHERE EXISTING GROUND COVER IS PRESENT, CONTRACTOR SHALL REMOVE THE TOPSOIL. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT GEOTECHNICAL ENGINEER FOR DEPTH OF TOPSOIL TO BE REMOVED.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES, FACILITIES, AND STRUCTURES THAT ARE INTENDED TO CONTINUE TO PROVIDE SERVICE (WHETHER SHOWN ON THE PLANS OR NOT).
- THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN AND VEHICULAR ACCESS TO ALL ADJACENT FACILITIES, INCLUDING BUILDINGS AND THOROUGFARES, DURING THE CONSTRUCTION PROCESS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING CITY PERMITS FOR TEMPORARY SIDEWALK AND LANE CLOSURES AS NEEDED.
- WHERE CONNECTING TO EXISTING ASPHALT OR CONCRETE PAVEMENT, THE CONTRACTOR SHALL SAWCUT THE EXISTING EDGE OF PAVEMENT (AT AN EXISTING JOINT IF POSSIBLE FOR CONCRETE) TO PROVIDE A SOUND & CLEAN EDGE. FOR ASPHALT, THE CONTRACTOR SHALL APPLY ITEM 407 TACK COAT TO THE ENTIRE CUT FACE OF EXISTING PAVEMENT PRIOR TO PLACEMENT OF THE PROPOSED PAVEMENT; FOR CONCRETE, AN EXPANSION JOINT MATERIAL SHALL BE APPLIED.
- AS SOON AS DEMOLITION WORK HAS BEEN COMPLETED AND APPROVED BY THE OWNER, EARTHWORK MAY BEGIN. THE FINAL GRADE IN AREAS OUTSIDE THE CONSTRUCTION SITE SHALL BE SUCH AS TO PRESENT A NEAT, WELL-DRAINED APPEARANCE, AND TO PREVENT WATER FROM DRAINING UNNECESSARILY ONTO ADJACENT FACILITIES.
- TRENCHES FROM THE REMOVAL OF EXISTING UTILITIES SHALL BE BACKFILLED AND COMPACTED PER THE SITE GEOTECHNICAL REPORT AND/OR THE RECOMMENDATION OF THE PROJECT GEOTECHNICAL ENGINEER.
- UNDERCUTTING OPERATIONS (DETAILED IN THE GEOTECHNICAL ENGINEER'S REPORT) SHALL BE PERFORMED UNDER THE DIRECTION OF THE PROJECT GEOTECHNICAL ENGINEER.
- ALL DIRT IMPORTED FROM OFFSITE TO BE USED AS STRUCTURAL FILL OR BACKFILL SHALL BE INSPECTED BY THE PROJECT GEOTECHNICAL ENGINEER (AND REPORTS PROVIDED TO OWNER) PRIOR TO PLACEMENT.
- ALL PAVEMENT AND SITE FEATURES TO BE REMOVED SHALL BE HAULED OFFSITE AT THE DIRECTION OF THE OWNER.

## MAINTENANCE OF TRAFFIC NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT STATE OF OHIO DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS, AND CURRENT STANDARD DRAWINGS, UNLESS OTHERWISE NOTED.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH ITEM 614 AND OTHER APPLICABLE PORTIONS OF THE C&M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF ODOTCD. LANE CLOSURES SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWINGS MT-97-10, MT-99-10.
- LOCAL TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGH THE USE OF FLAGGERS AND SAFETY CONES, AS DIRECTED BY THE CITY OF CINCINNATI DOTE.
- THE CONTRACTOR MUST COORDINATE THE WORK SO AS TO NOT INTERRUPT INGRESS AND EGRESS FROM AFFECTED PROPERTIES.
- IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THAT THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN WILL BE PUT INTO EFFECT UNTIL THE APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE CITY OF CINCINNATI DOTE.
- THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES.
- NO TRENCH SHALL BE LEFT OPEN OVERNIGHT. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED WORK SHALL BE PLATED OR BACKFILLED AT THE DIRECTION OF THE COUNTY ENGINEER.
- THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES LOCATED PRIOR TO BEGINNING CONSTRUCTION.

## SITE EROSION CONTROL NOTES

- THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES PRIOR TO DEMOLITION AND CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING EROSION CONTROL MEASURES PER THE OHIO EPA NPDES GENERAL PERMIT.
- BEST MANAGEMENT PRACTICES (BMPs) SHOWN ON PLANS SHALL BE REVISED OR IMPLEMENTED AS REQUIRED. CONTRACTOR SHALL MONITOR CONSTRUCTION BMPs AND PROVIDE ADDITIONAL BMPs AS REQUIRED TO PREVENT SEDIMENT RUNOFF FROM CONSTRUCTION SITE ONTO PAVEMENT AND NON-WORK AREAS.
- AT A MINIMUM, ALL EROSION AND SEDIMENT CONTROLS ON THE SITE SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN ONE HALF INCH OF RAIN PER 24 HOUR PERIOD. QUALIFIED INSPECTION PERSONNEL (THOSE WITH KNOWLEDGE AND EXPERIENCE IN THE INSTALLATION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROLS) SHALL CONDUCT THESE INSPECTIONS TO ENSURE THAT THE CONTROL PRACTICES ARE FUNCTIONAL AND TO EVALUATE WHETHER THE EROSION CONTROL IS ADEQUATE AND PROPERLY IMPLEMENTED OR WHETHER ADDITIONAL CONTROL MEASURES ARE REQUIRED. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. DISCHARGE LOCATIONS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION AND SEDIMENT CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO THE RECEIVING WATERS. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE VEHICLE TRACKING.
- SITE STABILIZATION SHALL BEGIN WITHIN 7 DAYS ON AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED FOR 14 DAYS.
- ALL MUD OR DEBRIS TRACKED ON EXISTING STREETS AND PARKING LOT PAVEMENT SHALL BE CLEANED AT THE END OF EACH DAY OR AS DIRECTED BY CITY OF CINCINNATI DOTE OR THE OWNER. PERIODIC STREET SWEEPING MAY BE REQUIRED.
- IN ADDITION TO ANY TEMPORARY EROSION, MUD, AND DEBRIS CONTROL DETAILS AND NOTES SHOWN ON THE PLANS, THE CONTRACTOR SHOULD PLACE TEMPORARY OR PERMANENT SEEDING, MULCHING AND/OR MULCH NETTING OR ANY OTHER GENERALLY ACCEPTED METHODS TO PREVENT EROSION, MUD, AND DEBRIS FROM BEING DEPOSITED ON OTHER PROPERTY, ON NEWLY CONSTRUCTED OR EXISTING ROADS, OR INTO EXISTING SEWERS OR NEW SEWERS WITHIN THE DEVELOPMENT. THE CONTRACTOR SHOULD CONTINUALLY MONITOR THE CONSTRUCTION PROGRESS AND MAKE ANY NECESSARY TEMPORARY ADJUSTMENTS TO MAINTAIN THIS CONTROL.
- ALL EXISTING TREES AND BUSHES TO REMAIN SHALL BE PROTECTED WITH RIGID CONSTRUCTION FENCING AT THE DRIPLINE TO PROTECT ROOTS FROM DAMAGE. DO NOT STORE ANY EQUIPMENT OR MATERIALS UNDER THE DRIPLINE.
- AFTER THE VEGETATION HAS BECOME WELL ESTABLISHED, TEMPORARY EROSION AND SEDIMENT CONTROLS CAN BE REMOVED.
- A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT EACH POINT OF INGRESS AND EGRESS TO THE SITE DURING CONSTRUCTION. SEE DETAIL 4/C102.
- ALL DISTURBED AREAS SHALL BE SEEDED. SEE DETAIL 1/C102.

## SITE DIMENSION PLAN NOTES

- WHERE CONNECTING TO EXISTING ASPHALT OR CONCRETE PAVEMENT, THE CONTRACTOR SHALL SAWCUT THE EXISTING EDGE OF PAVEMENT (AT AN EXISTING JOINT IF POSSIBLE FOR CONCRETE) TO PROVIDE A SOUND & CLEAN EDGE. FOR ASPHALT, THE CONTRACTOR SHALL APPLY ITEM 407 TACK COAT TO THE ENTIRE CUT FACE OF EXISTING PAVEMENT PRIOR TO PLACEMENT OF THE PROPOSED PAVEMENT; FOR CONCRETE, AN EXPANSION JOINT MATERIAL SHALL BE APPLIED.
- ALL DIMENSIONS ARE TO THE FACE OF CURB (OR EDGE OF PAVEMENT), UNLESS OTHERWISE NOTED.
- ALL RADII ARE 5.0' TO THE FACE OF CURB (OR EDGE OF PAVEMENT), UNLESS OTHERWISE NOTED.
- ALL CURB SHALL BE ODOT TYPE 6, UNLESS OTHERWISE NOTED. SEE DETAIL 3/C101.
- ALL PARKING PAVEMENT SHALL BE LIGHT DUTY ASPHALT, UNLESS OTHERWISE NOTED. SEE DETAIL 1/C101.
- ALL PAVEMENT MARKINGS SHALL CONFORM TO ITEM 641 PAVEMENT MARKINGS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAVEMENT MARKING MATERIAL SHALL BE PER ITEM 642 TRAFFIC PAINT UNLESS OTHERWISE NOTED. SEE DETAIL 7/C101.
- ALL TRAFFIC SIGNS AND POSTS SHALL CONFORM TO ITEM 630 TRAFFIC SIGNS AND SUPPORTS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- ACCESSIBLE PARKING SPACES SHALL HAVE STRIPING AND SIGNAGE MEETING 2010 ADA AND LOCAL REQUIREMENTS. SEE DETAIL 10/C101.

## SITE GRADING PLAN NOTES

- THE GRADING PLAN IS TO BE USED FOR GRADING PURPOSES ONLY.
- ALL DIMENSIONS AND PROPOSED ELEVATIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED. ALL PROPOSED ELEVATIONS ARE TO THE FINISHED SURFACE.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SET UP AN ONSITE PRE-CONSTRUCTION MEETING WITH THE CITY OF CINCINNATI BUILDING DEPARTMENT, PROJECT GEOTECHNICAL ENGINEER, EARTHWORK CONTRACTOR AND SITE CIVIL ENGINEER.
- ALL EARTHWORK AND CONSTRUCTION ACTIVITY SHALL BE PERFORMED PER THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A COPY OF THE COMPLETE GEOTECHNICAL REPORT, PERFORMED BY TERRACON, DATED MARCH 20, 2019, AND ALL ADDENDUMS.
- THE CONTRACTOR SHALL INSTALL SILT FENCE (SEE DETAIL 2/C102) AROUND THE ENTIRE PERIMETER OF THE SITE TO PREVENT SEDIMENT RUNOFF TO SURROUNDING PROPERTIES.
- WHERE EXISTING GROUND COVER IS PRESENT, CONTRACTOR SHALL REMOVE THE TOPSOIL. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT GEOTECHNICAL ENGINEER FOR DEPTH OF TOPSOIL TO BE REMOVED.
- THE CONTRACTOR SHALL VERIFY ALL EARTHWORK QUANTITIES AFTER AWARD OF CONTRACT. PAY QUANTITIES ARE FINAL EXCEPT FOR DOCUMENTED UNDERCUT APPROVED BY THE OWNER PRIOR TO COMPLETION OF THE EXTRA WORK. UPON REQUEST, CONTRACTORS MAY HAVE ACCESS TO THE SITE TO FIELD CHECK TOPOGRAPHY.
- PARKING ISLANDS AND PLANTING AREAS ARE TO BE BACKFILLED WITH TOPSOIL. BUILDING PAD SUBGRADE SHALL BE CONSTRUCTED AS SHOWN ON THE FOUNDATION PLAN. SEE ARCHITECTURAL PLANS FOR BUILDING FOUNDATION DIMENSIONS.
- FFE = FINISH FLOOR ELEVATION
- BFE = BASE FLOOD ELEVATION
- FPE = FLOOD PROTECTION ELEVATION

## SITE UTILITY PLAN NOTES

- ALL STORM SEWER SHALL BE PRIVATE AND HAVE A MANNING'S "n" VALUE EQUAL TO OR LESS THAN 0.012.
- ALL WATER SERVICE MATERIALS AND CONSTRUCTION SHALL BE PER GCWW STANDARDS. SANITARY SERVICE AND STORMWATER MATERIALS AND CONSTRUCTION SHALL BE PER MSDGC AND SMU STANDARDS RESPECTIVELY. GAS AND ELECTRIC SERVICE PROVIDED BY DUKE ENERGY; TELEPHONE SERVICE PROVIDED BY CINCINNATI BELL; CABLE PROVIDED BY TIME WARNER (SEE MEP PLANS FOR GAS, CABLE, TELEPHONE, AND ELECTRIC SERVICE INFORMATION ON SITE).
- ALL FRAMES AND GRATES LOCATED IN THE PAVEMENT SHALL BE H-20 TRAFFIC-BEARING.
- ROOF DRAINS (R.D.) SHALL HAVE A MINIMUM SLOPE OF 1/8" / FT. UNLESS OTHERWISE NOTED.
- WATER/SEWER SERVICES AND ROOF DRAINS SHALL BE INSTALLED TO A POINT 5' FROM THE FACE OF THE BUILDING (SEE MEP PLANS FOR SERVICE CONNECTIONS AT THE BUILDING).
- REFER TO THE GEOTECHNICAL ENGINEER'S REPORT FOR TRENCH BACKFILL REQUIREMENTS.
- IF QUESTIONS EXIST AS TO THE PURPOSE OR INTENT OF GRADES OR STAKES, THE CONTRACTOR SHALL NOT ASSUME, BUT SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING.

## MSD SANITARY SEWER NOTES

[EFFECTIVE 1 OCTOBER 2004]

- ALL PLANS AND CONSTRUCTION WITHIN THE CITY OF CINCINNATI SHALL COMPLY WITH THE LATEST EDITION OF THE "RULES AND REGULATIONS" MANUAL GOVERNING THE DESIGN, CONSTRUCTION, MAINTENANCE, OPERATION, AND USE OF SANITARY AND COMBINED SEWERS IN THE METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI, HAMILTON COUNTY, OHIO, EFFECTIVE MARCH 1, 2001. COPIES MAY BE OBTAINED FROM THE DIVISION OF WASTEWATER ENGINEERING MSD, 1600 GEST STREET, CINCINNATI, OHIO 45204.
- ALL SANITARY SEWERS SHALL BE CONSTRUCTED UNDER THE INSPECTION OF THE SEWERS CHIEF ENGINEER, MSD.
- THE OWNERS OF ALL PROPERTIES SHOWN ON THIS IMPROVEMENT PLAN SHALL BE SUBJECT TO ALL APPLICABLE SEWER SERVICE CHARGES, ASSESSMENTS, TAP-IN CHARGES OR FEES WHICH HAVE BEEN OR MAY BE ESTABLISHED BY THE BOARD OF COUNTY COMMISSIONERS.
- APPROPRIATE UTILITY COMPANIES SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO BREAKING GROUND FOR THE PURPOSE OF VERIFYING BY FIELD INSPECTION THE EXACT LOCATION OF UNDERGROUND UTILITIES.
- ALL SANITARY SEWER PIPE SHALL BE PVC, SDR35, ASTM D-3034 IN ACCORDANCE WITH MSD RULES AND REGULATIONS, EXCEPT WHERE NOTED. SEWER TO BE 6" DIAMETER PIPE WITH A MINIMUM SLOPE OF 1/4" PER FOOT (2.08%), UNLESS OTHERWISE NOTED.
- JOINTS FOR SANITARY SEWERS SHALL BE PER ASTM D-3212. BEDDING FOR SANITARY SEWERS SHALL BE CLASS I (ASTM D-2321). PIPE SHALL BE CONNECTED TO MANHOLES WITH GASKET FLEXIBLE WATERTIGHT CONNECTIONS. ALL SERVICE LATERALS TO BE PROVIDED AT TIME OF CONSTRUCTION AND ALL SPECIFICATIONS APPLY TO LATERALS ALSO.
- ALL MANHOLES ON SANITARY SEWERS SHALL BE TYPE "S".
- SANITARY MANHOLES SHALL BE TEMPORARILY CONSTRUCTED TO AN ELEVATION OF TWO FEET ABOVE THE SURROUNDING GRADE BY MEANS OF AN ADDITIONAL MANHOLE SECTION OR BRICK MASONRY ON TOP OF THE CONE.
- ALL LOWEST FINISHED FLOOR ELEVATIONS SHALL BE AT LEAST 36 INCHES ABOVE THE CROWN OF THE SEWER AT THE POINT OF TAP CONNECTION TO SAID SEWER, WHETHER PUBLIC OR PRIVATE, AND/OR IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF CINCINNATI SUPPLEMENT TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY BUILDING TO BE SERVED BY MEANS OTHER THAN GRAVITY MUST BE SO NOTED ON THE PLANS.
- ALL MANHOLES ON PUBLIC SANITARY SEWERS SHALL HAVE STANDARD LIDS AND FRAMES, ACC NO. 49005, EXCEPT WHERE NOTED. THE FRAME SHALL BE SECURELY FASTENED TO THE TOP MANHOLE SECTION BY FOUR 3/4-INCH STAINLESS STEEL CINCH ANCHORS.
- CONTRACTOR'S LICENSE - ALL WORK DONE ON SANITARY AND/OR COMBINED SEWERS WITHIN THE JURISDICTION OF THE METROPOLITAN SEWER DISTRICT MUST BE DONE BY A CONTRACTOR WHO IS AN APPROVED SEWER TAPPER PROPERLY LICENSED BY THE DEPARTMENT AND BONDED.
- SANITARY BUILDING SEWERS SHALL BE CONNECTED TO THE MAIN LINE WITH WYES. TEE FITTINGS ARE TO BE USED ONLY WHERE SHOWN ON THE APPROVED PLAN UNLESS SHOWN OTHERWISE ON THE PLAN.
- ROOF DRAINS, FOUNDATION DRAINS, COOLING WATER, SWIMMING POOL WATER OR OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.
- A TAP PERMIT IS REQUIRED FOR EACH BUILDING. BOND OR FINAL APPROVAL OF THE MAIN LINE IS REQUIRED PRIOR TO ISSUANCE OF A TAP PERMIT.
- SANITARY SEWER CONSTRUCTION MUST COMMENCE WITHIN 12 MONTHS AND BE COMPLETED WITHIN 36 MONTHS OF THE DATE OF APPROVAL SHOWN HEREON OR THESE PLANS BECOME VOID.
- FOR SANITARY SEWER MANHOLES CONSTRUCTED IN PARKING LOTS, THE RIM ELEVATION SHALL BE 1" HIGHER THAN THE SURROUNDING GRADE AND THE PAVEMENT SHALL BE FEATHERED AWAY FROM THE MANHOLE RIM AT A GRADUAL SLOPE.
- FOR SANITARY MANHOLES CONSTRUCTED IN GRASS AREAS, THE RIM ELEVATION SHALL BE 3" HIGHER THAN THE SURROUNDING GRADE, AND THE FILL SHALL BE FEATHERED AWAY FROM THE MANHOLE RIM AT A GRADUAL SLOPE.
- TO ASSURE THAT STORMWATER DOES NOT ENTER THE SANITARY SEWER SYSTEM, A SCHEMATIC PLAN OF THE FOOTING AND FOUNDATION DRAINAGE SYSTEM, INCLUDING THE POINT OF DISCHARGE, IS NECESSARY.
- THE CONTRACTOR SHALL TEST ALL MANHOLES LEAKAGE BY MEANS OF VACUUM TESTING. THE VACUUM TESTING CANNOT BE DONE UNTIL AFTER THE MANHOLES ARE SET TO FINAL GRADE AND THE MANHOLE CASTINGS ARE BOLTED DOWN. ALL LIFT HOLES SHALL BE PLUGGED. ANY OTHER OPENINGS, SUCH AS FOR PRESSURE RELIEF VALVES, SHALL BE TEMPORARILY PLUGGED TO ALLOW THE VACUUM TEST. ALL PIPES ENTERING THE MANHOLE SHALL BE PLUGGED AND CARE SHALL BE TAKEN TO SECURELY BRACE THE PLUGS FROM BEING DRAWN INTO THE MANHOLE. THE VACUUM EQUIPMENT TEST HEAD SHALL BE PLACED IN THE OPENING OF THE CASTING ONLY, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. VACUUM TESTING SHALL BE IN ACCORDANCE WITH ASTM C1244. A VACUUM OF 10 INCHES MERCURY (10" HG) SHALL BE DRAWN AND THE VACUUM PUMP SHUT OFF. WITH THE VALVES CLOSED, THE TIME SHALL BE MEASURED FOR THE VACUUM TO DROP TO NINE INCHES MERCURY (9" HG). THE MANHOLE SHALL PASS IF THE TIME MEETS OR EXCEEDS THE ALLOWABLE TIMES AS CALCULATED FROM ASTM C1244, OR AS APPROVED BY THE ENGINEER. ALL MANHOLE REPAIR AND RETESTING REQUIRED BECAUSE OF THE FAILURE TO MEET THE TESTING REQUIREMENTS SHALL BE BORNE BY THE CONTRACTOR AT HIS COST. THE COST OF LEAKAGE TESTS SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS MANHOLE ITEMS."
- COMPACTED FILLS ARE TO BE MADE TO A MINIMUM OF THREE (3) FEET ABOVE THE CROWN OF ANY PROPOSED SEWER PRIOR TO CUTTING OF TRENCHES FOR PLACEMENT OF SAID SEWERS. ALL FILLS SHALL BE CONTROLLED, COMPACTED AND INSPECTED BY AN APPROVED TESTING LABORATORY OR AN INSPECTOR FROM THE APPROPRIATE GOVERNMENTAL AGENCY. A COPY OF THESE TESTING REPORTS SHALL BE SUBMITTED TO THE METROPOLITAN SEWER DISTRICT AND THE ENGINEER'S OFFICE.
- PUBLIC SANITARY SEWER EASEMENTS ARE ALSO FOR THE USE AND BENEFIT OF ADJACENT LOTS AND/OR FUTURE DEVELOPMENTS FOR THE PURPOSE OF INSTALLATION, OPERATION, MAINTENANCE, EXTENSION, REPAIR OR REPLACEMENT OF SANITARY SEWER HOUSE SERVICE CONNECTIONS AND/OR SANITARY MAINLINE SEWERS APPROVED BY M.S.D.

## SMU STANDARD PLAN NOTES

- ALL PLANS AND CONSTRUCTION WITHIN THE CITY OF CINCINNATI SHALL COMPLY WITH CHAPTER 720 OF THE CITY'S MUNICIPAL CODE ALONG WITH THE LATEST EDITIONS OF SMU'S: A) DETENTION OPERATION AND MAINTENANCE PLAN, A) FEES, C) STANDARD DRAWINGS, D) PIPE MATERIALS POLICY, AND E) RULES & REGULATIONS. THESE DOCUMENTS CAN BE DOWNLOADED FROM SMU'S WEBSITE AT: HTTP://WWW.CINCINNATI-OH.GOV/STORMWATER/. IF THERE ARE CONFLICTS BETWEEN THESE DOCUMENTS SMU SHALL BE CONTACTED TO RESOLVE THE ISSUE PRIOR TO WORK COMMENCING. SMU CAN BE REACHED AT 513-591-7746 OR STORMWATERMANAGEMENT@CINCINNATI-OH.GOV.
- TEMPORARY EROSION CONTROL MEASURES SHOWN ON THE PLANS SHALL BE INSTALLED AS EARLY AS POSSIBLE AND BE MAINTAINED THROUGHOUT THE PROJECT.
- A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT IS REQUIRED IF THE TOTAL LAND DISTURBANCE WILL BE EQUAL TO OR GREATER THAN ONE ACRE IN A STORM ONLY SEWER AND/OR IF DISCHARGING TO A CREEK. A COPY OF THE PERMIT MUST ACCOMPANY THE REQUEST FOR APPROVAL OF THE PLAN.
- SMU DOES NOT ALLOW TWO-PIECE CASTINGS OR SLAB TOP MANHOLES AND ONLY REINFORCED CONCRETE PIPE (RCP) OR DUCTILE IRON PIPE (DIP) IS PERMITTED WITHIN AN EASEMENT OR RIGHT-OF-WAY.
- SMU DOES NOT ALLOW ANY DRAINAGE STRUCTURES WITHIN 5 FEET OF A DRIVEWAY.
- ALL PUBLIC STORM DRAINAGE CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH LATEST EDITION OF THE OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATIONS, AND WITH THE LATEST EDITION OF THE CITY OF CINCINNATI SUPPLEMENT TO THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. IF THERE IS A CONFLICT BETWEEN THE GOVERNING SPECIFICATIONS THE MOST STRINGENT SHALL BE. SMU SHALL BE CONTACTED TO RESOLVE ANY DISCREPANCIES PRIOR TO WORK COMMENCING. SMU CAN BE REACHED AT 513-591-7746 OR STORMWATERMANAGEMENT@CINCINNATI-OH.GOV.
- THE OWNERS OF ALL PROPERTIES SHOWN ON THIS IMPROVEMENT PLAN SHALL BE SUBJECT TO ALL APPLICABLE SEWER MAINLINE INSPECTION FEES, SERVICE CHARGES, ASSESSMENTS, TAP-IN CHARGES OR OTHER FEES, WHICH HAVE BEEN ESTABLISHED BY CITY COUNCIL, CITY OF CINCINNATI.
- ALL WORK DONE ON STORMWATER INFRASTRUCTURE WITHIN THE CITY OF CINCINNATI MUST BE DONE BY A CONTRACTOR WHO IS AN APPROVED SEWER TAPPER PROPERLY LICENSED AND BONDED THROUGH THE METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI.
- A STORMWATER TAP PERMIT IS REQUIRED FOR EACH BUILDING. BOND OR FINAL ACCEPTANCE OF THE MAIN LINE IS REQUIRED PRIOR TO ISSUANCE OF A TAP PERMIT. A SKETCH SHALL BE SUBMITTED BY THE PLUMBER, WHICH SHALL SHOW THE ELEVATION AND LOCATION OF THE STORMWATER TAP WITH RESPECT TO THE NEAREST STORM MANHOLE. A REQUEST FOR APPLICATION CAN BE SENT TO STORMWATERMANAGEMENT@CINCINNATI-OH.GOV.
- ALL PUBLIC STORMWATER INFRASTRUCTURE THAT IS BEING TAPPED INTO MUST BE CORED, AND INSPECTED AS PART OF THE TAP PERMIT PROCESS.
- ALL STORMWATER INFRASTRUCTURE WITHIN THIS DEVELOPMENT IS TO BE PRIVATE AND MAINTAINED BY THE OWNER(S). (ONLY IF APPLICABLE.)
- STORMWATER INFRASTRUCTURE CONSTRUCTION MUST COMMENCE WITHIN 12 MONTHS AND BE COMPLETED WITHIN 36 MONTHS OF THE DATE OF APPROVAL SHOWN HEREON OR THESE PLANS BECOME VOID.
- NEAR THE COMPLETION OF WORK ON ALL STORMWATER INFRASTRUCTURE, THE [CONTRACTOR/OWNER/DEVELOPER/ETC.] SHALL REQUEST CAGIS IDS FROM SMU. UPON COMPLETION OF THE WORK USING SAID IDS THE [CONTRACTOR/OWNER/DEVELOPER/ETC.] SHALL CLOSE CIRCUIT TELEVISION (CCTV) THE PUBLIC STORMWATER MAINLINES AS WELL AS PROVIDE DIGITAL PHOTOGRAPHS OF THE LINES AND STRUCTURES. THE CCTV SHALL BE PIPELINE ASSESSMENT CERTIFICATION PROGRAM (PACP)-COMPLIANT AND SUBMITTED TO SMU FOR APPROVAL.
- FINAL ACCEPTANCE: IN ORDER FOR SMU TO GRANT FINAL ACCEPTANCE THE FOLLOWING MUST BE SUPPLIED:
  - AS-BUILT DRAWINGS WITH ACCURATE LOCATIONS, DESCRIPTIONS, AND QUANTITIES OF THE INSTALLED MATERIALS
  - FINAL CLEANING AND INSPECTION BY THE OWNER OF THE INFRASTRUCTURE MUST BE COMPLETED AND WITHOUT CONFLICTS.
- SMU RESERVES THE RIGHT TO REFUSE OWNERSHIP ON BEHALF OF THE CITY.
- SHOP DRAWINGS FOR ALL STORMWATER STRUCTURES SHALL BE SUBMITTED TO SMU FOR REVIEW BEFORE DELIVERY ONSITE.

## SITE PERMITS NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL CITY OF CINCINNATI PERMITS FOR PROPOSED SITE WORK, INCLUDING (BUT NOT LIMITED TO): GCWW BRANCH APPLICATION, MSD TAP PERMIT, DOTE RIGHT-OF-WAY PERMIT (FOR UTILITY CONNECTIONS, STREET/WALK CLOSURE, AND PAVEMENT INSTALLATION), DOTE BARRICADE PERMIT, DOTE REVOCABLE STREET PERMIT (IF APPLICABLE).
- CONTRACTOR SHALL SUBMIT ANY & ALL WATER SERVICE FOD RECEIPTS TO MSD WHEN APPLYING FOR TAP PERMIT.



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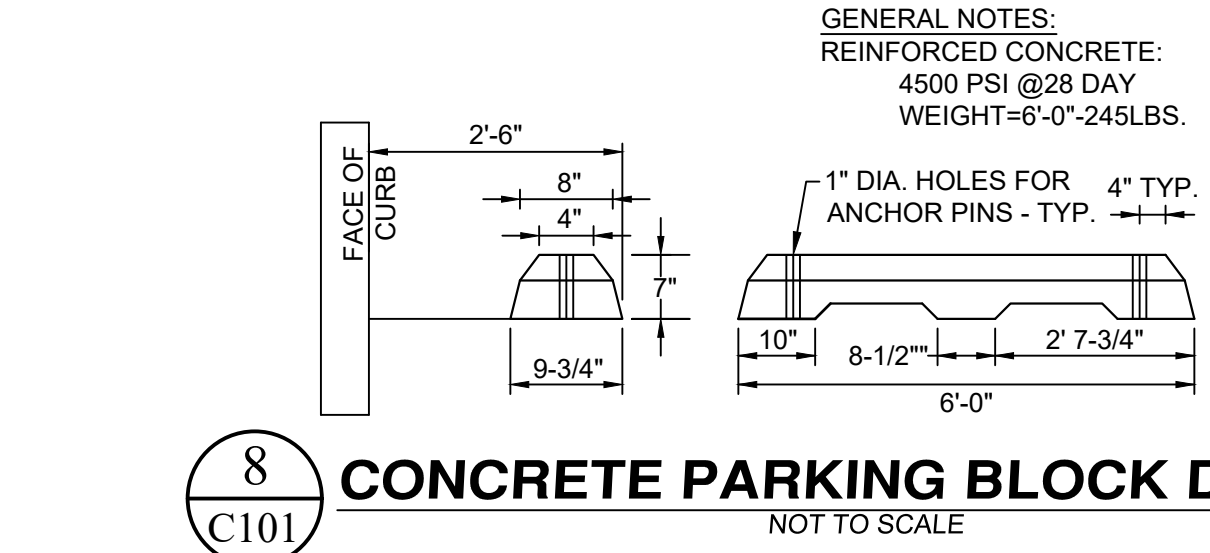
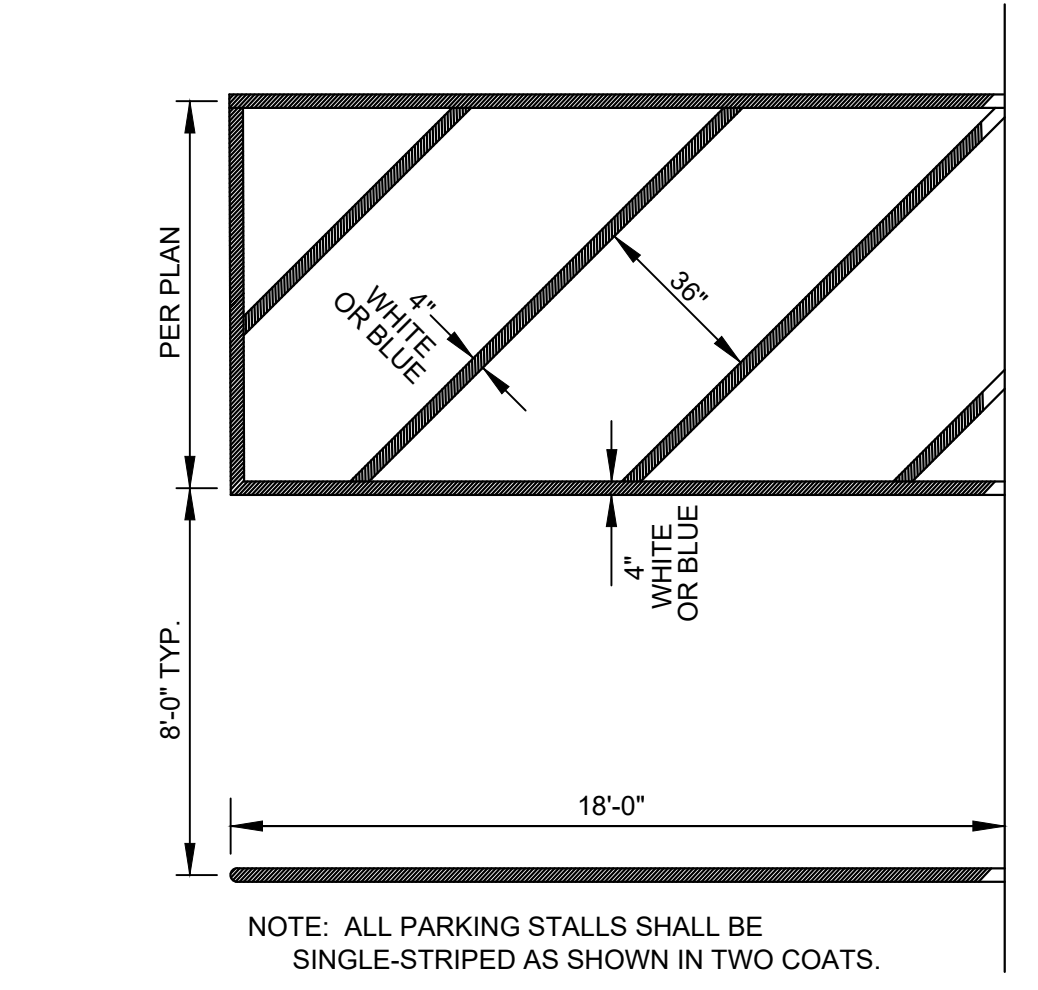
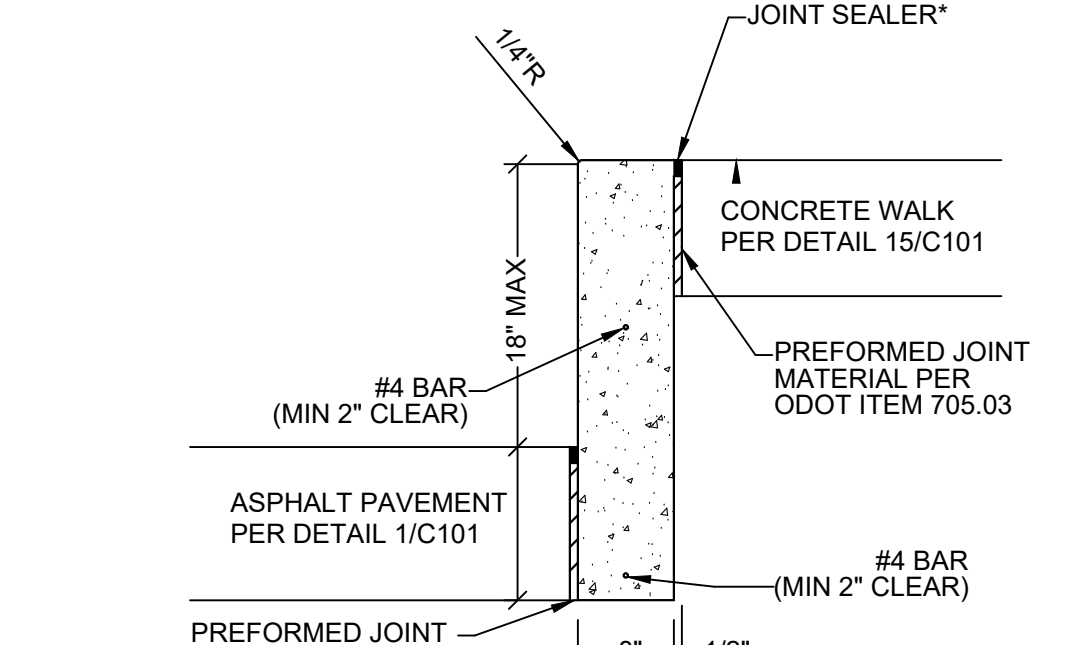
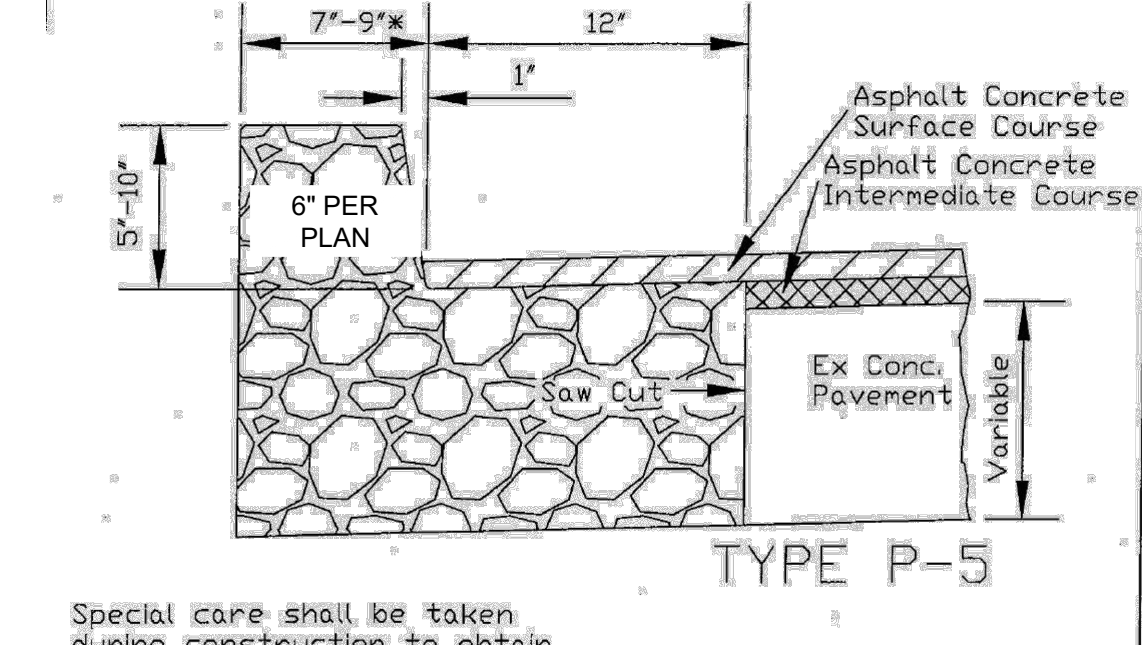
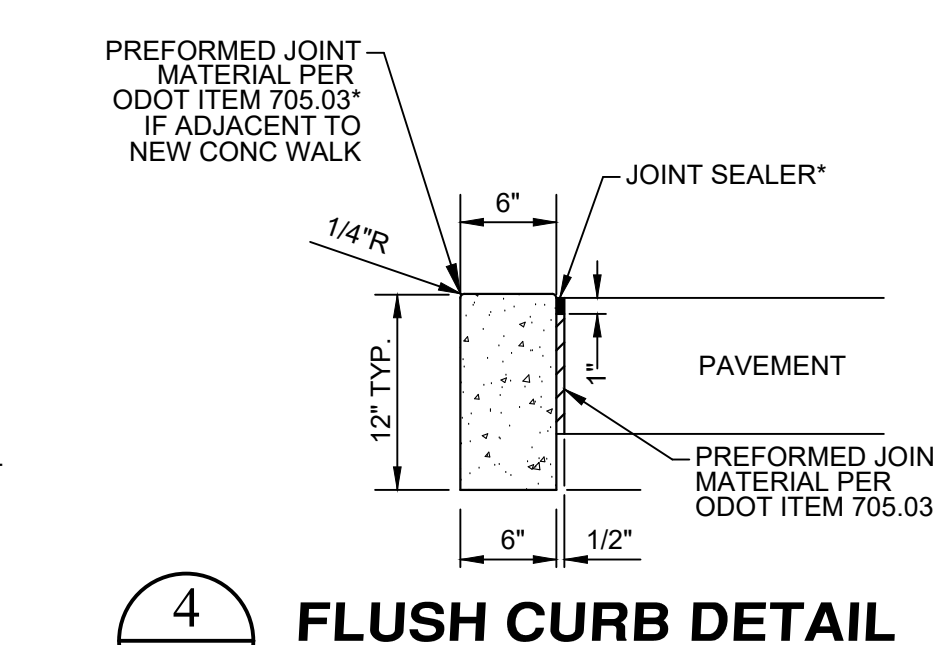
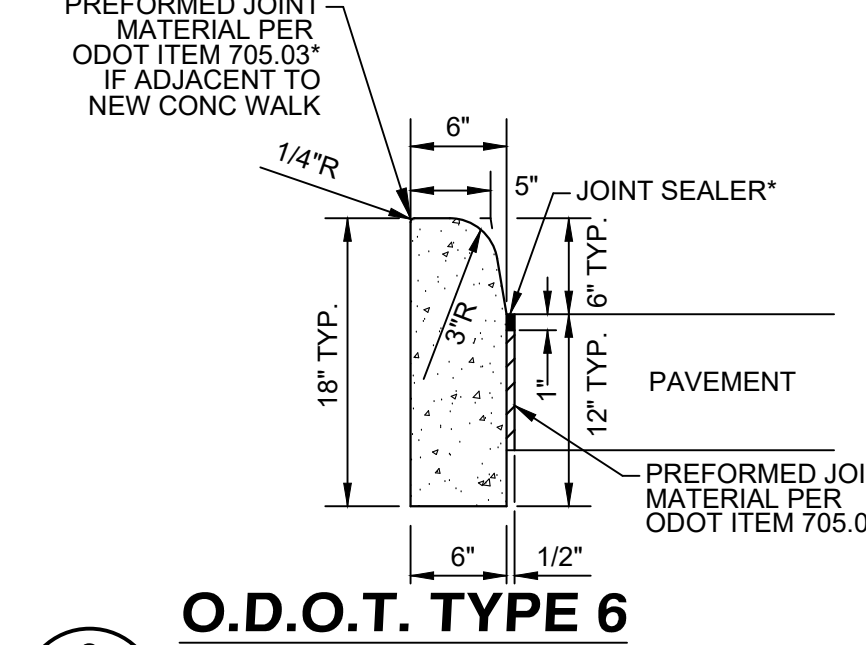
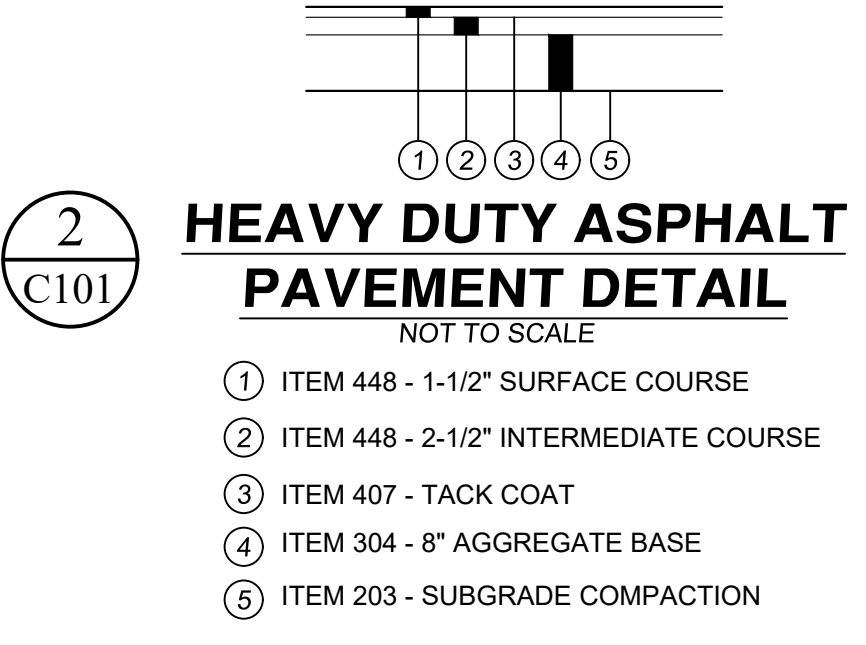
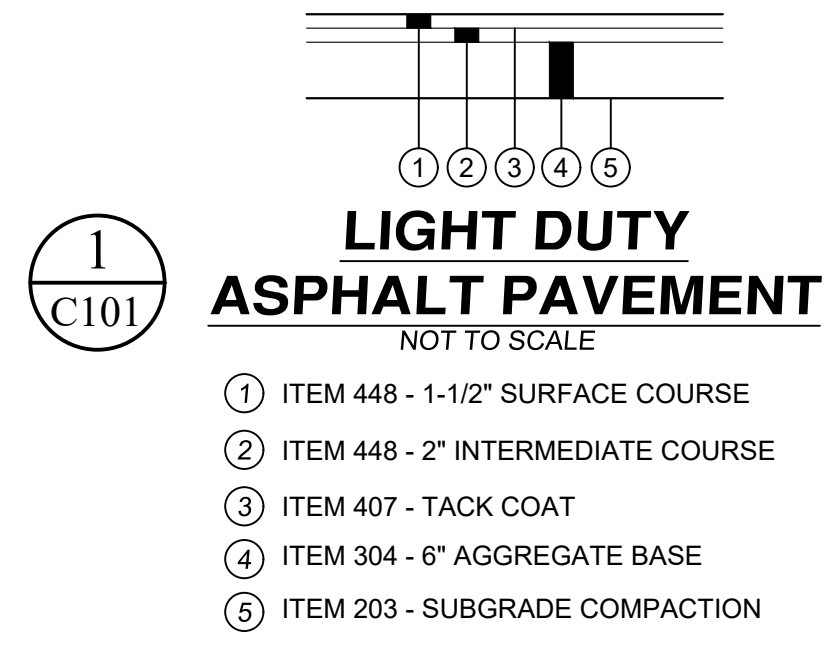


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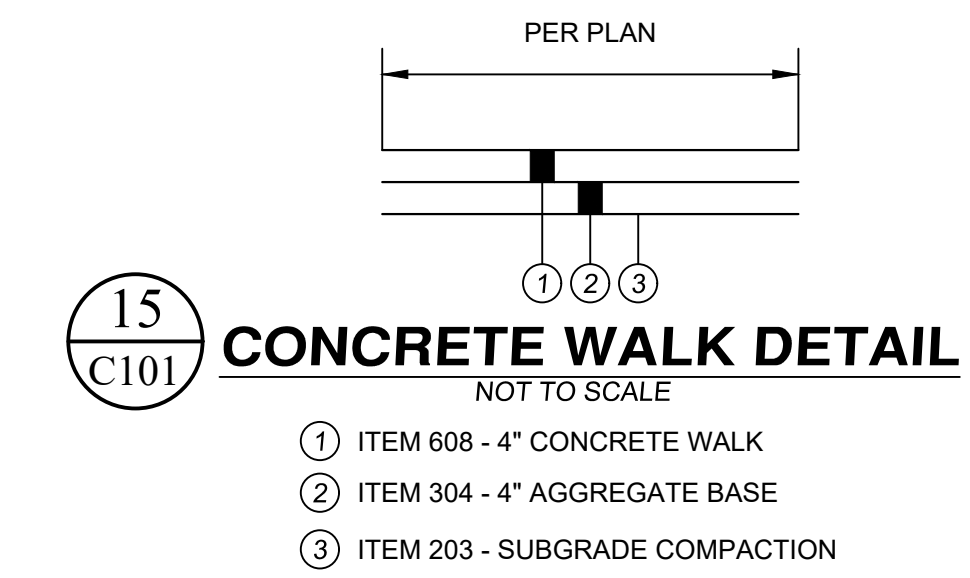
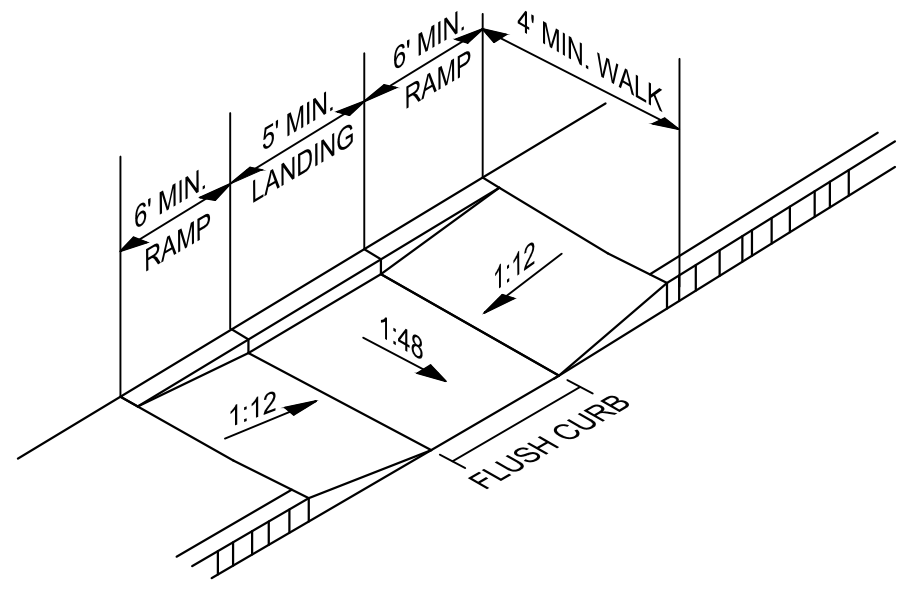
NO.	DESCRIPTION	DATE
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SITE NOTES		
23-056		

# C100

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\*NOTE: EXPANSION JOINT MATERIAL & JOINT SEALER ARE NOT REQUIRED FOR THAT PORTION OF THE CURB WHICH IS ADJACENT TO A FLEXIBLE TYPE PAVEMENT. BOTH MATERIALS ARE REQUIRED FOR THE FULL HEIGHT OF RIGID PAVEMENT AND CONCRETE BASES.

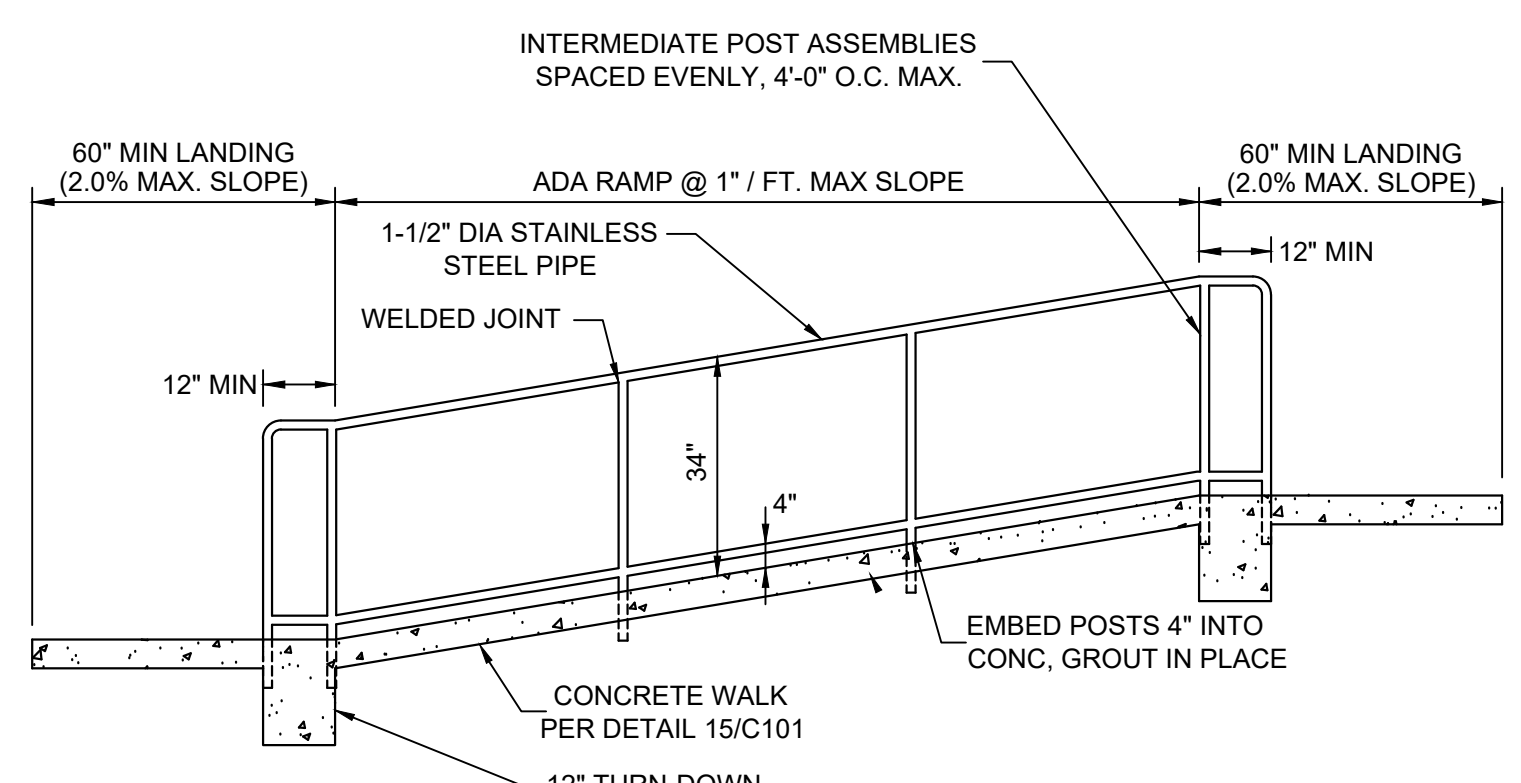
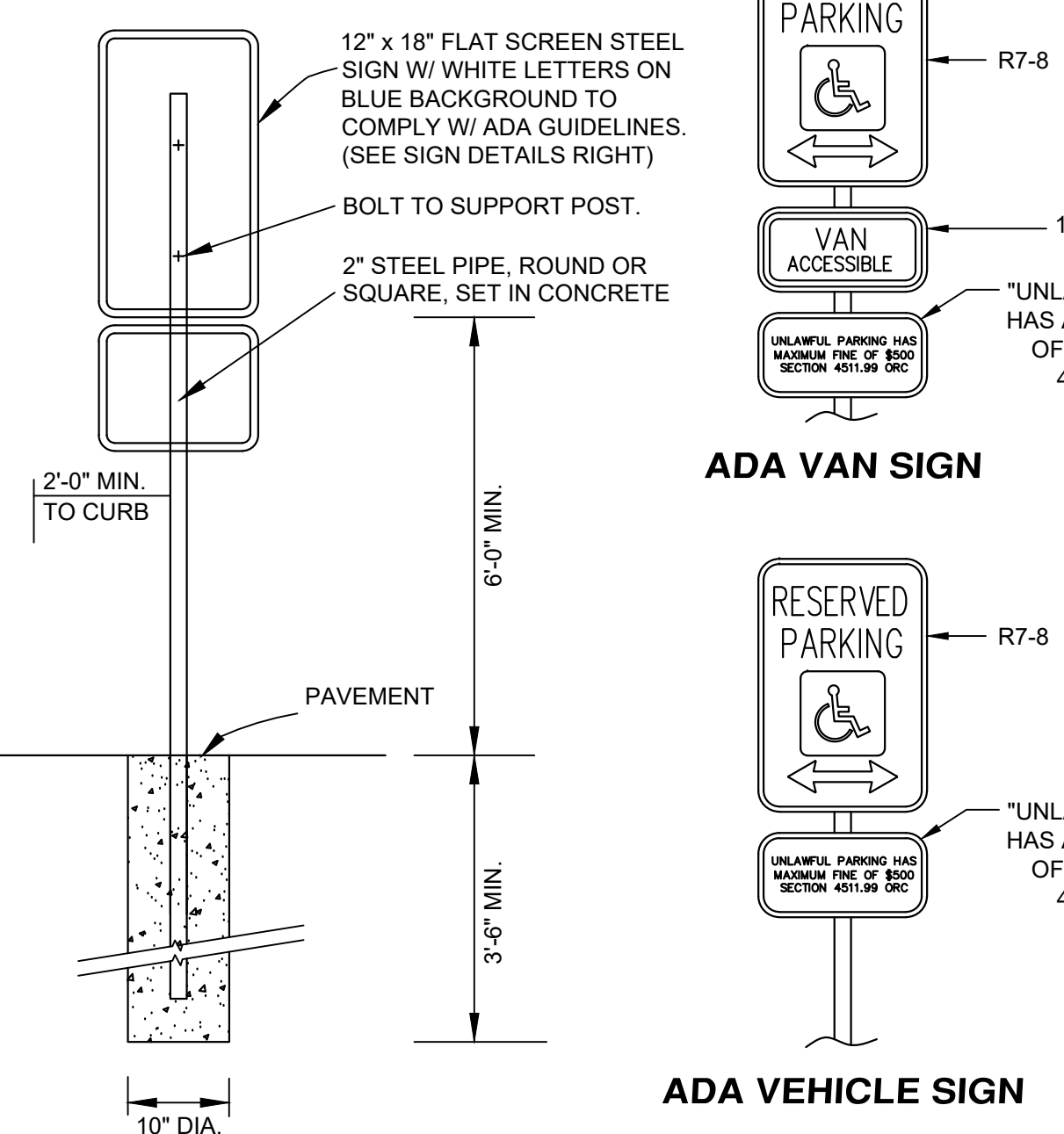
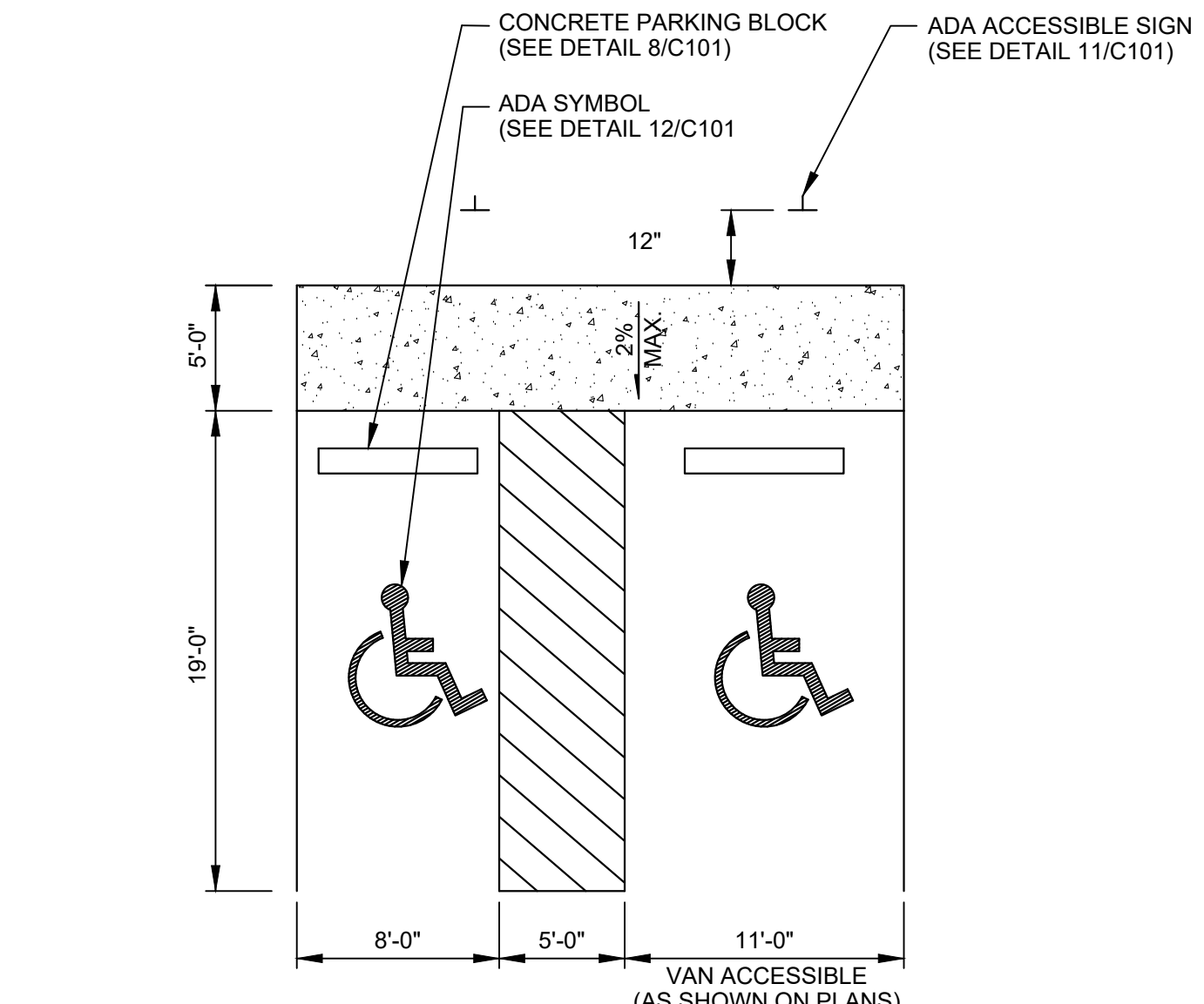


**7 STRIPING DETAIL**  
NOT TO SCALE

**8 CONCRETE PARKING BLOCK DETAIL**  
NOT TO SCALE

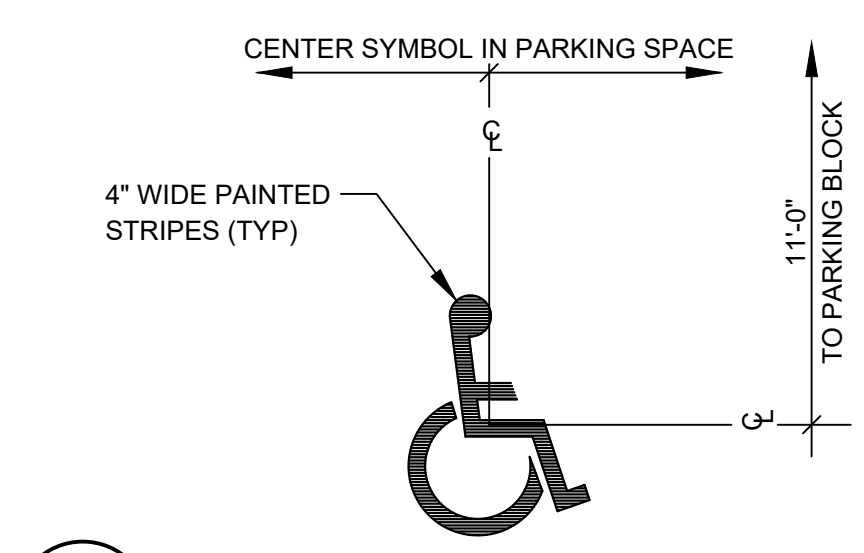
**9 ADA INLINE CURB RAMP DETAIL**  
NOT TO SCALE

**15 CONCRETE WALK DETAIL**  
NOT TO SCALE



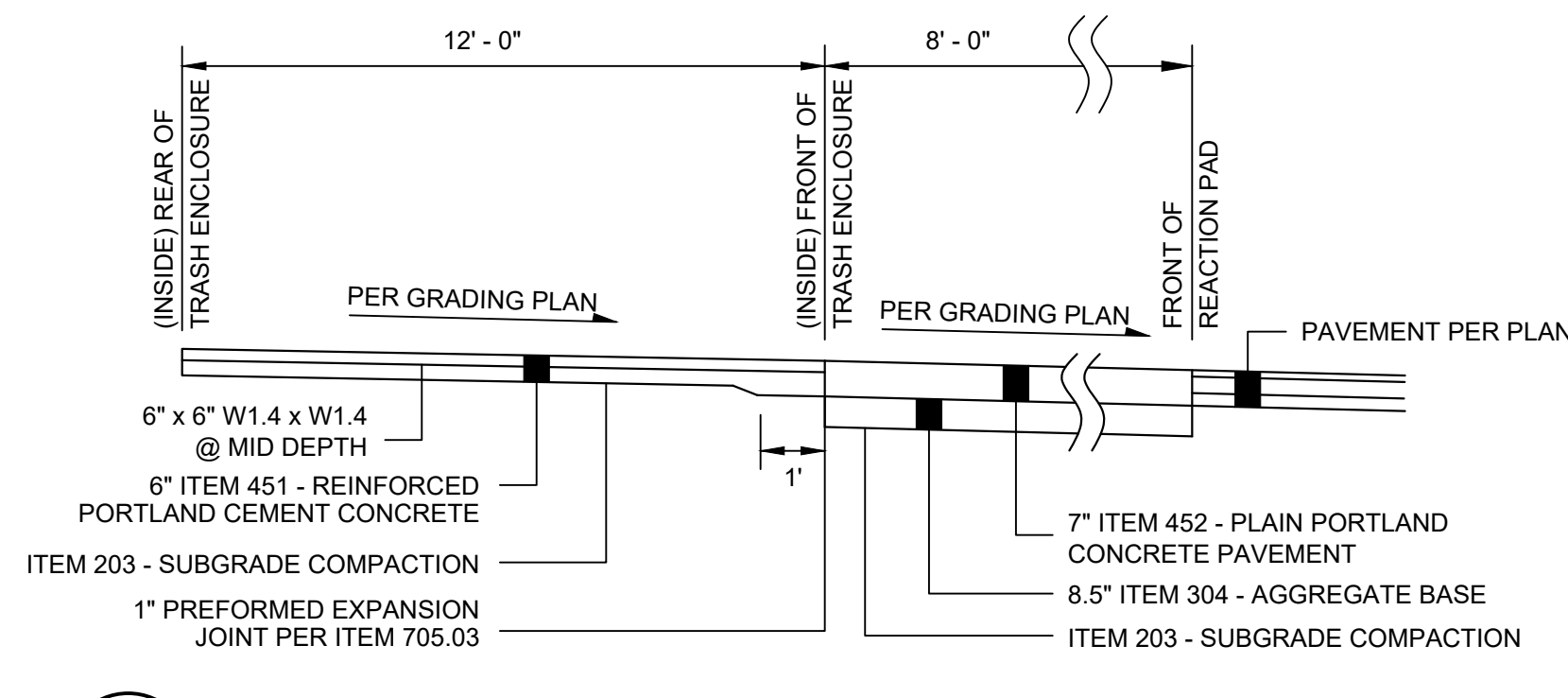
**10 ADA ACCESSIBLE PARKING DETAIL**  
NOT TO SCALE

**13 ADA RAMP DETAIL**  
NOT TO SCALE



**12 ADA SYMBOL DETAIL**  
NOT TO SCALE

**11 ADA ACCESSIBLE SIGN DETAILS**  
NOT TO SCALE



**14 DUMPSTER ENCLOSURE PAD DETAIL**  
NOT TO SCALE



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NO.	DESCRIPTION	DATE
PERMIT SET		08/09/24

SITE DETAILS

23-056

**C101**

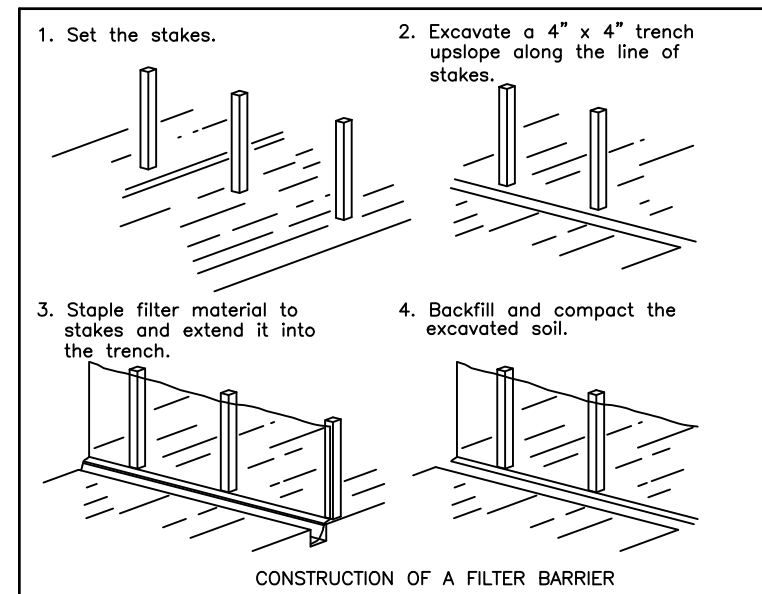
Plot time: Aug 09, 2024 - 1:46pm  
Drawing name: J:\2023\23-0200\CV\DWG\23-0200 CD.dwg - Layout Tab: C101 - Site Details

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Spread 4 to 6 inches of topsoil. Fertilize according to soil test (or apply 10 lb./1000 sq. ft. of 20-10-10 or 10-10-10 fertilizer.) Seed with an appropriate mix for the site (see table.) Rake lightly to cover seed with 1/4" of soil. Roll lightly. Mulch with straw (10-90 lb. or one bale per 1000 sq. ft.) Anchor mulch by punching 2 inches into the soil with a dull, weighted disk or by using netting or other measures on steep slopes, or windy areas. Water gently every day or two to keep soil moist. Less watering is needed once grass is 2 inches tall. Areas within 50 feet of a stream are to be stabilized within two (2) days if area is to remain idle for more the 21 days. Any seeding done between October 1st and March 1st shall utilize dormant seeding techniques according to page 167 of the ODNR Rainwater and Land Development manual.

Grass	Sunny Site	Shady Site
Kentucky bluegrass	65%	15%
Fine fescue	20%	70%
Parennial ryegrass	15%	15%
Seeding rate		
Seeding rate (lb./1000 sq. ft.)	3-4	4-5

**1 SEEDING & MULCHING**  
NOT TO SCALE



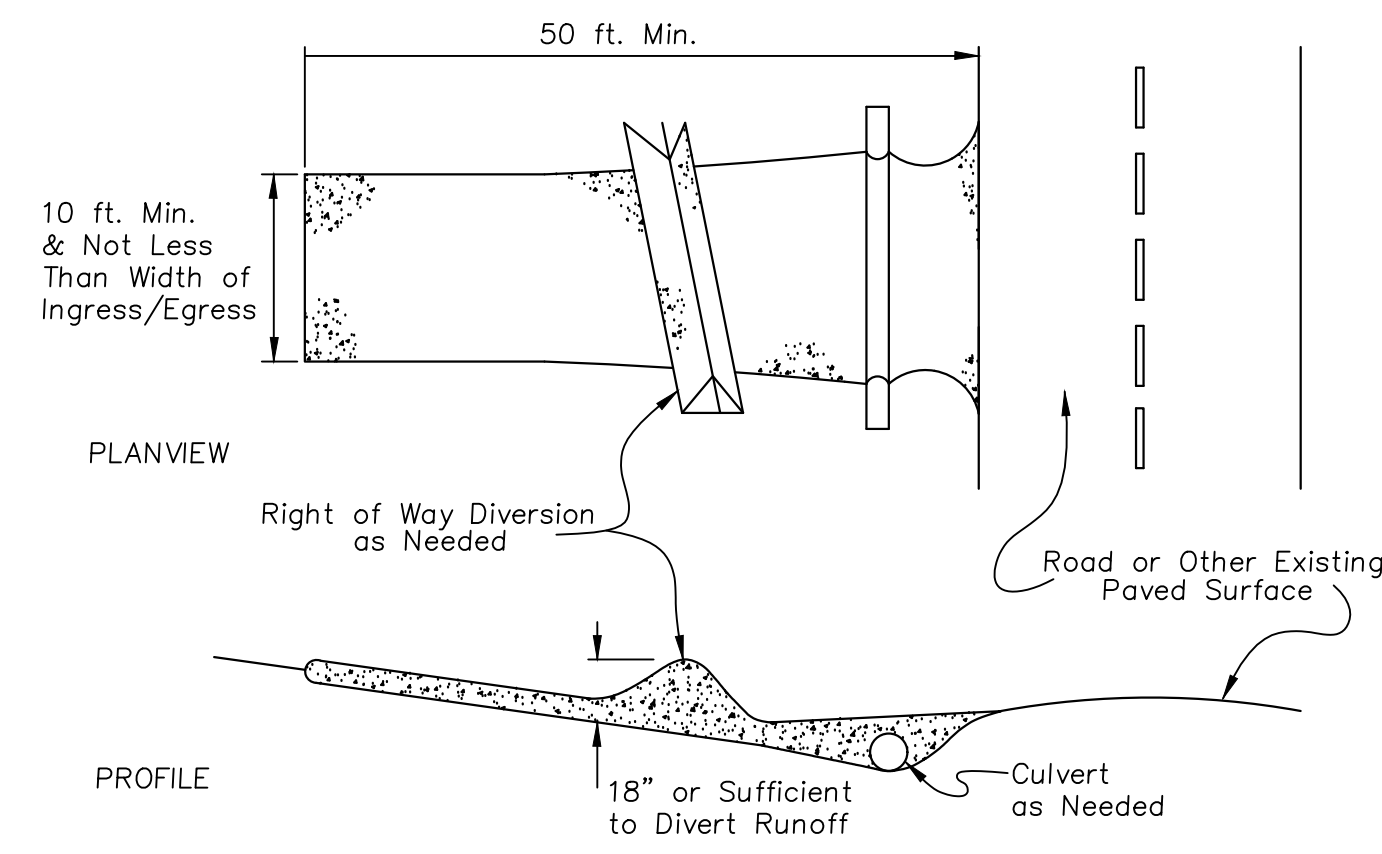
**CONSTRUCTION OF A FILTER BARRIER**

NOTES:

- Install silt fence prior to any to the start construction.
- Install on downslope side(s) of site with ends extended up sideslopes a short distance.
- Place parallel to the contour of the land to allow water to pond behind fence.
- Entrench silt fence with a 4 inches deep trench.
- Use 1 stake every 3 feet for silt fence and leave no gaps between sections of silt fence.
- Inspect and repair silt fence once a week and after every 1/2 inch rain.
- Remove sediment if deposits reach half the fence.
- Maintain until a lawn is established.

Source: Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant

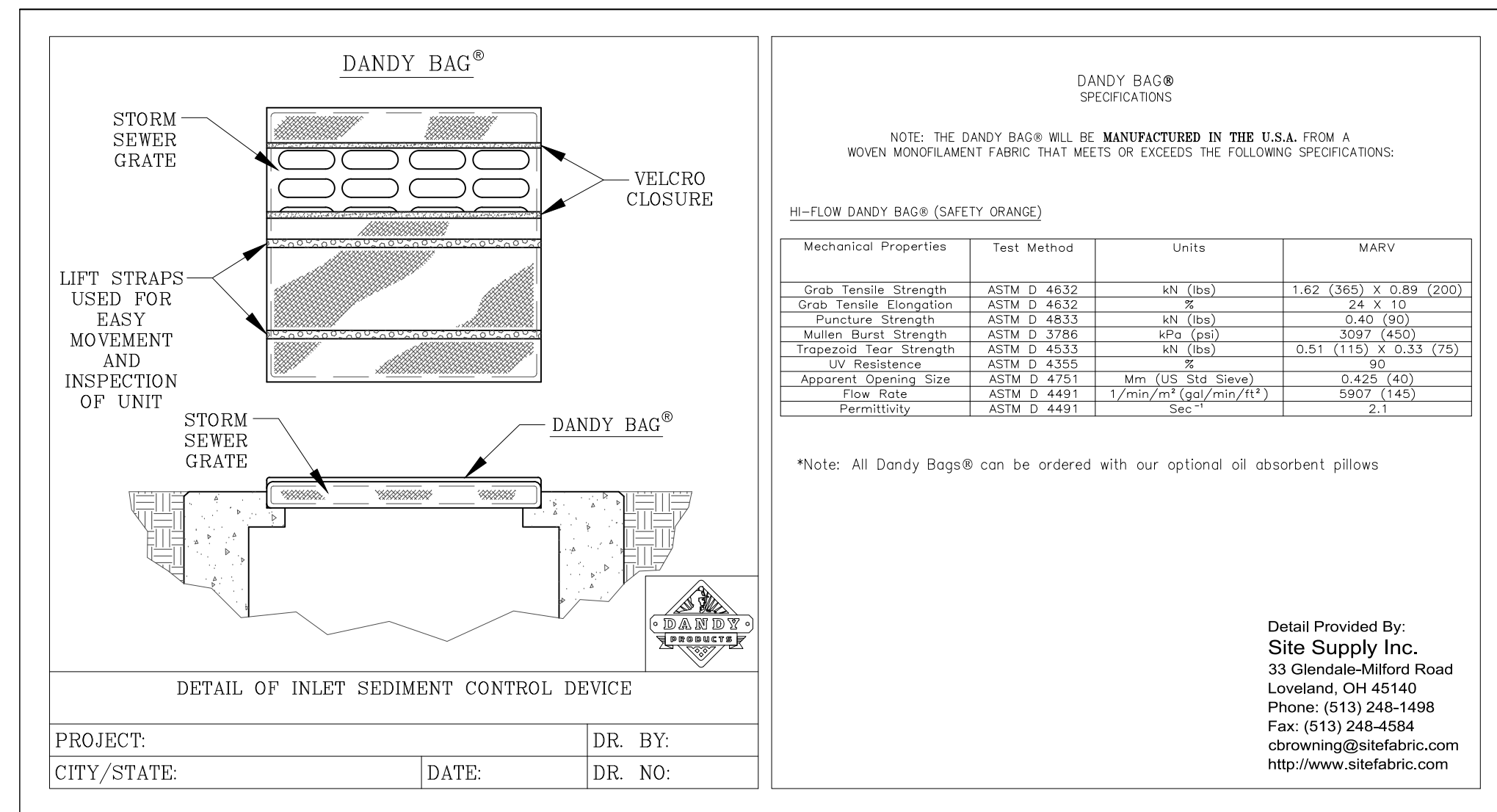
**2 SILT FENCE DETAIL**  
NOT TO SCALE



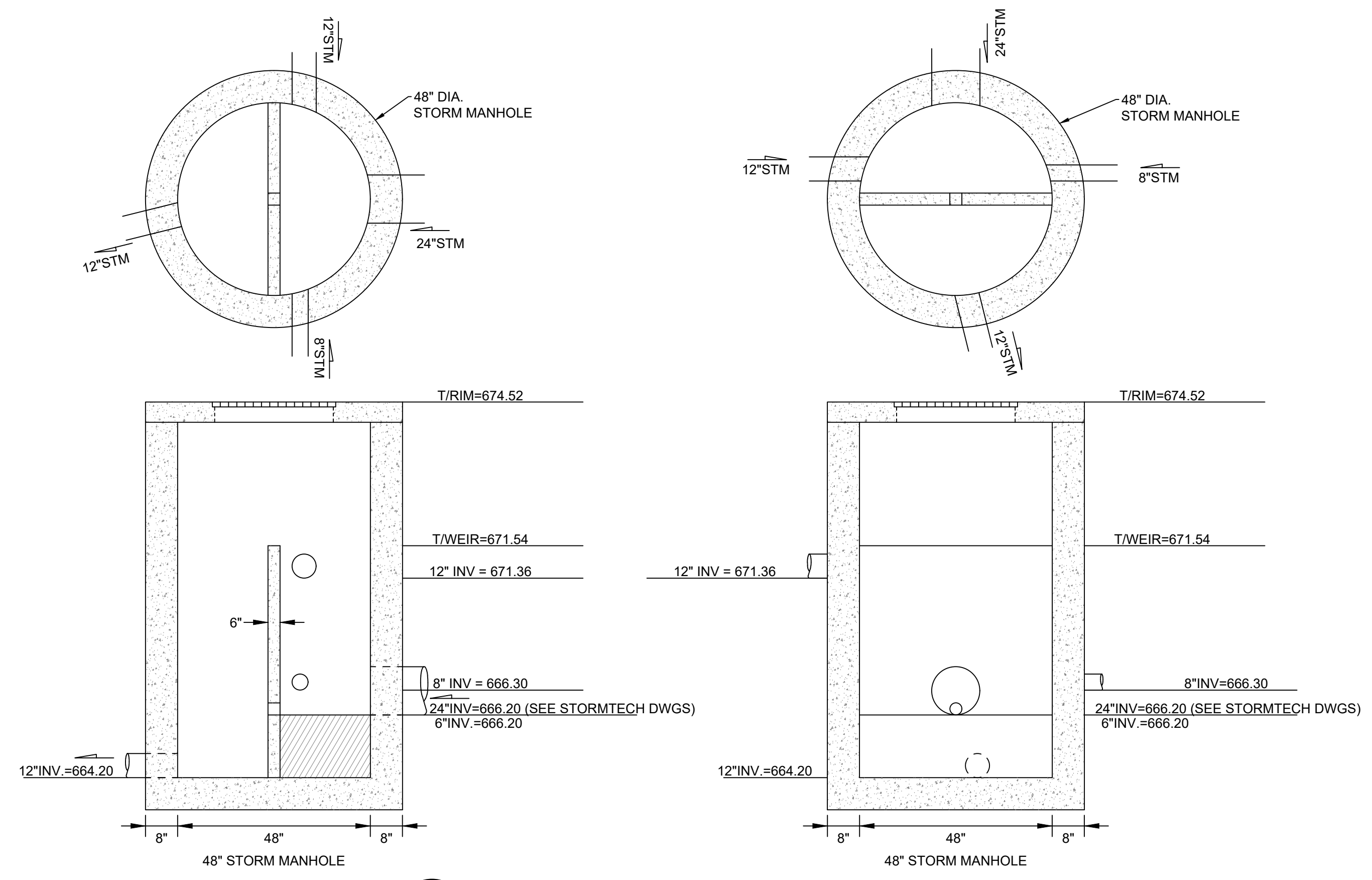
**SPECIFICATIONS FOR CONSTRUCTION ENTRANCE**

- STONE SIZE - TWO-INCH STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH - THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 50 FT.
- THICKNESS - THE STONE LAYER SHALL BE AT LEAST 6 IN. THICK.
- WIDTH - THE ENTRANCE SHALL BE AT LEAST 10 FT. WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- BEDDING - A GEOTEXTILE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL HAVE A GRAB TENSILE STRENGTH OF AT LEAST 200 LB. AND A MULLEN BURST STRENGTH OF AT LEAST 190 LB.
- CULVERT - A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FLOWING ACROSS THE ENTRANCE FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
- WATER BAR - A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
- MAINTENANCE - TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
- CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
- CONSTRUCTION ENTRANCE SHALL BE PAVED WITHIN THE RIGHT OF WAY PER DOTE STANDARDS.

**4 TEMPORARY CONSTRUCTION ENTRANCE DETAIL**  
NOT TO SCALE



**3 DANDY BAG DETAIL**  
NOT TO SCALE



**5 ADS OUTLET STRUCTURE DETAIL**  
NOT TO SCALE



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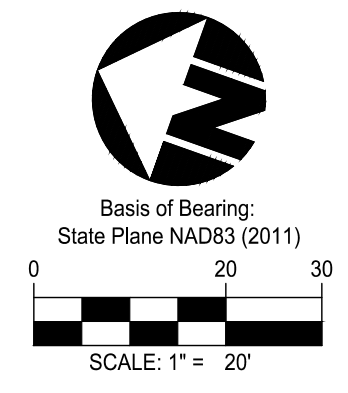
23-056

**C102**

Plot time: Aug 09, 2024, 1:47pm  
Drawing name: J:\2023\23-0200\CV\DWG\23-0200 CD.dwg - Layout Tab: C101 - Site Details

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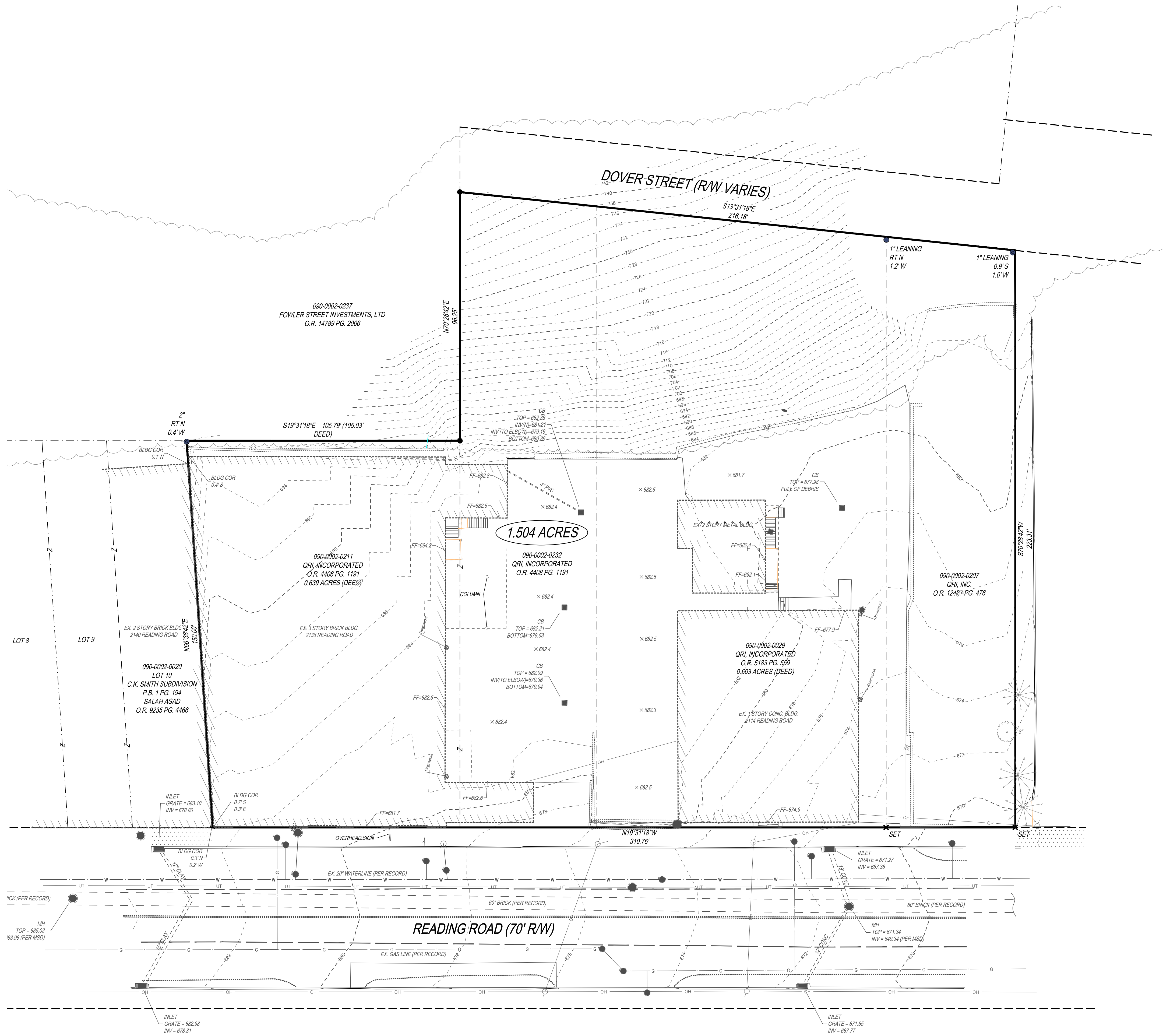
Plot time: Aug 09, 2024 - 1:48pm  
Drawing name: J:\2023\23-0200\CV\DWG\23-0200 CD.dwg - Layout Tab: C200 - Existing Conditions



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**SURVEY PREPARED BY  
THE KLEINGERS GROUP**

**811**  
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LOCATION OF ALL EXISTING  
UTILITIES TO BE  
DETERMINED IN THE FIELD  
PRIOR TO CONSTRUCTION

NO.	DESCRIPTION	DATE
1	PERMIT SET	08/09/24

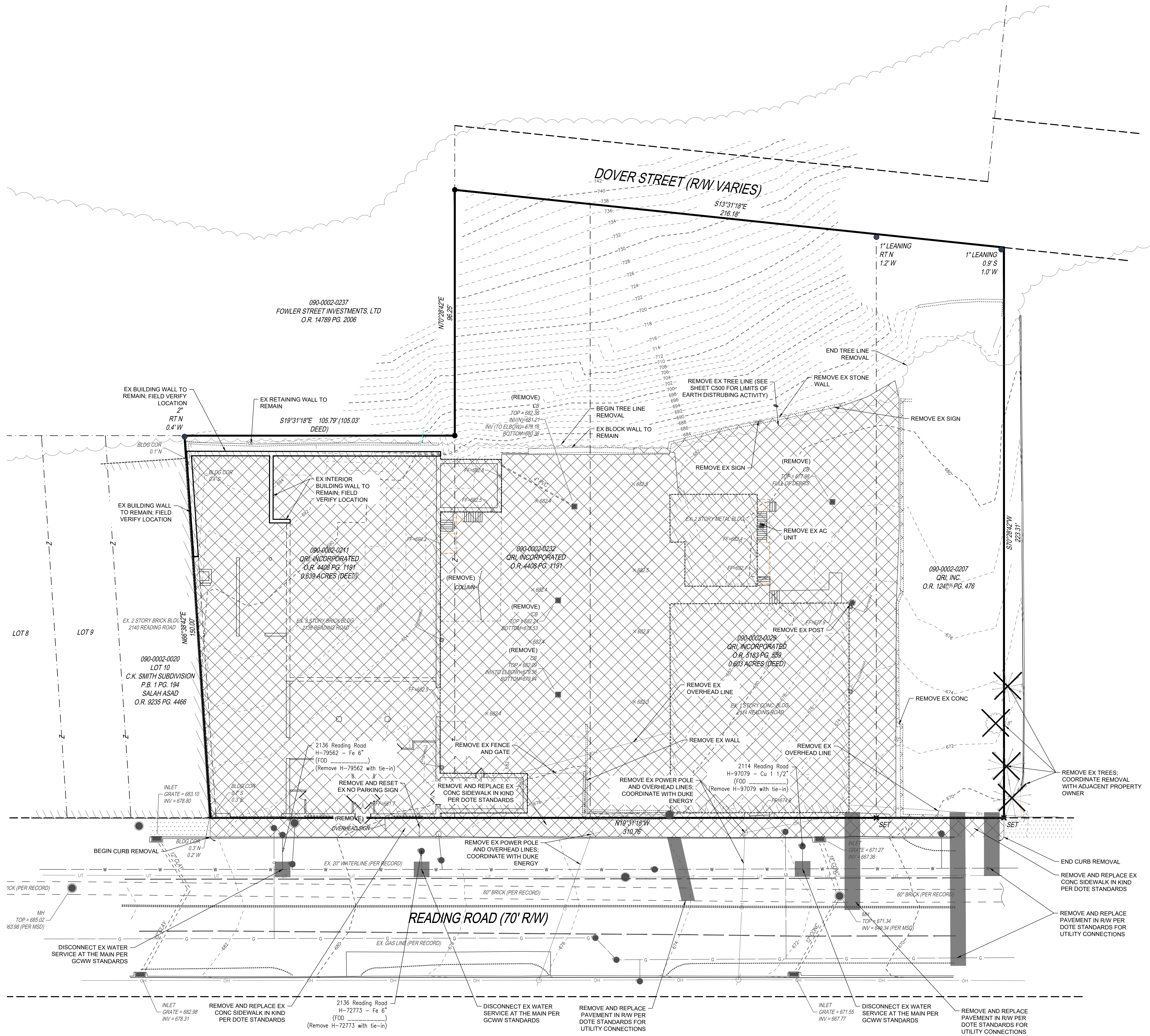
EXISTING  
CONDITIONS

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**C200**

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Plot time: Aug 09, 2024 - 1:49pm  
Drawing name: J:\2023\23-0200\CV\DWG\23-0200 CD.dwg - Layout Tab: C201 - Site Demolition Plan



**LEGEND**

- EXISTING ASPHALT PAVEMENT (TO REMAIN)
- EXISTING CONCRETE/WALK (TO REMAIN)
- REMOVE EXISTING CONCRETE/ASPHALT/WALK/ BUILDING/PAVERS
- REMOVE & REPLACE EX PAVEMENT IN KIND PER DOTE STANDARDS FOR UTILITY CONNECTIONS
- REMOVE EX TREE

Basis of Bearing:  
 State Plane NAD83 (2011)  
 0 20 30  
 SCALE: 1" = 20'

**\*BUILDING DEMO NOTE:**  
 DEMOLITION OF EXISTING BUILDING INDICATES REMOVAL OF ALL ASSOCIATED STRUCTURES INCLUDING FOUNDATIONS, PAVEMENT, WALLS, STAIRS, FENCES, LANDSCAPING, LIGHTING, STORM DRAINAGE, UTILITY SERVICES, ETC. EXISTING BASEMENTS SHALL BE BACKFILLED AND COMPACTED PER THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER. EXISTING GAS AND ELECTRIC SERVICES SHALL BE ABANDONED PER DUKE ENERGY STANDARDS. EXISTING WATER SERVICES SHALL BE DISCONNECTED AT THE CURB STOP AND REMOVED PER GCWW STANDARDS. EXISTING SANITARY SERVICES NOT BEING USED FOR THIS DEVELOPMENT SHALL BE CAPPED AT THE RIGHT-OF-WAY AND REMOVED PER MSD STANDARDS.



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**SITE DEMOLITION PLAN**

23-056

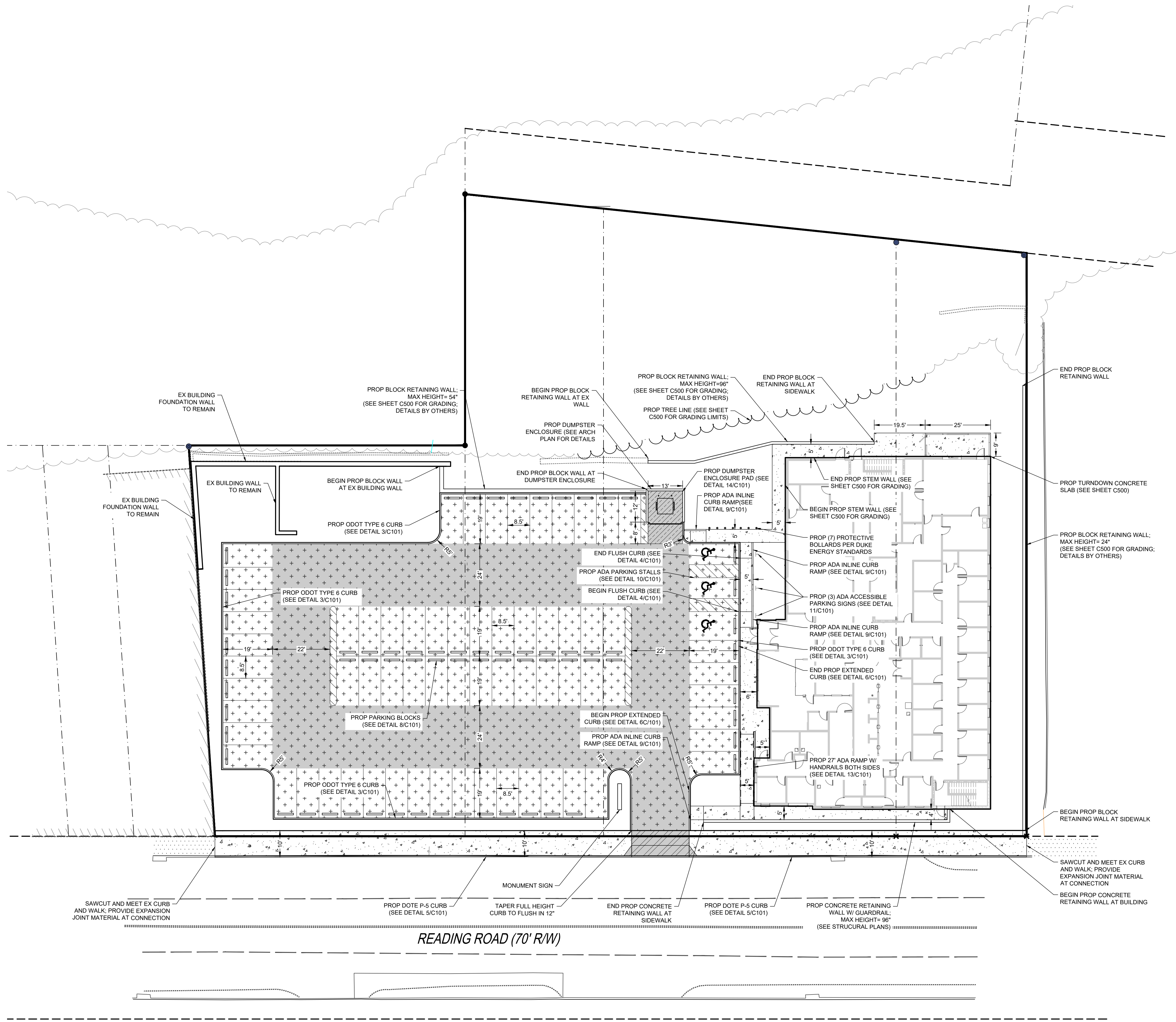
**C201**



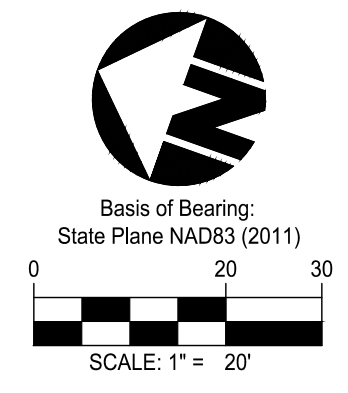
Know what's below.  
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 LOCATION OF ALL EXISTING UTILITIES TO BE DETERMINED IN THE FIELD PRIOR TO CONSTRUCTION

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Plot time: Aug 09, 2024 - 1:49pm  
Drawing name: J:\2023\23-0200\CV\DWG\23-0200 CD.dwg - Layout Tab: C300 - Site Layout Plan



- LEGEND**
- PROPOSED CONCRETE WALK (SEE DETAIL 15/C101)
  - PROPOSED LIGHT DUTY ASPHALT PAVEMENT (SEE DETAIL 1/C101)
  - PROPOSED HEAVY DUTY ASPHALT PAVEMENT (SEE DETAIL 2/C101)
  - PROPOSED CONCRETE DRIVE APRON (PER DOTE ACC NO. 21346)
  - PROPOSED DUMPSTER ENCLOSURE PAD (SEE DETAIL 1/102)



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SITE LAYOUT PLAN

23-056



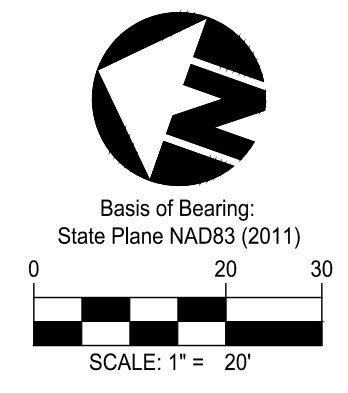
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LOCATION OF ALL EXISTING UTILITIES TO BE DETERMINED IN THE FIELD PRIOR TO CONSTRUCTION

**C300**

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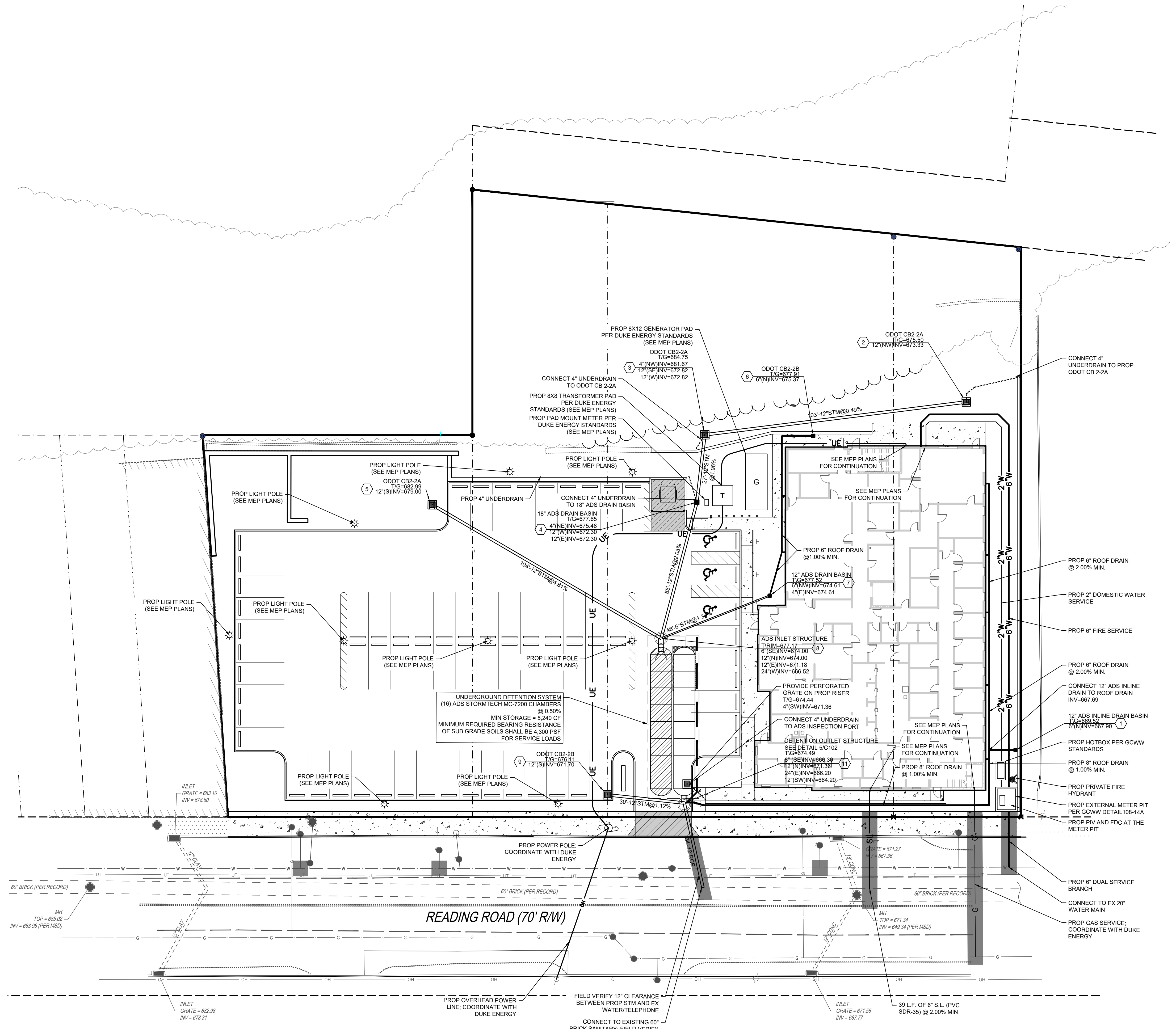
Plot time: Aug 09, 2024 - 1:50pm  
Drawing name: J:\2023\23-0200\CV\DWG\23-0200 CD.dwg - Layout Tab: C400 - Site Utility Plan



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SITE UTILITY PLAN

23-056

**C400**

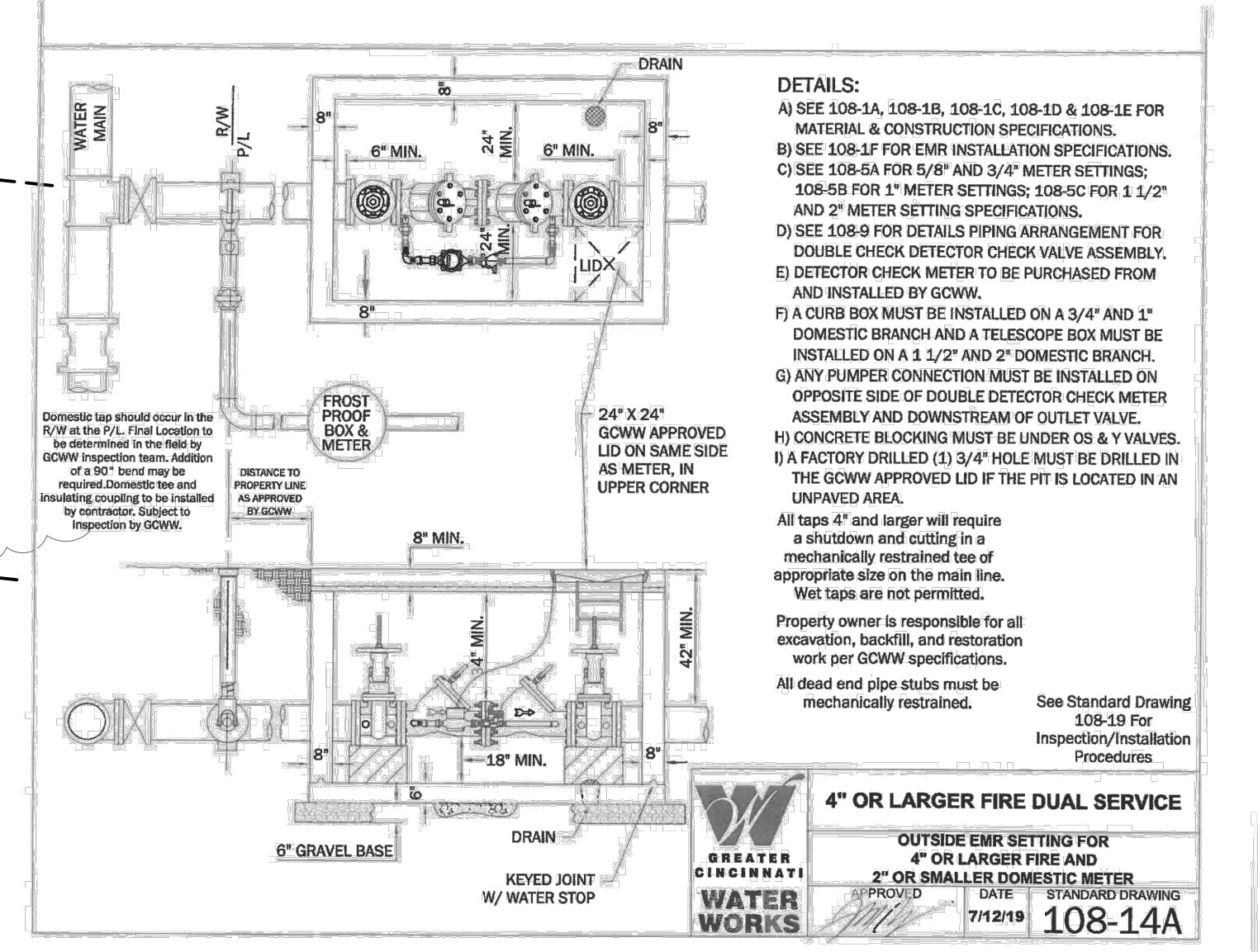
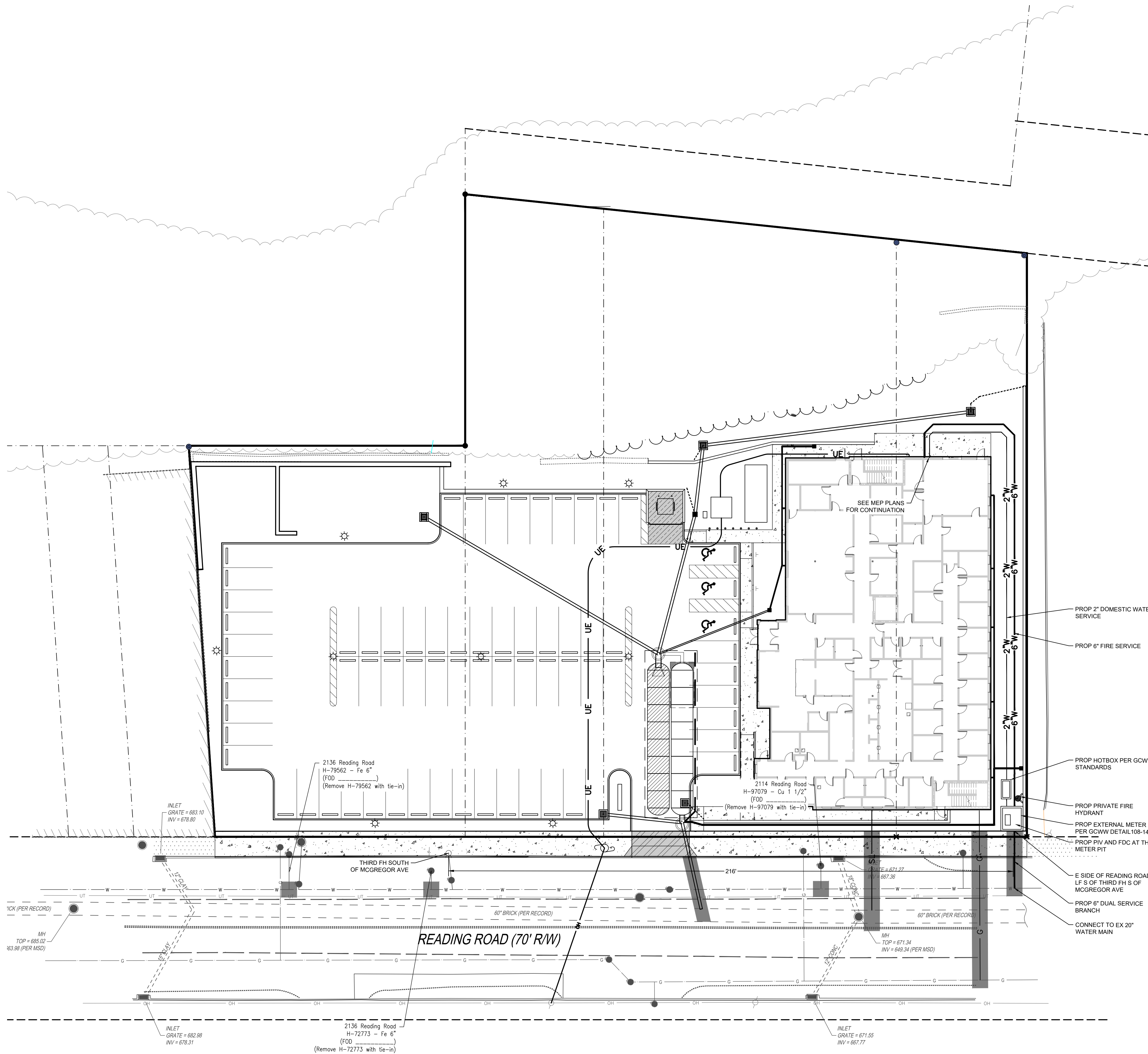


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Plot time: Aug 09, 2024 - 1:51pm  
Drawing name: J:\2023\23-0200\CV\DWG\23-0200 CD.dwg - Layout Tab: C400 - Site Utility Plan



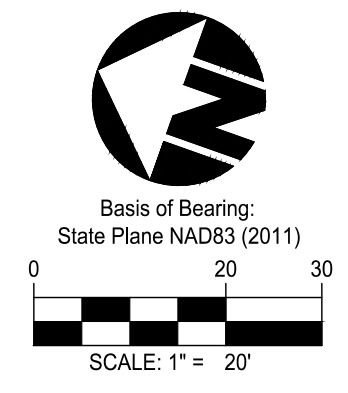
**BRANCH APPLICATION DRAWING VERITY DISCLAIMER**

THIS PLAT/SHEET HAS BEEN PREPARED BY THE APPLICANT FOR WATER SERVICE.

ALL EXISTING UTILITY AND RECORD INFORMATION DEPICTED ON THE DRAWING, INCLUDING BUILDING FOOTPRINT (WHICH MUST SHOW ANY ENCROACHMENTS INTO THE PUBLIC RIGHT OF WAY, INCLUDING, BUT NOT LIMITED TO: BASEMENT AREAS, ROOT CELLARS AND COAL CHUTES), PARCEL AND EASEMENT INFORMATION, ROADWAY AND RIGHT OF WAY LOCATION ARE THE RESULT OF RESEARCH BY THIS APPLICANT.

ANY AND ALL DAMAGES OR NEED FOR ADDITIONAL WORK, RESULTING FROM INACCURACY ON THE PART OF THE APPLICANT IS THE APPLICANT'S SOLE FINANCIAL RESPONSIBILITY.

- GCWW WATER MAIN NOTES**
1. ALL WATER WORK AND WATER MAIN MATERIALS INCLUDING PIPE, FITTINGS, VALVES, HYDRANTS, AND INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF GREATER CINCINNATI WATER WORKS. THE MOST RIGID SPECIFICATIONS SHALL GOVERN IN THE EVENT OF A CONFLICT WITH THE PROJECT SPECIFICATIONS.
  2. ALL WATER FACILITIES ON THIS PROJECT ARE TO BE PRIVATE.
  3. BACKFILL SHALL BE CLASS A WHEN MAIN IS FIVE (5) FEET OR GREATER FROM EXISTING PUBLIC CURB. LESS THAN FIVE (5) FEET FROM EXISTING PUBLIC CURB, UNDER CURB OR EXISTING PUBLIC PAVEMENT BACKFILL SHALL BE CONTROLLED DENSITY FILL.
  4. WATER MAINS SHALL MAINTAIN A MINIMUM COVER OF FOUR (4) FEET.
  5. A MINIMUM CLEAR DISTANCE OF TEN (10) FEET HORIZONTAL AND EIGHTEEN (18) INCHES VERTICAL SHALL BE MAINTAINED BETWEEN SANITARY AND/OR STORM SEWERS AND WATER MAINS.
  6. SANITARY AND STORM SEWERS THAT CROSS WATER MAINS SHALL BE LOCATED SUCH THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS.
  7. PRIVATE WATER MAINS BEYOND THE METER PIT MAY BE C900 DR18 FOR WORKING PRESSURES LESS THAN 150 PSI. FOR DESIGN PRESSURES GREATER THAN 150 PSI, DUCTILE IRON PRESSURE CLASS 350 OR C900 DR 14 SHALL BE USED.
  8. SERVICE PIPING SMALLER THAN THREE (3) INCHES SHALL BE SEAMLESS COPPER FLEXIBLE WATER TUBING, ASTM B 88, TYPE K, PRESSURE CLASS 250.



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GCWW BRANCH APPLICATION PLAN

23-056

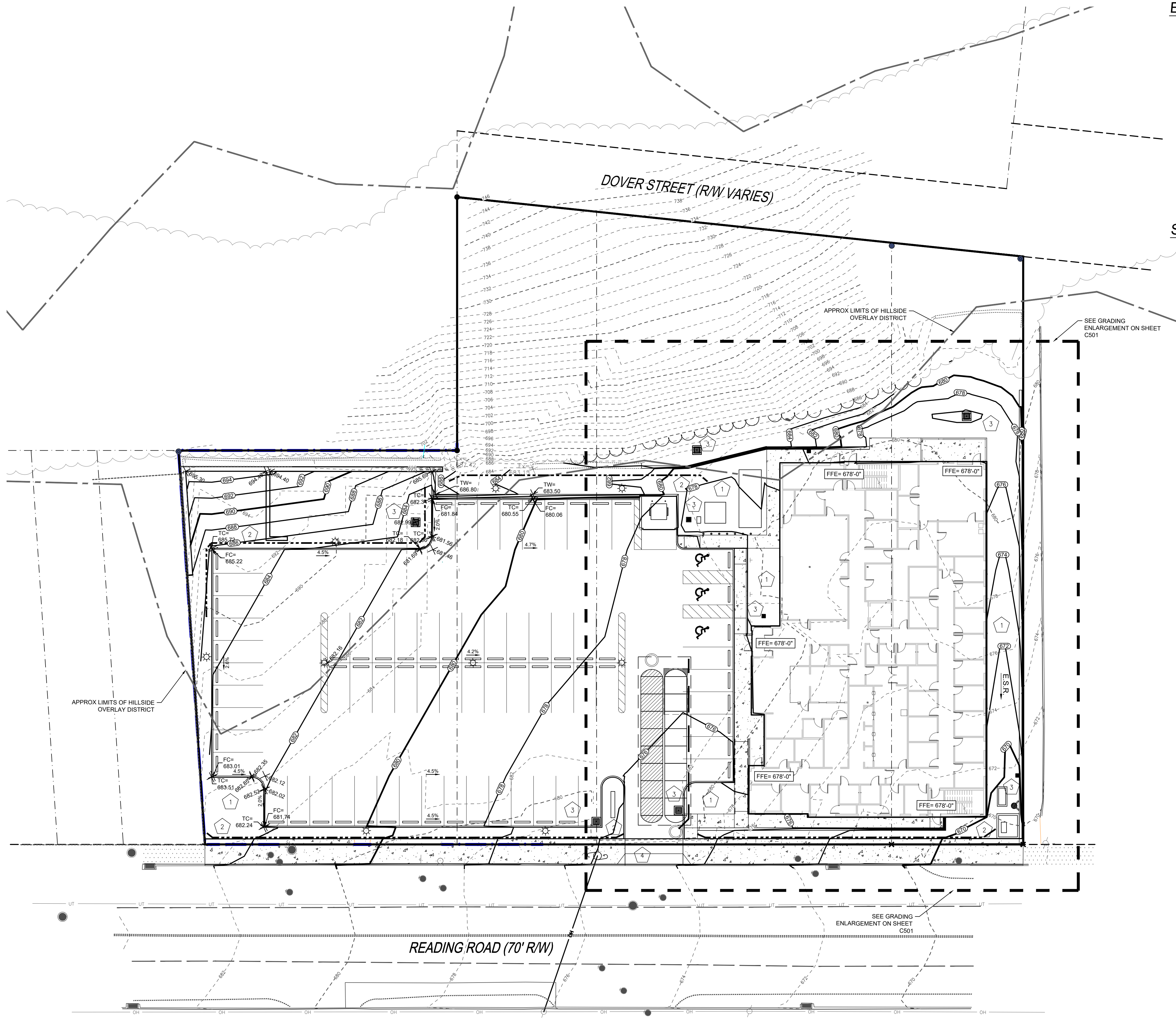
C401



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Drawing name: J:\2023\23-0200\CV\DWG\23-0200 GR.dwg - Layout Tab: C500 - Site Grading & Erosion Control



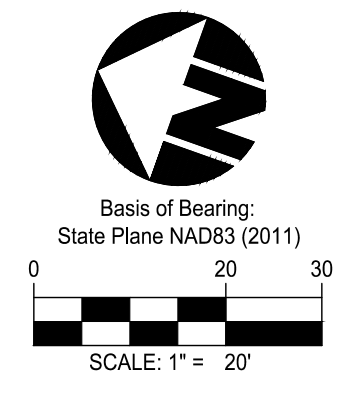
**EROSION CONTROL LEGEND**

- 1 SEEDING & MULCHING (SEE DETAIL 1/C102)
- 2 SILT FENCE (SEE DETAIL 2/C102)
- 3 DANDY BAG OR APPROVED EQUAL (SEE DETAIL 3/C102)
- 4 ROCK CONSTRUCTION ENTRANCE (SEE DETAIL 4/C102)
- E.S.R. EMERGENCY STORM ROUTE

NOTE: EMERGENCY STORM ROUTES INDICATE LOCATIONS OF OVERFLOW LAND ROUTES WATER WOULD TAKE SHOULD THE PROPOSED SYSTEM EVER SURCHARGE OR FAIL.

**SPOT ELEVATION LEGEND**

- EX = EXISTING
- FF = FINISH FLOOR
- HP = HIGH POINT
- LP = LOW POINT
- FC = FACE OF CURB
- TC = TOP OF CURB
- GS = GROUND SHOT
- EP = EDGE OF PAVEMENT
- BW = BOTTOM OF WALL
- TW = TOP OF WALL
- PAVT = PAVEMENT



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**SITE GRADING & EROSION CONTROL PLAN**

23-056



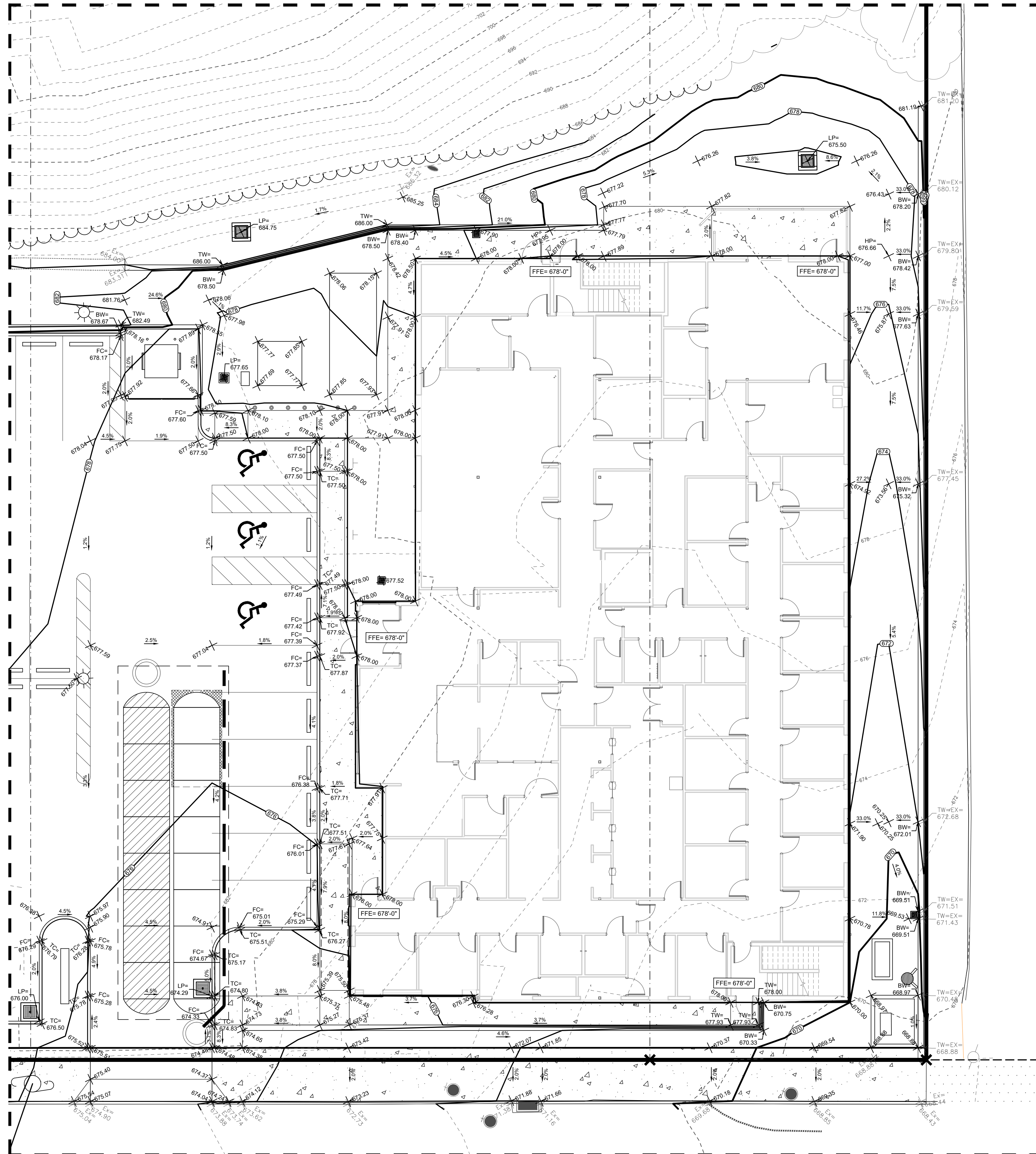
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LOCATION OF ALL EXISTING UTILITIES TO BE DETERMINED IN THE FIELD PRIOR TO CONSTRUCTION

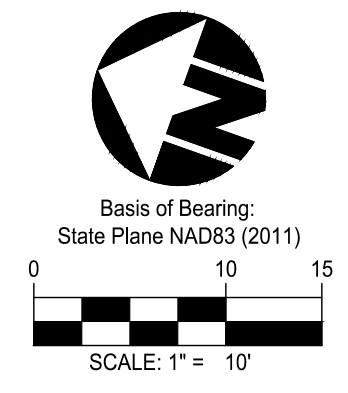
**C500**

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Plot time: Aug 09, 2024 - 1:56pm  
Drawing name: J:\2023\23-0200\CV\DWG\23-0200 GR.dwg - Layout Tab: C501 - Grading Enlargements



**GRADING ENLARGEMENT**  
1"=10'



**SPOT ELEVATION LEGEND**

- EX = EXISTING
- FF = FINISH FLOOR
- HP = HIGH POINT
- LP = LOW POINT
- FC = FACE OF CURB
- TC = TOP OF CURB
- GS = GROUND SHOT
- EP = EDGE OF PAVEMENT
- BW = BOTTOM OF WALL
- TW = TOP OF WALL
- PAVT = PAVEMENT



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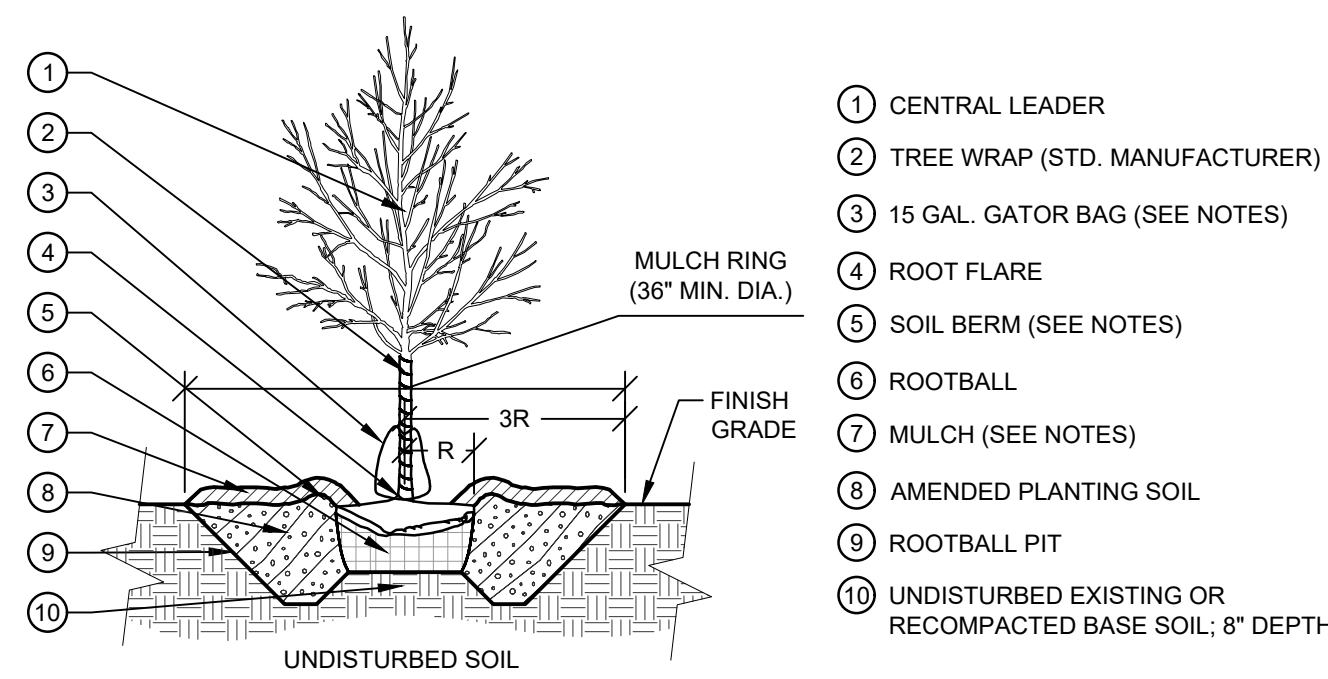
GRADING ENLARGEMENT

23-056



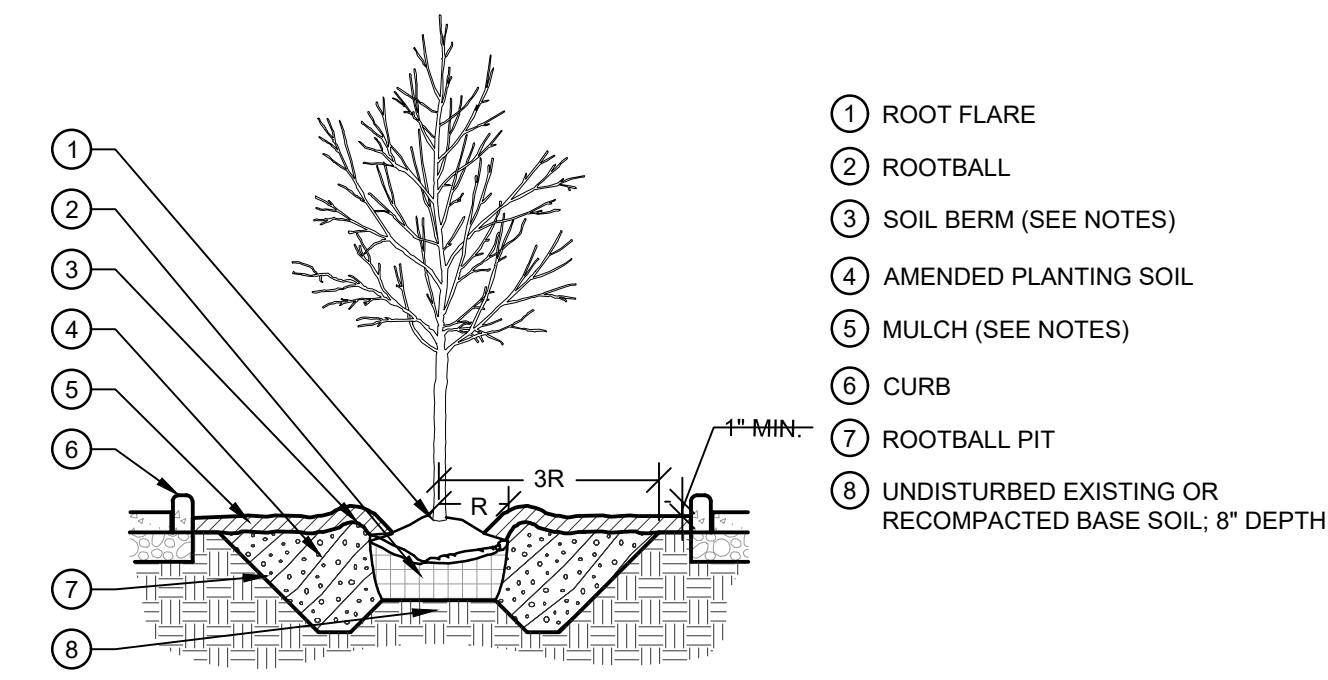
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**C501**



- 1 CENTRAL LEADER
  - 2 TREE WRAP (STD. MANUFACTURER)
  - 3 15 GAL. GATOR BAG (SEE NOTES)
  - 4 ROOT FLARE
  - 5 SOIL BERM (SEE NOTES)
  - 6 ROOTBALL
  - 7 MULCH (SEE NOTES)
  - 8 AMENDED PLANTING SOIL
  - 9 ROOTBALL PIT
  - 10 UNDISTURBED EXISTING OR RECOMPACTED BASE SOIL; 8" DEPTH
- UNDISTURBED SOIL
- UNDISTURBED SOIL
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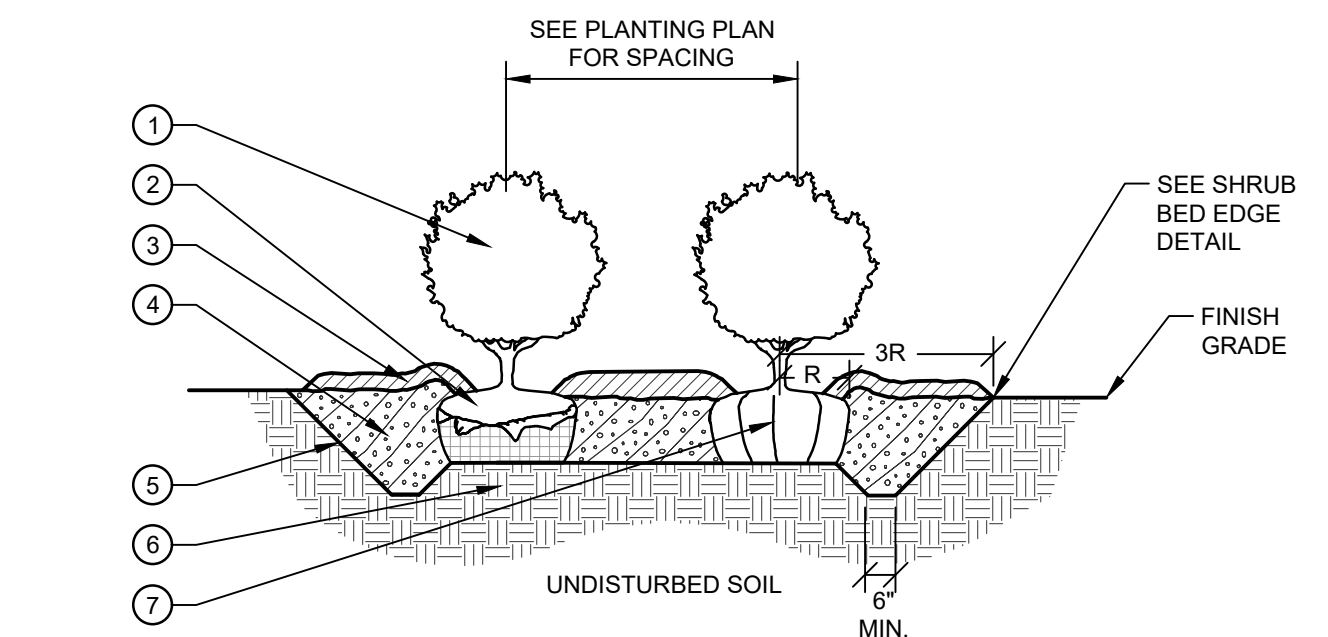
**1 TYP. TREE PLANTING DETAIL**  
NOT TO SCALE 329343.46-08



- 1 ROOT FLARE
  - 2 ROOTBALL
  - 3 SOIL BERM (SEE NOTES)
  - 4 AMENDED PLANTING SOIL
  - 5 MULCH (SEE NOTES)
  - 6 CURB
  - 7 ROOTBALL PIT
  - 8 UNDISTURBED EXISTING OR RECOMPACTED BASE SOIL; 8" DEPTH
- UNDISTURBED SOIL
- UNDISTURBED SOIL
- UNDISTURBED SOIL
- UNDISTURBED SOIL
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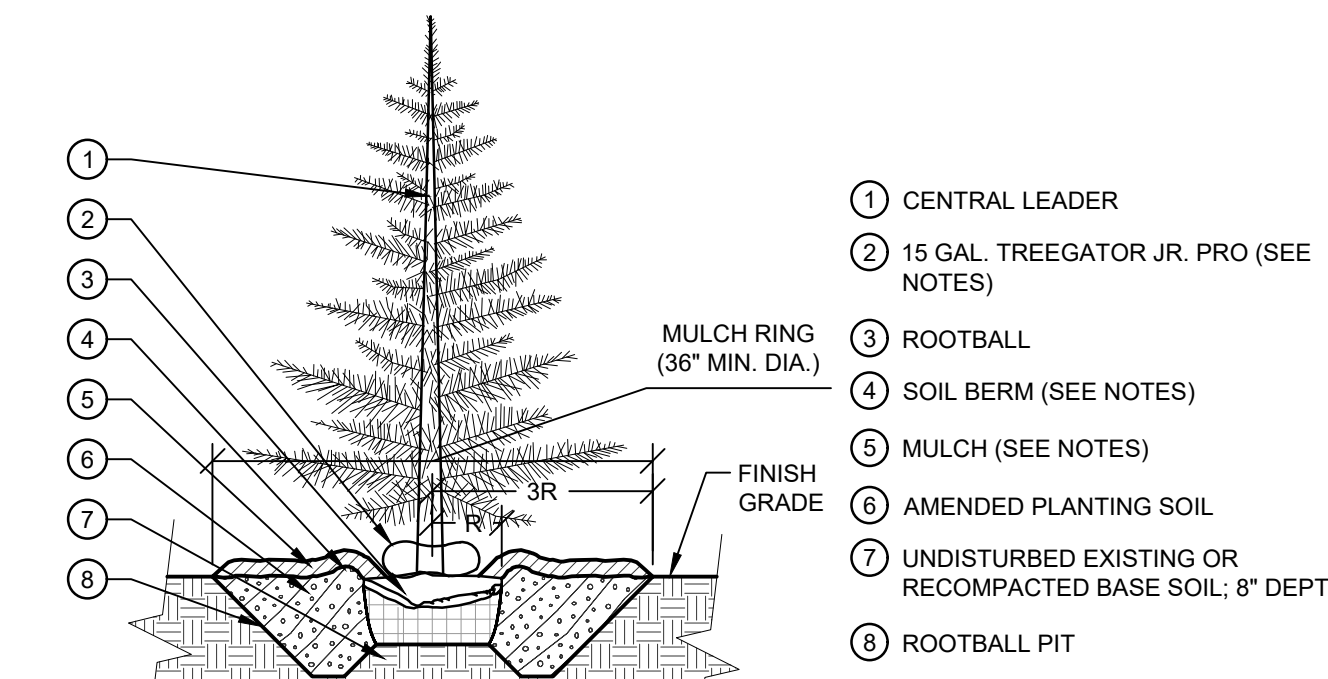
**2 TYP. EVERGREEN PLANTING DETAIL**  
NOT TO SCALE 329343.46-13

**3 TREE ISLAND PLANTING**  
NOT TO SCALE 329343.46-11



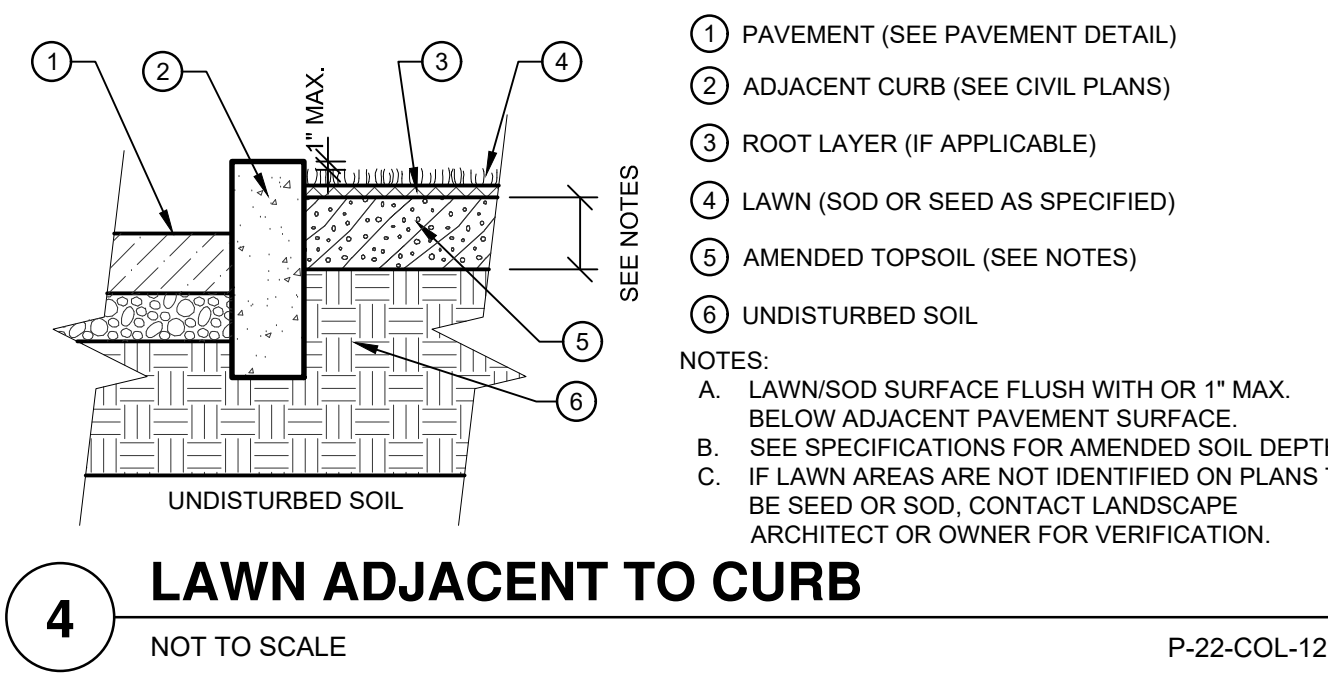
- 1 SHRUB
  - 2 B&B SHRUB
  - 3 MULCH (SEE NOTES)
  - 4 AMENDED PLANTING SOIL
  - 5 SHRUB PIT
  - 6 UNDISTURBED EXISTING OR RECOMPACTED BASE SOIL; 8" DEPTH
  - 7 CONTAINER SHRUB
- UNDISTURBED SOIL
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**6 SHRUB PLANTING DETAIL**  
NOT TO SCALE 329113.26-06



- 1 PAVEMENT (SEE PAVEMENT DETAIL)
  - 2 ADJACENT CURB (SEE CIVIL PLANS)
  - 3 ROOT LAYER (IF APPLICABLE)
  - 4 LAWN (SOD OR SEED AS SPECIFIED)
  - 5 AMENDED TOPSOIL (SEE NOTES)
  - 6 UNDISTURBED SOIL
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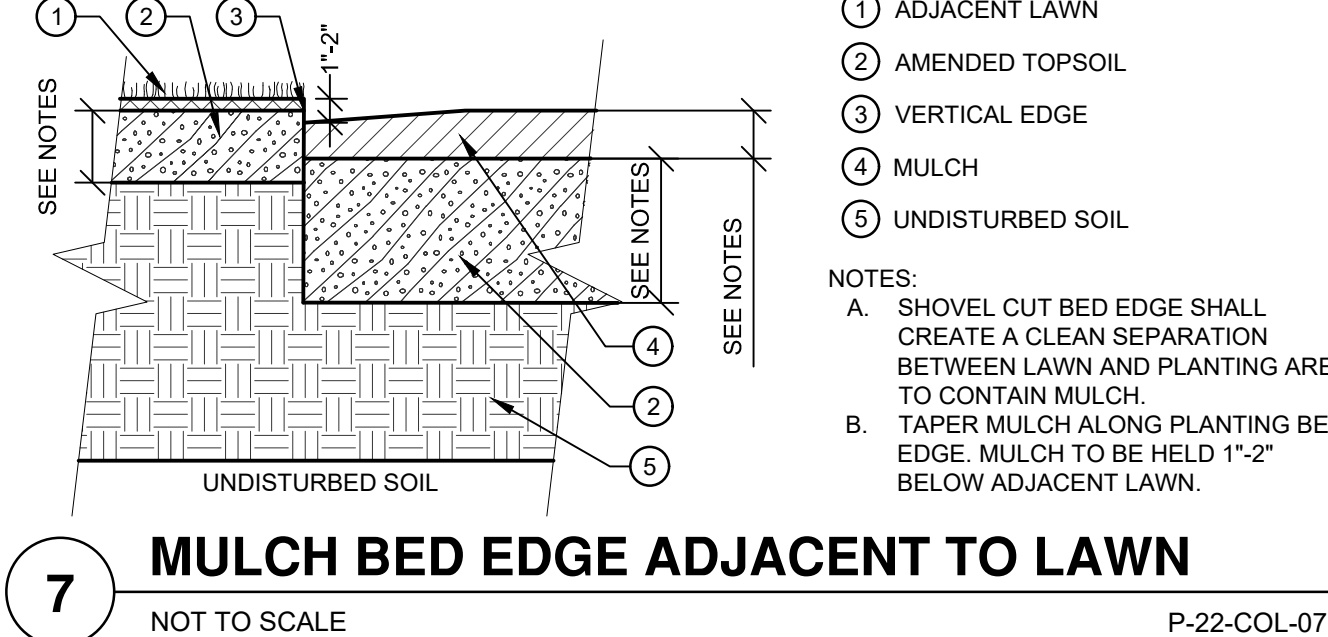
**4 LAWN ADJACENT TO CURB**  
NOT TO SCALE P-22-COL-12



- 1 ADJACENT PAVEMENT
  - 2 ROOT LAYER
  - 3 LAWN (SOD OR SEED AS SPECIFIED)
  - 4 AMENDED TOPSOIL (SEE NOTES)
  - 5 UNDISTURBED SOIL
- UNDISTURBED SOIL
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**5 LAWN ADJACENT TO PAVED SURFACE**  
NOT TO SCALE P-22-COL-11

**7 MULCH BED EDGE ADJACENT TO LAWN**  
NOT TO SCALE P-22-COL-07

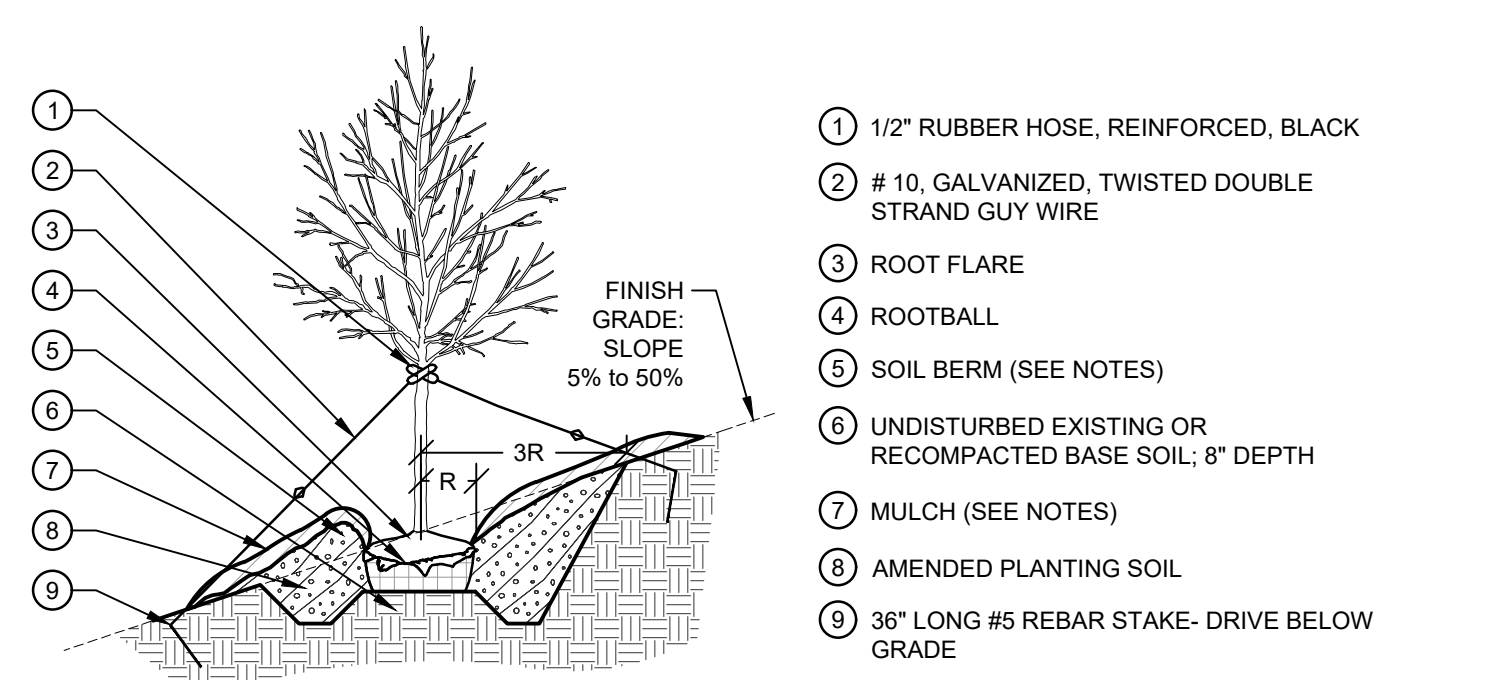


- 1 ADJACENT PAVEMENT (SEE PAVEMENT DETAIL)
  - 2 ADJACENT CURB
  - 3 AMENDED TOPSOIL
  - 4 MULCH
  - 5 UNDISTURBED SOIL
- UNDISTURBED SOIL
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**8 MULCH BED EDGE ADJACENT TO WALK**  
NOT TO SCALE P-22-COL-09

**GENERAL LANDSCAPE NOTES**

- A. REFER TO LANDSCAPE SPECIFICATIONS FOR ADDITIONAL INSTALLATION REQUIREMENTS.
- B. THE CONTRACTOR SHALL VISIT THE SITE AND COMPLETELY REVIEW THESE DOCUMENTS AND FULLY UNDERSTAND THE NATURE AND SCOPE OF WORK NEEDED TO ACHIEVE THE FINISHED PRODUCT INTENDED BY THE OWNER. IN ADDITION, THE CONTRACTOR SHALL AT ONCE REPORT TO THE LANDSCAPE ARCHITECT, INACCURACIES OR INCONSISTENCIES DISCOVERED, FAILURE TO REASONABLY RECOGNIZE OR NOTIFY THE LANDSCAPE ARCHITECT OF SUCH ITEMS SHALL RELEASE THE LANDSCAPE ARCHITECT AND OWNER OF ALL LIABILITY. ANY DEVIATIONS FROM THESE DOCUMENTS WITHOUT WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECT SHALL BE CORRECTED AT THE CONTRACTORS EXPENSE.
- C. PRIOR TO CONSTRUCTION, THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS NECESSARY TO COMPLETE THE WORK, LOCATING ALL UNDERGROUND UTILITIES, AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING INSTALLATION. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC., WHICH MAY OCCUR AS A RESULT OF LANDSCAPE CONSTRUCTION.
- D. CONTRACTOR MUST CERTIFY THAT ITS SAFETY PROGRAM MEETS REGULATORY REQUIREMENTS AT A MINIMUM. CONTRACTOR TO PROVIDE DOCUMENTATION OF THE OSHA RECORD KEEPING SUMMARY.
- E. REFER TO BID DOCUMENTS AND COMPLY WITH ALL STATE & LOCAL TRAFFIC AND SAFETY REQUIREMENTS REGARDING APPROVED WORK TIMES, SCHEDULING OF INSTALLATION, AND ALL OTHER REQUIREMENTS.
- F. LANDSCAPE CONTRACT IS RESPONSIBLE FOR COORDINATING WITH OTHER CONTRACTORS AND/OR LOCATING PROPOSED SITE UTILITIES, STORM STRUCTURES, EASEMENTS, ETC.
- G. ALL PLANT MATERIAL MUST BE INSTALLED ACCORDING TO THE APPROVED LANDSCAPING PLAN BY NO LATER THAN THE NEXT PLANTING SEASON OR WITHIN 6 MONTHS FROM THE COMPLETION OF ALL SITE CONSTRUCTION. CONTRACTOR TO VERIFY ALL PLANT QUANTITIES. ANY DISCREPANCY BETWEEN THE PLANTING LIST AND THE PLAN SHALL BE VERIFIED BY THE LANDSCAPE ARCHITECT. ALL SUBSTITUTIONS AND/OR CHANGES SHALL BE REQUESTED IN WRITING TO THE OWNER OR OWNER'S REPRESENTATIVE AND BE APPROVED BY THE LANDSCAPE ARCHITECT AND THE LOCAL MUNICIPALITY (IF REQUIRED) PRIOR TO INSTALLATION.
- I. INSTALL PLANTS - REFER TO TYPICAL PLANTING DETAILS FOR PLANT INSTALLATION.
- J. IT IS THE CONTRACTOR'S OPTION WHETHER OR NOT TO STAKE A TREE UNDER 5" CALIPER, BUT IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT PLANTS REMAIN IN AN UPRIGHT POSITION UNTIL THE END OF THE WARRANTY PERIOD, AT WHICH POINT ANY STAKES & WIRE ARE TO BE REMOVED BY THE CONTRACTOR.
- K. LANDSCAPE CONTRACTOR SHALL INSTALL GATOR BAGS, PER MANUFACTURER'S RECOMMENDATION FOR ALL TREES THAT ARE NOT OTHERWISE IRRIGATED. GATOR BAGS TO BE INSTALLED AND FILLED BETWEEN JUNE AND AUGUST. (1) BAG REQUIRED FOR 1" - 4" CALIPER TREES AND (2) BAGS REQUIRED FOR 5"-8" CALIPER TREES.
- L. LANDSCAPE CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE FROM ALL PLANT BEDS WITHOUT ADVERSELY AFFECTING SITE DRAINAGE. GRADES BEHIND CURBS FOR AREAS TO RECEIVE MULCH SHALL BE HELD 4 INCHES BELOW TOP OF CURB AND 2 INCHES BELOW TOP OF CURB FOR SOD.
- M. CONTRACTOR TO RUN PERCOLATION TESTS TO ASSURE PROPER DRAINAGE IN PLANTING AREAS.
- N. ADDITIONAL ROCK EXCAVATION AND TOPSOIL MAY BE REQUIRED TO OBTAIN SPECIFIED PLANTING DEPTHS FOR ROOT COVERAGE BASED ON SITE CONDITIONS.



- 1 1/2" RUBBER HOSE, REINFORCED, BLACK
  - 2 # 10, GALVANIZED, TWISTED DOUBLE STRAND GUY WIRE
  - 3 ROOT FLARE
  - 4 ROOTBALL
  - 5 SOIL BERM (SEE NOTES)
  - 6 UNDISTURBED EXISTING OR RECOMPACTED BASE SOIL; 8" DEPTH
  - 7 MULCH (SEE NOTES)
  - 8 AMENDED PLANTING SOIL
  - 9 36" LONG #5 REBAR STAKE, DRIVE BELOW GRADE
- UNDISTURBED SOIL
- UNDISTURBED SOIL
- UNDISTURBED SOIL
- UNDISTURBED SOIL
- UNDISTURBED SOIL
- UNDISTURBED SOIL
- UNDISTURBED SOIL
- UNDISTURBED SOIL
- UNDISTURBED SOIL

**9 TREE ON SLOPE 5% (20:1) TO 50% (2:1)**  
NOT TO SCALE 329343.46-10

**11 MULCH BED EDGE ADJACENT TO CURB**  
NOT TO SCALE P-22-COL-10

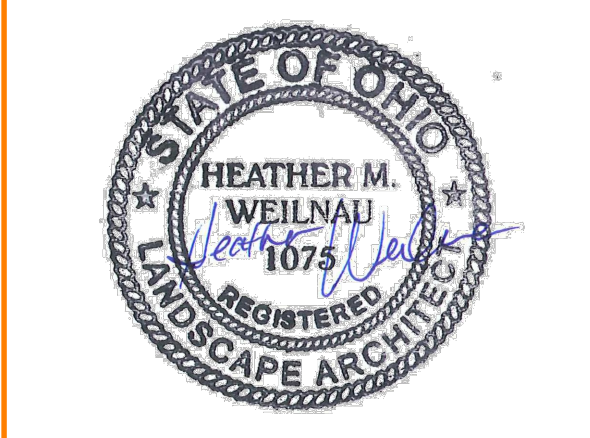


- 1 ADJACENT PAVEMENT (SEE PAVEMENT DETAIL)
  - 2 ADJACENT CURB
  - 3 AMENDED TOPSOIL
  - 4 MULCH
  - 5 UNDISTURBED SOIL
- UNDISTURBED SOIL
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**11 MULCH BED EDGE ADJACENT TO CURB**  
NOT TO SCALE P-22-COL-10



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(859)431-8612 Newport, KY 41071



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www.bayerbecker.com  
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Cincinnati, OH 45202 - 513.834.6151

**The Crossroads Center**  
2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
PERMIT SET		08/09/24

**PLANTING NOTES AND DETAILS**

23-056

**L100**

**SECTION 32 93 00 - PLANTS**

**PART 1 - GENERAL**

- 1.1 RELATED DOCUMENTS
  - A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
- 1.2 SUMMARY
  - A. SECTION INCLUDES:
    - 1. PLANTS.
    - 2. PLANTING SOILS.
    - 3. MISCELLANEOUS PRODUCTS.
- 1.3 SUBMITTALS
  - A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED, INCLUDING SOILS.
    - 1. PLANT MATERIALS: INCLUDE QUANTITIES, SIZES, QUALITY, AND SOURCES FOR PLANT MATERIALS.
    - 2. PESTICIDES AND HERBICIDES: INCLUDE PRODUCT LABEL AND MANUFACTURER'S APPLICATION INSTRUCTIONS SPECIFIC TO THE PROJECT.
  - B. SAMPLES FOR VERIFICATION: SUBMIT EACH PRODUCT AND MATERIAL WHERE REQUIRED BY THE SPECIFICATIONS TO THE OWNER'S REPRESENTATIVE FOR APPROVAL.
  - C. PRODUCT CERTIFICATES: FOR EACH TYPE OF MANUFACTURED PRODUCT, FROM MANUFACTURER, AND COMPLYING WITH THE FOLLOWING:
    - 1. MANUFACTURER'S CERTIFIED ANALYSIS OF STANDARD PRODUCTS.
  - D. MATERIAL TEST REPORTS: FOR STANDARDIZED ASTM D 5268 TOPSOIL, EXISTING NATIVE SURFACE TOPSOIL, AND IMPORTED OR MANUFACTURED TOPSOIL.
  - E. WARRANTY: SAMPLE OF SPECIAL WARRANTY.

- 1.4 QUALITY ASSURANCE
  - A. INSTALLER QUALIFICATIONS: A QUALIFIED LANDSCAPE INSTALLER WHOSE WORK HAS RESULTED IN SUCCESSFUL ESTABLISHMENT OF PLANTS.
    - 1. EXPERIENCED YEARS' EXPERIENCE IN LANDSCAPE INSTALLATION IN ADDITION TO REQUIREMENTS IN DIVISION 01 SECTION "QUALITY REQUIREMENTS."
    - 2. INSTALLER'S FIELD SUPERVISION: REQUIRE INSTALLER TO MAINTAIN AN EXPERIENCED FULL-TIME SUPERVISOR ON PROJECT SITE WHEN WORK IS IN PROGRESS.
    - 3. PESTICIDE APPLICATOR: STATE LICENSED, COMMERCIAL.
  - B. SOIL ANALYSIS: FOR EACH UNAMENDED SOIL TYPE, FURNISH SOIL ANALYSIS AND A WRITTEN REPORT BY A QUALIFIED SOIL TESTING LABORATORY STATING PERCENTAGES FOR ORGANIC MATTER, GRADATION OF SAND, SILT, AND CLAY CONTENT, CATION EXCHANGE CAPACITY, SODIUM ABSORPTION RATIO, DELETERIOUS MATERIAL, PH, AND MINERAL AND PLANT-NUTRIENT CONTENT OF THE SOIL.
    - 1. TESTING METHODS AND WRITTEN RECOMMENDATIONS SHALL COMPLY WITH USDA'S HANDBOOK NO. 60.
    - 2. THE SOIL-TESTING LABORATORY SHALL OVERSEE SOIL SAMPLING, WITH DEPTH, LOCATION, AND NUMBER OF SAMPLES TO BE TAKEN PER INSTRUCTIONS FROM LANDSCAPE ARCHITECT. A MINIMUM OF THREE REPRESENTATIVE SAMPLES SHALL BE TAKEN FROM VARIOUS LOCATIONS FOR EACH SOIL. TO BE USED OR AMENDED FOR PLANTING PURPOSES.
    - 3. REPORT SUITABILITY OF TESTED SOIL FOR PLANT GROWTH.
      - a. BASED UPON THE TEST RESULTS, STATE RECOMMENDATIONS FOR SOIL TREATMENTS AND SOIL AMENDMENTS TO BE INCORPORATED. STATE RECOMMENDATIONS IN WEIGHT PER 1000 SQ. FT. (92.9 SQ. M) OR VOLUME PER CU. YD. (0.76 CU. M) FOR NITROGEN, PHOSPHORUS, AND POTASH NUTRIENTS AND SOIL AMENDMENTS TO BE ADDED TO PRODUCE SATISFACTORY PLANTING SOIL SUITABLE FOR HEALTHY, VIABLE PLANTS.
      - b. REPORT PRESENCE OF PROBLEM SALTS, MINERALS, OR HEAVY METALS, INCLUDING ALUMINUM, ARSENIC, BARIUM, CADMIUM, CHROMIUM, COBALT, LEAD, LITHIUM, AND VANADIUM. IF SUCH PROBLEM MATERIALS ARE PRESENT, PROVIDE ADDITIONAL RECOMMENDATIONS FOR CORRECTIVE ACTION.
  - C. PROVIDE QUALITY, SIZE, GENUS, SPECIES, AND VARIETY OF PLANTS INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS IN ANSI Z60.1. PLANTS WITH HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK, FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT.
    - a. IF FORMAL ARRANGEMENTS OR CONSEQUENTIAL ORDER OF TREES OR SHRUBS IS SHOWN, SELECT STOCK FOR UNIFORM HEIGHT AND SPREAD, AND NUMBER LABEL TO ASSURE SYMMETRY IN PLANTING.
  - D. MEASUREMENTS: MEASURE ACCORDING TO ANSI Z60.1. DO NOT PRUNE TO OBTAIN REQUIRED SIZES.
    - 1. TREES AND SHRUBS: MEASURE WITH BRANCHES AND TRUNKS OR CANES IN THEIR NORMAL POSITION. TAKE HEIGHT MEASUREMENTS FROM OR NEAR THE TOP OF THE ROOT FLARE FOR FIELD-GROWN STOCK AND CONTAINER-GROWN STOCK. MEASURE MAIN BODY OF TREE OR SHRUB FOR HEIGHT AND SPREAD. DO NOT MEASURE BRANCHES OR ROOTS TIP TO TIP. TAKE CALIPER MEASUREMENTS 6 INCHES (150 MM) ABOVE THE ROOT FLARE FOR TREES UP TO 4-INCH (100-MM) CALIPER SIZE, AND 12 INCHES (300 MM) ABOVE THE ROOT FLARE FOR LARGER SIZES.
    - 2. OTHER PLANTS: MEASURE WITH STEMS, PETIOLES, AND FOLIAGE IN THEIR NORMAL POSITION.
  - E. PLANT MATERIAL OBSERVATION: LANDSCAPE ARCHITECT MAY OBSERVE PLANT MATERIAL EITHER AT PLACE OF GROWTH OR AT SITE BEFORE PLANTING FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, CULTIVAR, SIZE, AND QUALITY. LANDSCAPE ARCHITECT RETAINS RIGHT TO OBSERVE TREES AND SHRUBS FURTHER FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEMS, PESTS, DISEASE SYMPTOMS, INJURIES, AND LATENT DEFECTS AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. REMOVE REJECTED TREES OR SHRUBS IMMEDIATELY FROM PROJECT SITE.

- 1.5 DELIVERY, STORAGE, AND HANDLING
  - A. PACKAGED MATERIALS: DELIVER PACKAGED MATERIALS IN ORIGINAL, UNOPENED CONTAINERS SHOWING WEIGHT, CERTIFIED ANALYSIS, NAME AND ADDRESS OF MANUFACTURER, AND INDICATION OF CONFORMANCE WITH STATE AND FEDERAL LAWS IF APPLICABLE.
  - B. BULK MATERIALS:
    - 1. DO NOT DUMP OR STORE BULK MATERIALS NEAR STRUCTURES, UTILITIES, WALKWAYS AND PAVEMENTS, OR ON EXISTING TURF AREAS OR PLANTS.
    - 2. PROVIDE EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF BULK MATERIALS, DISCHARGE OF SOIL-BEARING WATER RUNOFF, AND AIRBORNE DUST REACHING ADJACENT PROPERTIES, WATER CONVEYANCE SYSTEMS, OR WALKWAYS.
    - 3. ACCOMPANY EACH DELIVERY OF BULK FERTILIZERS, LIME, AND SOIL AMENDMENTS WITH APPROPRIATE CERTIFICATES.
  - C. DO NOT PRUNE TREES AND SHRUBS BEFORE DELIVERY. PROTECT BARK, BRANCHES, AND ROOT SYSTEMS FROM SUN SCALD, DRYING, WIND BURN, SWEATING, WHIPPING, AND OTHER HANDLING AND TYING DAMAGE. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DESTROY THEIR NATURAL SHAPE. PROVIDE PROTECTIVE COVERING OF PLANTS DURING SHIPPING AND DELIVERY. DO NOT DROP PLANTS DURING DELIVERY AND HANDLING.
  - D. HANDLE PLANTING STOCK BY ROOT BALL.
  - E. STORE BULBS, CORMS, AND TUBERS IN A DRY PLACE AT 60 TO 65 DEG F (16 TO 18 DEG C) UNTIL PLANTING.
  - F. DELIVER PLANTS AFTER PREPARATIONS HAVE BEEN COMPLETED, AND INSTALL IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN SIX HOURS AFTER DELIVERY, SET PLANTS AND TREES IN THEIR APPROPRIATE ASPECT (SUN, FILTERED SUN, OR SHADE), PROTECT FROM WEATHER AND MECHANICAL DAMAGE, AND KEEP ROOTS MOIST.
    - 1. SET BALLED STOCK ON GROUND AND COVER BALL WITH SOIL, PEAT MOSS, SAWDUST, OR OTHER ACCEPTABLE MATERIAL.
    - 2. DO NOT REMOVE CONTAINER-GROWN STOCK FROM CONTAINERS BEFORE TIME OF PLANTING.
    - 3. WATER ROOT SYSTEMS OF PLANTS STORED ON-SITE DEEPLY AND THOROUGHLY WITH A FINE-MIST SPRAY. WATER AS OFTEN AS NECESSARY TO MAINTAIN ROOT SYSTEMS IN A MOIST, BUT NOT OVERLY-WET CONDITION.

- 1.6 PROJECT CONDITIONS
  - A. FIELD MEASUREMENTS: VERIFY ACTUAL GRADE ELEVATIONS, SERVICE AND UTILITY LOCATIONS, IRRIGATION SYSTEM COMPONENTS, AND DIMENSIONS OF PLANTINGS AND CONSTRUCTION CONTIGUOUS WITH NEW PLANTINGS BY FIELD MEASUREMENTS BEFORE PROCEEDING WITH PLANTING WORK.
  - B. WEATHER LIMITATIONS: PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING TO BE PERFORMED WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. APPLY PRODUCTS DURING FAVORABLE WEATHER CONDITIONS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND WARRANTY REQUIREMENTS.
  - C. COORDINATION WITH TURF AREAS (LAWNS): PLANT TREES, SHRUBS, AND OTHER PLANTS AFTER FINISH GRADES ARE ESTABLISHED AND BEFORE PLANTING TURF AREAS UNLESS OTHERWISE INDICATED.
    - 1. WHEN PLANTING TREES, SHRUBS, AND OTHER PLANTS AFTER PLANTING TURF AREAS, PROTECT TURF AREAS, AND PROMPTLY REPAIR DAMAGE CAUSED BY PLANTING OPERATIONS.

- 1.7 WARRANTY
  - A. SPECIAL WARRANTY: INSTALLER AGREES TO REPAIR OR REPLACE PLANTINGS AND ACCESSORIES THAT FAIL IN MATERIALS, WORKMANSHIP, OR GROWTH WITHIN SPECIFIED WARRANTY PERIOD.
    - 1. FAILURES INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
      - a. DEATH & UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM ABUSE, LACK OF ADEQUATE MAINTENANCE, OR NEGLIGENCE BY OWNER, OR INCIDENTS THAT ARE BEYOND CONTRACTOR'S CONTROL.
      - b. STRUCTURAL FAILURES INCLUDING PLANTINGS FALLING OR BLOWING OVER.
      - c. FAULTY PERFORMANCE OF TREE STABILIZATION, EDGINGS.
      - d. DETERIORATION OF METALS, METAL FINISHES, AND OTHER MATERIALS BEYOND NORMAL WEATHERING.
    - 2. WARRANTY PERIODS FROM DATE OF PLANTING COMPLETION:
      - a. TREES, SHRUBS, VINES, AND ORNAMENTAL GRASSES: 12 MONTHS.
      - b. GROUND COVERS, BIENNIALS, PERENNIALS, AND OTHER PLANTS: 12 MONTHS.
    - 3. INCLUDE THE FOLLOWING REMEDIAL ACTIONS AS A MINIMUM:
      - a. IMMEDIATELY REMOVE DEAD PLANTS AND REPLACE UNLESS REQUIRED TO PLANT IN THE SUCCEEDING PLANTING SEASON.
      - b. REPLACE PLANTS THAT ARE MORE THAN 25 PERCENT DEAD OR IN AN UNHEALTHY CONDITION AT END OF WARRANTY PERIOD.
      - c. A LIMIT OF ONE REPLACEMENT OF EACH PLANT WILL BE REQUIRED EXCEPT FOR LOSSES OR REPLACEMENTS DUE TO FAILURE TO COMPLY WITH REQUIREMENTS.
      - d. PROVIDE EXTENDED WARRANTY FOR PERIOD EQUAL TO ORIGINAL WARRANTY PERIOD, FOR REPLACED PLANT MATERIAL.

**PART 2 - PRODUCTS**

- 2.1 PLANT MATERIAL
  - A. GENERAL: FURNISH NURSERY-GROWN PLANTS TRUE TO GENUS, SPECIES, VARIETY, CULTIVAR, STEM FORM, SHEARING, AND OTHER FEATURES INDICATED IN PLANT SCHEDULE OR PLANT LEGEND SHOWN ON DRAWINGS AND COMPLYING WITH ANSI Z60.1; AND WITH HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK, DENSELY FOLIATED WHEN IN LEAF AND FREE OF DISEASE, PESTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT.
    - 1. TREES WITH DAMAGED, CROOKED, OR MULTIPLE LEADERS; TIGHT VERTICAL BRANCHES WHERE BARK IS SQUEEZED BETWEEN TWO BRANCHES OR BETWEEN BRANCH AND TRUNK ("INCLUDED BARK"); CROSSING TRUNKS; CUT-OFF LIMBS MORE THAN 3/4 INCH (19 MM) IN DIAMETER; OR WITH STEM GIRDLING ROOTS WILL BE REJECTED.
    - 2. COLLECTED STOCK: DO NOT USE PLANTS HARVESTED FROM THE WILD, FROM NATIVE STANDS, FROM AN ESTABLISHED LANDSCAPE PLANTING, OR NOT GROWN IN A NURSERY UNLESS OTHERWISE INDICATED.

- B. PROVIDE PLANTS OF SIZES, GRADES, AND BALL OR CONTAINER SIZES COMPLYING WITH ANSI Z60.1 FOR TYPES AND FORM OF PLANTS REQUIRED. PLANTS OF A LARGER SIZE MAY BE USED IF ACCEPTABLE TO LANDSCAPE ARCHITECT, WITH A PROPORTIONATE INCREASE IN SIZE OF ROOTS OR BALLS.
- C. ROOT-BALL DEPTH: FURNISH TREES AND SHRUBS WITH ROOT BALLS MEASURED FROM TOP OF ROOT BALL, WHICH SHALL BEGIN AT ROOT FLARE ACCORDING TO ANSI Z60.1. ROOT FLARE SHALL BE VISIBLE BEFORE PLANTING.
- D. LABELING: LABEL AT LEAST ONE PLANT OF EACH VARIETY, SIZE, AND CALIPER WITH A SECURELY ATTACHED, WATERPROOF TAG BEARING LEGIBLE DESIGNATION OF COMMON NAME AND FULL SCIENTIFIC NAME, INCLUDING GENUS AND SPECIES. INCLUDE NOMENCLATURE FOR HYBRID, VARIETY, OR CULTIVAR, IF APPLICABLE FOR THE PLANT AS SHOWN ON DRAWINGS. PLANT TAGS SHALL REMAIN ON INSTALLED PLANT MATERIAL UNTIL THE WORK HAS BEEN APPROVED BY LOCAL INSPECTOR AND/OR THE OWNER OR OWNER'S REPRESENTATIVE.
- 2.2 INORGANIC SOIL AMENDMENTS
  - A. LIME: ASTM C 602, AGRICULTURAL LIMING MATERIAL CONTAINING A MINIMUM OF 80 PERCENT CALCIUM CARBONATE EQUIVALENT AND AS FOLLOWS:
    - 1. PROVIDE LIME IN FORM OF GROUND DOLOMITIC LIMESTONE PER ASTM 605, CONTAINING NOT LESS THAN 85% OF TOTAL CARBONATES AND SHALL BE GROUND TO SUCH A FINENESS THAT 50% WILL PASS THROUGH A 100 MESH SIEVE AND 90% WILL PASS THROUGH A 20 MESH SIEVE. COARSER MATERIAL WILL BE ACCEPTABLE, PROVIDED THE SPECIFIED RATES OF APPLICATION ARE INCREASED PROPORTIONALLY ON THE BASIS OF QUANTITIES PASSING THE 100 MESH SIEVE.
  - B. SULFUR: GRANULAR, BIODEGRADABLE, AND CONTAINING A MINIMUM OF 90 PERCENT SULFUR, WITH A MINIMUM OF 99 PERCENT PASSING THROUGH NO. 6 (3.35-MM) SIEVE AND A MAXIMUM OF 10 PERCENT PASSING THROUGH NO. 40 (0.425-MM) SIEVE.

- 2.3 MULCHES
  - A. ORGANIC MULCH: FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF TREES AND SHRUBS, CONSISTING OF ONE OF THE FOLLOWING:
    - 1. TYPE: DOUBLE SHREDDED HARDWOOD BARK.
- 2.4 MISCELLANEOUS PRODUCTS
  - A. ANTIDESICCANT: WATER-INSOLUBLE EMULSION, PERMEABLE MOISTURE RETARDER, FILM FORMING, FOR TREES AND SHRUBS. DELIVER IN ORIGINAL, SEALED, AND FULLY LABELED CONTAINERS AND MIX ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
  - B. TREE-WRAP TAPE: TWO LAYERS OF CRINKLED PAPER CEMENTED TOGETHER WITH BITUMINOUS MATERIAL, 4" WIDE MINIMUM, WITH STRETCH FACTOR 33 PERCENT.
  - C. PRE-EMERGENT HERBICIDE: TO KILL GENERATING WEED SEEDLINGS, APPLY ONE OF THE FOLLOWING PRE-EMERGENT HERBICIDES AS MANUFACTURER'S RECOMMENDED RATE:
    - 1. ORYZALIN (SURFLAN).
    - 2. SIMAZIN (PRINCEP).
    - 3. TRIFLURALIN (TRIFLAN).
  - D. POST-EMERGENT HERMIDICE: TO KILL EMERGENT WEEDS DURING MAINTENANCE PERIOD, APPLY ONE OF THE FOLLOWING POST-EMERGENT HERBICIDES AT MANUFACTURER'S RECOMMENDED RATE:
    - 1. SETHOXYDIM (POAST)
    - 2. FLUAZIFOP (FUSILADE)

**PART 3 - EXECUTION**

- 3.1 EXAMINATION
  - A. EXAMINE AREAS TO RECEIVE PLANTS FOR COMPLIANCE WITH REQUIREMENTS AND CONDITIONS AFFECTING INSTALLATION AND PERFORMANCE.
    - 1. VERIFY THAT NO DELETERIOUS MATERIAL OR LIQUID SUCH AS PAINT, PAINT WASHOUT, CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, OR ACID HAS BEEN DEPOSITED IN SOIL WITHIN A PLANTING AREA.
    - 2. DO NOT MIX OR PLACE SOILS AND SOIL AMENDMENTS IN FROZEN, WET, OR MUDDY CONDITIONS.
    - 3. SUSPEND SOIL SPREADING, GRADING, AND TILLING OPERATIONS DURING PERIODS OF EXCESSIVE SOIL MOISTURE UNTIL THE MOISTURE CONTENT REACHES ACCEPTABLE LEVELS TO ATTAIN THE REQUIRED RESULTS.
    - 4. UNIFORMLY MOISTEN EXCESSIVELY DRY SOIL THAT IS NOT WORKABLE AND WHICH IS TOO DUSTY.
  - B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
  - C. IF CONTAMINATION BY FOREIGN OR DELETERIOUS MATERIAL OR LIQUID IS PRESENT IN SOIL WITHIN A PLANTING AREA, REMOVE THE SOIL AND CONTAMINATION AS DIRECTED BY LANDSCAPE ARCHITECT AND REPLACE WITH NEW PLANTING SOIL.
- 3.2 PREPARATION
  - A. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES AND TURF AREAS AND EXISTING PLANTS FROM DAMAGE CAUSED BY PLANTING OPERATIONS.
  - B. INSTALL EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF SOILS AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS.
  - C. LAY OUT INDIVIDUAL TREE AND SHRUB LOCATIONS AND AREAS FOR MULTIPLE PLANTINGS. STAKE LOCATIONS, OUTLINE AREAS, ADJUST LOCATIONS WHEN REQUESTED, AND OBTAIN LANDSCAPE ARCHITECT'S ACCEPTANCE OF LAYOUT BEFORE EXCAVATING OR PLANTING. MAKE MINOR ADJUSTMENTS AS REQUIRED.
  - D. LAY OUT PLANTING LOCATIONS DIRECTED BY LANDSCAPE ARCHITECT. STAKE LOCATIONS OF INDIVIDUAL TREES AND SHRUBS AND OUTLINE AREAS FOR MULTIPLE PLANTINGS.
  - E. IF EXISTING ECOLOGY CAUSES ADJUSTMENTS OF LANDSCAPE PLANTS TO FIT THE SITE CONDITIONS, A STAKE OUT BY LANDSCAPE CONTRACTOR AND ADJUSTMENTS BY LANDSCAPE ARCHITECT SHALL BE REQUIRED PRIOR TO INSTALLATION.
  - F. APPLY ANTIDESICCANT TO TREES AND SHRUBS USING POWER SPRAY TO PROVIDE AN ADEQUATE FILM OVER TRUNKS (BEFORE WRAPPING), BRANCHES, STEMS, TWIGS, AND FOLIAGE TO PROTECT DURING DIGGING, HANDLING, AND TRANSPORTATION.
    - 1. IF DECIDUOUS TREES OR SHRUBS ARE MOVED IN FULL LEAF, SPRAY WITH ANTIDESICCANT AT NURSERY BEFORE MOVING AND AGAIN TWO WEEKS AFTER PLANTING.
  - G. WRAP TREES AND SHRUBS WITH BURLAP FABRIC OVER TRUNKS, BRANCHES, STEMS, TWIGS, AND FOLIAGE TO PROTECT FROM WIND AND OTHER DAMAGE DURING DIGGING, HANDLING, AND TRANSPORTATION.

- 3.3 PLANTING AREA ESTABLISHMENT
  - A. LOOSEN SOIL MADE FOR PLANTING AREAS TO A MINIMUM DEPTH OF 18 INCHES (450 MM). REMOVE STONES LARGER THAN 1 INCH (25 MM) IN ANY DIMENSION AND STICKS, ROOTS, RUBBISH, AND OTHER EXTRANEOUS MATTER AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.
    - 1. APPLY FERTILIZER DIRECTLY TO SUBGRADE BEFORE LOOSENING.
    - 2. SPREAD TOPSOIL, APPLY SOIL AMENDMENTS AND FERTILIZER ON SURFACE, AND THOROUGHLY BLEND PLANTING SOIL.
      - a. DELAY MIXING FERTILIZER WITH PLANTING SOIL IF PLANTING WILL NOT PROCEED WITHIN A FEW DAYS.
      - b. MIX LIME WITH DRY SOIL BEFORE MIXING FERTILIZER.
    - 3. SPREAD PLANTING SOIL TO A DEPTH OF 18 INCHES (450 MM) BUT NOT LESS THAN REQUIRED TO MEET FINISH GRADES AFTER NATURAL SETTLEMENT. DO NOT SPREAD IF PLANTING SOIL OR SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET.
  - B. FINISH GRADING GRADE PLANTING AREAS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. ROLL AND RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES.
  - C. RESTORE PLANTING AREAS IF ERODED OR OTHERWISE DISTURBED AFTER FINISH GRADING.
  - D. ALL PLANTING AREAS SHOWN ON PLANS SHALL BE WITHIN 2" OF FINAL GRADE BEFORE LANDSCAPE CONTRACTOR COMMENCES INSTALLATION.

- 3.4 EXCAVATION FOR TREES AND SHRUBS
  - A. PLANTING PITS AND TRENCHES: EXCAVATE CIRCULAR PLANTING PITS WITH SIDES SLOPING INWARD AT A 45-DEGREE ANGLE. EXCAVATIONS WITH VERTICAL SIDES ARE NOT ACCEPTABLE. TRIM PERIMETER OF BOTTOM LEAVING CENTER AREA OF BOTTOM RAISED 8 INCHES TO SUPPORT ROOT BALL, AND ASSIST IN DRAINAGE AWAY FROM CENTER. DO NOT FURTHER DISTURB BASE. ENSURE THAT ROOT BALL WILL SIT ON UNDISTURBED BASE SOIL TO PREVENT SETTLING. SCARIFY SIDES OF PLANTING PIT SMEARED OR SMOOTHED DURING EXCAVATION.
    - 1. EXCAVATE APPROXIMATELY THREE TIMES AS WIDE AS BALL DIAMETER FOR BALLED AND BURLAPPED STOCK.
    - 2. EXCAVATE AT LEAST 12 INCHES (300 MM) WIDER THAN ROOT SPREAD AND DEEP ENOUGH TO ACCOMMODATE ROOTS FOR BALL ROOTS OR BARE-ROOT STOCK.
    - 3. IF DRAIN TILE IS SHOWN ON DRAWINGS OR REQUIRED UNDER PLANTING AREAS, EXCAVATE TO TOP OF POROUS BACKFILL OVER TILE.
  - B. SUBSOIL AND TOPSOIL REMOVED FROM EXCAVATIONS MAY BE USED AS PLANTING SOIL PROVIDED IT IS FREE OF ROCKS OR OTHER DELETERIOUS MATERIALS.
  - C. OBSERVE ADJACENT FINISH GRADES. NOTIFY LANDSCAPE ARCHITECT IF UNEXPECTED ROCK OR OBSTRUCTIONS DETRIMENTAL TO TREES OR SHRUBS ARE ENCOUNTERED IN EXCAVATIONS.
  - D. DRAINAGE: NOTIFY LANDSCAPE ARCHITECT IF SUBSOIL CONDITIONS EVIDENCE UNEXPECTED WATER SEEPAGE OR RETENTION IN TREE OR SHRUB PLANTING PITS.
  - E. FILL EXCAVATIONS WITH WATER AND ALLOW TO PERCOLATE AWAY BEFORE POSITIONING TREES AND SHRUBS.

- 3.5 TREE, SHRUB, AND VINE PLANTING
  - A. BEFORE PLANTING, VERIFY THAT ROOT FLARE IS VISIBLE AT TOP OF ROOT BALL ACCORDING TO ANSI Z60.1. IF ROOT FLARE IS NOT VISIBLE, REMOVE SOIL IN A LEVEL MANNER FROM THE ROOT BALL TO WHERE THE TOP-MOST ROOT EMERGES FROM THE TRUNK. AFTER SOIL REMOVAL TO EXPOSE THE ROOT FLARE, VERIFY THAT ROOT BALL STILL MEETS SIZE REQUIREMENTS.
  - B. REMOVE STEM GIRDLING ROOTS AND KINKED ROOTS. REMOVE INJURED ROOTS BY CUTTING CLEANLY; DO NOT BREAK.
  - C. SET BALLED AND BURLAPPED STOCK PLUMB AND IN CENTER OF PLANTING PIT OR TRENCH WITH ROOT FLARE 1 INCH (25 MM) ABOVE ADJACENT FINISH GRADES.
  - D. SET CONTAINER-GROWN STOCK PLUMB AND IN CENTER OF PLANTING PIT OR TRENCH WITH ROOT FLARE 1 INCH (25 MM) ABOVE ADJACENT FINISH GRADES.
    - 1. CAREFULLY REMOVE ROOT BALL FROM CONTAINER WITHOUT DAMAGING ROOT BALL OR PLANT.
    - 2. PLACE PLANTING SOIL MIX AROUND ROOT BALL IN LAYERS, TAMPING TO SETTLE MIX AND ELIMINATE VOICE AND AIR POCKETS. WHEN PIT IS APPROXIMATELY ONE-HALF BACKFILLED, WATER THOROUGHLY BEFORE PLACING REMAINDER OF BACKFILL. REPEAT WATERING UNTIL NO MORE WATER IS ABSORBED. WATER AGAIN AFTER PLACING AND TAMPING FINAL LAYER OF PLANTING SOIL MIX.
  - E. AFTER THE LANDSCAPE ARCHITECT HAS EXAMINED THE TRUNKS OF NEW INSTALLED TREES, WRAP TREES OF 2-INCH CALIPER AND LARGER WITH TREE-WRAP TAPE. START AT THE BASE OF THE TRUNK AND SPIRAL COVER THE TRUNK TO THE HEIGHT OF THE FIRST BRANCHES. OVERLAP THE WRAP, EXPOSING HALF THE WIDTH, AND SECURELY ATTACH WITHOUT CAUSING GIRDLING. INSPECT TREE TRUNKS FOR INJURY, IMPROPER PRUNING, AND INSECT INFESTATION; TAKE CORRECTIVE MEASURES REQUIRED BEFORE TREE WRAPPING.

- 3.6 TREE, SHRUB, AND VINE PRUNING
  - A. REMOVE ONLY DEAD, DYING, OR BROKEN BRANCHES. DO NOT PRUNE FOR SHAPE.
  - B. PRUNE, THIN, AND SHAPE TREES, SHRUBS, AND VINES AS DIRECTED BY LANDSCAPE ARCHITECT.
  - C. PRUNE, THIN, AND SHAPE TREES, SHRUBS, AND VINES ACCORDING TO STANDARD PROFESSIONAL HORTICULTURAL AND ARBORICULTURAL PRACTICES. UNLESS OTHERWISE INDICATED BY LANDSCAPE ARCHITECT, DO NOT CUT TREE LEADERS; REMOVE ONLY INJURED, DYING, OR DEAD BRANCHES FROM TREES AND SHRUBS; AND PRUNE TO RETAIN NATURAL CHARACTER.
  - D. DO NOT APPLY PRUNING PAINT TO WOUNDS.
- 3.7 GROUND COVER AND PLANT PLANTING
  - A. SET OUT AND SPACE GROUND COVER AND PLANTS OTHER THAN TREES, SHRUBS, AND VINES AS INDICATED IN EVEN ROWS WITH TRIANGULAR SPACING.
  - B. DIG HOLES LARGE ENOUGH TO ALLOW SPREADING OF ROOTS.

- C. WORK SOIL AROUND ROOTS TO ELIMINATE AIR POCKETS AND LEAVE A SLIGHT SAUCER INDENTATION AROUND PLANTS TO HOLD WATER.
- D. WATER THOROUGHLY AFTER PLANTING, TAKING CARE NOT TO COVER PLANT CROWNS WITH WET SOIL.
- E. PROTECT PLANTS FROM HOT SUN AND WIND; REMOVE PROTECTION IF PLANTS SHOW EVIDENCE OF RECOVERY FROM TRANSPLANTING SHOCK.
- 3.8 PLANTING AREA MULCHING
  - A. INSTALL WEED-CONTROL BARRIERS BEFORE MULCHING ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. COMPLETELY COVER AREA TO BE MULCHED. OVERLAPPING EDGES A MINIMUM OF 6 INCHES (150 MM) AND SECURE SEAMS WITH GALVANIZED PINS. PINS TO BE 8"-10" APART ALONG EDGES AND 12" MINIMUM IN CENTER.
  - B. MULCH BACKFILLED SURFACES OF PLANTING AREAS AND OTHER AREAS INDICATED.
    - 1. TREES AND TREE-LIKE SHRUBS IN TURF AREAS: APPLY ORGANIC MULCH RING OF 4-INCH (75-MM)) AVERAGE THICKNESS, WITH 36-INCH (900-MM) RADIUS AROUND TRUNKS OR STEMS. DO NOT PLACE MULCH WITHIN 3 INCHES (75 MM) OF TRUNKS OR STEMS OR VOLCANO MULCH.
    - 2. ORGANIC MULCH IN PLANTING AREAS: APPLY 2-INCH (50-MM) AVERAGE THICKNESS OF ORGANIC MULCH EXTENDING 12 INCHES (300 MM) BEYOND EDGE OF INDIVIDUAL PLANTING PIT OR TRENCH AND OVER WHOLE SURFACE OF PLANTING AREA, AND FINISH LEVEL WITH ADJACENT FINISH GRADES. DO NOT PLACE MULCH WITHIN 3 INCHES (75 MM) OF TRUNKS OR STEMS.

- 3.9 PLANT MAINTENANCE
  - A. MAINTAIN PLANTINGS BY PRUNING, CULTIVATING, WATERING, WEEDING, FERTILIZING, MULCHING, RESTORING PLANTING SAUCERS, ADJUSTING AND REPAIRING TREE-STABILIZATION DEVICES, RESETTING TO PROPER GRADES OR VERTICAL POSITION, AND PERFORMING OTHER OPERATIONS AS REQUIRED TO ESTABLISH HEALTHY, VIABLE PLANTINGS. SPRAY OR TREAT AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE.
    - a. WATER EXISTING PROTECTED TREES AND VEGETATION WITH ONE INCH OF RAIN (RAIN GAUGE OR NOAA LOCAL WEATHER VERIFIED) PER WEEK FOR DURATION OF CONSTRUCTION PROJECT.
  - B. FILL IN AS NECESSARY SOIL SUBSIDENCE THAT MAY OCCUR BECAUSE OF SETTTLING OR OTHER PROCESSES. REPLACE MULCH MATERIALS DAMAGED OR LOST IN AREAS OF SUBSIDENCE.
  - C. APPLY TREATMENTS AS REQUIRED TO KEEP PLANT MATERIALS, PLANTED AREAS, AND SOILS FREE OF PESTS AND PATHOGENS OR DISEASE. USE INTEGRATED PAST MANAGEMENT PRACTICES WHENEVER POSSIBLE TO MINIMIZE THE USE OF PESTICIDES AND REDUCE HAZARDS. TREATMENTS INCLUDE PHYSICAL CONTROLS SUCH AS HOISING OFF FOLIAGE, MECHANICAL CONTROLS SUCH AS TRAPS, AND BIOLOGICAL CONTROL AGENTS.

- 3.10 PESTICIDE APPLICATION
  - A. APPLY PESTICIDES AND OTHER CHEMICAL PRODUCTS AND BIOLOGICAL CONTROL AGENTS IN ACCORDANCE WITH AUTHORITIES HAVING JURISDICTION AND MANUFACTURER'S WRITTEN RECOMMENDATIONS. COORDINATE APPLICATIONS WITH OWNER'S OPERATIONS AND OTHERS IN PROXIMITY TO THE WORK. NOTIFY OWNER BEFORE EACH APPLICATION IS PERFORMED.
  - B. PRE-EMERGENT HERBICIDES (SELECTIVE AND NON-SELECTIVE): APPLY TO TREE, SHRUB, AND GROUND-COVER AREAS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS. DO NOT APPLY TO SEEDED AREAS.
  - C. POST-EMERGENT HERBICIDES (SELECTIVE AND NON-SELECTIVE): APPLY ONLY AS NECESSARY TO TREAT ALREADY-GERMINATED WEEDS AND IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS.

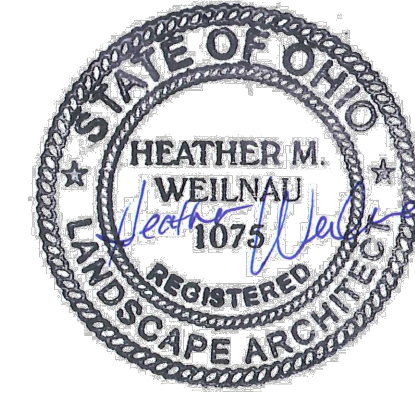
- 3.11 CLEANUP AND PROTECTION
  - A. DURING PLANTING, KEEP ADJACENT PAVING AND CONSTRUCTION CLEAN AND WORK AREA IN AN ORDERLY CONDITION.
  - B. PROTECT PLANTS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS AND OPERATIONS OF OTHER CONTRACTORS AND TRADES WITHIN 20' OF CONSTRUCTION DISTURBANCE. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR, OR REPLACE DAMAGED PLANTINGS.
  - C. INSTALL MINIMUM 4' TALL FENCE 5' OUTSIDE THE DRIP LINE OF TREES TO REMAIN.
  - D. AFTER INSTALLATION AND AFTER WORK HAS BEEN APPROVED BY LOCAL INSPECTOR AND/OR OWNER OR OWNER'S REPRESENTATIVE, REMOVE NURSERY TAGS, NURSERY STAKES, TIE TAPE, LABELS, WIRE, BURLAP, AND OTHER DEBRIS FROM PLANT MATERIAL, PLANTING AREAS, AND PROJECT SITE.

- 3.12 DISPOSAL
  - A. REMOVE SURPLUS SOIL AND WASTE MATERIAL, INCLUDING EXCESS SUBSOIL, UNSUITABLE SOIL, TRASH, AND DEBRIS AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.

END OF SECTION 32 93 00



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**SECTION 31 14 00 - SITE RESTORATION OF LANDSCAPING**

**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS  
G. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

**1.2 SUMMARY**

- A. SECTION INCLUDES:  
1. SPREAD AND CONDITION EXISTING STOCKPILED TOPSOIL  
2. PROVIDE NEW, IF REQUIRED; LIME  
3. TILL, DISTRIBUTE AND GRADE TOPSOIL  
4. CLEAN UP

1.3 SUBMITTALS (SUBMIT ALL THE FOLLOWING REPORTS, IN TRIPLICATE, TO OWNER FOR REVIEW)

- A. LABORATORY TESTS: SUBMIT COPIES OF TOPSOIL LABORATORY TESTS TO THE OWNER.  
B. FERTILIZER: SUBMIT COPIES ATTESTING TO THE FERTILIZER COMPOSITION TO THE OWNER.  
C. SEED MIX: SUBMIT COPIES ATTESTING TO THE SEED MIX COMPOSITION TO THE OWNER.  
D. SOD: SUBMIT COPIES FROM THE SOD SOURCE ATTESTING TO THE SEED MIX COMPOSITION TO THE OWNER.

**1.4 SITE PROTECTION**

- A. PROTECT EXISTING GROUNDS, PLANTS, LAWNS AND VEGETATION TO REMAIN.  
1. PROTECT EXISTING TREES TO REMAIN IN PLACE AGAINST UNNECESSARY CUTTING, BREAKING, SKINNING, OR BRUISING OF ROOTS AND BARK. SMOTHERING OF TREES BY COMPACTION OR STOCKPILING CONSTRUCTION MATERIALS OR EXCAVATED MATERIALS WITHIN FIVE FEET OF OUTER EDGE OF DRIP LINE.  
a. ERECT MINIMUM OF FOUR (4) FOOT HIGH FENCE FIVE (5) FEET OUTSIDE DRIP LINE OF TREES TO REMAIN.  
b. ERECT TREE PROTECTION BEFORE STARTING SITE WORK OF ANY KIND. MAINTAIN FENCING DURING CONSTRUCTION PERIOD.  
c. INTERFERING BRANCHES MAY ONLY BE REMOVED WITH PRIOR CONSENT FROM LANDSCAPE ARCHITECT.  
d. IDENTIFY ANY TREES LANDSCAPE ARCHITECT WOULD LIKE VERTICALLY MULCHED, TRIMMED OR REPAIRED AS RESULT OF CONSTRUCTION IMPACT AT END OF PROJECT. ALL WORK TO BE DONE BY A CERTIFIED ARBORIST TO BE APPROVED BY LANDSCAPE ARCHITECT.  
2. WATER TREES AND VEGETATION TO REMAIN WITH ONE INCH OF RAIN (RAIN GAUGE OR NOAA LOCAL WEATHER VERIFIED) PER WEEK FOR DURATION OF CONSTRUCTION PROJECT.  
3. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO PLANTS TO REMAIN. COST FOR TREE REPLACEMENT SHALL BE DETERMINED IN ACCORDANCE WITH THE 'GUIDE FOR PLANT APPRAISAL' BY THE COUNCIL OF TREE AND LANDSCAPE APPRAISERS (INTERNATIONAL SOCIETY OF AGRICULTURE, PUBLICATION #1209).  
B. TEMPORARY CONSTRUCTION ACCESS: PROJECT SITE ACCESS AND EQUIPMENT ACCESS ROUTES WITHIN THE PROJECT SITE MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO COMMENCEMENT OF WORK. ANY TEMPORARY GRAVEL PATH OR ACCESS WAY MUST INCLUDE A GEOFABRIC LINER TO ENSURE FULL REMOVAL OF GRAVEL/ STONE FROM PROJECT SITE AT PROJECT COMPLETION.

**1.5 STRIPPING AND STORAGE OF EXISTING TOPSOIL**

- A. STRIP TOPSOIL TO FULL DEPTH AT AREAS IMPACTED & AT ALL AREAS TO BE RE-GRADED OR RESURFACED.  
B. STOP TOPSOIL STRIPPING OUTSIDE DRIP LINE OF TREES TO REMAIN / DO NOT STRIP AS TO IMPACT ROOT LINE OF TREES TO REMAIN.  
C. DISPOSE OF ROOTS, STONE AND OTHER DEBRIS; STORE TOPSOIL IN PILES WITHIN THE WORK LIMITS.  
1. OBTAIN APPROVAL OF LANDSCAPE ARCHITECT PRIOR TO ESTABLISHING TOPSOIL STORAGE AREAS.  
2. GRADE AND SLOPE STOCKPILES FOR PROPER DRAINAGE AND TO PREVENT EROSION  
D. THE REUSE OF STOCKPILED TOPSOIL WITHIN THE PROJECT SITE MUST BE APPROVED FOR PLACEMENT BY THE LANDSCAPE ARCHITECT.

**PART 2 - PRODUCTS AND MATERIALS**

**2.1 TOPSOIL**

- A. ALL TOPSOIL SHALL BE SHREDDED, CLEAN, AND OF UNIFORM QUALITY FREE FROM HARD CLODS, STIFF CLAY, PARTIALLY DISINTEGRATED STONE, LIME, CEMENT, SLAG, OR OTHER UNDESIRABLE MATERIAL. TOPSOIL SHALL CONFORM TO THE FOLLOWING:  
1. ORGANIC CONTENT: TOPSOIL SHALL CONTAIN BETWEEN 3% AND 10% ORGANIC MATTER AS DETERMINED BY LOSS OF IGNITION.  
2. PH: TOPSOIL PH SHALL RANGE BETWEEN 6.0 AND 7.5  
3. SOIL TEXTURE: TOPSOIL SHALL CONSIST OF THE FOLLOWING PERCENTAGES OF SAND, SILT, AND CLAY PASSING THROUGH A 2,00MM (#10) SIEVE:  
a. SAND: 30% TO 75%  
b. SILT: 15% TO 70%  
c. CLAY: 10% TO 30%  
B. TOPSOIL MUST BE APPROVED BY GROUNDS MANGER PRIOR TO PLACEMENT. TOPSOIL TEST RESULTS SHALL SHOW RECOMMENDATION FOR SOIL ADDITIVES OR FERTILIZERS TO CORRECT NUTRIENT DEFICIENCIES AS NECESSARY. ALL SOIL AMENDMENTS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO USE.

**2.2 GRASS SEED**

- A. GRASS SEED SHALL BE A TURF-TYPE TALL FESCUE BLEND SUCH AS TROPHY XRE TURF-TYPE TALL FESCUE BLEND OR APPROVED EQUAL BLEND WITH FRESH, CLEAN, NEW CROP SEED MIXTURES.  
B. SEED MIXTURE SHALL BE POA-FREE MEETING OREGON STATE STANDARDS FOR NOXIOUS WEED EXAMS.  
C. SEED MIXTURE FOR RECREATION FIELDS SHALL BE AS DIRECTED BY THE LANDSCAPE ARCHITECT.

**2.3 SOD**

- A. LANDSCAPE ARCHITECT APPROVED NURSERY GROWN TURF-TYPE TALL FESCUE BLEND SUITABLE FOR JOB SPECIFIC EXPOSURE, WEARABILITY, AND DISEASE RESISTANCE CONFORMING TO THE FOLLOWING PERCENTAGES OF GRASS TYPE:  
1. 100% - TURF TYPE TALL FESCUE  
B. PROVIDE WELL-ROOTED, HEALTHY SOD, FREE OF DISEASES, NEMATODES, AND SOIL BORNE INSECTS. PROVIDE SOD IN UNIFORM COLOR, LEAF, TEXTURE, DENSITY, AND FREE OF WEEDS, UNDESIRABLE GRASSES, CAPABLE OF GROWTH AND DEVELOPMENT WHEN PLANTED. SOD IS CONSIDERED FREE OF WEEDS IF LESS THAN 5 WEEDS ARE FOUND PER 100 SQ. FT.  
C. FURNISH SOD MACHINE STRIPPED AND OF SUPPLIER'S STANDARD WIDTH AND LENGTH; UNIFORMLY 1" TO 1-1/2" THICK WITH CLEAN CUT EDGES. SOD SHALL BE RELATIVELY FREE OF THATCH, UP TO 1/2" PERMISSIBLE. SOD SHALL BE MOWED UNIFORMLY BEFORE HARVESTING  
D. DELIVERY, STORAGE, AND HANDLING: SOD SHALL BE HARVESTED, DELIVERED, AND TRANSPORTED WITHIN A PERIOD OF TWENTY-FOUR (24) HOURS.  
1. DO NOT HARVEST OR TRANSPORT SOD WHEN MOISTURE CONTENT MAY ADVERSELY AFFECT SOD SURVIVAL.  
2. PROTECT SOD FROM SUN, WIND, AND DEHYDRATION PRIOR TO INSTALLATION.  
3. DO NOT TEAR, STRETCH, OR DRAP SOD DURING HANDLING AND INSTALLATION.

**2.4 FERTILIZER**

- A. GRANULAR, NON-BURNING PRODUCE COMPOSED OF NOT LESS THAN 50% ORGANIC SLOW ACTING, GUARANTEED ANALYSIS PROFESSIONAL FERTILIZER CONFORMING TO THE FOLLOWING:  
1. TYPE A: STARTER FERTILIZER CONTAINING 20% NITROGEN, 26% PHOSPHORIC ACID, AND 6% POTASH BY WEIGHT, OR SIMILAR APPROVED COMPOSITION.  
2. TYPE B: SECONDARY FERTILIZER CONTAINING 31% NITROGEN, 3% PHOSPHORIC ACID, AND 10% POTASH BY WEIGHT, OR SIMILAR APPROVED COMPOSITION.

**2.5 GRASS SEED MULCH**

- A. GREEN DYED CELLULOSE OR WOOD FIBER MULCH SUCH AS CONWED HYDROMULCH, WEYERHAUSER SILVA-FIBER OR CLEAN FRESH STRAW.

**2.6 WATER**

- A. CLEAN, POTABLE AND FREE OF SUBSTANCE HARMFUL TO LAWN GROWTH. LAWN WATERING EQUIPMENT, HOSES OR OTHER METHODS OF WATER TRANSPORTATION FURNISHED BY CONTRACTOR.

**PART 3 - EXECUTION**

**3.1 PREPARATION OF SEED BED/ SODDED AREAS**

- A. DE-COMPACTION: DE-COMPACT AREAS HEAVILY TRAFFICKED BY CONSTRUCTION ACTIVITIES WITH HOE OR OTHER LANDSCAPE ARCHITECT APPROVED METHOD PRIOR TO ROUGH GRADING.  
B. ROUGH GRADING: GRADE SURFACES TO ASSURE DRAINAGE AWAY FROM STRUCTURES AND TO PREVENT PONDING AND POCKETS OF SURFACE DRAINAGE. PROVIDE SUBGRADE FREE FROM IRREGULAR SURFACE CHANGES AND AS FOLLOWS:  
1. ROUGH GRADE SHALL EQUAL PLUS/ MINUS 0.20 FT. . SUB GRADE TOLERANCE SHALL BE FREE OF EXPOSED BOULDERS OR STONES EXCEEDING 1' IN GREATEST DIMENSION.  
2. FILL IN ALL AREAS OF SETTLEMENT TO PROPER GRADE BEFORE SUBSEQUENT PLACEMENT OF TOPSOIL.  
C. TOPSOIL DEPTHS:  
1. LAWN AREAS TO RECEIVE SOD OR SEED MUST HAVE MINIMUM SIX (6) INCHES AVERAGE DEPTH OF TOPSOIL PLACED.  
2. PLANTED BEDS: AREAS IDENTIFIED AS PLANTING BEDS SHALL HAVE MINIMUM TWELVE (12) INCHES AVERAGE DEPTH OF TOPSOIL PLACED.  
D. FINE GRADING: GRADE AREA TO A SMOOTH, FREE DRAINING EVEN SURFACE WITH A LOOSE, MODERATELY COURSE TEXTURE. ROLL, SCARIFY, RAKE AND LEVEL AS NECESSARY TO OBTAIN A TRUE, EVEN LAWN SURFACE AND FILL DEPRESSIONS AS REQUIRED TO DRAIN. SEED BED TO BE APPROXIMATELY 1/2" - 1" BELOW ALL SIDEWALKS AND CURBS. DO NOT MOVE HEAVY OBJECTS EXCEPT NECESSARY LAWN MAKING EQUIPMENT OVER THE LAWN AREAS AFTER THE SOIL IS PREPARED UNLESS IT IS LOOSEND AND RE-GRADED. RESTORE PREPARED AREAS TO SPECIFIED CONDITION IF ERODED, SETTLED, OR OTHERWISE DISTURBED AFTER FINE GRADING.  
E. FERTILIZING: APPLY TYPE A / STARTER FERTILIZER TO INDICATED TURF AREAS AT A RATE EQUAL TO 1.0 LB. OF ACTUAL NITROGEN PER 1,000 S.F. OR AS DIRECTED BY LANDSCAPE ARCHITECT. APPLY FERTILIZERS BY MECHANICAL DROP OR ROTARY DISTRIBUTOR, THOROUGHLY AND EVENLY INCORPORATED WITH SOIL TO A DEPTH OF 3" BY DICING OR OTHER APPROVED METHOD. FERTILIZE AREAS INACCESSIBLE TO POWER EQUIPMENT WITH HAND TOOLS AND INCORPORATE INTO SOIL.

**3.2 INSTALLATION OF GRASS SEED**

- A. LANDSCAPE CONTRACTOR SHALL SEED ALL DISTURBED AREAS. THE FINAL GRADE AND TOPSOIL WITHIN +/- .10 FEET WILL BE IN PLACE FOR SEEDING CONTRACTOR.  
B. GRASS SEED SHALL ONLY BE SOWN AT THE FOLLOWING TIMES:  
a. SPRING SEED PLANTING: APRIL 1 TO JUNE 1  
b. FALL SEED PLANTING: AUGUST 15 TO OCTOBER 1  
c. OR AS APPROVED BY THE LANDSCAPE ARCHITECT  
C. PERFORM SEEDING WORK ONLY AFTER PLANTING AND OTHER WORK AFFECTING THE GROUND SURFACE HAVE BEEN COMPLETED. LIMIT PREPARATION OF SEED AREAS TO THOSE READY FOR IMMEDIATE SEEDING.  
D. SEED IMMEDIATELY AFTER PREPARATION OF BED.  
E. PERFORM SEEDING OPERATIONS WHEN SOIL IS DRY AND WHEN WINDS DO NOT EXCEED FIVE MILES PER HOUR.

**F. SEEDING**

- a. TO BE APPLIED AT APPROVED MANUFACTURED RATES IN CROSS DIRECTIONS WITH APPROVED SEED DRILLING OR SLICE SEEDING EQUIPMENT. APPLY 50% OF THE SEED IN EACH DIRECTION.  
b. APPLY HYDRO-MULCH WITH APPROVED HYDRO-MULCH EQUIPMENT IMMEDIATELY AFTER SEEDING. SLURRY TO BE COMPOSED OF CLEAN WATER AND MULCH. APPLY MULCH SLURRY AT MINIMUM RATE OF 1,500 POUNDS PER ACRE ON SLOPES STEEPER THAN 4:1. DIRECT SLURRY TO EVENLY COVER DESIGNATED SEED AREAS. REPAIR RUTS, DEPRESSIONS AND ALL DAMAGE CAUSED BY HYDRO-MULCHING EQUIPMENT.  
c. IMMEDIATELY RESEED AND REAPPLY HYDRO-MULCH TO AREAS THAT SHOW POOR GERMINATION.

**G. HYDROMULCHING**

- a. CONTRACTOR SHALL APPLY CELLULOSE FIBER MULCH AT A MINIMUM RATE OF 1500 POUNDS PER ACRE AND FERTILIZERS: BEST 6-20-20 OR BEST 15-15-15 OR APPROVED EQUAL APPLIED AT RATE APPROPRIATE FOR PRODUCT. ORGANIC TACKIFIER SHALL BE APPLIED AT RATE OF 70 POUNDS PER ACRE. HYDROSEED SEED MIX SHALL BE APPLIED AT THE 2,000 POUNDS PER ACRE.  
b. CONTRACTOR SHALL WATER ALL PLANT AREAS THOROUGHLY TO SATURATE UPPER LAYERS OF SOIL PRIOR TO THE HYDROSEEDING OPERATION. ALLOW THE PLANTING AREA SOIL SURFACE TO DRY OUT FOR ONE DAY ONLY PRIOR TO THE HYDROSEEDING APPLICATION.  
c. CONTRACTOR SHALL APPLY THE HYDROSEEDING IN THE FORM OF A SLURRY CONSISTING OF ORGANIC SOIL AMENDMENTS, COMMERCIAL FERTILIZER, AND ANY OTHER CHEMICALS THAT ARE CALLED OUT. WHEN HYDRAULICALLY SPRAYED ONTO THE SOIL, THE MULCH SHALL FORM A BLOTTER-LIKE MATERIAL. SPRAY THE AREA WITH A UNIFORM VISIBLE COAT, USING THE DARK COLOR OF THE CELLULOSE FIBER AS A VISUAL GUIDE. THE SLURRY SHALL BE APPLIED IN A DOWNWARD DRILLING MOTION VIA A FAN STREAM NOZZLE. CONTRACTOR SHALL INSURE THAT ALL OF THE SLURRY COMPONENTS ENTER AND MIX WITH THE SOIL.  
d. IF SLURRY COMPONENTS ARE LEFT FOR MORE THAN TWO HOURS IN THE MACHINE, ADD 50% MORE OF THE ORIGINALLY SPECIFIED SEED MIX TO ANY SLURRY MIXTURE WHICH HAS NOT BEEN APPLIED WITHIN THE TWO HOURS AFTER MIXING. ADD 75% MORE OF THE ORIGINAL SEED MIX TO ANY SLURRY MIXTURE WHICH HAS NOT BEEN APPLIED EIGHT (8) HOURS AFTER MIXING. ALL MIXTURES MORE THAN EIGHT (8) HOURS OLD, SHALL BE DISPOSED, OFFSITE, AT THE CONTRACTOR'S EXPENSE.  
e. CONTRACTOR SHALL REMOVE ALL SLURRY SPRAYED ONTO HARDSCAPE AREAS INCLUDING CONCRETE WALKS, FENCES, WALLS, BUILDINGS, ETC. AT THE CONTRACTOR'S EXPENSE.  
f. CONTRACTOR SHALL SAVE ALL SEED AND FERTILIZER TACK AND FIBER MULCH BAGS FOR THE LANDSCAPE ARCHITECT TO VERIFY COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS.

**3.3 INSTALLATION OF SOD (IF APPLICABLE)**

- A. PERFORM SODDING WORK ONLY AFTER PLANTING AND OTHER WORK AFFECTING THE GROUND SURFACE HAVE BEEN COMPLETED. LIMIT PREPARATION OF SODDED AREAS TO THOSE READY FOR IMMEDIATE SODDING.  
B. SOD IMMEDIATELY AFTER PREPARATION OF BED.  
C. INSTALL INITIAL ROW OF SOD IN A STRAIGHT LINE, BEGINNING AT BOTTOM OF SLOPES, PERPENDICULAR TO DIRECTION OF THE SLOPED AREA. PLACE SUBSEQUENT ROWS PARALLEL TO AND TIGHTLY AGAINST PREVIOUSLY INSTALLED ROW.  
D. LAY SOD TO FORM A SOLID MASS WITH TIGHTLY FITTED JOINTS. SOD STRIPS SHALL BUTT CLOSE TOGETHER WITH NO VOIDS BETWEEN THE PIECES. CARE SHALL BE EXERCISED TO ENSURE THAT THE SOD IS NOT STRETCHED OR OVERLAPPED. LATERAL JOINTS SHALL BE STAGGERED. REMOVE EXCESS SOD TO AVOID SMOTHERING OF ADJACENT GRASS. PROVIDE SOD PAD TOP FLUSH WITH ADJACENT CURBS, SIDEWALKS, DRAINS, AND SEEDED AREAS.  
E. TO ENHANCE ROOTING, MOISTEN THE SOIL TO A DEPTH OF FOUR (4) TO SIX (6) INCHES TWENTY-FOUR (24) HOURS BEFORE LAYING SOD. DO NOT LAY SOD ON A HOT DRY SOIL SURFACE.  
F. DO NOT LAY, PLACE OR INSTALL DORMANT SOD PADS ON SATURATED OR FROZEN SOIL.  
G. PEG SOD ON SLOPES GREATER THAN 3:1 TO PREVENT SLIPPAGE AT A RATE OF TWO STAKES PER YD. OF SOD.  
H. WATER SOD THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER LAYING/INSTALLATION.  
I. ROLL WITH LIGHT LAWN ROLLER TO ENSURE CONTACT WITH SUB-GRADE.

**3.4 MAINTENANCE**

- A. WATERING AND MAINTENANCE ACTIVITIES MUST BE REVIEWED AND APPROVED WITH THE LANDSCAPE ARCHITECT. UNLESS OTHERWISE APPROVED, THE FOLLOWING REQUIREMENTS ARE TO BE COMPLETED AT A MINIMUM:  
1. MAINTAIN NEW INSTALLED SEEDED/ SODDED LAWN AREAS IN AN ACCEPTABLE MANNER UNTIL FINAL ACCEPTANCE OF PROJECT, INCLUDING WATERING, SPOT WEEDING, MOWING, TRIMMING, REMOVAL OF CLIPPINGS, LEAF REMOVAL, APPLICATION OF HERBICIDES, FUNGICIDES, INSECTICIDES, AND RE-SEEDING UNTIL A FULL, UNIFORM STAND OF GRASS FREE OF WEED, UNDESIRABLE GRASS SPECIES, DISEASE, AND INSECTS IS ACHIEVED AND ACCEPTED BY THE LANDSCAPE ARCHITECT.  
2. WATER DAILY TO MAINTAIN ADEQUATE SURFACE SOIL MOISTURE FOR PROPER SEED GERMINATION. CONTINUE DAILY WATERING FOR NOT LESS THAN THIRTY (30) DAYS. THEREAFTER APPLY ONE-HALF (1/2) INCH WATER EVERY TWO OR THREE DAYS UNTIL ACCEPTED.  
3. REPAIR, RE-WORK, RE-SEED, AND OR SOD ALL RESPECTIVE AREAS THAT HAVE WASHED OUT, ARE ERODED, OR DID NOT CATCH.  
4. SET MOWER BLADES AT A MINIMUM HEIGHT OF TWO AND ONE-HALF (2-1/2) INCHES. NOT MORE THAN THIRTY (30) PERCENT OF THE GRASS LEAF/BLADE SHALL BE REMOVED AT THE INITIAL OR SUBSEQUENT MOWING. MOW ALL LAWNS BEFORE TURF REACHES A HEIGHT OF FOUR (4) INCHES.  
5. IF INFESTATION OF WEEDS OR CRABGRASS DEVELOPS, TREAT INFESTATION BY HAND WEEDING OR HERBICIDAL CONTROL. FURNISH AND INSTALL WEED CHEMICAL CONTROL AS RECOMMENDED BY MANUFACTURER. HERBICIDAL CONTROLS, INCLUDING RENOVATION BEFORE SEEDING OPERATIONS, SHALL BE ACCEPTABLE TO THE LANDSCAPE ARCHITECT.  
6. APPLY TYPE B FERTILIZER TO LAWNS APPROXIMATELY THIRTY (30) DAYS AFTER INSTALLATION AT A RATE EQUAL TO 1.0 LB. OF ACTUAL NITROGEN PER 1,000 SQ. FT. APPLY WITH MECHANICAL DROP OR ROTARY TYPE DISTRIBUTOR. WATER THE FERTILIZER THOROUGHLY INTO THE SOIL.  
B. PROVIDE EROSION CONTROL MEASURES TO ADEQUATELY SLOW WATER AND IMPEDE SOIL LOSS AS REQUIRED AND DIRECTED BY THE LANDSCAPE ARCHITECT.  
1. EROSION CONTROL BLANKETS TO BE USED ON SEEDDED SLOPES GREATER THAN 3:1.  
2. FIBER ROLLS TO BE USED ON SEEDDED SLOPES GREATER THAN 2:1.  
3. STRAW BALE CHECKING OR OTHER APPROVED DEVICE IN DITCHES OR ERODED SWALES AS REQUIRED.

**3.5 ACCEPTANCE**

- A. INSPECTION TO DETERMINE ACCEPTANCE OF INSTALLED LAWNS WILL BE MADE BY THE LANDSCAPE ARCHITECT, UPON CONTRACTOR'S REQUEST. PROVIDE NOTIFICATION AT LEAST THREE (3) WORKING DAYS BEFORE REQUESTED INSPECTION DATE.  
1. NEW LAWN AREAS WILL BE ACCEPTABLE PROVIDED ALL REQUIREMENTS, INCLUDING MAINTENANCE, HAVE BEEN COMPLIED WITH, AND A HEALTHY UNIFORM, CLOSE STAND OF GRASS IS ESTABLISHED FREE OF WEEDS, UNDESIRABLE GRASS SPECIES, DISEASE AND INSECTS.  
2. NO INDIVIDUAL LAWN AREAS SHALL HAVE BARE SPOTS OR UNACCEPTABLE COVER TOTALING MORE THAN TWO (2) PERCENT OF THE INDIVIDUAL AREAS, IN THOSE AREAS REQUESTED FOR INSPECTION.  
3. UPON ACCEPTANCE, THE CONTRACTOR WILL ASSUME LAWN MAINTENANCE.



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END OF SECTION 31 14 00



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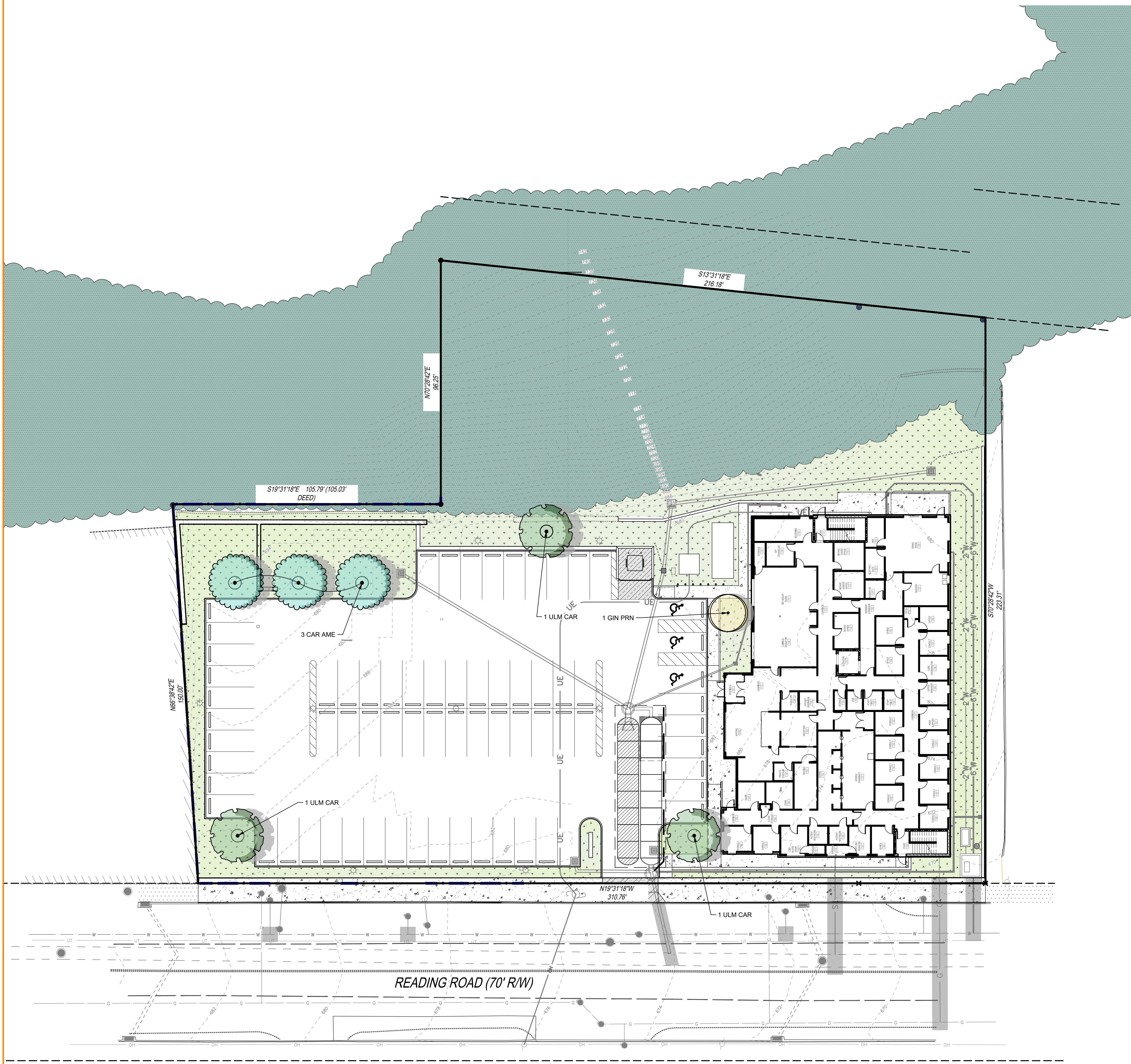
PLANTING SPECIFICATIONS - SITE RESTORATION

23-056

L102

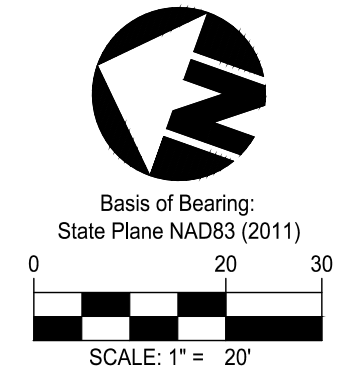
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Plot time: Aug 09, 2024 - 8:48am  
Drawing name: J:\2023\23-0200\LA\DWG\23-0200 PP.dwg - Layout Tab: L200 Planting-Required



**GENERAL NOTES**

1. THIS SHEET SHOWS ZONING MINIMUM PLANTINGS ONLY.
2. SOME AREAS LISTED AS SEEDED LAWN MAY END UP AS MULCHED PLANTING BEDS. IF SUPPLEMENTAL PLANTS ARE ADDED BY THE OWNER.
3. SEE PLANTING NOTES, DETAILS AND SPECIFICATIONS SHEETS.



**REQUIRED LANDSCAPING**

SECTION 1425-29 PARKING LOT LANDSCAPING

ONE (1) TREE (2" MIN. CALIPER) TO BE PLANTED FOR EVERY 10 PARKING SPACES

69 PARKING SPACES / 10 = 6.9 = 7 TREES REQUIRED

- A. PERIMETER LANDSCAPING: PARKING LOTS MUST PROVIDE A PERIMETER LANDSCAPE AREA OF AT LEAST 3' IN WIDTH
- B. GROUND COVER: GROUND COVER MUST BE INSTALLED APPROPRIATE TO THE SURFACE CONDITIONS OF THE AREA. GRASS IS THE DEFAULT LANDSCAPING MATERIAL
- C. LIGHTING AND WALKWAYS: LIGHT FIXTURES AND WALKWAYS ARE PERMITTED WITHIN ISLANDS AND PERIMETER AREAS
- D. MAINTENANCE: ALL REQUIRED PLANTING MUST BE PERMANENTLY MAINTAINED IN GOOD GROWING CONDITION AND REPLACED WITH NEW PLANT MATERIALS WHEN NECESSARY TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE LANDSCAPING REQUIREMENTS.

SECTION 1421-35 REFUSE STORAGE AREAS

- F. LANDSCAPING: THE EXTERIOR PERIMETER OF ENCLOSURE MUST BE LANDSCAPED, EXCLUDING THE ACCESS POINT.

**REFERENCE NOTES SCHEDULE**

SYMBOL	DESCRIPTION
	EXISTING VEGETATION
	SEEDED LAWN

**PLANT SCHEDULE**

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	TYPE	MIN. SIZE
<b>DECIDUOUS TREES</b>						
	CAR AME	3	Carpinus caroliniana	American Hornbeam	B & B	2.0' Cal
	GIN PRN	1	Ginkgo biloba 'PNI 2720'	Princeton Sentry® Maidenhair Tree	B & B	2.0' Cal
	ULM CAR	3	Ulmus x 'Frontier'	Frontier Elm	B & B	2.0' Cal



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PLANTING PLAN  
ZONING MINIMUM

23-056

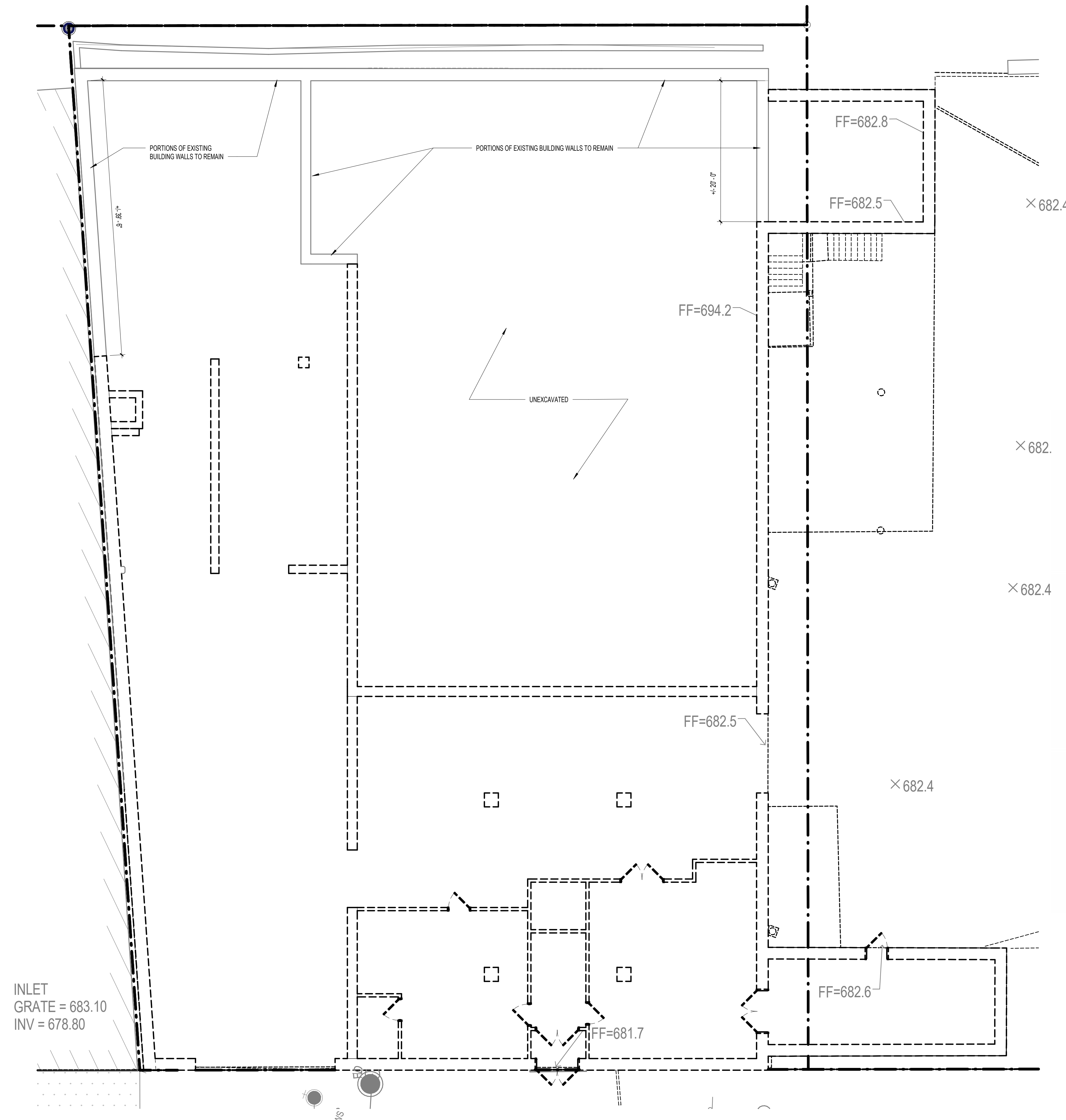


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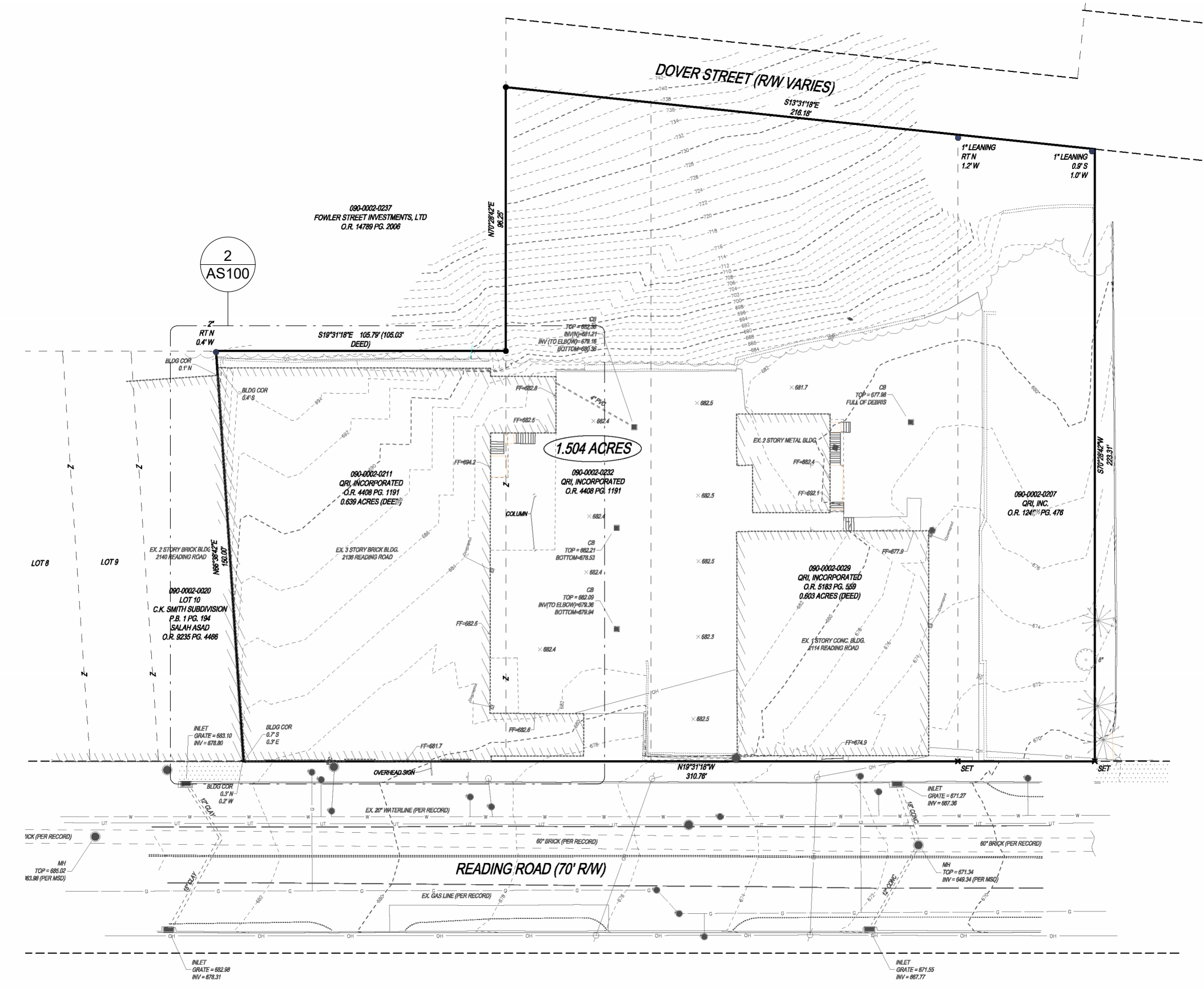
**2 PARTIAL SITE DEMO PLAN**  
AS100 SCALE: 1/8" = 1'-0"

**GENERAL NOTES - DEMO PLANS**

- A. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION ON THE EXTENTS OF TE PARTIAL BUILDING DEMOLITION SHOWN ON THIS PLAN.
- B. REFER TO CIVIL DRAWINGS FOR ADDITIONAL SITE DEMOLITION, UTILITY ALTERATIONS, GRADING MODIFICATIONS, AND ALL OTHER SITE RELATED ALTERATIONS.

**DEMO PLAN LEGEND**

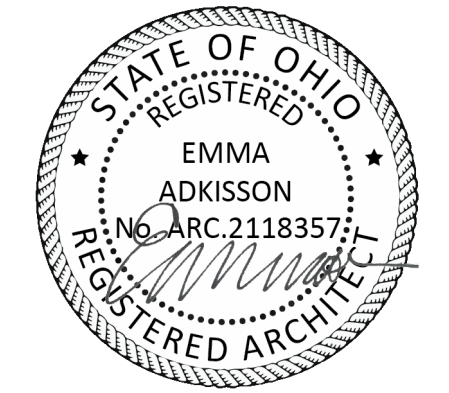
- EXISTING CONSTRUCTION TO REMAIN
- EXISTING CONSTRUCTION TO BE REMOVED



**1 KEY PLAN - EXISTING SITE**  
AS100 SCALE: 1/2" = 1'-0"



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ARCHITECTURAL SITE  
DEMOLITION PLANS

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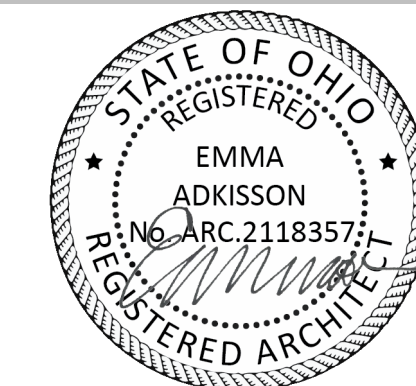
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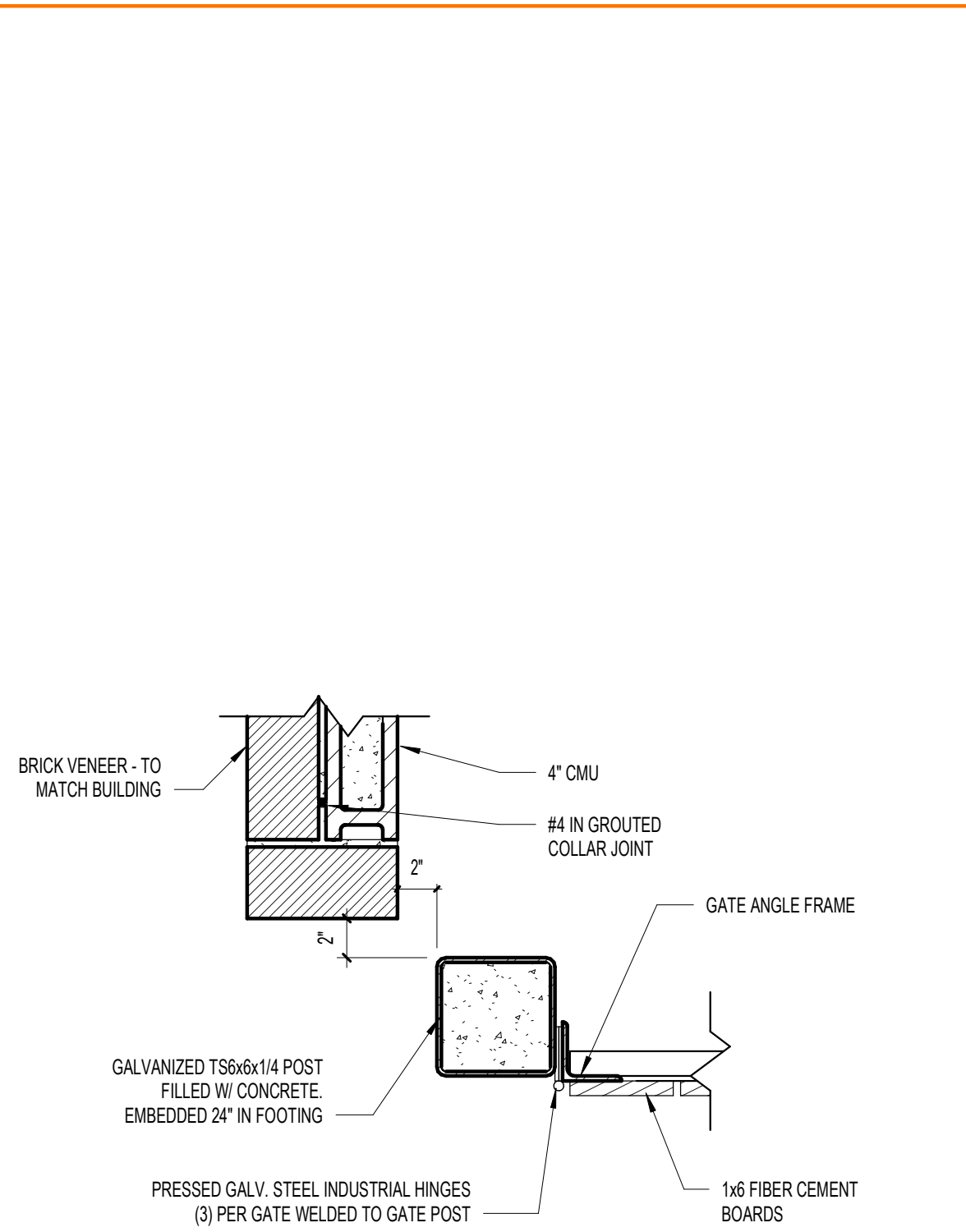
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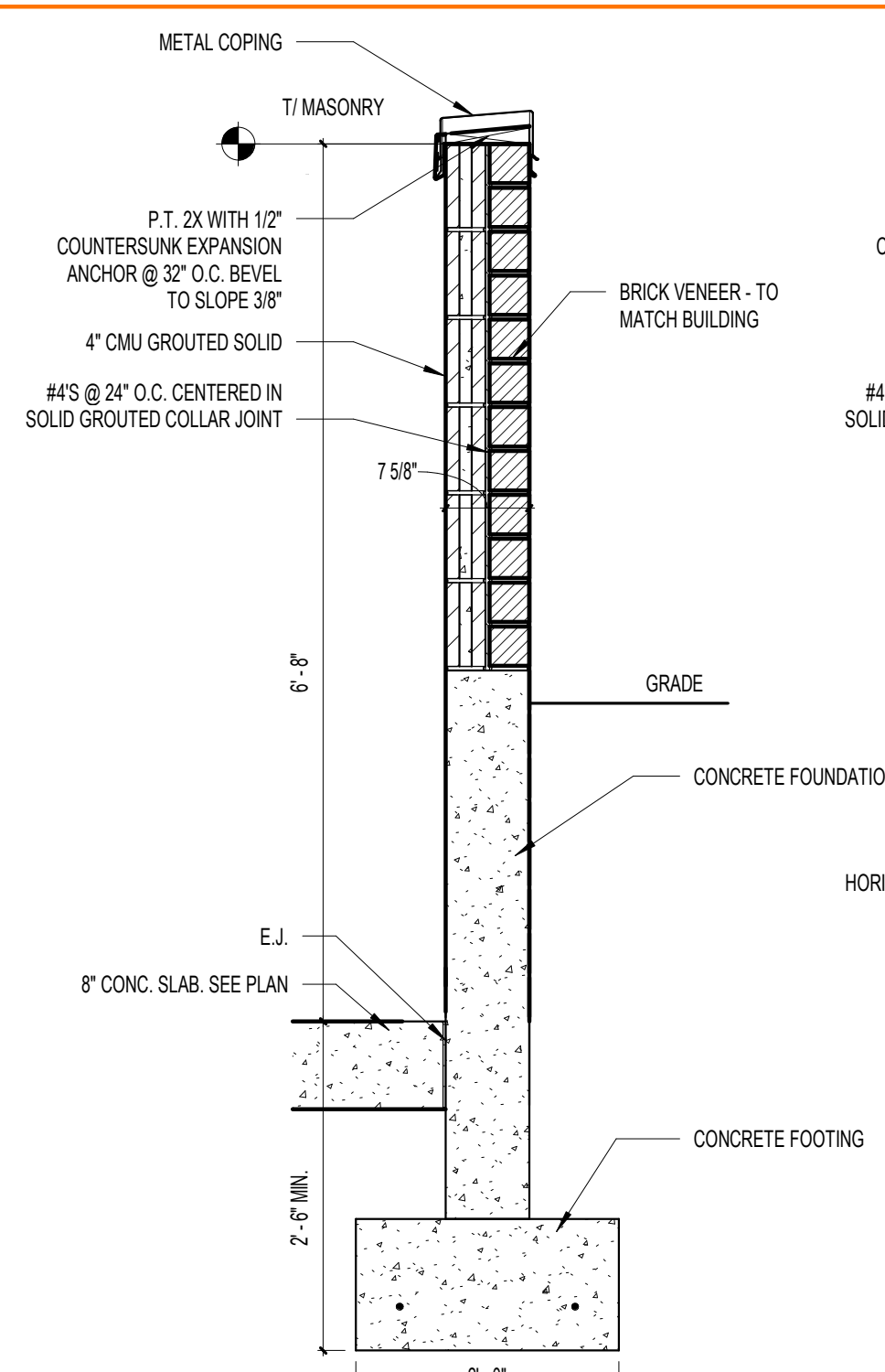


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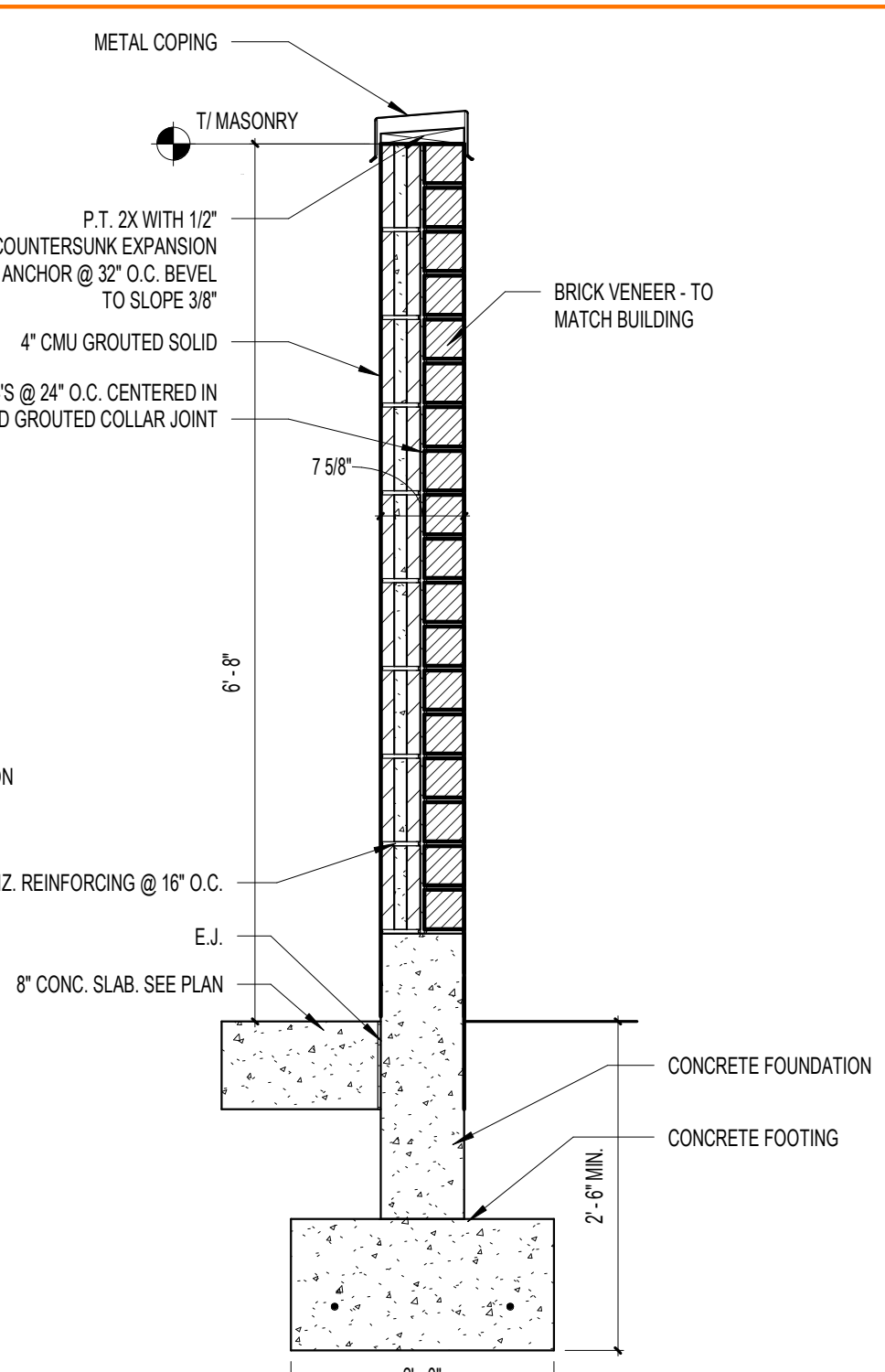
**6 DUMPSTER ENCLOSURE PLAN DETAIL**

AS101 SCALE: 1 1/2" = 1'-0"



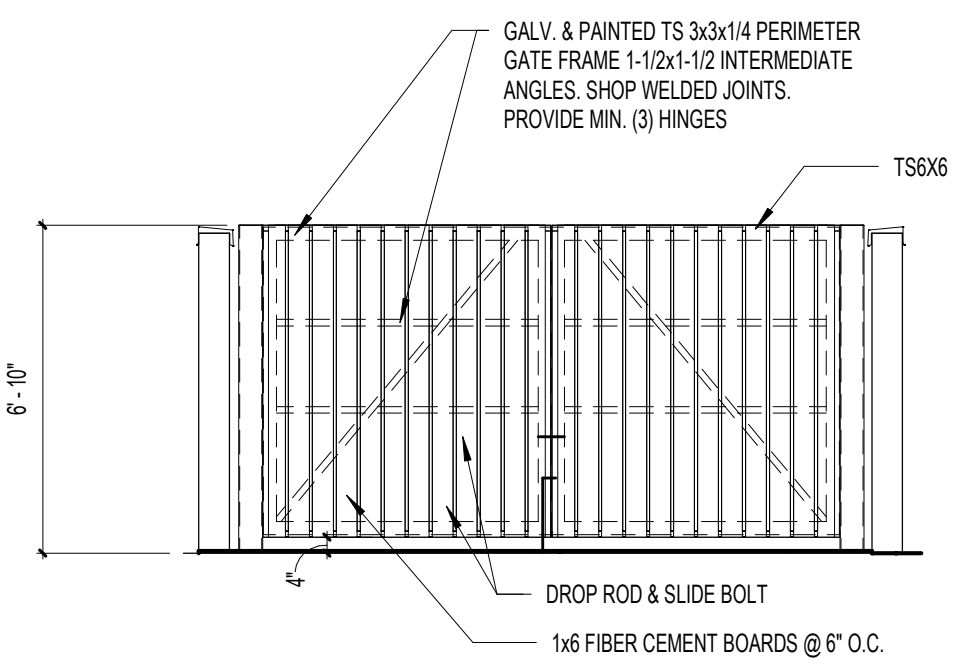
**5 ENCLOSURE SECTION**

AS101 SCALE: 3/4" = 1'-0"



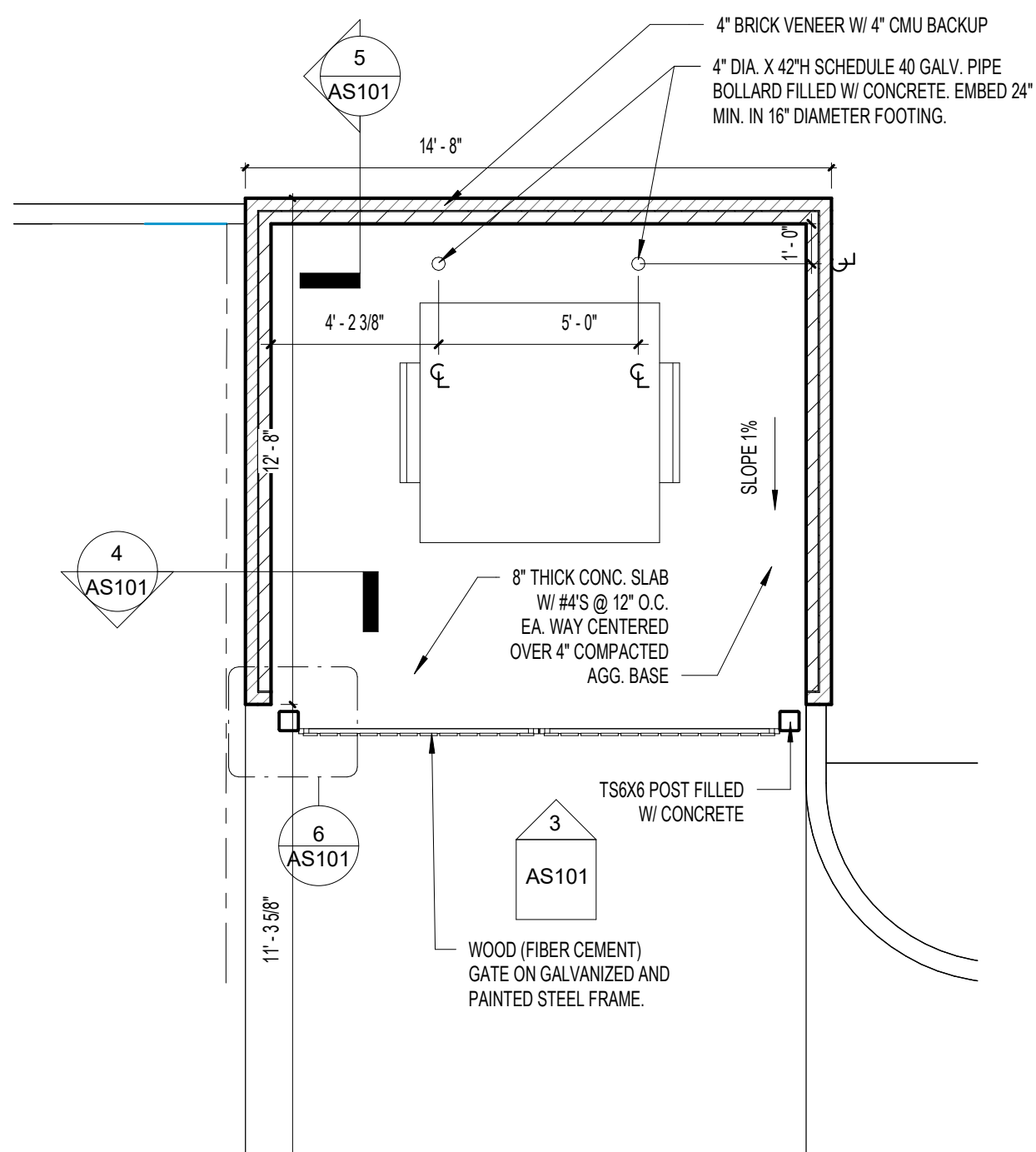
**4 ENCLOSURE SECTION**

AS101 SCALE: 3/4" = 1'-0"



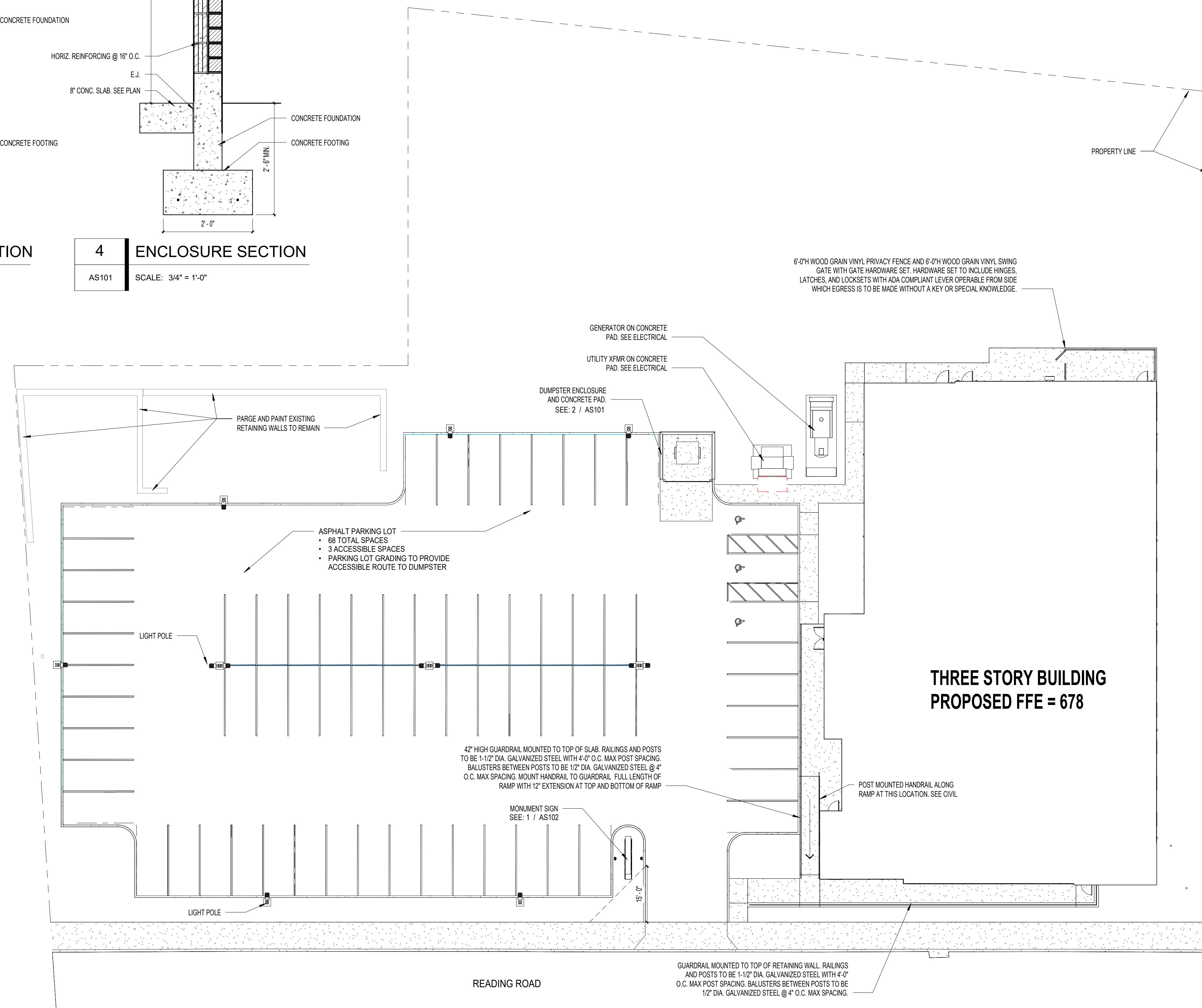
**3 DUMPSTER ENCLOSURE ELEVATION**

AS101 SCALE: 1/4" = 1'-0"



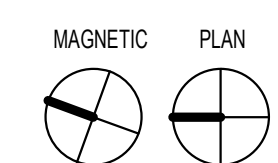
**2 DUMPSTER ENCLOSURE PLAN**

AS101 SCALE: 1/4" = 1'-0"



**1 ARCHITECTURAL SITE PLAN**

AS101 SCALE: 1/16" = 1'-0"



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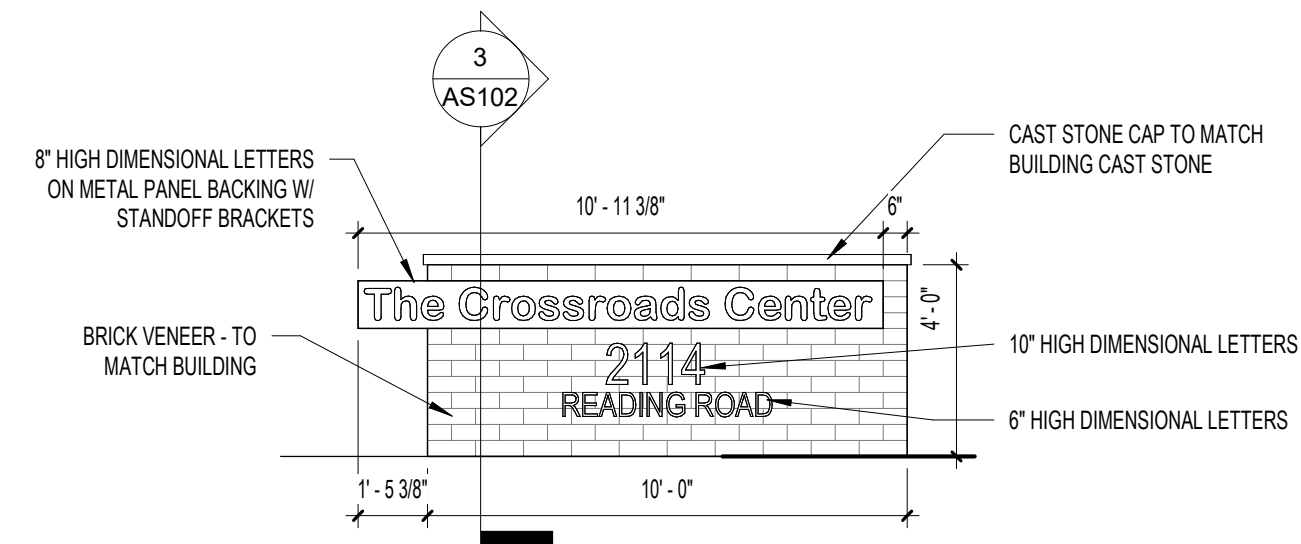
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ARCHITECTURAL SITE PLAN

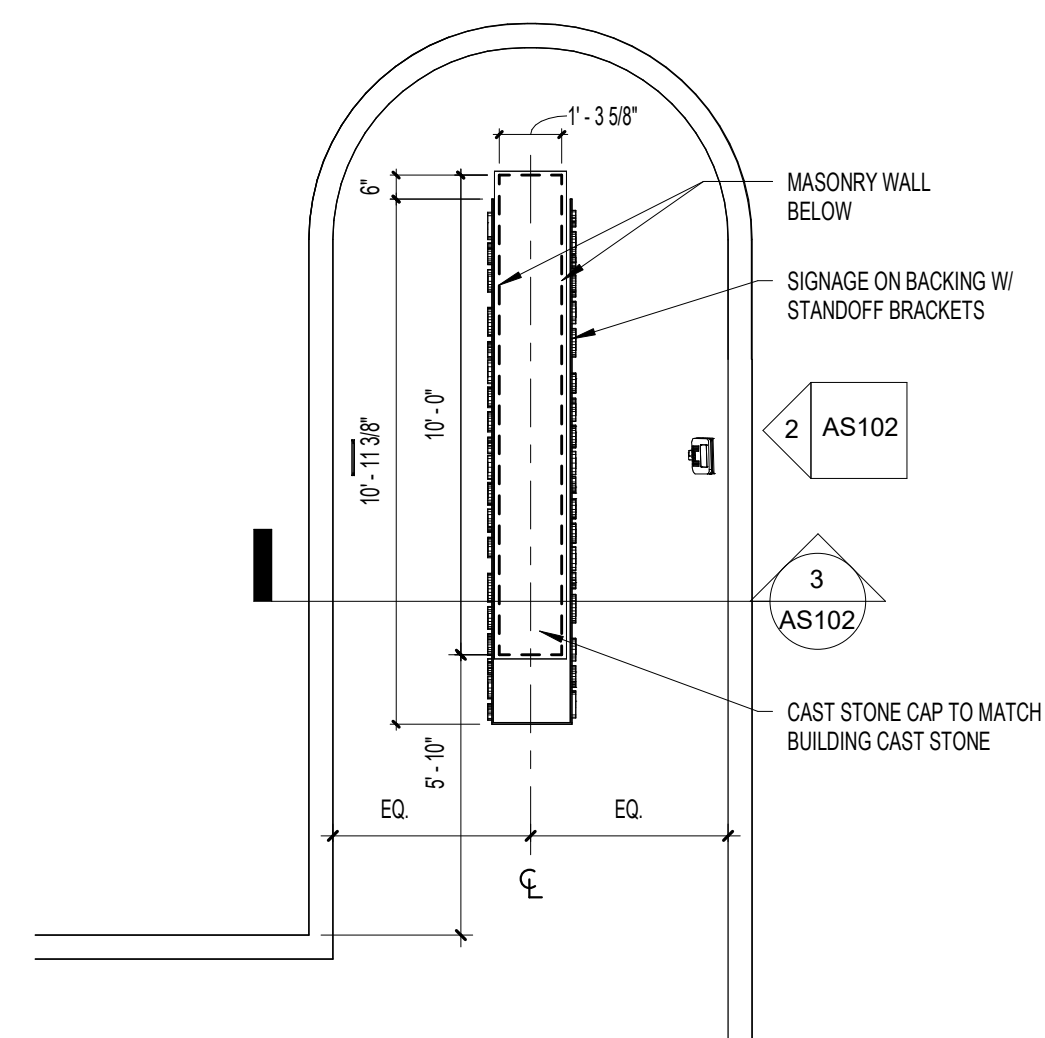
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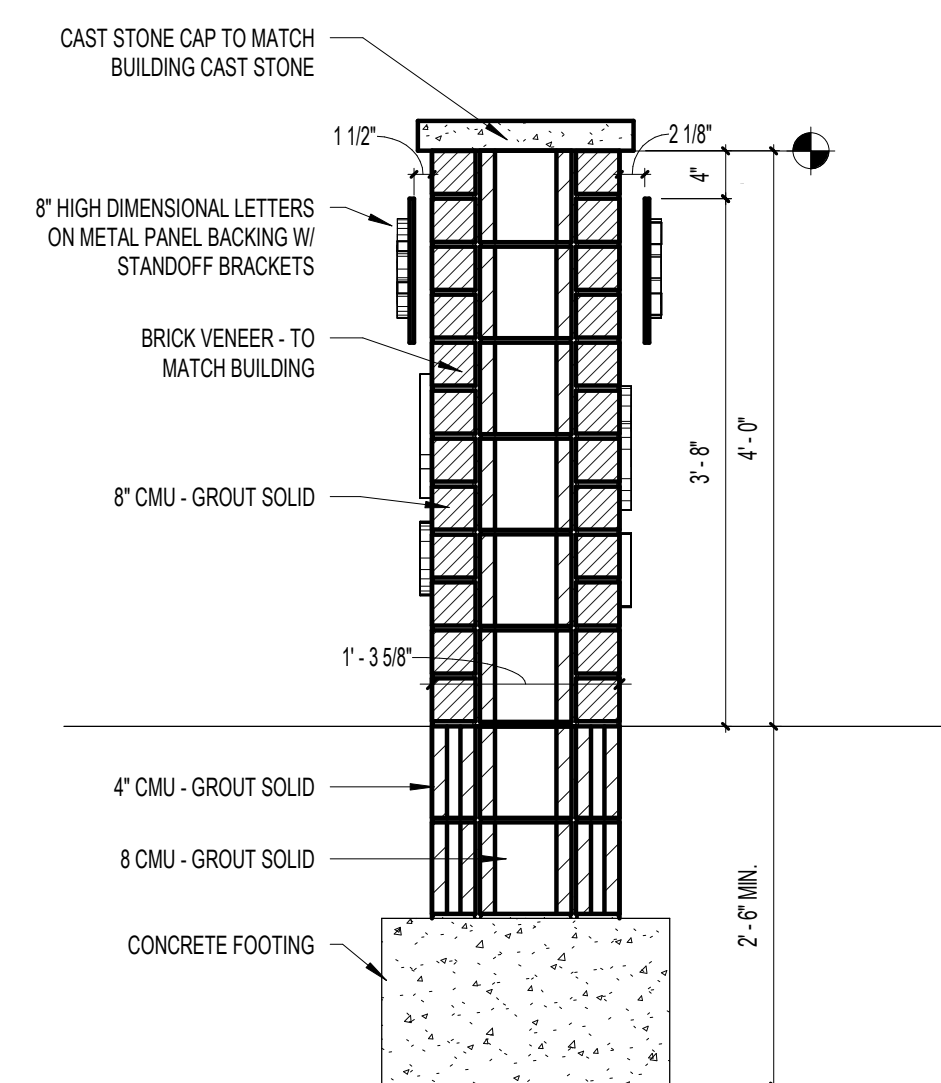
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**2** MONUMENT SIGNAGE ELEVATION  
AS102 SCALE: 1/4" = 1'-0"



**1** MONUMENT SIGNAGE PLAN  
AS102 SCALE: 1/4" = 1'-0"



**3** MONUMENT SIGNAGE SECTION  
AS102 SCALE: 3/4" = 1'-0"



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ARCHITECTURAL SITE  
DETAILS

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**AS102**



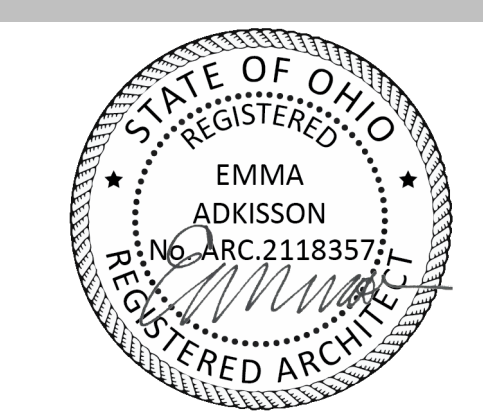
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**GENERAL NOTES - FLOOR PLANS**

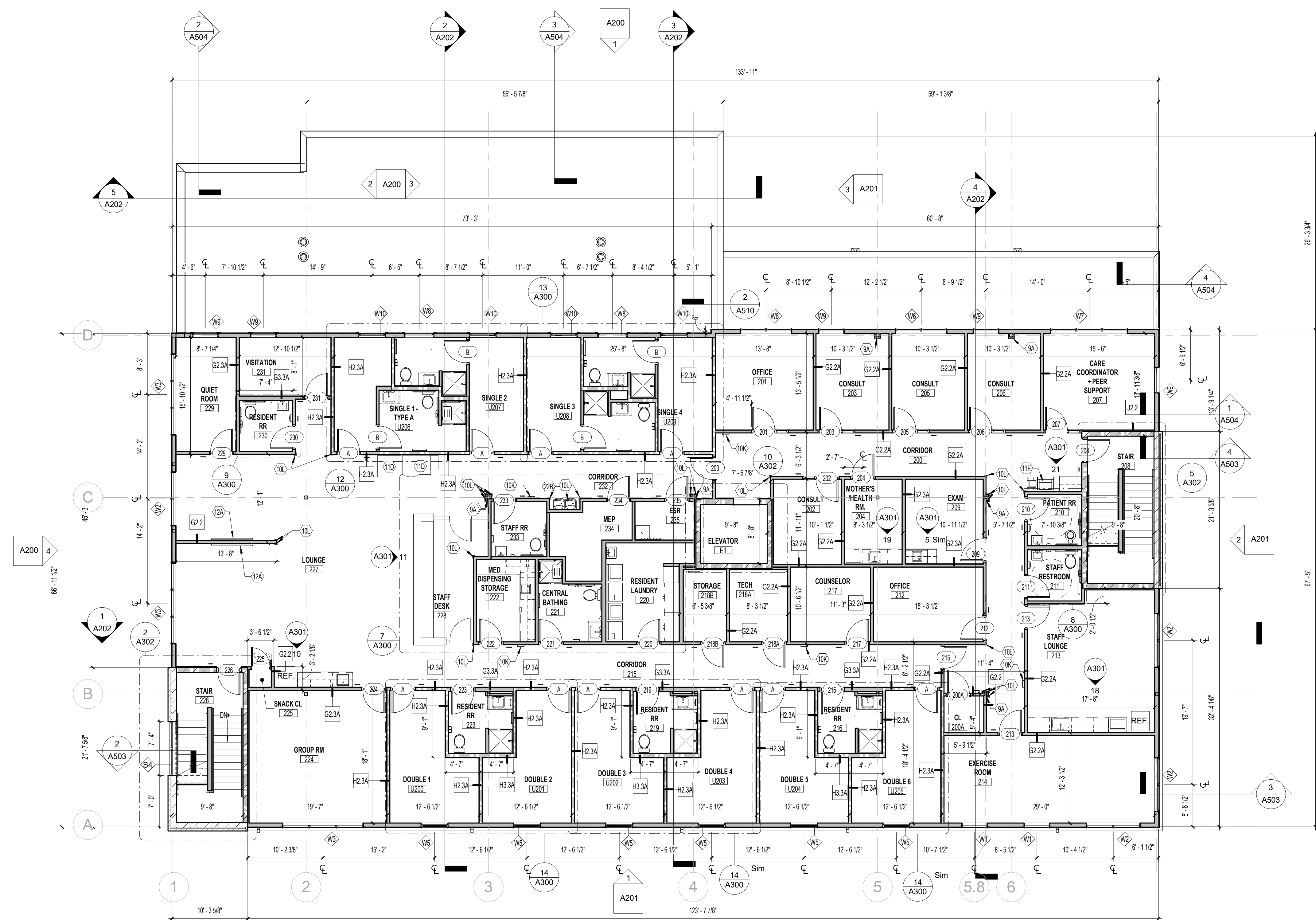
- A. SEE SHEET G102 FOR WALL TYPES
- B. PROVIDE SOLID SURFACE WINDOW STOOL EXTENDING 1/2" BEHIND FACE OF GYPSUM AT ALL NEW ELEVATED STOREFRONTS AND WINDOWS
- C. PROVIDE BLOCKING IN WALLS AROUND SHOWER (ALL SIDES) AND TOILET FOR POTENTIAL FUTURE GRAB BARS
- D. OFFSET NEW DOORS FROM ADJACENT PERPENDICULAR WALL 4" UNLESS INDICATED OTHERWISE
- E. PROVIDE BLOCKING IN WALLS, CEILING, ETC. WHEREVER ITEMS WILL BE ATTACHED TO THESE SURFACES (I.E., TOILET ACCESSORIES, WALL MOUNTED DOOR STOPS, FIXTURES, CASEWORK, HANDRAILS, TV'S, DISPLAYS, AV EQUIPMENT, ETC.)
- F. A VAPOR MITIGATION SYSTEM WILL BE PROVIDED UNDER SEPARATE CONTRACT. COORDINATE PIPE RUNS FOR THIS SYSTEM WITH MEP EQUIPMENT AND WALL, WHERE POSSIBLE. PIPES SHALL BE LOCATED IN NEW WALLS, WHERE NOT POSSIBLE TO LOCATE PIPES WITHIN CURRENTLY SHOWN WALLS, PIPES SHALL BE BOXED OUT TO MINIMUM DIMENSION
- 9A. DIMENSION AROUND STRUCTURAL COLUMN TO MINIMUM DIMENSION WITH WOOD STUD AND GYPSUM WALL BOARD.
- 10K. FIRE EXTINGUISHER IN SEMI RECESSED FIRE EXTINGUISHER CABINET
- 10L. CORNER GUARD
- 11D. VENDING MACHINE (BY OWNER)
- 11E. COPIER (BY OWNER)
- 12A. TV & MOUNT, OWNER FURNISHED, CONTRACTOR INSTALLED. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- 22B. HI-LO ICC ANSI A117.1 COMPLIANT DRINKING FOUNTAIN. SEE MEP DRAWINGS.



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MAGNETIC PLAN  
 1 FLOOR PLAN - SECOND FLOOR  
 A101 SCALE: 1/8" = 1'-0"

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SECOND FLOOR PLAN

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- D. OFFSET NEW DOORS FROM ADJACENT PERPENDICULAR WALL 4" UNLESS INDICATED OTHERWISE
- E. PROVIDE BLOCKING IN WALLS, CEILING, ETC. WHEREVER ITEMS WILL BE ATTACHED TO THESE SURFACES (I.E., TOILET ACCESSORIES, WALL MOUNTED DOOR STOPS, FIXTURES, CASEWORK, HANDRAILS, TV'S, DISPLAYS, AV EQUIPMENT, ETC.)
- F. A VAPOR MITIGATION SYSTEM WILL BE PROVIDED UNDER SEPARATE CONTRACT. COORDINATE PIPE RUNS FOR THIS SYSTEM WITH MEP EQUIPMENT AND WALL, WHERE POSSIBLE. PIPES SHALL BE LOCATED IN NEW WALLS, WHERE NOT POSSIBLE TO LOCATE PIPES WITHIN CURRENTLY SHOWN WALLS, PIPES SHALL BE BOXED OUT TO MINIMUM DIMENSION.

**SHEET KEYNOTES**

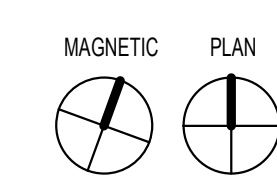
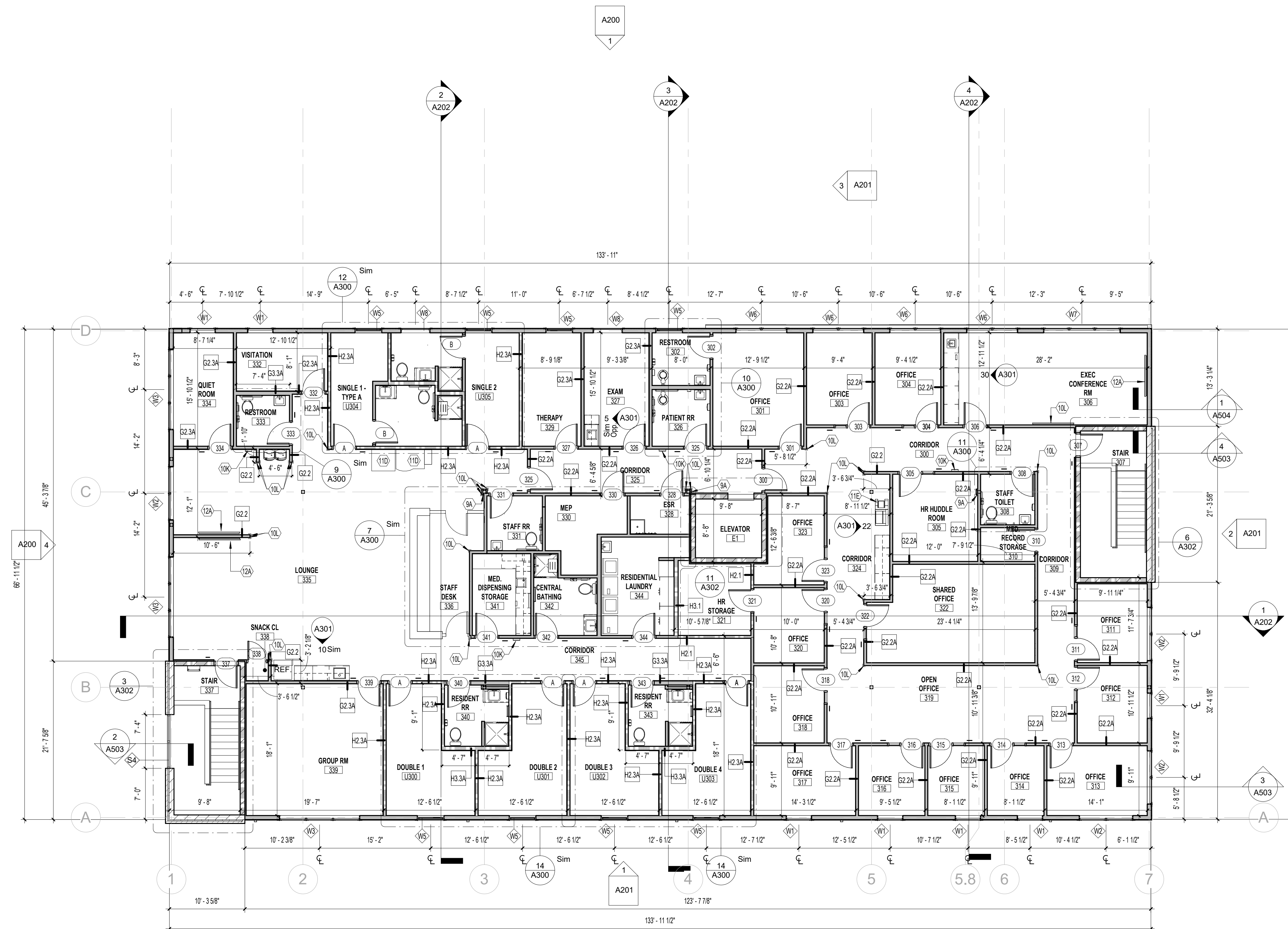
- 9A. BOX OUT AROUND STRUCTURAL COLUMN TO MINIMUM DIMENSION WITH WOOD STUD AND GYPSUM WALL BOARD.
- 10K. FIRE EXTINGUISHER IN SEMI RECESSED FIRE EXTINGUISHER CABINET
- 10L. CORNER GUARD
- 11D. VENDING MACHINE (BY OWNER)
- 11E. COPIER (BY OWNER)
- 12A. TV & MOUNT, OWNER FURNISHED, CONTRACTOR INSTALLED. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.



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EXPIRATION DATE 12/31/2025



**1 FLOOR PLAN - THIRD FLOOR**  
A102 SCALE: 1/8" = 1'-0"

**The Crossroads Center**  
2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
PERMIT SET		08/09/24

THIRD FLOOR PLAN

23-056

**A102**



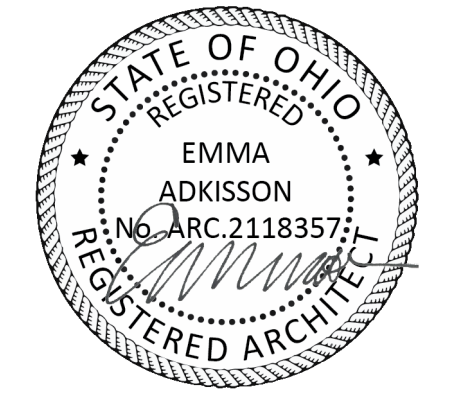
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**GENERAL NOTES - ELEVATIONS**

- A. ACM METAL PANELS - TYPE '1' BASIS-OF-DESIGN: ALPOLIC CMC LBM BLUE MATTE LOT #R02820
- B. ACM METAL PANELS - TYPE '2' BASIS-OF-DESIGN: ALFREX 2 COAT SOLIDS DARK GRAY JY-6140
- C. BRICK BASIS-OF-DESIGN: HEBRON BRICK MODULAR SEA GREY #6, SMOOTH, UTILITY BRICK
- D. "WOOD LOOK" METAL PANEL, 6" EXPOSURE BASIS-OF-DESIGN: ALFREX WOOD SERIES TEAK JY-W120
- E. "WOOD LOOK" FIBER CEMENT WALL PANEL 6" EXPOSURE BASIS-OF-DESIGN: NICHHA VINTAGE WOOD SERIES; POPLAR



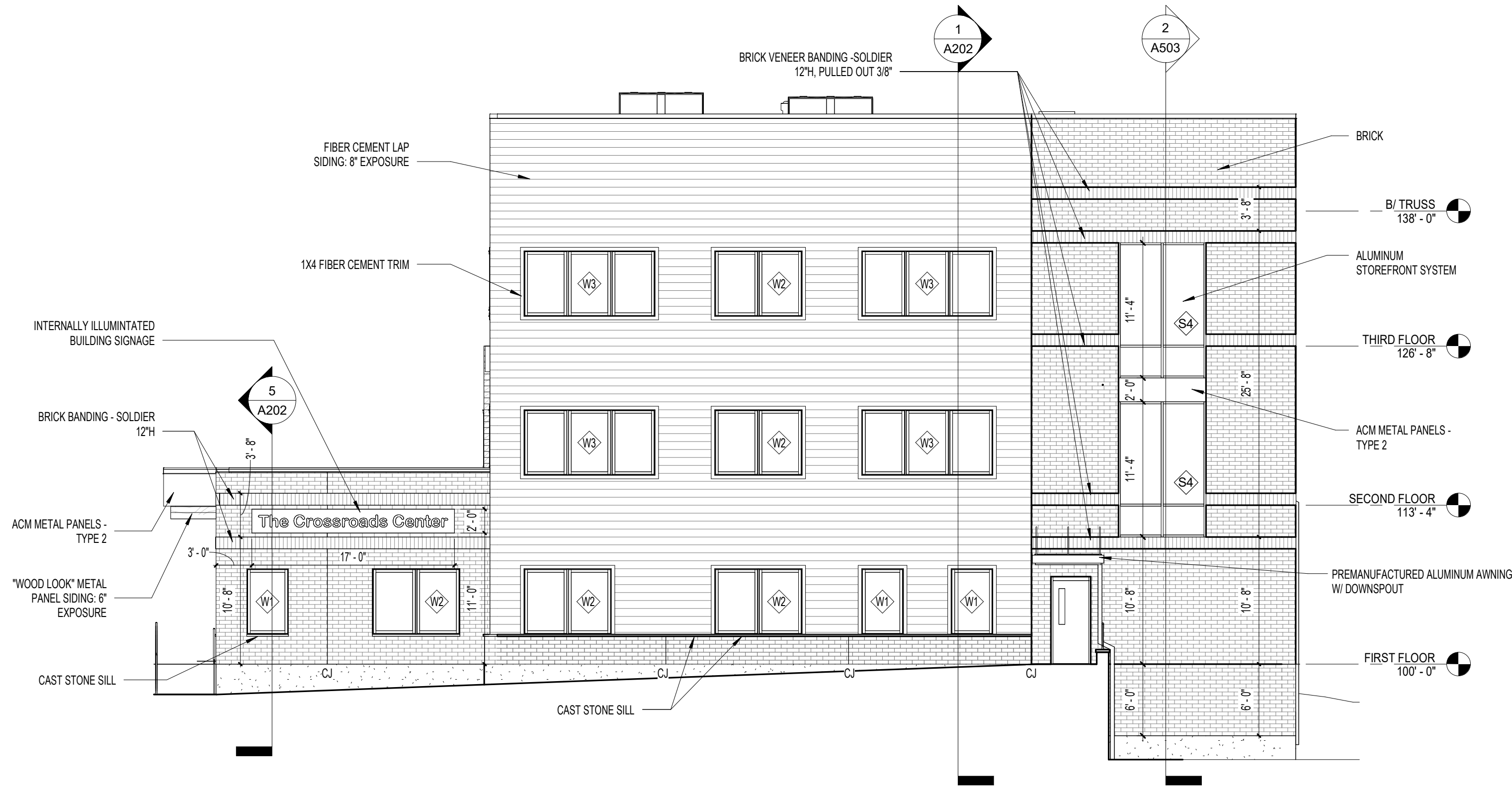
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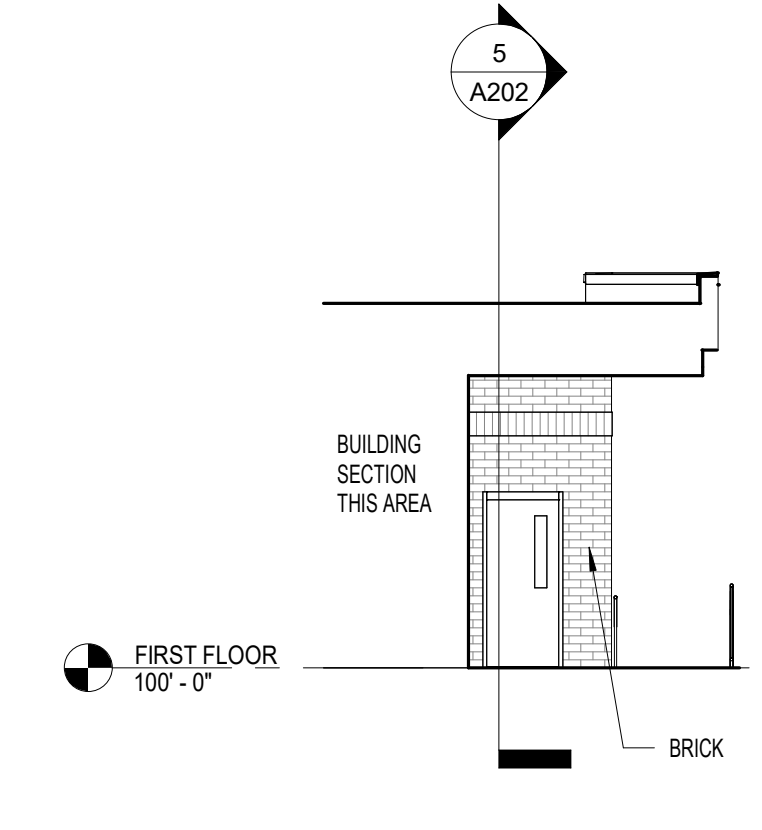
EMMA ADKISSON, LIC# 2118357  
 EXPIRATION DATE 12/31/2025



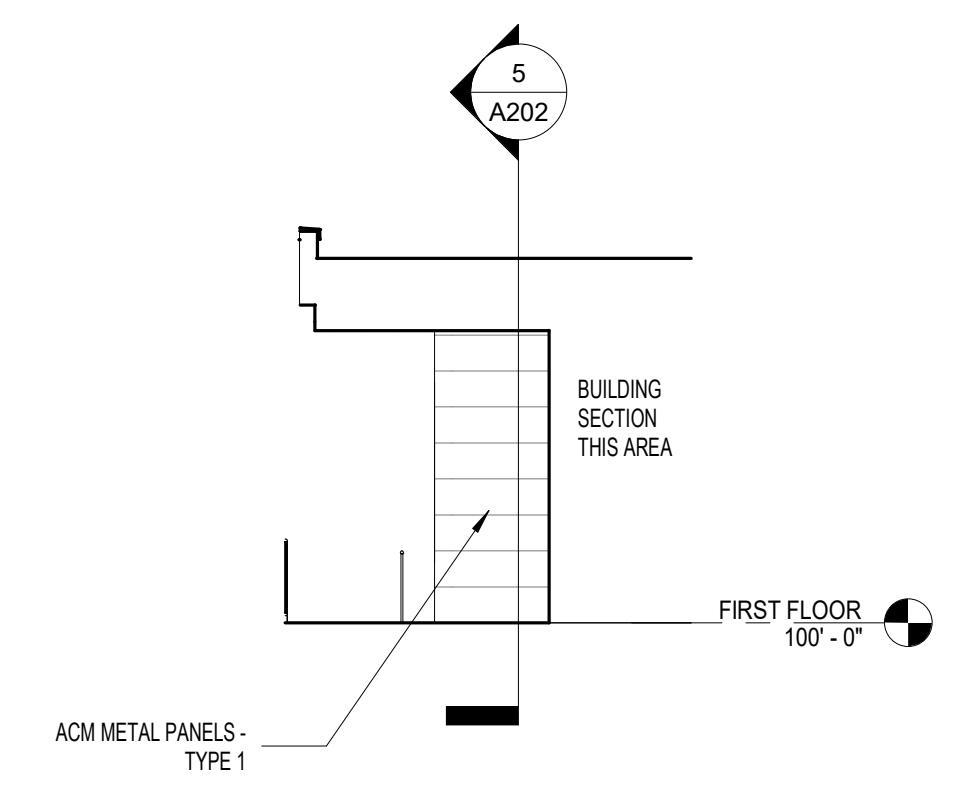
**1 NORTH ELEVATION**  
 A200 SCALE: 1/8" = 1'-0"



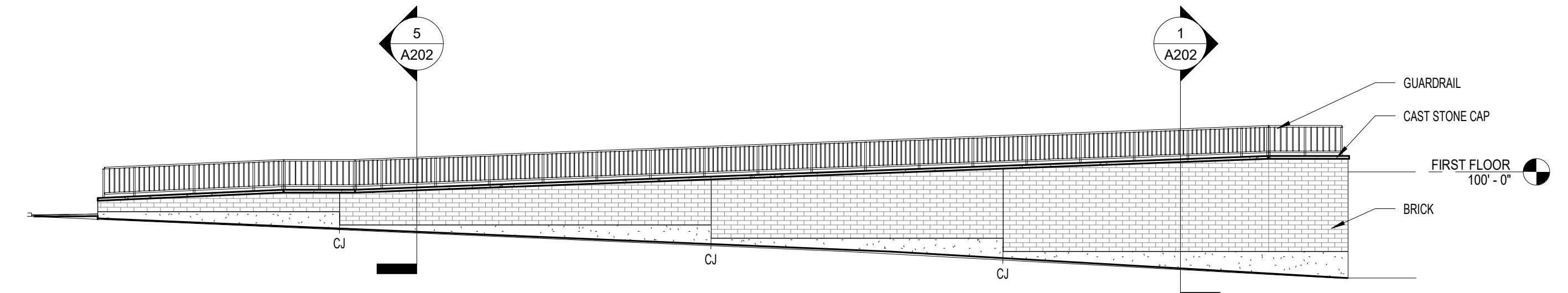
**4 WEST ELEVATION**  
 A200 SCALE: 1/8" = 1'-0"



**2 PARTIAL NORTH ELEVATION**  
 A200 SCALE: 1/8" = 1'-0"



**3 PARTIAL NORTH ELEVATION**  
 A200 SCALE: 1/8" = 1'-0"



**5 WEST ELEVATION**  
 A200 SCALE: 1/8" = 1'-0"

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EXTERIOR ELEVATIONS

23-056

**A200**

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**GENERAL NOTES - ELEVATIONS**

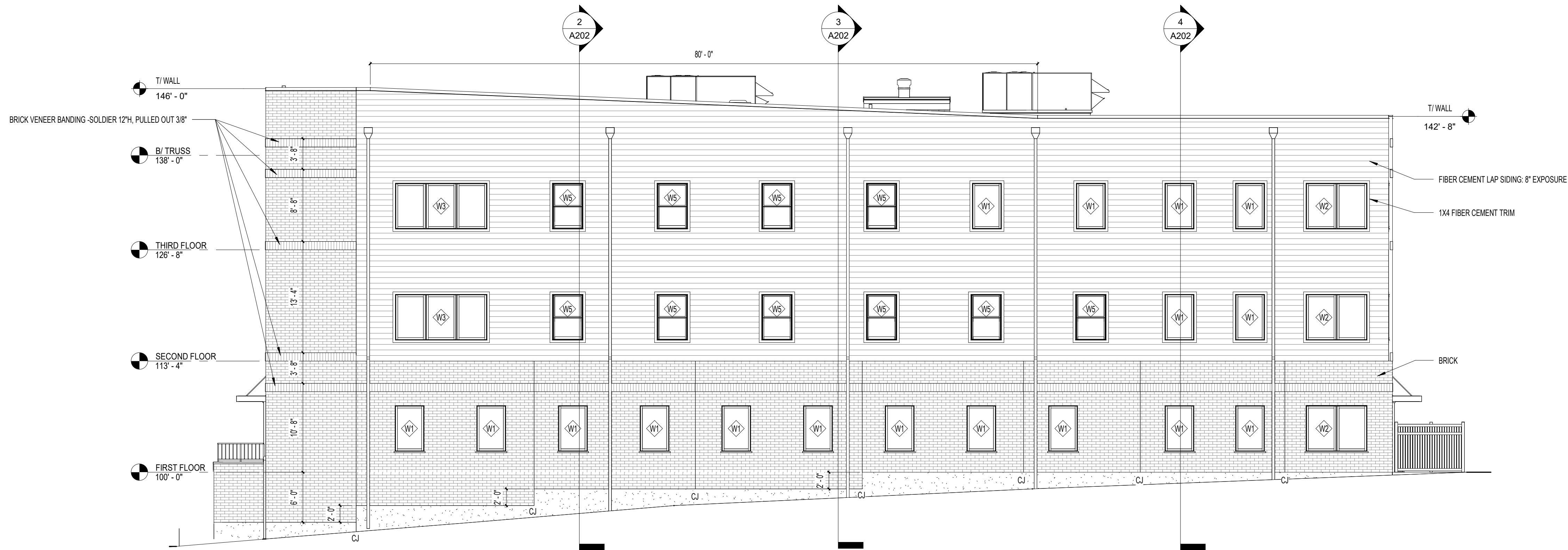
- A. ACM METAL PANELS - TYPE '1' BASIS-OF-DESIGN: ALPOLIC CMC LBM BLUE MATTE LOT #060820
- B. ACM METAL PANELS - TYPE '2' BASIS-OF-DESIGN: ALFREX 2 COAT SOLIDS DARK GRAY JY-6140
- C. BRICK BASIS-OF-DESIGN: HEBRON BRICK MODULAR SEA GREY #6, SMOOTH, UTILITY BRICK
- D. "WOOD LOOK" METAL PANEL, 6" EXPOSURE BASIS-OF-DESIGN: ALFREX WOOD SERIES TEAK JY-W120
- E. "WOOD LOOK" FIBER CEMENT WALL PANEL 6" EXPOSURE BASIS-OF-DESIGN: NICHHA VINTAGE WOOD SERIES; POPLAR



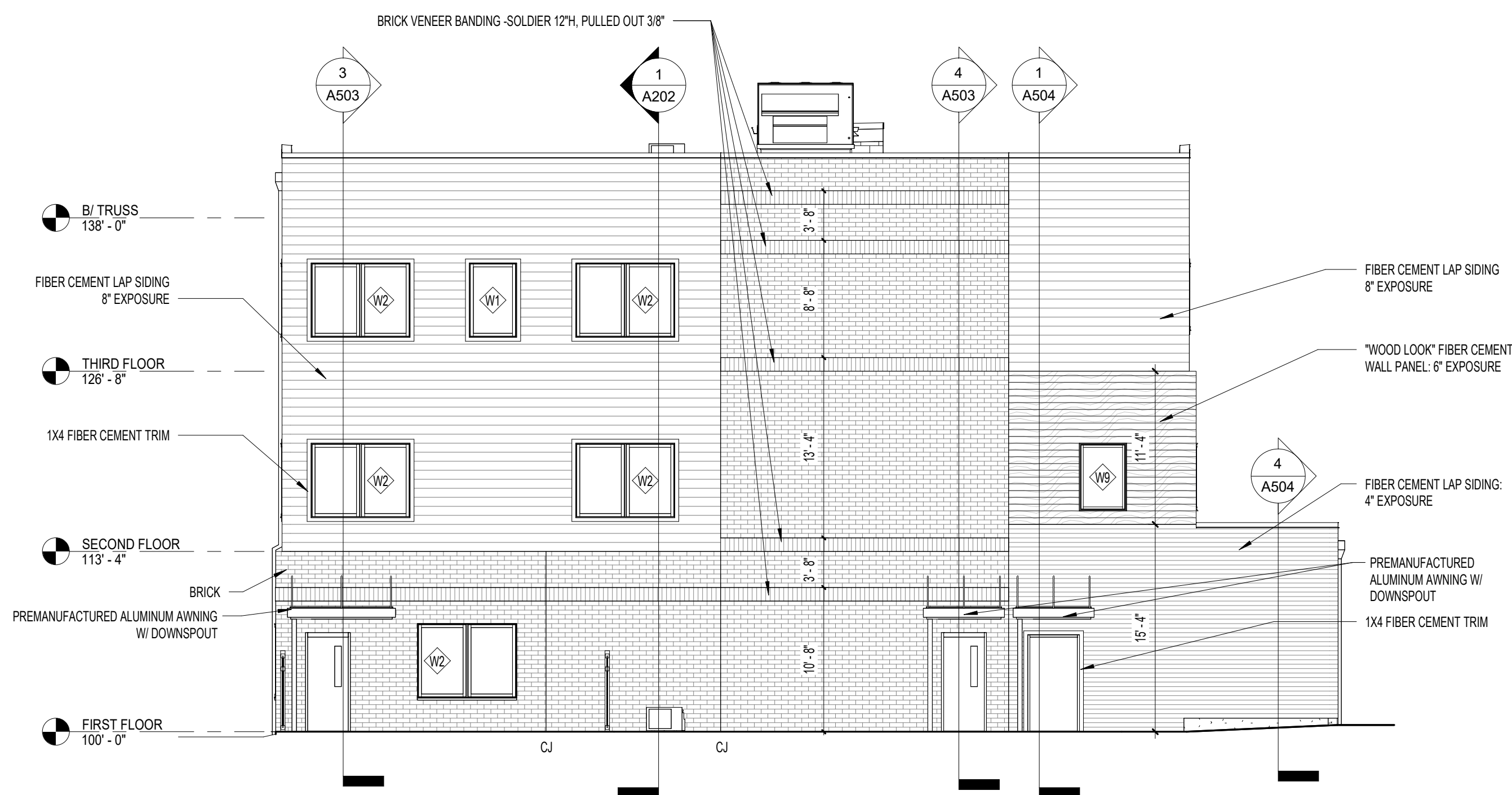
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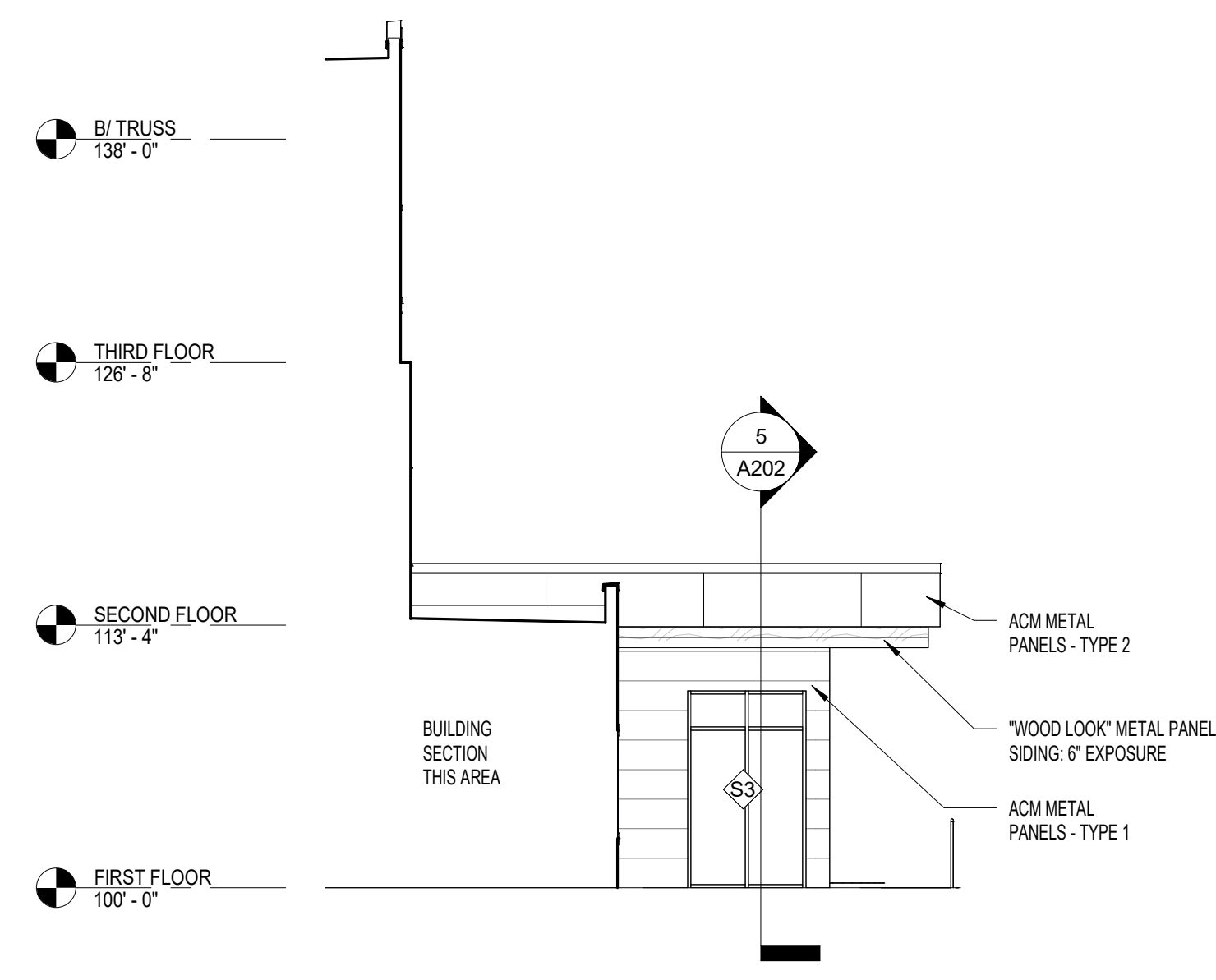
EMMA ADKISSON, LIC# 2118357  
EXPIRATION DATE 12/31/2025



**1 SOUTH ELEVATION**  
A201 SCALE: 1/8" = 1'-0"



**2 EAST ELEVATION**  
A201 SCALE: 1/8" = 1'-0"



**3 PARTIAL EAST ELEVATION**  
A201 SCALE: 1/8" = 1'-0"

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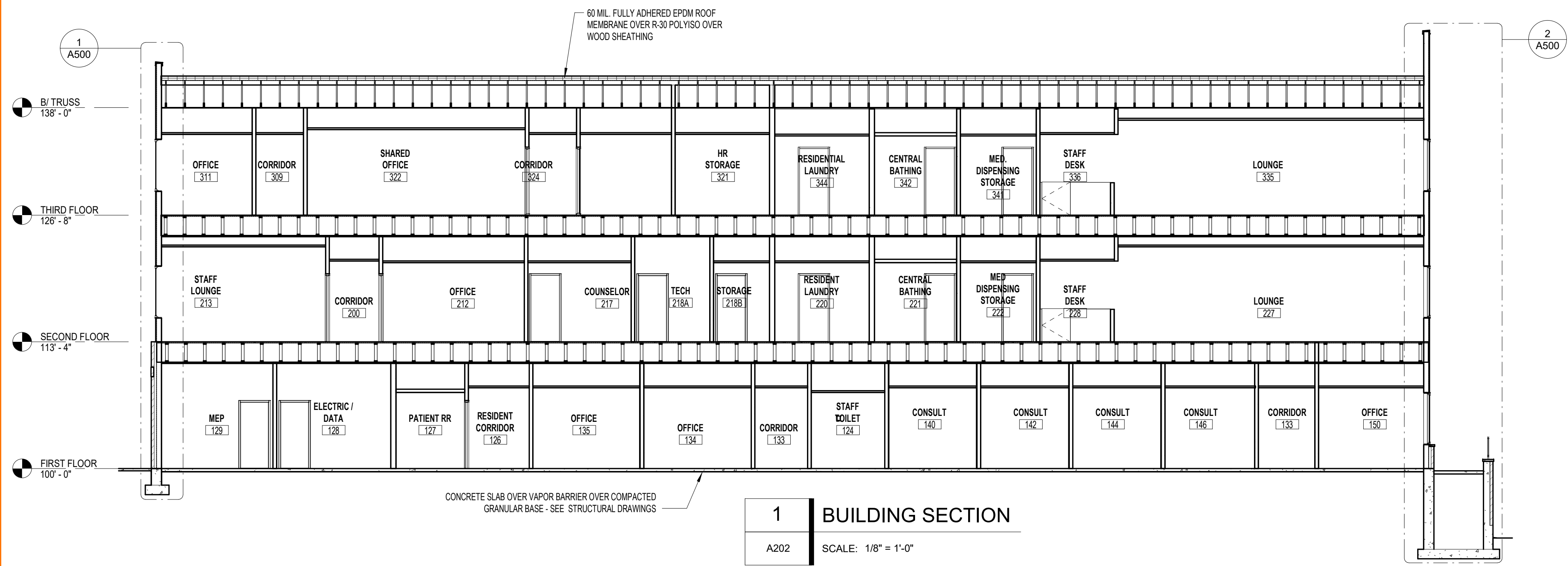
EXTERIOR ELEVATIONS

23-056

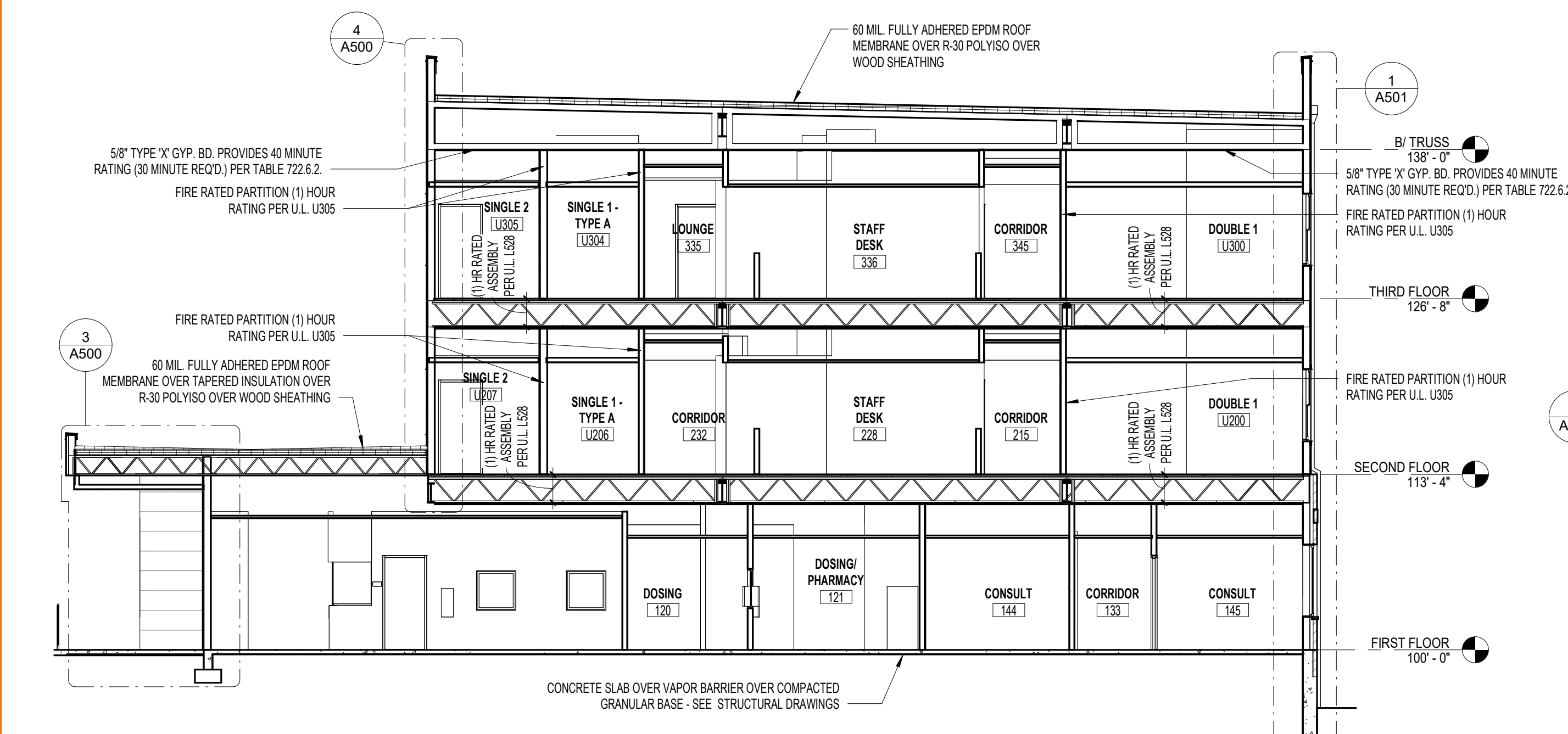
**A201**



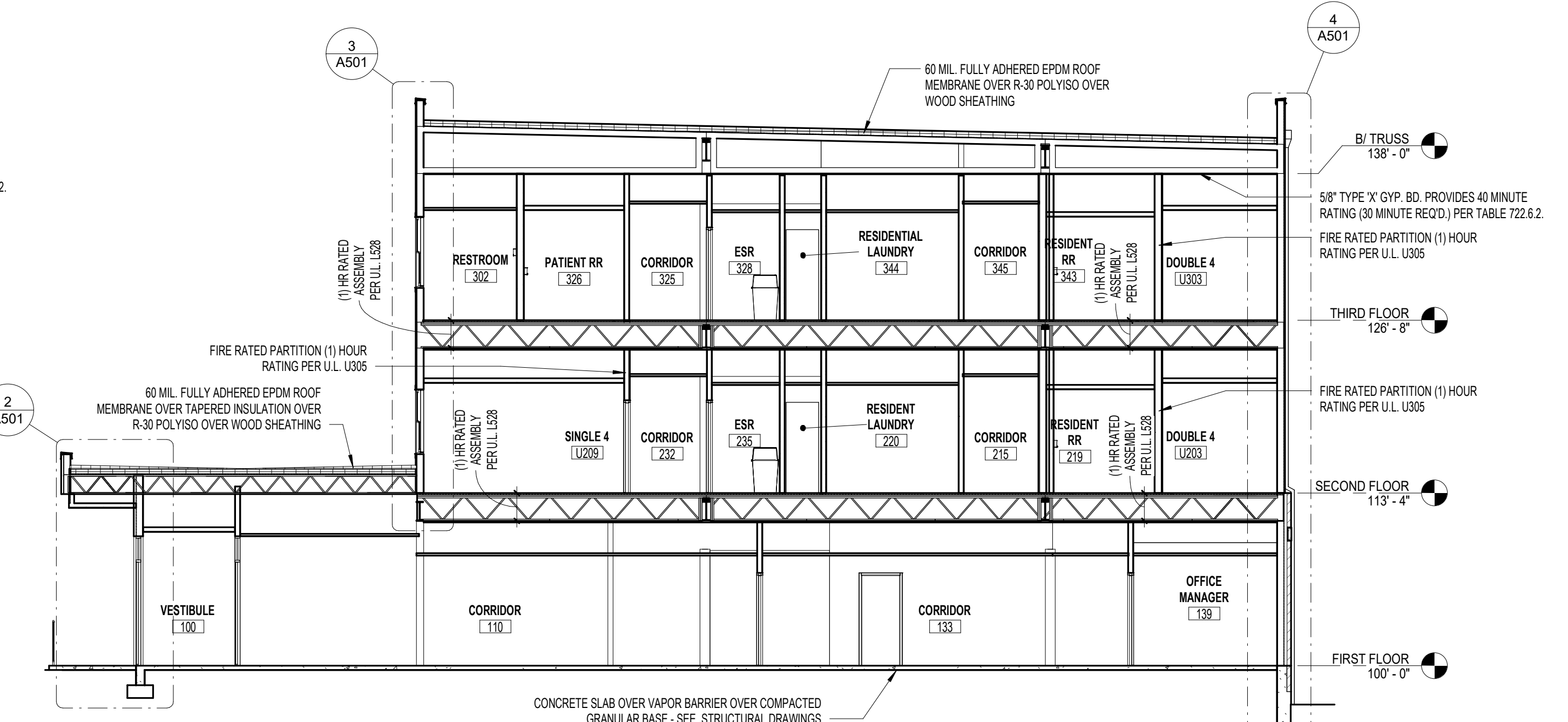
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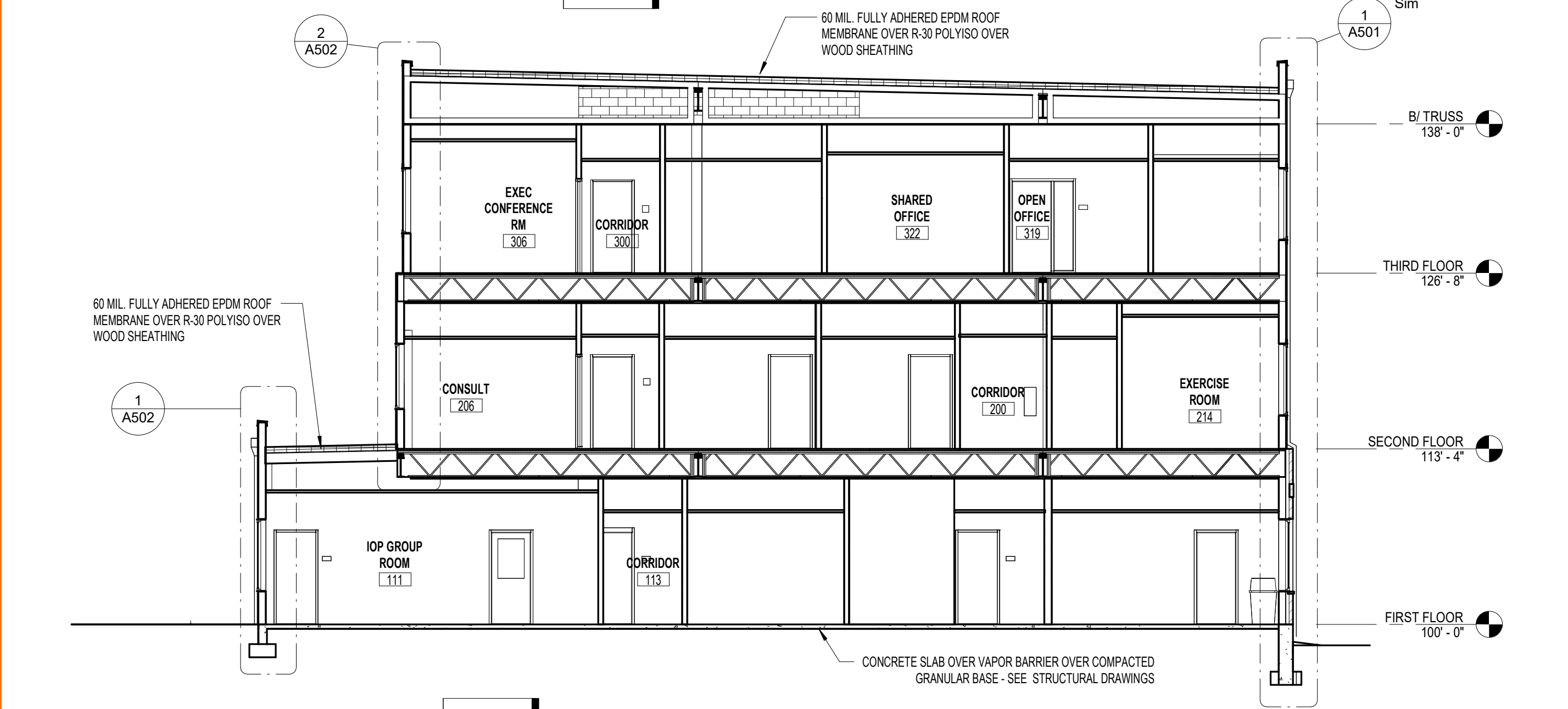
**1 BUILDING SECTION**  
A202 SCALE: 1/8" = 1'-0"



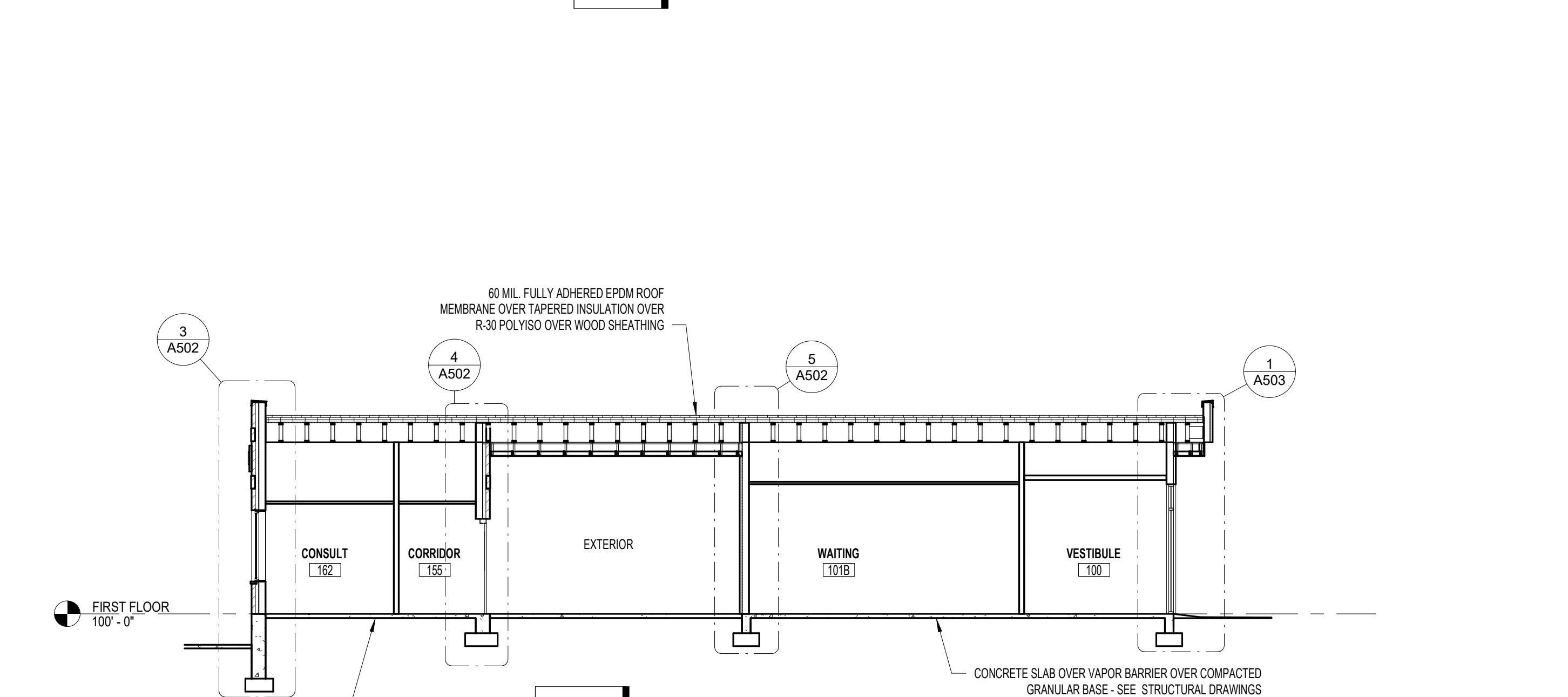
**2 BUILDING SECTION**  
A202 SCALE: 1/8" = 1'-0"



**3 BUILDING SECTION**  
A202 SCALE: 1/8" = 1'-0"



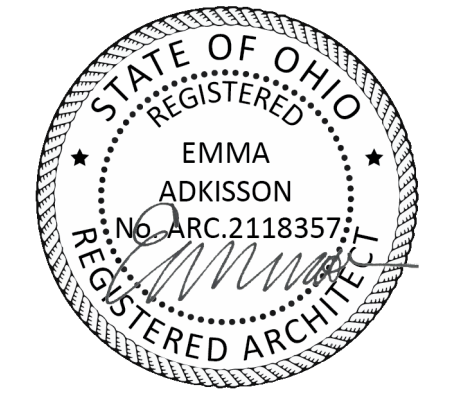
**4 BUILDING SECTION**  
A202 SCALE: 1/8" = 1'-0"



**5 BUILDING SECTION**  
A202 SCALE: 1/8" = 1'-0"



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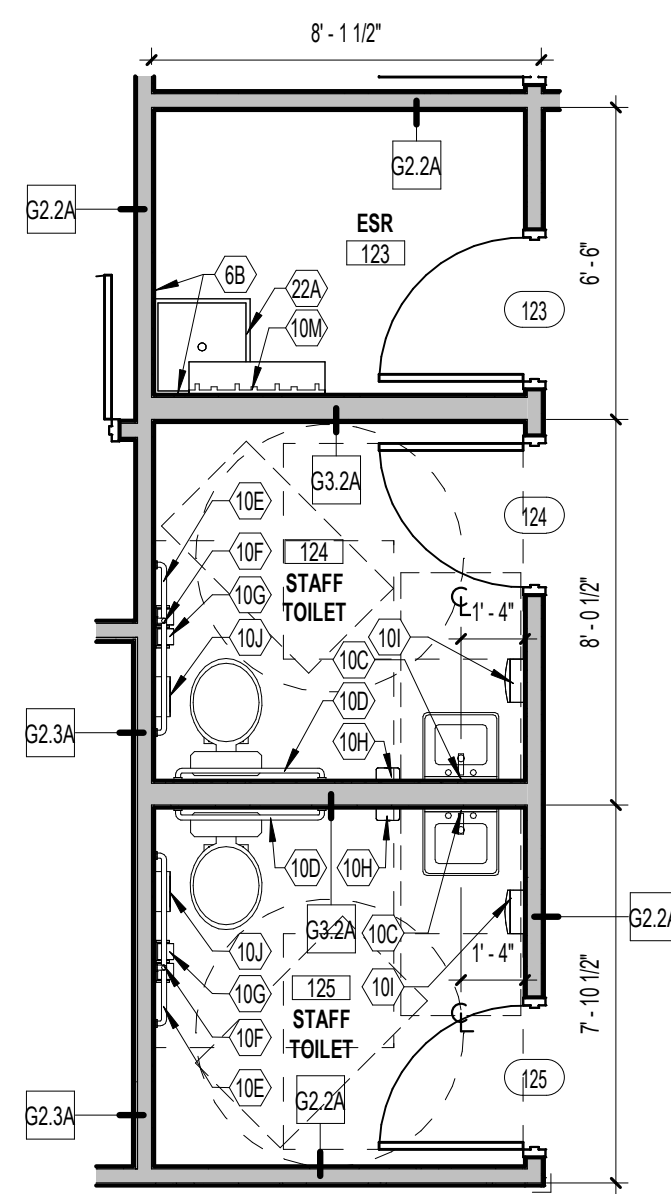
NO.	DESCRIPTION	DATE
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BUILDING SECTIONS

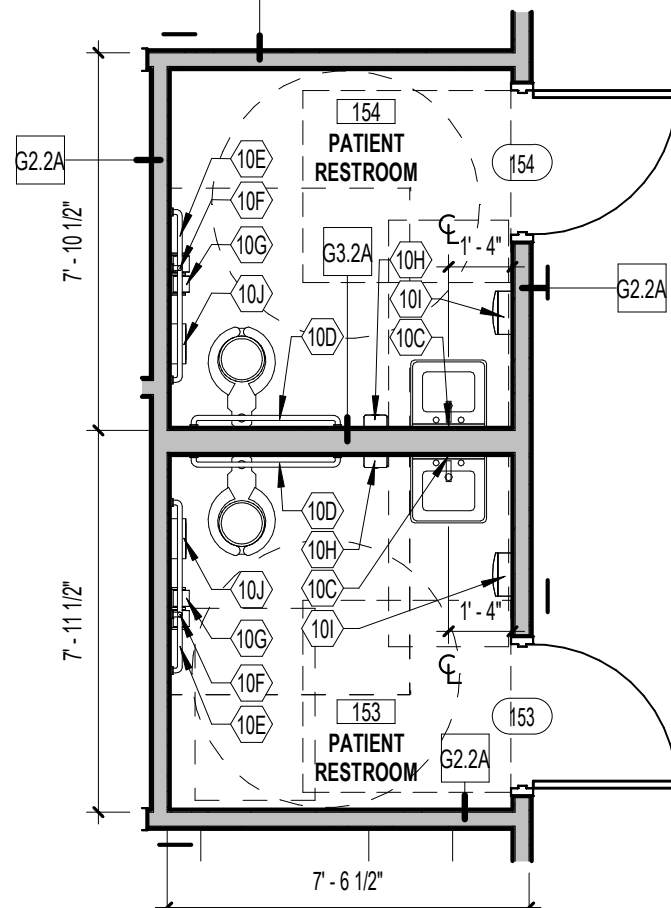
23-056

**A202**

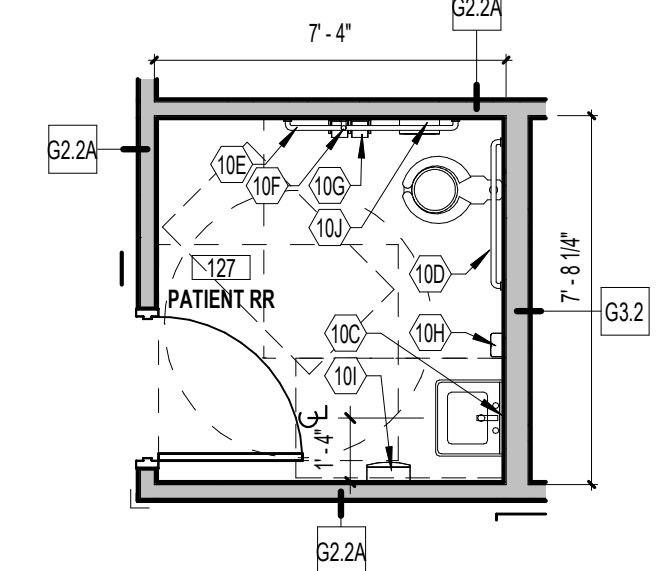
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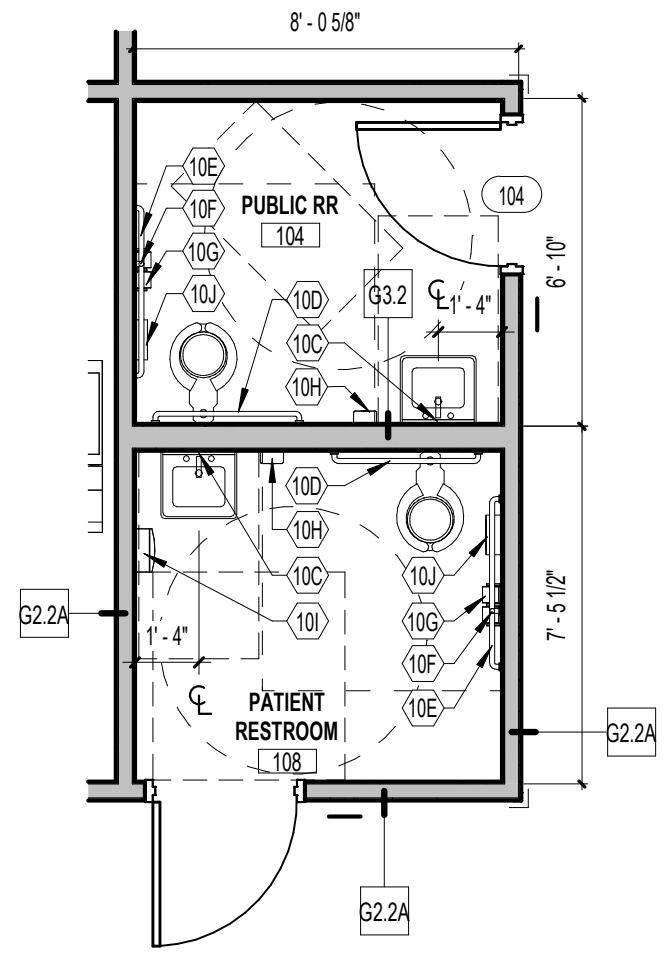
**1 ENLARGED PLAN**  
A300 SCALE: 1/4" = 1'-0"



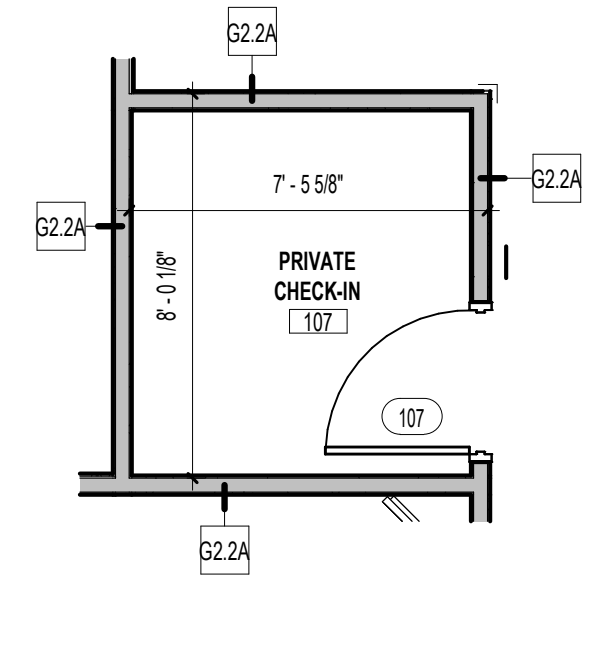
**2 ENLARGED PLAN**  
A300 SCALE: 1/4" = 1'-0"



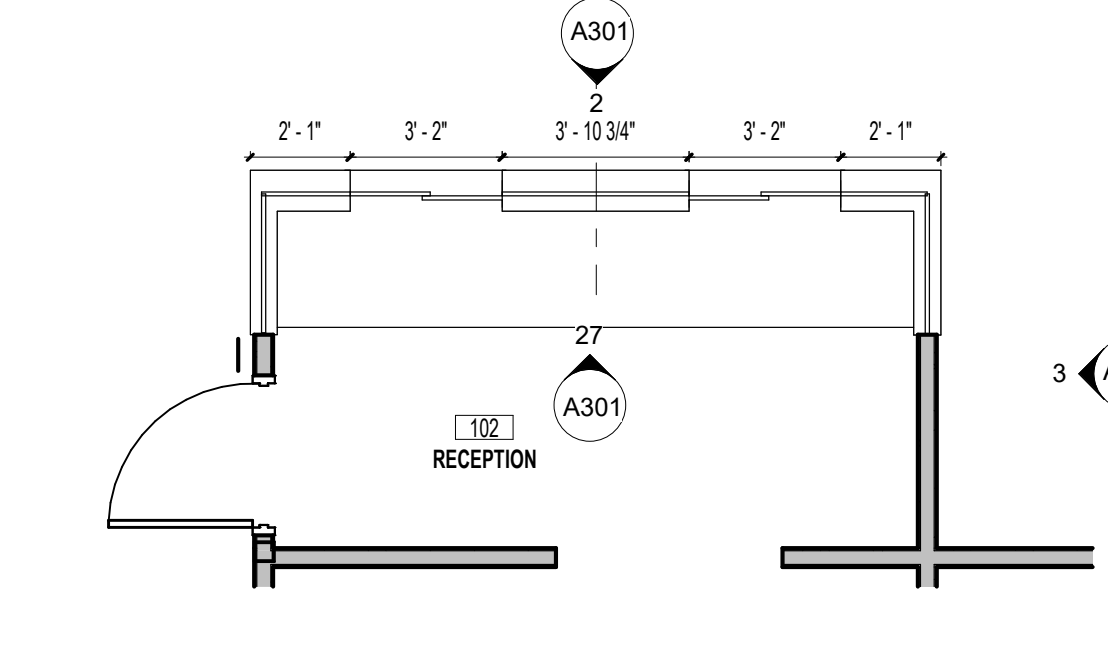
**3 ENLARGED PLAN**  
A300 SCALE: 1/4" = 1'-0"



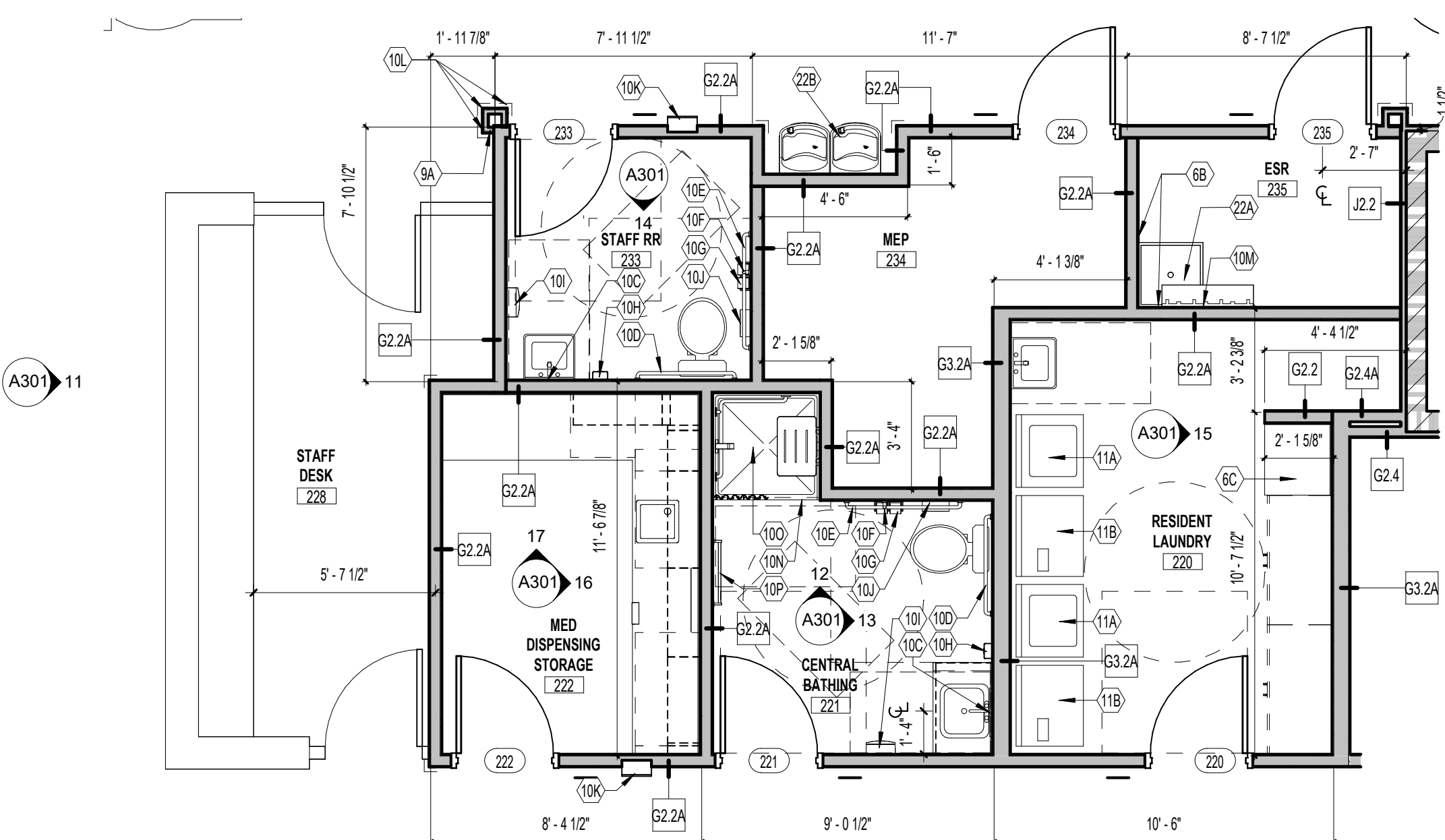
**4 ENLARGED PLAN**  
A300 SCALE: 1/4" = 1'-0"



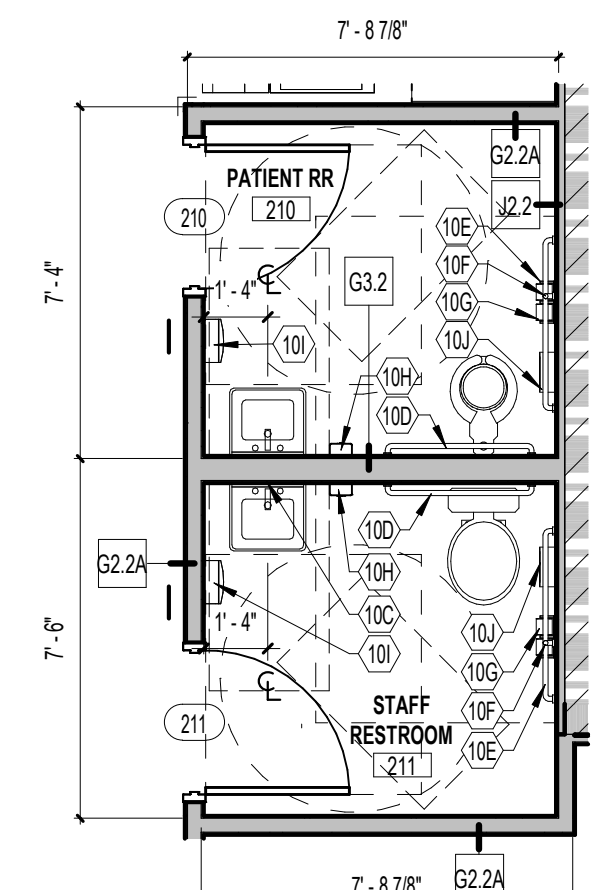
**5 ENLARGED PLAN**  
A300 SCALE: 1/4" = 1'-0"



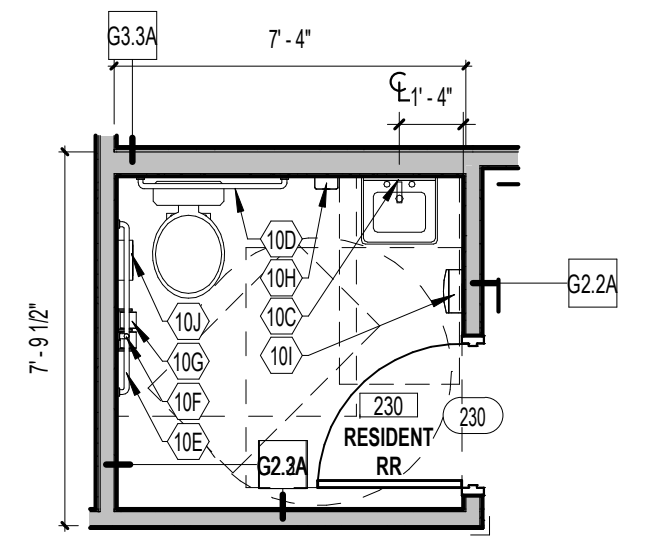
**6 ENLARGED PLAN**  
A300 SCALE: 1/4" = 1'-0"



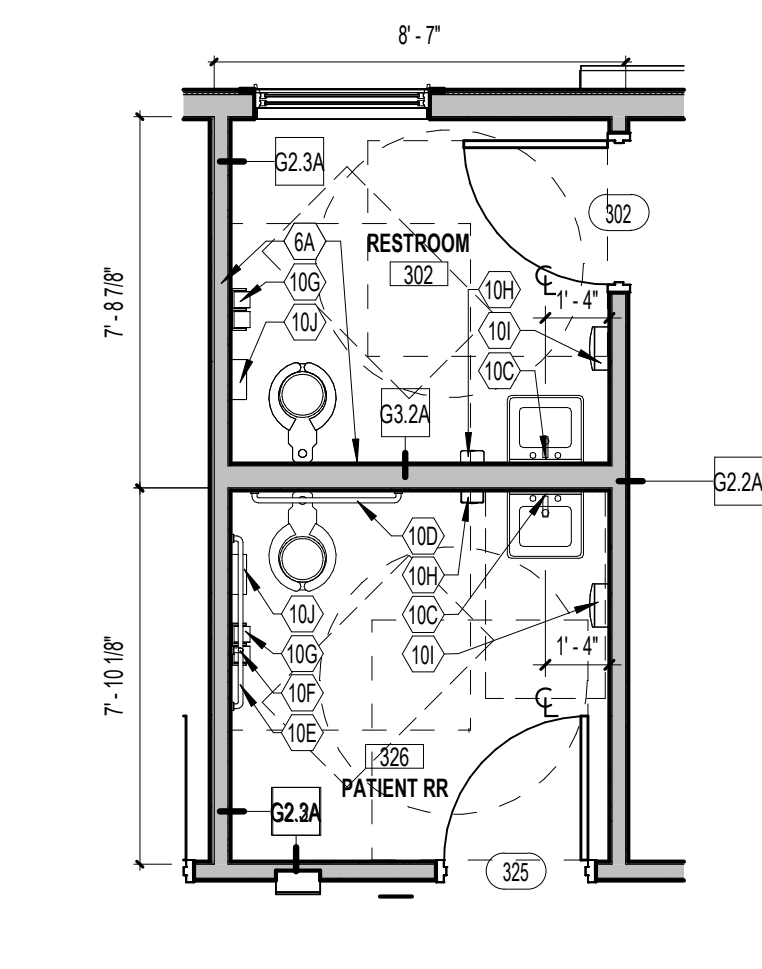
**7 ENLARGED PLAN**  
A300 SCALE: 1/4" = 1'-0"



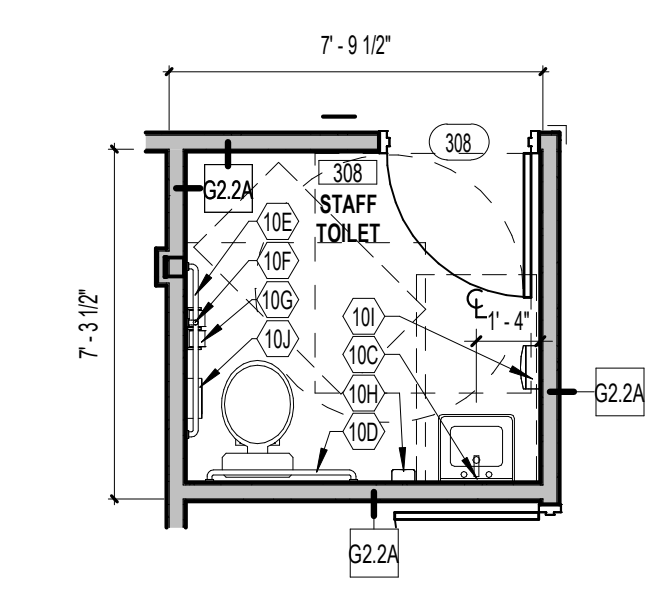
**8 ENLARGED PLAN**  
A300 SCALE: 1/4" = 1'-0"



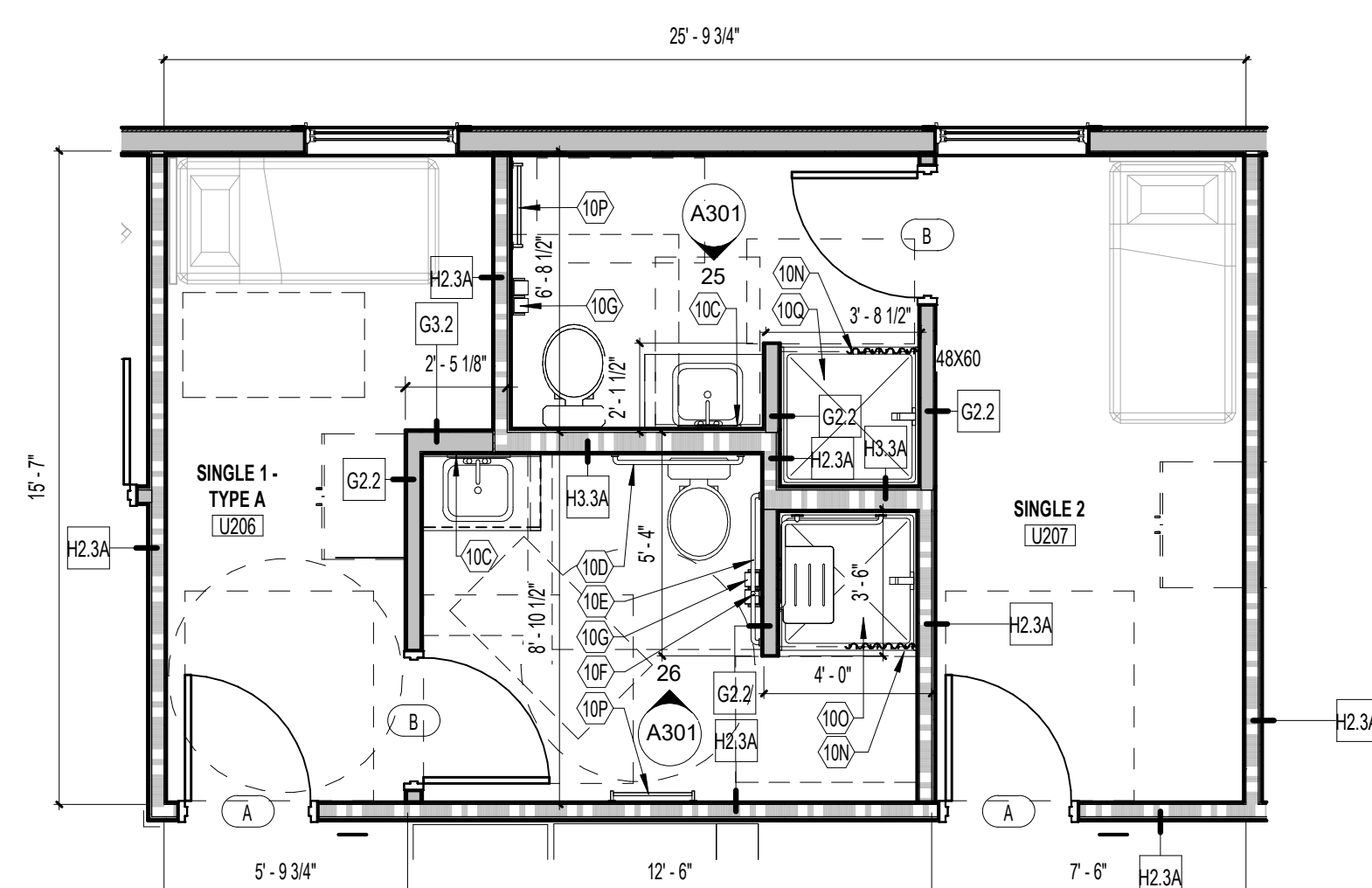
**9 ENLARGED PLAN**  
A300 SCALE: 1/4" = 1'-0"



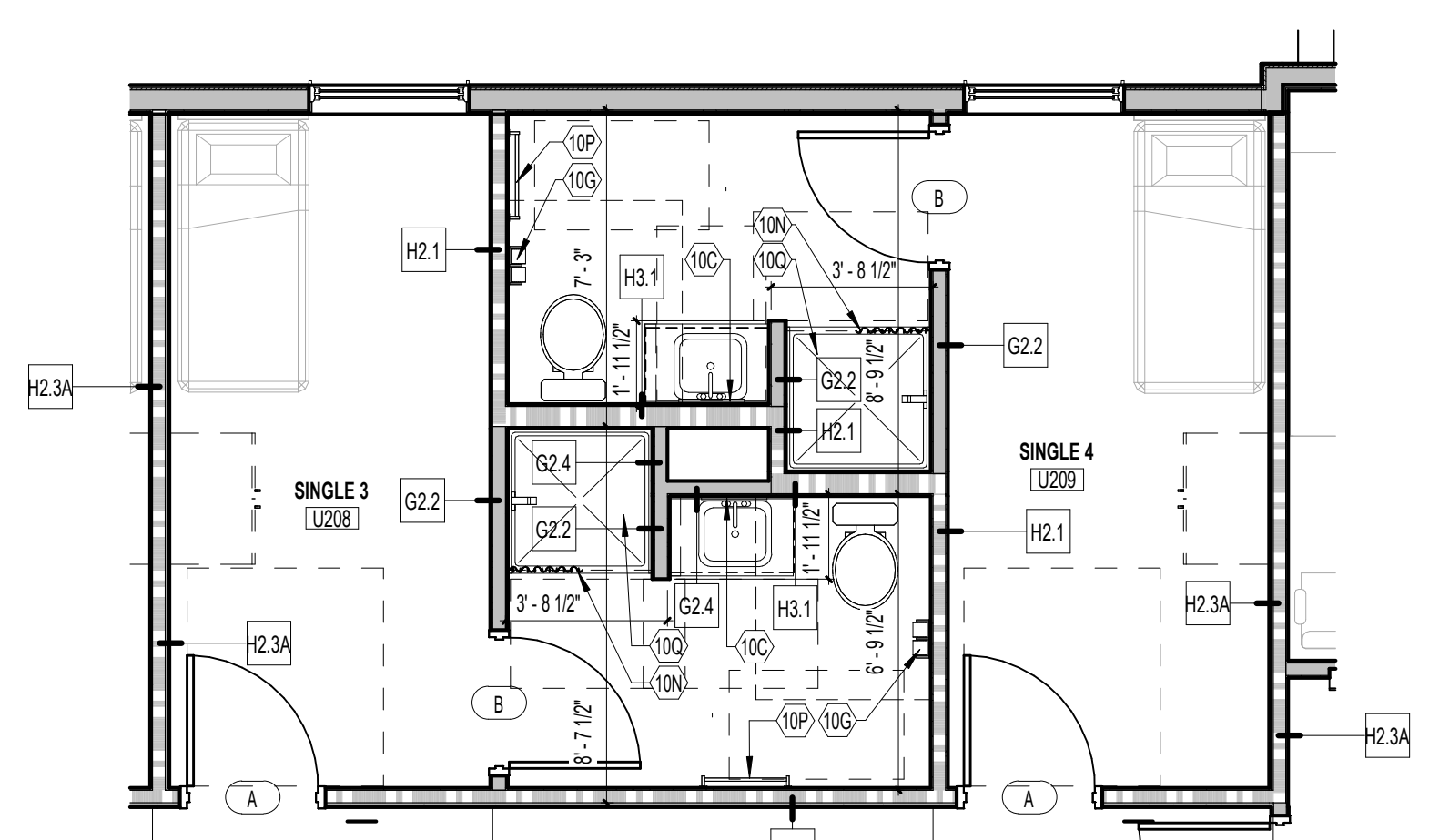
**10 ENLARGED PLAN**  
A300 SCALE: 1/4" = 1'-0"



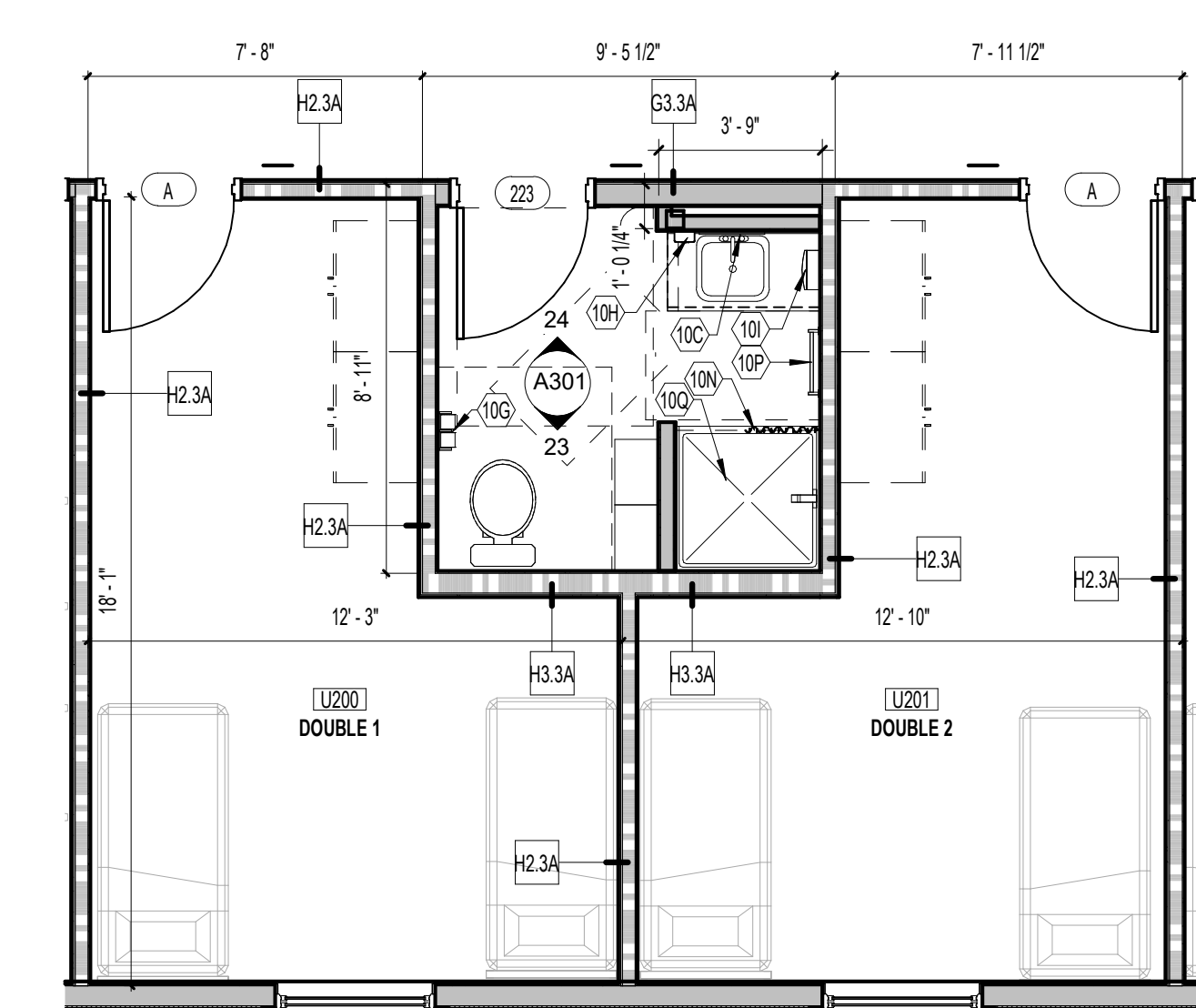
**11 ENLARGED PLAN**  
A300 SCALE: 1/4" = 1'-0"



**12 ENLARGED TYPE A AND TYPE B SINGLE UNIT PLAN**  
A300 SCALE: 1/4" = 1'-0"



**13 ENLARGED TYPE B SINGLE UNIT PLAN**  
A300 SCALE: 1/4" = 1'-0"



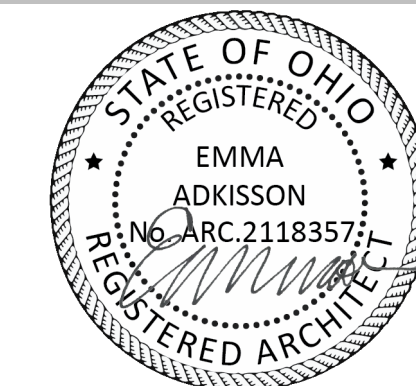
**14 ENLARGED TYPE B DOUBLE UNIT PLAN**  
A300 SCALE: 1/4" = 1'-0"

**SHEET KEYNOTES**

- 6A PROVIDE BLOCKING IN WALL TO PERMIT THE INSTALLATION OF FUTURE GRAB BARS.
- 6B PROVIDE GLASS-FIBER-REINFORCED PANELING (FRP) BEHIND MOP SINK. EXTEND PANELS MINIMUM 4'-0" ABOVE FINISHED FLOOR AND 2'-0" BEYOND SINK HORIZONTALLY.
- 6C 2'-3" X 2'-0" DEEP PLASTIC LAMINATE COUNTER AT 36" A.F.F. WITH 4" BACKSPLASH AND PLASTIC KNEE BRACES AT EACH END WHERE NO ABUTTING A WALL.
- 9A BOX OUT AROUND STRUCTURAL COLUMN TO MINIMUM DIMENSION WITH WOOD STUD AND GYPSUM WALL BOARD.
- 10C 18" X 30" MIRROR CENTERED OVER SINK.
- 10D 36" GRAB BAR
- 10E 42" GRAB BAR
- 10F 18" GRAB BAR
- 10G TOILET TISSUE DISPENSER
- 10H SURFACE MOUNTED SOAP DISPENSER
- 10I SURFACE MOUNTED PAPER TOWEL DISPENSER
- 10J SANITARY NAPKIN DISPOSAL UNIT
- 10K FIRE EXTINGUISHER IN SEMI RECESSED FIRE EXTINGUISHER CABINET
- 10L CORNER GUARD
- 10M MOP AND BROOM HOLDER
- 10N SHOWER CURTAIN AND ROD
- 10O 40"x40" POLYRESIN / FIBERGLASS TRANSFER TYPE ICC ANSI A117.1 COMPLIANT SHOWER BASE & WALL SURROUND, GRAB BARS, AND FOLDING SEAT
- 10P 24" TOWEL BAR
- 10Q 40"x40" POLYRESIN / FIBERGLASS SHOWER BASE & WALL SURROUND. PROVIDE BLOCKING IN WALLS FOR FUTURE GRAB BAR INSTALLATION.
- 11A FRONT LOADING, ICC ANSI A117.1 COMPLIANT WASHING MACHINE
- 11B FRONT LOADING, ICC ANSI A117.1 COMPLIANT DRYER
- 22A MOP SINK. SEE MEP DRAWINGS.
- 22B HI-LO ICC ANSI A117.1 COMPLIANT DRINKING FOUNTAIN. SEE MEP DRAWINGS.



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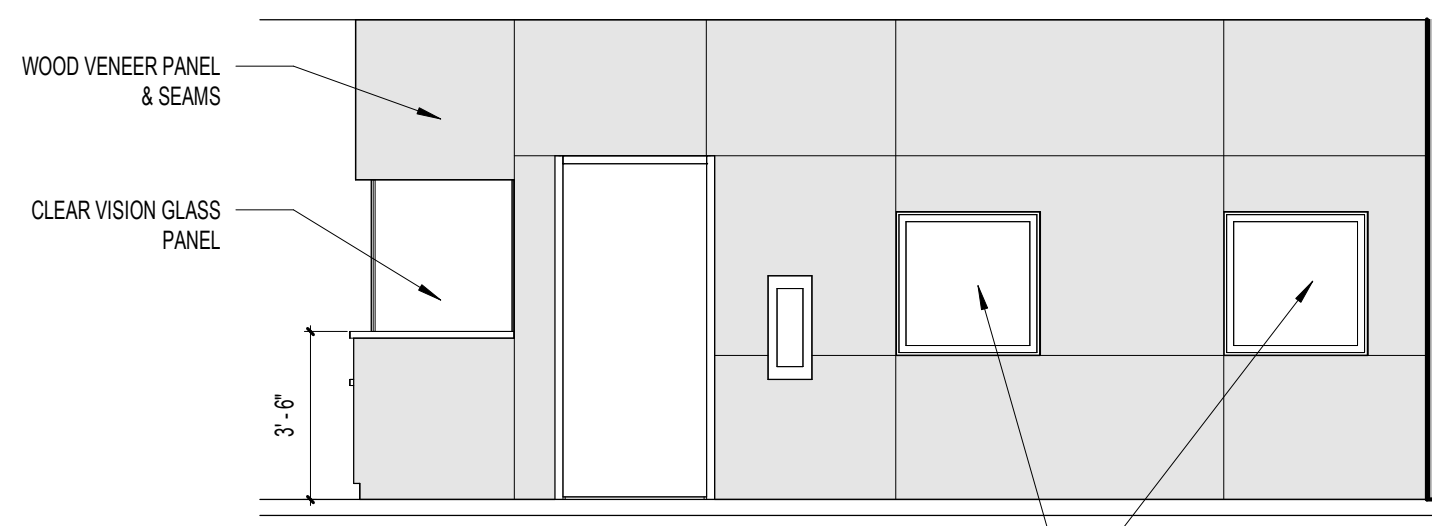
NO.	DESCRIPTION	DATE
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ENLARGED PLANS

23-056

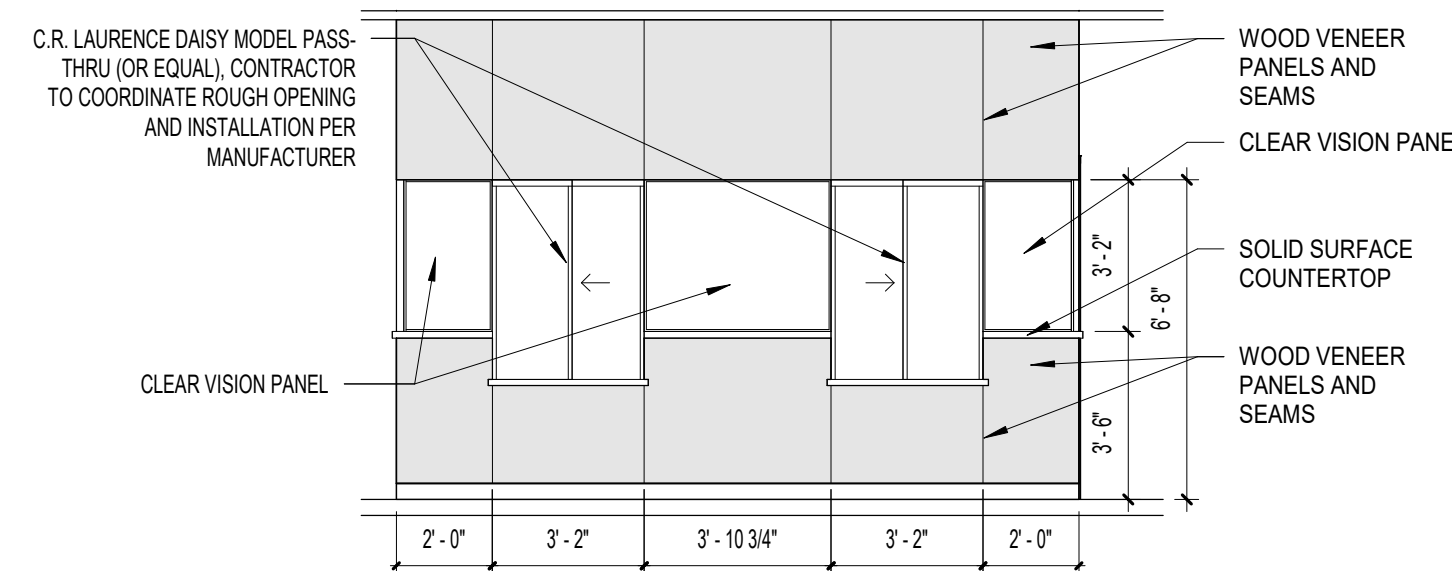
**A300**

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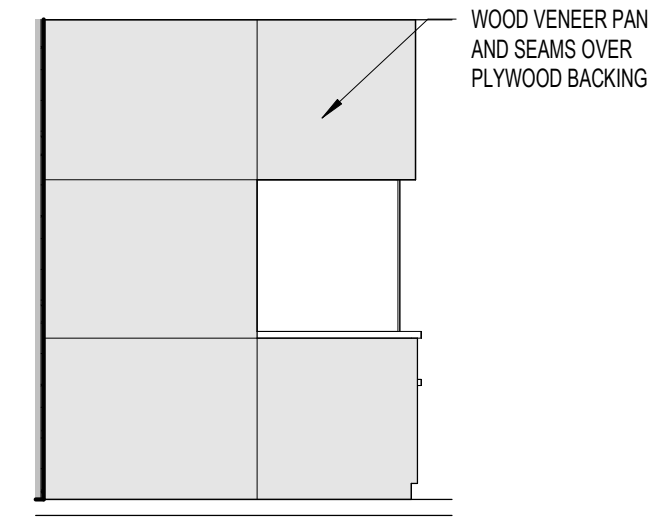
**1 RECEPTION**

A301 SCALE: 1/4" = 1'-0"



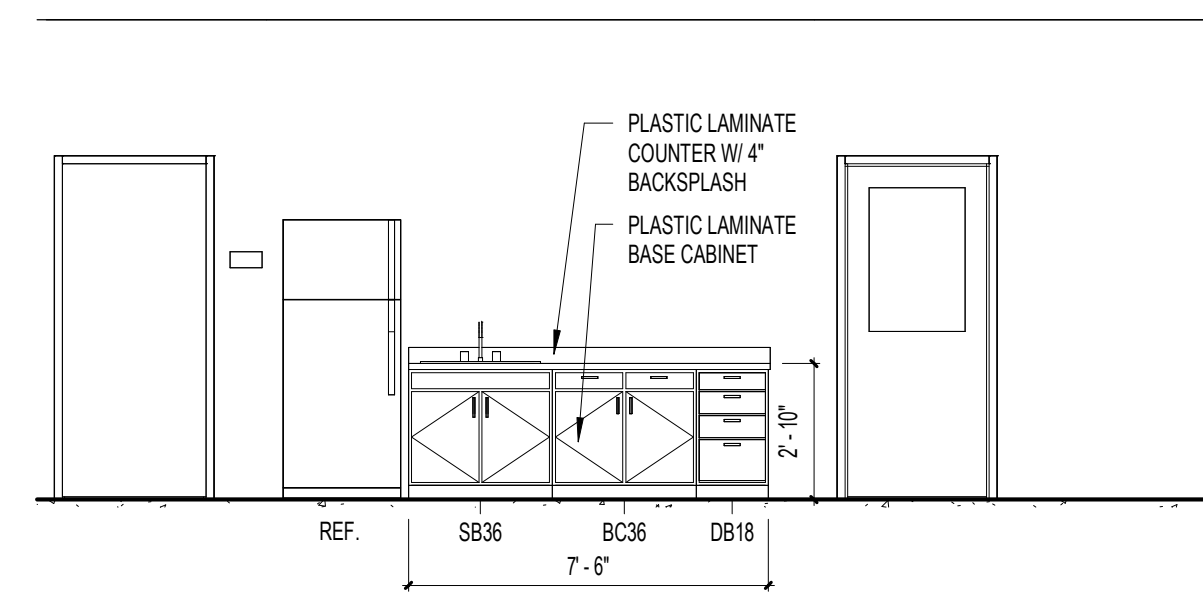
**2 RECEPTION**

A301 SCALE: 1/4" = 1'-0"



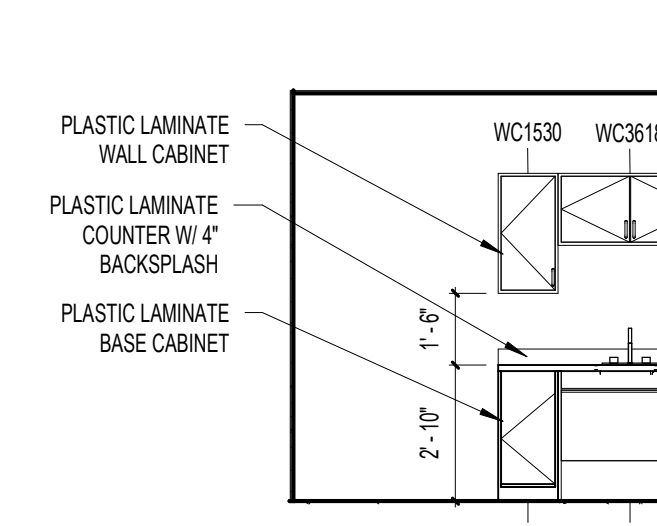
**3 RECEPTION**

A301 SCALE: 1/4" = 1'-0"



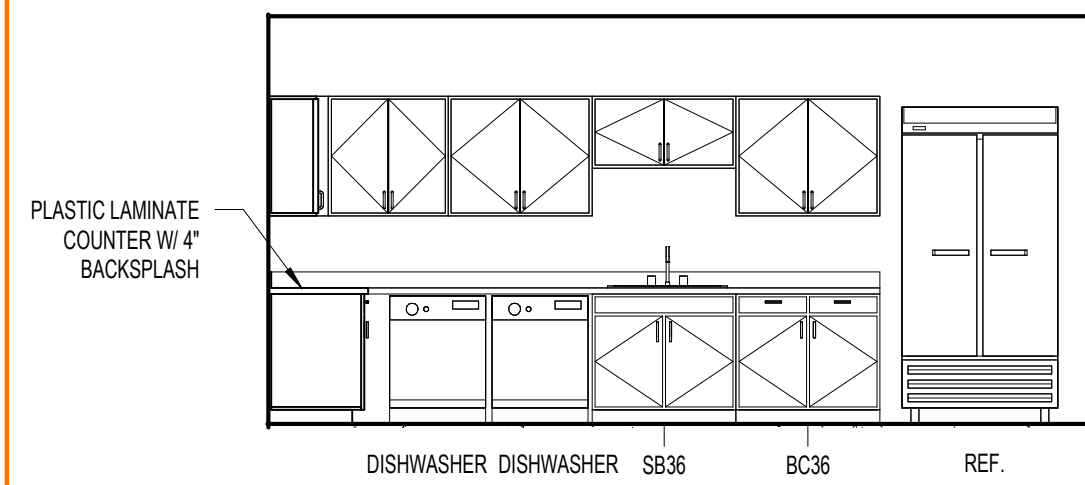
**4 IOP GROUP ROOM**

A301 SCALE: 1/4" = 1'-0"



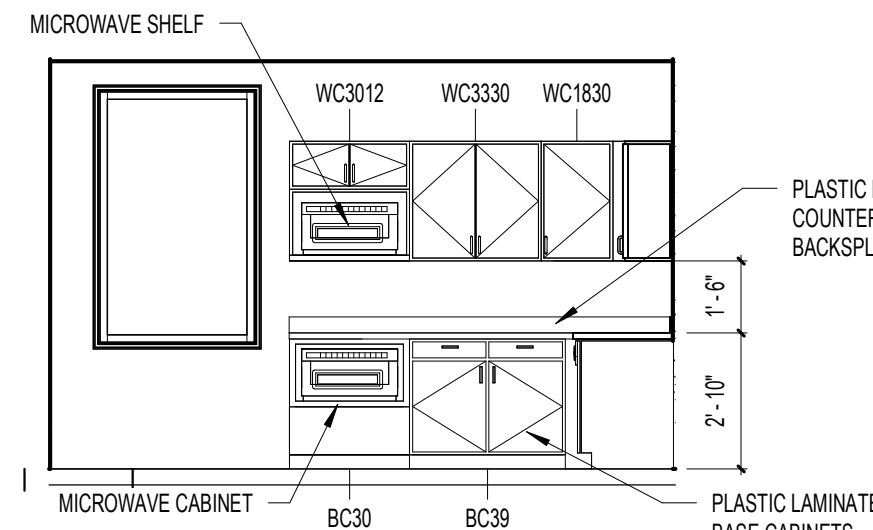
**5 TYP. EXAM**

A301 SCALE: 1/4" = 1'-0"



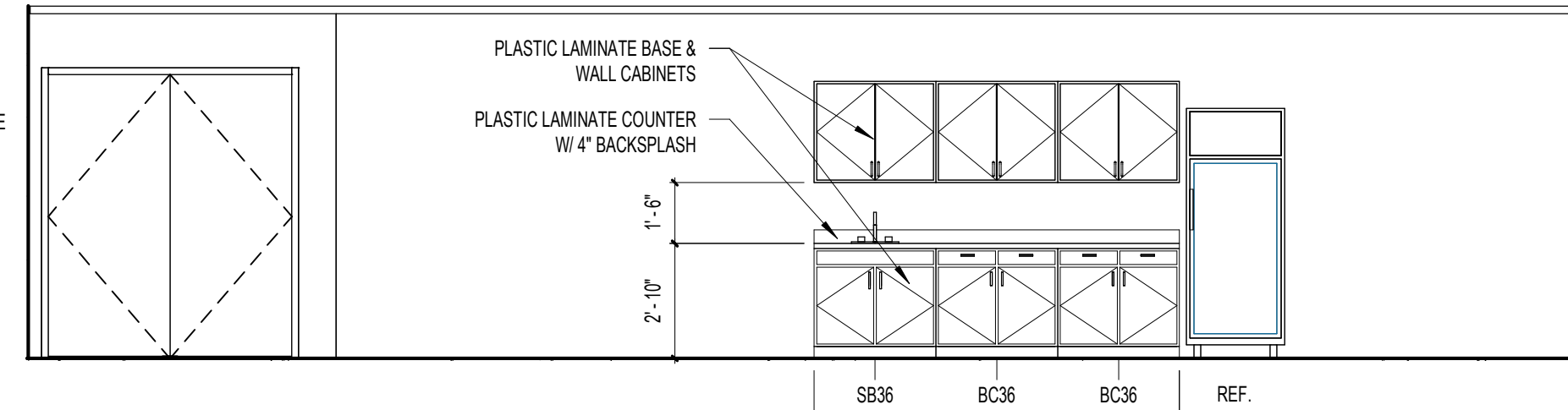
**6 SERVERY 132**

A301 SCALE: 1/4" = 1'-0"



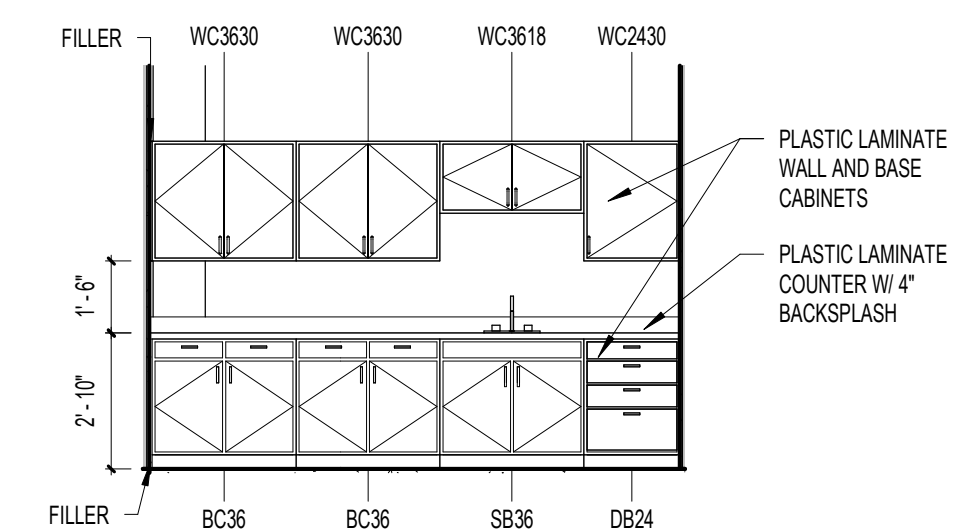
**7 SERVERY 132**

A301 SCALE: 1/4" = 1'-0"



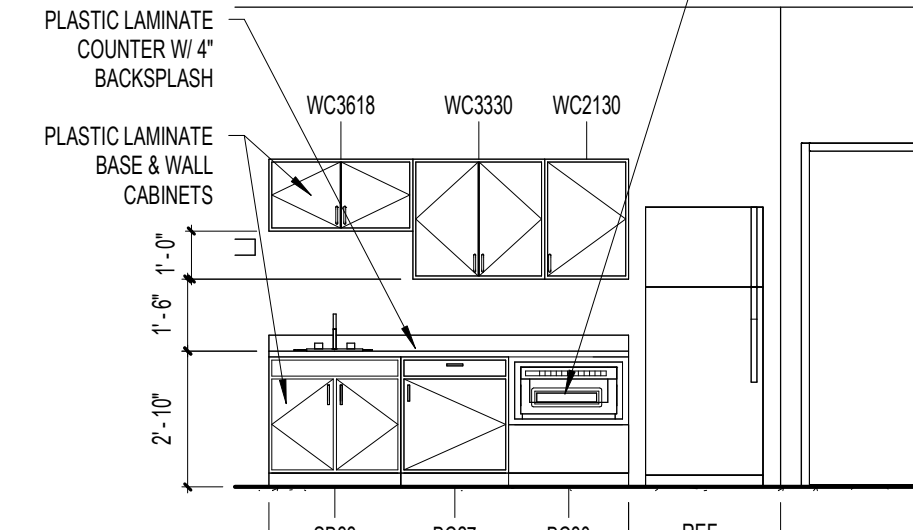
**8 PHARMACY**

A301 SCALE: 1/4" = 1'-0"



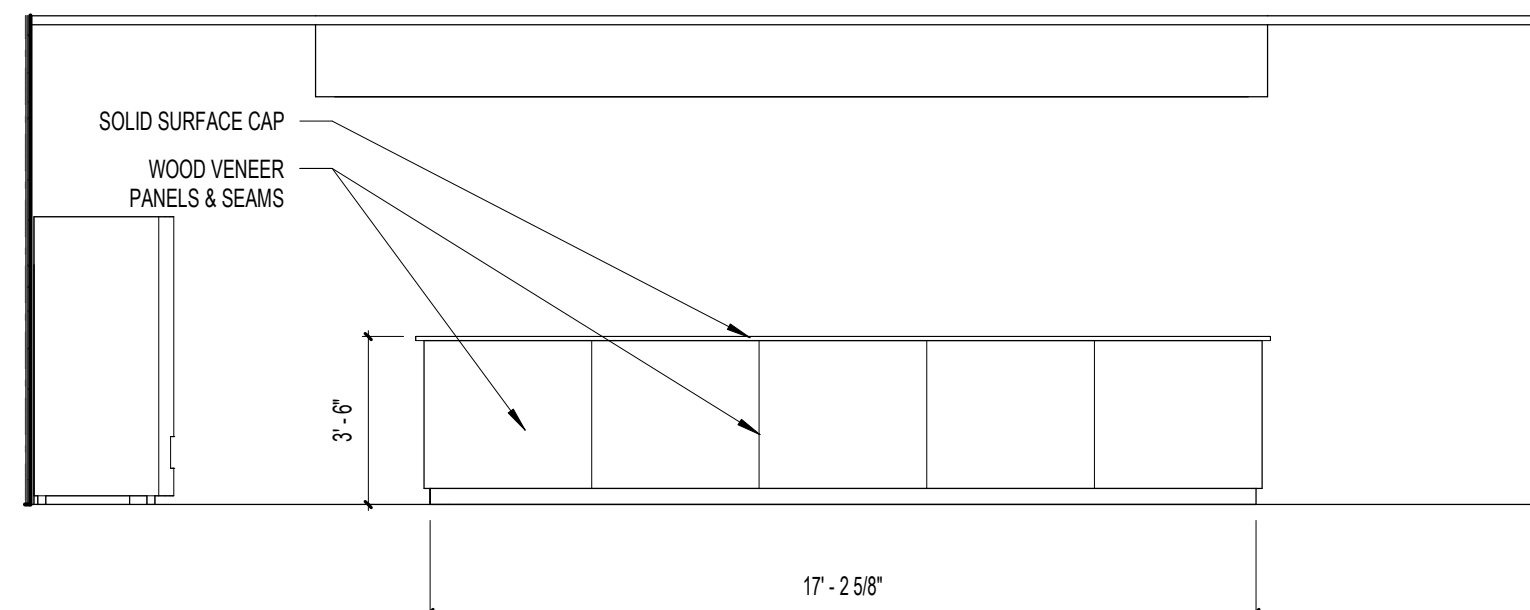
**9 LAB**

A301 SCALE: 1/4" = 1'-0"



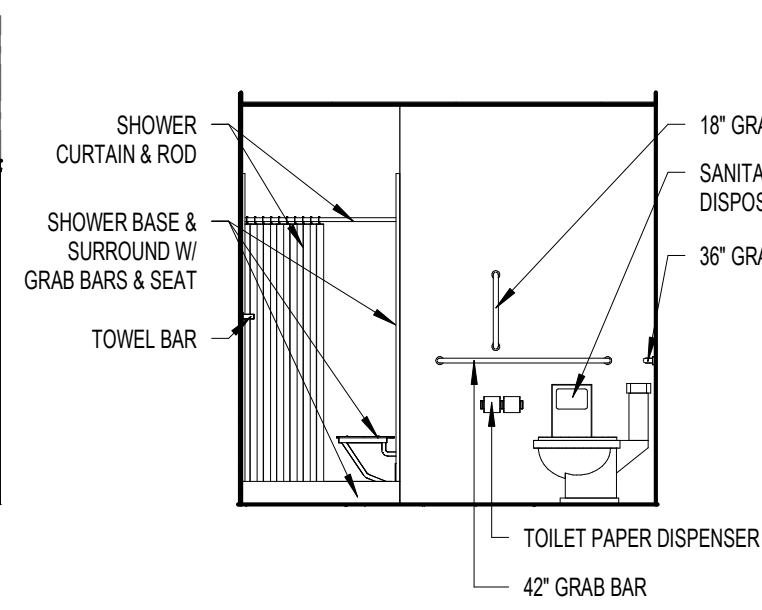
**10 SNACK AREA**

A301 SCALE: 1/4" = 1'-0"



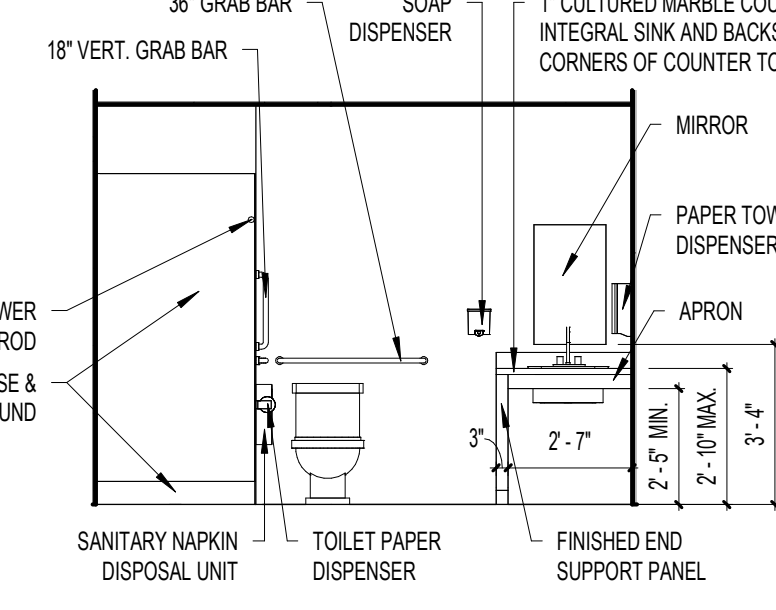
**11 STAFF DESK**

A301 SCALE: 1/4" = 1'-0"



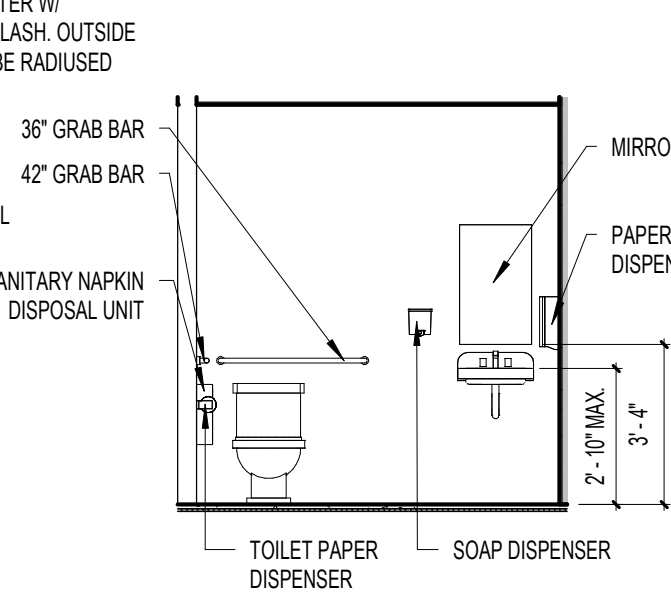
**12 CENTRAL BATHING**

A301 SCALE: 1/4" = 1'-0"



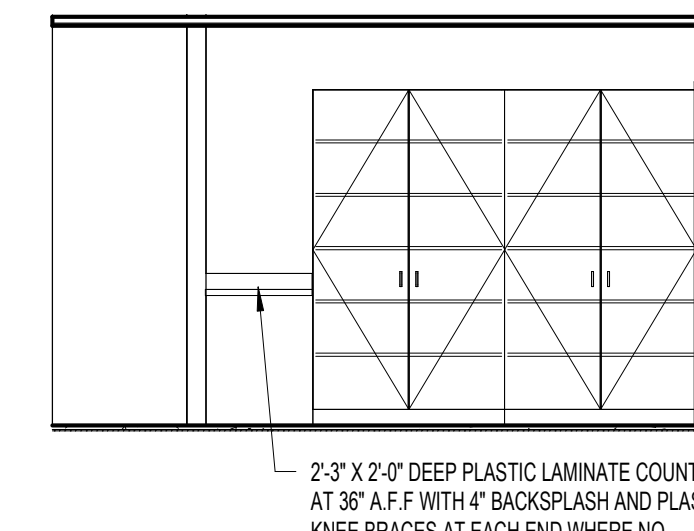
**13 CENTRAL BATHING**

A301 SCALE: 1/4" = 1'-0"



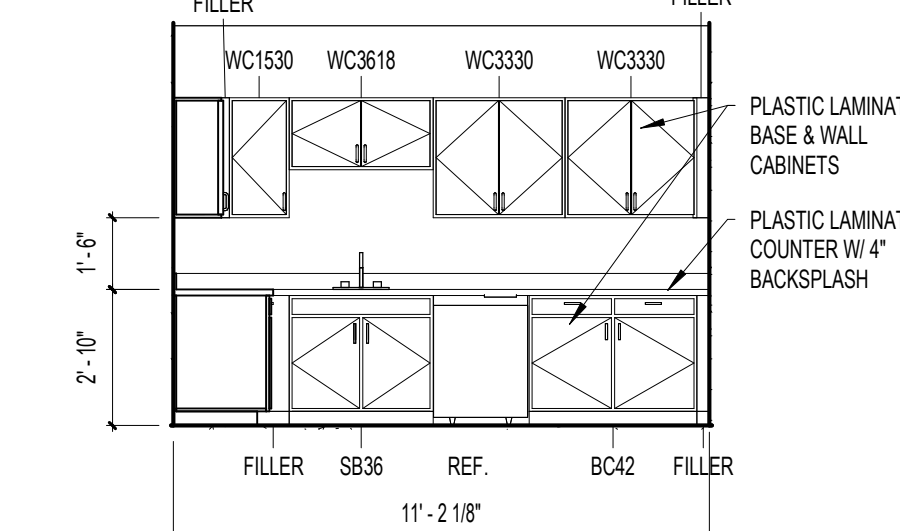
**14 STAFF RESTROOM**

A301 SCALE: 1/4" = 1'-0"



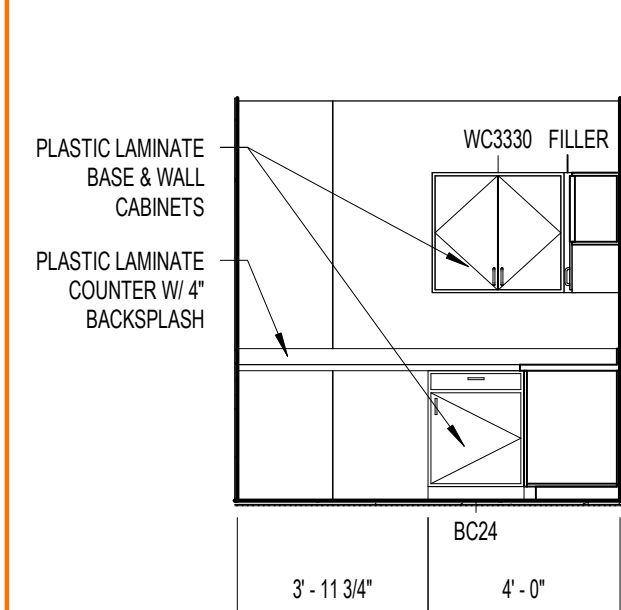
**15 RESIDENT LAUNDRY**

A301 SCALE: 1/4" = 1'-0"



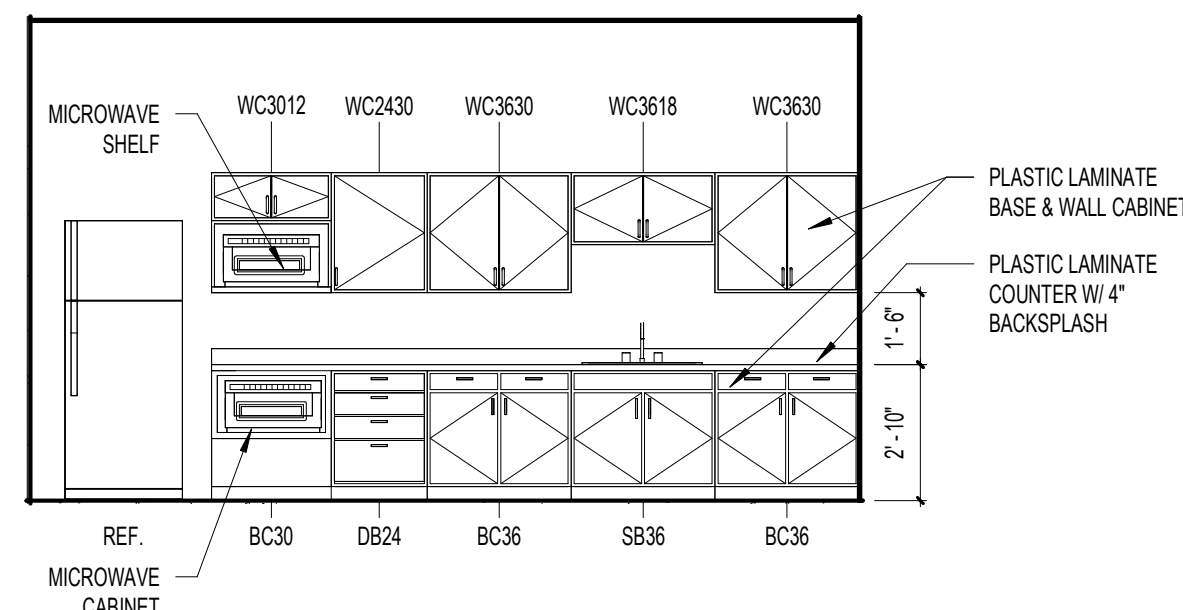
**16 MED DISPENSING**

A301 SCALE: 1/4" = 1'-0"



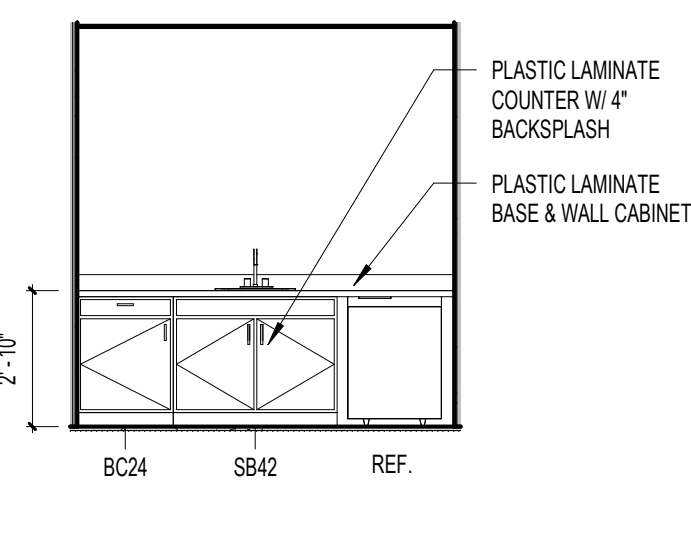
**17 MED DISPENSING**

A301 SCALE: 1/4" = 1'-0"



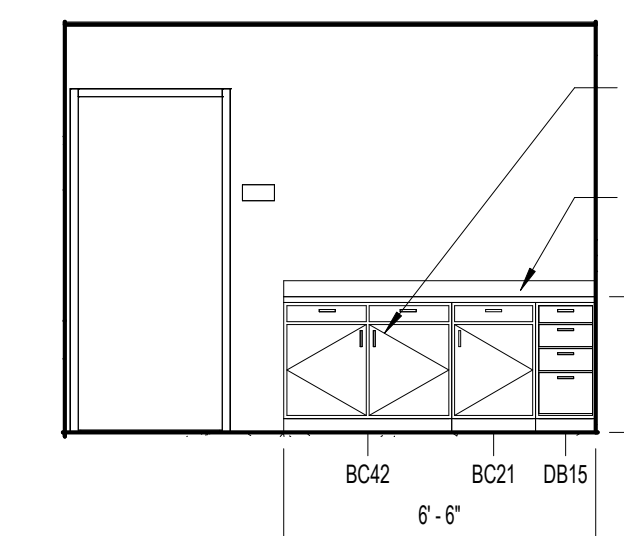
**18 BREAKROOM**

A301 SCALE: 1/4" = 1'-0"



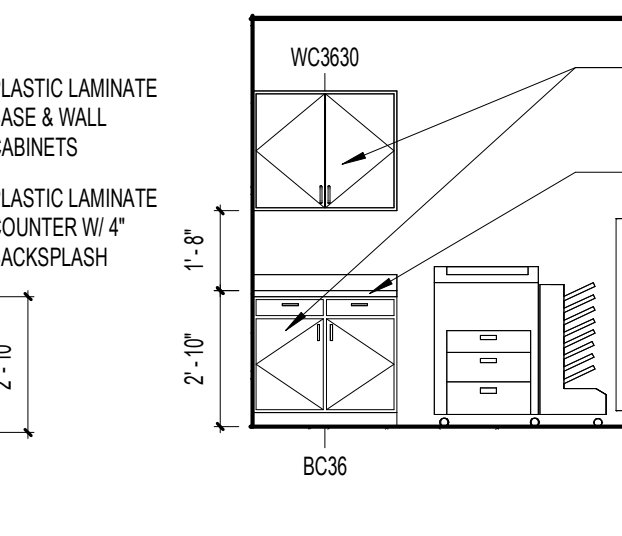
**19 MOTHER'S ROOM**

A301 SCALE: 1/4" = 1'-0"



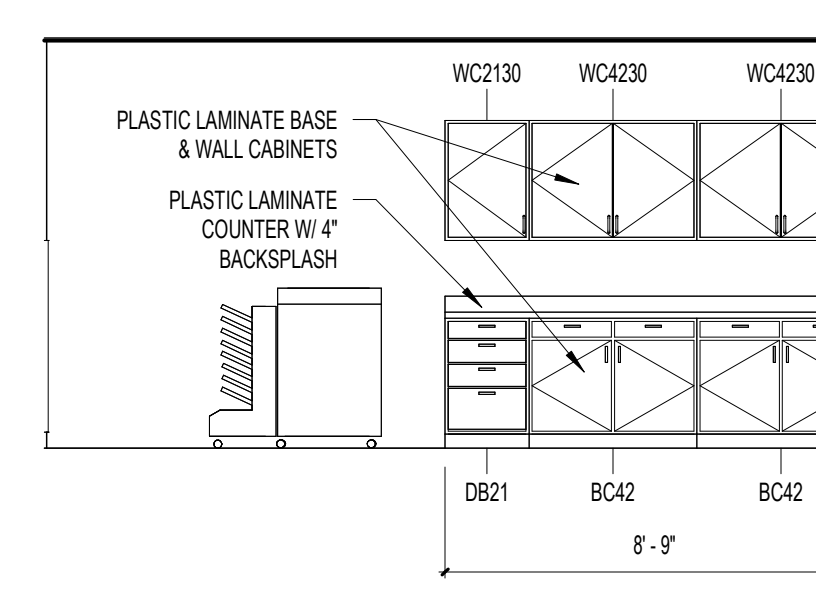
**20 COPY PRINT 153**

A301 SCALE: 1/4" = 1'-0"



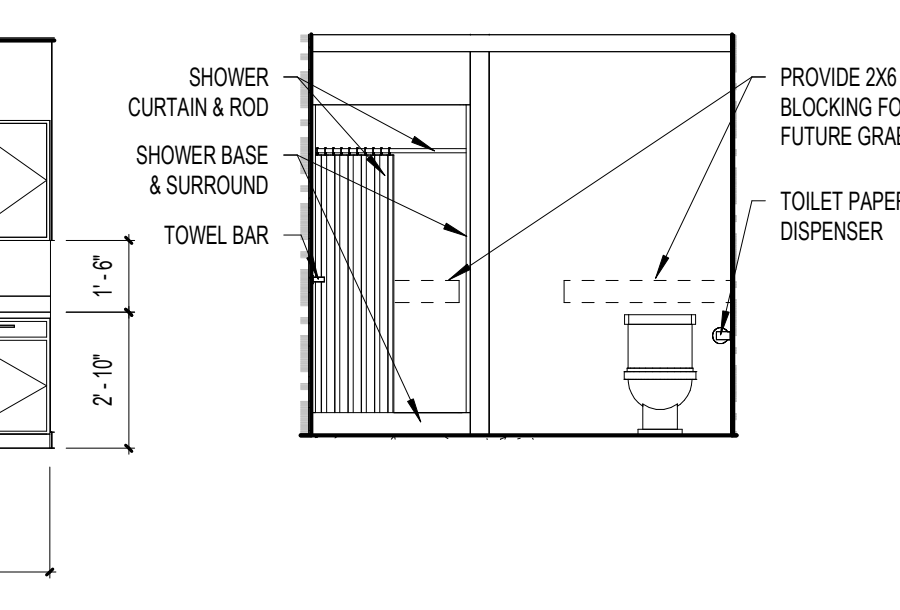
**21 COPY/PRINT 200**

A301 SCALE: 1/4" = 1'-0"



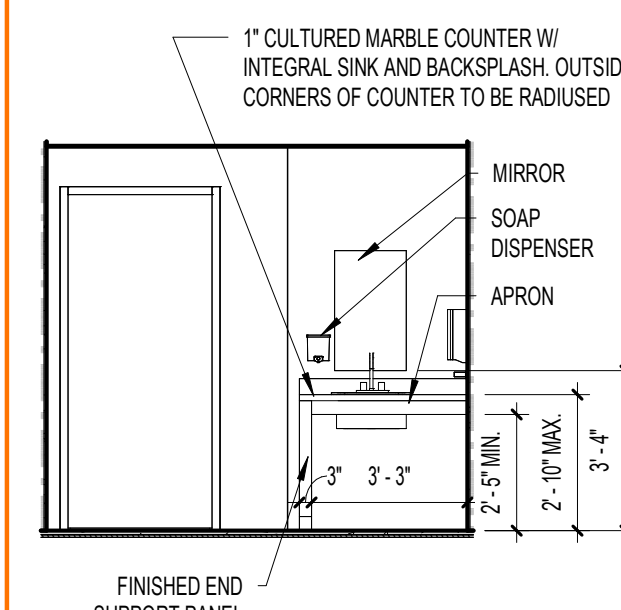
**22 COPY. PRINT 324**

A301 SCALE: 1/4" = 1'-0"



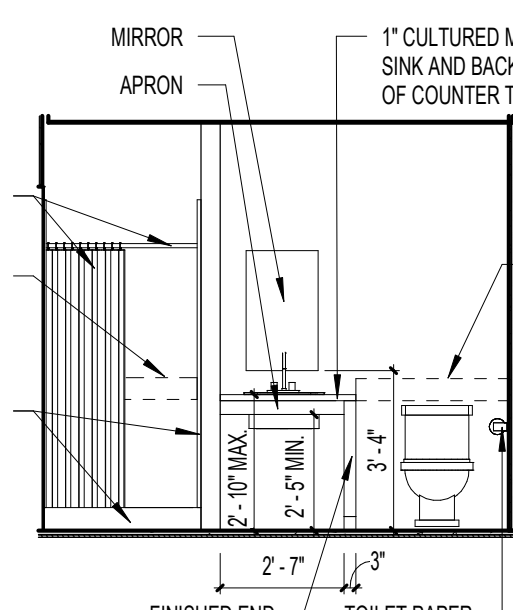
**23 RESIDENT BATH**

A301 SCALE: 1/4" = 1'-0"



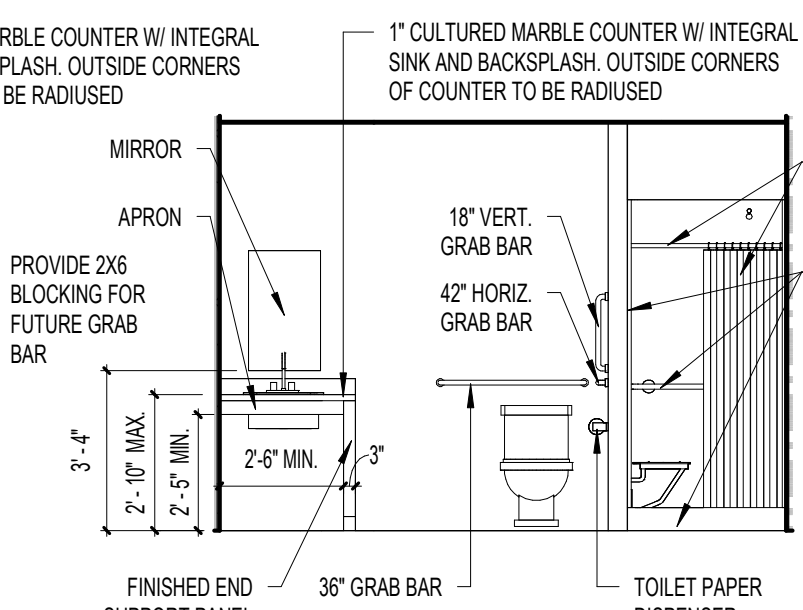
**24 RESIDENT BATH**

A301 SCALE: 1/4" = 1'-0"



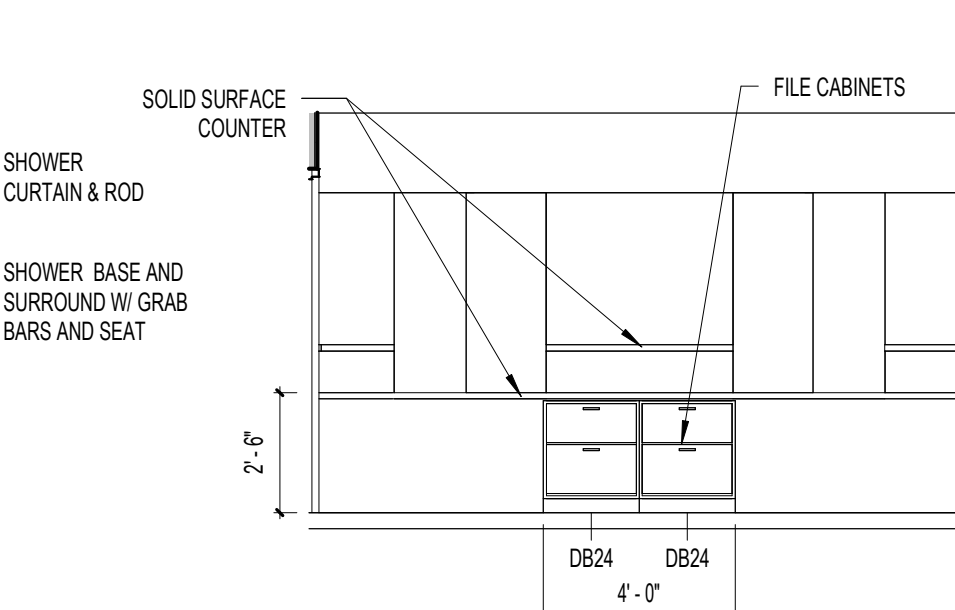
**25 RESIDENT BATH**

A301 SCALE: 1/4" = 1'-0"



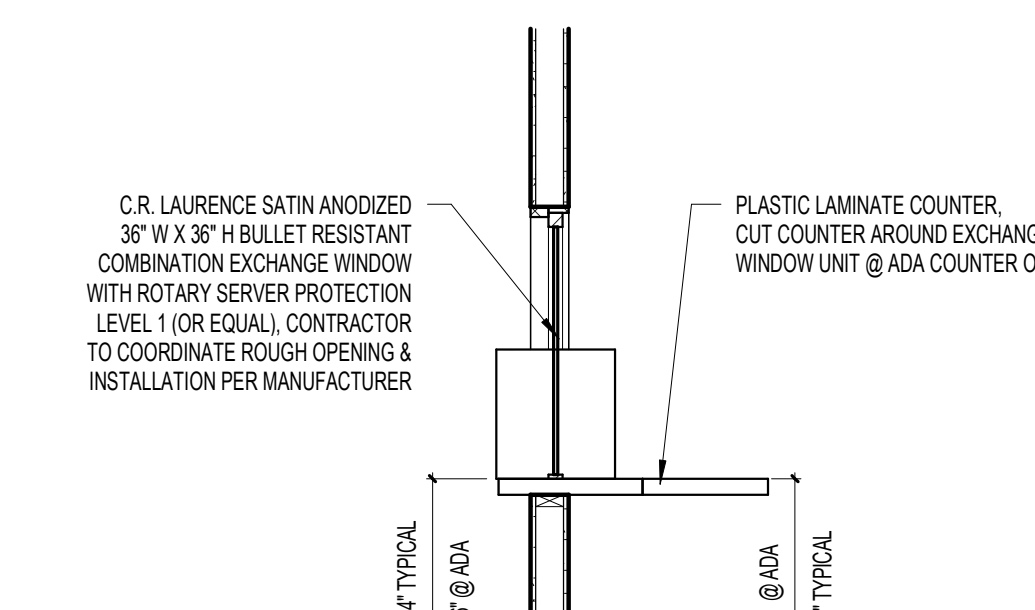
**26 RESIDENT BATH**

A301 SCALE: 1/4" = 1'-0"



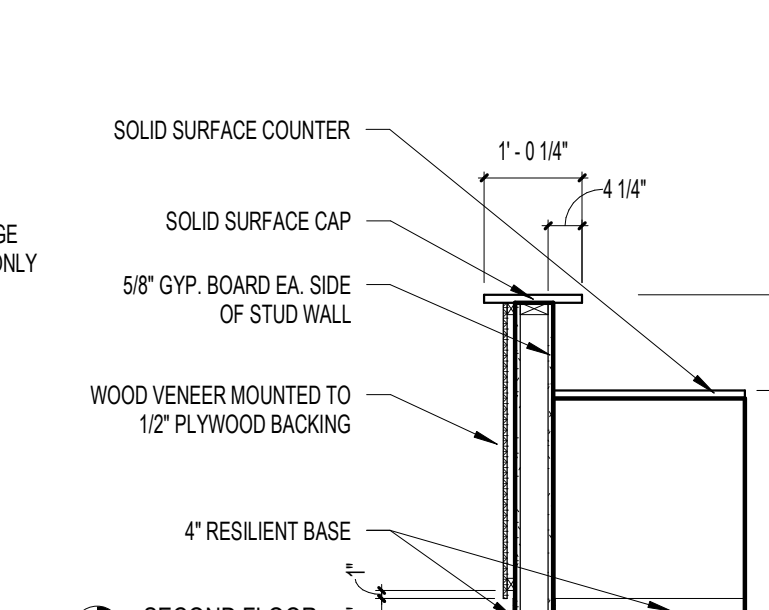
**27 RECEPTION DESK**

A301 SCALE: 1/4" = 1'-0"



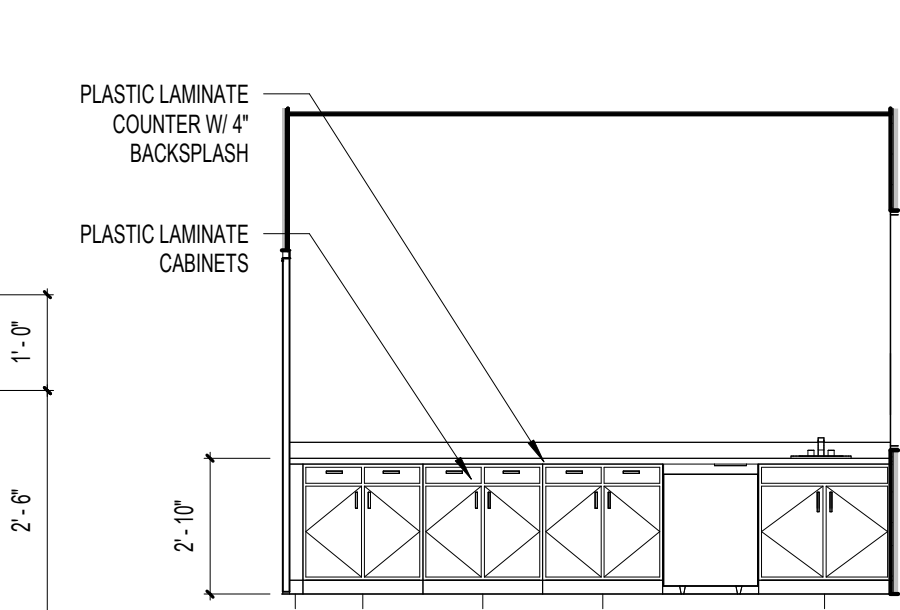
**28 PHARMACY/DOSING COUNTER**

A301 SCALE: 1/2" = 1'-0"



**29 STAFF DESK SECTION**

A301 SCALE: 1/2" = 1'-0"

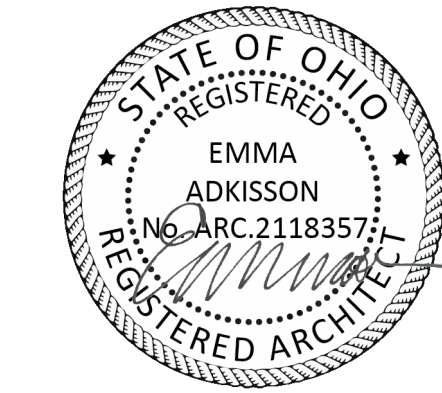


**30 CONFERENCE 306**

A301 SCALE: 1/4" = 1'-0"



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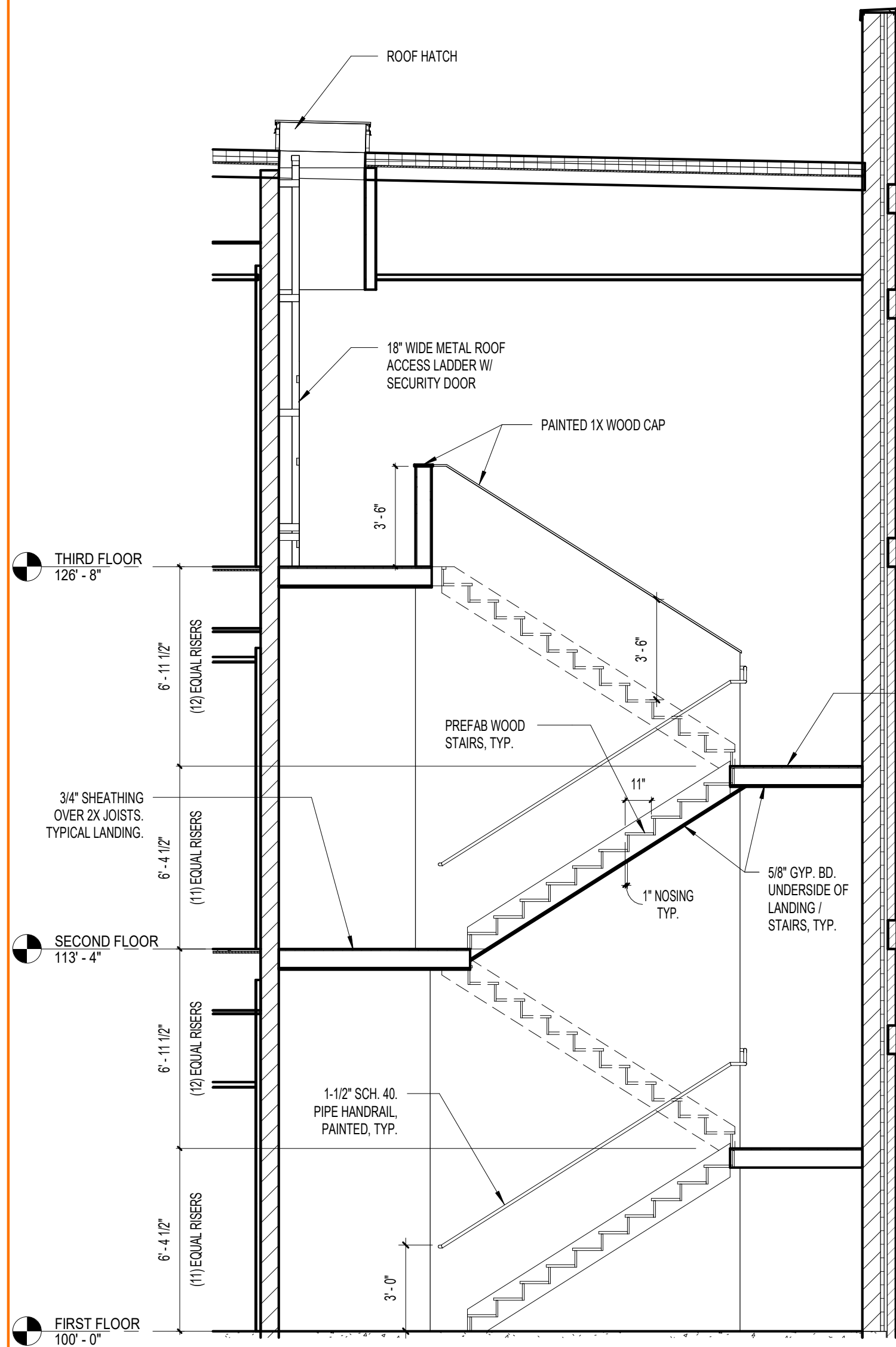
NO.	DESCRIPTION	DATE
PERMIT SET		08/09/24

INTERIOR ELEVATIONS

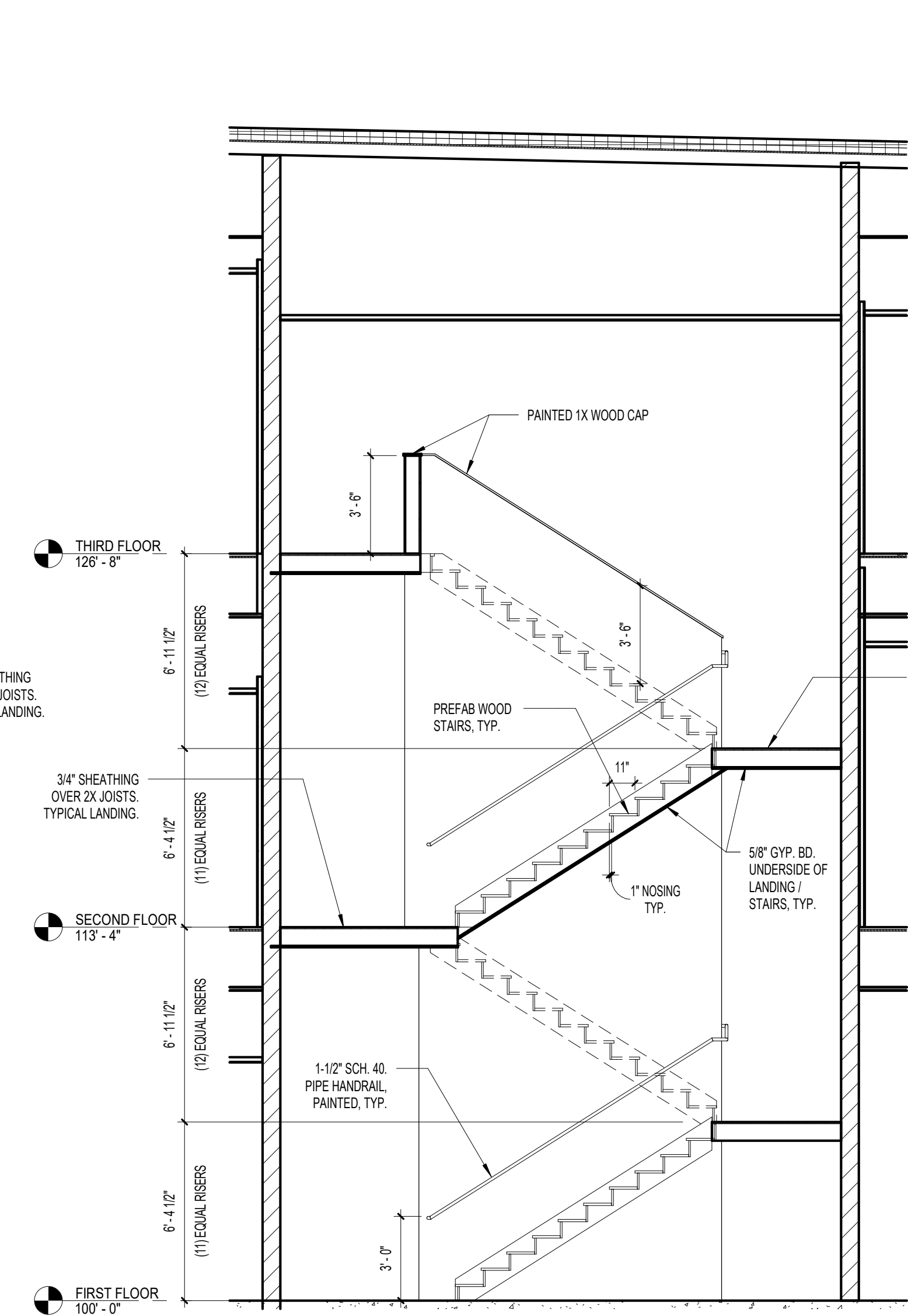
23-056

**A301**

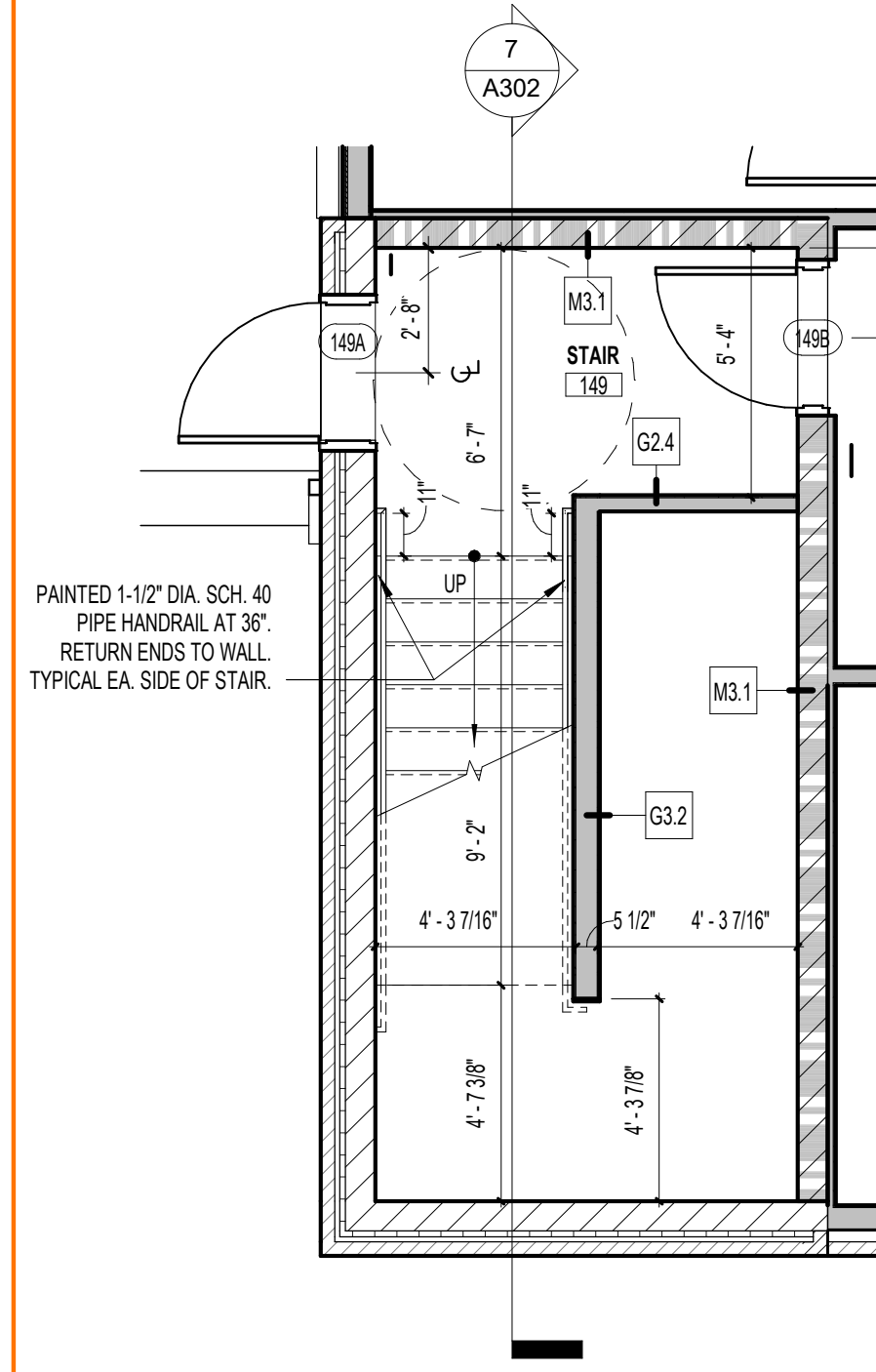
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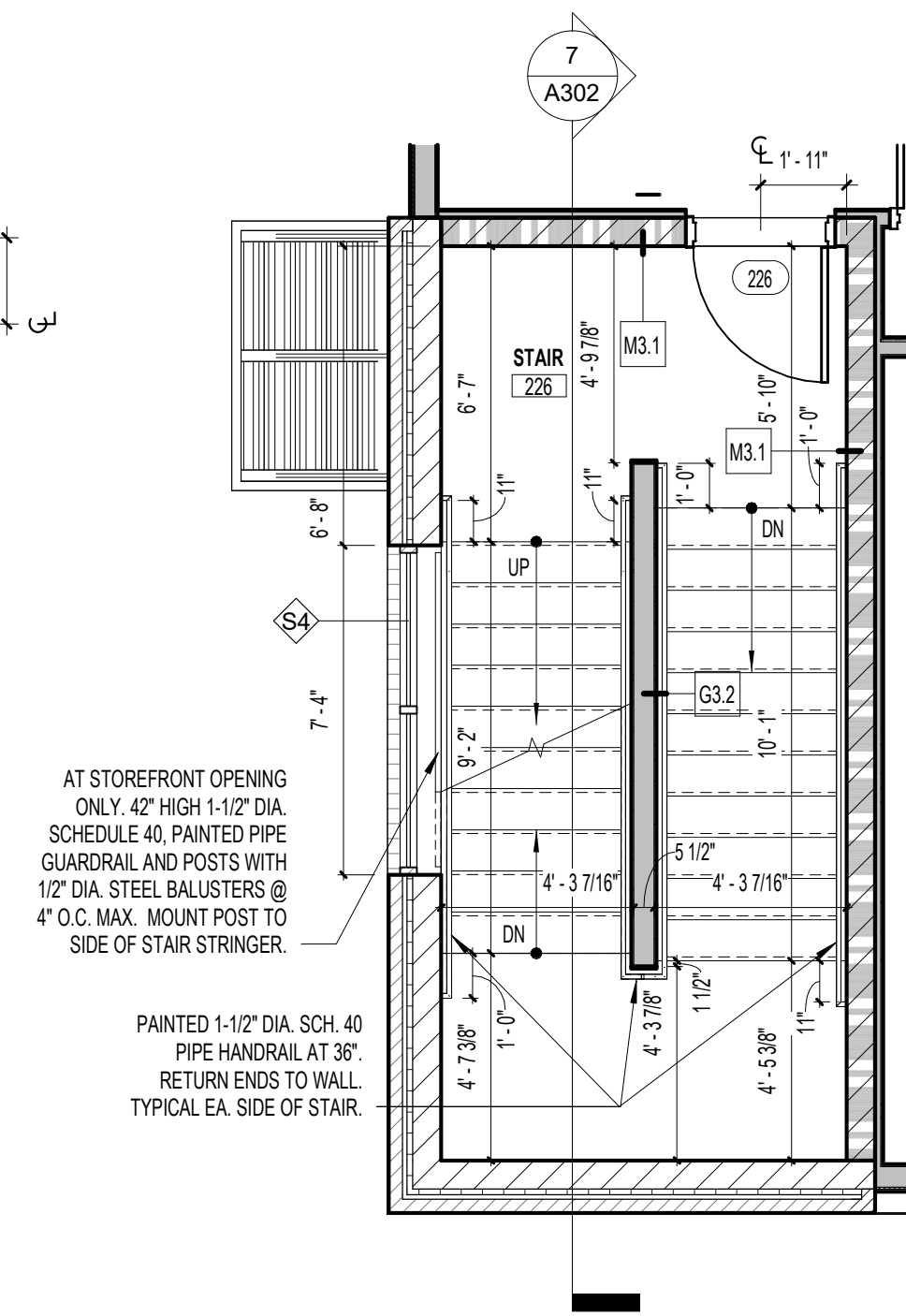
**7 STAIR SECTION**  
A302 SCALE: 1/4" = 1'-0"



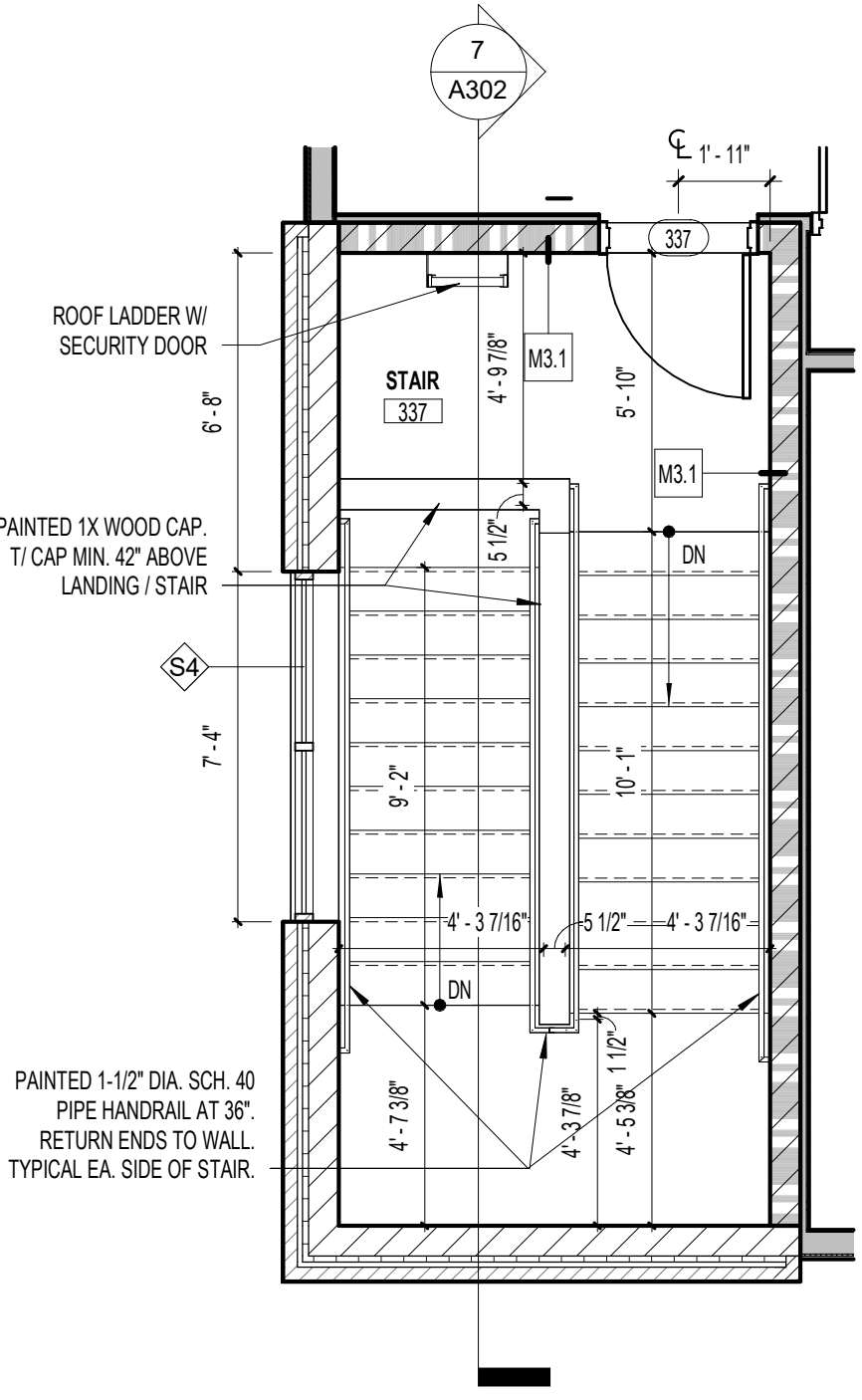
**8 STAIR SECTION**  
A302 SCALE: 1/4" = 1'-0"



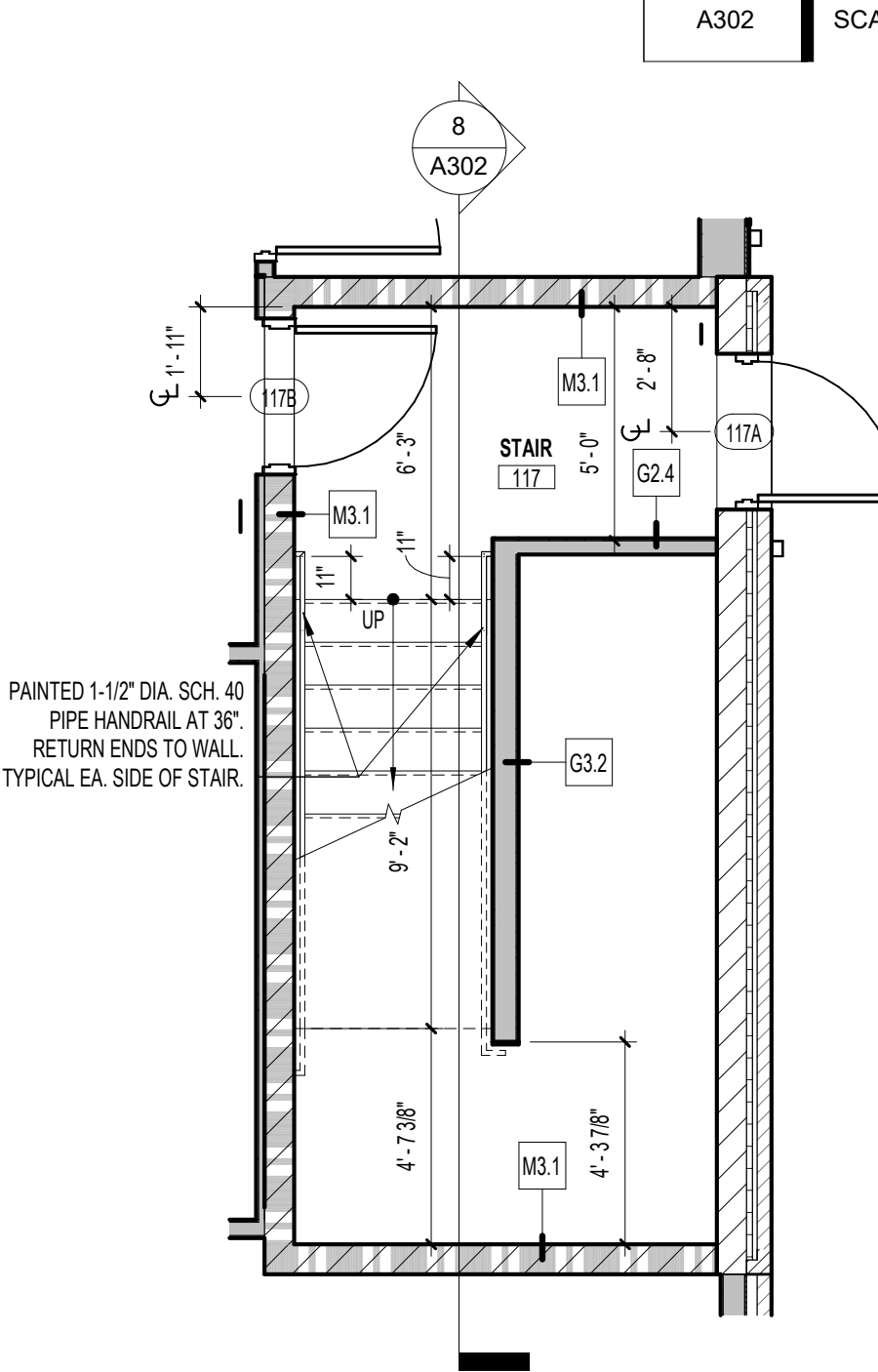
**1 STAIR PLAN - FIRST FLOOR**  
A302 SCALE: 1/4" = 1'-0"



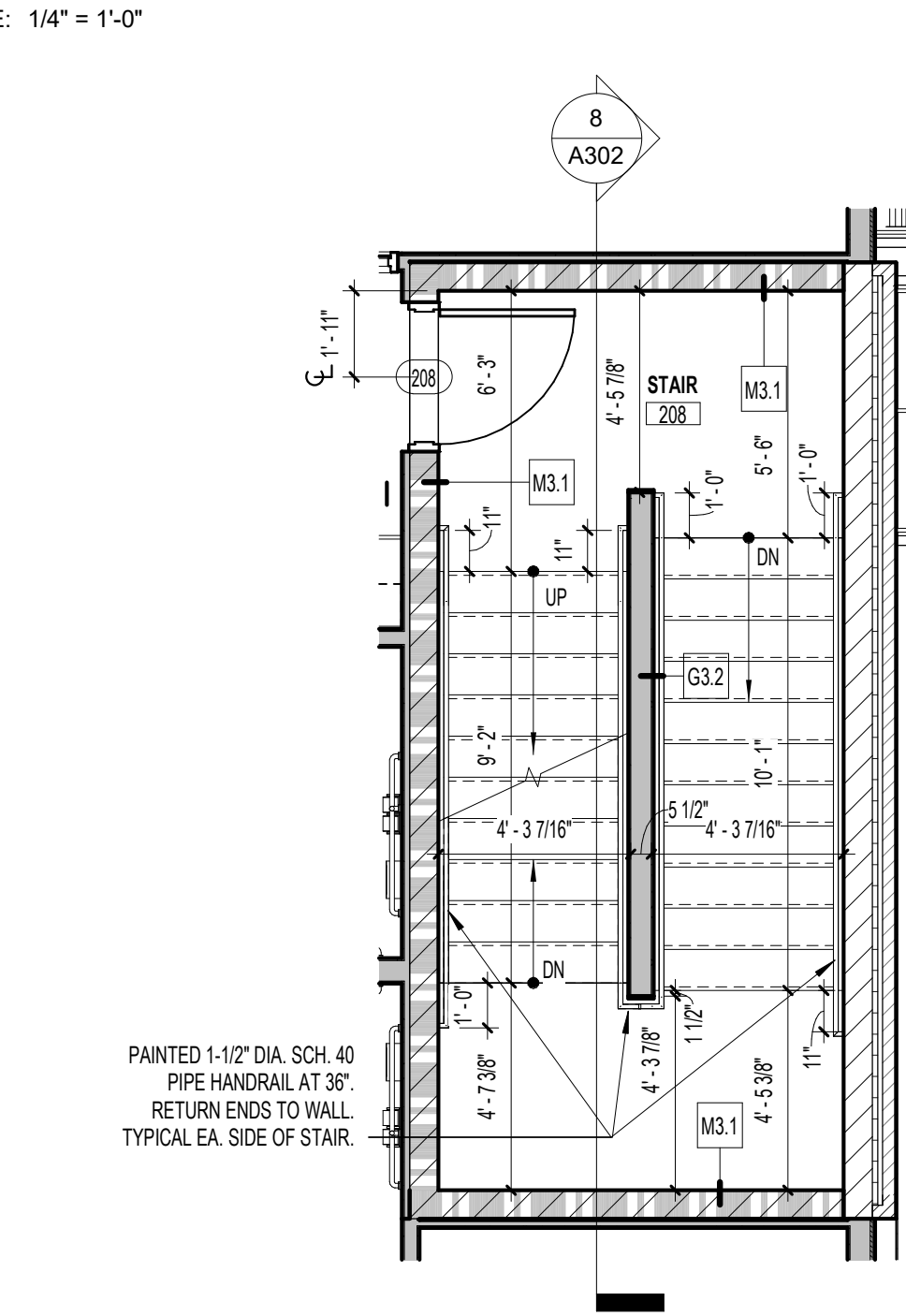
**2 STAIR PLAN - SECOND FLOOR**  
A302 SCALE: 1/4" = 1'-0"



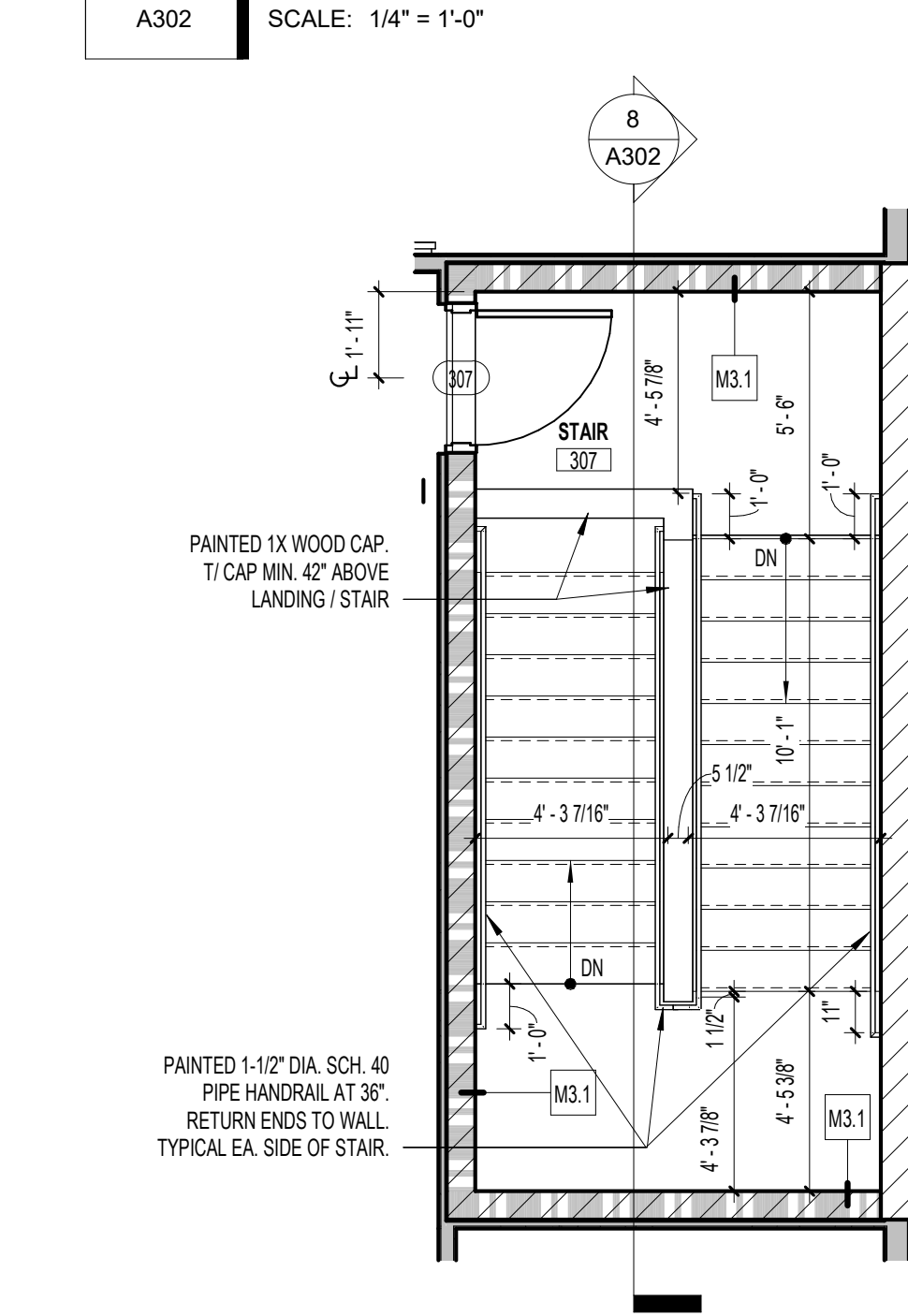
**3 STAIR PLAN - THIRD FLOOR**  
A302 SCALE: 1/4" = 1'-0"



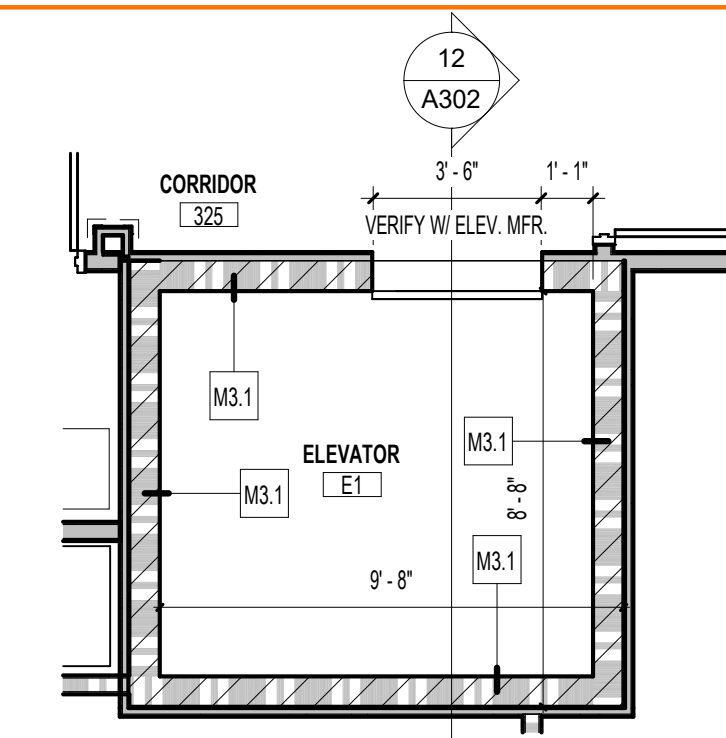
**4 STAIR PLAN - FIRST FLOOR**  
A302 SCALE: 1/4" = 1'-0"



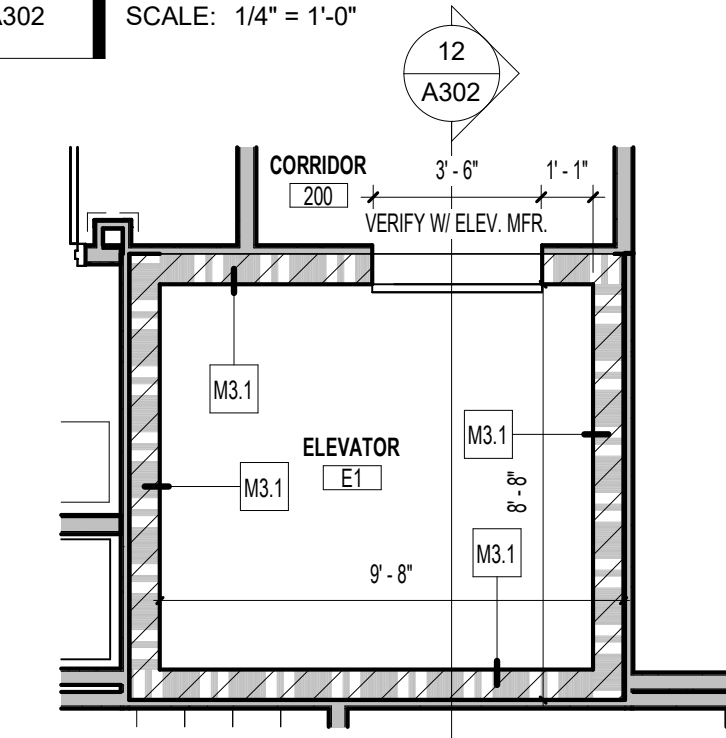
**5 STAIR PLAN - SECOND FLOOR**  
A302 SCALE: 1/4" = 1'-0"



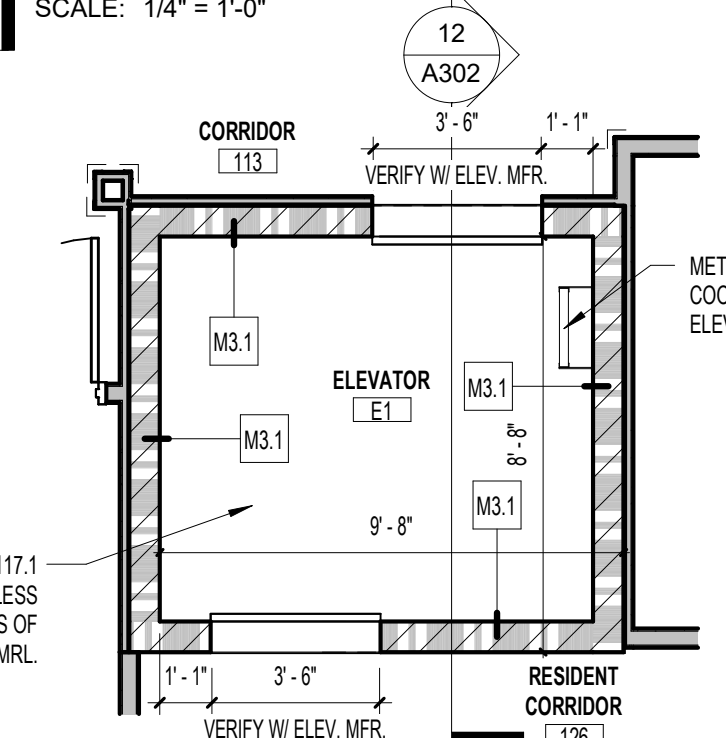
**6 STAIR PLAN - THIRD FLOOR**  
A302 SCALE: 1/4" = 1'-0"



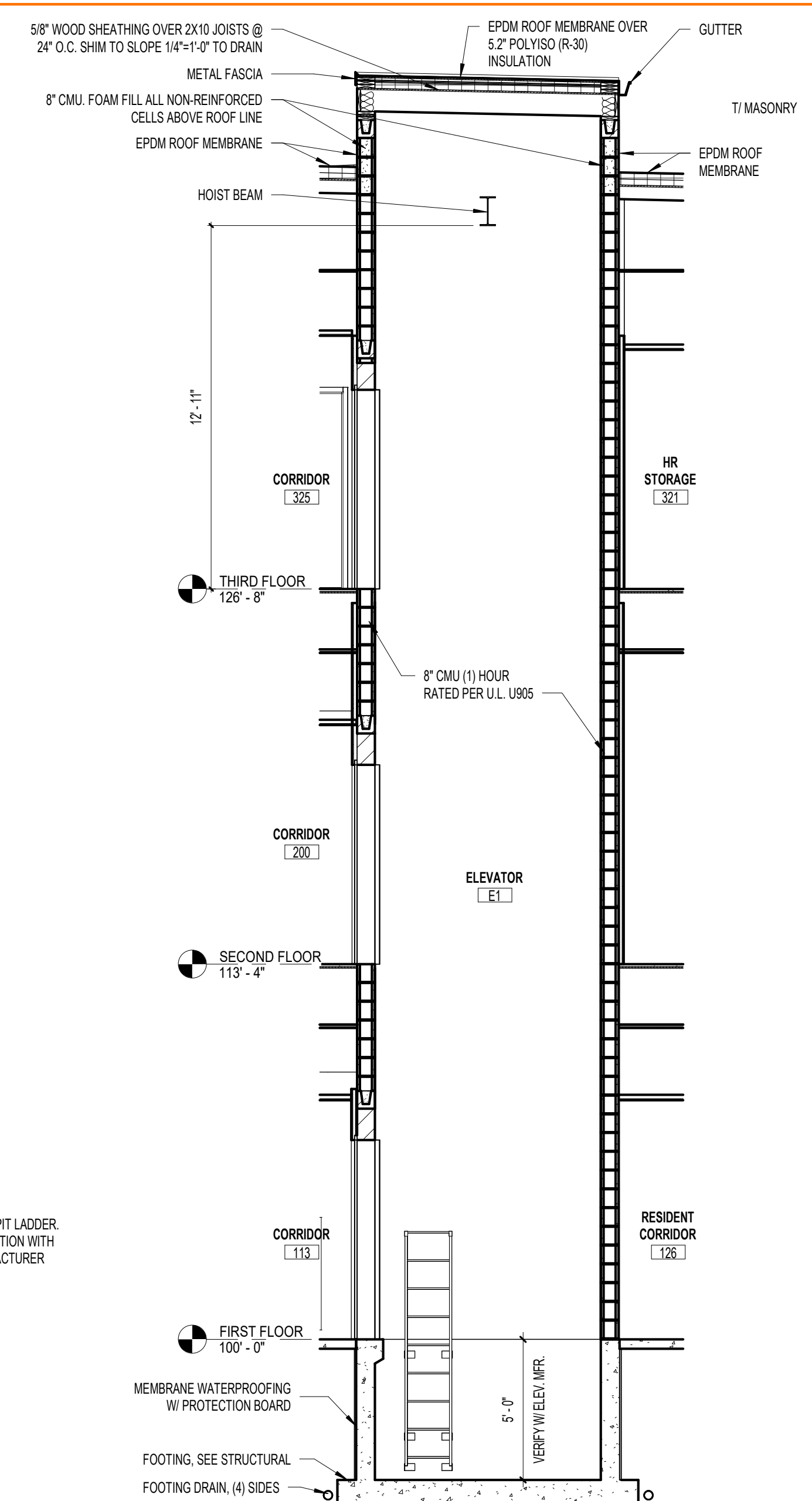
**11 ELEVATOR - THIRD FLOOR**  
A302 SCALE: 1/4" = 1'-0"



**10 ELEVATOR - SECOND FLOOR**  
A302 SCALE: 1/4" = 1'-0"



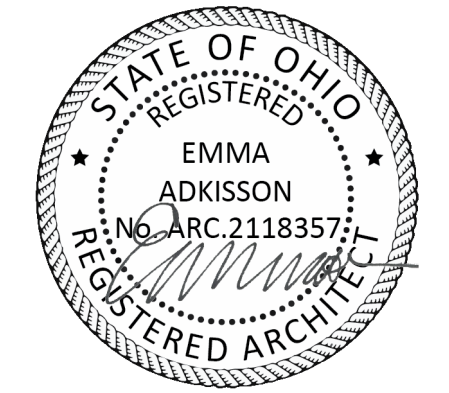
**9 ELEVATOR - FIRST FLOOR**  
A302 SCALE: 1/4" = 1'-0"



**12 ELEVATOR SECTION**  
A302 SCALE: 1/4" = 1'-0"



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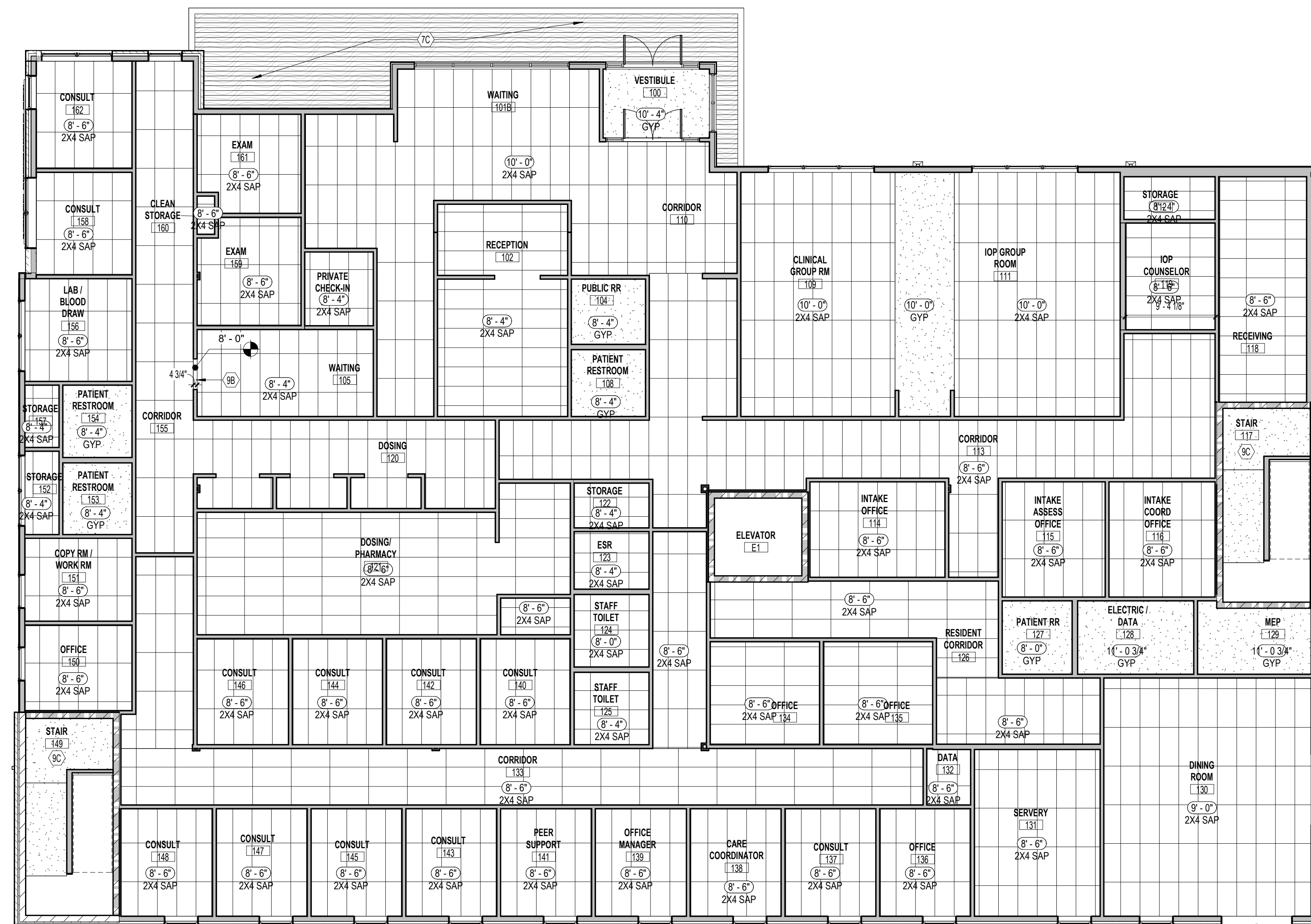
NO.	DESCRIPTION	DATE
PERMIT SET		08/09/24

ENLARGED STAIR & ELEVATOR PLANS, SECTIONS, & DETAILS

23-056

**A302**

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**GENERAL NOTES - CEILING PLANS**

- A. PROVIDE (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD ON BOTTOM OF FLOOR TRUSS FRAMING THROUGHOUT BUILDING. PAINT WHERE EXPOSED.
- B. PROVIDE (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD ON BOTTOM OF ROOF TRUSS FRAMING ABOVE THIRD FLOOR. PAINT WHERE EXPOSED.

**CEILING PLAN - ABBREVIATIONS**

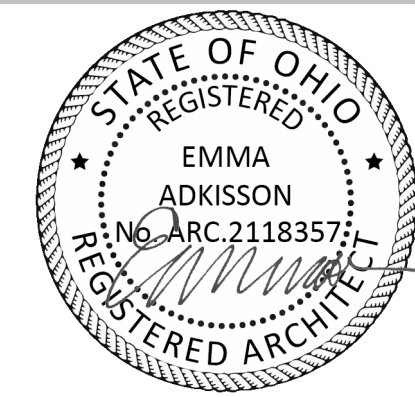
Note Number	Note Text
GYP	GYPSUM BOARD
SAP	SUSPENDED ACOUSTICAL PANEL

**SHEET KEYNOTES**

- 7C VENTED "WOOD LOOK" METAL SOFFIT
- 9B GYPSUM BOARD SOFFIT.
- 9C GYPSUM BOARD ON UNDERSIDE OF STAIRS AND LANDINGS.



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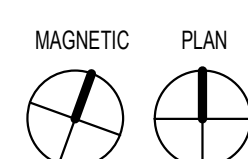
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FIRST FLOOR REFLECTED  
CEILING PLAN

23-056

**A400**



**1 FIRST FLOOR REFLECTED CEILING PLAN**

A400 SCALE: 1/8" = 1'-0"

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**GENERAL NOTES - CEILING PLANS**

- A. PROVIDE (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD ON BOTTOM OF FLOOR TRUSS FRAMING THROUGHOUT BUILDING. PAINT WHERE EXPOSED.
- B. PROVIDE (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD ON BOTTOM OF ROOF TRUSS FRAMING ABOVE THIRD FLOOR. PAINT WHERE EXPOSED

**CEILING PLAN - ABBREVIATIONS**

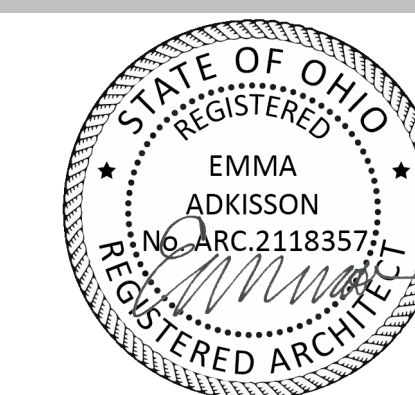
Note Number	Note Text
GYP	GYPSUM BOARD
SAP	SUSPENDED ACOUSTICAL PANEL

**SHEET KEYNOTES**

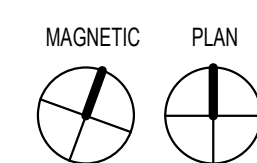
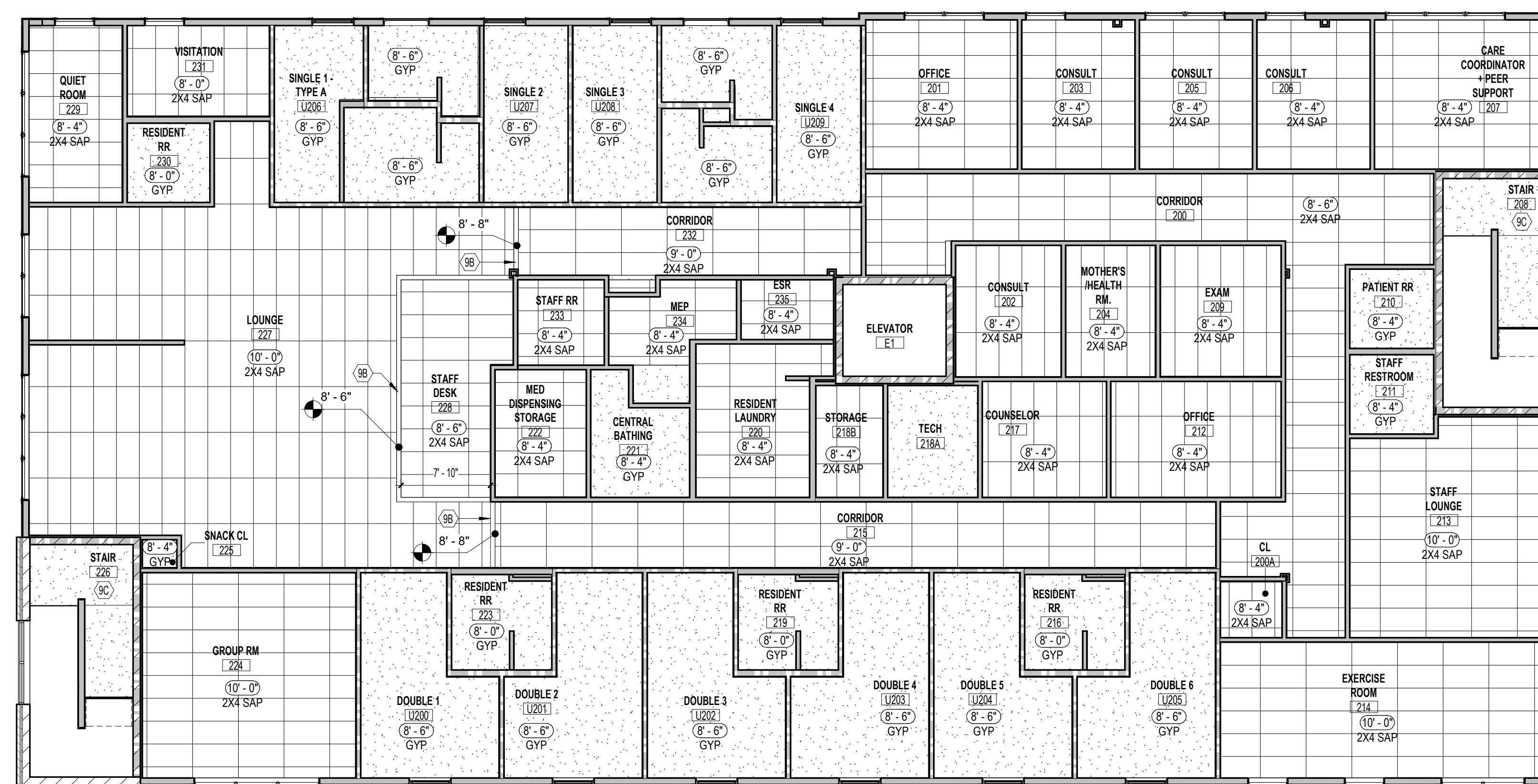
- 9B GYPSUM BOARD SOFFIT.
- 9C GYPSUM BOARD ON UNDERSIDE OF STAIRS AND LANDINGS.



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**1** SECOND FLOOR REFLECTED CEILING PLAN  
A401 SCALE: 1/8" = 1'-0"

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PERMIT SET		08/09/24

SECOND FLOOR  
REFLECTED CEILING  
PLAN

23-056

**A401**

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**GENERAL NOTES - CEILING PLANS**

- A. PROVIDE (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD ON BOTTOM OF FLOOR TRUSS FRAMING THROUGHOUT BUILDING. PAINT WHERE EXPOSED.
- B. PROVIDE (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD ON BOTTOM OF ROOF TRUSS FRAMING ABOVE THIRD FLOOR. PAINT WHERE EXPOSED.

**CEILING PLAN - ABBREVIATIONS**

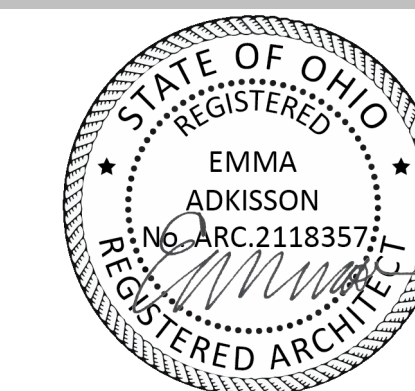
Note Number	Note Text
GYP	GYPSUM BOARD
SAP	SUSPENDED ACOUSTICAL PANEL

**SHEET KEYNOTES**

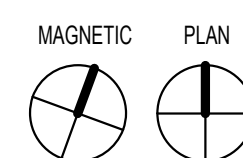
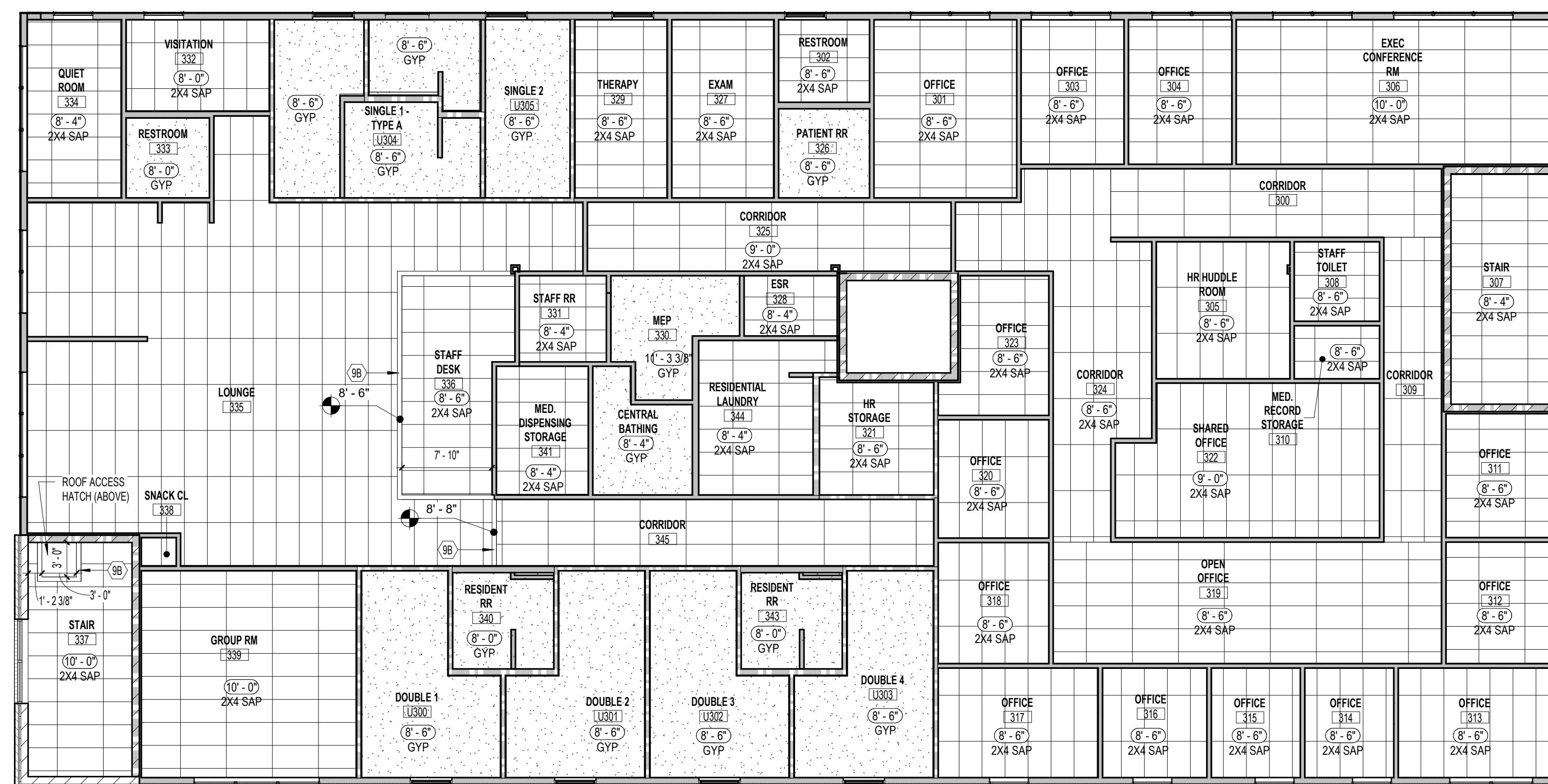
9B GYPSUM BOARD SOFFIT.



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**1** THIRD FLOOR REFLECTED CEILING PLAN  
A402 SCALE: 1/8" = 1'-0"

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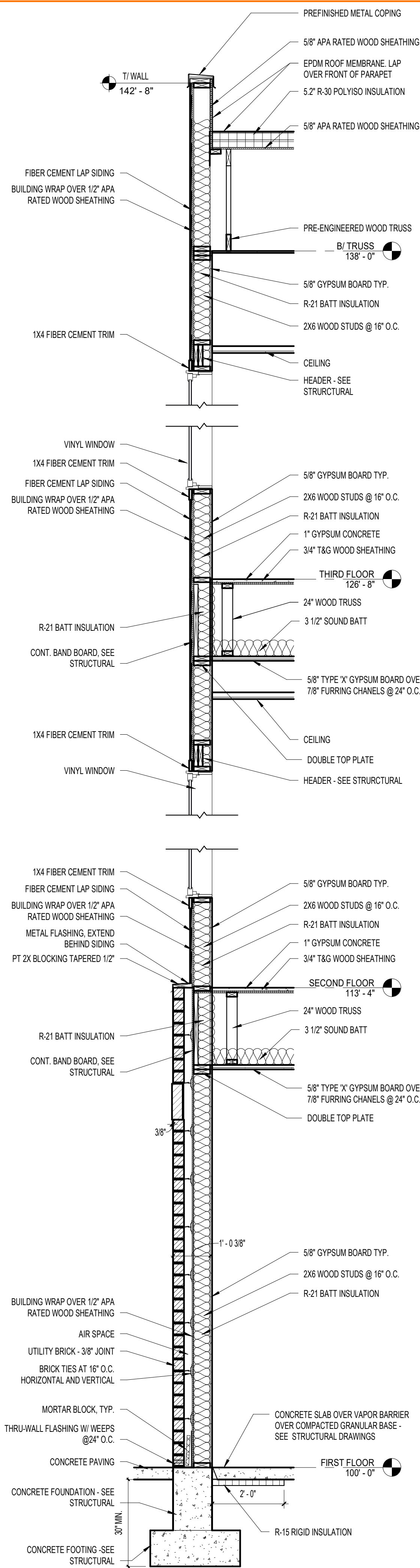
NO.	DESCRIPTION	DATE
	PERMIT SET	08/09/24

THIRD FLOOR REFLECTED  
CEILING PLAN

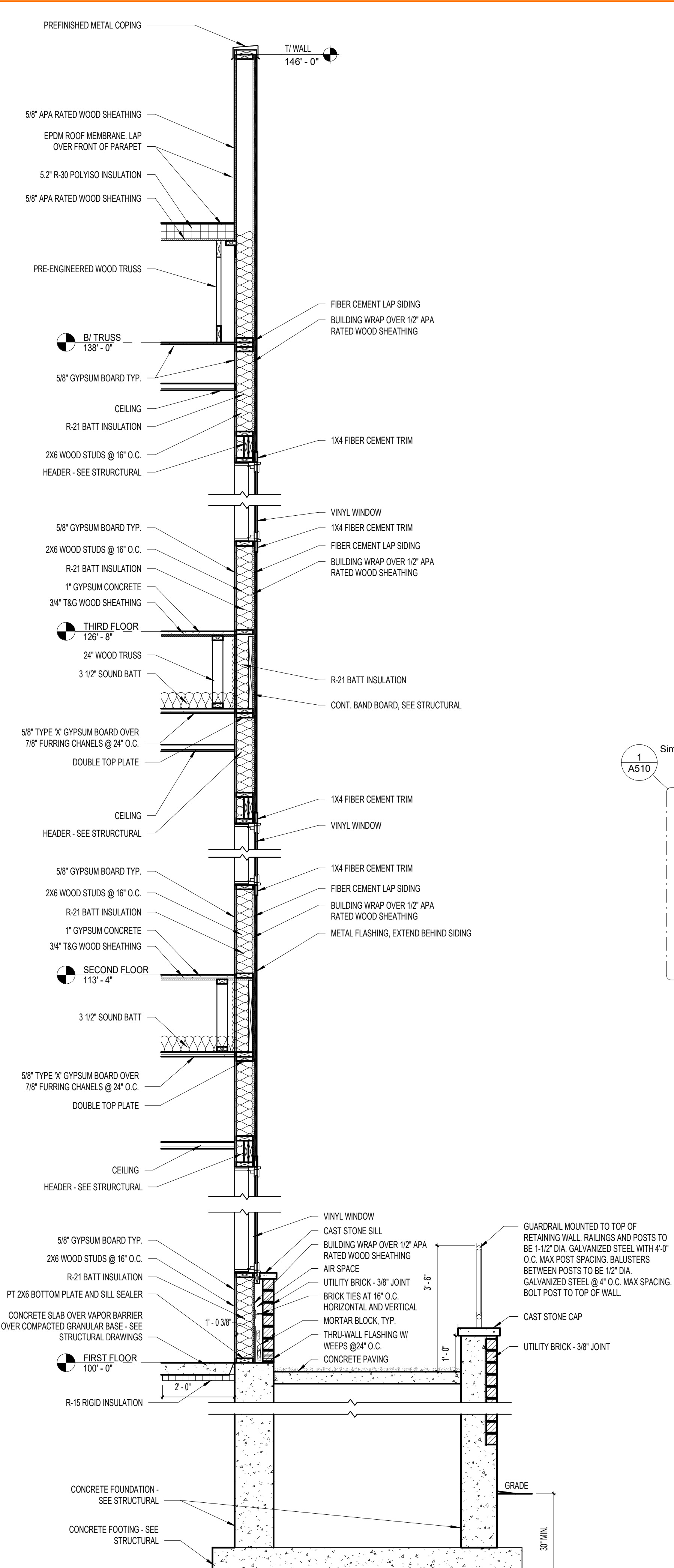
23-056

**A402**

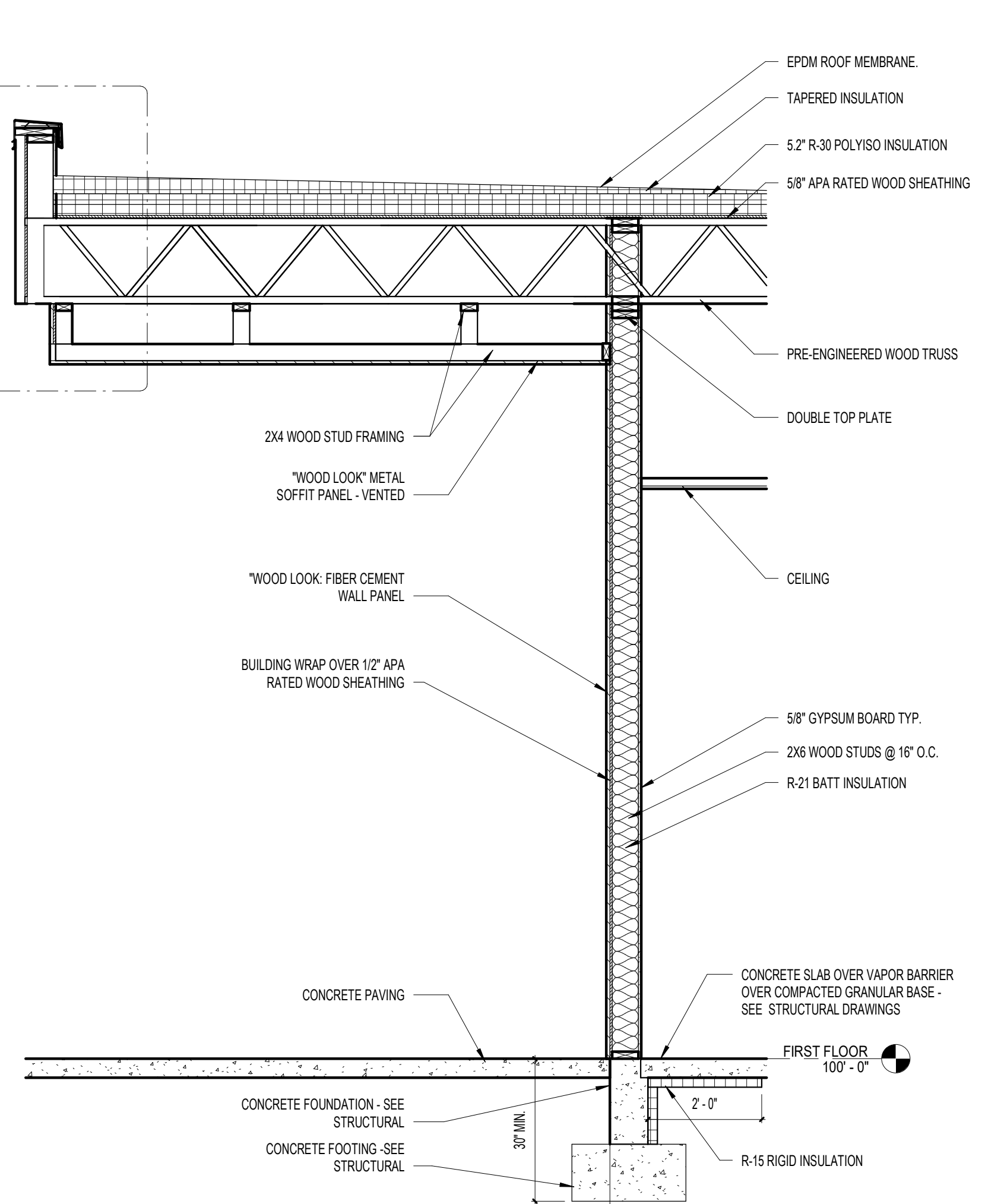
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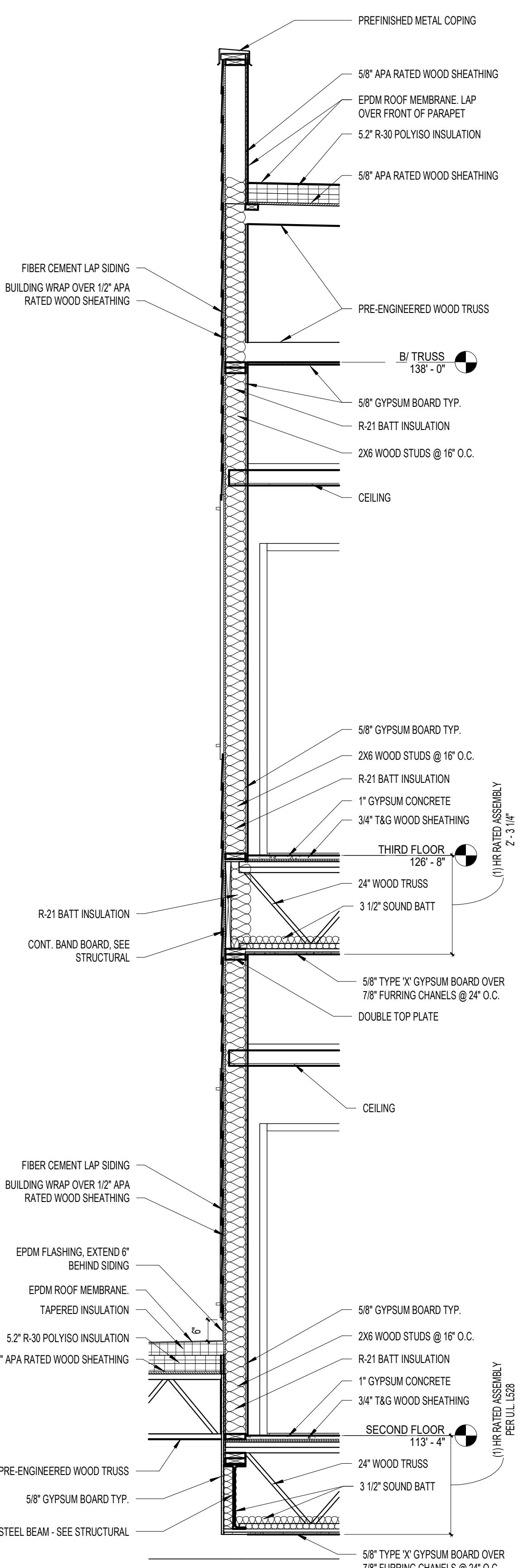
**1 WALL SECTION**  
A500 SCALE: 1/2" = 1'-0"



**2 WALL SECTION**  
A500 SCALE: 1/2" = 1'-0"



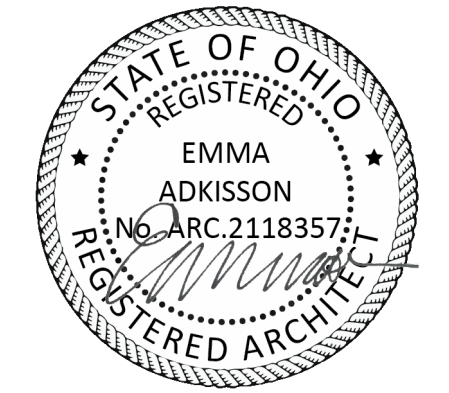
**3 WALL SECTION**  
A500 SCALE: 1/2" = 1'-0"



**4 WALL SECTION**  
A500 SCALE: 1/2" = 1'-0"



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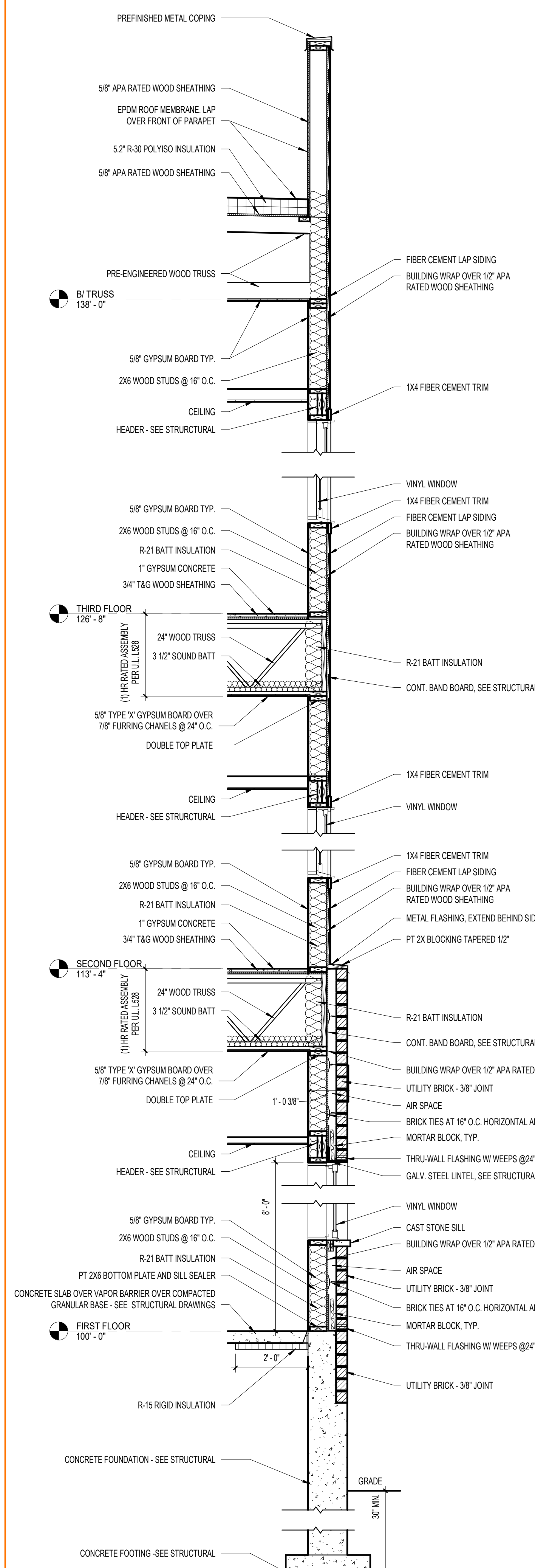
**WALL SECTIONS**

23-056

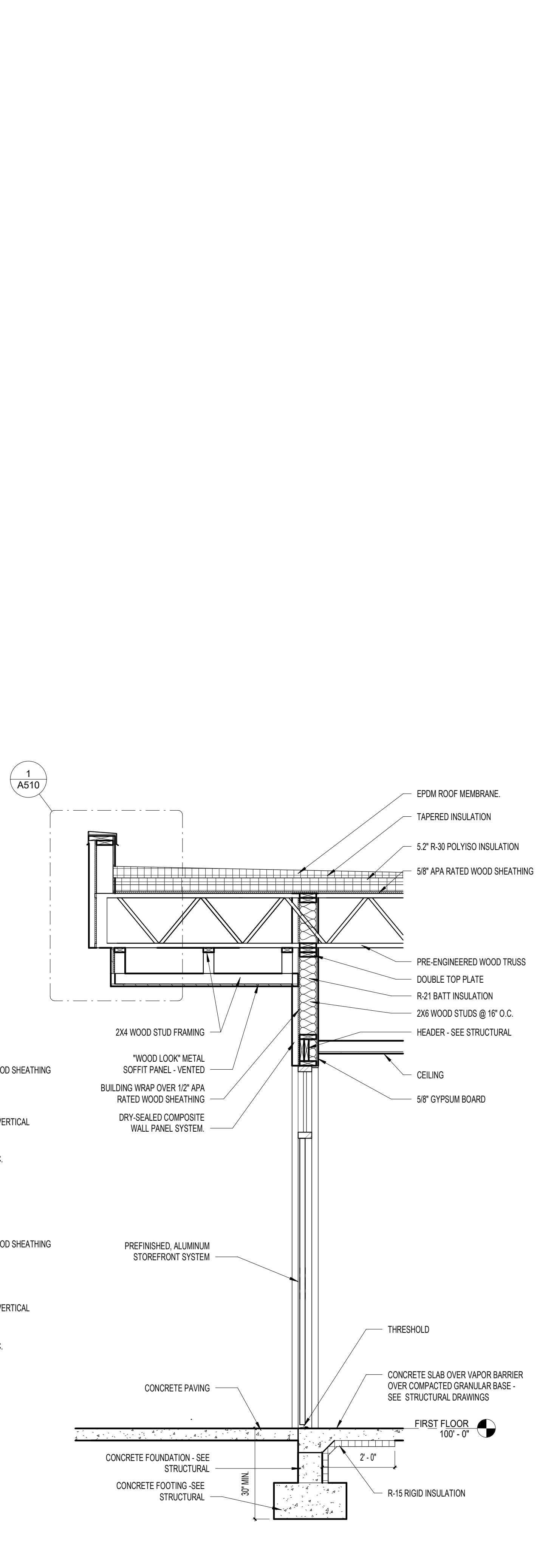
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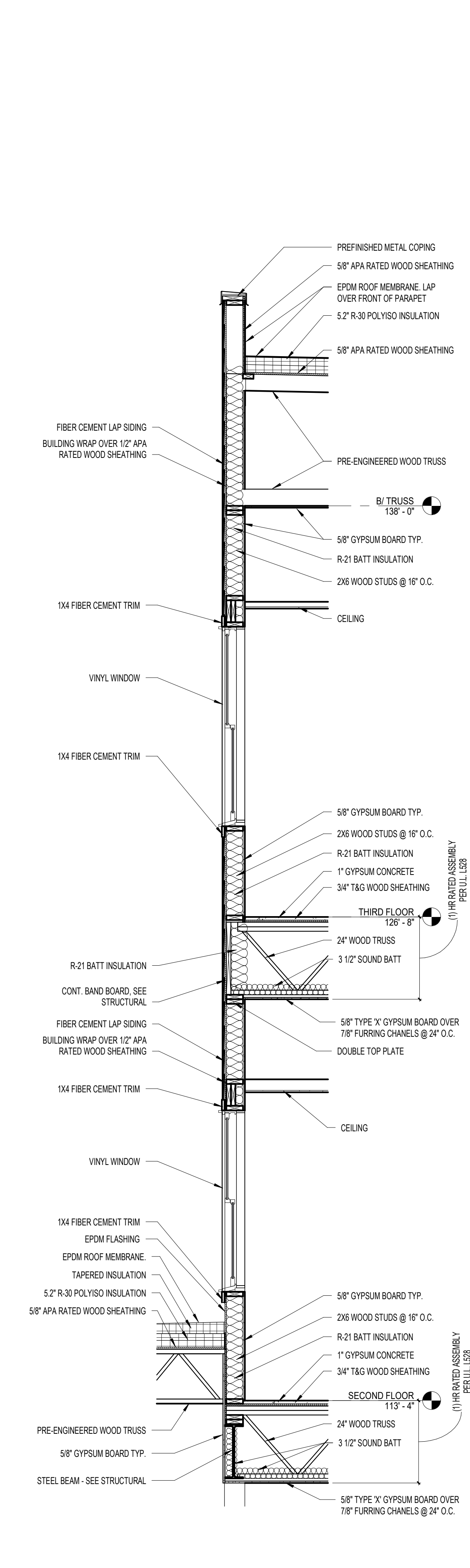
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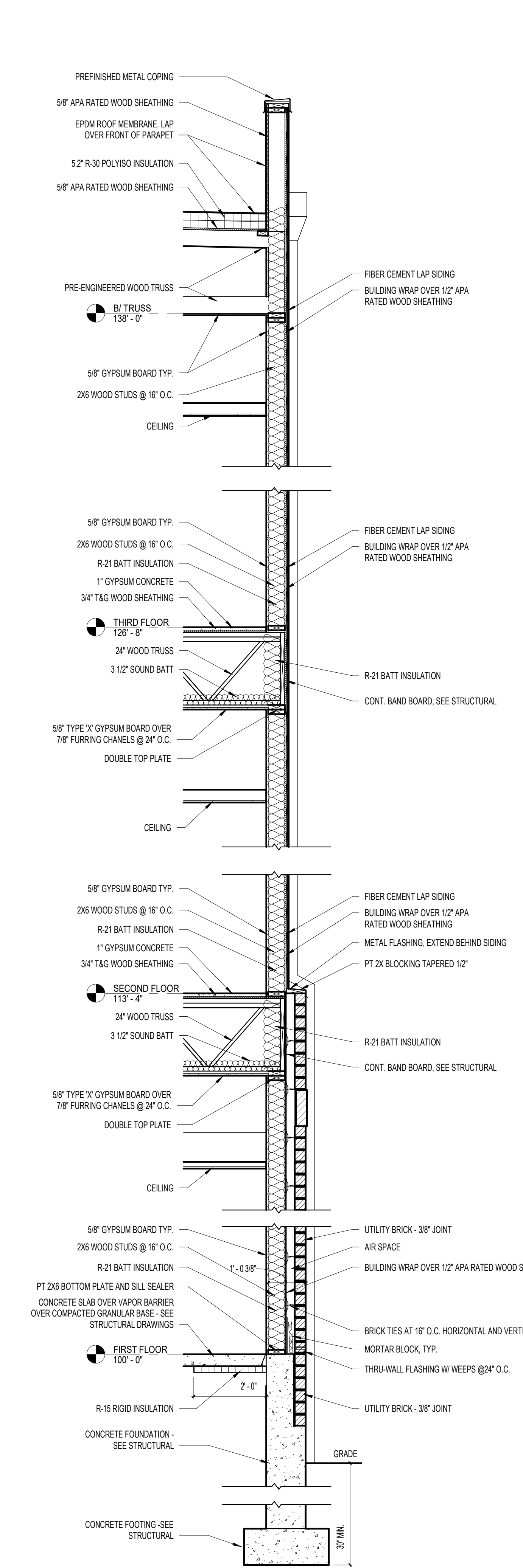
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A501 SCALE: 1/2" = 1'-0"



**2 WALL SECTION**  
A501 SCALE: 1/2" = 1'-0"



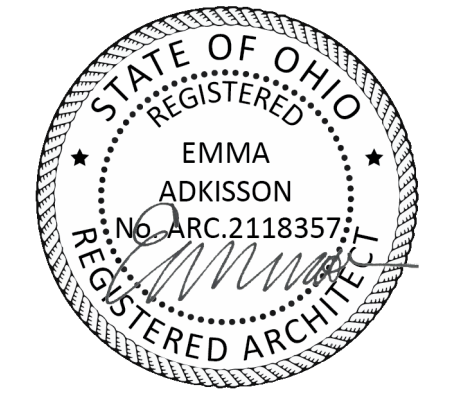
**3 WALL SECTION**  
A501 SCALE: 1/2" = 1'-0"



**4 WALL SECTION**  
A501 SCALE: 1/2" = 1'-0"



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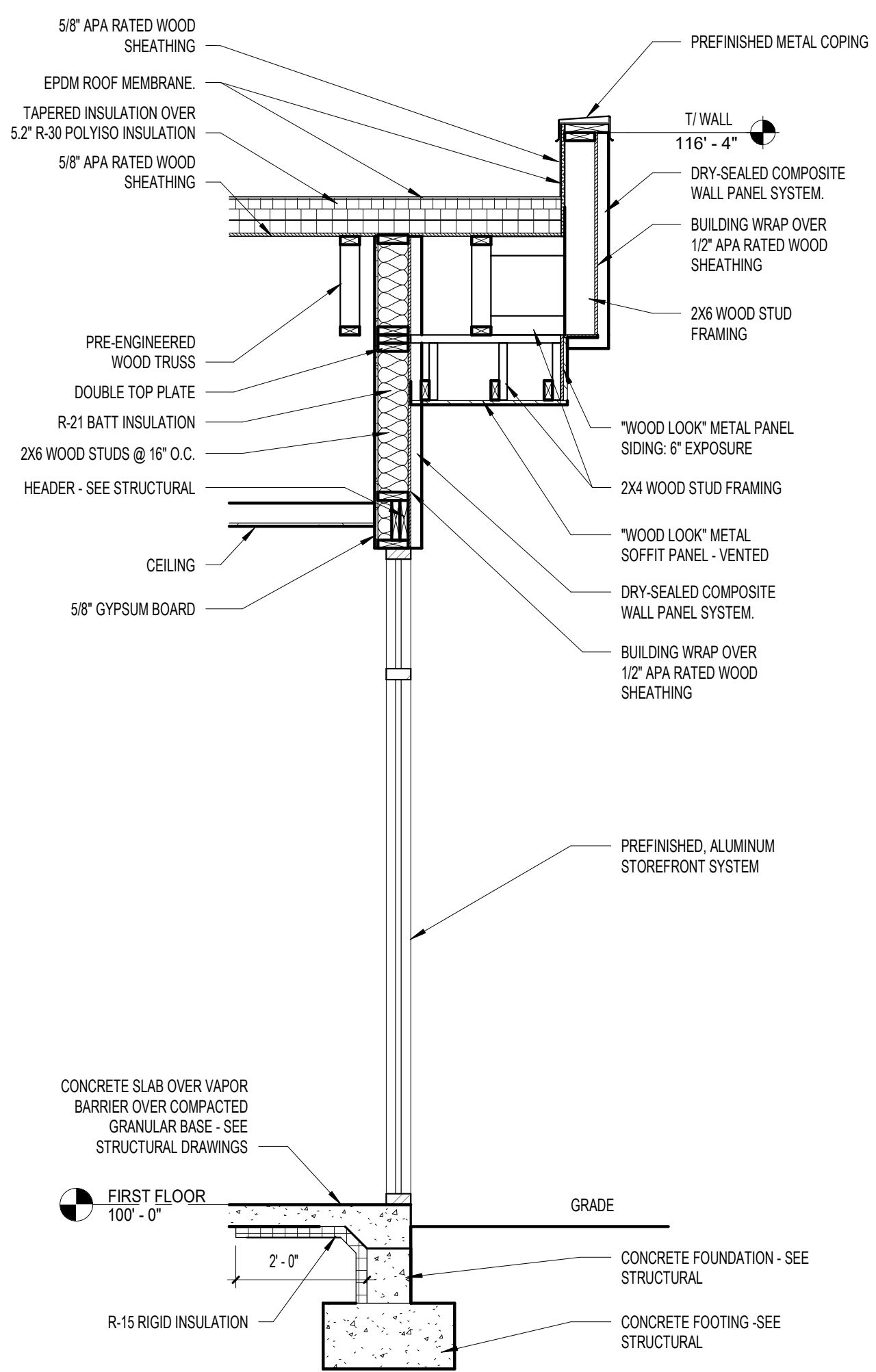
WALL SECTIONS

23-056

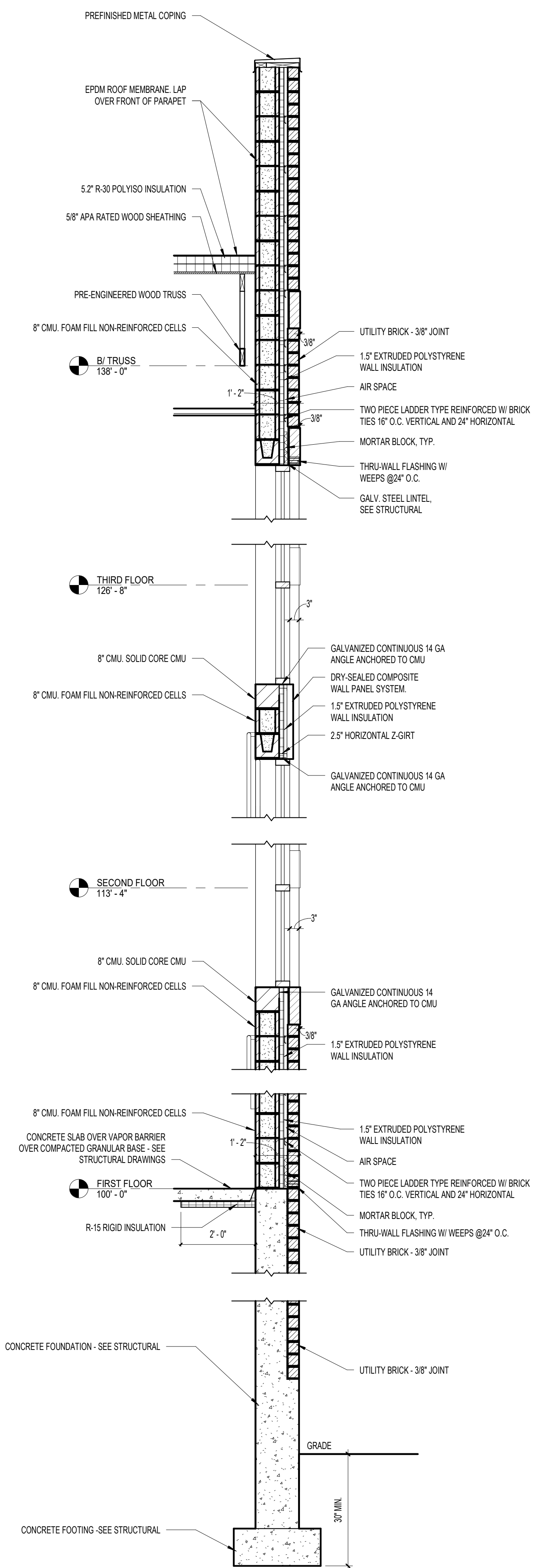
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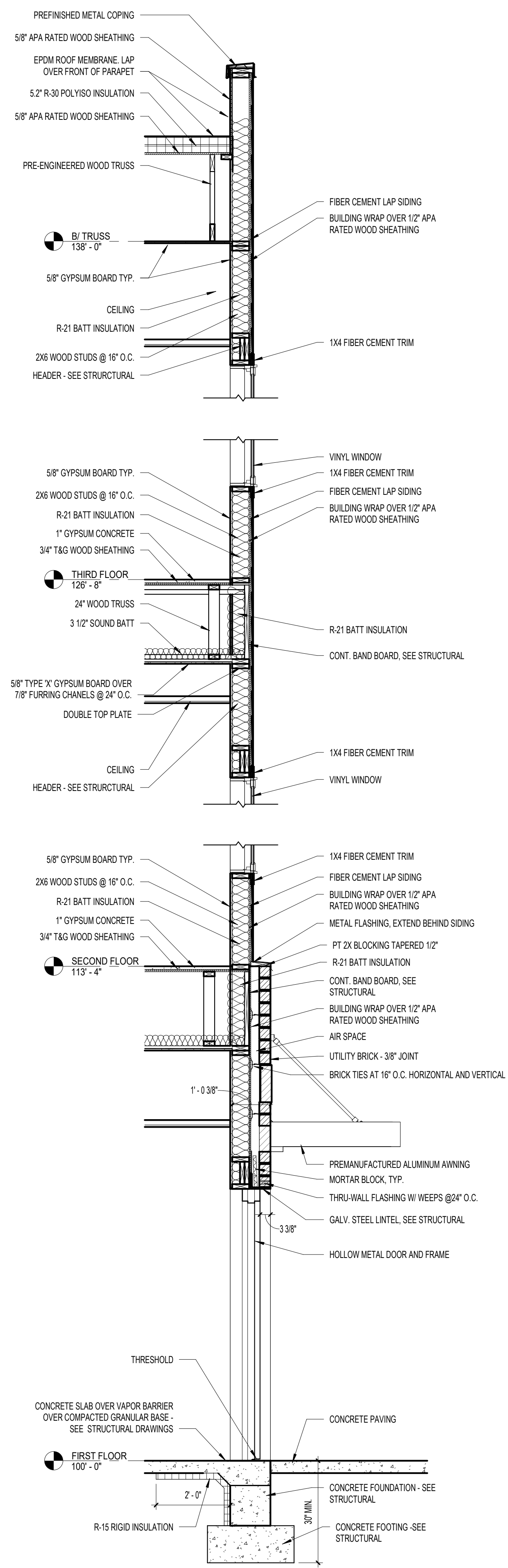
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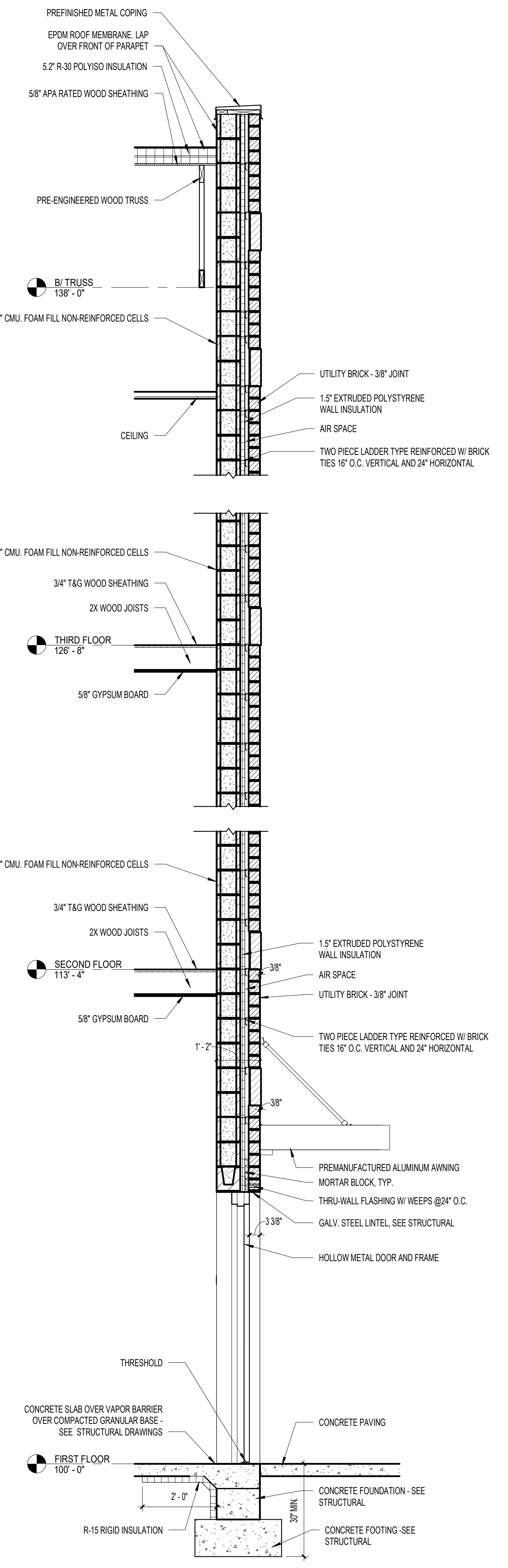
**1 WALL SECTION**  
A503 SCALE: 1/2" = 1'-0"



**2 WALL SECTION**  
A503 SCALE: 1/2" = 1'-0"



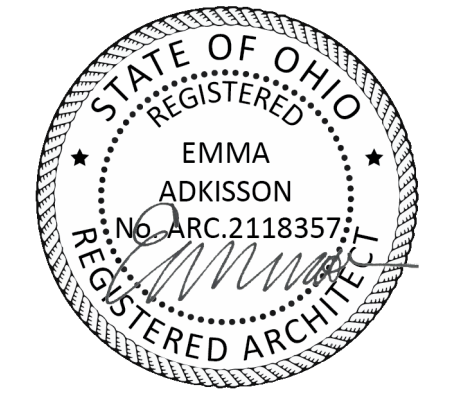
**3 WALL SECTION**  
A503 SCALE: 1/2" = 1'-0"



**4 WALL SECTION**  
A503 SCALE: 1/2" = 1'-0"



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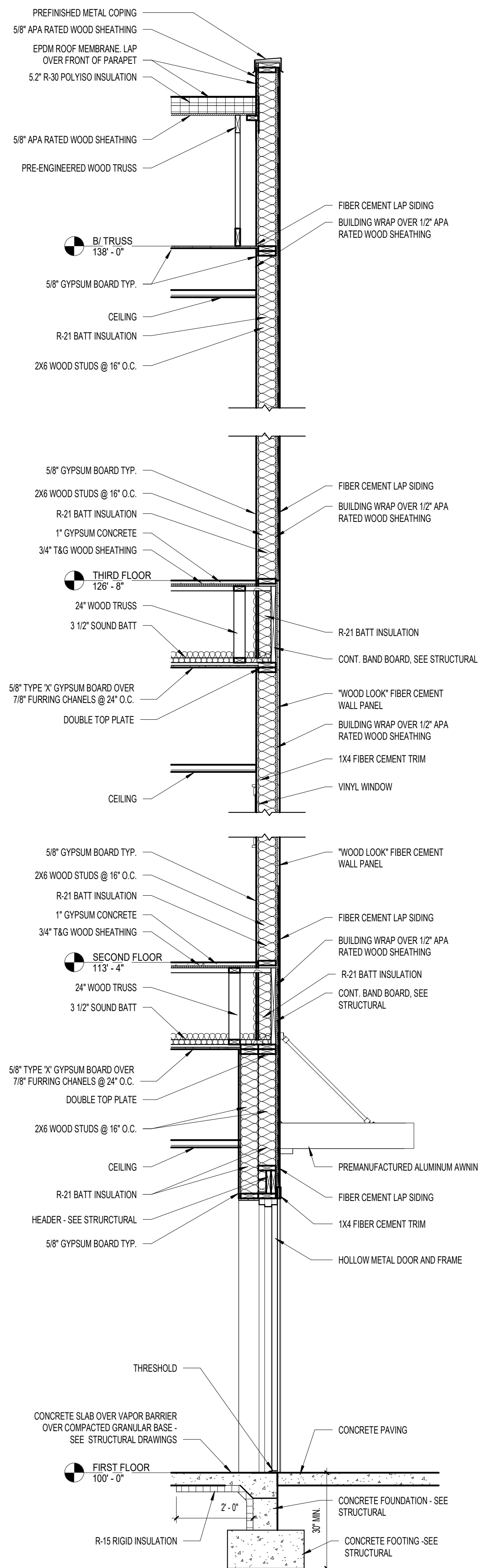
NO.	DESCRIPTION	DATE
PERMIT SET		08/09/24

WALL SECTIONS

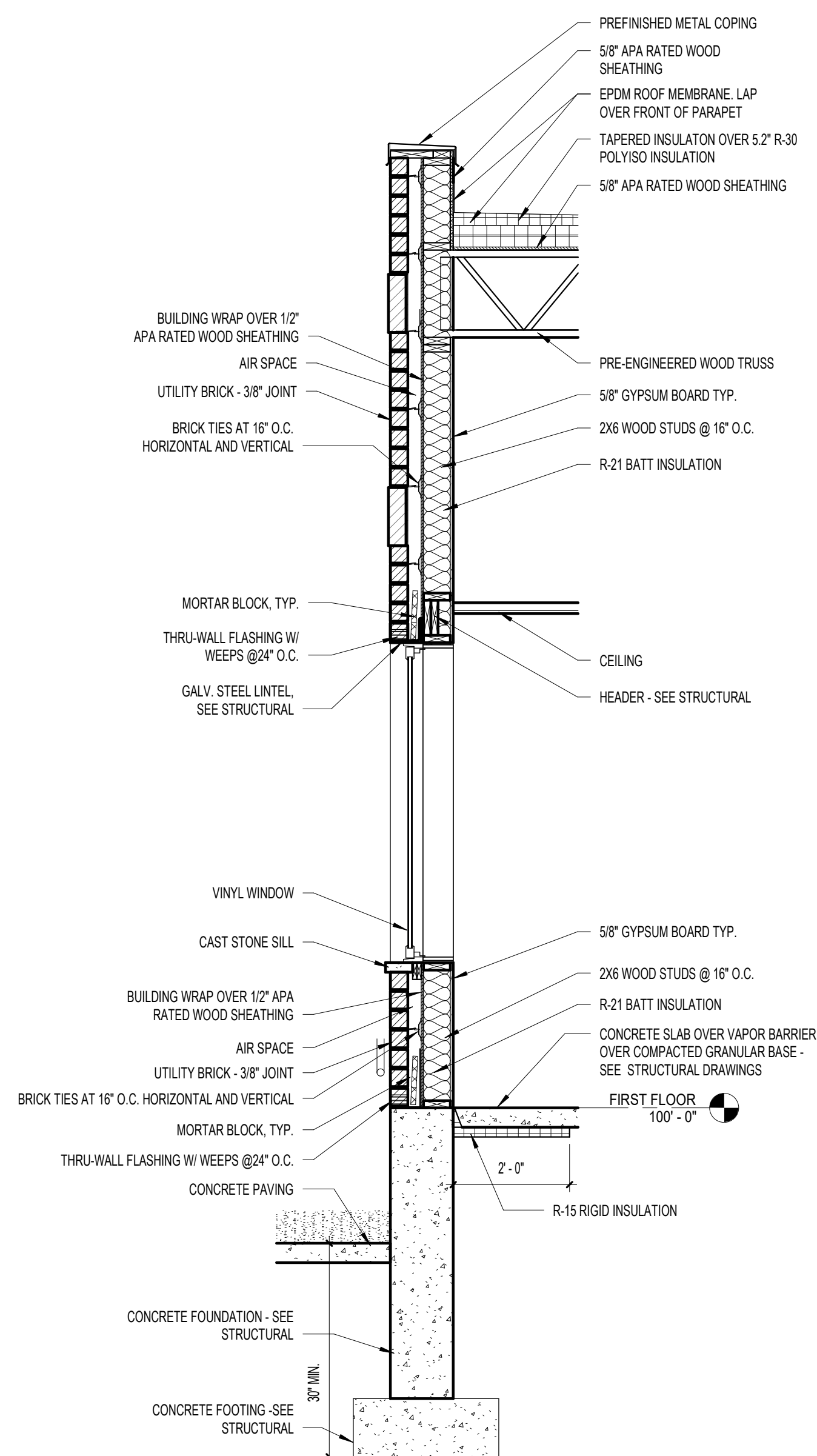
23-056

**A503**

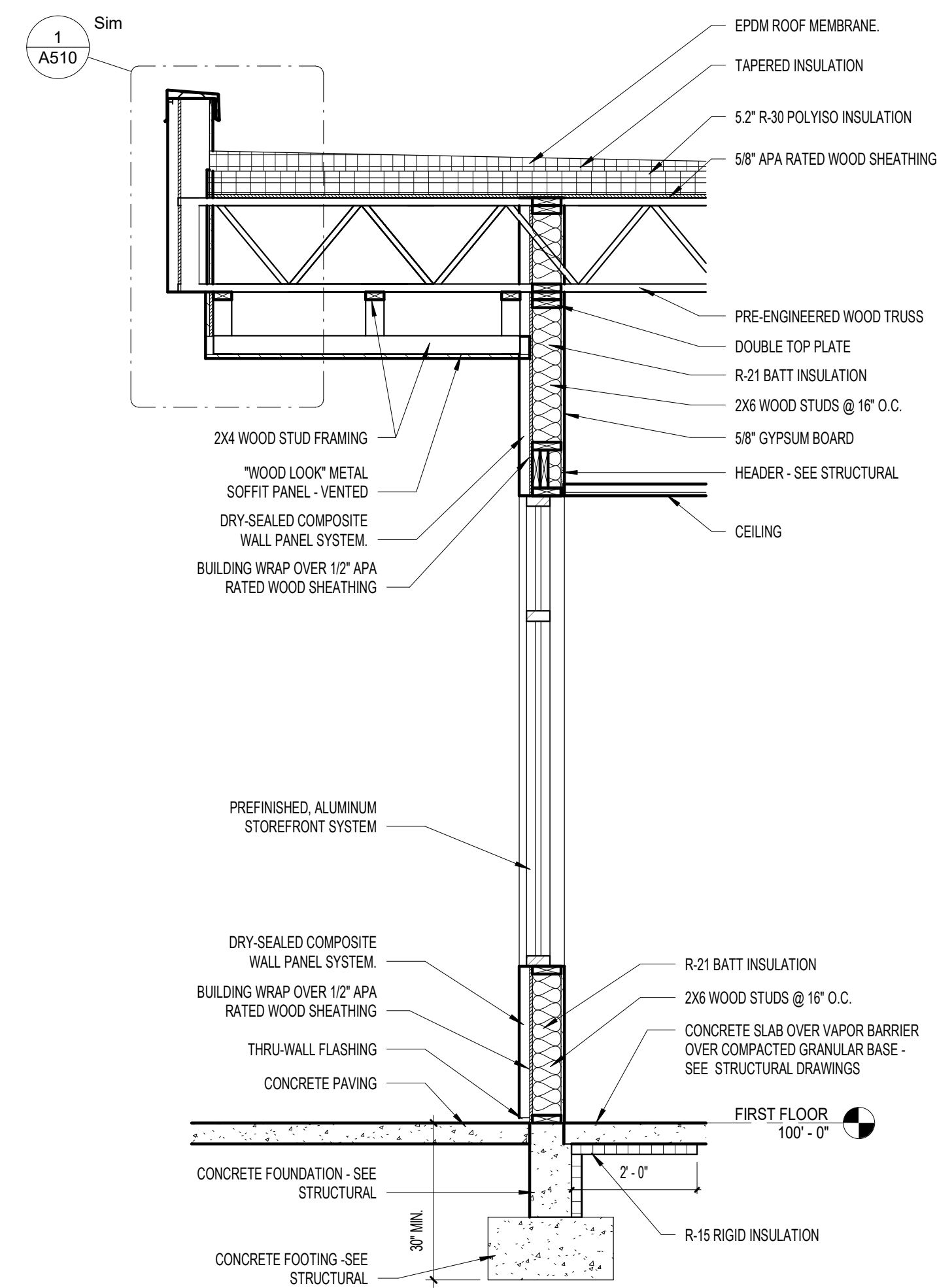
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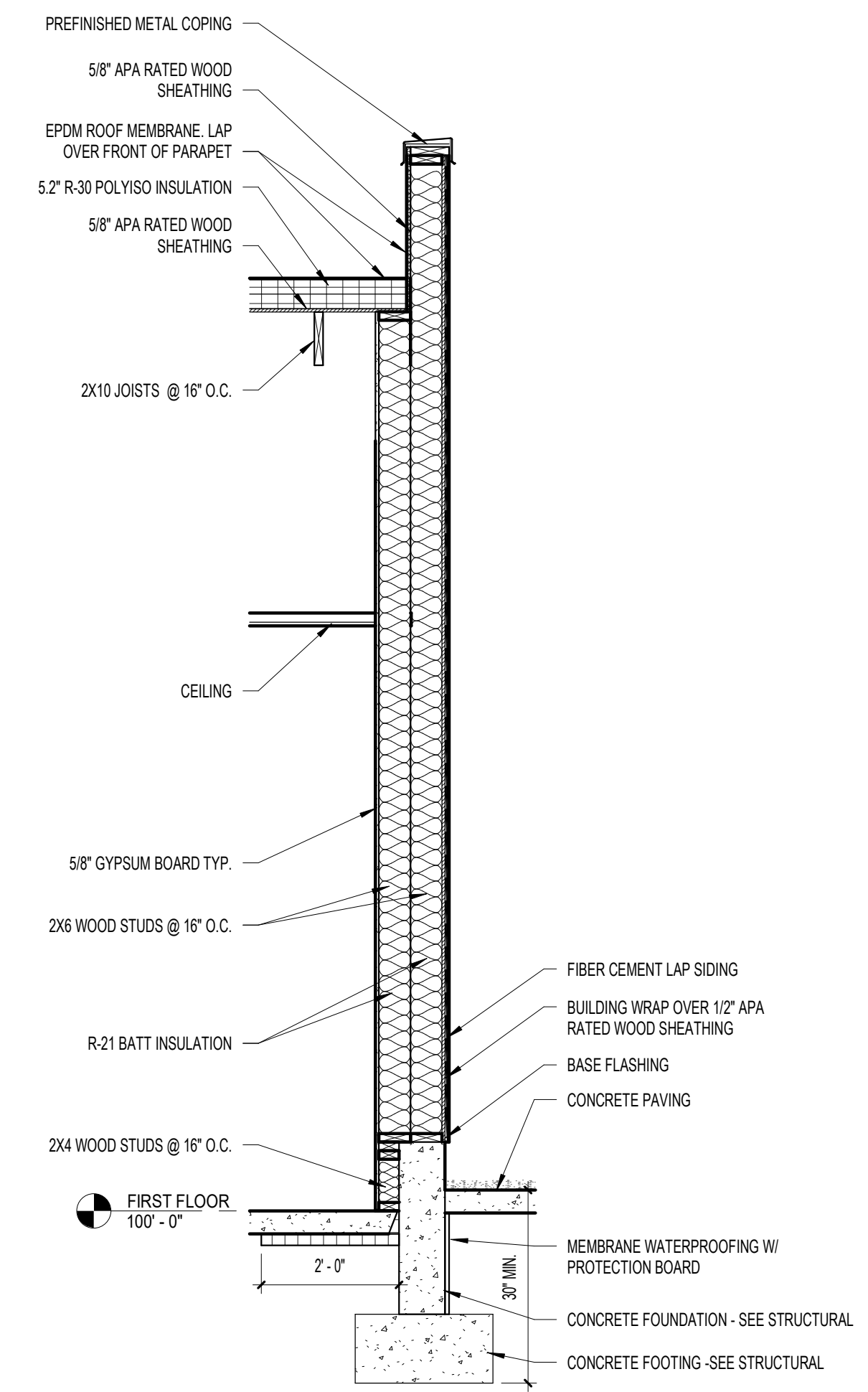
**1** WALL SECTION  
A504 SCALE: 1/2" = 1'-0"



**2** WALL SECTION  
A504 SCALE: 1/2" = 1'-0"



**3** WALL SECTION  
A504 SCALE: 1/2" = 1'-0"



**4** WALL SECTION  
A504 SCALE: 1/2" = 1'-0"



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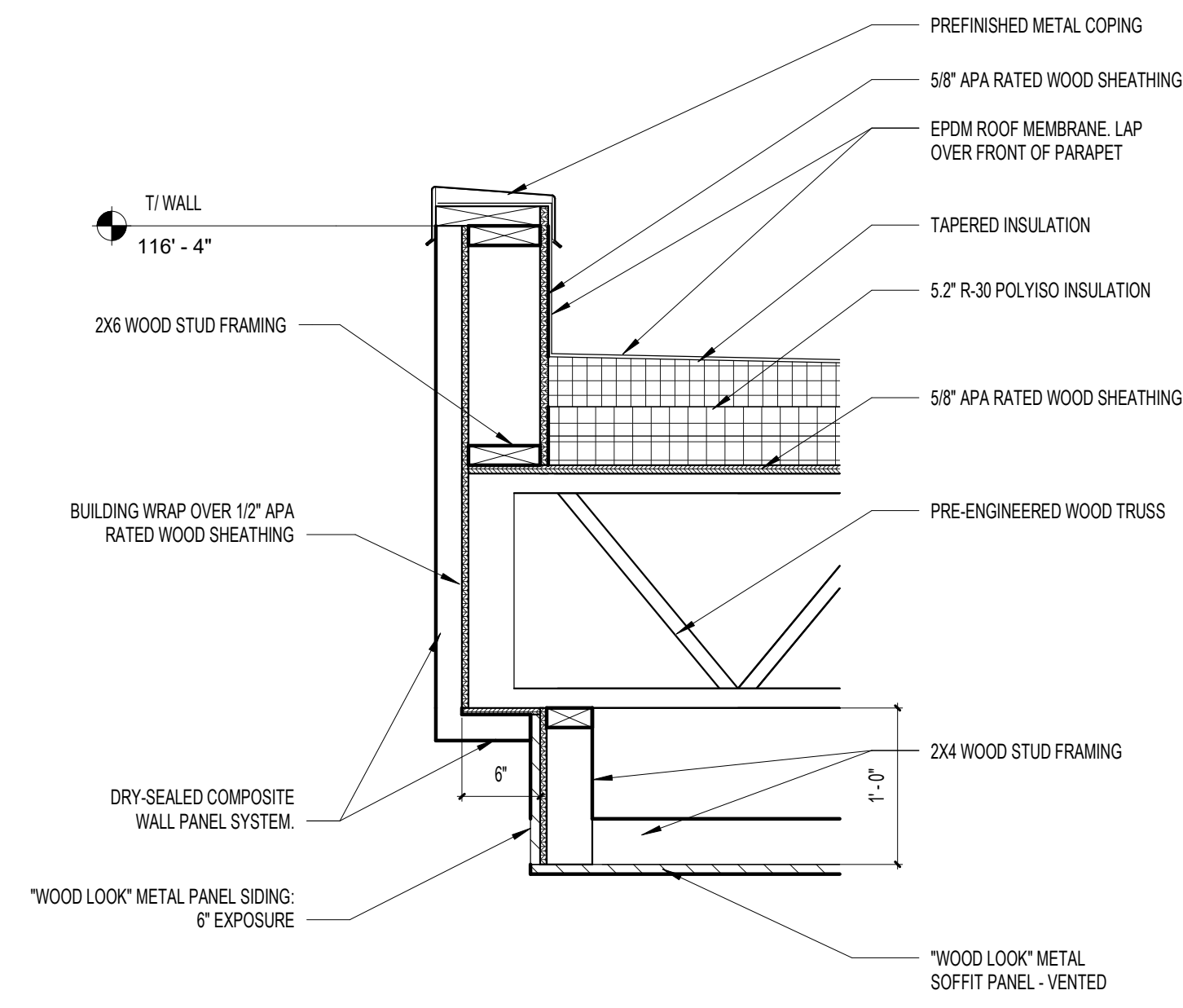
NO.	DESCRIPTION	DATE
PERMIT SET		08/09/24

WALL SECTIONS

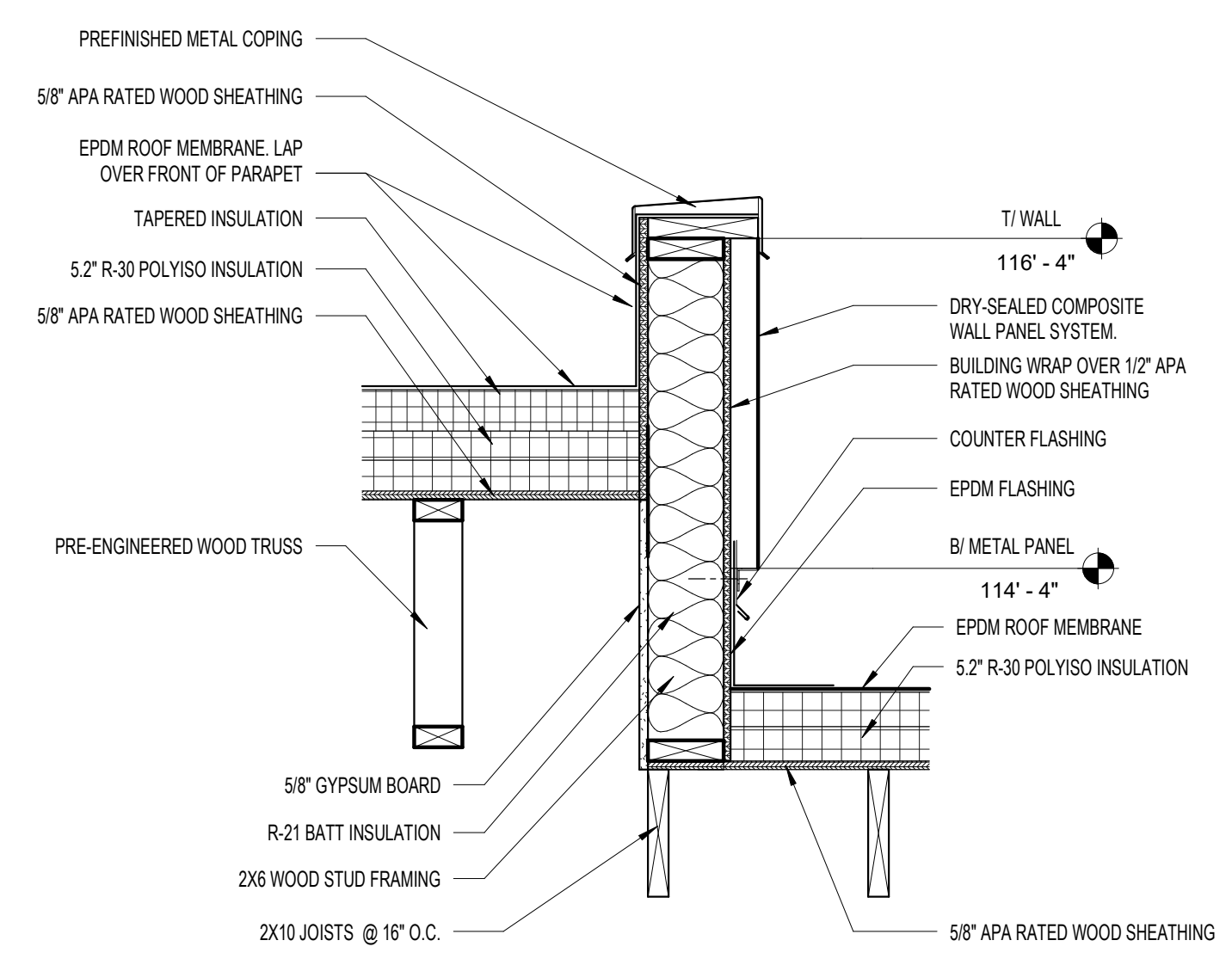
23-056

**A504**

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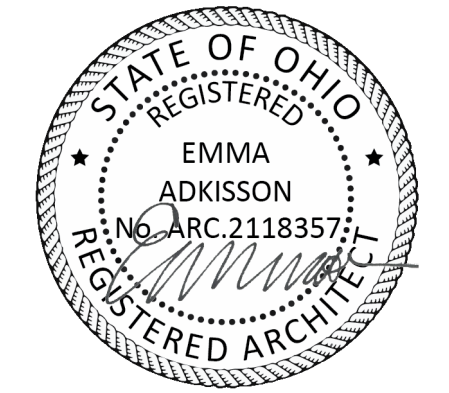
**1** | **DETAIL**  
A510 | SCALE: 1" = 1'-0"



**2** | **DETAIL**  
A510 | SCALE: 1" = 1'-0"



EmbossDesign.com 906 Monmouth Street,  
(859)431-8612 Newport, KY 41071



EMMA ADKISSON, LIC# 2118357  
EXPIRATION DATE 12/31/2025

**The Crossroads Center**  
2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
	PERMIT SET	08/09/24

DETAILS

23-056

**A510**

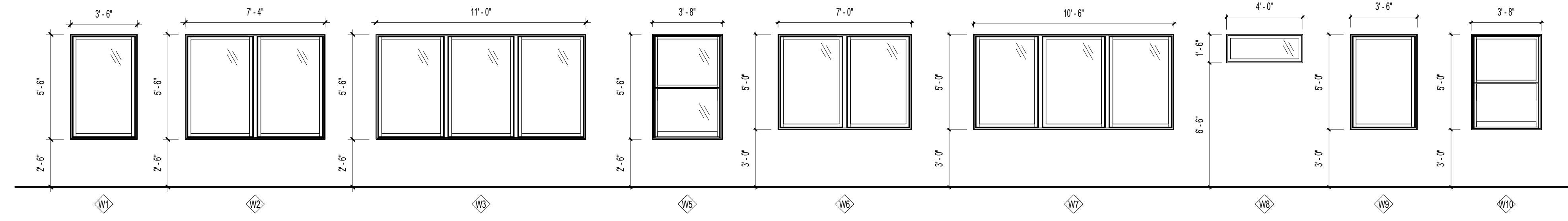
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GENERAL NOTES - DOOR & FRAME SCHEDULE		DOOR & FRAME ABBREVIATIONS	
A.	ALL DOORS SHALL BE MADE READILY OPERABLE FROM SIDE WHICH EGRESS IS TO BE MADE WITHOUT A KEY OR SPECIAL KNOWLEDGE	AL	ALUMINUM
B.	ALL LATCHSETS AND LOCKSETS ARE TO BE CYLINDRICAL SETS WITH ADA COMPLIANT LEVER HANDLES	HM	HOLLOW METAL
C.	PROVIDE WALL MOUNTED STOPS WHENEVER POSSIBLE.	PF	PREFINISHED
D.	ALL FIRE RATED DOORS SHALL BE LATCHING AND SELF OR AUTOMATIC CLOSING IN ACCORDANCE WITH SECTION 716.5.9 OF THE 2017 OHIO BUILDING CODE	PT	PAINT
E.	HOLLOW METAL DOORS TO BE INSULATED & GALVANIZED AT EXTERIOR LOCATIONS	S	STAINED
F.	HOLLOW METAL FRAMES TO BE GALVANIZED AT EXTERIOR LOCATIONS	WD	WOOD

DOOR AND FRAME SCHEDULE - COMMON AREAS																
#	ROOM	DOOR					FRAME					RATING (MINUTES)	ACCESS CONTROL	HDWR SET	NOTES	
		# OF LEAFS	WIDTH	HEIGHT	TYPE	MATL	FINISH	TYPE	MATL	FINISH	HEAD					JAMB
100A	VESTIBULE	2	3'-0"	8'-0"	D3	AL	PF	S1	AL	PF				✓	1.0	
100B	VESTIBULE	2	3'-0"	8'-0"	D3	AL	PF	S5	AL	PF				✓	4.0	
102A	RECEPTION	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	10.0
102B	RECEPTION	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	8.0
104	PUBLIC RR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
105	WAITING	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	17.0
107	PRIVATE CHECK-IN	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
108	PATIENT RESTROOM	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
109A	CLINICAL GROUP RM	1	3'-0"	7'-0"	D4	WD	S	F1	HM	PT					-	12.0
109B	CLINICAL GROUP RM	1	3'-0"	7'-0"	D4	WD	S	F1	HM	PT					-	12.0
1114	IOP GROUP ROOM	1	3'-0"	7'-0"	D4	WD	S	F1	HM	PT					-	12.0
111B	IOP GROUP ROOM	1	3'-0"	7'-0"	D4	WD	S	F1	HM	PT					-	12.0
112	STORAGE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	8.0
114	INTAKE OFFICE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
115	INTAKE ASSESS OFFICE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
116	INTAKE COORD OFFICE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
117A	STAIR	1	3'-0"	7'-0"	D5	HM	PT	F2	HM	PT				✓	2.0	
117B	STAIR	1	3'-0"	7'-0"	D1	WD	S	F2	HM	PT			60	✓	3.0	
118A	RECEIVING	1	3'-6"	7'-0"	D1	WD	S	F1	HM	PT					-	6.0
118B	RECEIVING	1	3'-6"	7'-0"	D2	HM	PT	F1	HM	PT				✓	2.0	
119	IOP COUNSELOR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
121A	DOSING/ PHARMACY	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	8.0
121B	DOSING/ PHARMACY	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	8.0
121C	DOSING/ PHARMACY	2	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	7.0
122	STORAGE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	8.0
123	ESR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	8.0
124	STAFF TOILET	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
125	STAFF TOILET	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
126A	RESIDENT CORRIDOR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT				✓	21.0	
126B	RESIDENT CORRIDOR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT				✓	21.0	
127	PATIENT RR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
128	ELECTRIC / DATA	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	6.0
129	MEP	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	8.0
130A	DINING ROOM	1	3'-0"	7'-0"	D5	HM	PT	F2	HM	PT				✓	2.0	
130B	DINING ROOM	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	5.0
131A	SERVERY	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	10.0
131B	SERVERY	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	12.0
132	DATA	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	10.0
133A	CORRIDOR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT				✓	21.0	
133B	CORRIDOR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT				✓	21.0	
134	OFFICE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
135	OFFICE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
136	OFFICE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
137	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
138	CARE COORDINATOR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
139	OFFICE MANAGER	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
140	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
141	PEER SUPPORT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
142	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
143	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
144	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
145	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
146	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
147	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
148	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
149A	STAIR	1	3'-0"	7'-0"	D5	HM	PT	F2	HM	PT				✓	2.0	
149B	STAIR	1	3'-0"	7'-0"	D1	WD	S	F2	HM	PT			60	✓	3.0	
150	OFFICE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
151	COPY RM / WORK RM	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	12.0
152	STORAGE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	8.0
153	PATIENT RESTROOM	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	15.0
154	PATIENT RESTROOM	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	15.0
155	CORRIDOR	1	3'-0"	7'-0"	D5	HM	PT	F2	HM	PT				✓	2.0	
156	LAB / BLOOD DRAW	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	10.0
157	STORAGE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	8.0
158	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
159	EXAM	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	16.0
160	CLEAN STORAGE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	10.0
161	EXAM	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	16.0
162	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
200	CORRIDOR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT				✓	21.0	
200A	CL	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	9.0
201	OFFICE	1	3'-0"	7'-0"	D1	WD	S	F3	HM	PT					-	11.0
202	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F3	HM	PT					-	11.0
203	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F3	HM	PT					-	11.0
204	MOTHERS / HEALTH RM.	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
205	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F3	HM	PT					-	11.0
206	CONSULT	1	3'-0"	7'-0"	D1	WD	S	F3	HM	PT					-	11.0
207	CARE COORDINATOR + PEER SUPPORT	1	3'-0"	7'-0"	D1	WD	S	F3	HM	PT					-	11.0
208	STAIR	1	3'-0"	7'-0"	D1	WD	S	F2	HM	PT				60	✓	3.0
209	EXAM	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	16.0
210	PATIENT RR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
211	STAFF RESTROOM	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
212	OFFICE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
213	STAFF LOUNGE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	12.0
213	EXERCISE ROOM	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	12.0
215	CORRIDOR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT				✓	3.0	
216	RESIDENT RR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
217	COUNSELOR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	11.0
218A	TECH	1	3'-0"	7'-0"	D1	WD	S	F2	HM	PT					-	8.0
218B	CORRIDOR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	8.0
219	RESIDENT RR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
220	RESIDENT LAUNDRY	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	18.0
221	CENTRAL BATHING	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
222	MED DISPENSING STORAGE	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	8.0
223	RESIDENT RR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
224	GROUP RM	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	12.0
225	SNACK CL	1	2'-6"	7'-0"	D1	WD	S	F1	HM	PT					-	9.0
226	STAIR	1	3'-0"	7'-0"	D1	WD	S	F2	HM	PT				60	✓	3.0
229	QUIET ROOM	1	3'-0"	7'-0"	D4	WD	S	F1	HM	PT					-	14.0
230	RESIDENT RR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0

DOOR AND FRAME SCHEDULE - COMMON AREAS																
#	ROOM	DOOR					FRAME					RATING (MINUTES)	ACCESS CONTROL	HDWR SET	NOTES	
		# OF LEAFS	WIDTH	HEIGHT	TYPE	MATL	FINISH	TYPE	MATL	FINISH	HEAD					JAMB
231	VISITATION	1	3'-0"	7'-0"	D4	WD	S	F1	HM	PT					-	14.0
233	STAFF RR	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT					-	14.0
234	MEP	1	3'-0"	7'-0"	D1	WD	S	F1	HM	PT						

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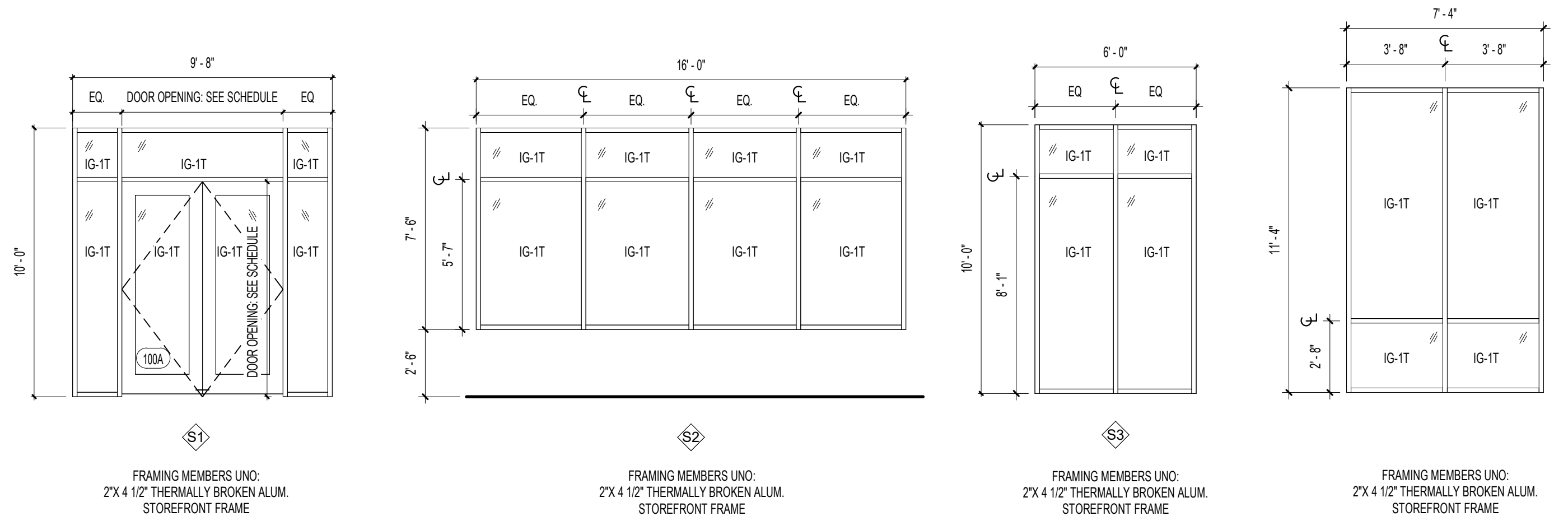


WINDOW TYPE COMMENTS	
W1	BASIS OF DESIGN: QUAKER V250 SERIES FIXED VINYL WINDOW WITH INSULATING LOW-E GLASS
W2	<varies>
W3	BASIS OF DESIGN: QUAKER V250 SERIES FIXED VINYL WINDOW WITH INSULATING LOW-E GLASS
W5	BASIS OF DESIGN: QUAKER V250 SERIES DOUBLE-HUNG VINYL WINDOW WITH INSULATING LOW-E GLASS
W6	BASIS OF DESIGN: QUAKER V250 SERIES FIXED VINYL WINDOW WITH INSULATING LOW-E GLASS
W7	BASIS OF DESIGN: QUAKER V250 SERIES FIXED VINYL WINDOW WITH INSULATING LOW-E GLASS
W8	BASIS OF DESIGN: QUAKER V250 SERIES FIXED VINYL WINDOW WITH INSULATING LOW-E GLASS
W9	BASIS OF DESIGN: QUAKER V250 SERIES FIXED VINYL WINDOW WITH INSULATING LOW-E GLASS
W10	BASIS OF DESIGN: QUAKER V250 SERIES DOUBLE-HUNG VINYL WINDOW WITH INSULATING LOW-E GLASS

### 1 WINDOW TYPES

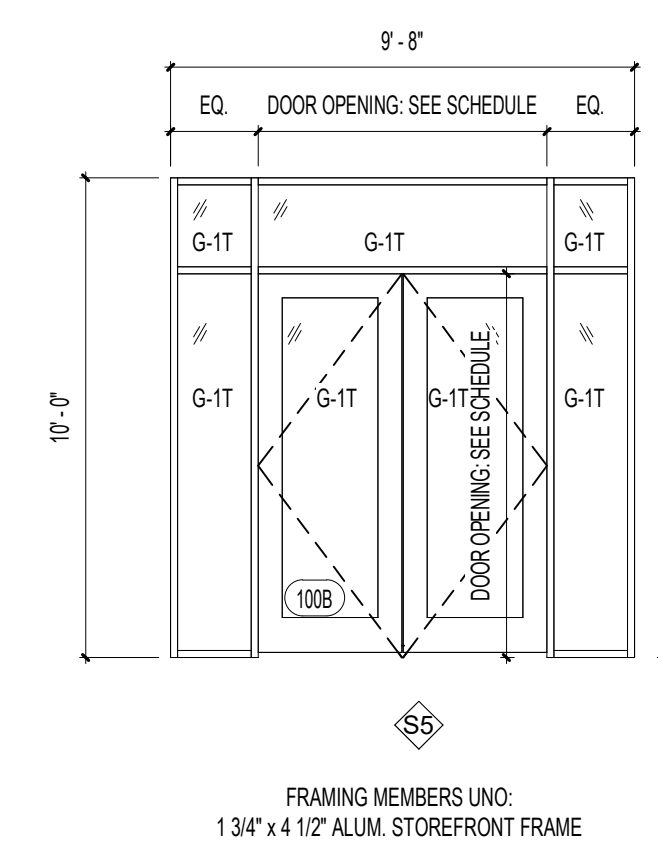
A601 SCALE: 1/4" = 1'-0"

GLASS TYPE LEGEND	
MARK	DESCRIPTION
G-1	1/4" CLEAR GLASS
G-1T	1/4" CLEAR GLASS, TEMPERED
IG-1	1" INSULATING GLASS
IG-1T	1" INSULATING GLASS, TEMPERED



### 2 EXTERIOR STOREFRONT TYPES

A601 SCALE: 1/4" = 1'-0"

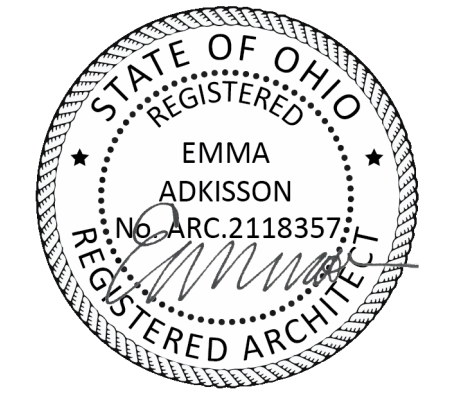


### 3 INTERIOR STOREFRONT TYPES

A601 SCALE: 1/4" = 1'-0"



EmbossDesign.com 906 Monmouth Street,  
(859)431-8612 Newport, KY 41071



EMMA ADKISSON, LIC# 2118357  
EXPIRATION DATE 12/31/2025

**The Crossroads Center**  
2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
	PERMIT SET	08/09/24

OPENING SCHEDULES,  
TYPES, AND DETAILS

23-056

**A601**

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**GENERAL NOTES - FINISHES**

- A. FINISHES SHALL COMPLY WITH 2024 OHIO BUILDING CODE
- B. FINISHES IN CLOSETS SHALL MATCH THAT OF THE ROOM WITH WHICH THEY ARE ASSOCIATED
- C. LOW TRANSITION STRIPS SHALL BE USED BETWEEN DIFFERING FLOORING MATERIALS
- D. PAINT ALL COLUMNS WHERE EXPOSED TO VIEW WITHIN ANY ROOMS

**ROOM FINISH SCHEDULE - COMMON AREAS**

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL	CEILING	REMARKS
100	VESTIBULE	F4	B1	W1	SEE RCP	
101A	FAMILY WAITING	F1	B1	W1	SEE RCP	
101B	WAITING	F1	B1	W1	SEE RCP	
102	RECEPTION	F1	B1	W1	SEE RCP	
103	CHECK-IN	F1	B1	W1	SEE RCP	
104	PUBLIC RR	F2	B2	W1	SEE RCP	
105	WAITING	F1	B1	W1	SEE RCP	
107	PRIVATE CHECK-IN	F1	B1	W1	SEE RCP	
108	PATIENT RESTROOM	F2	B2	W1	SEE RCP	
109	CLINICAL GROUP RM	F1	B1	W1	SEE RCP	
110	CORRIDOR	F1	B1	W1	SEE RCP	
111	IOP GROUP ROOM	F1	B1	W1	SEE RCP	
112	STORAGE	F1	B1	W1	SEE RCP	
113	CORRIDOR	F1	B1	W1	SEE RCP	
114	INTAKE OFFICE	F1	B1	W1	SEE RCP	
115	INTAKE ASSESS OFFICE	F1	B1	W1	SEE RCP	
116	INTAKE COORD OFFICE	F1	B1	W1	SEE RCP	
117	STAIR	F1	B1	W1	SEE RCP	RM-1
118	RECEIVING	F6	B1	W1	SEE RCP	
119	IOP COUNSELOR	F1	B1	W1	SEE RCP	
120	DOSING	F1	B1	W1	SEE RCP	
121	DOSING/ PHARMACY	F1	B1	W1	SEE RCP	
122	STORAGE	F1	B1	W1	SEE RCP	
123	ESR	F6	B1	W1	SEE RCP	
124	STAFF TOILET	F2	B2	W1	SEE RCP	
125	STAFF TOILET	F2	B2	W1	SEE RCP	
126	RESIDENT CORRIDOR	F1	B1	W1	SEE RCP	
127	PATIENT RR	F2	B2	W1	SEE RCP	
128	ELECTRIC / DATA	F6	B1	W1	SEE RCP	
129	MEP	F6	B1	W1	SEE RCP	
130	DINING ROOM	F1	B1	W1	SEE RCP	
130A	OUTDOOR PATIO	-	-	-	-	
131	SERVERY	F1	B1	W1	SEE RCP	
132	DATA	F6	B1	W1	SEE RCP	
133	CORRIDOR	F1	B1	W1	SEE RCP	
134	OFFICE	F8	B1	W1	SEE RCP	
135	OFFICE	F8	B1	W1	SEE RCP	
136	OFFICE	B1	B1	W1	SEE RCP	
137	CONSULT	F1	B1	W1	SEE RCP	
138	CARE COORDINATOR	F1	B1	W1	SEE RCP	
139	OFFICE MANAGER	F1	B1	W1	SEE RCP	
140	CONSULT	F1	B1	W1	SEE RCP	
141	PEER SUPPORT	F1	B1	W1	SEE RCP	
142	CONSULT	F1	B1	W1	SEE RCP	
143	CONSULT	F1	B1	W1	SEE RCP	
144	CONSULT	F1	B1	W1	SEE RCP	
145	CONSULT	F1	B1	W1	SEE RCP	
146	CONSULT	F1	B1	W1	SEE RCP	
147	CONSULT	F1	B1	W1	SEE RCP	
148	CONSULT	F1	B1	W1	SEE RCP	
149	STAIR	F1	B1	W1	SEE RCP	RM-1
150	OFFICE	F1	B1	W1	SEE RCP	
151	COPY RM / WORK RM	F1	B1	W1	SEE RCP	
152	STORAGE	F1	B1	W1	SEE RCP	
153	PATIENT RESTROOM	F2	B2	W1	SEE RCP	
154	PATIENT RESTROOM	F2	B2	W1	SEE RCP	
155	CORRIDOR	F1	B1	W1	SEE RCP	
156	LAB / BLOOD DRAW	F1	B1	W1	SEE RCP	
157	STORAGE	F1	B1	W1	SEE RCP	
158	CONSULT	F1	B1	W1	SEE RCP	
159	EXAM	F1	B1	W1	SEE RCP	
160	CLEAN STORAGE	F6	B1	W1	SEE RCP	
161	EXAM	F1	B1	W1	SEE RCP	
162	CONSULT	F1	B1	W1	SEE RCP	
200	CORRIDOR	F1	B1	W1	SEE RCP	
200A	CL	F1	B1	W1	SEE RCP	
201	OFFICE	F1	B1	W1	SEE RCP	
202	CONSULT	F1	B1	W1	SEE RCP	
203	CONSULT	F1	B1	W1	SEE RCP	
204	MOTHERS /HEALTH RM.	F8	B1	W1	SEE RCP	
205	CONSULT	F1	B1	W1	SEE RCP	
206	CONSULT	F1	B1	W1	SEE RCP	
207	CARE COORDINATOR + PEER SUPPORT	F1	B1	W1	SEE RCP	
208	STAIR	F1	B1	W1	SEE RCP	RM-1
209	EXAM	F1	B1	W1	SEE RCP	
210	PATIENT RR	F2	B2	W1	SEE RCP	
211	STAFF RESTROOM	F2	B2	W1	SEE RCP	
212	OFFICE	F1	B1	W1	SEE RCP	
213	STAFF LOUNGE	F1	B1	W1	SEE RCP	
214	EXERCISE ROOM	F5	B1	W1	SEE RCP	
215	CORRIDOR	F1	B1	W1	SEE RCP	
216	RESIDENT RR	F2	B2	W1	SEE RCP	
217	COUNSELOR	F1	B1	W1	SEE RCP	
218A	TECH	F1	B1	W1	SEE RCP	
218B	STORAGE	F1	B1	W1	SEE RCP	
219	RESIDENT RR	F2	B2	W1	SEE RCP	
220	RESIDENT LAUNDRY	F2	B1	W1	SEE RCP	
221	CENTRAL BATHING	F7	B2	W1	SEE RCP	
222	MED DISPENSING STORAGE	F1	B1	W1	SEE RCP	

**ROOM FINISH SCHEDULE - COMMON AREAS**

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL	CEILING	REMARKS
223	RESIDENT RR	F2	B2	W1	SEE RCP	
224	GROUP RM	F1	B1	W1	SEE RCP	
225	SNACK CL	F1	B1	W1	SEE RCP	
226	STAIR	F1	B1	W1	SEE RCP	RM-1
227	LOUNGE	F1	B1	W1	SEE RCP	
228	STAFF DESK	F1	B1	W1	SEE RCP	
229	QUIET ROOM	F8	B1	W1	SEE RCP	
230	RESIDENT RR	F2	B2	W1	SEE RCP	
231	VISITATION	F1	B1	W1	SEE RCP	
232	CORRIDOR	F1	B1	W1	SEE RCP	
233	STAFF RR	F2	B2	W1	SEE RCP	
234	MEP	F1	B1	W1	SEE RCP	
235	ESR	F1	B1	W1	SEE RCP	
300	CORRIDOR	F1	B1	W1	SEE RCP	
301	OFFICE	F1	B1	W1	SEE RCP	
302	RESTROOM	F2	B2	W1	SEE RCP	
303	OFFICE	F1	B1	W1	SEE RCP	
304	OFFICE	F1	B1	W1	SEE RCP	
305	HR HUDDLE ROOM	F8	B1	W1	SEE RCP	
306	EXEC CONFERENCE RM	F8	B1	W1	SEE RCP	
307	STAIR	F3	B1	W1	SEE RCP	RM-1
308	STAFF TOILET	F1	B2	W1	SEE RCP	
309	CORRIDOR	F1	B1	W1	SEE RCP	
310	MED. RECORD STORAGE	F1	B1	W1	SEE RCP	
311	OFFICE	F1	B1	W1	SEE RCP	
312	OFFICE	F1	B1	W1	SEE RCP	
313	OFFICE	F1	B1	W1	SEE RCP	
314	OFFICE	F1	B1	W1	SEE RCP	
315	OFFICE	F1	B1	W1	SEE RCP	
316	OFFICE	F1	B1	W1	SEE RCP	
317	OFFICE	F1	B1	W1	SEE RCP	
318	OFFICE	F1	B1	W1	SEE RCP	
319	OPEN OFFICE	F1	B1	W1	SEE RCP	
320	OFFICE	F1	B1	W1	SEE RCP	
321	HR STORAGE	F1	B1	W1	SEE RCP	
322	SHARED OFFICE	F1	B1	W1	SEE RCP	
323	OFFICE	F1	B1	W1	SEE RCP	
324	CORRIDOR	F1	B1	W1	SEE RCP	
325	CORRIDOR	F1	B1	W1	SEE RCP	
326	PATIENT RR	F2	B2	W1	SEE RCP	
327	EXAM	F1	B1	W1	SEE RCP	
328	ESR	F1	B1	W1	SEE RCP	
329	THERAPY	F1	B1	W1	SEE RCP	
330	MEP	F1	B1	W1	SEE RCP	
331	STAFF RR	F2	B2	W1	SEE RCP	
332	VISITATION	F1	B1	W1	SEE RCP	
333	RESTROOM	F2	B2	W1	SEE RCP	
334	QUIET ROOM	F8	B1	W1	SEE RCP	
335	LOUNGE	F1	B1	W1	SEE RCP	
336	STAFF DESK	F1	B1	W1	SEE RCP	
337	STAIR	F3	B1	W1	SEE RCP	RM-1
338	SNACK CL	F1	B1	W1	SEE RCP	
339	GROUP RM	F1	B1	W1	SEE RCP	
340	RESIDENT RR	F2	B2	W1	SEE RCP	
341	MED. DISPENSING STORAGE	F1	B1	W1	SEE RCP	
342	CENTRAL BATHING	F7	B2	W1	SEE RCP	
343	RESIDENT RR	F2	B2	W1	SEE RCP	
344	RESIDENTIAL LAUNDRY	F2	B1	W1	SEE RCP	
345	CORRIDOR	F1	B1	W1	SEE RCP	
E1	ELEVATOR	F1	-	-	-	

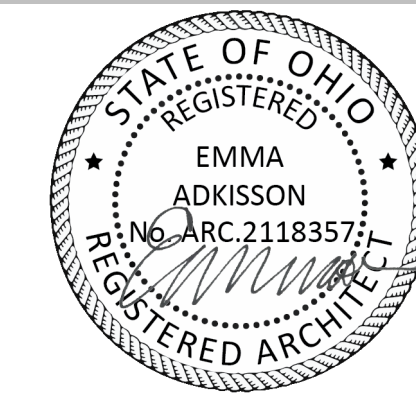
**ROOM FINISH SCHEDULE - RESIDENTIAL UNITS**

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL	CEILING	REMARKS
U200	DOUBLE 1	F1	B1	W1	C1	
U201	DOUBLE 2	F1	B1	W1	C1	
U202	DOUBLE 3	F1	B1	W1	C1	
U203	DOUBLE 4	F1	B1	W1	C1	
U204	DOUBLE 5	F1	B1	W1	C1	
U205	DOUBLE 6	F1	B1	W1	C1	
U206	SINGLE 1 - TYPE A	F1	B1	W1	C1	
U207	SINGLE 2	F1	B1	W1	C1	
U208	SINGLE 3	F1	B1	W1	C1	
U209	SINGLE 4	F1	B1	W1	C1	
U300	DOUBLE 1	F1	B1	W1	C1	
U301	DOUBLE 2	F1	B1	W1	C1	
U302	DOUBLE 3	F1	B1	W1	C1	
U303	DOUBLE 4	F1	B1	W1	C1	
U304	SINGLE 1 - TYPE A	F1	B1	W1	C1	
U305	SINGLE 2	F1	B1	W1	C1	

FINISH LEGEND	REMARKS LEGEND
<p>FLOOR:</p> <ul style="list-style-type: none"> <li>F1 - LUXURY VINYL TILE</li> <li>F2 - CERAMIC TILE</li> <li>F3 - LUXURY VINYL TILE @ LANDINGS, RUBBER TREADS AND RISERS ON STAIRS</li> <li>F4 - WALK-OFF CARPET TILE</li> <li>F5 - RUBBER ATHLETIC FLOORING</li> <li>F6 - SEALED CONCRETE</li> <li>F7 - EPOXY FLOORING</li> <li>F8 - CARPET TILE</li> </ul> <p>BASE:</p> <ul style="list-style-type: none"> <li>B1 - 4" HIGH RESILIENT BASE</li> <li>B2 - BULLNOSED CERAMIC BASE</li> </ul> <p>WALL:</p> <ul style="list-style-type: none"> <li>W1 - PAINTED GYPSUM BOARD</li> </ul> <p>CEILING:</p> <ul style="list-style-type: none"> <li>C1 - PAINTED GYPSUM BOARD</li> <li>C2 - SUSPENDED ACOUSTIC PANEL CEILING</li> </ul>	<ul style="list-style-type: none"> <li>RM-1 PAINT STRINGERS</li> </ul>



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EMMA ADKISSON, LIC# 2118357  
EXPIRATION DATE 12/31/2025

**The Crossroads Center**  
2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
	PERMIT SET	08/09/24

**FINISH SCHEDULE**

23-056

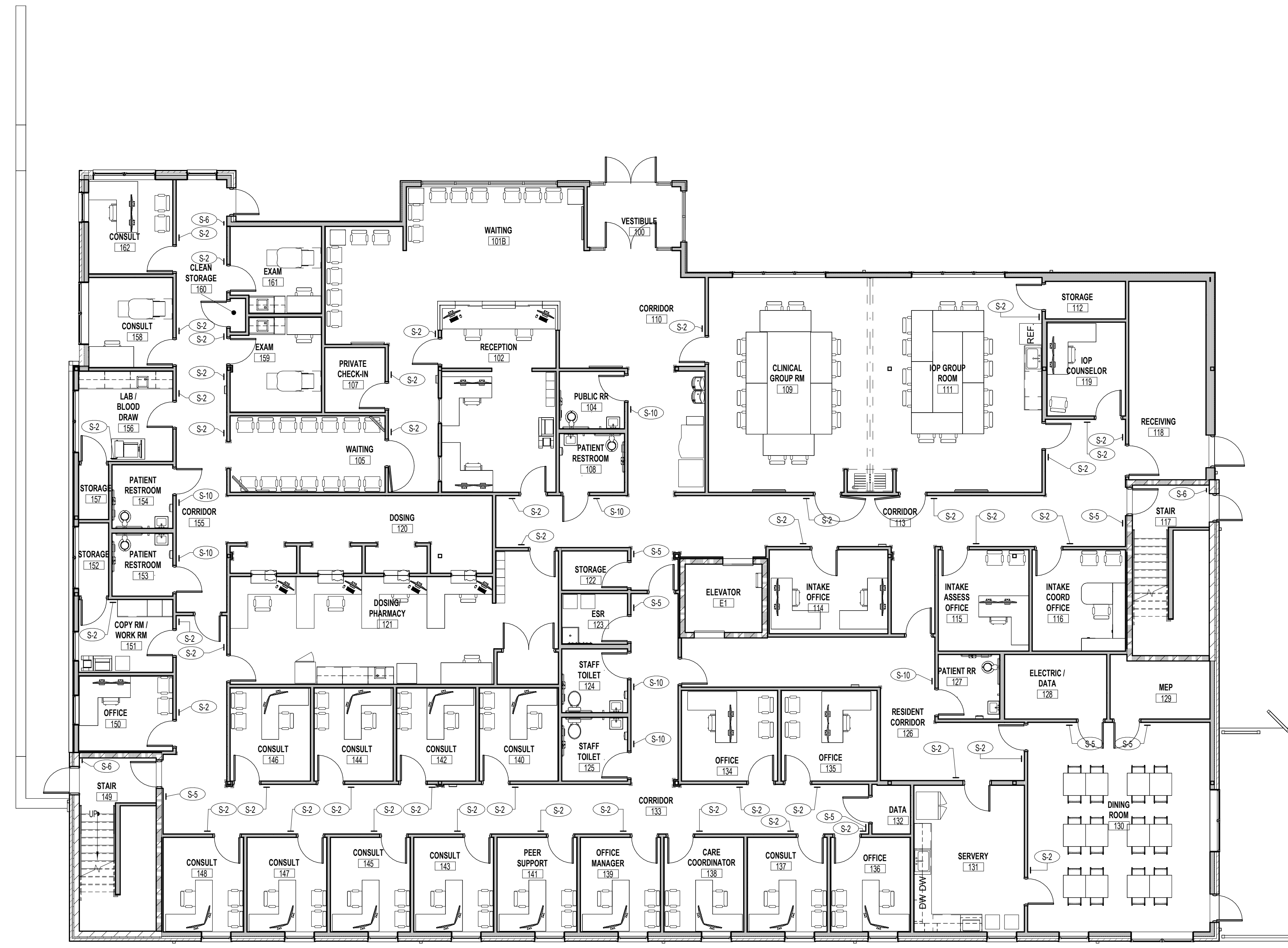
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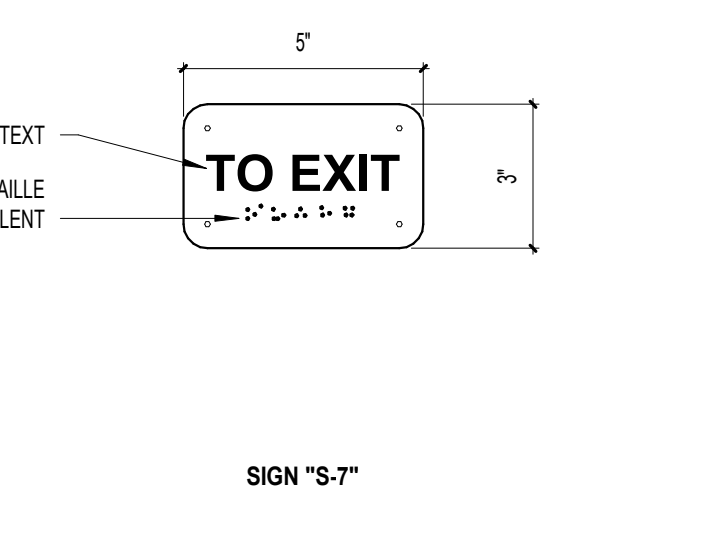
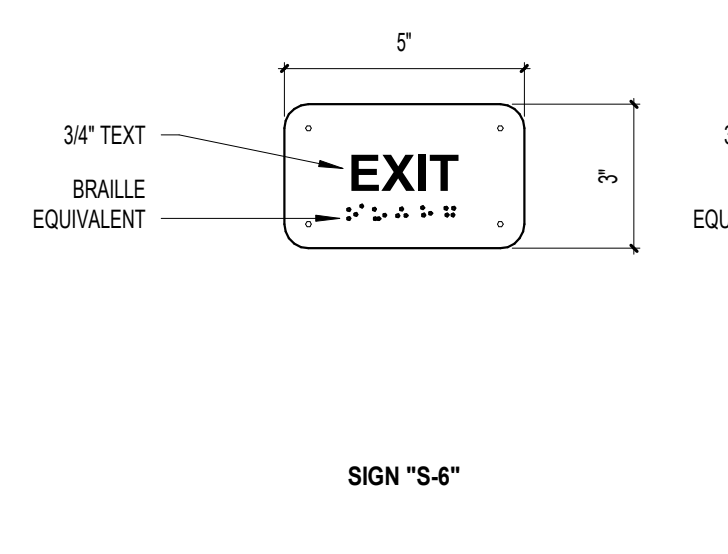
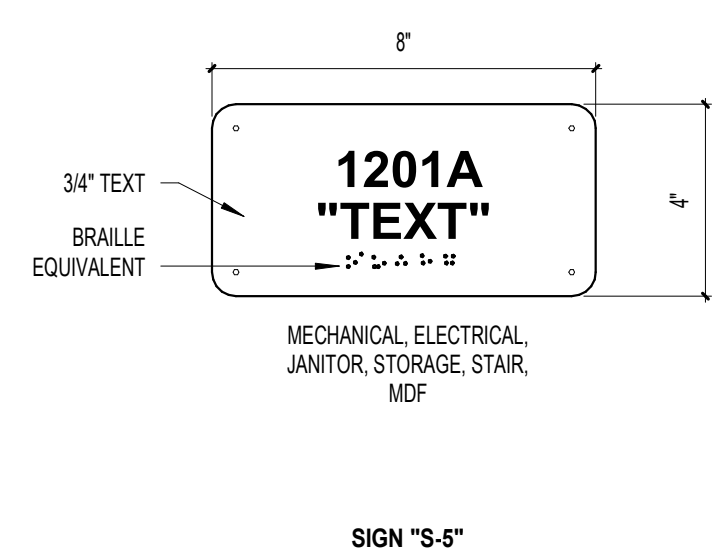
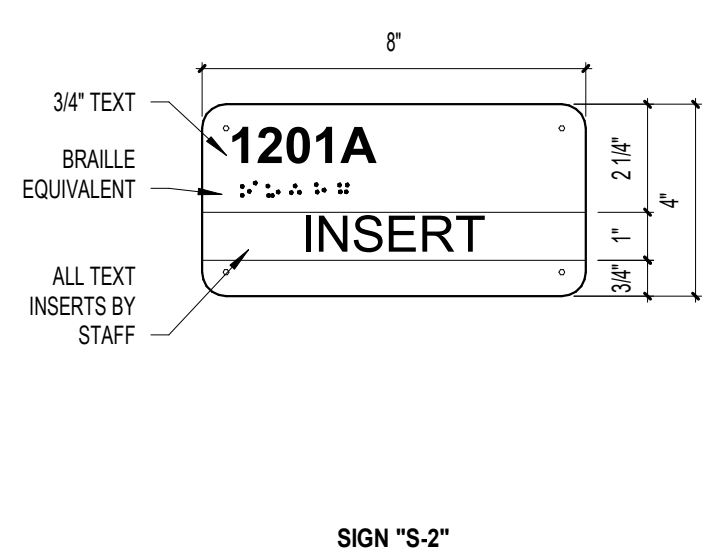
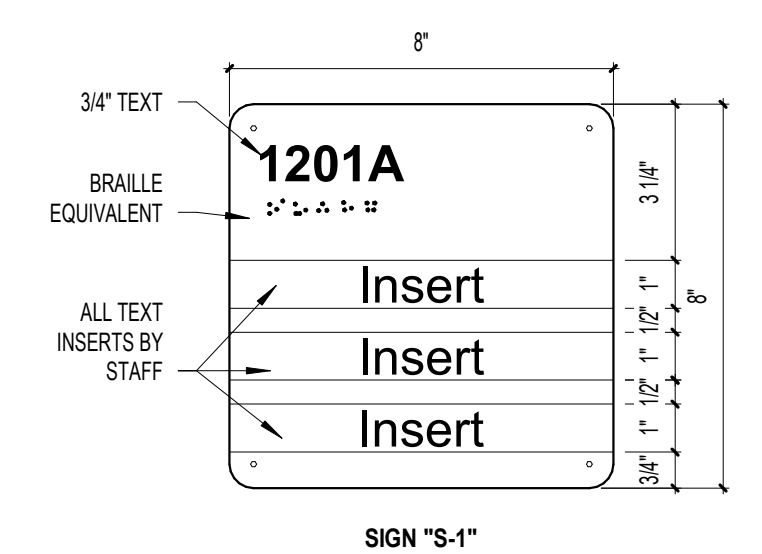
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**GENERAL NOTES - FURNITURE**

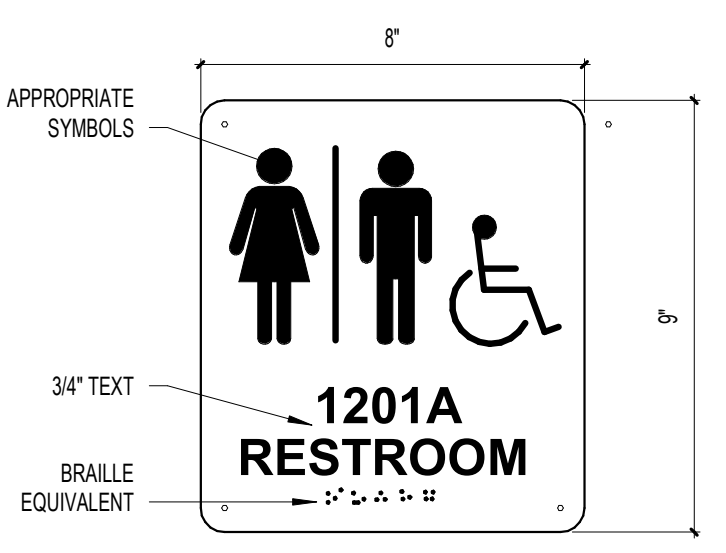
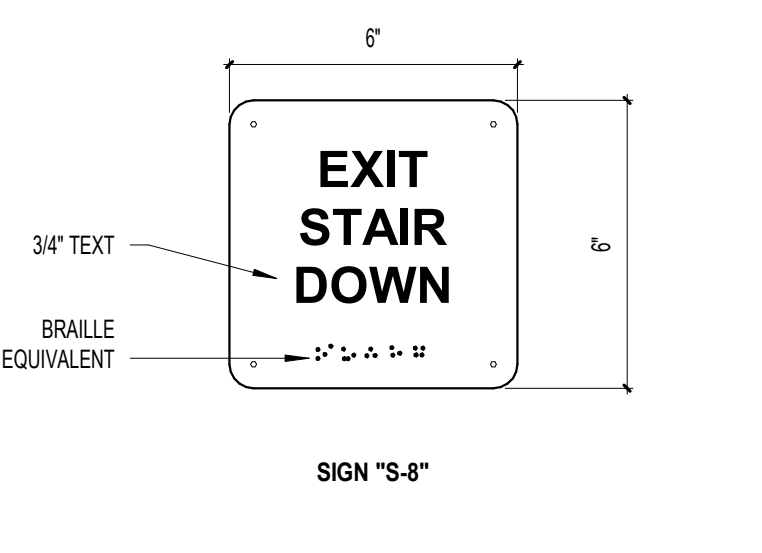
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MAGNETIC PLAN  
  
**1 FURNITURE AND SIGNAGE PLAN - FIRST FLOOR**  
 A900 SCALE: 1/8" = 1'-0"



- SIGNAGE NOTES:**
1. Signs shall be glued and screwed to walls as specified.
  2. Unless noted otherwise, signs shall be laminated acrylic.
  3. Refer to signage plan for general locations. Field verify locations and advise Architect if obstructions or field conditions require location change.
  4. Where there is no wall space to the latch side of the door, including at double leaf doors or where doors are in close proximity to each other, signs shall be placed on the nearest adjacent wall.
  5. Mounting height shall be 60" above finish floor to the top of the room number.
  6. Mounting width from edge of frame to edge of sign or from edge of wall to edge of sign shall be 8 inches. Where available horizontal wall space is 24" or less, mount sign centered horizontally.
  7. Refer to wall type general notes for additional code required signage at fire/smoke barriers.



**2 SIGNAGE TYPES**  
 A900 SCALE: 3" = 1'-0"



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**The Crossroads Center**  
 2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
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**FIRST FLOOR FURNITURE & SIGNAGE PLAN**

23-056

**A900**

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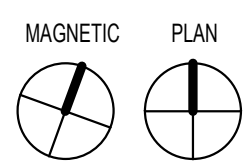
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**1** FURNITURE AND SIGNAGE PLAN - SECOND FLOOR  
A901 SCALE: 1/8" = 1'-0"

**The Crossroads Center**  
2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
PERMIT SET		08/09/24

SECOND FLOOR  
FURNITURE & SIGNAGE  
PLAN

23-056

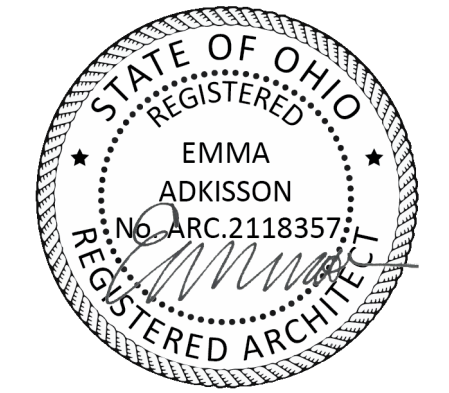
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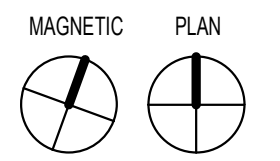
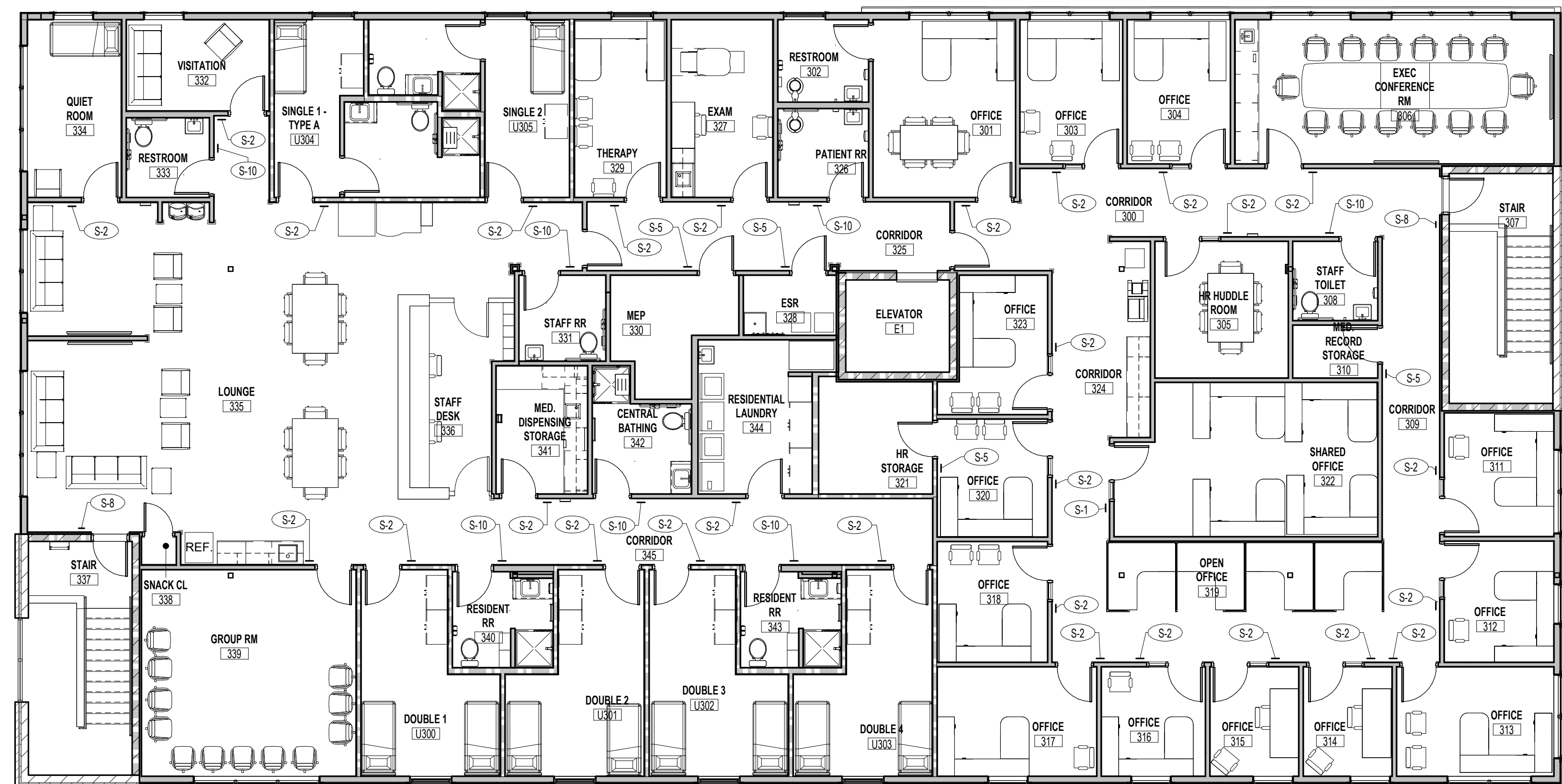
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**1** FURNITURE AND SIGNAGE PLAN - THIRD FLOOR  
 A902 SCALE: 1/8" = 1'-0"

**The Crossroads Center**  
 2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
	PERMIT SET	08/09/24

THIRD FLOOR FURNITURE & SIGNAGE PLAN

23-056

**A902**

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### GENERAL STRUCTURAL NOTES

COPIES OF PUBLICATIONS REFERENCED IN THESE GENERAL STRUCTURAL NOTES ARE AVAILABLE FOR REVIEW AT ADVANTAGE GROUP ENGINEERS, INC. CONTRACTORS UNFAMILIAR WITH THESE PUBLICATIONS MUST REVIEW THEM PRIOR TO CONSTRUCTION.

### GOVERNING CODE

OHIO BUILDING CODE – 2024, BASED ON 2021 IBC

CLASSIFICATION OF THE BUILDING STRUCTURE:  
RISK CATEGORY II, TABLE 1604.5

### DESIGN LOADS

#### 1. ROOF LOAD:

- A. MINIMUM LIVE LOAD: 20 PSF
- B. ROOF MEMBRANE: 1 PSF
- C. INSULATION: 3 PSF
- D. METAL DECK: 2 PSF
- E. JOIST FRAMING LOAD: 3 PSF
- F. CEILING (5/8" DRYWALL): 3 PSF
- G. SPRINKLERS: 3 PSF
- H. DUCTS, LIGHTS, MISC. MECHANICAL: 5 PSF

GO TO COORDINATED ROOF FRAMING WITH FINAL SELECTION OF ROOF SUPPORTED MECHANICAL EQUIPMENT AND ASSOCIATED OPENINGS. ITEMS TO BE COORDINATED INCLUDE SIZE, LOCATION, TOTAL WEIGHT, WEIGHT DISTRIBUTION, AND SUPPORT FRAME REQUIREMENTS.

\*MINIMUM LIVE / SNOW LOAD GOVERNED BY MINIMUM SNOW LOAD,  $P_m = I_s \cdot P_g$

#### 2. SNOW LOAD:

- A. GROUND SNOW LOAD,  $P_g = 20$  PSF
- B. FLAT ROOF SNOW LOAD,  $P_f = 14$  PSF MODIFIED BY APPLICABLE BUILDING COEFFICIENTS.
- C. MINIMUM ROOF SNOW LOAD,  $P_m = 20$  PSF
- D. SNOW LOAD IMPORTANCE FACTOR,  $I_s = 1.0$
- E. SNOW EXPOSURE FACTOR,  $C_e = 0.9$
- F. THERMAL FACTOR,  $C_t = 1.0$

#### 3. FLOOR LOAD:

- A. LIVE LOAD: 50 PSF (80 AT CORRIDORS, 100 AT STAIRS)
- B. PARTITION LOAD: 15 PSF
- C. GYPCRETE: 12 PSF
- D. JOIST FRAMING LOAD: 3 PSF
- E. CEILING (5/8" DRYWALL): 3 PSF
- F. SPRINKLERS: 3 PSF
- G. DUCTS, LIGHTS, MISC. MECHANICAL: 2 PSF

#### 4. WIND LOAD:

- A. MAIN WIND FORCE RESISTING SYSTEM: 106 MPH PER ASCE 7-16 (3-SECOND GUST - LOAD AND RESISTANCE FACTOR DESIGN).
- B. WIND EXPOSURE: B
- C. BASIC WIND VELOCITY PRESSURE,  $q_b = 15.26$  PSF
- D. INTERNAL GUST PRESSURE COEFFICIENT,  $GCP = 0.18$  (ENCLOSED BUILDING).

#### 5. SEISMIC LOAD:

- A. COUNTY: HAMILTON
- B. BUILDING SITE CLASSIFICATION: D (ASSUMED)
- C. SPECTRAL RESPONSE ACCELERATION,  $S_s = 0.145$ 
  - a.  $S_{s1} = 0.156$
- D. SPECTRAL RESPONSE ACCELERATION,  $S_1 = 0.077$ 
  - a.  $S_{s1} = 0.123$
- E. SEISMIC DESIGN CATEGORY,  $SDC = B$
- F. SEISMIC IMPORTANCE FACTOR,  $I_s = 1$
- G. SEISMIC FORCE RESISTING SYSTEM: INTERMEDIATE MASONRY SHEAR WALLS
- H. RESPONSE MODIFICATION FACTOR,  $R = 4.5$  (TABLE 12.2-1 ASCE 7)
- I. ANALYSIS PROCEDURE: ELFP
- J. SEISMIC RESPONSE COEFFICIENT,  $C_s = 0.7$  (EQUATION 12.8-2)
- K. DESIGN BASE SHEAR,  $V = C_s \cdot W$  (MAXIMUM)

### SPECIAL INSPECTIONS

PER THE REQUIREMENTS OF CHAPTER 17 SECTION 1704.2 OF THE REFERENCED BUILDING CODE, A SPECIAL INSPECTION IS REQUIRED FOR THE PROPOSED BUILDING CONSTRUCTION. SPECIAL INSPECTION INVOLVES THE VERIFICATION OF COMPLIANCE OF MATERIALS, INSTALLATION, FABRICATION, ERECTION AND OR PLACEMENT OF COMPONENTS WITH THE OFFICIAL SET OF CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS. SPECIAL INSPECTION IS PART OF THE PERMIT APPLICATION PROCESS FUNDED BY THE OWNER OR THE OWNER'S AGENT.

A STATEMENT OF SPECIAL INSPECTION LISTING THE REQUIREMENTS ALONG WITH A SCHEDULE OF TESTING, SUBMITTAL REVIEWS, AND FIELD OBSERVATION REQUIREMENTS HAS BEEN PREPARED BY THE STRUCTURAL ENGINEER OF RECORD IN ACCORDANCE WITH SECTION 108.1 OF THE BUILDING CODE. THIS STATEMENT INCLUDES A COMPLETE LIST OF MATERIAL AND ACTIVITY REQUIRING INSPECTION. IT IS THE RESPONSIBILITY OF ALL PARTIES TO BECOME FAMILIAR WITH THIS REQUIREMENT AND UNDERSTAND THE GUIDELINES AND REQUIREMENTS OF EACH PARTY INVOLVED WITH THE CONSTRUCTION. A COPY OF THE STATEMENT OF SPECIAL INSPECTION IS AVAILABLE UPON REQUEST. THE SPECIAL INSPECTOR COORDINATOR SHALL COORDINATE WITH THE OWNER, CONTRACTOR AND THE DESIGN PROFESSIONALS AND SCHEDULE THE INSPECTIONS ACCORDINGLY.

### CONSTRUCTION AND SAFETY

1. THE CONTRACTOR SHALL BRACE ENTIRE STRUCTURE AS REQUIRED TO MAINTAIN STABILITY UNTIL COMPLETE AND FUNCTIONING AS THE DESIGNED UNIT.
2. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION SELECTED BY THE CONTRACTOR.
3. THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. WHEN ON SITE, THE ENGINEER IS RESPONSIBLE FOR HIS OWN SAFETY BUT HAS NO RESPONSIBILITY FOR THE SAFETY OF OTHER PERSONNEL OR SAFETY CONDITIONS AT THE SITE.
4. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. SHOULD ANY DISCREPANCY BE FOUND, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY OF THE CONDITION.
5. THE CONTRACTOR SHALL BRACE ENTIRE STRUCTURE AS REQUIRED DURING DEMOLITION AND CONSTRUCTION TO MAINTAIN STABILITY UNTIL THE STRUCTURE IS COMPLETE AND FUNCTIONING AS THE DESIGNED UNIT.

### MISCELLANEOUS STRUCTURAL NOTES

1. THESE STRUCTURAL DRAWINGS DEPICT A STRUCTURAL SYSTEM AND THE MAJOR COMPONENTS OF THAT SYSTEM. MINOR ITEMS, INCLUDING BUT NOT LIMITED TO, POURSTOPS, DECK SUPPORT ANGLES, FRAMES AT FLOOR AND ROOF DECK OPENINGS, CFS AT ARCHITECTURAL FEATURES, ETC. SHALL BE SUPPLIED BY THE CONTRACTOR AS NEEDED TO PROVIDE A COMPLETE SYSTEM.
2. WHERE DETAILS ARE CALLED FOR IN ONE AREA OF THE BUILDING, THEY SHALL BE DUPLICATED AT SIMILAR CONDITIONS UNLESS NOTED OTHERWISE.
3. STRUCTURAL AND ARCHITECTURAL PLANS SHOW DIMENSIONS AND ELEVATIONS TO SIGNIFICANT WORKING POINTS. CONTRACTORS, DETAILERS AND SUPPLIERS ARE RESPONSIBLE FOR THE DETERMINATION OF ALL DIMENSIONS, PITCHES, ELEVATIONS, ETC. BEYOND THOSE NOTED AS NECESSARY TO THOROUGHLY DETAIL/FABRICATE THEIR WORK. CONTACT ARCHITECT WITH ANY DISCREPANCIES FOUND.
4. THE CONTRACTOR SHALL ONLY USE STRUCTURAL PLANS ISSUED AS "FOR CONSTRUCTION" OR ISSUES THEREAFTER. PRIOR ISSUES SHALL ONLY BE USED FOR PERMITTING OR PRICING PURPOSES. GC SHALL VERIFY THE MOST CURRENT SET OF DRAWINGS WITH THE ARCHITECT AND ENGINEER PRIOR TO PREPARING SUBMITTALS AND PRIOR TO FABRICATION.

### FOUNDATIONS

#### 1. SOIL CONDITIONS:

- A. FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS DESCRIBED IN THE GEOTECHNICAL ENGINEER'S REPORT BY CSI INC. DATED JANUARY 4, 2023. THE GEOTECHNICAL ENGINEER'S REPORT IS AVAILABLE UPON REQUEST.

2. THE BOTTOM OF FOUNDATION ELEVATION INDICATED ARE FOR BIDDING PURPOSES AND MAY BE LOWERED TO SUIT SUB-SURFACE SOIL CONDITION. BEARING STRATA SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE. PROVIDE ENGINEERED FILL OR FLOWABLE FILL CONCRETE (500 PSI) UNDER FOUNDATIONS AT SOFT SPOTS AND FOR EXTENDING EXCAVATION TO ADEQUATE BEARING MATERIAL. INSTALL FOUNDATIONS AT DESIGNED ELEVATIONS.

3. FOOTINGS AND GRADE BEAMS MAY BE PLACED WITHOUT SIDE FORMS IF EXCAVATED WALLS STAND APPROXIMATELY VERTICAL.

4. ALL FOOTINGS SHALL BEAR ON LEVEL (WITHIN 1 IN 12) UNDISTURBED SOIL OR APPROVED ENGINEERED FILL.

#### 5. GRAVITY SOIL PRESSURES USED FOR DESIGN:

Foundation Description	Design Bearing Capacity	Minimum Footing Width	Minimum Frost Depth
Isolated Column Footings on Native Soil/Engineered Fill	3,000 psf	24"	30"
Continuous Wall Footings on Native Soil/Engineered Fill	3,000 psf	18"	30"

#### 6. LATERAL SOIL PRESSURES USED FOR DESIGN:

- A. RETAINING WALLS: 60 PCF EQUIVALENT FLUID PRESSURE, TRIANGULAR DISTRIBUTION & 0.33 \* SURCHARGE PSF, RECTANGULAR DISTRIBUTION.

7. CONTRACTOR SHALL CONTACT UTILITY COMPANIES FOR LOCATING UNDERGROUND SERVICES AND IS RESPONSIBLE FOR THEIR PROTECTION AND SUPPORT.

#### 8. COMPACTION:

- A. ALL FILL MATERIALS SHALL BE APPROVED BY A GEOTECHNICAL CONSULTANT.
- B. ENGINEERED FILL BENEATH FOOTINGS: MINIMUM COMPACTION 98% STANDARD PROCTOR DENSITY AT THE OPTIMUM MOISTURE CONTENT.
- C. BACKFILL AGAINST FOUNDATION WALLS ALONG INTERIOR FACE OF FOUNDATION WALLS SHALL BE CLAYEY MATERIAL COMPACTED IN 6" LIFTS TO 95% STANDARD PROCTOR DENSITY OR CONCRETE WITH A COMPRESSIVE STRENGTH OF  $f_c = 500$  PSI.
- D. BACKFILL ALONG EXTERIOR FACE OF BASEMENT OR LONG RETAINING TYPE WALLS SHALL BE A WELL-GRADED GRANULAR MATERIAL, COMPACTED TO 95% STANDARD PROCTOR DENSITY UP TO WITHIN 24 INCHES OF THE FINISHED GRADE. TOP 24" OF BACKFILL SHALL BE COMPACTED CLAYEY MATERIAL. AT THE BOTTOM OF THE GRANULAR MATERIAL, PLACE A 4" DIAMETER PERFORATED FOUNDATION DRAINPIPE WITH POSITIVE DRAINAGE TO SUMP OR TO DAYLIGHT. AT EXTERIOR RETAINING WALLS, 4" DIAMETER WEEP HOLES AT 10'-0" ON CENTER MAXIMUM MAY BE INSTALLED IN LIEU OF PERFORATED FOUNDATION DRAIN.
- E. BACKFILL ALONG EXTERIOR FACE OF SHALLOW WALL FOUNDATIONS TO BE COMPACTED CLAYEY MATERIAL, COMPACT TO 95% STANDARD PROCTOR.
- F. FILL BELOW FLOOR SLABS TOP 12" OF SUBBASE BELOW INTERIOR FLOOR SLAB TO BE PROOF ROLLED TO 98% STANDARD PROCTOR DENSITY PRIOR TO PLACEMENT OF SLAB.

9. ALL AREAS WITHIN THE FOOTPRINT OF THE BUILDING, INCLUDING UTILITY TRENCHES, MUST BE FREE OF ANY WET AND/OR SOFT AREAS PRIOR TO THE PLACEMENT OF FILL MATERIAL OR SLAB.

10. SEAL UTILITY TRENCH AT THE EXTERIOR FOUNDATION WALL BY USING A COMPACTED CLAYEY BACKFILL OR LEAN CONCRETE TO CREATE A DAM TO PREVENT ENTRY OF WATER.

11. FINISHED GRADE SHALL SLOPE AWAY FROM THE PERIMETER FOUNDATION.

#### 1. REINFORCING STEEL:

- A. REINFORCING STEEL CAGES SHALL BE TIED WITH WIRE AT A MINIMUM OF 70 PERCENT OF THE INTERSECTIONS OF THE LONGITUDINAL BARS AND THE HOOPS/TIES.
- B. SUITABLE BAR SPACERS SHALL BE USED TO PROVIDE THE PROPER CLEARANCE.
- C. CAGES SHALL BE TIED WITH CROSS BRACES IN ORDER TO PREVENT RACKING OF THE CAGES.
- D. LAP SPLICE VERTICAL BARS 48 DIAMETERS.
- E. LAP SPLICE CIRCULAR TIES 48 DIAMETERS.
- F. REINFORCING STEEL CAGES SHALL BE THE FULL HEIGHT OF THE PIER UNLESS NOTED OTHERWISE.

#### 2. CONCRETE PLACEMENT:

- A. CONCRETE PLACEMENT SHALL BE OBSERVED BY GEOTECHNICAL ENGINEER.
- B. DEWATER EXCAVATION PRIOR TO PLACING CONCRETE. NO MORE THAN 1 INCH OF STANDING WATER SHALL BE ALLOWED PRIOR TO CONCRETE PLACEMENT.
- C. IF WATER INFLOWS CONTINUE DURING PUMPING, USE CASINGS SOCKETED INTO BOTTOM OF EXCAVATION OR OTHER APPROVED MEANS TO REDUCE INFLOW.
- D. PLACE CONCRETE IMMEDIATELY AFTER COMPLETION OF EXCAVATION. CONCRETE SHALL BE DIRECTED THROUGH A HOPPER AND ELEPHANT TRUNK DOWN THE CENTER OF THE SHAFT WITHOUT HITTING SIDES OR REINFORCING.

- F. VIBRATE TOP 5 FEET OF CONCRETE.
- G. PLACE CONCRETE IN PIER IN ONE CONTINUOUS OPERATION.

### CONCRETE

1. CONCRETE WORK AND TESTING SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", EXCEPT AS MODIFIED BY THE SUPPLEMENTAL REQUIREMENTS BELOW. REPORTS FROM TESTS REQUIRED BY SECTION 1.6 OF ACI 301 SHALL BE SUBMITTED TO STRUCTURAL ENGINEER, ARCHITECT, OWNER, CONTRACTOR, CONCRETE SUPPLIER, AND BUILDING OFFICIAL.
2. CONCRETE WORK IN COLD WEATHER SHALL CONFORM TO ALL REQUIREMENTS OF ACI 306.1 "STANDARD SPECIFICATION FOR COLD WEATHER CONCRETING" AND ACI 306R "COLD WEATHER CONCRETING".
3. CONCRETE WORK IN HOT WEATHER SHALL CONFORM TO ALL REQUIREMENTS OF ACI 305R "HOT WEATHER CONCRETING". THE AIR TEMPERATURE, RELATIVE HUMIDITY, CONCRETE TEMPERATURE, AND WIND VELOCITY SHALL BE ENTERED INTO THE NOMOGRAPH OF THIS REFERENCE TO DETERMINE IF PRECAUTIONS AGAINST PLASTIC SHRINKAGE ARE REQUIRED.
4. CONCRETE MIX DESIGNS SHALL BE SUBMITTED FOR EACH TYPE OF CONCRETE TO THE STRUCTURAL ENGINEER FOR APPROVAL IN ACCORDANCE WITH ACI 301 SECTION 4.2.3.4 FIELD TEST DATA OR TRIAL MIXTURES.

#### 5. SUBMIT SHOP DRAWINGS OF REINFORCING STEEL.

#### 6. MATERIALS (ALSO SEE CONCRETE MIX SCHEDULE):

- A. REINFORCING STEEL: ASTM A615 OR ASTM 996 (AXLE ONLY) 60 KSI YIELD DEFORMED BARS AND ASTM A1064 MESH, FLAT SHEETS ONLY.
- B. FLY ASH: ASTM C618, TYPE F OR C. FLY ASH-TOTAL CEMENTITIOUS RATIO SHALL NOT EXCEED 25% MAXIMUM.
- C. GROUND GRANULATED BLAST FURNACE SLAG: ASTM C989. TOTAL GROUND GRANULATED BLAST FURNACE SLAG-TOTAL CEMENTITIOUS RATIO SHALL NOT EXCEED 50% MAXIMUM.
- D. HIGH RADIATION WATER REDUCER (HRWR) ADMIXTURE: ASTM C494.
- E. CHLORIDE CONTENT OF CONCRETE: LIMIT TOTAL CHLORIDE ION CONTENT TO AMOUNT INDICATED IN TABLE 4.2.2.6 OF ACI 318. ADMIXTURES CONTAINING CHLORIDES ARE NOT PERMITTED IN REINFORCED CONCRETE OR CONCRETE CONTAINING METALS.

#### 7. CONCRETE MIX SCHEDULE:

Application	$f_c$ @ 28 days (psi)	Air Content <sup>1</sup>	Max w/c ratio <sup>2</sup>	Max Agg. Size <sup>3</sup> (in)	F	S	W	C	Class
Footings & Drilled Piers	3000	N/a	0.55	3/4	F0	S0	W0	C0	
Foundation and Retaining Walls	4500	6% ± 1.5%	0.45	3/4	F2	S0	W1	C1	
Interior Floor Slab on Grade <sup>4</sup>	4000	N/a	0.5	3/4	F0	S0	W0	C0	
Exterior Flatwork (Plain Concrete)	4500	6% ± 1.5%	0.45	3/4	F3	S0	W1	C1	

- [1] - Where 3/8" maximum aggregate is preferred, adjust air entrainment to 7.5% ± 1.5% (if required).
- [2] - Where air entrainment is not required by design, the contractor/supplier may choose to include air entrainment to improve placement or finish characteristics. Air entrainment is not permitted in normal weight concrete to receive a hard trowel finish and entrapped air shall not exceed 3%.
- [3] -  $f_c = 1800$  psi @ 3 days.
- [4] - Normal weight aggregate with 8%-18% retained on each sieve. Fly ash not permitted.  $f_c = 1800$  psi @ 3 days.
- [5] - Corlec MCI required.
- [6] -  $f_c = 3000$  psi @ 7 days.
- [7] - Entrained air is not required provided walls are painted and exterior paint is maintained by the owner.

8. SLUMP SHALL BE MEASURED PRIOR TO THE ADDITION OF HRWR.

9. ALL REINFORCING BARS, EMBEDS, AND ANCHOR RODS SHALL BE PLACED WITHIN THE REQUIRED TOLERANCES AND SUPPORTED TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT. WORKING REINFORCING BARS, EMBEDS, AND ANCHOR RODS INTO WET CONCRETE (KNOWN AS "WET STICKING") IS PROHIBITED. IF NECESSARY, CONTRACTOR MAY PROVIDE ADDITIONAL REINFORCING BARS TO SECURELY TIE REINFORCING BARS, EMBEDS, AND ANCHOR RODS.

10. LAP SPLICE REINFORCING BARS 48 BAR DIAMETERS UNLESS NOTED OTHERWISE.

11. BAR CLEARANCES BETWEEN ADJACENT BARS AND FORMWORK SHALL BE AS NOTED ON THE DRAWINGS OR A MINIMUM AS PER ACI REQUIREMENTS.

12. AT CORNERS AND INTERSECTIONS OF FOOTINGS, WALLS, AND GRADE BEAMS, PROVIDE BENT BARS OF EQUAL SIZE AND AT SAME SPACING AS TYPICAL REINFORCING AROUND CORNER AND/OR INTO ABUTTING WALL OR GRADE BEAM. BARS SHALL HAVE EMBEDMENT OF 30 BAR DIAMETERS (16" MINIMUM).

13. MACHINE TROWEL FINISH FLOOR SLAB AND CURE USING A METHOD RECOMMENDED BY ACI 302.1R (GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION) INCLUDING WATER CURING, WET COVERING, APPLICATION OF IMPERVIOUS SHEETING OR APPLICATION OF "CURE AND SEAL" TYPE CURING COMPOUND MEETING ASTM C-1315. FOR APPLICATIONS EXPOSED TO SUNLIGHT USE CLASS A (NON-YELLOWING) CURING COMPOUND. COORDINATE CURING METHOD WITH ARCHITECTURAL FLOOR FINISHES THAT REQUIRE ADHESION TO THE SLAB (SUCH AS TILE) TO INSURE PROPER BOND.

14. FLOOR SLAB-ON-GRADE SHALL CONFORM TO THE FOLLOWING SURFACE PROFILE TOLERANCES PER ASTM E-1155 AND ACI 117:  
 $F_i$  (FLATNESS) /  $F_l$  (LEVELNESS)

- A. SPECIFIED OVERALL VALUE: 25 / 20
- B. MINIMUM LOCAL VALUE: 18 / 13
- C. MAXIMUM GAP UNDER 10 FT. UNLEVELLED STRAIGHTEDGE = 1/4".

15. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR VAPOR BARRIER REQUIREMENTS. VAPOR BARRIER, WHERE REQUIRED, SHALL BE PLACED OVER COMPACTED GRANULAR SUBBASE.

16. AT SLAB AND WALL OPENING CORNERS AND REINFRANT CORNERS, PROVIDE (1) #5 BAR IN EACH FACE PARALLEL TO EACH EDGE EXTENDING A MINIMUM OF 2'-0" PAST EDGE OF OPENING. THIS STEEL MAY BE OMITTED IF TYPICAL REINFORCING STEEL EXCEEDS THIS MINIMUM REQUIREMENT.

17. REINFORCE ALL INTERIOR SLABS ON GROUND WITH 6x6-W2.9xW2.9 (42#) MESH. LOCATE MESH 2" CLEAR BELOW TOP OF SLAB.

18. REINFORCE ALL CONCRETE SLABS SUPPORTED ON METAL FORM DECK WITH 6x6-W2.9xW2.9 (42#) MESH. LOCATE MESH AT CENTER OF DEPTH OF CONCRETE THICKNESS ABOVE METAL DECK FOR SLABS UP TO 3" THICK. FOR SLABS GREATER THAN 3" THICK, DRAPE MESH OVER SUPPORTS TO 3/4" CLEAR FROM THE TOP OF SLAB.

19. LAP WELDED WIRE FABRIC MINIMUM 1 FULL SPACE PLUS 2".

20. PROVIDE 6'-0" LONG #4 BARS AT 16" ON CENTER CENTERED ABOVE ALL GIRDLERS. LOCATE 3/4" CLEAR FROM TOP OF SLAB.

21. DO NOT BACKFILL AGAINST BASEMENT FOUNDATION WALLS UNTIL ADJACENT FLOOR STRUCTURE AND CONCRETE/DECKING IS IN PLACE TO BRACE THE TOP OF THE WALL.

22. CAST IN CONTINUOUS DOVETAIL ANCHOR SLOTS ON VERTICAL SURFACES WHERE MASONRY ABUTS; 24" ON CENTER FOR PARALLEL SURFACES AND AT CENTERLINE OF MASONRY FOR PERPENDICULAR WALLS.

23. FINISH OF CONCRETE HANDICAP RAMPS TO CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA) COORDINATE LOCATION AND PATTERN WITH ARCHITECTURAL DRAWINGS.

24. CONTROL JOINTS IN SLABS ON GROUND SHALL BE LOCATED AT 12'-0" MAXIMUM SPACING AND SHALL CREATE SECTIONS OF SLAB WITH A MAXIMUM ASPECT RATIO OF 1 1/2 TO 1. CONTROL JOINTS SHALL BE SAWN AND SHALL BE A MINIMUM OF 1/4 OF THE SLAB THICKNESS DEEP. THE CONTROL JOINT SHALL BE SAWN AS SOON AS THE SAW BLADE CAN CUT THE CONCRETE WITHOUT DISPLACING THE AGGREGATE. CUT EVERY OTHER MESH WIRE AT THE CONTROL JOINT LOCATION PRIOR TO PLACING CONCRETE. IF AN EARLY-CUTTING SAW IS USED AND A SHALLOWER DEPTH OF THE CUT IS DESIRED, CONTACT THE ENGINEER IN ADVANCE FOR APPROVAL.

25. CONSTRUCTION JOINTS IN SLABS ON GROUND MAY BE LOCATED AT ANY CONTROL JOINT LOCATION. CONSTRUCTION JOINTS SHALL HAVE A KEY FORMED AT MID-DEPTH OF THE FIRST CAST SECTION. THE KEY SHALL BE 1/2" DEEP AND SHALL BE 1/3 OF THE SLAB THICKNESS HIGH. THE TOP AND BOTTOM OF THE KEY SHALL HAVE 1 VERTICAL TO 3 HORIZONTAL SLOPE.

26. FILL CONTROL AND CONSTRUCTION JOINTS IN TRAFFIC AREAS WITH SEMI-RIGID EPOXY JOINT FILLER WITH A DURMETER SHORE A-SCALE HARDNESS NUMBER OF APPROXIMATELY 80. FILL CONTROL AND CONSTRUCTION JOINTS IN NON-TRAFFIC AREAS WITH ELASTOMERIC SEALANT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

27. PROVIDE 3/4" CHAMFER AT CORNERS OF EXPOSED CONCRETE.

28. WHERE BRITTLE FLOOR FINISHES ARE TO BE APPLIED TO FLOOR SLABS, COORDINATE CONTROL JOINT LOCATIONS WITH FLOOR FINISH JOINT LOCATIONS AND ARCHITECT.

29. PROVIDE CONTROL/CONSTRUCTION JOINTS IN CONCRETE WALLS AT A MAXIMUM SPACING OF TWICE THE HEIGHT OF THE WALL. MAXIMUM JOINT SPACING SHALL NOT EXCEED 24 FT. CONTROL JOINTS SHALL HAVE A 3/4" DEEP BY 1/2" WIDE TAPERED REVEAL EACH SIDE OF THE WALL. AT CONTROL JOINTS, EVERY OTHER HORIZONTAL BAR SHALL BE CUT BACK 1" TO 1/2" FROM THE CONTROL JOINT. CONSTRUCTION JOINTS SHALL BE FORMED SIMILAR TO CONTROL JOINTS. AT CONSTRUCTION JOINTS, ALL HORIZONTAL STEEL SHALL BE DISCONTINUOUS AND A DOWEL BAR OF SIZE AND SPACING TO MATCH THE HORIZONTAL REINFORCING SHALL BE EMBEDDED A MINIMUM OF 40 BAR DIAMETERS EACH SIDE OF THE CONSTRUCTION JOINT. SEE ARCHITECTURAL DRAWINGS FOR ARCHITECTURAL JOINT TREATMENT.

### MASONRY

1. MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO ALL REQUIREMENTS OF "SPECIFICATION FOR MASONRY STRUCTURES (ACI 530.1/ASCE 6/TMS 602)" EXCEPT AS MODIFIED BY THE REQUIREMENTS OF THESE CONTRACT DOCUMENTS.
2. MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO ALL REQUIREMENTS OF "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (TMS 402) AND "SPECIFICATION FOR MASONRY STRUCTURES (TMS 602)" EXCEPT AS MODIFIED BY THE REQUIREMENTS OF THESE CONTRACT DOCUMENTS.

3. COMPRESSIVE STRENGTH SHALL BE DETERMINED FOR EACH TYPE OF MASONRY BY THE UNIT STRENGTH METHOD.

- A. NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY USED FOR DESIGN:  $f_m = 2000$  PSI AT 28 DAYS

#### 4. SUBMITTALS SHALL BE MADE FOR THE FOLLOWING:

- A. COLD WEATHER CONSTRUCTION PROCEDURE.
- B. HOT WEATHER CONSTRUCTION PROCEDURE.
- C. MANUFACTURERS LITERATURE FOR: HORIZONTAL JOINT REINFORCING, REINFORCING STEEL POSITIONERS, MOVEMENT JOINT MATERIALS, TIES AND ANCHORS.
- D. SHOP DRAWINGS SHOWING: DETAILS OF STEEL REINFORCING, AND LINTELS.
- E. MANUFACTURER'S CERTIFICATE OF COMPLIANCE FOR SPECIFIED MASONRY UNIT, AND REINFORCING STEEL.
- F. PROPORTIONS OF MATERIALS IN ACCORDANCE WITH REFERENCED SPECIFICATIONS OF MORTAR AND GROUT.

#### 5. MATERIALS:

- A. CONCRETE MASONRY UNITS: ASTM C90 TYPE I BELOW GRADE. NORMAL WEIGHT AGGREGATE PER ASTM C33.
  - a. MINIMUM UNIT COMPRESSIVE STRENGTH,  $f_m = 2000$  PSI
- B. CONCRETE MASONRY UNITS: ASTM C90 TYPE I ABOVE GRADE. LIGHTWEIGHT AGGREGATE PER ASTM C331 OR NORMAL WEIGHT.
  - a. MINIMUM UNIT COMPRESSIVE STRENGTH,  $f_m = 2000$  PSI
- C. FACING BRICK: ASTM C216 GRADE SW. COLOR AND SIZE AS NOTED ON THE ARCHITECTURAL DRAWINGS.
- D. MORTAR: ASTM C270 TYPE S.  $f_m = 1800$  PSI AT 28 DAYS.
  - a. PORTLAND CEMENT-LIME MORTAR:
    - i. PORTLAND CEMENT: TYPE I AND HYDRATED LIME
  - b. MASONRY CEMENT MORTAR: AT CONTRACTOR'S OPTION.
  - e. GROUT: ASTM C476.  $f_c = 2000$  PSI, SLUMP 8" TO 10".
  - f. REINFORCING STEEL: ASTM A615, 60 KSI YIELD.
- G. HORIZONTAL JOINT REINFORCING FOR SINGLE WYTHE CONCRETE MASONRY: 9 GAUGE LADDER TYPE, HOT-DIPPED GALVANIZED PER ASTM A153 CLASS B. PLACE HORIZONTAL JOINT REINFORCING AT 16" CENTERS VERTICALLY FOR CONCRETE MASONRY. LAP HORIZONTAL JOINT REINFORCING 6" MINIMUM. HORIZONTAL JOINT REINFORCING SHALL BE DISCONTINUOUS ACROSS MOVEMENT JOINTS.
- H. HORIZONTAL JOINT REINFORCING FOR CONCRETE MASONRY LAID IN STACK BOND: 3/16" LADDER TYPE, HOT-DIPPED GALVANIZED PER ASTM A153 CLASS B. PLACE HORIZONTAL JOINT REINFORCING AT 16" CENTERS VERTICALLY FOR CONCRETE MASONRY. LAP HORIZONTAL JOINT REINFORCING 6" MINIMUM. HORIZONTAL JOINT REINFORCING SHALL BE DISCONTINUOUS ACROSS MOVEMENT JOINTS.
- I. HORIZONTAL JOINT REINFORCING FOR CONCRETE MASONRY AND BRICK VENEER CAVITY WALL: 9 GAUGE LADDER TYPE PLACED IN CONCRETE MASONRY WITH PROJECTING EYES FOR 3/16" DIAMETER DOUBLE WIRE RECTANGULAR ADJUSTABLE PINTLE. HOT-DIPPED GALVANIZED PER ASTM A153 CLASS B. THIS TYPE OF JOINT REINFORCING ALLOWS THE VENEER TO BE PLACED AFTER INTERIOR WYTHE IS LAID. LADDER TYPE TRI-ROD MAY BE USED IF BOTH WYTHES ARE LAID SIMULTANEOUSLY. PLACE HORIZONTAL JOINT REINFORCING AT 16" CENTERS VERTICALLY FOR CONCRETE MASONRY. LAP HORIZONTAL JOINT REINFORCING 6" MINIMUM. HORIZONTAL JOINT REINFORCING SHALL BE DISCONTINUOUS ACROSS MOVEMENT JOINTS.

- J. BRICK VENEER ANCHORS FOR METAL STUD AND WOOD STUD BACKUP: DUR-O-WAL DIA 215 OR WIRE-BOND RJ-711 WITH 3/16" DIAMETER PINTLE. HOT-DIPPED GALVANIZED PER ASTM A153 CLASS B. VERTICAL DISTANCE BETWEEN HORIZONTAL PINTLE WIRE AND CLIP PLATE SHALL NOT EXCEED 3/4". (FLAT CORRUGATED TIES ARE NOT PERMITTED). SCREWS SHALL BE MINIMUM #10 SIZE AND SHALL BE CADMIUM-PLATED OR HOT-DIPPED GALVANIZED (STAINLESS STEEL AND COPPER-COATED SCREWS ARE NOT PERMITTED). ANCHORS SHALL BE ATTACHED WITH FASTENERS TO THE WOOD OR STEEL FRAMING WALL STUDS. PROVIDE BRICK VENEER ANCHORS WITH MAXIMUM HORIZONTAL SPACING OF 24" AND MAXIMUM VERTICAL SPACING OF 16". BRICK VENEER ANCHORS SHALL BE EMBEDDED 2" MINIMUM INTO BRICK.
- K. HORIZONTAL JOINT REINFORCING FOR BRICK OR CONCRETE MASONRY VENEER LAID IN STACK BOND: 9 GAUGE WIRE HOT-DIPPED GALVANIZED PER ASTM A153 CLASS B. PLACE HORIZONTAL JOINT REINFORCING AT 16" CENTERS VERTICALLY FOR VENEER. LAP HORIZONTAL JOINT REINFORCING 6" MINIMUM. HORIZONTAL JOINT REINFORCING SHALL BE DISCONTINUOUS ACROSS MOVEMENT JOINTS.

6. MORTAR PROPORTIONS MUST BE ACCURATELY MEASURED PRIOR TO MIXING. ADD CEMENT TO MIX IN FULL BAG QUANTITIES. MEASURE SAND IN BOX WITH VOLUME OF ONE CUBIC FOOT AS OFTEN AS NECESSARY TO MAINTAIN CONSISTENT PROPORTIONS AND AT LEAST ONCE DAILY AND EVERY 4 HOURS OF MIXING.

7. MINIMUM VERTICAL REINFORCEMENT REQUIREMENTS FOR ALL MASONRY WALLS.

- A. AS A MINIMUM, ALL MASONRY SHALL BE REINFORCED PER SECTION ACI 530.1.14.2.2.1.
- B. #4 VERTICAL BARS SHALL BE PLACED AT ALL CORNERS, WITHIN 16 INCHES OF EACH WALL OPENINGS, WITHIN 8 INCHES OF EACH WALL MOVEMENT JOINT AND WITHIN 8 INCHES OF THE END OF THE WALL.
- C. HORIZONTAL JOINT REINFORCEMENT SHALL BE SPACED AT 16" MAX. WALL OPENINGS SHALL BE REINFORCED TOP AND BOTTOM OF OPENINGS AND SHALL EXTEND NOT LESS THAN 24 INCHES BEYOND PAST THE ROUGH OPENING.
- D. SPACING OF VERTICAL REINFORCEMENT SHALL NOT EXCEED 4'-0".

8. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SPECIFICATIONS OF FIRE RATED MASONRY.

9. PROVIDE PREFABRICATED "L" AND "T" SHAPED HORIZONTAL JOINT REINFORCING AT WALL INTERSECTIONS. ALTERNATE MESH TIES REINFORCEMENT TO BE SUBMITTED FOR REVIEW CONSIDERATION PRIOR TO CONSTRUCTION.

10. KEEP AIR SPACE BEHIND VENEER FREE OF MORTAR DROPPINGS.

11. RUNNING BOND PATTERN SHALL BE USED FOR ALL MASONRY WORK UNLESS OTHERWISE NOTED.

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- E. BOLTS: ASTM A325-N, 3/4" DIAMETER UNLESS NOTED.
  - F. ANCHOR RODS: ASTM F1554 GRADE 36 KSI MATERIAL, FULLY THREADED RODS HAVING A NUT TACK WELDED IN PLACE ON BOTTOM. MINIMUM EMBEDMENT AS NOTED ON THE DRAWINGS.
  - G. FIELD WELDS: AWS E70XX, LOW HYDROGEN ELECTRODES.
  - H. COLD-FORMED STRUCTURAL SHAPES: ASTM A1011,  $F_y = 50$  KSI MINIMUM SECTION PROPERTIES BASED ON SECTIONS MANUFACTURED BY FABRAL ALCAN BUILDING PRODUCTS, METAL SALES MANUFACTURING CORPORATION, STEEL COMPONENT SYSTEMS.
  - I. NON-SHRINK NON-METALLIC GROUT: CRD-C-821 AND ASTM C1107 FOR INTERIOR AND EXTERIOR APPLICATIONS.
9. INSTALLATION OF HEADED COMPOSITE STUDS SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1 SECTIONS 7.4 AND 7.5. HEADED COMPOSITE STUDS SHALL BE TESTED IN ACCORDANCE WITH AWS D1.1 SECTIONS 7.6, 7.7, AND 7.8 BY A QUALIFIED TESTING AGENCY. COPIES OF THE TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER.

**WOOD**

1. MATERIALS:
  - A. FRAMING LUMBER:
    - a. 2x8 AND LARGER: NO.1 GRADE OR BETTER SOUTHERN PINE KILN DRIED.
    - b. 2x4: STUD GRADE OR BETTER SPRUCE PINE FIR KILN DRIED.
    - c. 2x6: NO.2 GRADE OR BETTER SPRUCE PINE FIR KILN DRIED.
    - d. 4x4: NO.1 GRADE OR BETTER SOUTHERN PINE.
    - e. 6x8: NO.2 GRADE OR BETTER SOUTHERN PINE.
    - f. PRESERVATIVE TREATED (PT) LUMBER TO BE UC3B FOR ABOVE GROUND EXTERIOR FRAMING AND UC4A FOR GROUND CONTACT.
    - g. 2x4 AND DEEPER FIRE RETARDANT-TREATED (FRT) LUMBER TO BE DRICON FIRE RETARDANT TREATED (FRT) BY ARCH INDUSTRIES, INC. OR APPROVED EQUIVALENT NO.2 GRADE OR BETTER SOUTHERN PINE.
2. SHEATHING AND SUBFLOORING:
  - A. 48/24 APA RATED TONGUE AND GROOVE SUBFLOOR EXPOSURE 1. (TYPICALLY, A NOMINAL 3/4" THICKNESS)
  - B. 40/20 APA RATED ROOF SHEATHING EXPOSURE 1. (TYPICALLY, A NOMINAL 5/8" THICKNESS)
  - C. 24/16 APA RATED STRUCTURAL WALL SHEATHING EXPOSURE 1. (TYPICALLY, A 1/2" NOMINAL THICKNESS)
  - D. ALL SHEATHING TO BE NAILED WITH 8d NAILS AT 6" ON CENTER AT PANEL EDGES AND 12" ON CENTER AT INTERMEDIATE SUPPORTS UNLESS NOTED OTHERWISE.
  - E. ROOF AND WALL SHEATHING SHALL BE SPACED A MINIMUM 1/8" AT PANEL EDGES AND ENDS OF SHEETS. USE APPROPRIATE PLYWOOD CLIPS AS RECOMMENDED BY THE APA.
  - F. SEE ARCHITECTURAL DRAWINGS FOR FRT SHEATHING LOCATIONS
  - G. ALL PLYWOOD SUBFLOORING SHALL BE GLUED AND NAILED.
3. ALL NAILS TO MEET ASTM 1667. NAIL SIZES AS CALLED OUT IN THE STRUCTURAL DRAWINGS AND FOR SIMPSON CONNECTORS ARE LISTED BELOW. NAIL GUN NAILS SHALL MEET DIAMETER AND LENGTH OF NAILS LISTED BELOW, OR ELSE NAILS SHALL BE DRIVEN WITH A HAMMER. AT EXTERIOR APPLICATIONS, PRESERVATIVE TREATED, OR FIRE RESISTANCE TREATED MATERIALS HOT DIP GALVANIZE PER ASTM F2329 OR ASTM A 153.
  - A. 6d NAILS ARE 0 120°Ø x 1 1/2" LONG (MIN 3/8" HEAD)
  - B. 8d NAILS ARE 0 131°Ø x 3" LONG (2 1/2" LONG FOR SHEATHING APPLICATIONS)
  - C. 10d NAILS ARE 0 148°Ø x 3" LONG
  - D. 16d NAILS ARE 0 162°Ø x 3 1/2" LONG
4. SIMPSON HANGERS:
  - A. ALWAYS USE THE NAIL OR FASTENER AS SPECIFIED BY SIMPSON, INCLUDING THE CORRECT DIAMETER AND LENGTH.
  - B. WHEN FASTENING TO A SINGLE PLY 1 1/2" OR 1 3/4" MEMBER, 1 1/2" FLANGE NAILS ARE ACCEPTABLE. USE FULL LENGTH NAILS FOR DIAGONAL NAILS OF DOUBLE SHEAR HANGERS.
  - C. EXTERIOR APPLICATIONS, PRESERVATIVE TREATED, OR FIRE-RETARDANT TREATED MATERIALS USE Z MAX (G185) OR HOT DIP GALVANIZE G60 AND G90 ARE NOT PERMITTED.
  - D. INTERIOR DRY APPLICATIONS WITH BORATE PRESERVATIVE TREATMENT SHALL BE G60 COATED.
5. ADHESIVE FOR PLYWOOD SUBFLOORING SHALL CONFORM TO PERFORMANCE SPECIFICATION AFG-01 DEVELOPED BY APA.
6. LVL (LAMINATED VENEER LUMBER) BEAMS: DISTRIBUTED AS TRUSS JOIST MACMILLAN, MICRO-LAM OR GEORGIA-PACIFIC CORPORATION, G-P LAM INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
  - A. LVL BEAMS SHALL HAVE MINIMUM DESIGN STRESS VALUES AS FOLLOWS:
    - a.  $F_b = 2600$  PSI BENDING
    - b.  $F_v = 285$  PSI HORIZONTAL SHEAR
    - c.  $F_{c\perp} = 750$  PSI COMPRESSION PERPENDICULAR TO GRAIN
    - d.  $E = 2,000,000$  PSI MODULUS OF ELASTICITY
  - B. MULTIPLE LVL BEAMS AND HEADERS SHALL BE FASTENED TOGETHER AS FOLLOWS:
    - a. 12" AND SMALLER MEMBERS:
      - TWO-PIECE MEMBERS: 2 ROWS OF 16d COMMON NAILS AT 12" ON CENTER.
      - THREE-PIECE MEMBERS: 2 ROWS OF 1/2" DIAMETER BOLTS AT 24" ON CENTER STAGGERED.
    - b. 14" AND LARGER MEMBERS:
      - TWO-PIECE MEMBERS – 3 ROWS OF 16d COMMON NAILS AT 12" ON CENTER.
      - THREE-PIECE MEMBERS – 2 ROWS OF 1/2" DIAMETER BOLTS AT 18" ON CENTER STAGGERED.
7. INSTALL TYPICAL FLOOR CROSS BRIDGING AT 8'-0" MAXIMUM INTERVALS IN EVERY JOIST SPACE TO AID IN LOAD SHARE DISTRIBUTION AND CONTROL POTENTIAL VIBRATION PROBLEMS.
8. UNLESS NOTED OTHERWISE, CONNECTORS SHALL BE MADE PER TABLE 2304.10.1, "RECOMMENDED FASTENING SCHEDULE", IN REFERENCED BUILDING CODE. STAPLES NOT PERMITTED FOR FASTENING APA RATED SHEATHING AND SUBFLOORING.
9. ALL PLYWOOD SUBFLOORING SHALL BE GLUED AND NAILED.
10. ALL CONNECTION HARDWARE SPECIFIED ON THE STRUCTURAL DRAWINGS SHALL BE MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND SHALL BE FASTENED AS SPECIFIED IN THE SIMPSON PRODUCT AND INSTRUCTION MANUAL.
11. FOR WOOD ROOF RAFTERS AND TRUSSES, INSTALL ONE SIMPSON H3 HURRICANE TIE AT EACH MEMBER AT EACH BEARING LOCATION IN ADDITION TO THE TYPICAL NAILING REQUIREMENT IN THE "RECOMMENDED FASTENING SCHEDULE".
12. BRIDGING IN ALL FLOOR AND CEILING JOISTS, INCLUDING MANUFACTURED WOOD I-JOISTS, SHALL BE 1"x3" CROSS BRIDGING (DOUBLE NAILED) AT 8'-0" ON CENTER MAXIMUM.

13. PROVIDE SOLID BLOCKING IN FLOOR CONSTRUCTION UNDER POSTS, MULTIPLE STUDS OR BEAM BEARINGS.
14. DOUBLE JOISTS SHALL BE PROVIDED BELOW ALL INTERIOR PARTITIONS THAT RUN PARALLEL WITH THE JOISTS.
15. ALL BEARING POINTS FROM CONCENTRATED LOADS SHALL BE CONTINUOUSLY BLOCKED THROUGH THE FLOOR FRAMING DOWN TO SOLID BEARING ON SILL PLATE, FOUNDATION WALL, OR STEEL BEAM.
16. NOTCHES IN JOISTS SHALL NOT EXCEED ONE-SIXTH THE JOIST DEPTH IN HEIGHT AND LENGTH AND SHALL NOT BE LOCATED WITHIN THE MIDDLE THIRD OF THE JOIST SPAN. HOLES BORED IN JOISTS SHALL BE NO MORE THAN ONE-FOURTH THE JOIST DEPTH AND SHALL NOT BE LOCATED WITHIN 2 FEET OF EITHER JOIST END. HOLES AND NOTCHES SHALL BE SPACED A MINIMUM OF 18" APART.
17. EXTERIOR OR LOAD BEARING STUDS MAY BE CUT OR NOTCHED TO A DEPTH NOT TO EXCEED ONE-FOURTH OF THE WIDTH. EXTERIOR OR LOAD BEARING STUDS MAY BE BORED OR DRILLED TO A DIAMETER NOT TO EXCEED ONE-FOURTH ITS WIDTH AND THE EDGE OF ANY HOLE SHALL BE 1/4" CLEAR FROM THE STUD EDGE.

**WOOD TRUSSES**

1. ALL WORK TO CONFORM TO "DESIGN SPECIFICATION FOR METAL PLATE CONNECTED WOOD TRUSSES" (TPI) OR "DESIGN SPECIFICATION FOR METAL PLATE CONNECTED PARALLEL CHORD TRUSSES" (PCT) BY TRUSS PLATE INSTITUTE, INC.
2. UNLESS NOTED OTHERWISE, ALL TRUSSES SHALL BE DESIGNED FOR THE LOADS AS SHOWN IN THE DESIGN LOAD SECTION OF THESE NOTES.
3. ALL WOOD TRUSS TO TRUSS GIRDER CONNECTIONS ARE THE RESPONSIBILITY OF THE TRUSS MANUFACTURER AND SHALL BE SPECIFIED ON THE TRUSS LAYOUT SHOP SUBMITTAL. PROVIDE HANGER AND ATTACHMENT SCHEDULE AS REQUIRED.
4. SHOP DRAWINGS ARE REQUIRED AND SHALL BEAR THE DESIGNER'S ENGINEERING SEAL, SHOW ALL DESIGN AND FABRICATION DATA, TEMPORARY AND PERMANENT BRACING REQUIREMENTS, AND HANDLING AND ERECTION INSTRUCTIONS. SHOP DRAWINGS SHALL CLEARLY SHOW PERMANENT BRACING REQUIREMENTS FOR WEB COMPRESSION MEMBERS. AN ERECTION PLAN LOCATING ALL TRUSSES SHALL BE PROVIDED.
5. GABLE END WALL FRAMING SHALL BE 2x WOOD STUD FRAMING AS SHOWN ON THE STRUCTURAL DRAWINGS. WHEN APPROVED AND APPLICABLE, GABLE END TRUSSES MAY BE USED AS AN ALTERNATE TO THIS FRAMED GABLE WALL PROVIDED THAT THE MANUFACTURER DESIGN AND PROVIDE CALCULATIONS OF ALL MISCELLANEOUS LATERAL BRACE REQUIREMENTS PER WTCA STANDARDS. THIS BRACING AND MATERIAL SHALL BE SUPPLIED AND PROVIDED BY THE MANUFACTURER OF THE WOOD TRUSSES AND BE CONSIDERED THE RESPONSIBILITY OF THE TRUSS MANUFACTURER.
6. ALL TRUSSES SHALL BE BRACED DURING ERECTION PER THE CURRENT EDITION OF "BUILDING COMPONENT SAFETY INFORMATION: GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING, AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES" BY THE STRUCTURAL BUILDING COMPONENTS ASSOCIATION AND THE TRUSS PLATE INSTITUTE, UNLESS MORE STRICT BRACING IS REQUIRED BY THE TRUSS MANUFACTURER. THIS BRACING SHALL REMAIN AS PERMANENT BRACING. BRACING IN THE PLANE OF THE TOP CHORD MAY BE REMOVED WHEN THE TOP CHORD IS LATERALLY BRACED BY PLYWOOD SHEATHING.
7. BOTTOM CHORD OF ALL WOOD TRUSSES SHALL BE DESIGNED AS UNBRACED FOR A LENGTH EQUAL TO THE SPACING BETWEEN BOTTOM CHORD BRACES. BOTTOM CHORD BRACES SHALL BE SUPPLIED BY TRUSS MANUFACTURER.
8. WHEN REQUIRED, THE GENERAL CONTRACTOR SHALL SUBMIT COPIES OF STAMPED ERECTION / SHOP DRAWINGS OF THE PREFABRICATED WOOD TRUSSES TO THE BUILDING OFFICIAL. COORDINATE WITH PERMIT CONTINGENCIES.

DRAWING INDEX	
S001	GENERAL STRUCTURAL NOTES
S002	GENERAL STRUCTURAL NOTES
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S130	THIRD FLOOR FRAMING PLAN
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S300	TYPICAL DETAILS
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S311	FOUNDATION SECTIONS
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S321	FRAMING SECTIONS
S330	FRAMING SECTIONS

TYPICAL ABBREVIATION LIST			
AEF	= Alternate Each Face	LG	= Long
ARCH	= Architect	LL	= Live Load
BLDG	= Building	LLH	= Long Leg Horizontal
BM	= Beam	LLV	= Long Leg Vertical
B/FTG	= Bottom of Footing	LSL	= Laminated Strand Lumber
B/DECK	= Bottom of Deck	LVL	= Laminated Veneer Lumber
BRG	= Bearing	MAX	= Maximum
CIP	= Cast In Place	MECH	= Mechanical
CJ	= Control Joint	MIN	= Minimum
CL	= Center Line	ML	= Micro Laminated
CLR	= Clear	NS	= Non Shrink
CMU	= Concrete Masonry Unit	NTS	= Not to Scale
CONC	= Concrete	o.c.	= On Center
CONT	= Continuous	PAF	= Powder Actuated Fastener
DL	= Dead Load	PC	= Piece
DWG	= Drawings	PEMB	= Pre-Engineered Metal Building
EJ	= Expansion Joint	PL	= Plate
EL	= Elevation	psf	= Pounds Per Square Foot
EMBD	= Embedment	RD	= Roof Drain
ENGR	= Engineer	REINF	= Reinforcement
EQ	= Equal Distance	RTU	= Roof Top Unit
EW	= Each Way	SDS	= Self Drilling Screw
EF	= Each Face	SF	= Step Footing
EX	= Existing	SW	= Step Wall
EXT	= Exterior	SB	= Solid Bearing
FTG	= Footing	SCH	= Schedule
FND	= Foundation	SIM	= Similar
ga	= Gauge	STL	= Steel
GALV	= Galvanized	SRD	= Secondary Roof Drain
GC	= General Contractor	T/FTG	= Top Of Footing
GRAN	= Granular	TS	= Tube Steel
HORZ	= Horizontal	TYP	= Typical
HD	= Hold Down Anchor	UNO	= Unless Noted Otherwise
HSS	= Hollow Structural Section	VERT	= Vertical
k	= Kips	WWF	= Welded Wire Fabric
ksf	= Kips Per Square Foot	WF	= Wide Flange
lbs	= Pounds	WP	= Work Point

NOT ALL ABBREVIATIONS APPLY. INCLUDED FOR REFERENCE ONLY.



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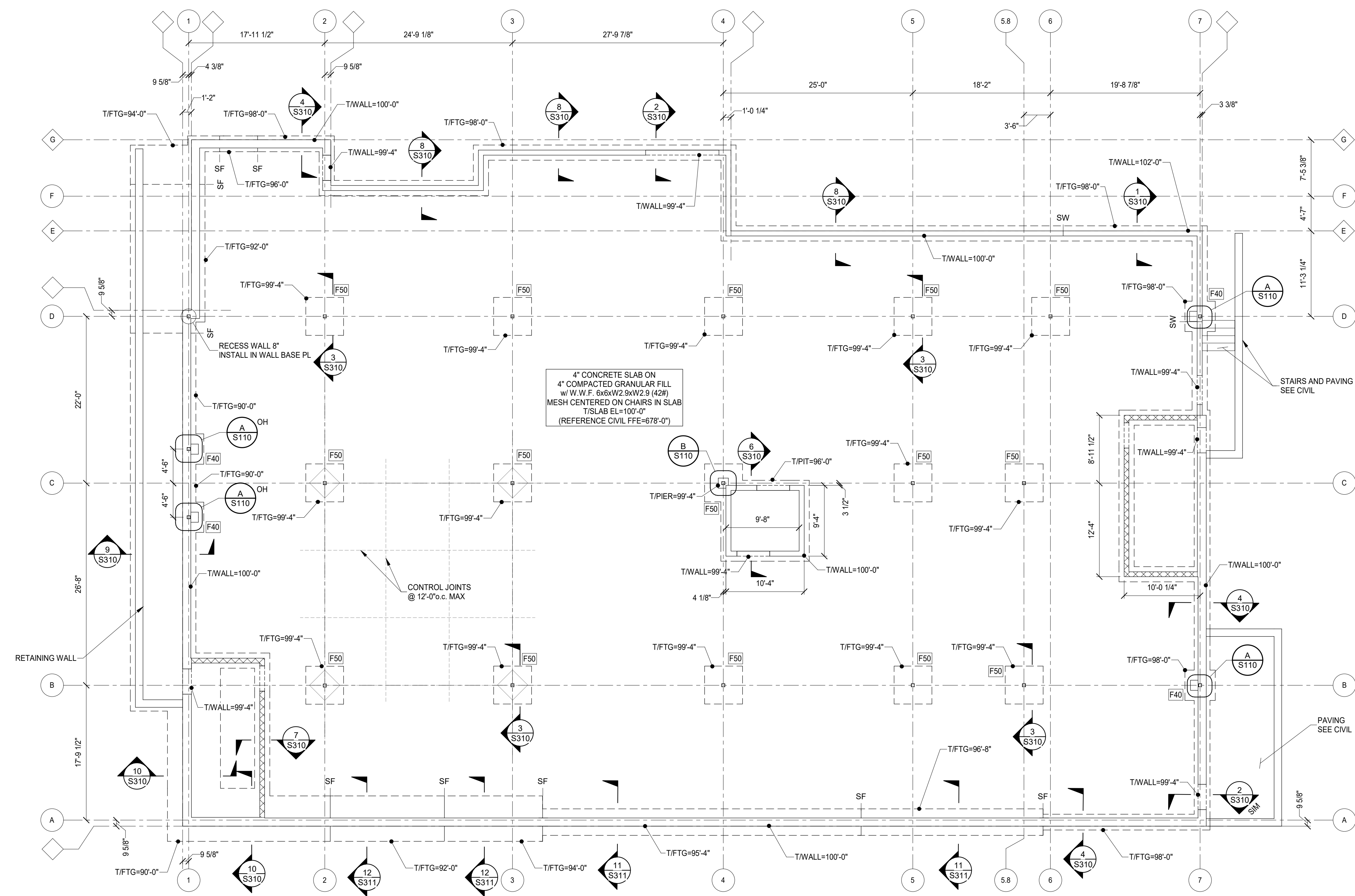
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**GENERAL STRUCTURAL NOTES**

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**S002**

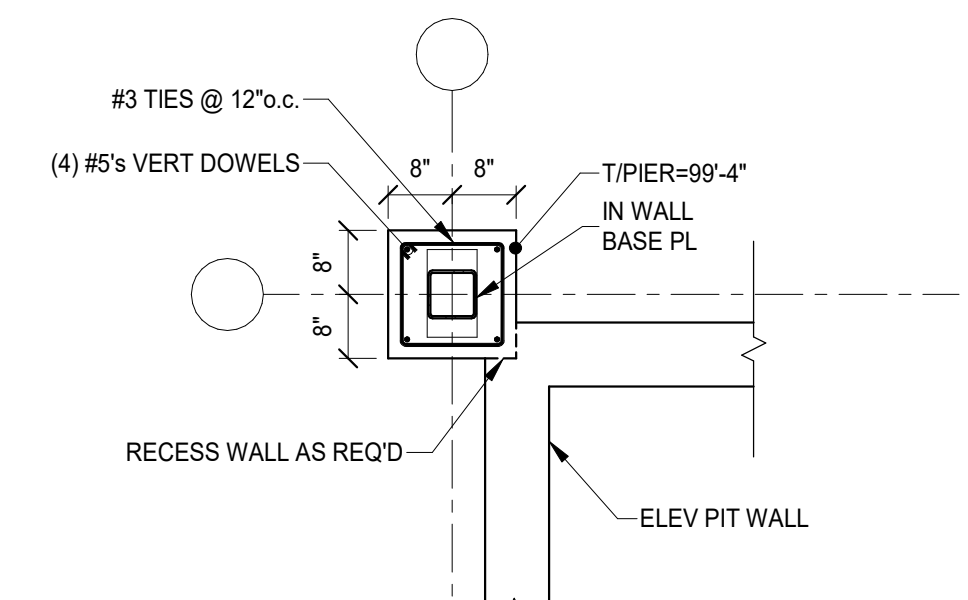
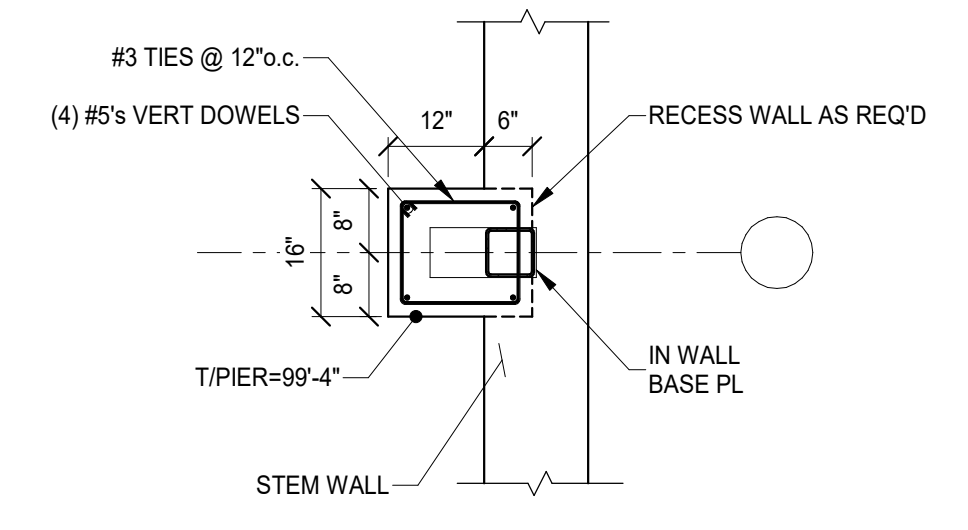
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FOOTING SCHEDULE		
MARK	DESCRIPTION	T/FTG
F40	4'-0"x4'-0"x1'-0" CONC FOOTING w/(4) #5s EACH WAY BOTTOM	SEE PLAN
F50	5'-0"x5'-0"x1'-0" CONC FOOTING w/(5) #5s EACH WAY BOTTOM	SEE PLAN



- PLAN NOTES:**
- COORDINATE ALL DIMENSIONS, DOOR AND WINDOW LOCATIONS WITH ARCHITECTURAL DRAWINGS.
  - SF=STEP FOOTING, SW=STEP WALL



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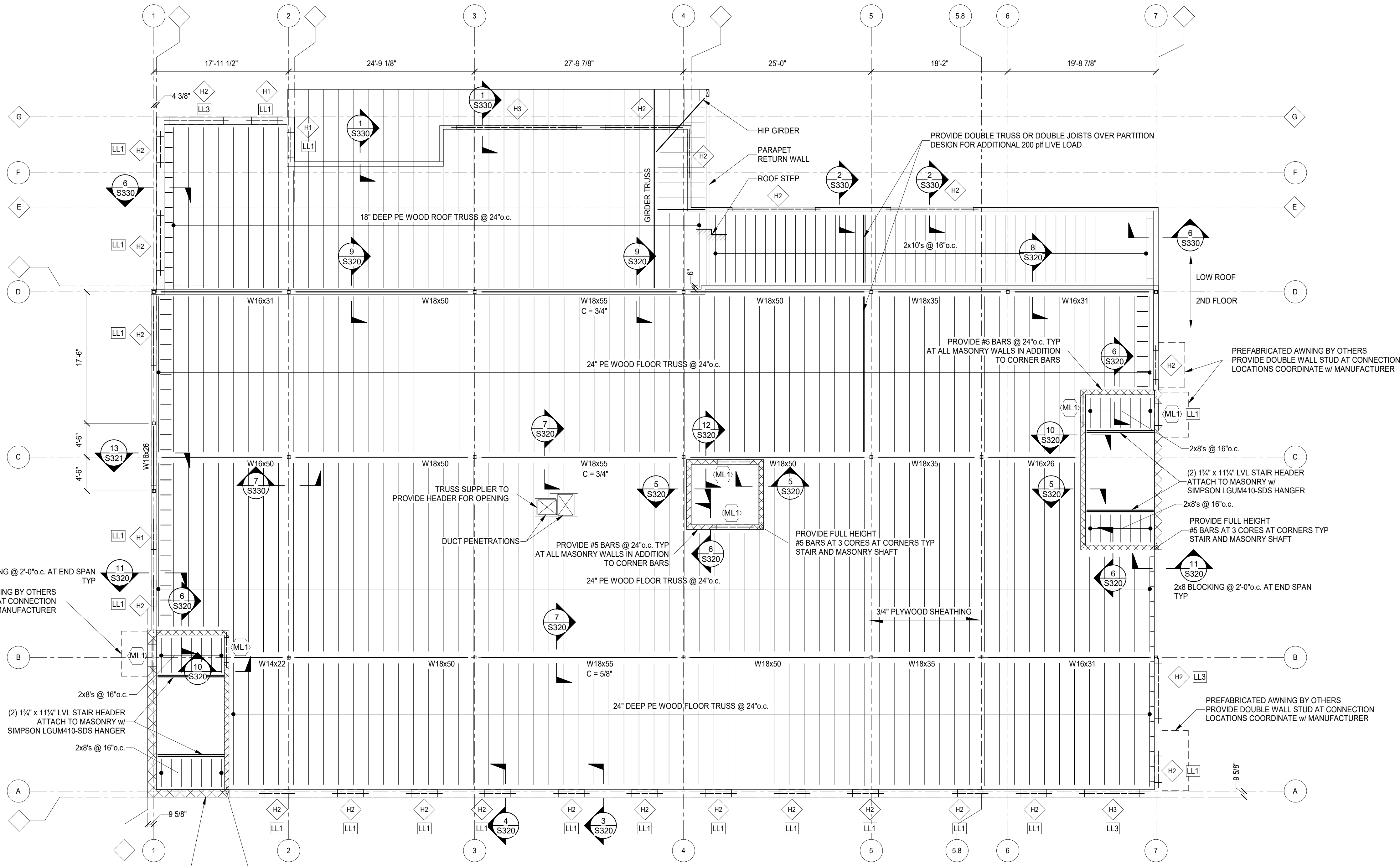
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FOUNDATION PLAN

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S110

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HEADER SCHEDULE			
MARK	HEADER	BEARING STUDS	FULL HEIGHT STUDS
H1	(3) 2x8	(2) 2x6	(2) 2x6
H2	(3) 2x10	(3) 2x6	(2) 2x6
H3	(3) 1 3/4 x 11 1/4 LVL	(4) 2x6	(2) 2x6

MASONRY LINTEL SCHEDULE	
MARK	LINTEL
ML1	8" CMU BOND BEAM w/(2) #5 BOTTOM CONT
ML2	16" CMU BOND BEAM w/(2) #5 BOTTOM CONT
ML3	24" CMU BOND BEAM w/(2) #5 BOTTOM CONT

LOOSE LINTEL SCHEDULE		
MARK	LINTEL	MIN BEARING (EA SIDE)
LL1	L4 x 3 1/2 x 1/4	8"
LL2	L5 x 3 1/2 x 3/8	8"
LL3	L6 x 3 1/2 x 3/8	8"

**SECOND FLOOR FRAMING PLAN**  
SCALE 1/8" = 1'-0"



- PLAN NOTES:**
- COORDINATE ALL DIMENSIONS, DOOR AND WINDOW LOCATIONS WITH ARCHITECTURAL DRAWINGS.
  - FF = 113'-4"
  - T/SHEATHING = 113'-3"
  - TRUSS BRG = 113'-0"
  - T/STEEL = 112'-9" U.N.O.
  - ALL WALL FRAMING TO BE NO. 2 OR BETTER SPF 2x6's @ 16" o.c.



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SECOND FLOOR FRAMING PLAN

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**S120**





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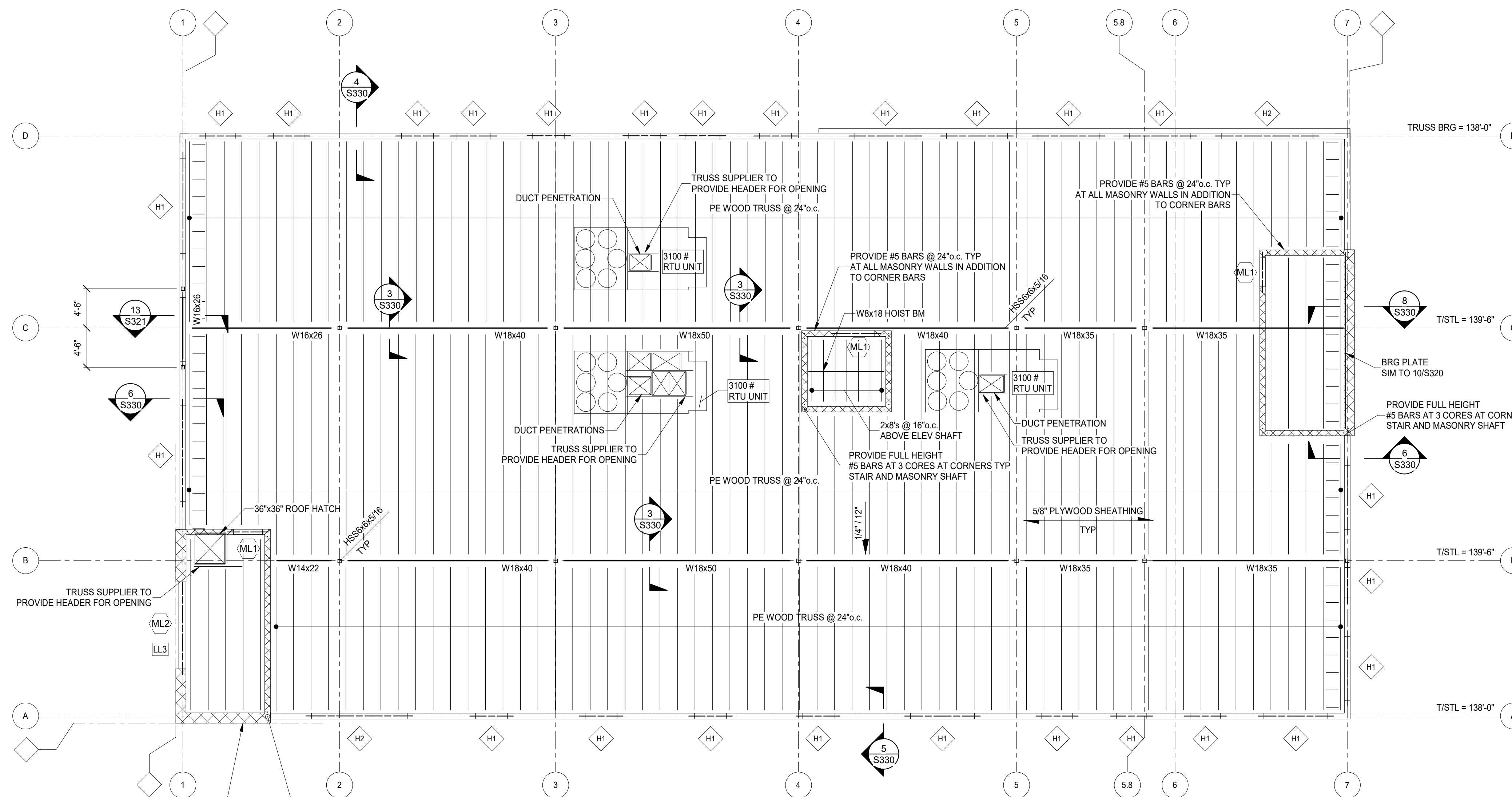
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ROOF FRAMING PLAN

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**S140**



**ROOF FRAMING PLAN**  
SCALE 1/8" = 1'-0"

HEADER SCHEDULE			
MARK	HEADER	BEARING STUDS	FULL HEIGHT STUDS
H1	(3) 2x8	(2) 2x6	(2) 2x6
H2	(3) 2x10	(3) 2x6	(2) 2x6
H3	(3) 1 3/4 x 11 1/4" LVL	(4) 2x6	(2) 2x6

MASONRY LINTEL SCHEDULE	
MARK	LINTEL
ML1	8" CMU BOND BEAM w/(2) #5 BOTTOM CONT
ML2	16" CMU BOND BEAM w/(2) #5 BOTTOM CONT
ML3	24" CMU BOND BEAM w/(2) #5 BOTTOM CONT

MINIMUM OF 8" BEARING ON ALL BOND BEAM LINTELS. EXTEND ALL REINFORCING BOTH VERTICAL AND HORIZONTAL CONTINUOUS AT BEARING OF JAMB

LOOSE LINTEL SCHEDULE		
MARK	LINTEL	MIN BEARING (EA SIDE)
LL1	L4 x 3 1/2 x 1/4	8"
LL2	L5 x 3 1/2 x 3/8	8"
LL3	L6 x 3 1/2 x 3/8	8"

- PLAN NOTES:**
- COORDINATE ALL DIMENSIONS, DOOR AND WINDOW LOCATIONS WITH ARCHITECTURAL DRAWINGS.
  - COORD RTU SIZE AND LOCATION WITH ARCH & MECH.
  - DESIGN TRUSSES FOR ADDITIONAL DEAD LOAD OF UNIT.

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**NORTH ELEV**  
SCALE 1/8" = 1'-0"



**WEST ELEV**  
SCALE 1/8" = 1'-0"



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EXTERIOR ELEVATIONS

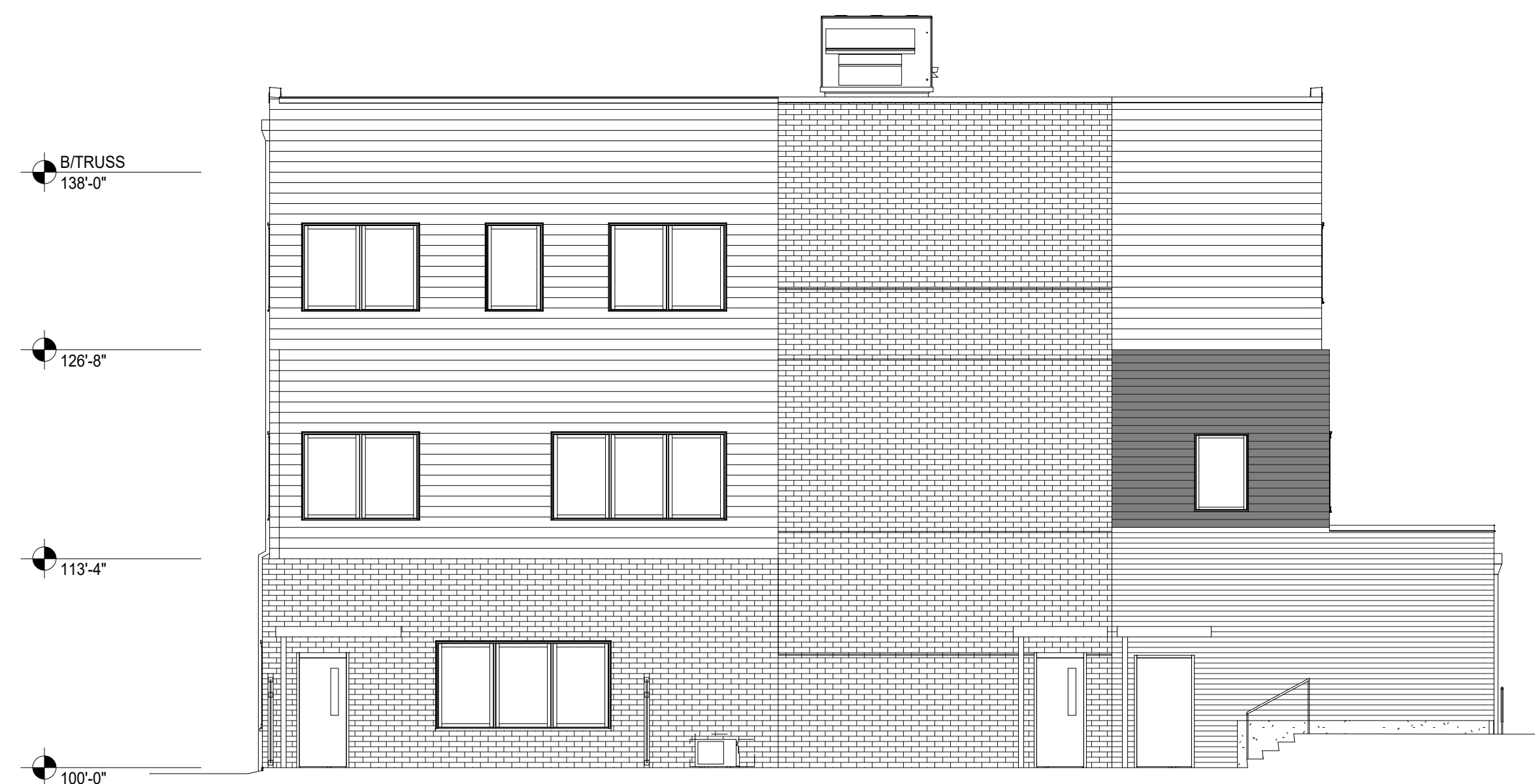
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**SOUTH ELEV**  
SCALE 1/8" = 1'-0"



**EAST ELEV**  
SCALE 1/8" = 1'-0"



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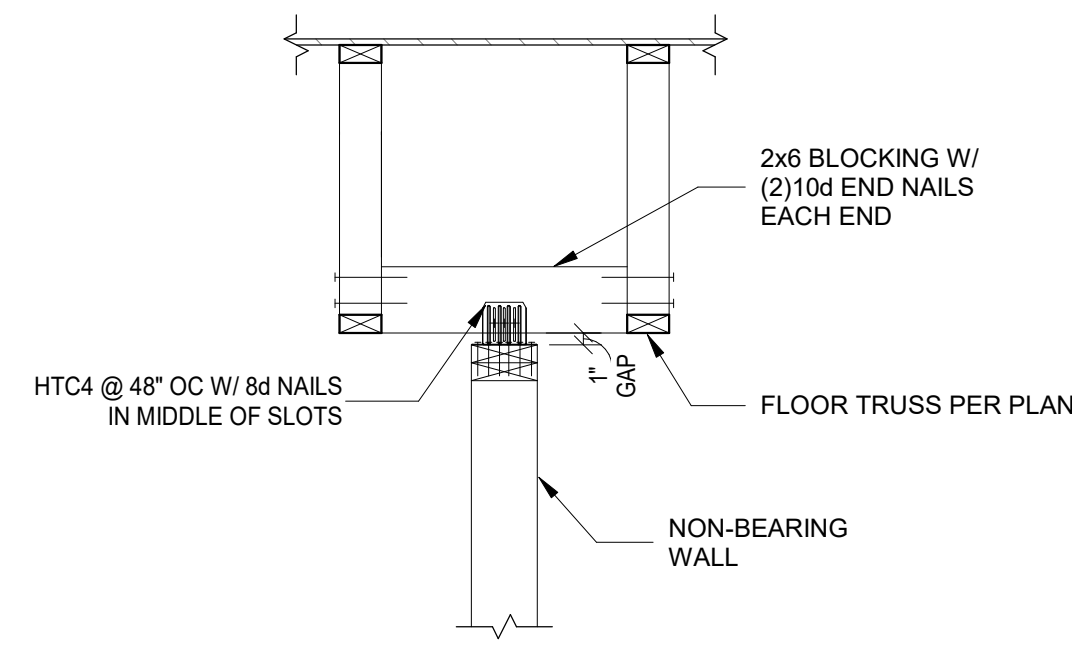
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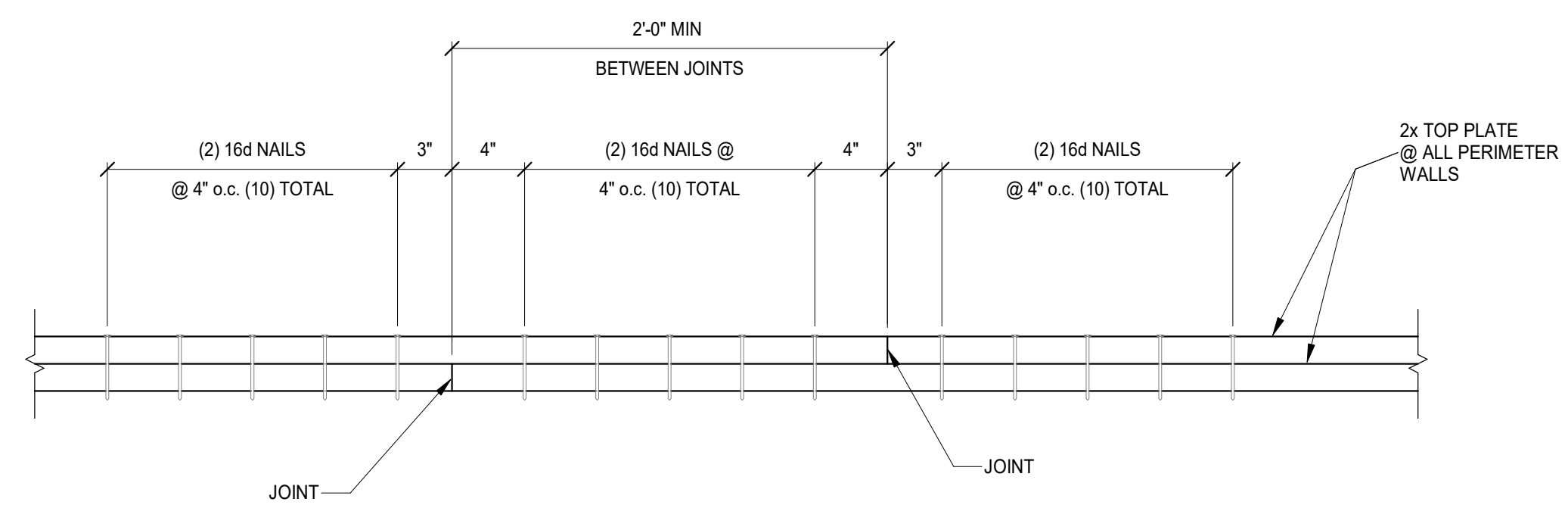
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**S201**

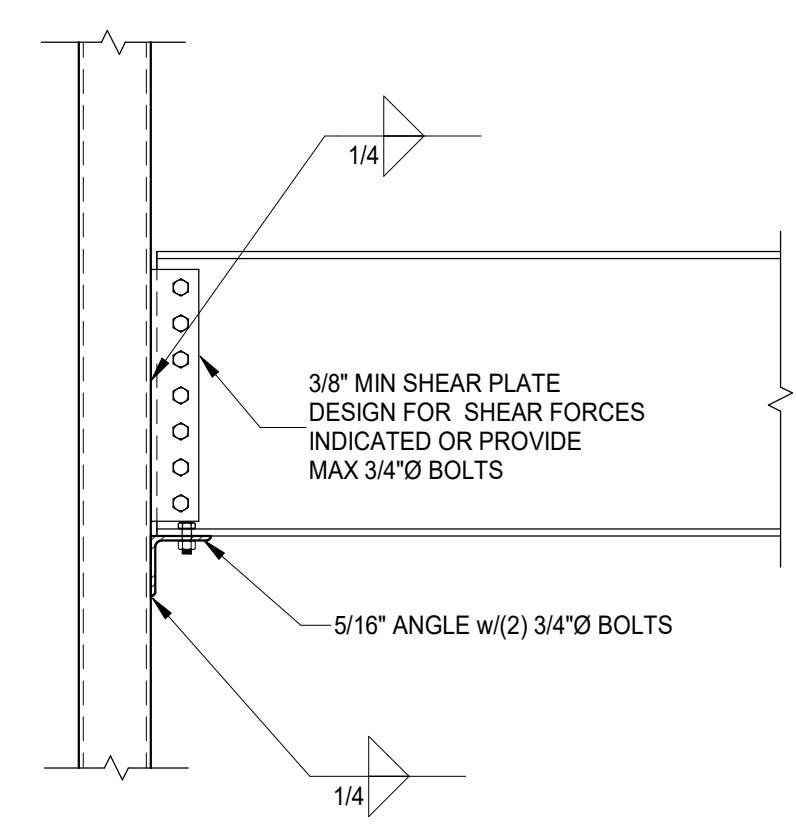
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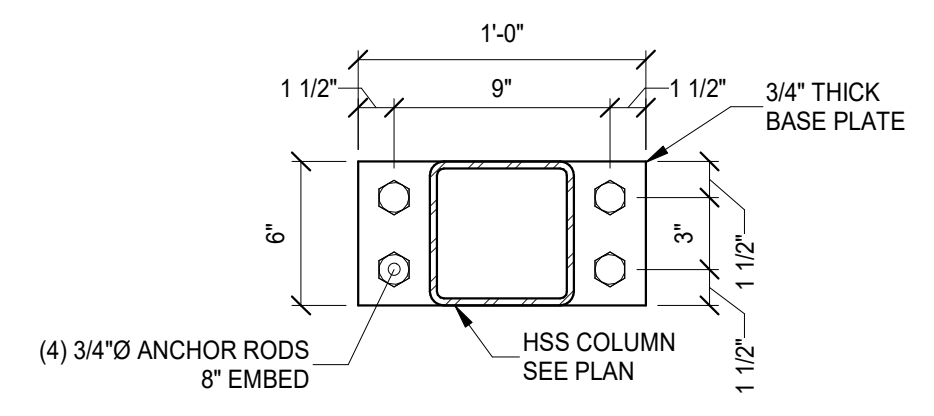
**DEFLECTION CLIP - PARALLEL NON BRG**  
SCALE 3/4" = 1'-0"



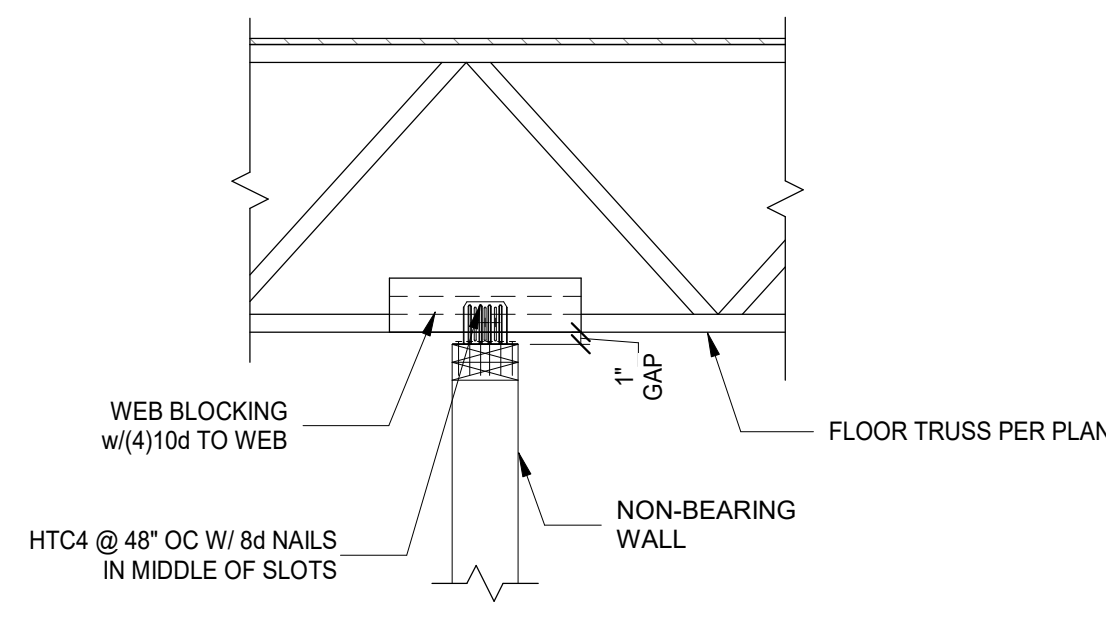
**TOP SPLICE AT PERIMETER WALLS**  
SCALE 1 1/2" = 1'-0"



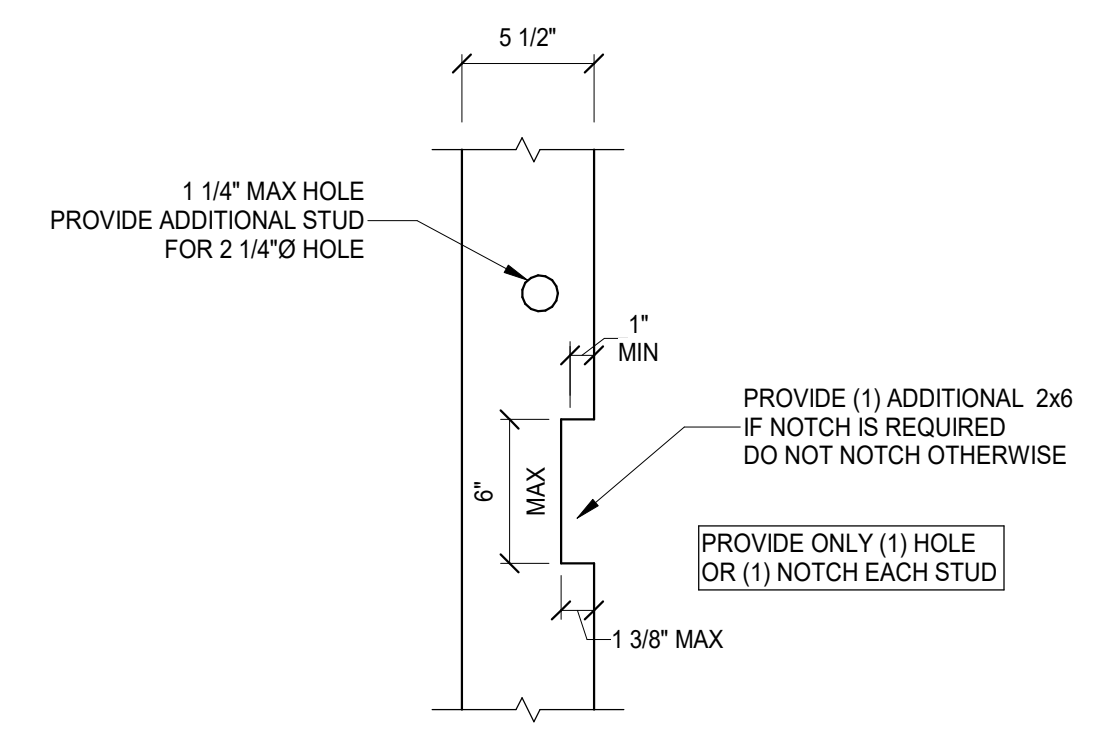
**TYP BEAM TO HSS COLUMN SIDE CONNECTION**  
SCALE 3/4" = 1'-0"



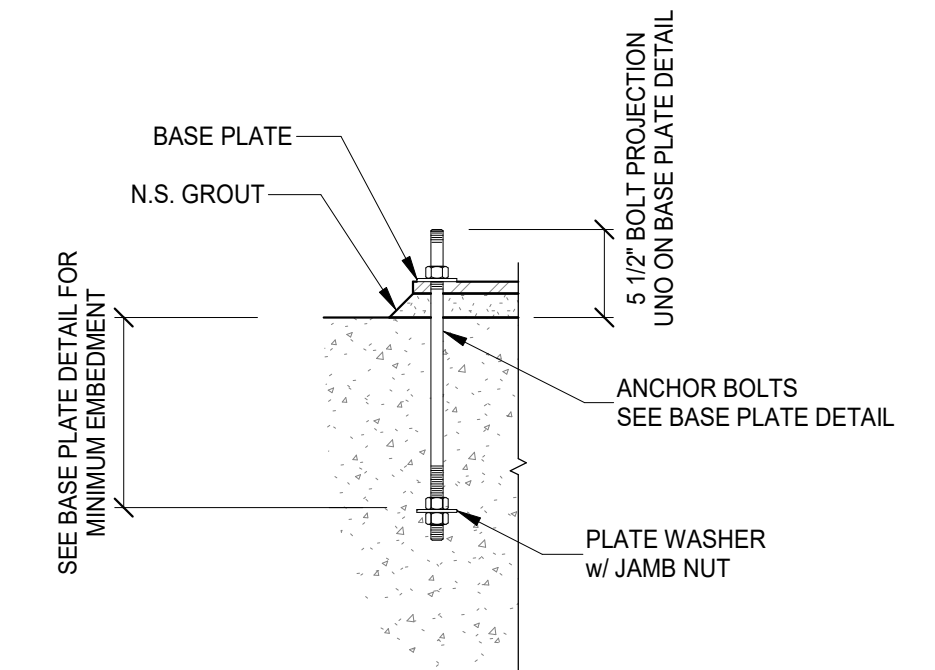
**TYP HSS6x6 BASE PLATE IN WALL DETAIL**  
SCALE 1 1/2" = 1'-0"



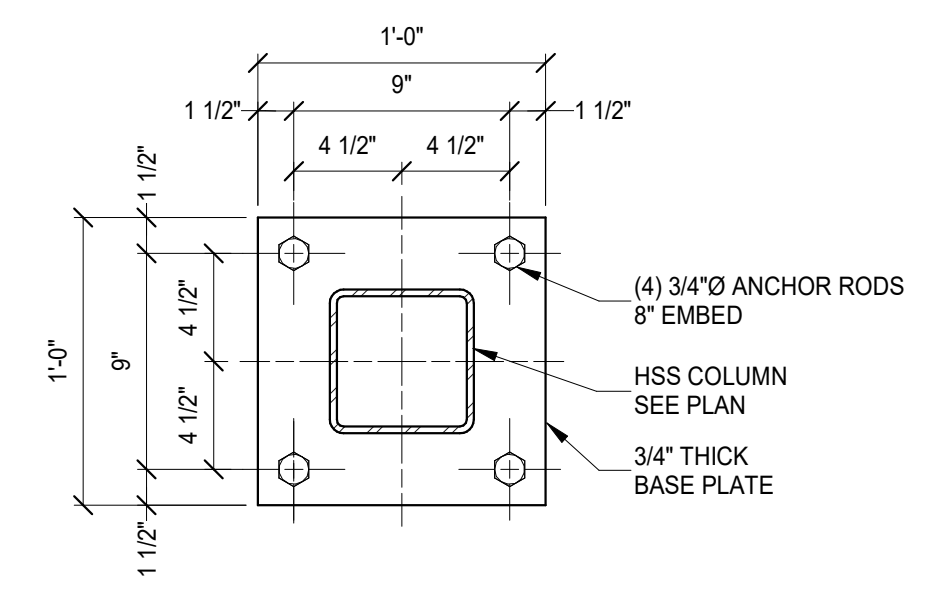
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SCALE 3/4" = 1'-0"



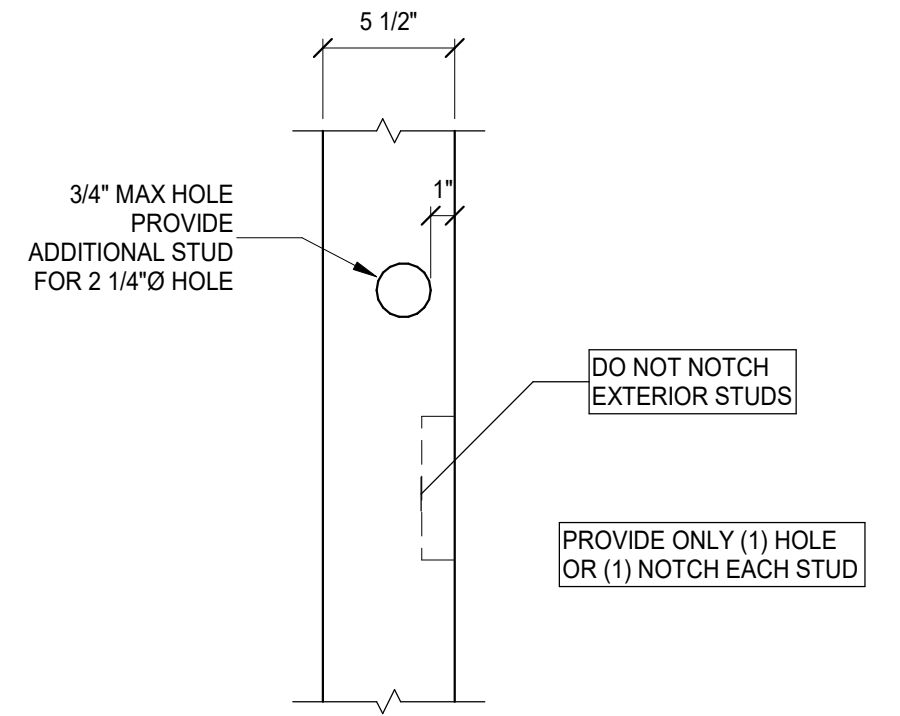
**TYP INT LOAD BRG**  
SCALE 1 1/2" = 1'-0"



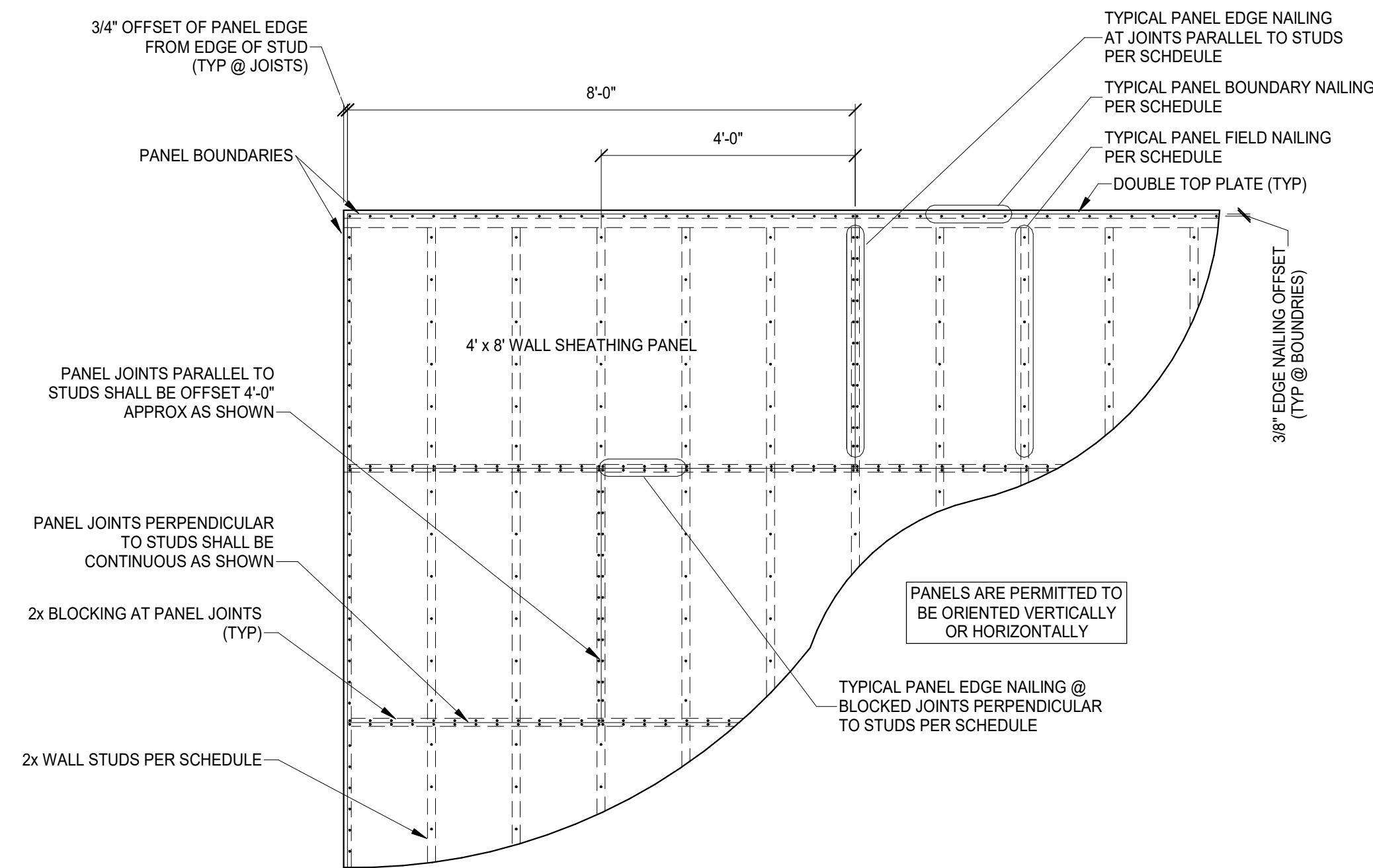
**TYP ANCHOR BOLT DET**  
SCALE 1" = 1'-0"



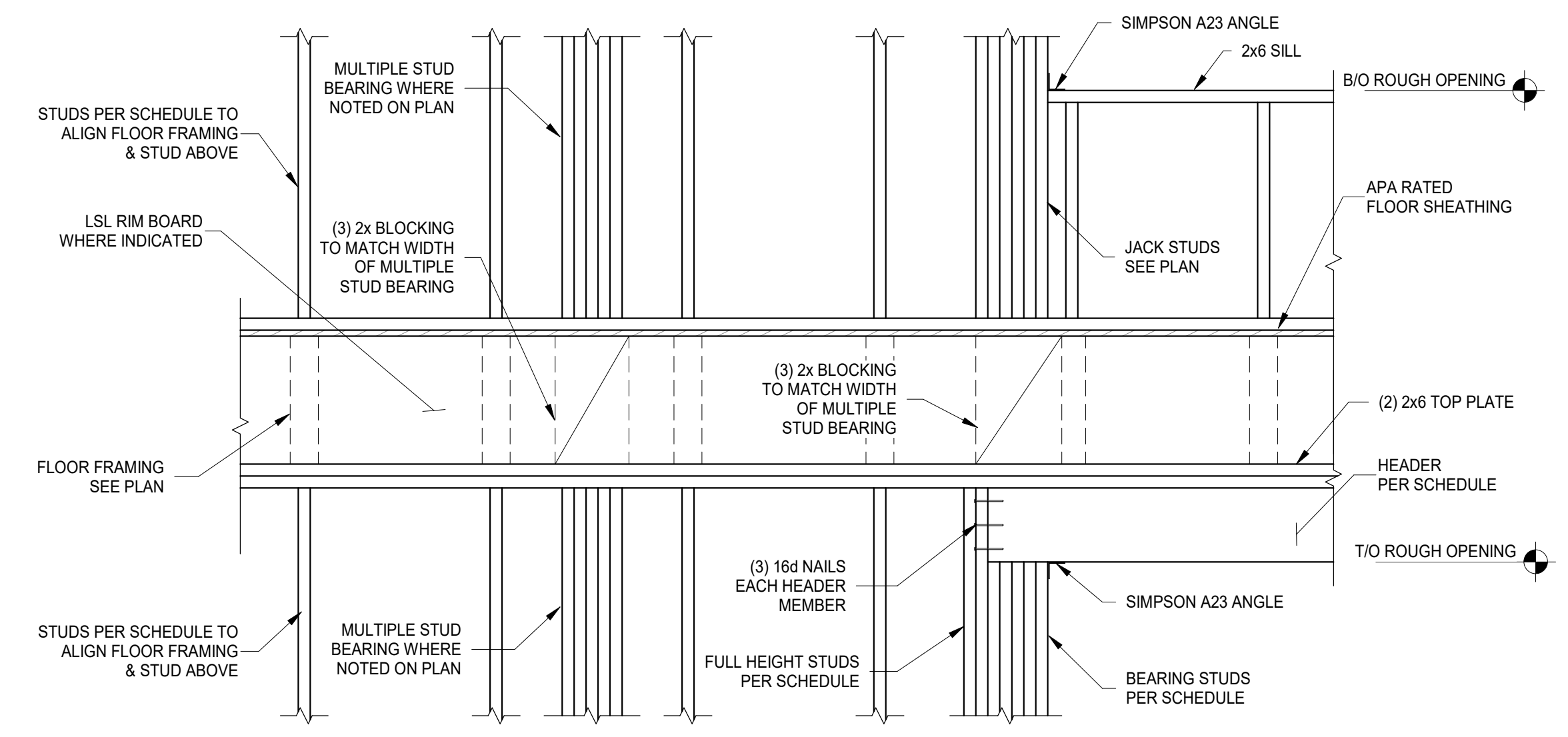
**TYP HSS6x6 BASE PLATE DETAIL**  
SCALE 1 1/2" = 1'-0"



**TYP EXT WALL**  
SCALE 1 1/2" = 1'-0"



**TYPICAL SHEAR WALL NAILING SHEATHING**  
SCALE 1/2" = 1'-0"



**TYPICAL FLOOR FRAMING ELEVATION**  
SCALE 3/4" = 1'-0"



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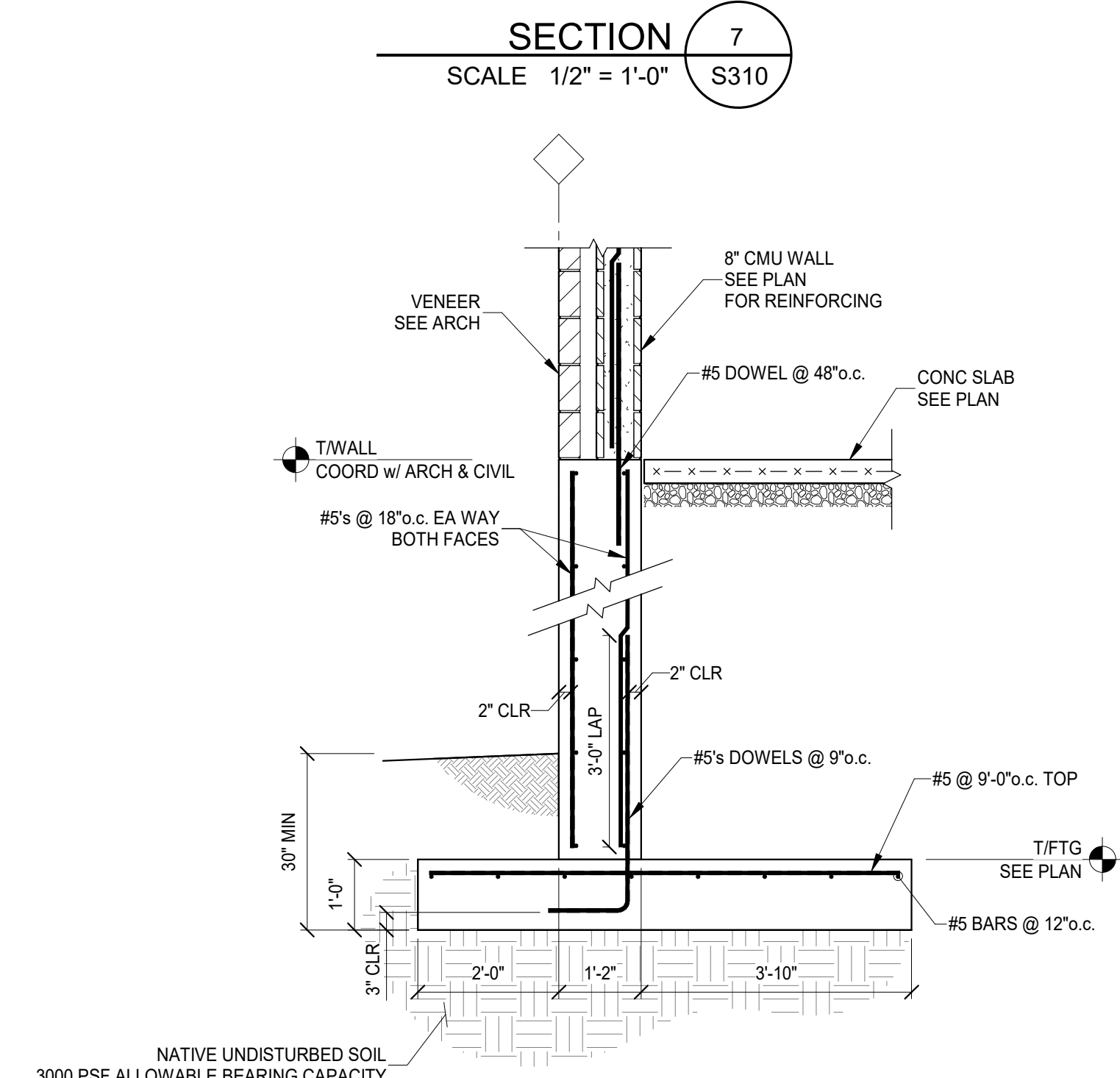
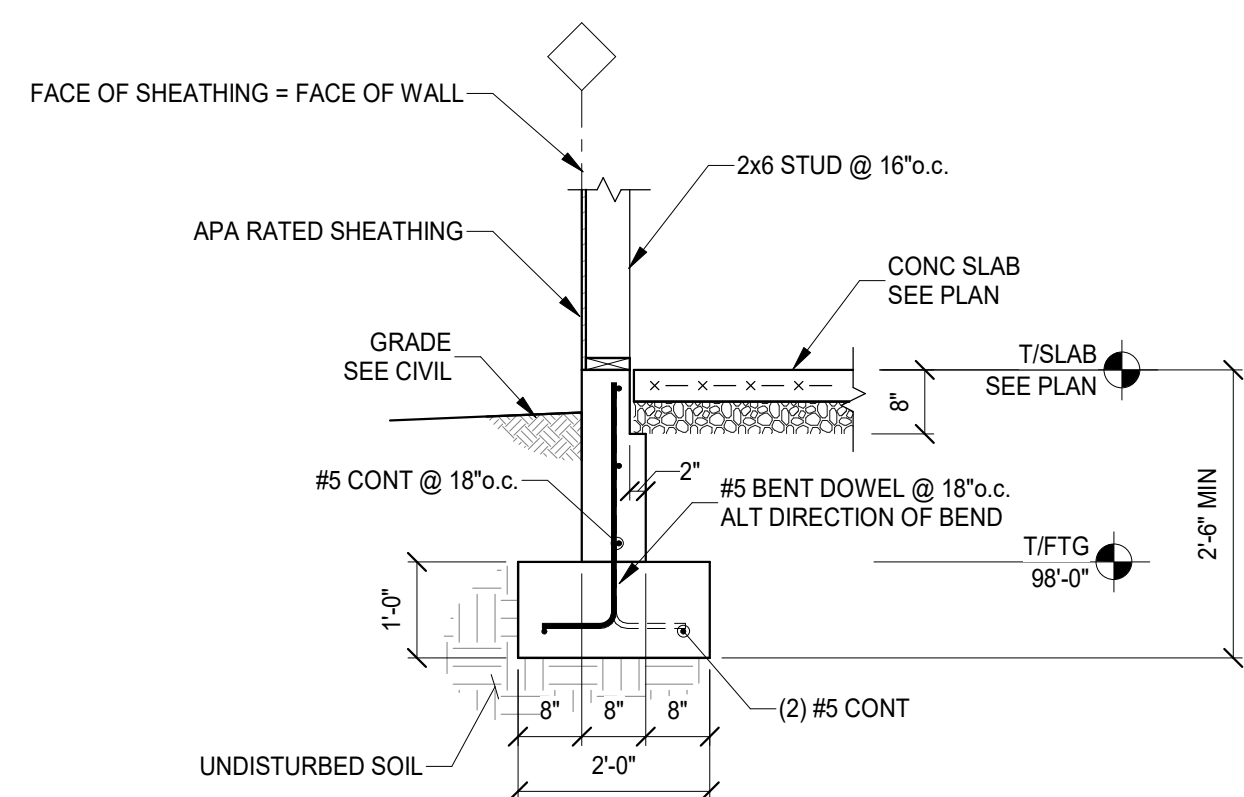
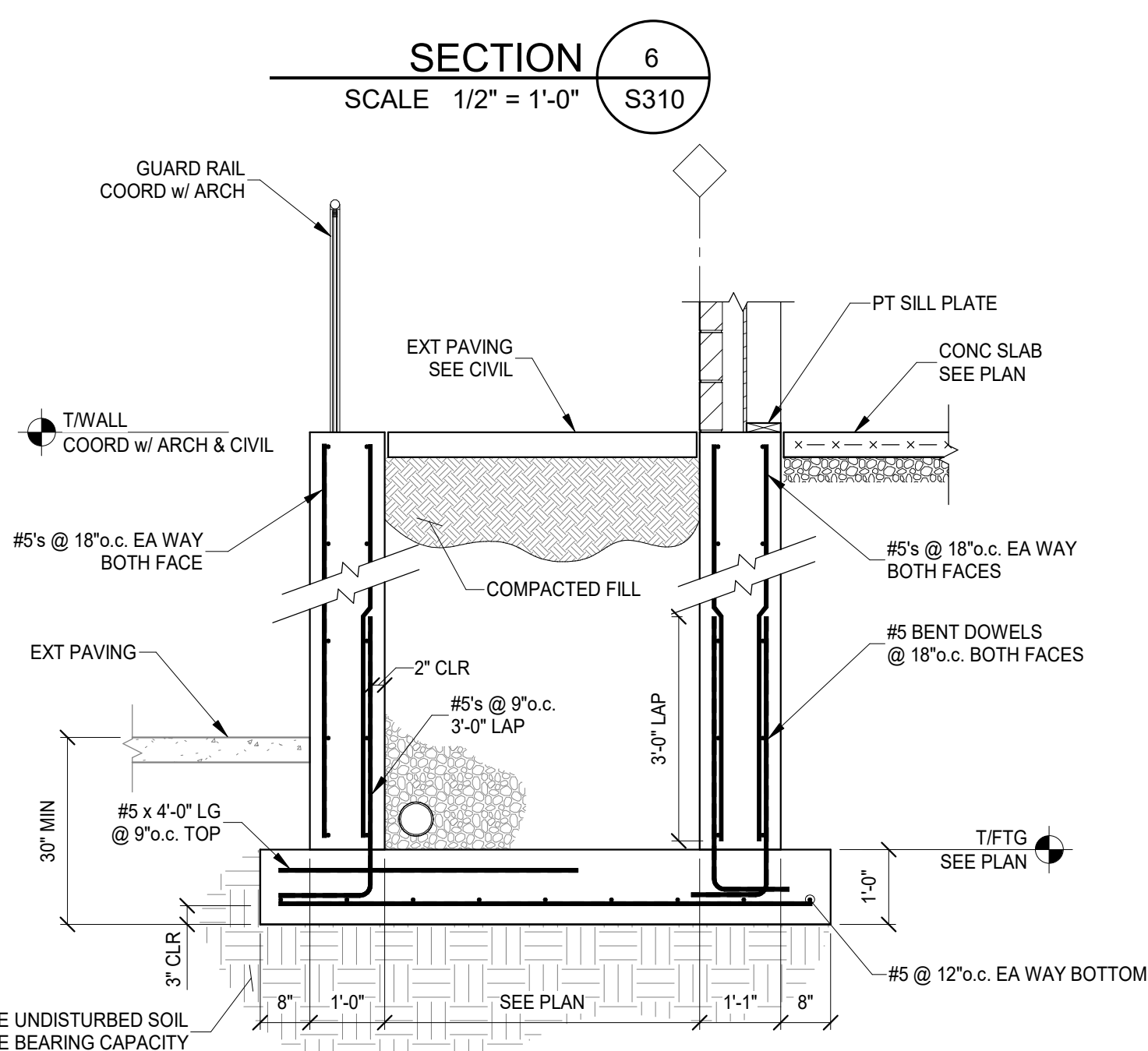
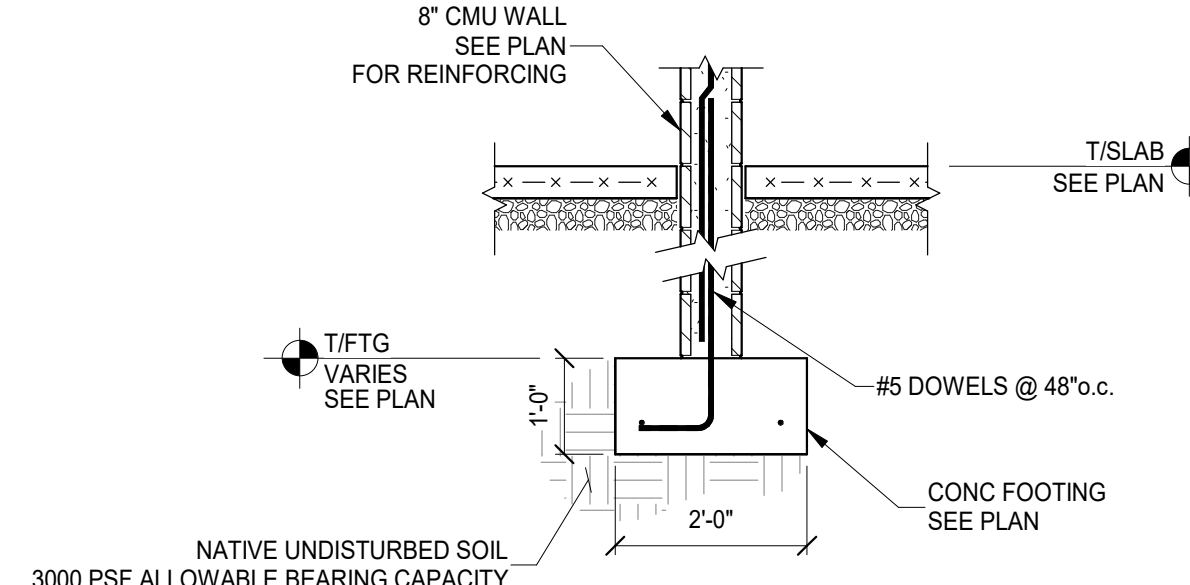
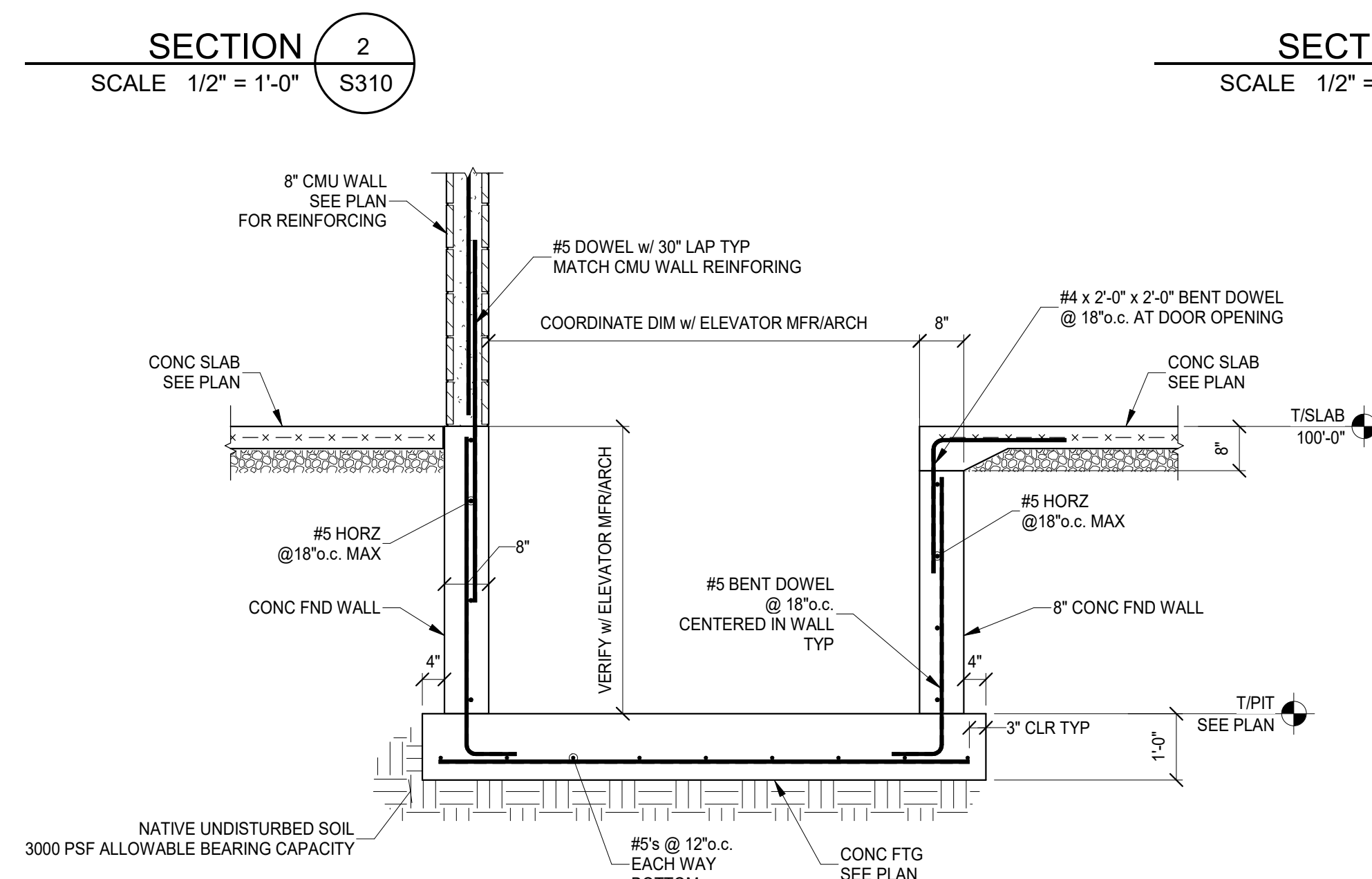
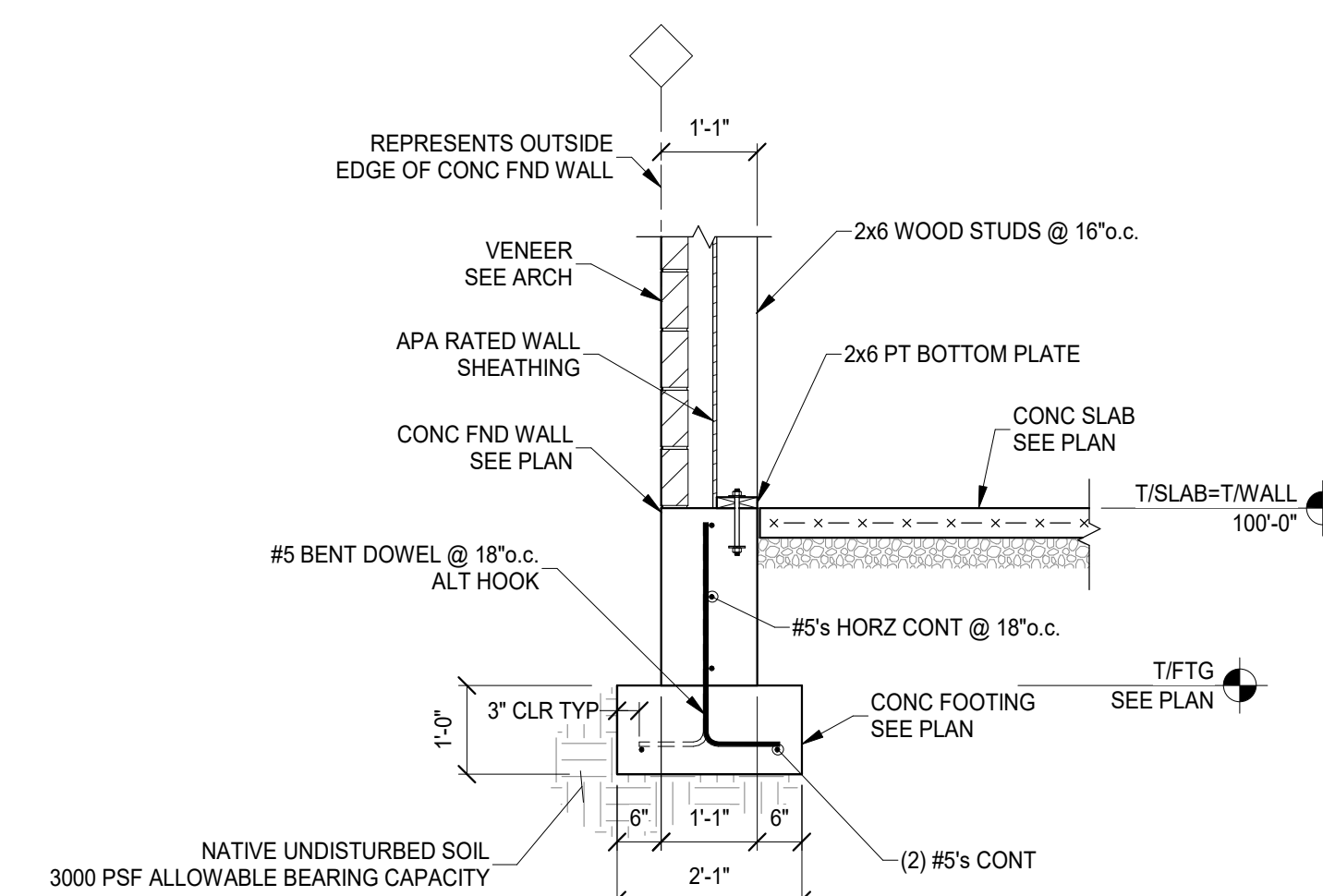
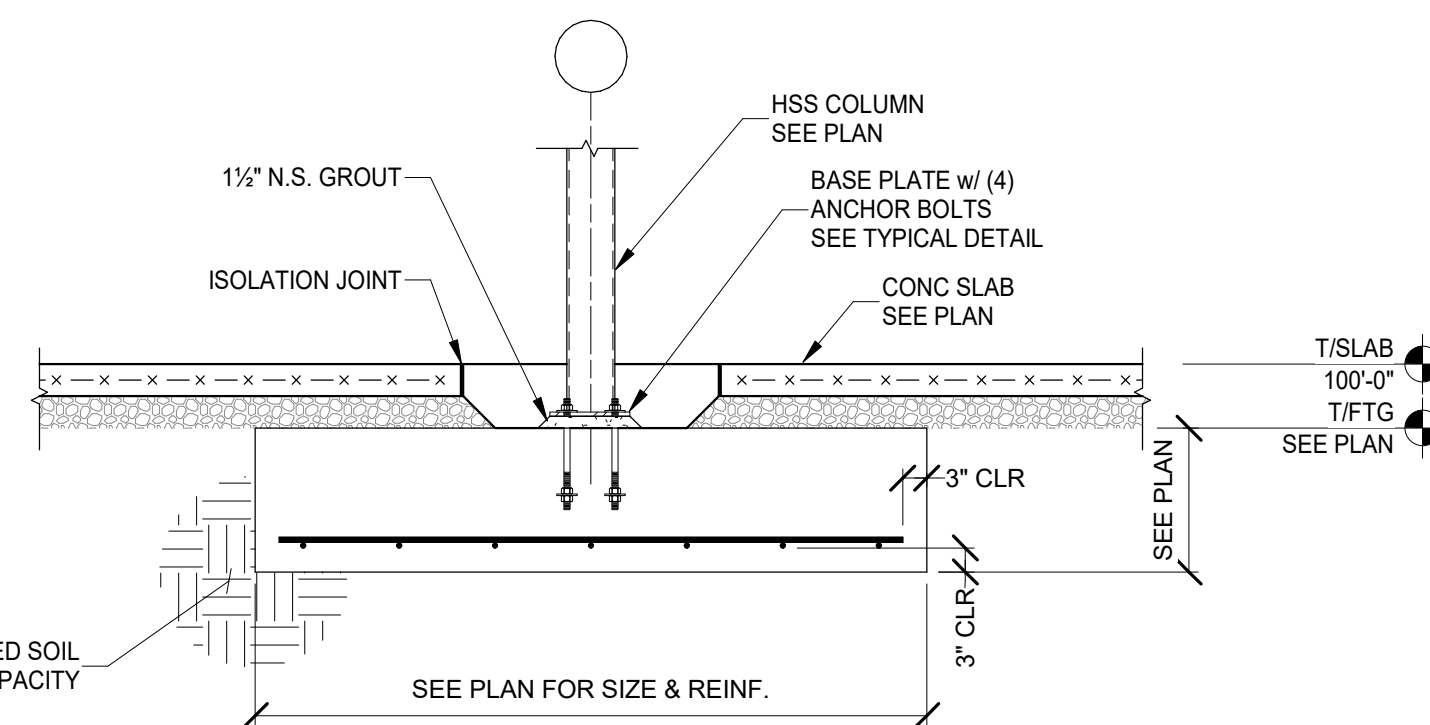
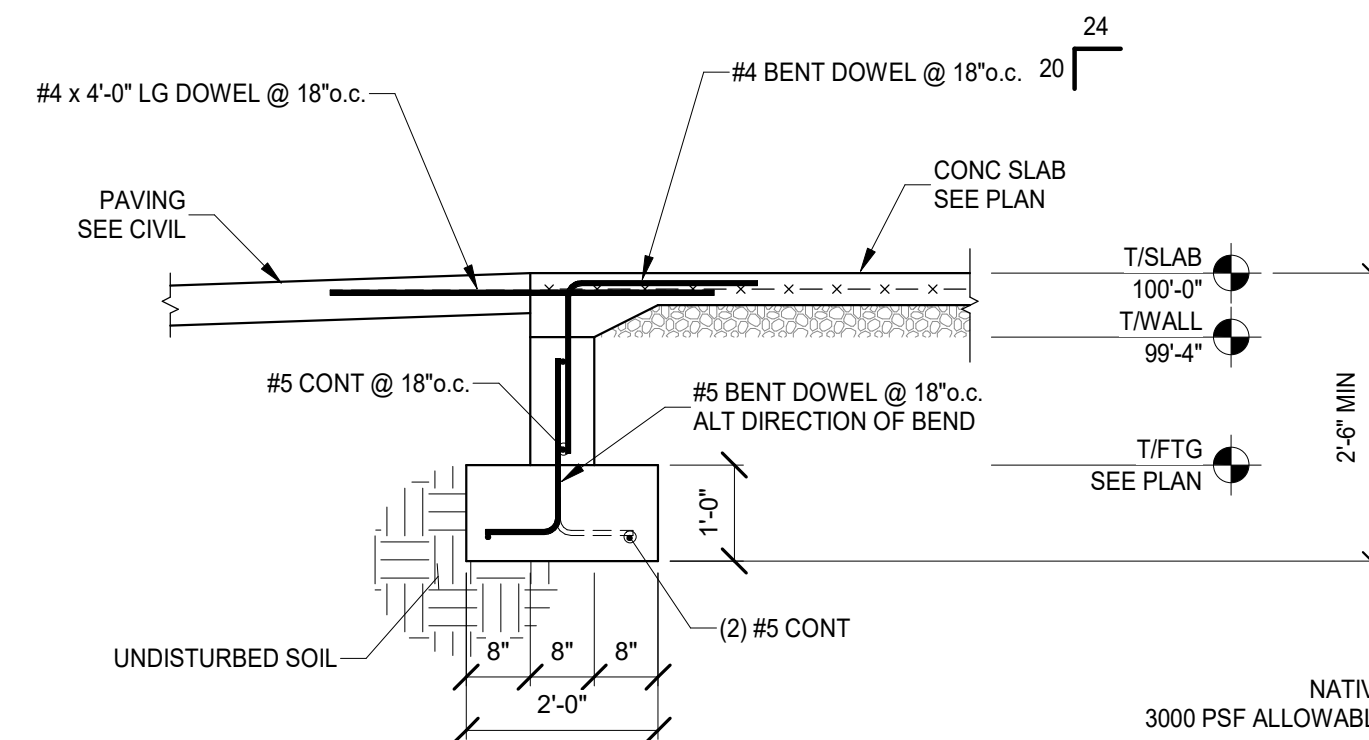
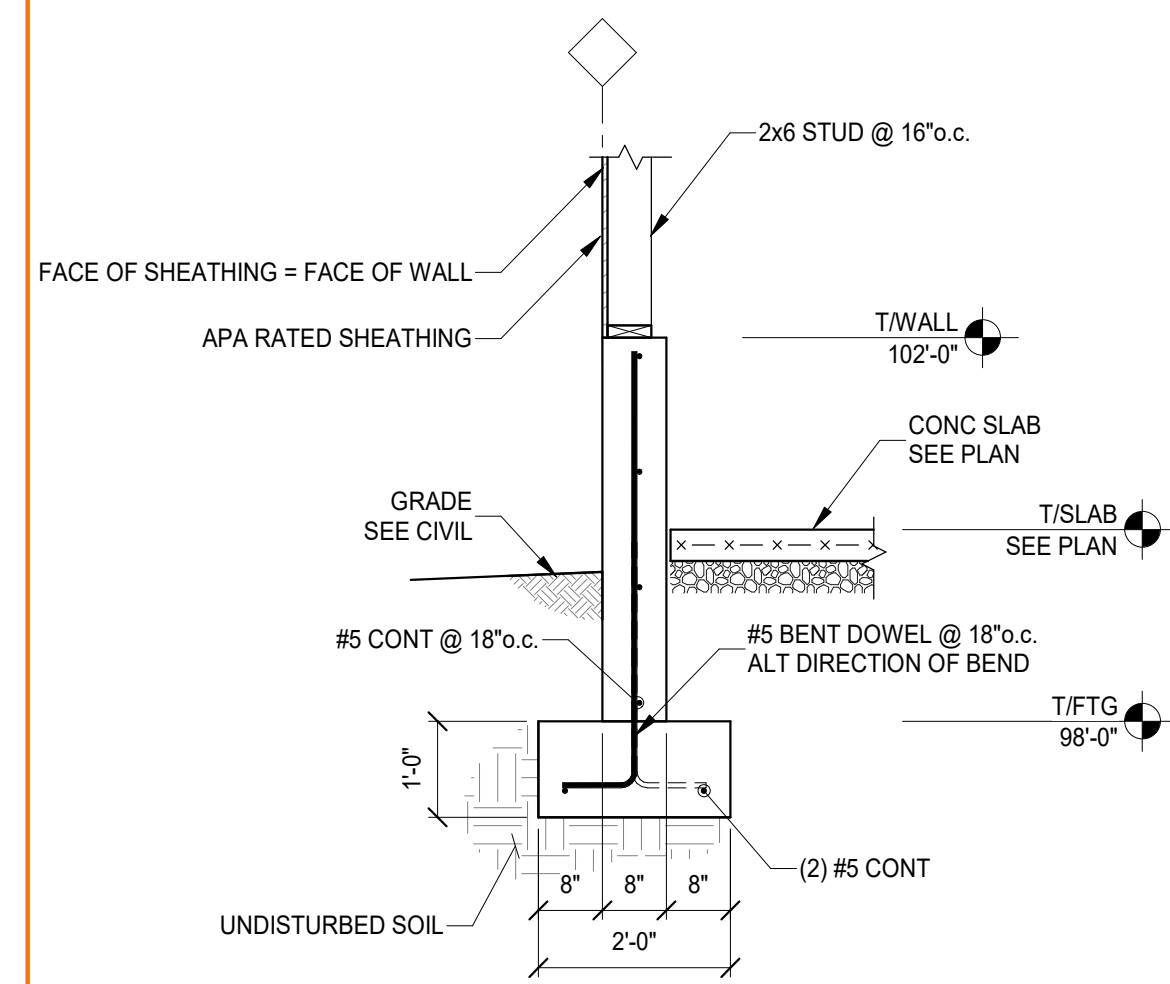
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TYPICAL DETAILS

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**S300**

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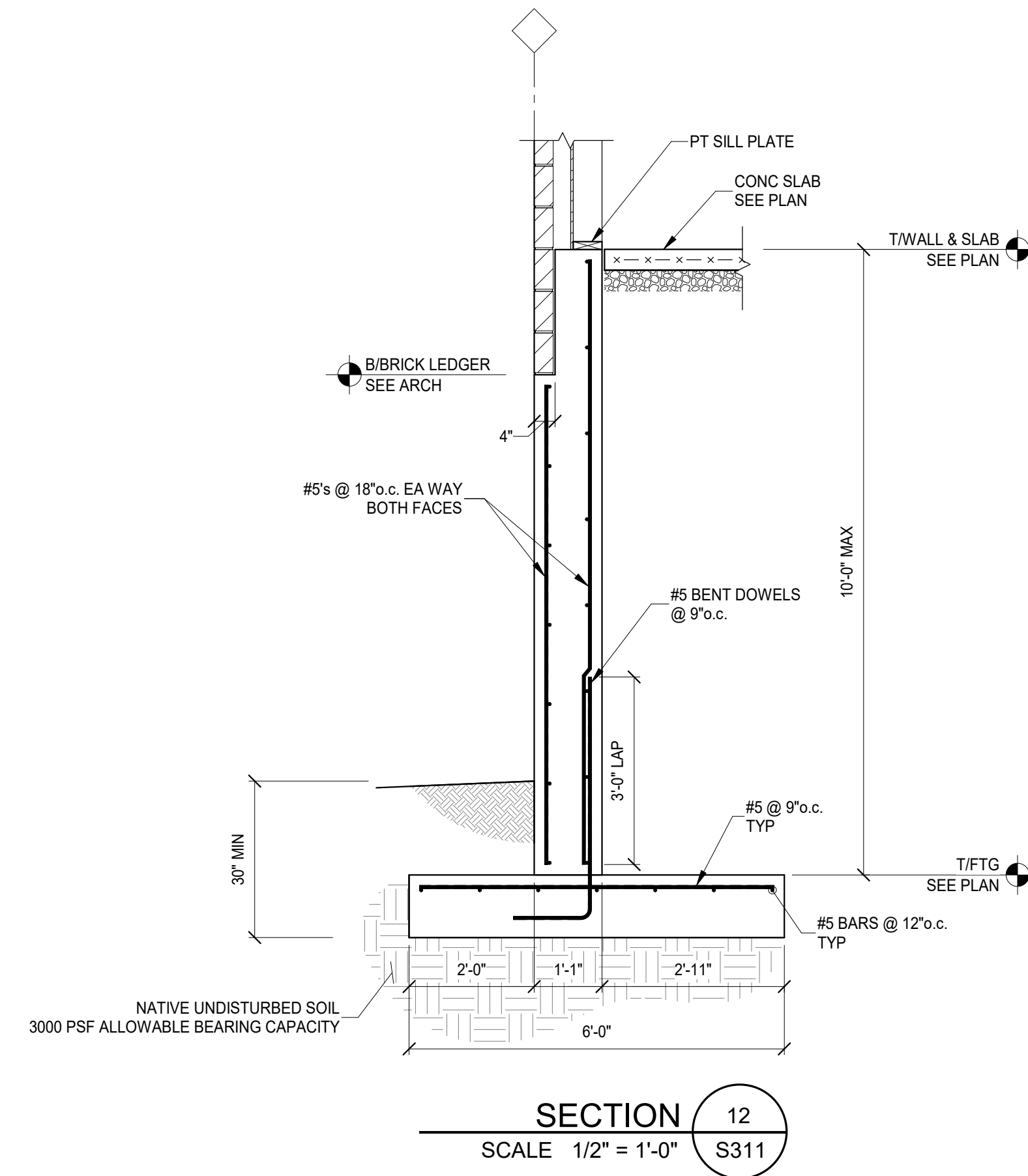
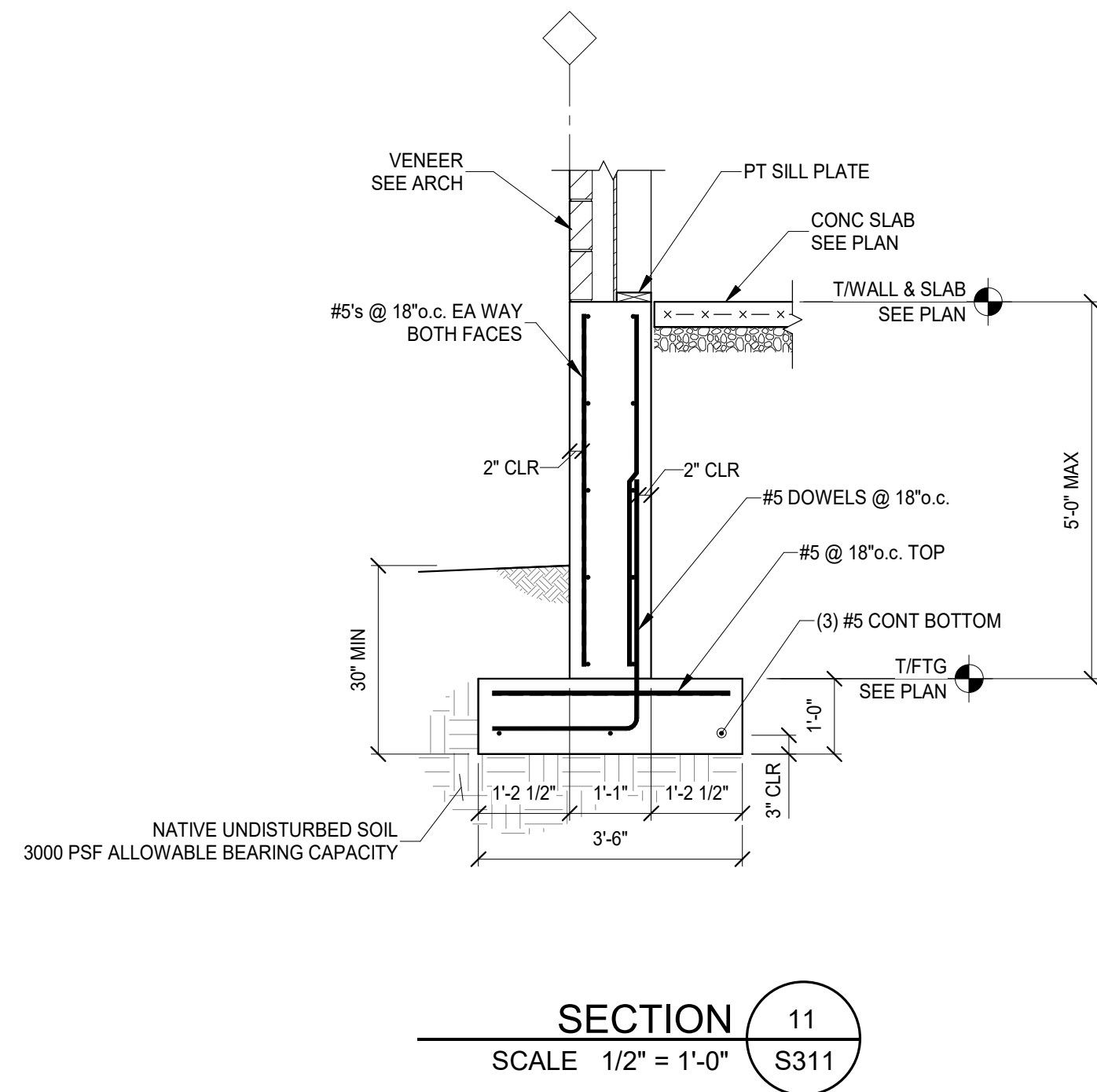
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FOUNDATION SECTIONS

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**S310**

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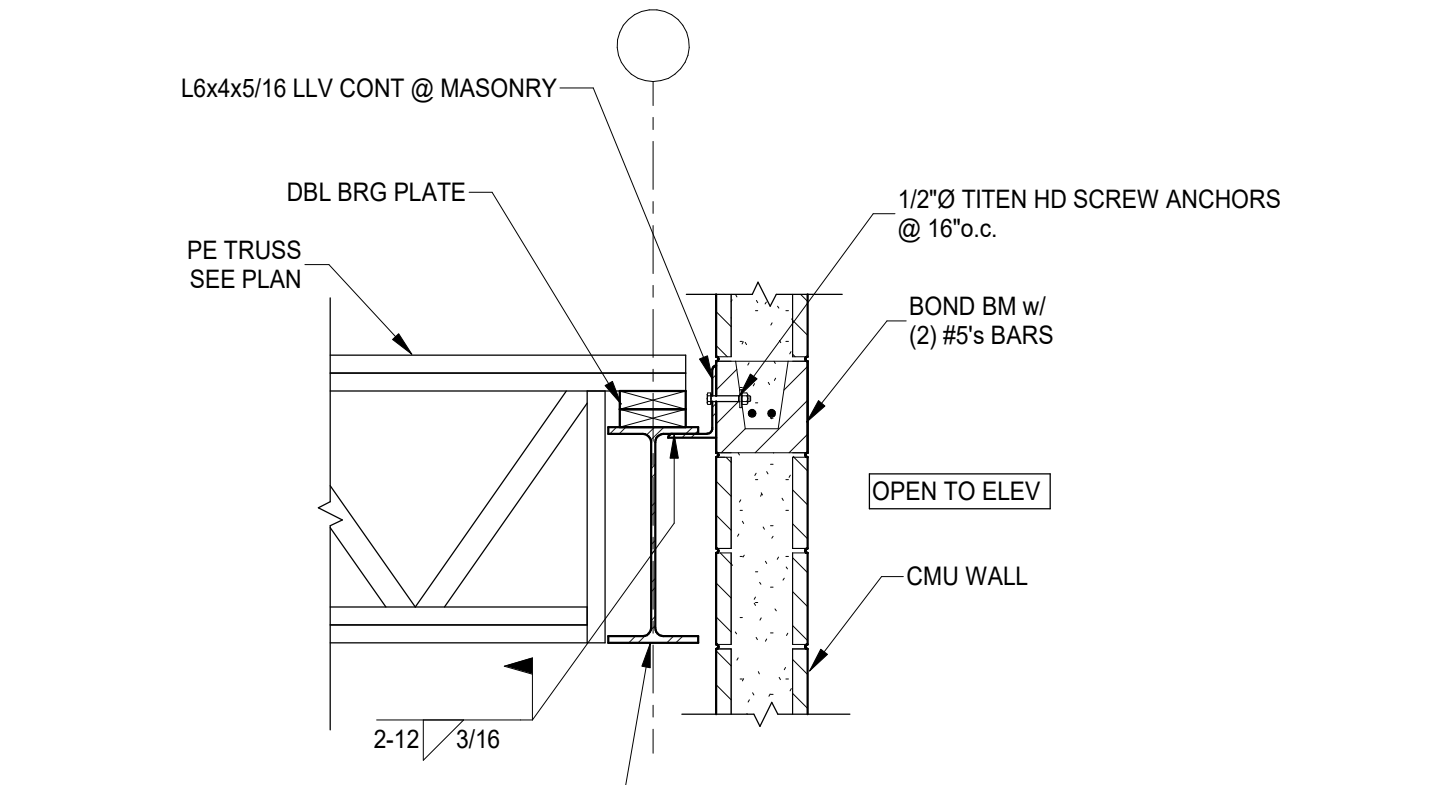
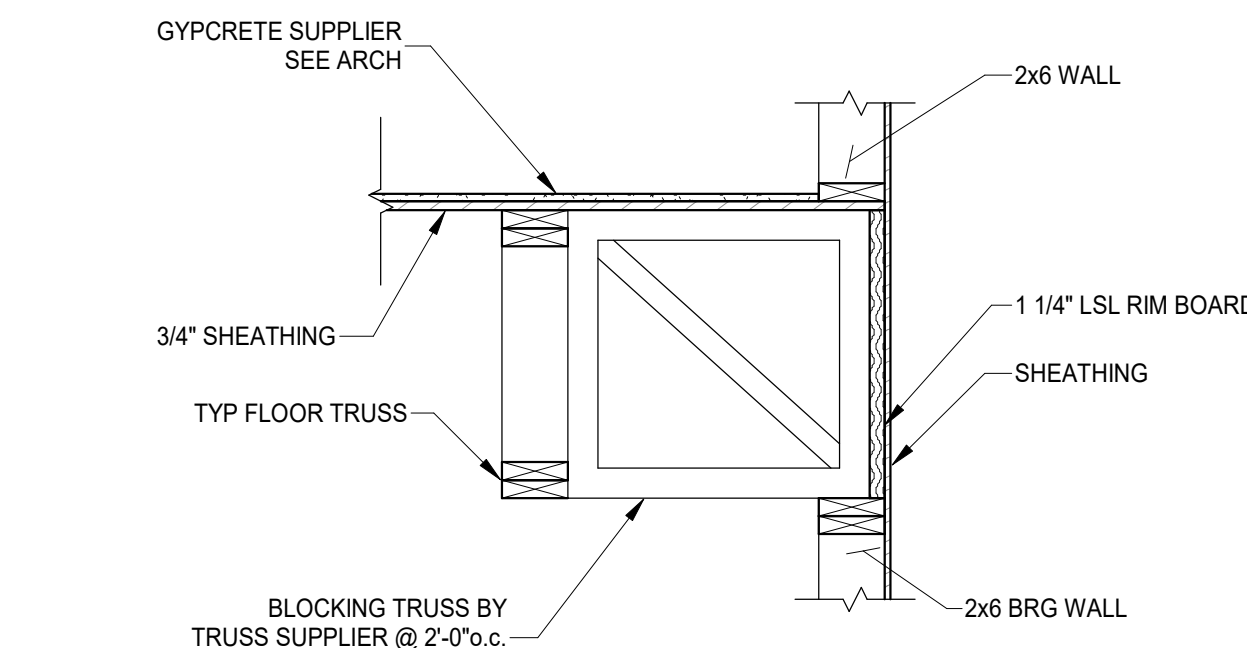
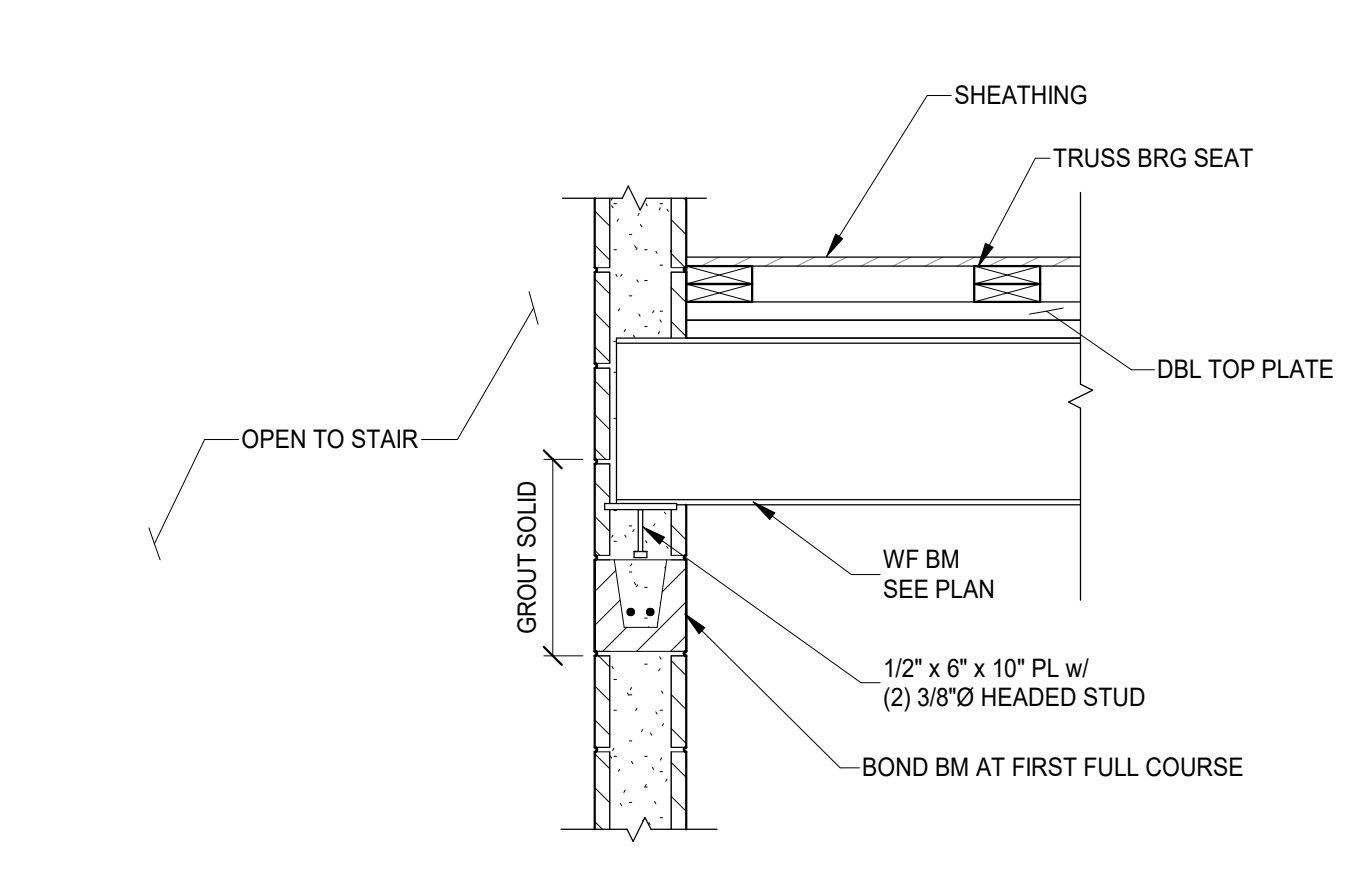
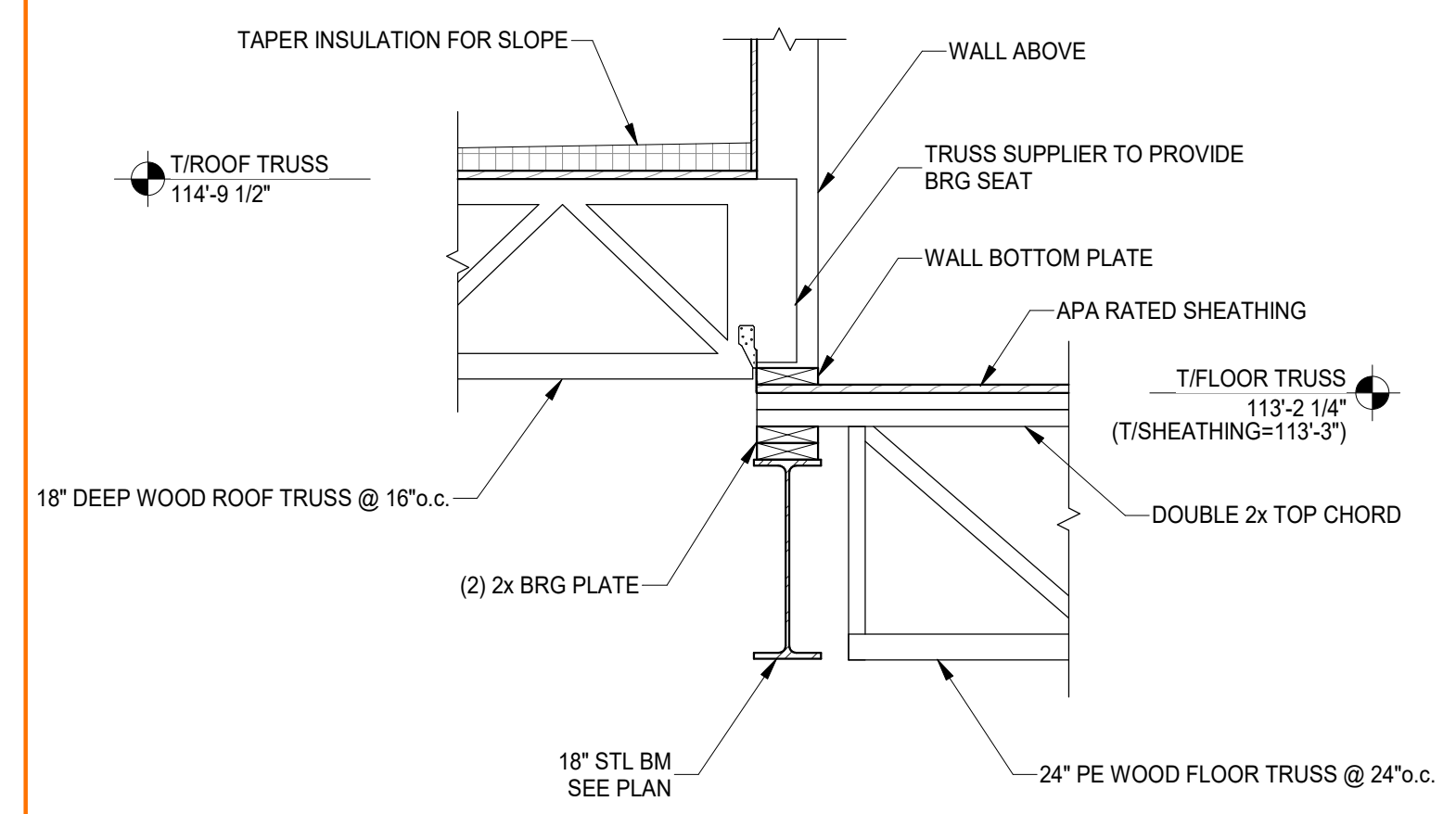
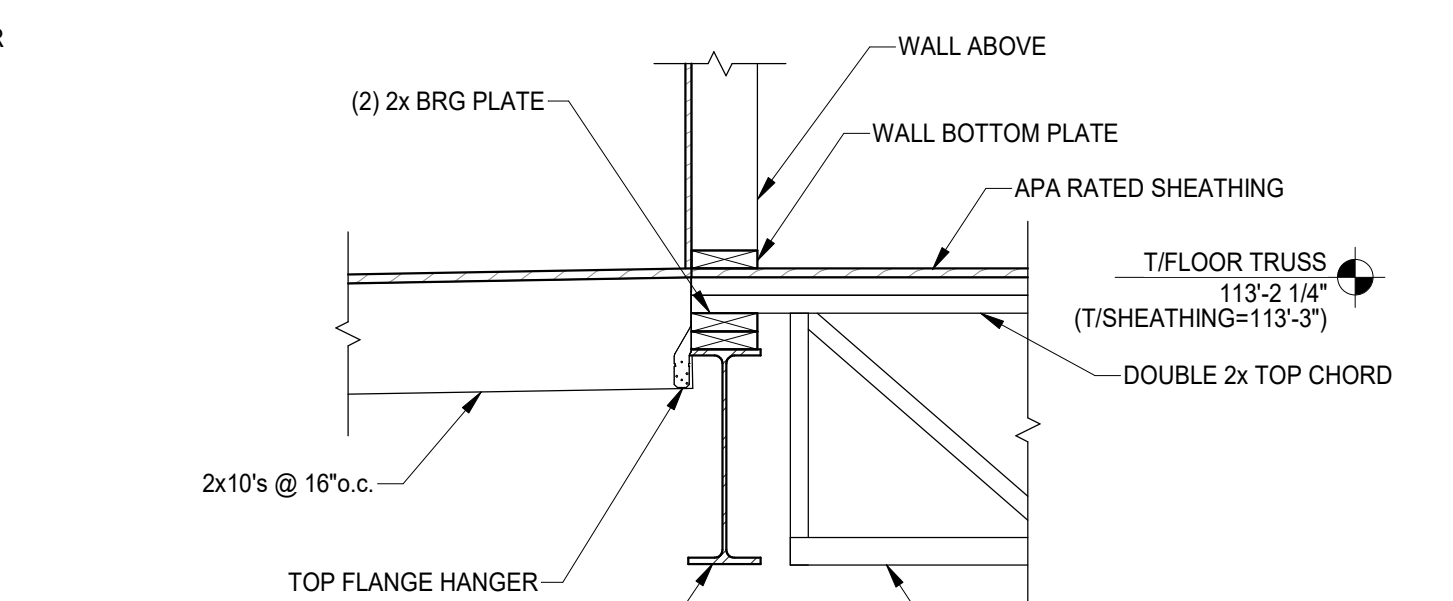
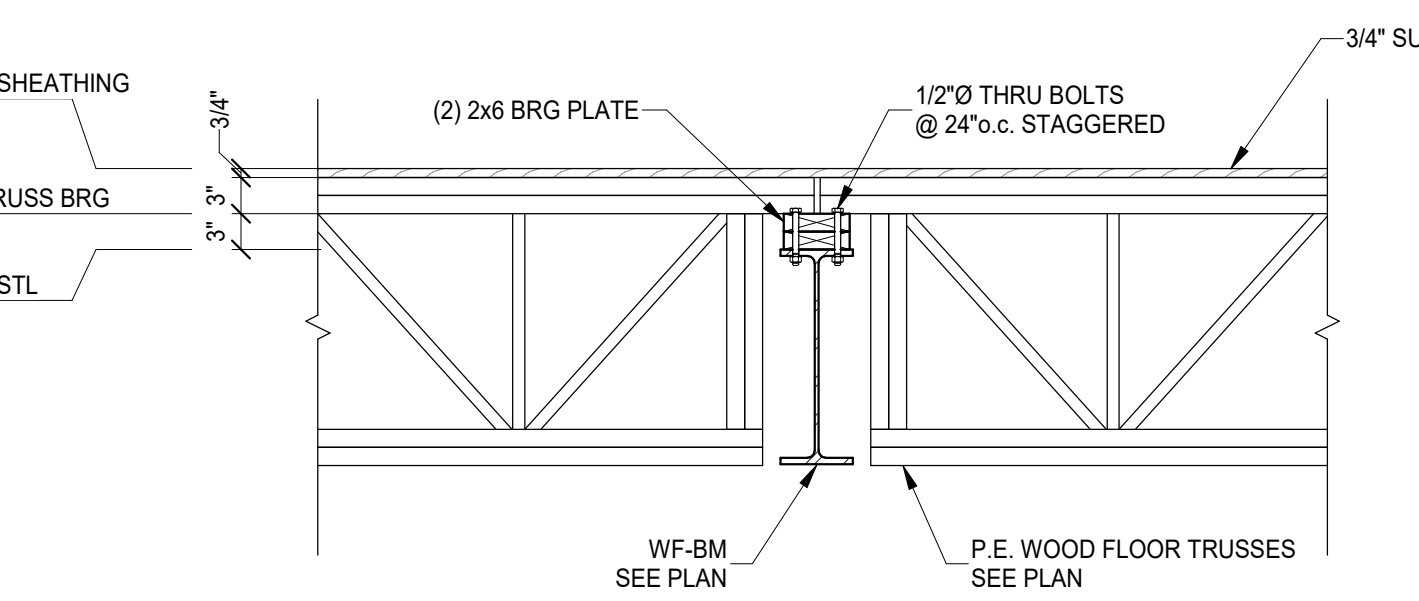
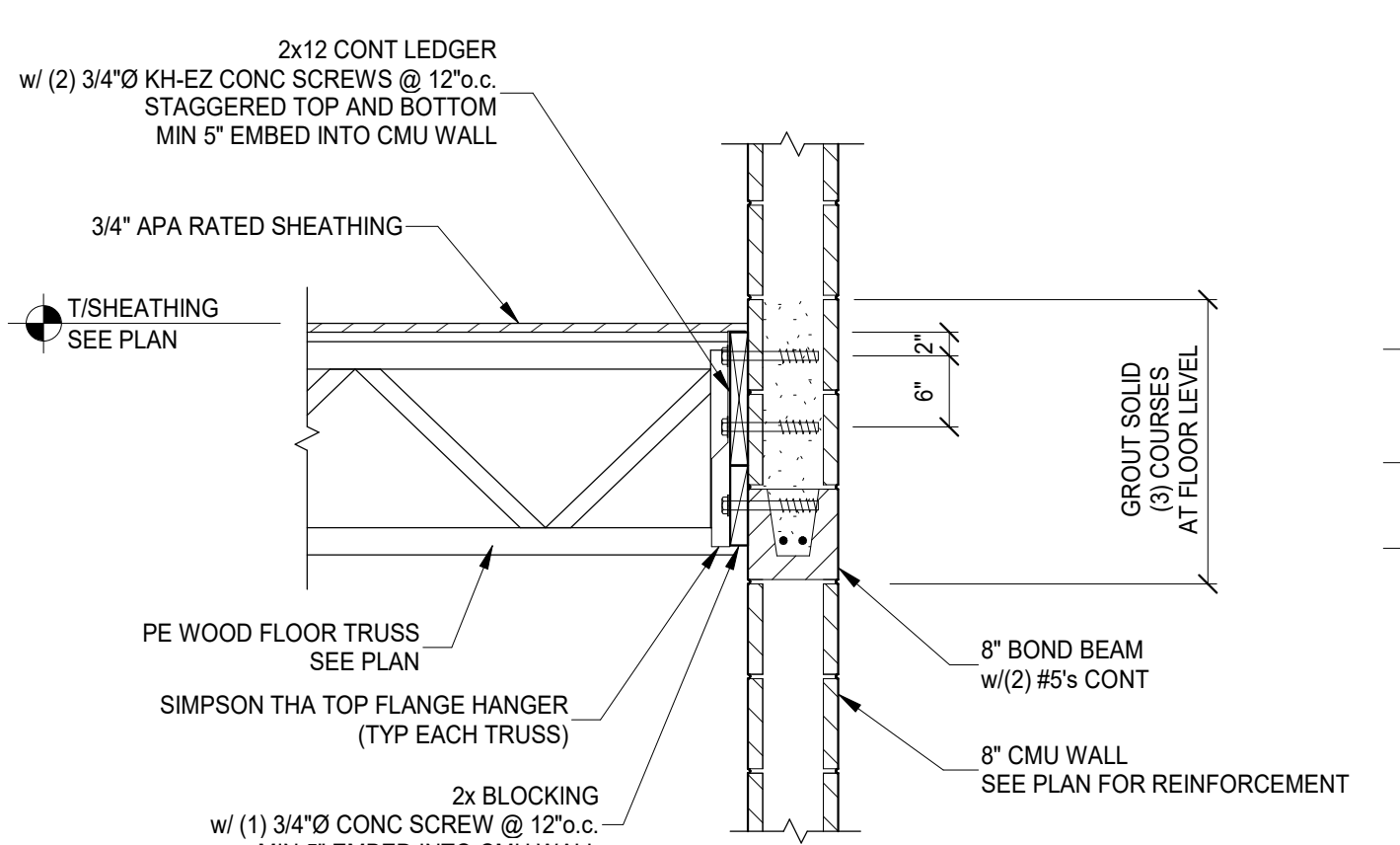
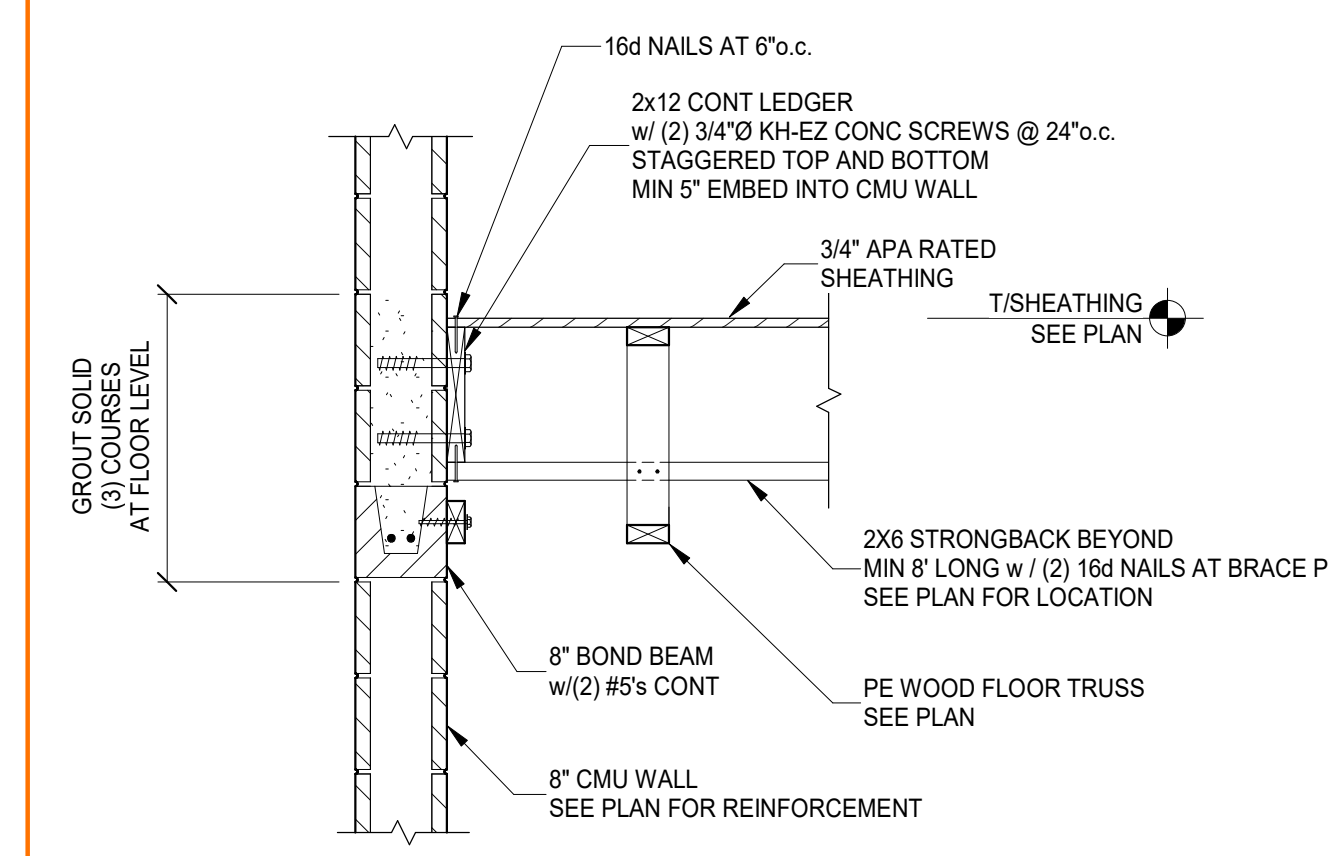
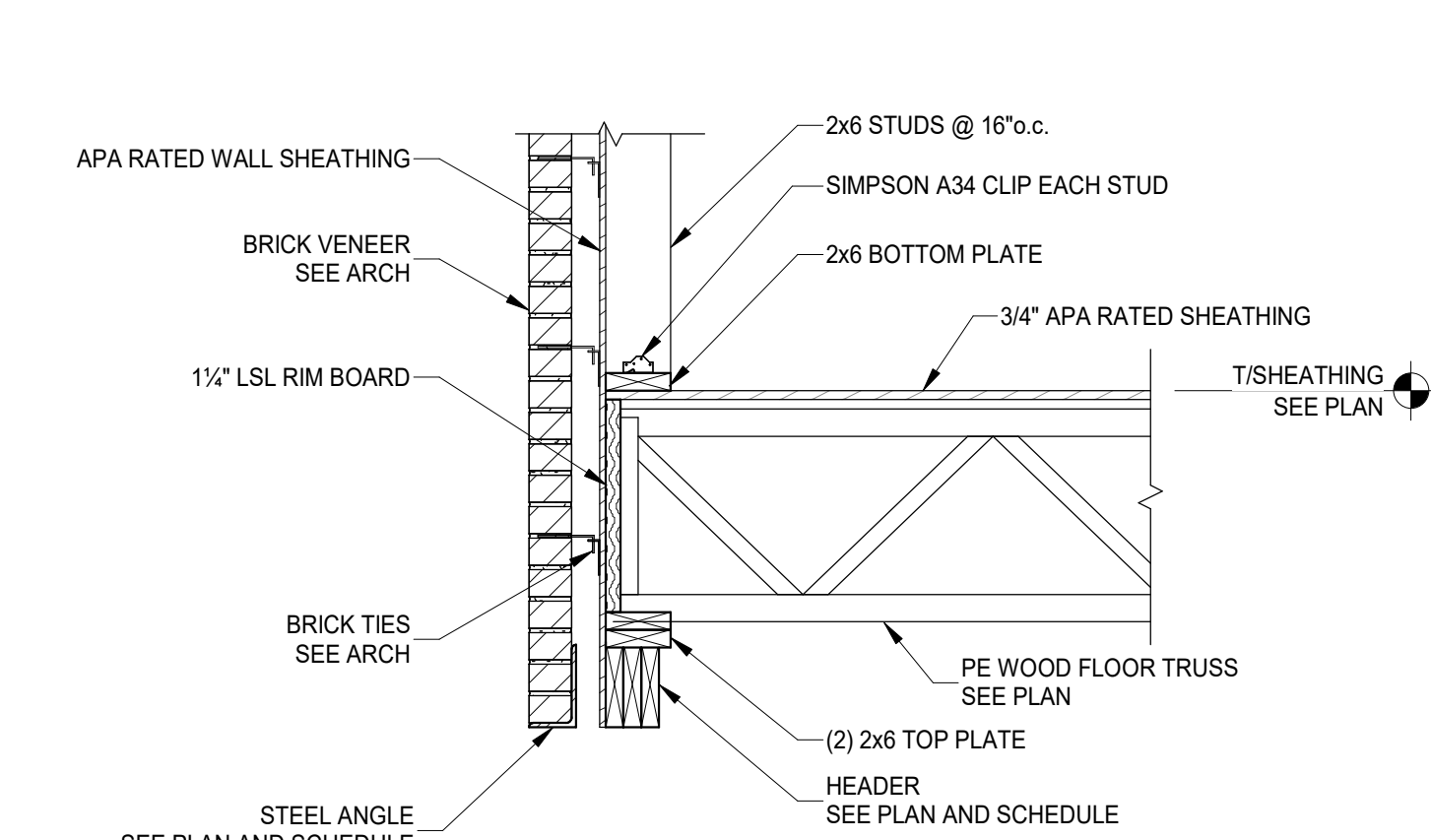
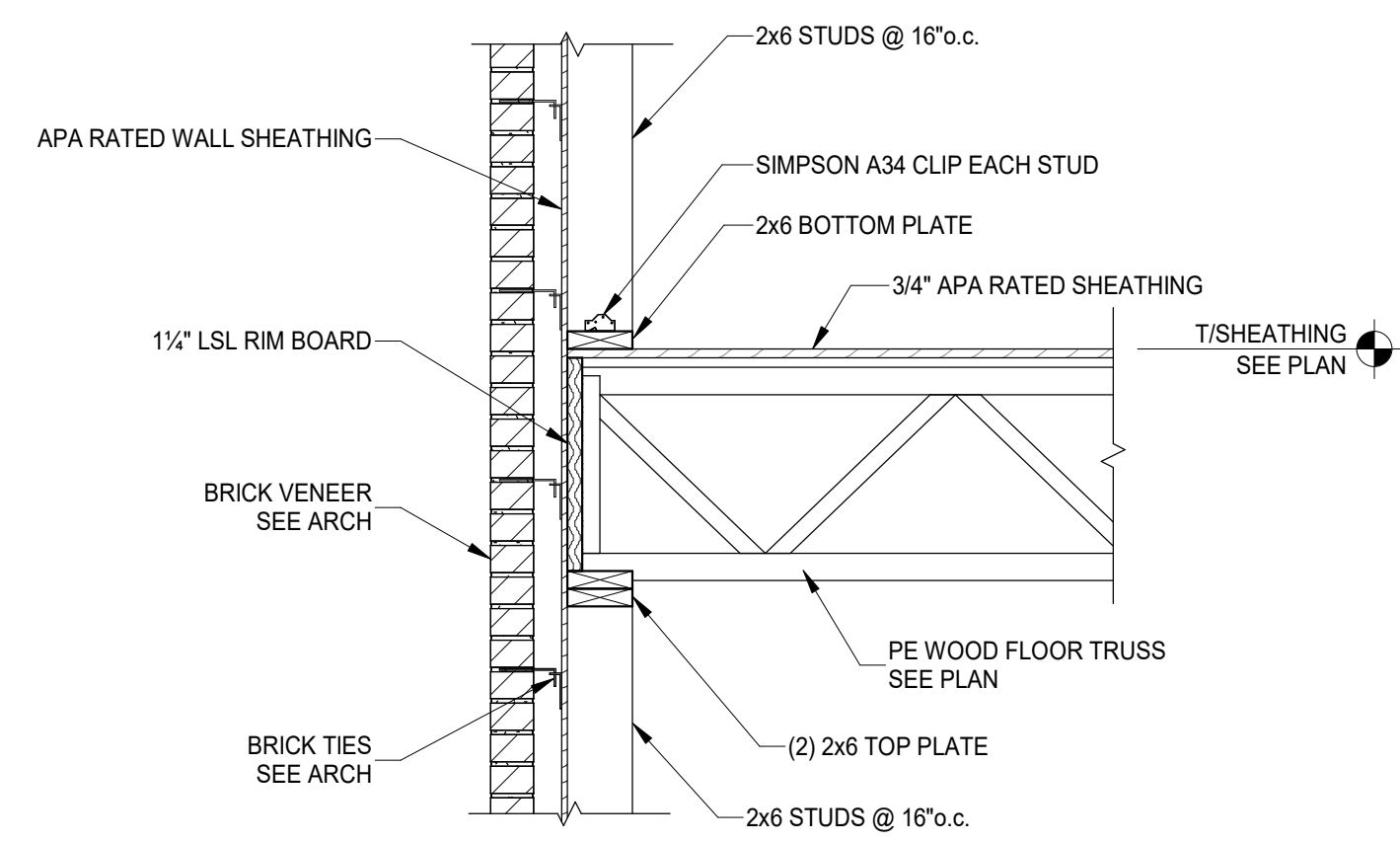
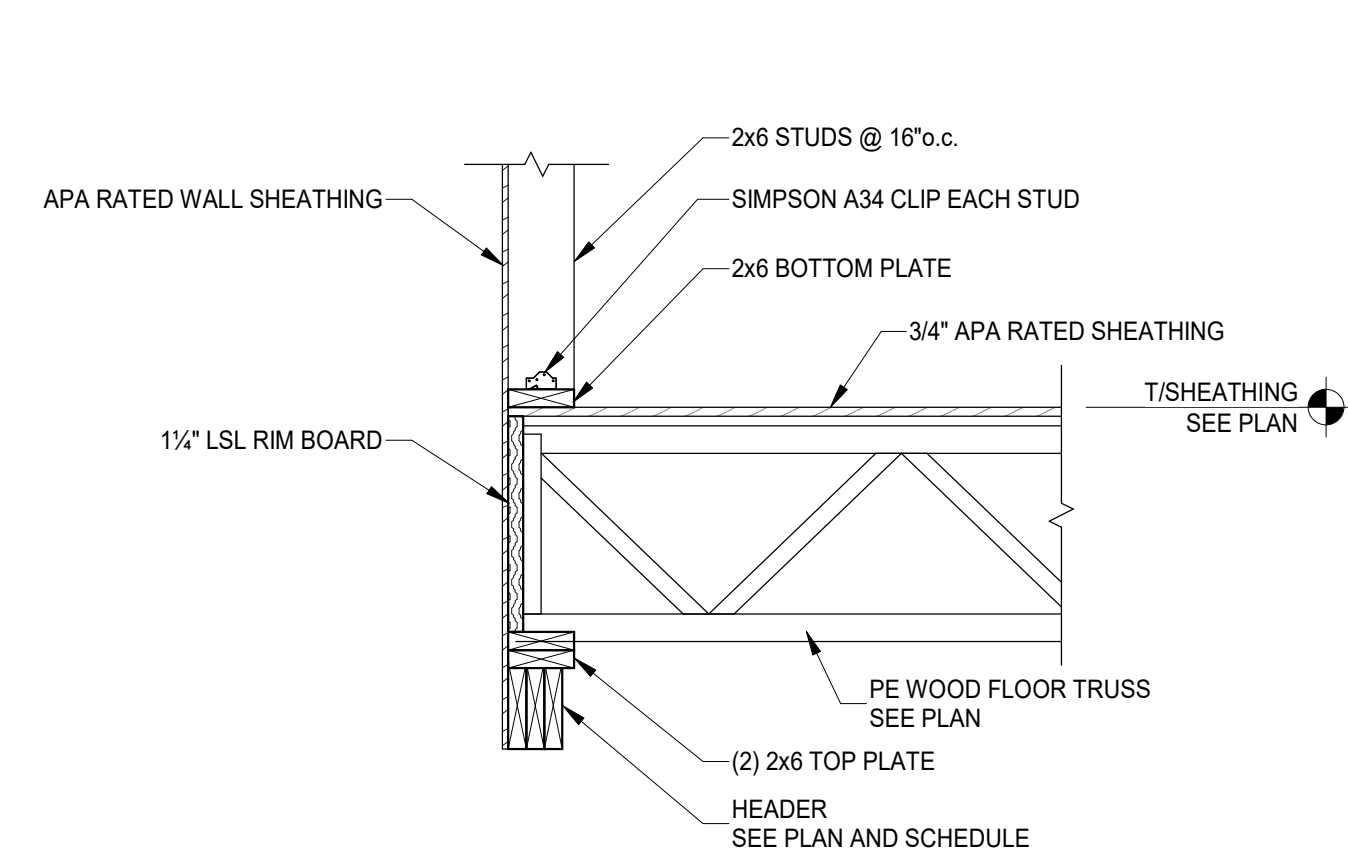
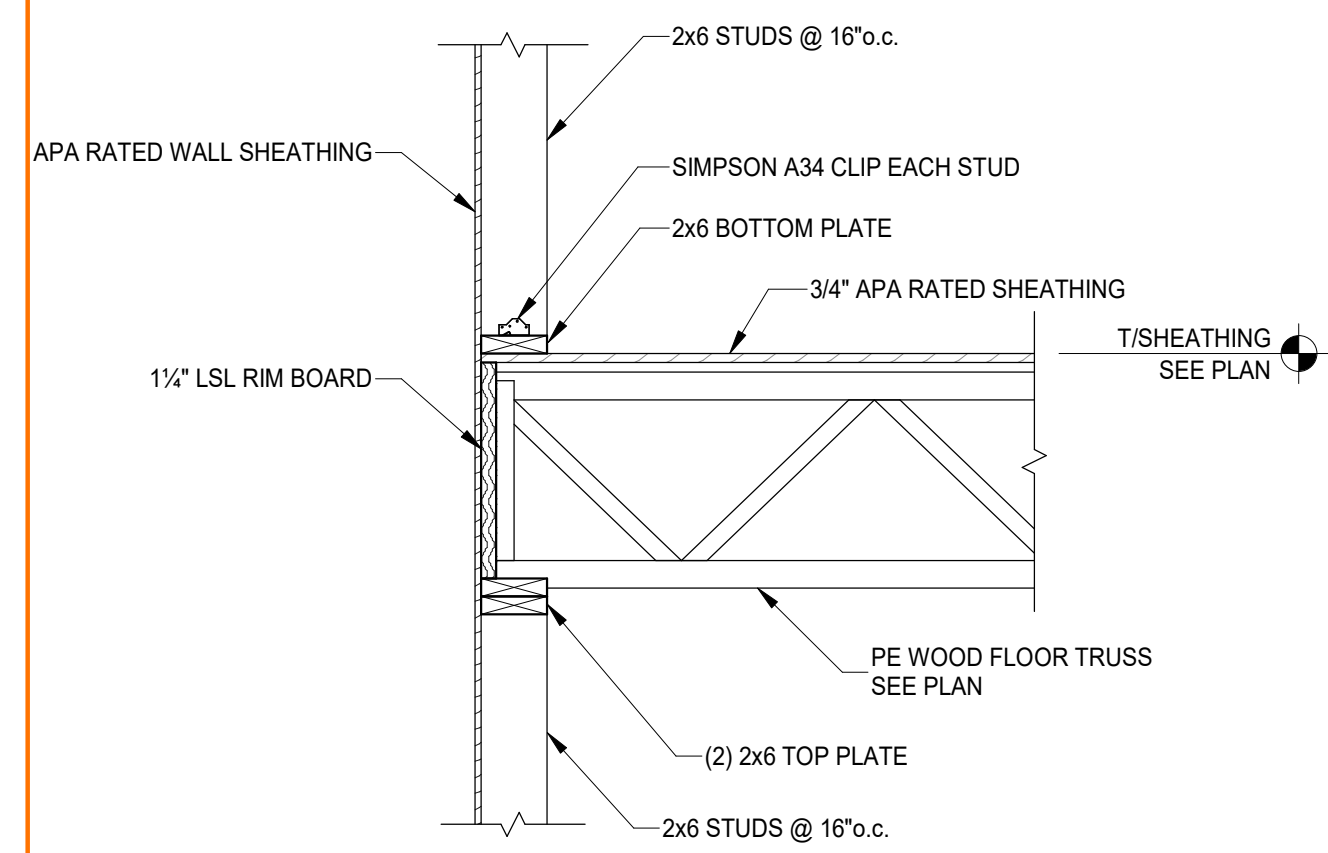
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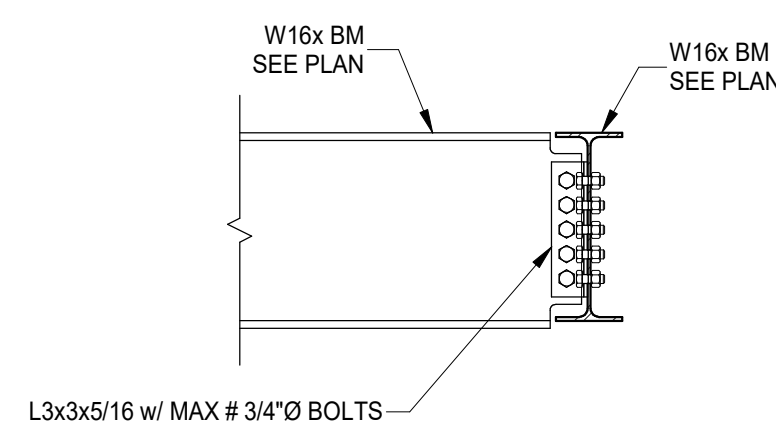
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NOTE: WOOD FRAMING NOT SHOWN FOR CLARITY.



SECTION 13  
 SCALE 3/4" = 1'-0" S321



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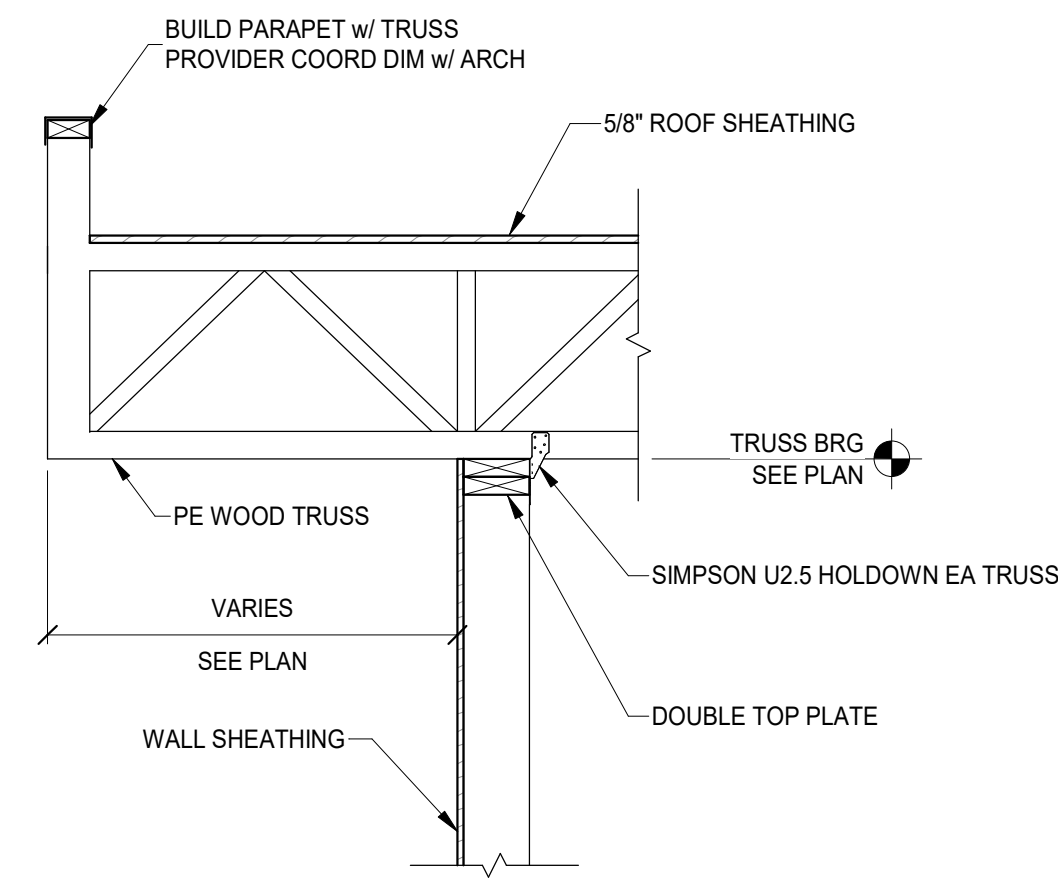
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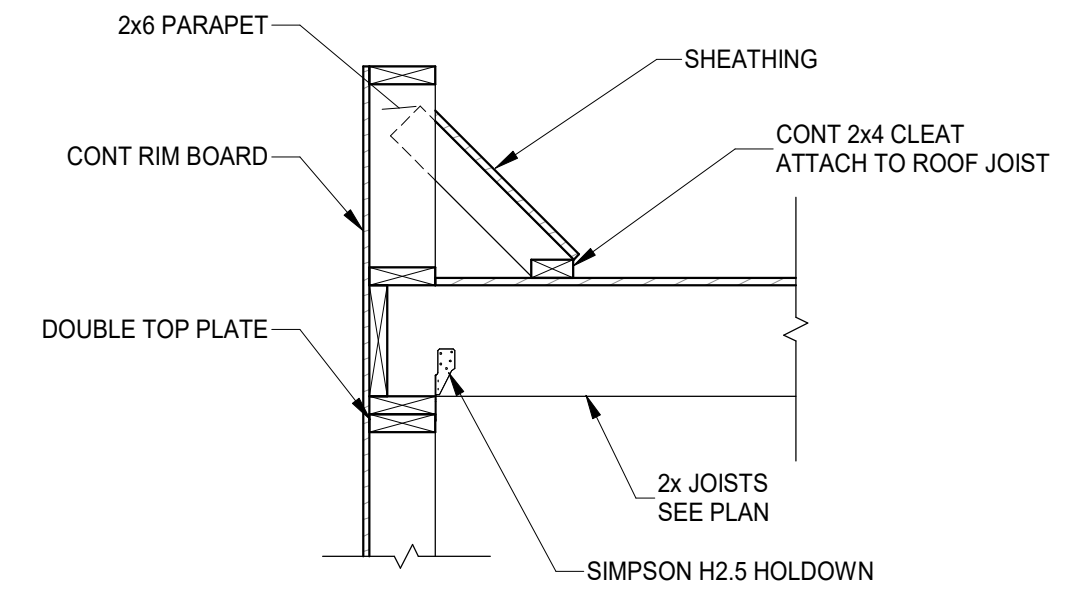
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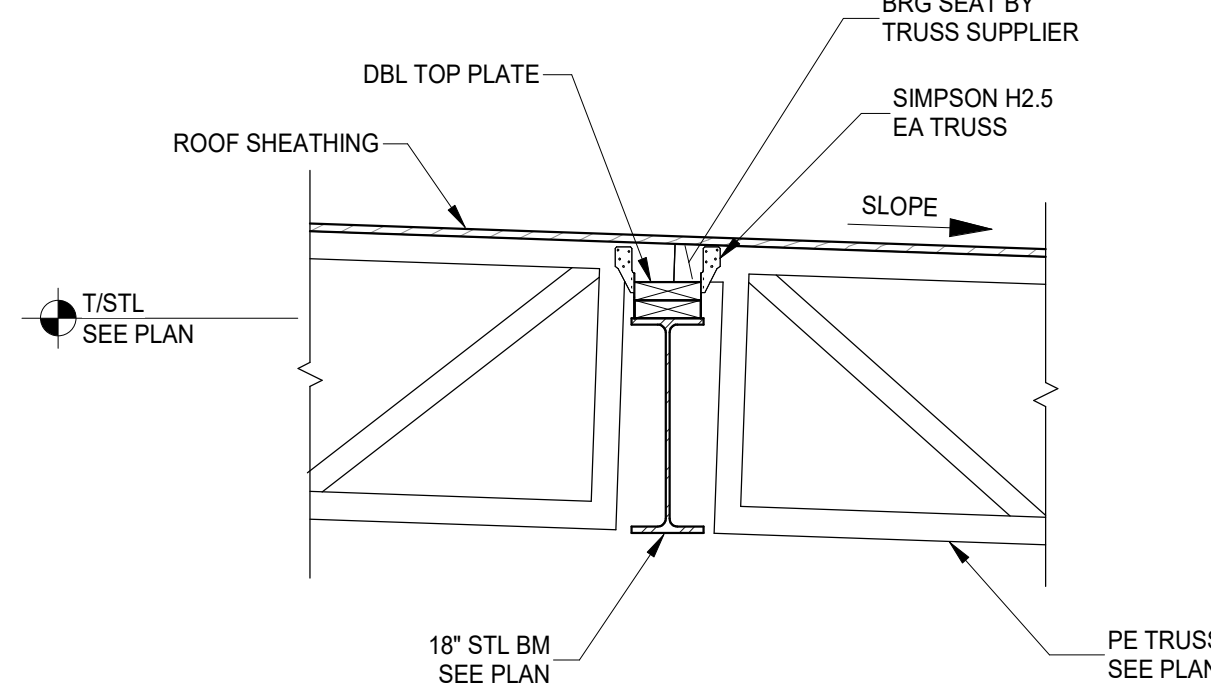
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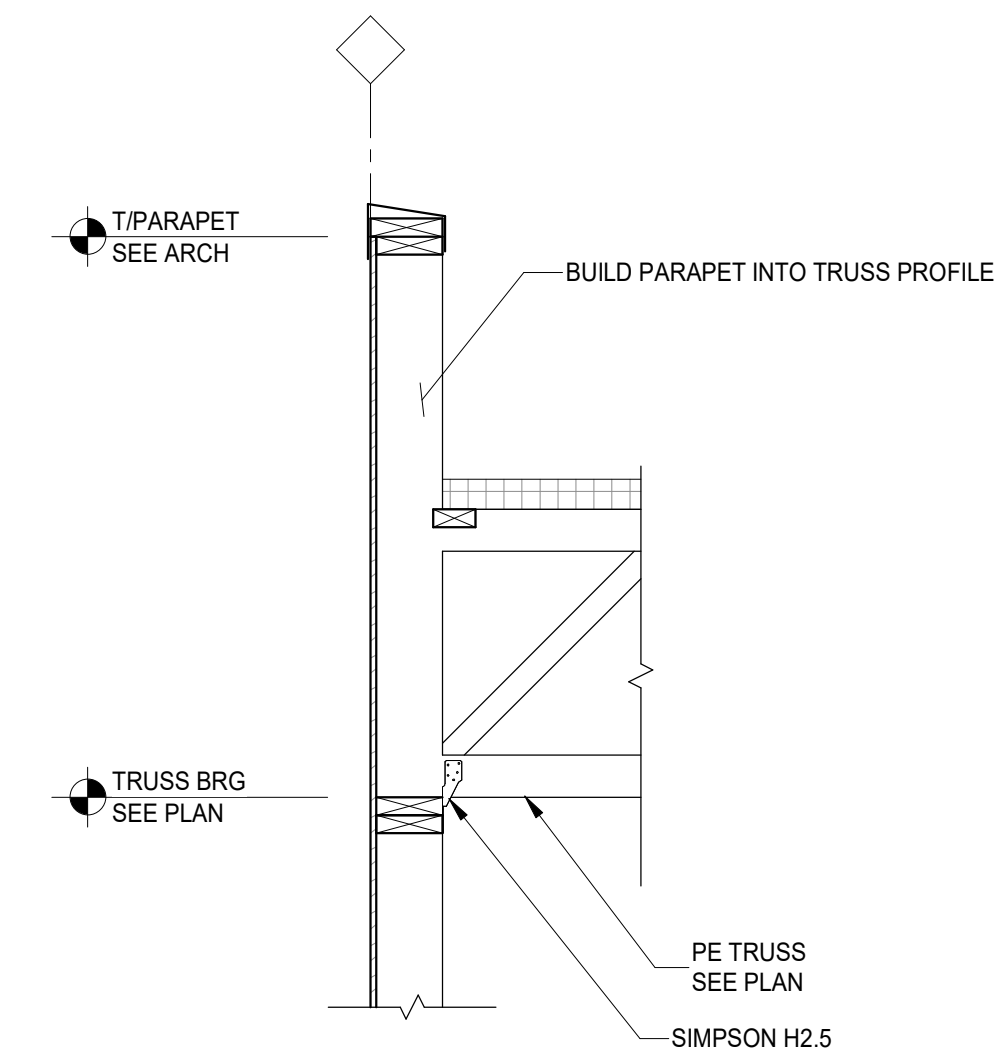
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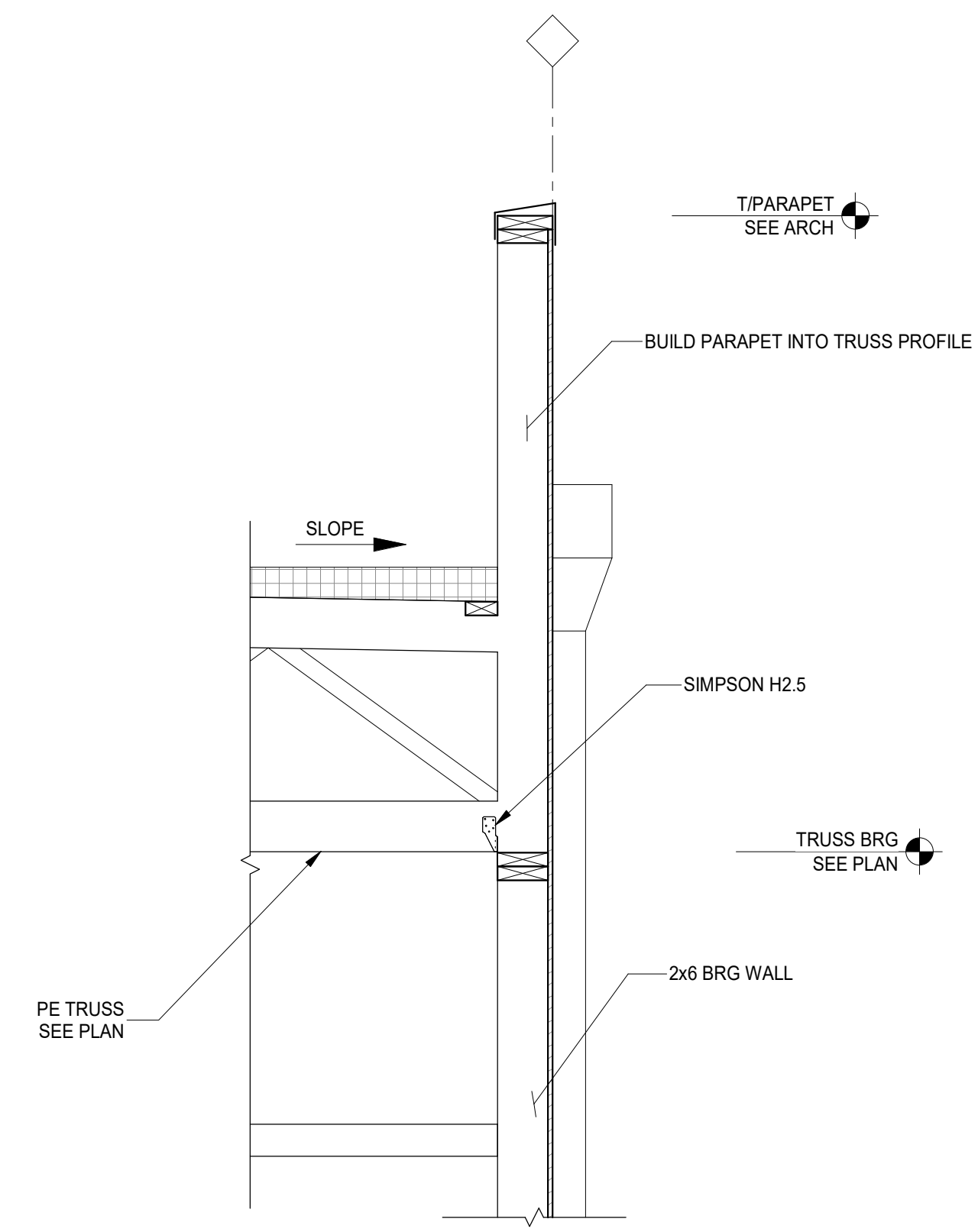
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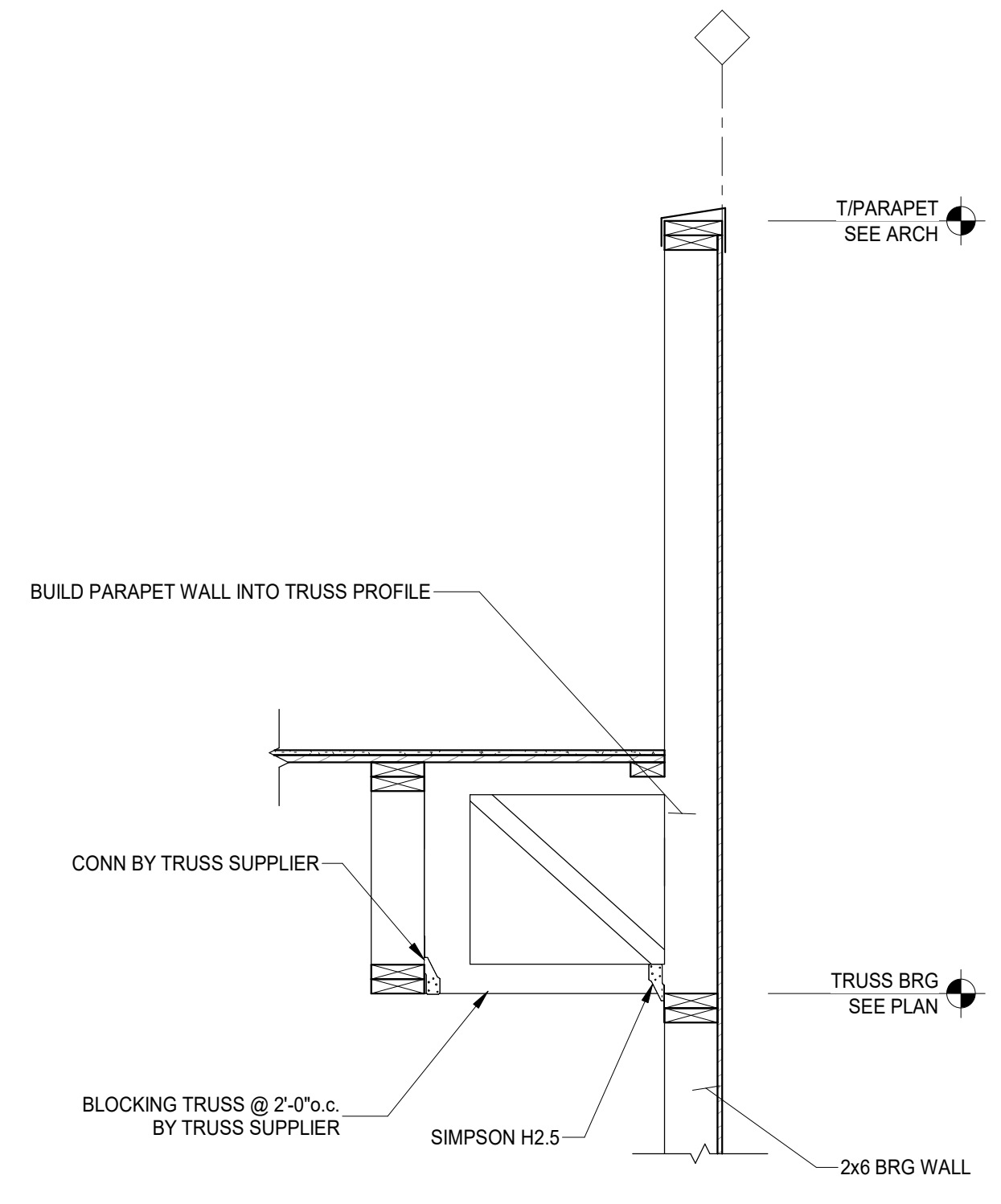
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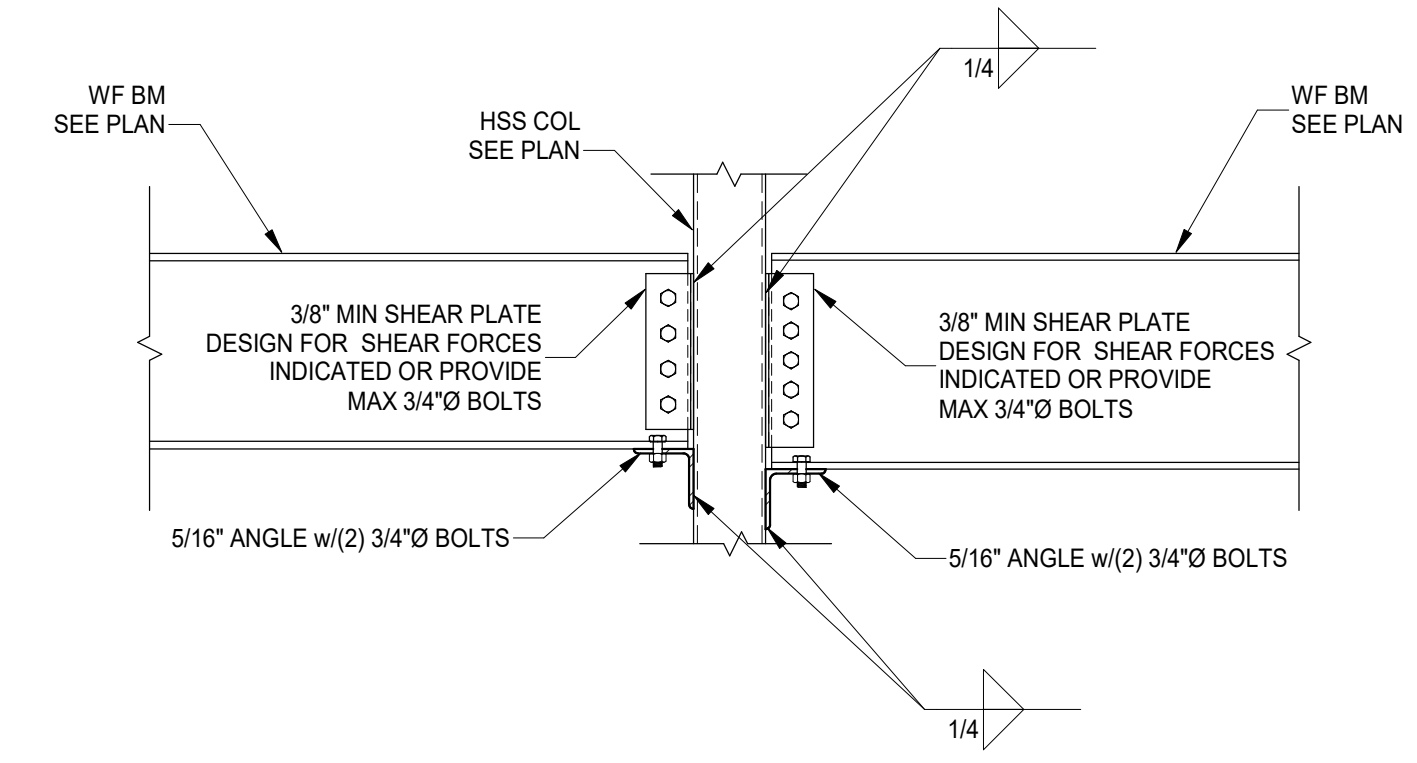
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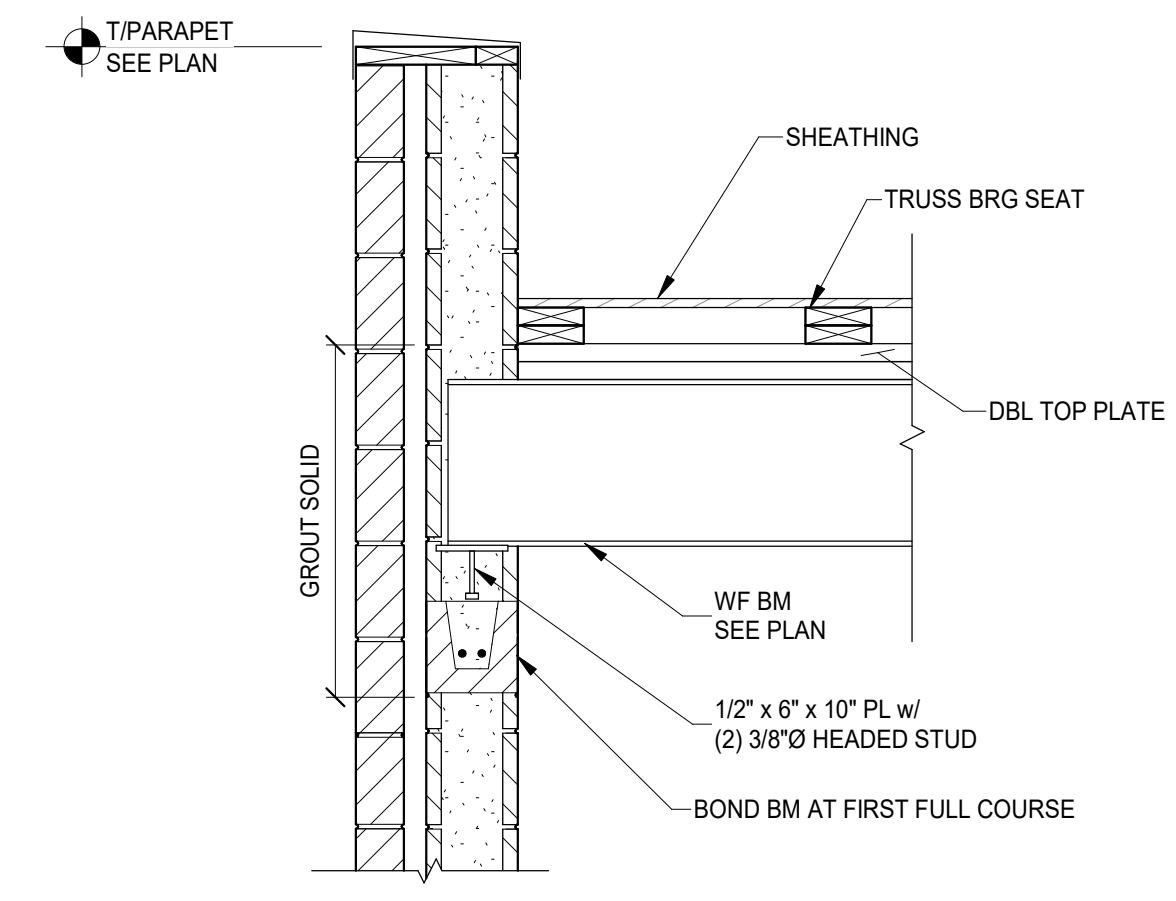
**SECTION 5**  
SCALE 3/4" = 1'-0" S330



**SECTION 6**  
SCALE 3/4" = 1'-0" S330



**SECTION 7**  
SCALE 3/4" = 1'-0" S330



**SECTION 8**  
SCALE 3/4" = 1'-0" S330



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**FIRE PROTECTION GENERAL NOTES**

INSTALL NEW SPRINKLER SYSTEM PER NFPA 13 THROUGHOUT THE BUILDING. CONCEALED COMBUSTIBLE SPACES INTERSTITIAL SPACES FOR THE FLOOR/CEILING AND ROOF/CEILING ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH NFPA 13 AND SHALL COMPLY WITH THE DRAFTSTOPPING EXCEPTIONS IN 718.3 AND 718.4.  
 SPRINKLERS ARE TO BE LOCATED IN THE CENTER OF ALL CEILING TILES (IN AT LEAST ONE DIRECTION).  
 COORDINATE WITH ARCHITECT'S CODE ANALYSIS. CONTACT ARCHITECT IF ANY DISCREPANCIES.  
 REFERENCE ARCHITECTURAL PLANS FOR CEILING HEIGHTS AND MATERIALS.  
DELEGATED FIRE SUPPRESSION DESIGN  
 DESIGN OF THE FIRE SUPPRESSION SYSTEM IS DELEGATED TO THE INSTALLING CONTRACTOR. RESPONSIBILITY FOR PROVIDING A COMPLIANT, OPERATIONAL FIRE SUPPRESSION SYSTEM LIES WITH THE INSTALLING SPRINKLER CONTRACTOR. REFER TO ARCHITECT'S CODE SHEET WHEN DETERMINING THE APPROPRIATE FIRE SUPPRESSION DESIGN. VERIFY REQUIREMENTS SPECIFIC TO THE PROJECT LOCALITY, THE AUTHORITY HAVING JURISDICTION, AND INCLUDE IN SCOPE.  
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 REQUIRED COMPONENTS THAT ARE NOT SHOWN ON THESE DRAWINGS ARE THE RESPONSIBILITY OF THIS CONTRACTOR AND ARE INCLUDED IN THIS SCOPE OF WORK.

FIRE PROTECTION LEGEND	
SYMBOL	DESCRIPTION
— F —	FIRE SERVICE / SPRINKLER PIPING
○ <sup>N</sup>	EXPOSED SPRINKLER IN AREA WITH NO CEILING (BRASS FINISH)
● <sup>N</sup>	SPRINKLER IN FINISHED CEILING (CONCEALED WITH COVER PLATE)
⊙ <sup>N</sup>	SIWALL SPRINKLER



**1** FIRE PROTECTION FLOOR PLAN - SECOND FLOOR  
 FP101 SCALE: 1/8" = 1'-0"



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FIRE PROTECTION SECOND FLOOR PLAN

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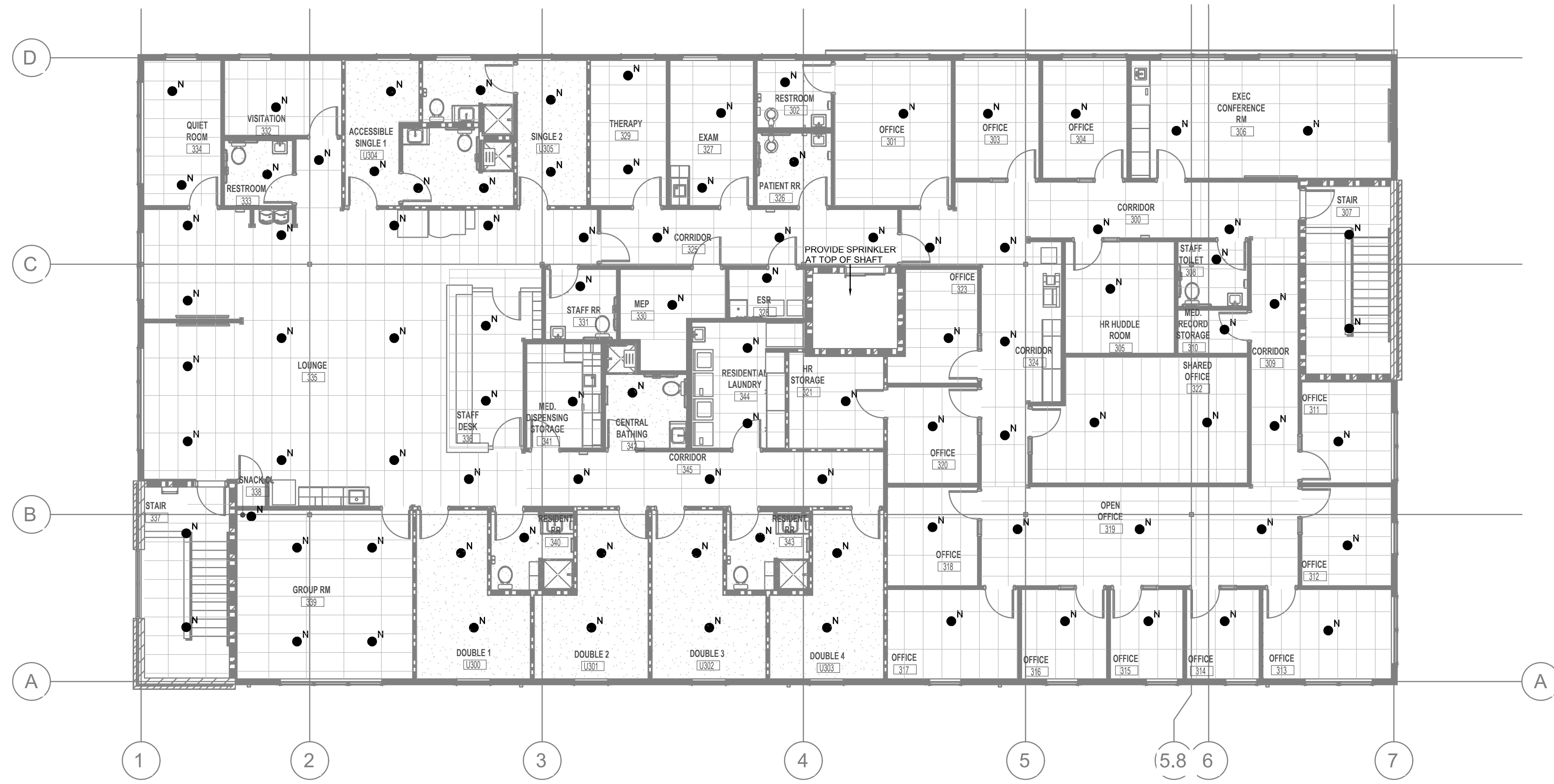
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**FIRE PROTECTION GENERAL NOTES**

INSTALL NEW SPRINKLER SYSTEM PER NFPA 13 THROUGHOUT THE BUILDING. CONCEALED COMBUSTIBLE SPACES INTERSTITIAL SPACES FOR THE FLOOR/CEILING AND ROOF/CEILING ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH NFPA 13 AND SHALL COMPLY WITH THE DRAFTSTOPPING EXCEPTIONS IN 718.3 AND 718.4.  
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FIRE PROTECTION LEGEND	
SYMBOL	DESCRIPTION
— F —	FIRE SERVICE / SPRINKLER PIPING
○ <sup>N</sup>	EXPOSED SPRINKLER IN AREA WITH NO CEILING (BRASS FINISH)
● <sup>N</sup>	SPRINKLER IN FINISHED CEILING (CONCEALED WITH COVER PLATE)
◐ <sup>N</sup>	SIDEWALL SPRINKLER



1 FIRE PROTECTION FLOOR PLAN - THIRD FLOOR  
 FP102 SCALE: 1/8" = 1'-0"



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FIRE PROTECTION  
 THIRD FLOOR PLAN

10637

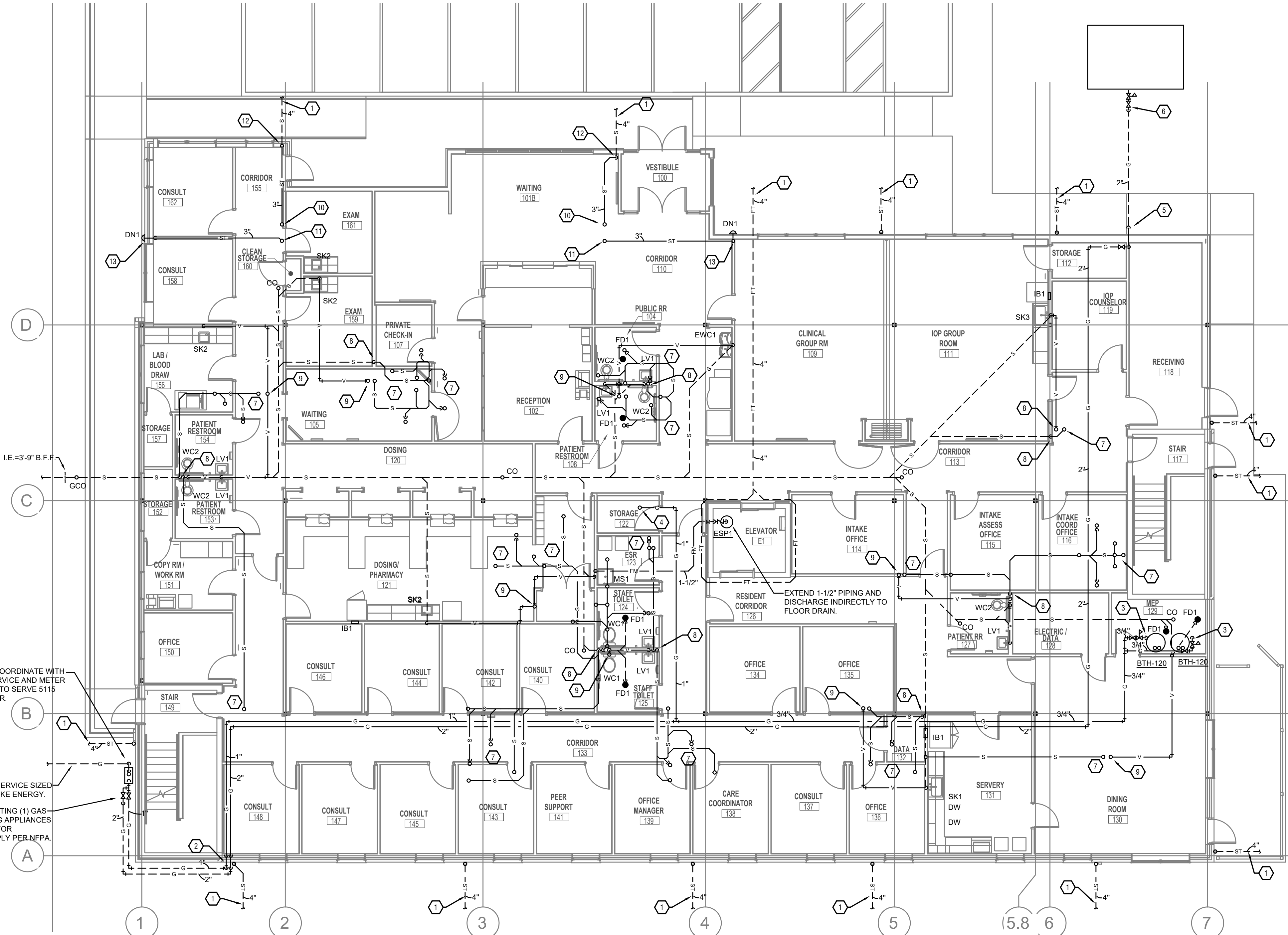
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PLUMBING CONTRACTOR SHALL COORDINATE WITH GAS PROVIDER FOR NEW GAS SERVICE AND METER SETTING. METER SHALL BE SIZED TO SERVE 5115 CFH AT 2 PSI THROUGH THE METER.

GAS SERVICE SIZED BY DUKE ENERGY.  
 PROVIDE SIGNS INDICATING (1) GAS VALVE IS FOR BUILDING APPLIANCES AND (1) GAS VALVE IS FOR GENERATOR GAS SUPPLY PER NFPA.



**1** PLUMBING SANITARY, VENT, AND GAS PLAN FLOOR PLAN - FIRST FLOOR  
 P100a SCALE: 1/8" = 1'-0"

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
---	SANITARY/WASTE PIPING BELOW FLOOR
---	SANITARY/WASTE PIPING ABOVE CEILING
---	VENT PIPING
---	COLD WATER PIPING
---	HOT WATER PIPING
---	HOT WATER RETURN PIPING
---	NATURAL GAS PIPING
---	STORM PIPING
---	FOOTER PIPING
FD ●	FLOOR DRAIN
RD ⊙	ROOF DRAIN
OD ⊙	OVERFLOW DRAIN
⊘	BALL VALVE
⊘	CHECK VALVE
⊘	BALANCING VALVE
⊘	GAS REGULATOR
CO ●	CLEANOUT
WHH	FROST PROOF WALL HYDRANT
⊘	VENT THROUGH ROOF RISER INDICATOR
⊘	HOT WATER RETURN PUMP

**PLUMBING FIRST FLOOR KEYED NOTES**

- PROVIDE A 4" DOWNSPOUT CONNECTION. REFER TO SITE UTILITY DRAWINGS FOR CONTINUATION.
- GAS PIPING ABOVE GRADE AND ROUTED INTO THE BUILDING TO SERVE MECHANICAL EQUIPMENT, WATER HEATERS AND GENERATOR.
- 3/4" GAS PIPING DOWN TO SERVE WATER HEATER. PROVIDE A PRESSURE REGULATOR TO REDUCE GAS PRESSURE FROM 2 PSI TO 7" W.C.
- 1" GAS PIPING UP TO FLOOR ABOVE.
- 2" GAS PIPING DOWN IN WALL AND OUT ABOVE GRADE TO SERVE GENERATOR.
- 2" GAS PIPING UP FROM BELOW GRADE TO GENERATOR. PROVIDE A PRESSURE REDUCING VALVE ON GAS PIPING TO REDUCE GAS PRESSURE FROM 2 PSI TO 11" W.C.
- SANITARY PIPING UP TO FLOOR ABOVE. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.
- SANITARY PIPING DOWN IN WALL AND UNDER SLAB. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.
- VENT PIPING UP TO FLOOR ABOVE. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.
- 3" ROOF LEADER UP TO PRIMARY ROOF DRAIN.
- 3" ROOF LEADER UP TO SECONDARY OVERFLOW DRAIN.
- 3" ROOF LEADER DOWN UNDER SLAB. REFER TO SITE UTILITY PLAN FOR CONTINUATION.
- 3" ROOF LEADER DOWN TO DOWNSPOUT NOZZLE. DOWNSPOUT NOZZLE SHALL BE A ZURN Z-199 OR APPROVED EQUAL. COORDINATE WITH GC AND ARCHITECT FOR MOUNTING HEIGHTS AND FINISH.



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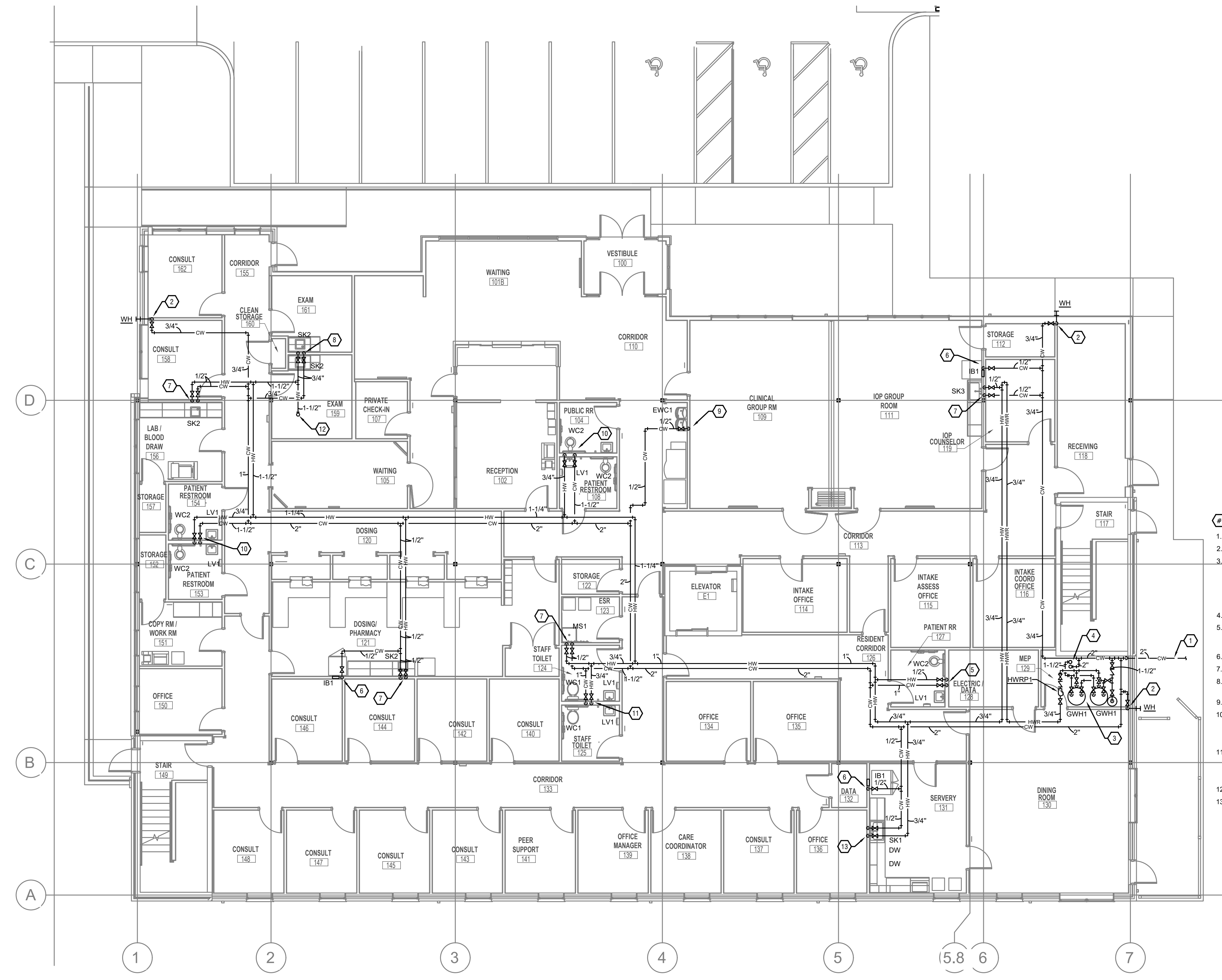
**PLUMBING FIRST FLOOR PLAN  
 SANITARY VENT AND GAS PLAN**

10637

**P100a**

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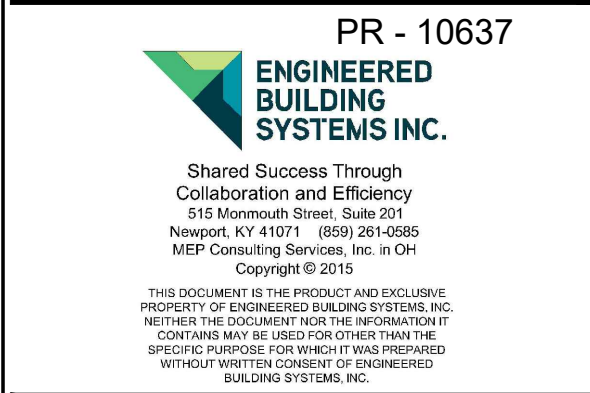


PLUMBING LEGEND	
SYMBOL	DESCRIPTION
---S---	SANITARY/WASTE PIPING BELOW FLOOR
---S---	SANITARY/WASTE PIPING ABOVE CEILING
---V---	VENT PIPING
---CW---	COLD WATER PIPING
---HW---	HOT WATER PIPING
---HWR---	HOT WATER RETURN PIPING
---G---	NATURAL GAS PIPING
---ST---	STORM PIPING
---FT---	FOOTER PIPING
FD ●	FLOOR DRAIN
RD ⊙	ROOF DRAIN
OD ⊙	OVERFLOW DRAIN
⊘	BALL VALVE
⊘	CHECK VALVE
⊘	BALANCING VALVE
⊘	GAS REGULATOR
CO ●	CLEANOUT
WHH	FROST PROOF WALL HYDRANT
⊘	VENT THROUGH ROOF RISER INDICATOR
⊘	HOT WATER RETURN PUMP

**PLUMBING FIRST FLOOR KEYED NOTES**

- 2" COLD WATER SERVICE. REFER TO SITE UTILITY PLAN FOR CONTINUATION.
- 3/4" COLD WATER PIPING DOWN TO SERVE FROST PROOF WALL HYDRANT.
- GW1- GAS TANK TYPE WATER HEATERS SHALL BE EQUAL TO AO SMITH BTH-120, 3/4" HOT WATER RETURN PIPING, 1-1/2" HOT WATER AND COLD WATER DOWN TO WATER HEATER WITH AN AMTROL ST-12-CC EXPANSION TANK. CONTRACTOR SHALL SUPPLY CIRCULATION PUMP (HWRP) BELL AND GOSSETT SERIES 100 OR APPROVED EQUAL AND ALL SHUT OFF. CHECK AND BALANCING VALVES REQUIRED. REFER TO PIPING DETAIL ON SHEET P201.
- 1-1/2" HOT WATER AND 2" COLD WATER PIPING UP TO FLOOR ABOVE.
- 1/2" HOT WATER AND 1" COLD WATER PIPING DOWN IN WALL. 1/2" HOT AND COLD WATER TO LAVATORY AND 1" COLD WATER TO WATER CLOSET. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALE ON SUPPLY LINES TO LAVATORY.
- 1/2" COLD WATER DOWN TO VALVE BOX TO SERVE REFRIGERATOR.
- 1/2" HOT AND COLD WATER DOWN TO SERVE SINK.
- 3/4" HOT AND COLD WATER PIPING DOWN IN WALL. 1/2" HOT AND COLD WATER PIPING TO EACH SINK.
- 1/2" COLD WATER DOWN TO SERVE WATER COOLER.
- 3/4" HOT WATER AND 1-1/2" COLD WATER PIPING DOWN IN WALL. 1/2" HOT AND COLD WATER TO EACH LAVATORY AND 1" COLD WATER TO EACH WATER CLOSET. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALE ON SUPPLY LINES TO LAVATORY.
- 3/4" HOT WATER AND 1" COLD WATER PIPING DOWN IN WALL. 1/2" HOT AND COLD WATER TO EACH LAVATORY AND 1/2" COLD WATER TO EACH WATER CLOSET. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALE ON SUPPLY LINES TO LAVATORY.
- 1-1/2" HOT WATER PIPING DOWN FROM FLOOR ABOVE.
- 1/2" HOT AND COLD WATER PIPING DOWN TO IN WALL. 1/2" HOT AND COLD WATER TO SERVE SINK AND EXTEND 1/2" HOT WATER LINES TO SERVE DISHWASHERS.

**1 PLUMBING DOMESTIC WATER FLOOR PLAN - FIRST FLOOR**  
 P100b SCALE: 1/8" = 1'-0"



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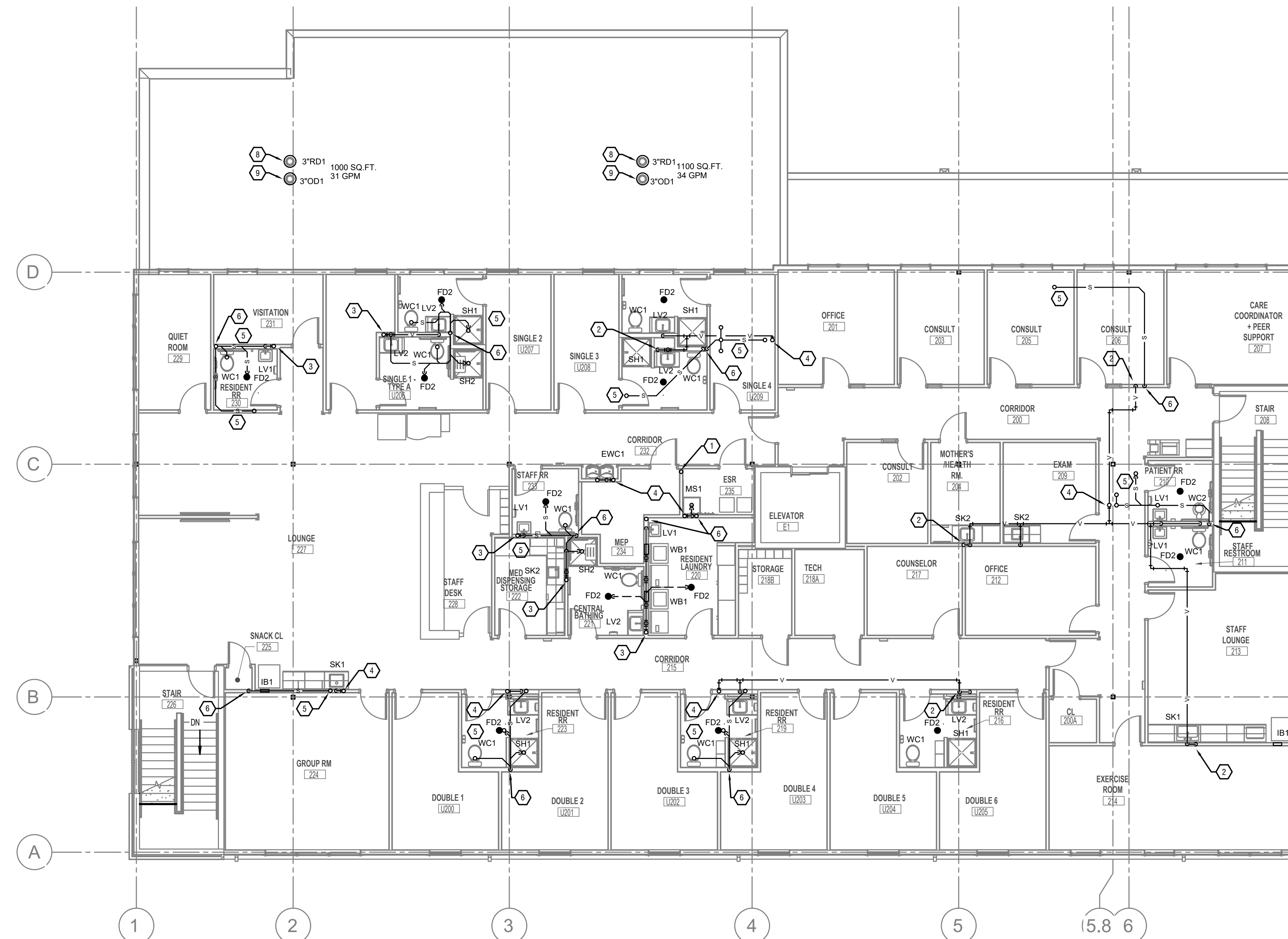
**PLUMBING FIRST FLOOR DOMESTIC WATER PLAN**

10637

**P100b**

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PLUMBING LEGEND	
SYMBOL	DESCRIPTION
---	SANITARY/WASTE PIPING BELOW FLOOR
---	SANITARY/WASTE PIPING ABOVE CEILING
---	VENT PIPING
---	COLD WATER PIPING
---	HOT WATER PIPING
---	HOT WATER RETURN PIPING
---	NATURAL GAS PIPING
---	STORM PIPING
---	FOOTER PIPING
FD ●	FLOOR DRAIN
RD ⊙	ROOF DRAIN
OD ⊙	OVERFLOW DRAIN
⊘	BALL VALVE
⊘	CHECK VALVE
⊘	BALANCING VALVE
⊘	GAS REGULATOR
CO ●	CLEANOUT
WHH	FROST PROOF WALL HYDRANT
⊙	VENT THROUGH ROOF RISER INDICATOR
⊘	HOT WATER RETURN PUMP

- PLUMBING SECOND FLOOR KEYED NOTES**
- 1" GAS PIPING UP FROM FLOOR BELOW AND UP TO FLOOR ABOVE.
  - VENT PIPING UP FROM FLOOR BELOW. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.
  - VENT PIPING UP FROM FLOOR BELOW AND UP TO FLOOR ABOVE. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.
  - VENT PIPING UP TO FLOOR ABOVE. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.
  - SANITARY PIPING UP TO FLOOR ABOVE. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.
  - SANITARY PIPING DOWN IN WALL. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.
  - SANITARY PIPING UP AND DOWN. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.
  - 3" ROOF DRAIN SERVING 1000 SQ. FT.
  - 3" ROOF OVERFLOW DRAIN SERVING 1000 SQ. FT.

**1 PLUMBING WASTE, VENT, STORM AND GAS FLOOR PLAN - SECOND FLOOR**  
 P101a SCALE: 1/8" = 1'-0"



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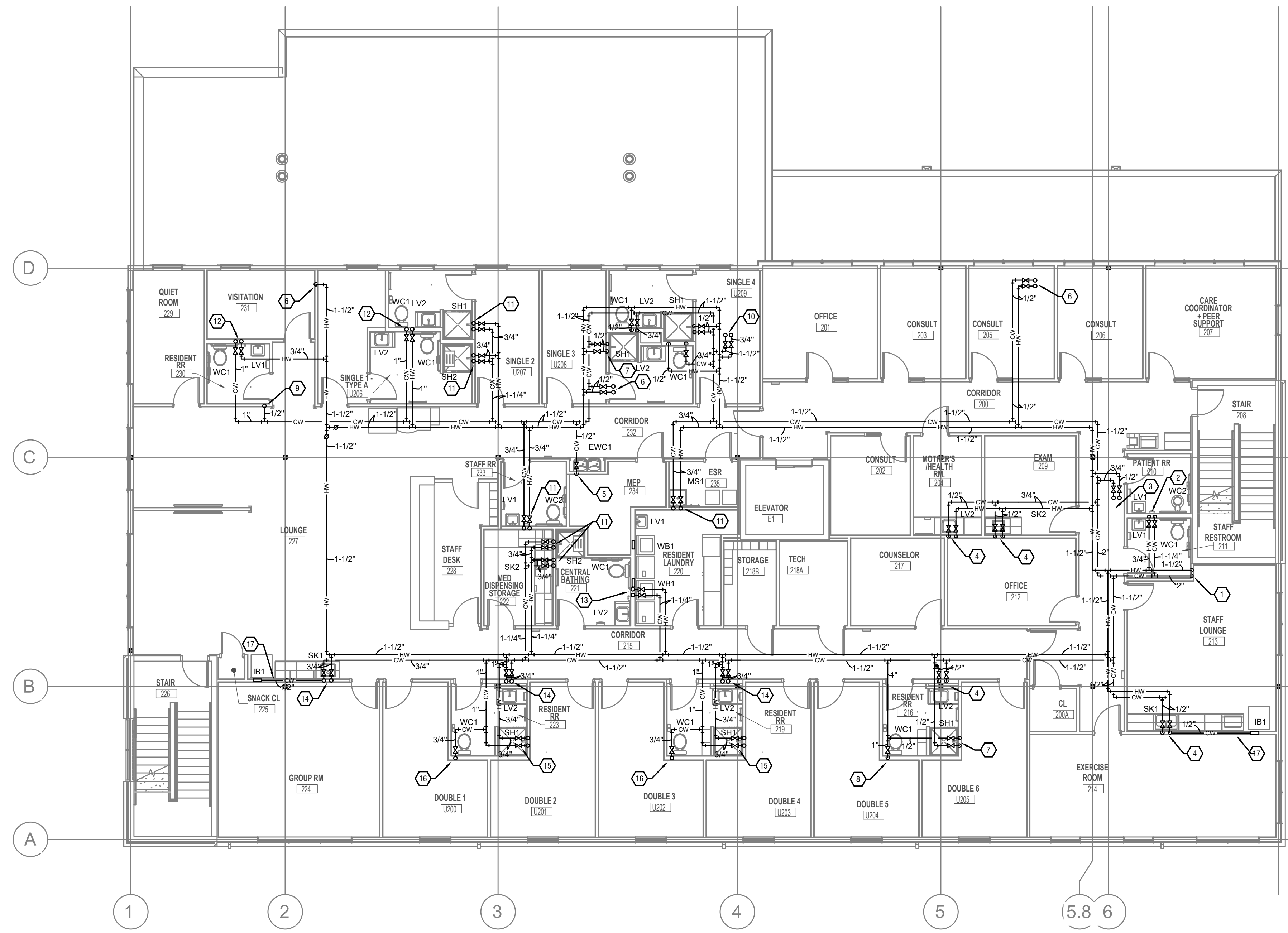
**PLUMBING SECOND FLOOR WASTE, VENT, STORM AND GAS PLAN**

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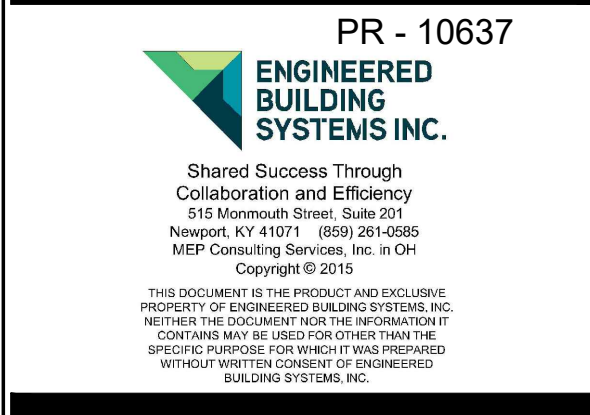


PLUMBING LEGEND	
SYMBOL	DESCRIPTION
---	SANITARY/WASTE PIPING BELOW FLOOR
---	SANITARY/WASTE PIPING ABOVE CEILING
---	VENT PIPING
---	COLD WATER PIPING
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⊘	BALANCING VALVE
⊘	GAS REGULATOR
CO ●	CLEANOUT
WHH	FROST PROOF WALL HYDRANT
⊘	VENT THROUGH ROOF RISER INDICATOR
⊘	HOT WATER RETURN PUMP

PLUMBING SECOND FLOOR KEYED NOTES

- 1-1/2" HOT WATER AND 2" COLD WATER PIPING UP FROM FLOOR BELOW.
- 3/4" HOT WATER AND 1-1/4" COLD WATER PIPING DOWN IN WALL. 1/2" HOT AND COLD WATER TO EACH LAVATORY. 1" COLD WATER TO WC1 AND 1/2" COLD WATER TO WC2. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALVE ON SUPPLY LINES TO EACH LAVATORY.
- 1/2" HOT WATER AND 3/4" COLD WATER PIPING UP TO FLOOR ABOVE.
- 1/2" HOT AND COLD WATER PIPING DOWN TO SERVE SINK. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALVE ON SUPPLY LINES TO EACH LAVATORY/SINK.
- 1/2" COLD WATER DOWN TO VALVE BOX TO SERVE WATER COOLER.
- 1/2" HOT AND COLD WATER UP TO FLOOR ABOVE.
- 1/2" HOT AND COLD WATER DOWN TO SERVE SHOWER.
- 1/2" COLD WATER DOWN TO SERVE WATER CLOSET.
- 1/2" COLD WATER UP TO FLOOR ABOVE.
- 3/4" HOT WATER AND 1-1/2" COLD WATER UP TO FLOOR ABOVE.
- 3/4" HOT AND COLD WATER, 1/2" HOT AND COLD WATER UP TO FLOOR ABOVE AND 1/2" HOT AND COLD WATER DOWN TO SERVE PLUMBING FIXTURE.
- 1" HOT AND COLD WATER, 3/4" HOT AND COLD WATER UP TO FLOOR ABOVE AND 3/4" HOT AND COLD WATER DOWN 1/2" HOT AND COLD WATER TO EACH LAVATORY AND 1/2" COLD WATER TO EACH WATER CLOSET. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALVE ON SUPPLY LINES TO EACH LAVATORY.
- 1-1/4" HOT AND COLD WATER, 1" HOT AND COLD WATER UP TO FLOOR ABOVE AND 1" HOT AND COLD WATER DOWN 1/2" HOT AND COLD WATER TO EACH LAVATORY AND WASHER BOX, 1/2" COLD WATER TO WATER CLOSET. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALVE ON SUPPLY LINES TO EACH LAVATORY.
- 3/4" HOT AND COLD WATER PIPING IN WALL. 1/2" HOT AND COLD WATER PIPING DOWN TO SERVE SINK AND 1/2" HOT AND COLD WATER UP TO FLOOR ABOVE. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALVE ON SUPPLY LINES TO EACH LAVATORY/SINK.
- 3/4" HOT AND COLD WATER PIPING IN WALL. 1/2" HOT AND COLD WATER DOWN TO SERVE SHOWER AND 1/2" HOT AND COLD WATER PIPING UP TO FLOOR ABOVE.
- 3/4" COLD WATER IN WALL. 1/2" COLD WATER DOWN TO SERVE WATER CLOSET AND 1/2" COLD WATER UP TO FLOOR ABOVE.
- EXTEND A 1/2" COLD WATER LINE THROUGH WALL TO SERVE VALVE BOX FOR REFRIGERATOR.

1 PLUMBING DOMESTIC WATER PLAN FLOOR PLAN - SECOND FLOOR  
 101b SCALE: 1/8" = 1'-0"



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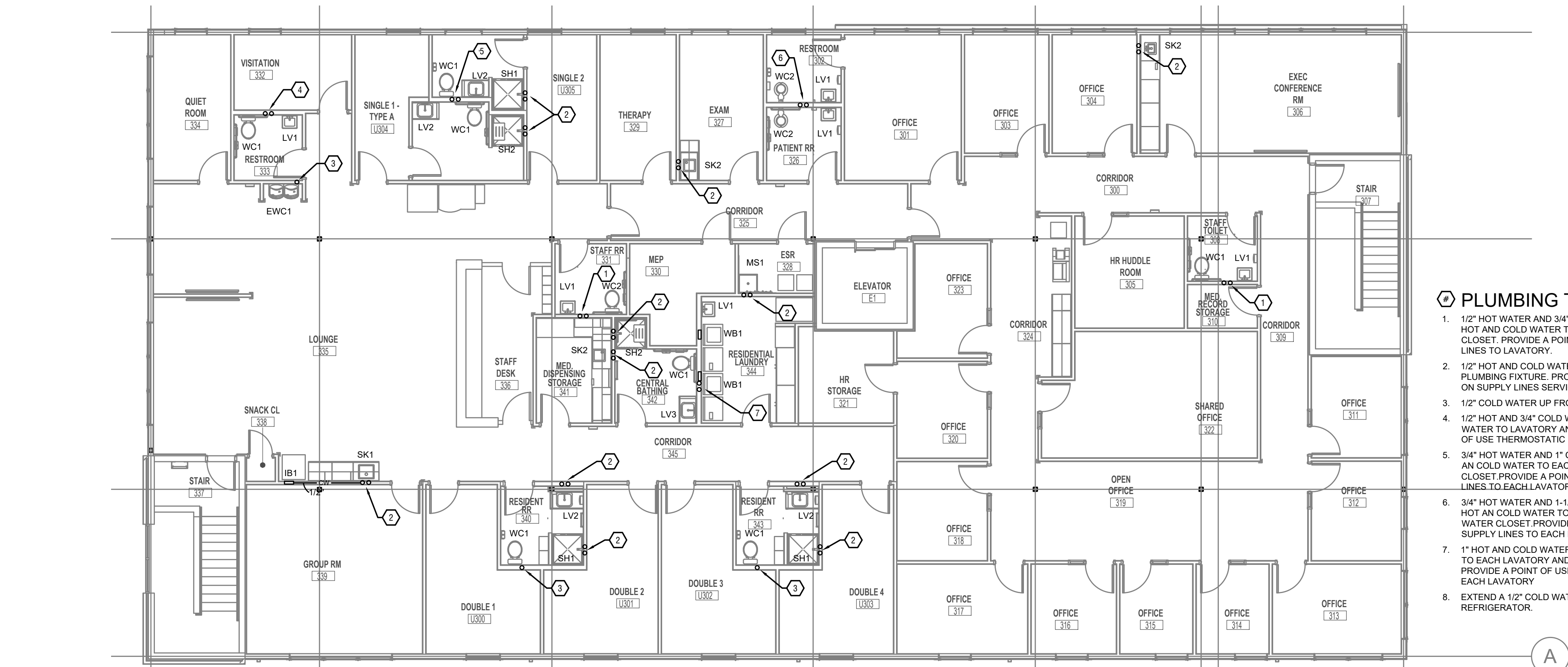
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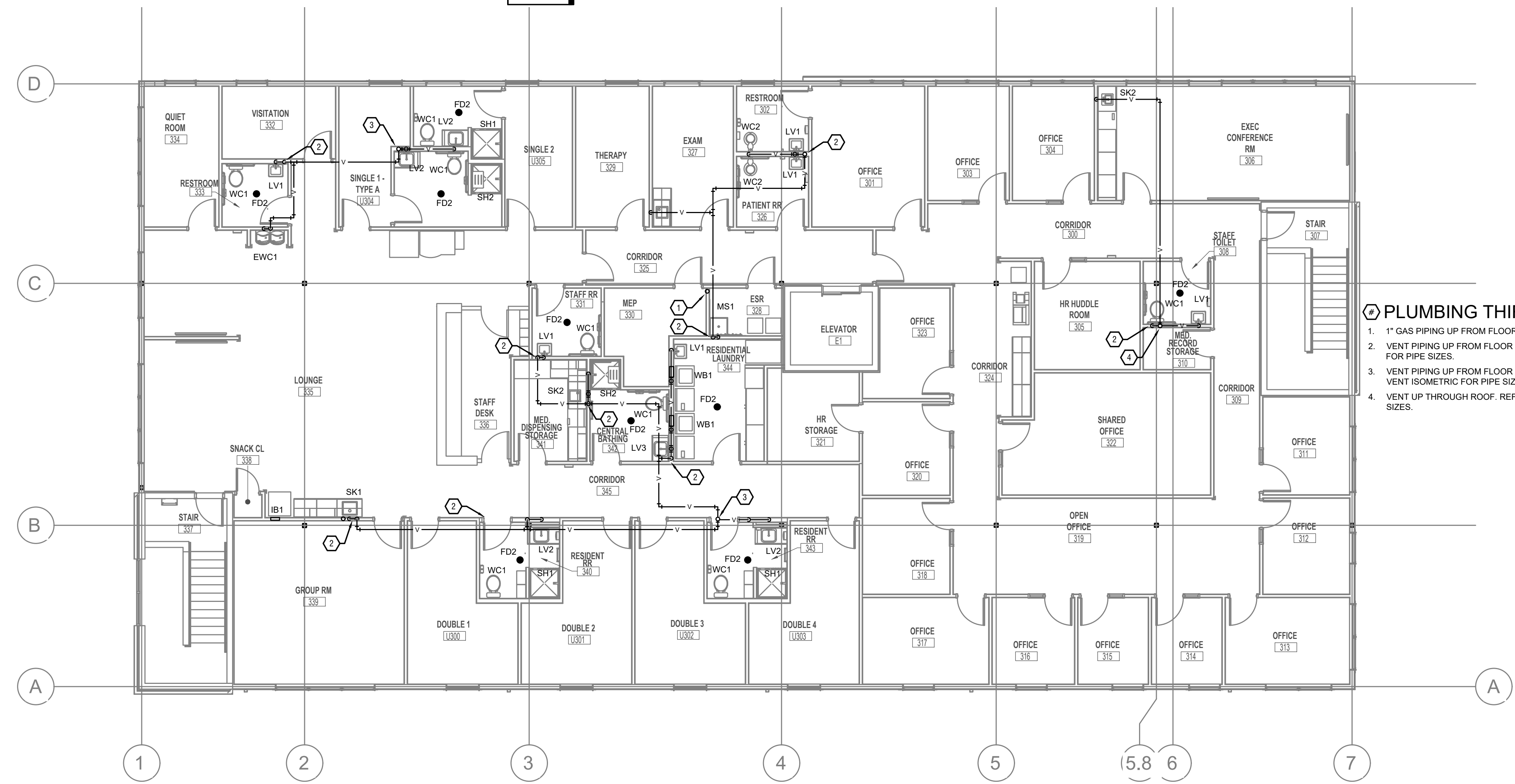
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**2** PLUMBING SANITARY VENT, AND GAS FLOOR PLAN - THIRD FLOOR  
 P102 SCALE: 1/8" = 1'-0"

**PLUMBING THIRD FLOOR KEYED NOTES**

- 1/2" HOT WATER AND 3/4" COLD WATER PIPING UP FROM FLOOR BELOW. 1/2" HOT AND COLD WATER TO LAVATORY AND 1/2" COLD WATER TO WATER CLOSET. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALVE ON SUPPLY LINES TO LAVATORY.
- 1/2" HOT AND COLD WATER PIPING UP FROM FLOOR BELOW TO SERVE PLUMBING FIXTURE. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALVE ON SUPPLY LINES SERVICE EACH LAVATORY/SINK.
- 1/2" COLD WATER UP FROM FLOOR BELOW TO SERVE PLUMBING FIXTURE.
- 1/2" HOT AND 3/4" COLD WATER UP FROM FLOOR BELOW. 1/2" HOT AND COLD WATER TO LAVATORY AND 1/2" COLD WATER WATER CLOSET. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALVE ON SUPPLY LINES TO EACH LAVATORY.
- 3/4" HOT WATER AND 1" COLD WATER PIPING UP FROM FLOOR BELOW. 1/2" HOT AN COLD WATER TO EACH LAVATORY AND 1/2" COLD WATER TO EACH WATER CLOSET. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALVE ON SUPPLY LINES TO EACH LAVATORY.
- 3/4" HOT WATER AND 1-1/2" COLD WATER PIPING UP FROM FLOOR BELOW. 1/2" HOT AN COLD WATER TO EACH LAVATORY AND 1/2" COLD WATER TO EACH WATER CLOSET. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALVE ON SUPPLY LINES TO EACH LAVATORY.
- 1" HOT AND COLD WATER UP FROM FLOOR BELOW. 1/2" HOT AND COLD WATER TO EACH LAVATORY AND WASHER BOX. 1/2" COLD WATER TO WATER CLOSET. PROVIDE A POINT OF USE THERMOSTATIC MIXING VALVE ON SUPPLY LINES TO EACH LAVATORY.
- EXTEND A 1/2" COLD WATER LINE THROUGH WALL TO SERVE VALVE BOX FOR REFRIGERATOR.



**1** PLUMBING SANITARY VENT, AND GAS FLOOR PLAN - THIRD FLOOR  
 P102 SCALE: 1/8" = 1'-0"

**PLUMBING THIRD FLOOR KEYED NOTES**

- 1" GAS PIPING UP FROM FLOOR BELOW AND UP TO ROOF.
- VENT PIPING UP FROM FLOOR BELOW. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.
- VENT PIPING UP FROM FLOOR BELOW AND UP TO ROOF. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.
- VENT UP THROUGH ROOF. REFER TO WASTE AND VENT ISOMETRIC FOR PIPE SIZES.



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PLUMBING SANITARY VENT, AND GAS THIRD FLOOR PLAN

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**P102**

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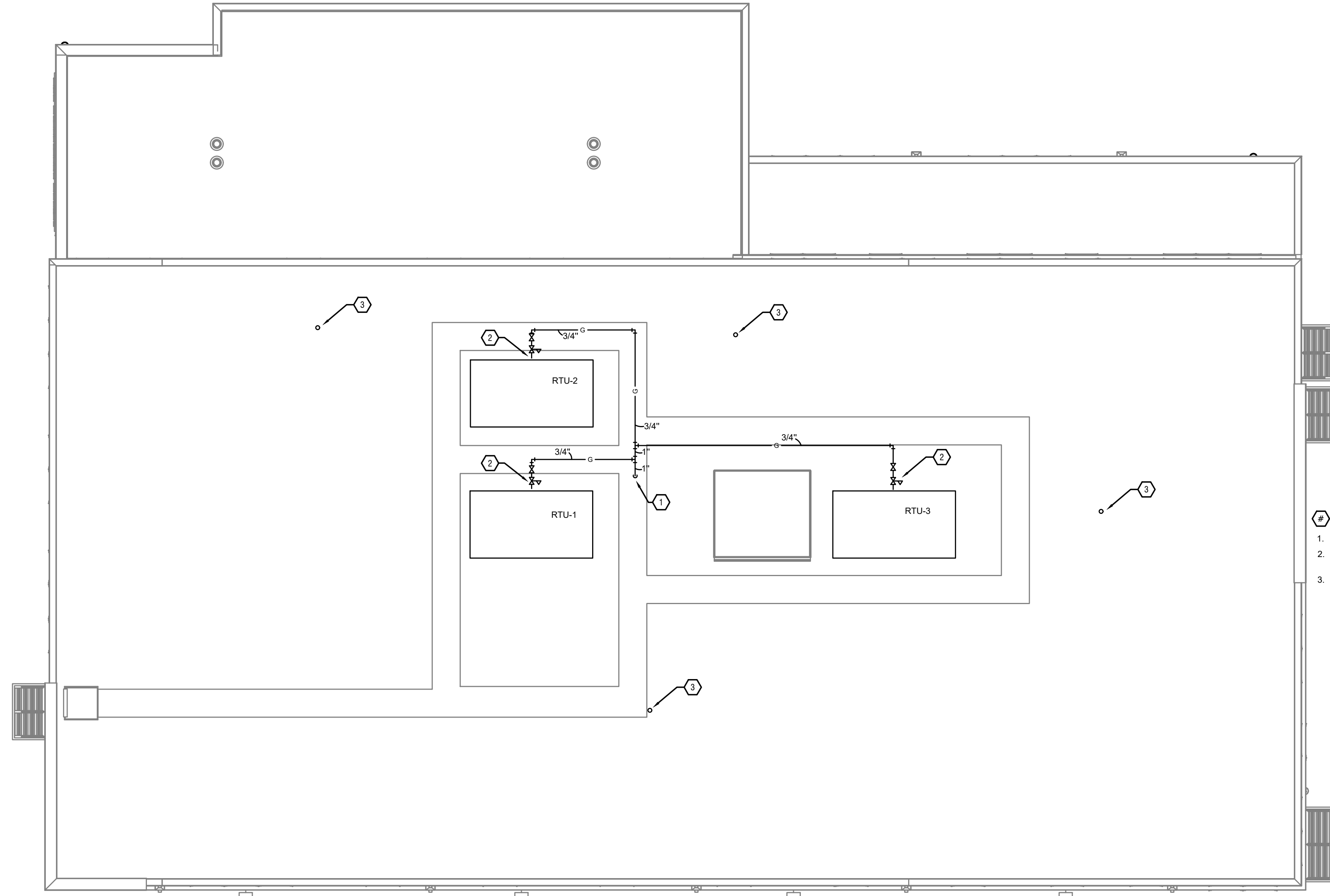
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MISCELLANEOUS FIXTURE SCHEDULE								
MARK	FIXTURE DESCRIPTION	FIXTURE MANUFACTURER	FIXTURE MODEL	FAUCET MANUFACTURER	FAUCET MODEL	APPROVED FIXTURE MANUFACTURERS	APPROVED FAUCET MANUFACTURER	ADDITIONAL INFORMATION
EW1	HI-LO WATER COOLER ADA	OASIS	PG84CSL	N/A	N/A	OASIS, ELKAY, HALSEY TAYLOR	N/A	
IB1	ICE MAKER WATER SUPPLY BOX	OATEY	MODA WITH SURE-VENT	N/A	N/A	ACCOR, GUY GRAY, SIOUX CHIEF, OATEY	N/A	PROVIDE FIRE-RATED BOX IF INSTALLED IN FIRE-RATED WALL
MS1	MOP SINK	FIAT	MSB-2424	FIAT	830-AA	FIAT, MUSTEE, STERN-WILLIAMS	FIAT, SPEAKMAN, AMERICAN STANDARD	FAUCET WITH VACUUM BREAKER
SH1	SHOWER	AQUARIUS	G3679 SH	SYMMONS	1-100-TRM	AQUARIUS, AQUA BATH, AMERICAN STANDARD, KOHLER, AQUA GLASS, LASCO, CLARION	KOHLER, AMERICAN STANDARD, SYMMONS, POWERS, DELTA	PRESSURE BALANCING, INTEGRAL VOLUME CONTROL
SH2	SHOWER ADA	AQUA BATH	C41368BF-FUS	SYMMONS	9605-PLR-B-1.5-TRM	COMFORT DESIGNS, AQUARIUS, AQUA BATH, AMERICAN STANDARD, KOHLER, AQUA GLASS, LASCO, CLARION	KOHLER, AMERICAN STANDARD, SYMMONS, POWERS, DELTA	2 GPM, PRESSURE BALANCING, WALL/HAND SHOWER WITH 5' FLEXIBLE METAL HOSE, 36" SLIDE BAR, IN-LINE VACUUM BREAKER, WALL CONNECTION AND FLANGE. PROVIDE ADEQUATE BLOCKING IN WALL FOR UNIT AND ACCESSORIES
SK1	COUNTERTOP SINK	ELKAY	D5ESR12722	PROFLO	PFXC7017ZBN	ELKAY, JUST	ELKAY, JUST, MOEN, DELTA	CRUMB CLIP STRAINER
SK2	COUNTERTOP SINK	ELKAY	DXUH1210	PROFLO	PFXC4027	ELKAY, JUST	ELKAY, JUST, MOEN, DELTA	CRUMB CLIP STRAINER
SK3	COUNTERTOP SINK	DAYTON	GE12521	PROFLO	PFXC4027	ELKAY, JUST	ELKAY, JUST, MOEN, DELTA	CRUMB CLIP STRAINER
WB1	WASHER SUPPLY/DRAIN BOX	OATEY	MODA	N/A	N/A	SYMMONS, GUY GRAY, SIOUX CHIEF, OATEY	N/A	PROVIDE FIRE-RATED BOX IF INSTALLED IN FIRE-RATED WALL

DRAIN SCHEDULE						
MARK	DESCRIPTION	BASE MANUFACTURER	MODEL #	FINISH	ADDITIONAL FEATURES	ACCEPTABLE MANUFACTURERS
DN1	DOWNSPOUT NOZZLE	ZURN	Z199-SS	NICKEL-BRONZE BODY	REMOVABLE STAINLESS STEEL SCREEN	ZURN, SMITH, WATTS, WADE, JOSAM, MIFAB
FD1	ON-GRADE FLOOR DRAIN (FINISHED AREAS)	OATEY	TRUE SET ON-GRADE TP SERIES	PVC BODY, 5" NICKEL-BRONZE STRAINER WITH RING	TRAP PRIMER, SQUARE STRAINER IF INSTALLED IN TILE FLOOR	SIOUX CHIEF, OATEY, NSF, JUMBO
FD2	ABOVE-GRADE FLOOR DRAIN (FINISHED AREAS)	OATEY	TRUE SET FLANGED TP SERIES	PVC BODY, 5" NICKEL-BRONZE STRAINER WITH RING	FLANGED DRAIN, TRAP PRIMER, SQUARE STRAINER IF INSTALLED IN TILE FLOOR	SIOUX CHIEF, OATEY, NSF, JUMBO
OD1	OVERFLOW ROOF DRAIN	SIOUX CHIEF	868-E-S-U-STP2	PVC BODY, POLYETHYLENE DOME	EXTENSION, ROOF SUMP, UNDERDECK CLAMP	SIOUX CHIEF, OATEY, NSF, JUMBO
RD1	ROOF DRAIN	SIOUX CHIEF	868-E-S-U	PVC BODY, POLYETHYLENE DOME	EXTENSION, ROOF SUMP, UNDERDECK CLAMP	SIOUX CHIEF, OATEY, NSF, JUMBO

WATER CLOSET SCHEDULE																
MARK	WATER CLOSET DESCRIPTION	FIXTURE MANUFACTURER	FIXTURE MODEL #	FLUSH VALVE MANUFACTURER	FLUSH VALVE MODEL NUMBER	MATERIAL	USE	MOUNTING	STYLE	FLUSH VALVE TYPE	CONTROL	FLOW RATE	SEAT-TYPE	ACCEPTABLE MANUFACTURERS	APPROVED FLUSH VALVE MANUFACTURERS	ADDITIONAL INFORMATION
WC1	FLOOR-SET TANK-TYPE ADA	AMERICAN STANDARD	2467.1	NOT APPLICABLE	NOT APPLICABLE	CHINA	ADA	FLOOR	ELONGATED	NOT APPLICABLE	MANUAL	1.1	OPEN	AMERICAN STANDARD, KOHLER, ZURN	NOT APPLICABLE	WITH LOCKING LID
WC2	FLOOR SET FLUSH VALVE ADA	AMERICAN STANDARD	3461.001	AMERICAN STANDARD	6047.122.002	CHINA	ADA	WALL	ELONGATED	EXPOSED	MANUAL	1.28	OPEN	AMERICAN STANDARD, KOHLER, ZURN	SLOAN, ZURN, KOHLER	

LAVATORY SCHEDULE															
MARK	LAVATORY DESCRIPTION	FIXTURE MANUFACTURER	FIXTURE MODEL	FAUCET MANUFACTURER	FAUCET MODEL	MATERIAL	USE	MOUNTING	STYLE	CONTROL	FLOW RATE	DRAIN	APPROVED FIXTURE MANUFACTURERS	APPROVED FAUCET MANUFACTURERS	ADDITIONAL INFORMATION
LV1	WALL-HUNG ADA	KOHLER	K-2030	KOHLER	K-15592-F	CHINA	ADA	WALL-HUNG	N/A	MANUAL	0.5	GRID	AMERICAN STANDARD, KOHLER, ZURN	AMERICAN STANDARD, KOHLER, ZURN, BRADLEY, CHICAGO FAUCET, SPEAKMAN, T&S, SYMMONS, POWERS, MOEN, DELTA	PROVIDE WITH FLOOR-MOUNTED CARRIER AND INSULATE SUPPLIES & DRAIN WHERE NOT PROTECTED WITH SHROUD
LV2	COUNTERTOP LAVATORY WITH INTEGRAL BOWL	SEE ARCHITECTURAL SPECS FOR BOWL	N/A	PROFLO	PFWC3016CP	N/A	NON-ADA & ADA	COUNTER	N/A	MANUAL	1.5	GRID	PROFLO, AMERICAN STANDARD, KOHLER, ZURN	AMERICAN STANDARD, KOHLER, ZURN, BRADLEY, CHICAGO FAUCET, SPEAKMAN, T&S, SYMMONS, POWERS, MOEN, DELTA	IN ADA LOCATIONS, INSULATE SUPPLIES & DRAIN WHERE NOT PROTECTED WITH SHROUD



- PLUMBING ROOF KEYED NOTES**
- 1" GAS PIPING UP FROM FLOOR BELOW.
  - 3/4" GAS PIPING TO SERVE RTU. PROVIDE A PRESSURE REGULATOR TO REDUCE GAS PRESSURE FROM 2 PSI TO 7" W.C.
  - 4" VENT THROUGH ROOF.

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
---S---	SANITARY/WASTE PIPING BELOW FLOOR
---S---	SANITARY/WASTE PIPING ABOVE CEILING
---V---	VENT PIPING
---CW---	COLD WATER PIPING
---HW---	HOT WATER PIPING
---HWR---	HOT WATER RETURN PIPING
---G---	NATURAL GAS PIPING
---ST---	STORM PIPING
---FT---	FOOTER PIPING
FD ●	FLOOR DRAIN
RD ⊙	ROOF DRAIN
OD ⊙	OVERFLOW DRAIN
⊘	BALL VALVE
⊘	CHECK VALVE
⊘	BALANCING VALVE
⊘	GAS REGULATOR
CO ●	CLEANOUT
WHH	FROST PROOF WALL HYDRANT
⊙	VENT THROUGH ROOF RISER INDICATOR
⊘	HOT WATER RETURN PUMP



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PLUMBING ROOF PLAN

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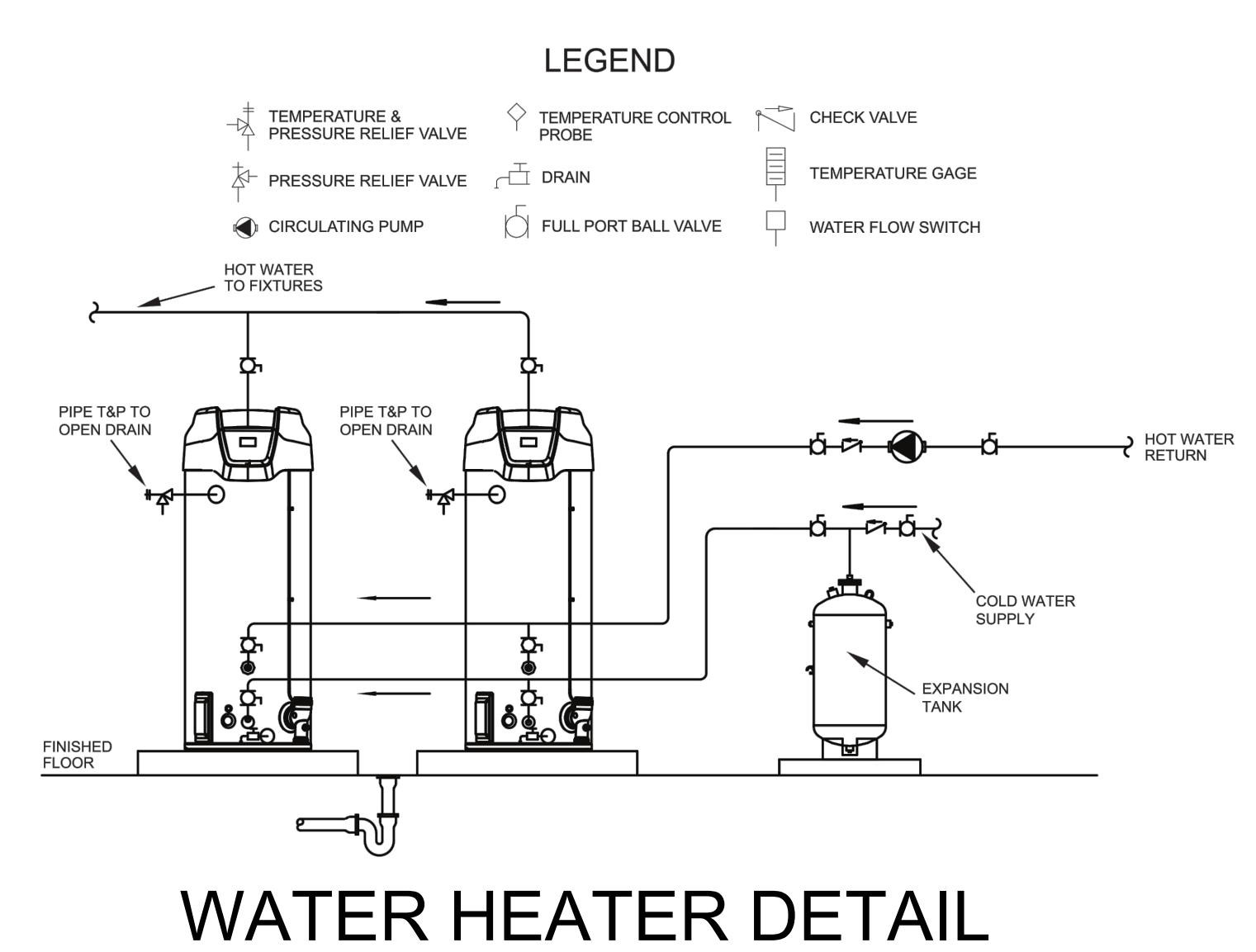
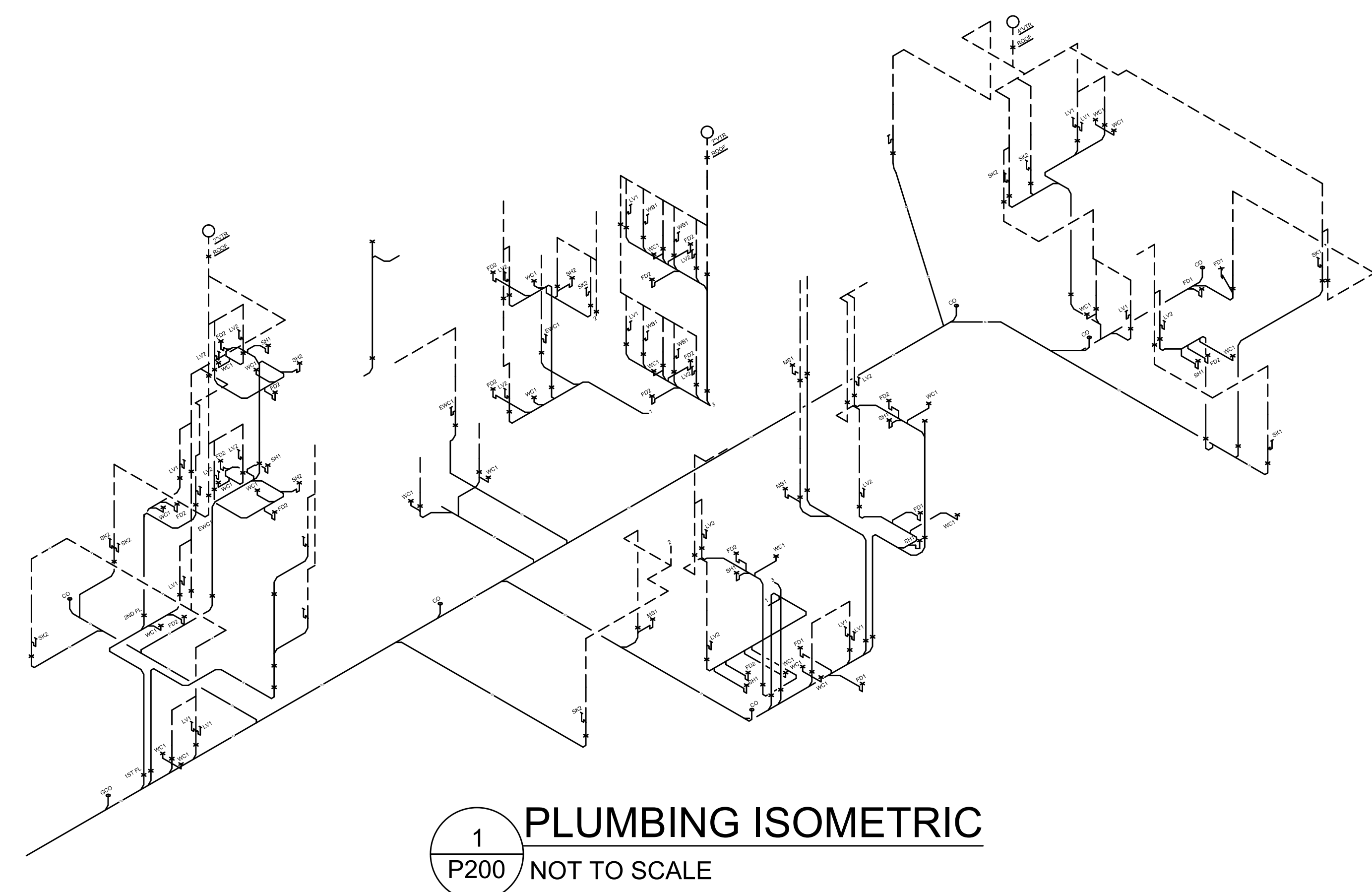
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**1 PLUMBING ROOF PLAN -ROOF PLAN**  
 P103 SCALE: 1/8" = 1'-0"



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**WATER HEATER DETAIL**

**LEGEND**

- TEMPERATURE & PRESSURE RELIEF VALVE
- PRESSURE RELIEF VALVE
- CIRCULATING PUMP
- TEMPERATURE CONTROL PROBE
- DRAIN
- FULL PORT BALL VALVE
- CHECK VALVE
- TEMPERATURE GAGE
- WATER FLOW SWITCH

**PLUMBING LEGEND**

SYMBOL	DESCRIPTION
--- S ---	SANITARY/WASTE PIPING BELOW FLOOR
— S —	SANITARY/WASTE PIPING ABOVE CEILING
— V —	VENT PIPING
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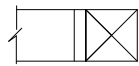
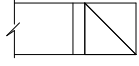

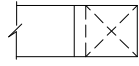
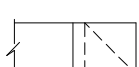
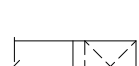

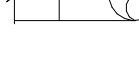



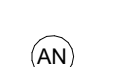

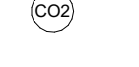






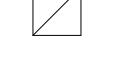

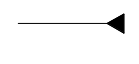
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


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**HVAC SYMBOLS**

-  SUPPLY DUCT TURNING UP
-  RETURN DUCT TURNING UP
-  EXHAUST DUCT TURNING UP
-  SUPPLY DUCT TURNING DOWN
-  RETURN DUCT TURNING DOWN
-  EXHAUST DUCT TURNING DOWN
-  ROUND DUCT UP
-  ROUND DUCT DOWN
-  FLEX DUCT - SAME SIZE AS NECK INLET
-  T THERMOSTAT
-  AN AUDIBLE/VISIBLE ANNUNCIATOR
-  S SENSOR (REFER TO PLAN FOR TYPE)
-  CO2 CARBON DIOXIDE SENSOR
-  CO CARBON MONOXIDE SENSOR
-  NH3 AMMONIA SENSOR
-  S/D SMOKE DETECTOR
-  RETURN AIR/EXHAUST AIR AIRFLOW DIRECTION
-  SUPPLY AIR AIRFLOW DIRECTION
-  SUPPLY AIR OUTLET
-  RETURN/EXHAUST AIR OUTLET
-  LINEAR DIFFUSER W/INSULATED PLENUM
-  MANUAL VOLUME DAMPER
-  FIRE, SMOKE, OR FIRE/SMOKE COMBO WITH ACCESS DOOR AND SLEEVE (REFER TO PLAN FOR RATING AND TYPE)

NOT ALL SYMBOLS, LEGENDS AND ABBREVIATIONS ARE USED.

**ANNOTATION SYMBOLS**

-  NEW CONNECTION TO EXISTING
-  CODED DRAWING NOTE
-  XX-X  
XXXX - CFM

**ABBREVIATIONS**

- |                                 |   |
|---------------------------------|---|
| ACU AIR CONDITIONING UNIT       | LD LINEAR DIFFUSER                          |
| ACCU AIR COOLED CONDENSING UNIT | LWPS LOW PRESSURE STEAM PIPING (15PSI)      |
| ACT ACOUSTIC CEILING TILE       | LWPC LOW PRESSURE CONDENSATE PIPING         |
| AFF ABOVE FINISHED FLOOR        | LVR LOUVER                                  |
| AHU AIR HANDLING UNIT           | MAU MAKE-UP AIR UNIT                        |
| AN AUDIBLE/VISIBLE ANNUNCIATOR  | MVD MANUAL VOLUME DAMPER                    |
| BAS BUILDING AUTOMATION SYSTEM  | MOD MOTORIZED DAMPER                        |
| CD CEILING DIFFUSER             | MPC MEDIUM PRESSURE CONDENSATE              |
| CHWR CHILLED WATER RETURN       | MPS MEDIUM PRESSURE STEAM                   |
| CHWS CHILLED WATER SUPPLY       | N NEW                                       |
| CNWR CONDENSING WATER RETURN    | NTS NOT TO SCALE                            |
| CNWS CONDENSING WATER SUPPLY    | OA OUTSIDE AIR                              |
| COND CONDENSATE                 | PTAC PACKAGED TERMINAL AIR CONDITIONER      |
| CU CONDENSING UNIT              | R RELOCATE                                  |
| E EXISTING                      | RA RETURN AIR                               |
| EA EXHAUST AIR                  | REFD REFRIGERANT DISCHARGE PIPING (HOT GAS) |
| EBH ELECTRIC BASEBOARD HEATER   | REFL REFRIGERANT LIQUID PIPING              |
| EF EXHAUST FAN                  | REFS REFRIGERANT SUCTION PIPING             |
| EG EXHAUST GRILLE               | RG RETURN GRILLE                            |
| ER EXHAUST REGISTER             | RR RETURN REGISTER                          |
| EVAP EVAPORATOR                 | RTU ROOFTOP UNIT                            |
| EWH ELECTRIC WALL HEATER        | SALP SUPPLY AIR LOW PRESSURE                |
| FC FAIL CLOSE                   | SAMP SUPPLY AIR MEDIUM PRESSURE             |
| FCU FAN COIL UNIT               | SD SMOKE DETECTOR                           |
| FD FIRE DAMPER                  | SG SUPPLY GRILLE                            |
| FO FAIL OPEN                    | SR SUPPLY REGISTER                          |
| FOB FLAT ON BOTTOM              | STM STEAM                                   |
| FOT FLAT ON TOP                 | TCV TEMPERATURE CONTROL VALVE               |
| FURN FURNACE                    | TG TRANSFER GRILLE                          |
| GYP GYPSUM BOARD                | TYP TYPICAL                                 |
| HP HEAT PUMP                    | U.O.N UNLESS OTHERWISE NOTE                 |
| HTWR HEATING WATER RETURN       | VAV VARIABLE AIR VOLUME                     |
| HTWS HEATING WATER SUPPLY       | VFD VARIABLE FREQUENCY DRIVE                |

**CODES REFERENCED**

- 2024 OHIO MECHANICAL CODE (REFERENCES 2021 IMC)
- 2024 OHIO BUILDING CODE (REFERENCES 2021 IBC)
- OHIO COMMERCIAL ENERGY CODE (REFERENCES ASHRAE 90.1-2019)

**HVAC DESIGN CONDITIONS**

SEASON	OUTDOOR CONDITIONS	INSIDE CONDITIONS
COOLING	OUTDOOR: 93°F DB/74°F WB	INDOOR: 74°F
HEATING	OUTDOOR: 0°F DB	INDOOR: 72°F

**GENERAL NOTES**

- 1 FOR FULL SCHEDULES, SPECIFICATIONS AND COMPLETE LISTING SEE DETAIL SHEETS.
- 2 DUCT DIMENSIONS INDICATE OUTSIDE DIMENSIONS OF DUCT. REFER TO DUCT CONSTRUCTION SCHEDULE FOR LINER THICKNESS. VERIFY EXACT ROUTING OF ALL DUCTWORK WITH EXISTING CONDITIONS AND MAINTAIN CLEAR OUTSIDE DIMENSIONS.
- 3 COORDINATE EXACT LOCATIONS OF AIR DEVICES WITH REFLECTED CEILING PLAN, LIGHTING LAYOUT AND EXISTING CONDITIONS.
- 4 BRANCH DUCT TO DIFFUSER TO BE SAME SIZE AS DIFFUSER NECK.
- 5 COORDINATE EXACT LOCATION AND HEIGHT OF THERMOSTATS WITH FURNITURE PLAN AND OWNER.
- 6 FOR PURPOSES OF CLEARNESS AND LEGIBILITY, DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC ALTHOUGH SIZE AND LOCATION OF EQUIPMENT ARE SHOWN TO SCALE WHEREVER POSSIBLE.
- 7 ANY DISCREPANCIES OR EXISTING CONDITIONS DISCOVERED DURING CONSTRUCTION THAT PROHIBIT THE SUCCESSFUL COMPETITION OF WORK INDICATED ON THIS PLAN MUST BE REPORTED TO THE PROJECT MANAGER IMMEDIATELY.
- 8 DUCTWORK INSULATION SHALL CONFORM WITH CHAPTER 6, SECTION 604 OF THE 2024 OMC. COVERING AND LININGS, INCLUDING ADHESIVES, SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX NOT MORE THAN 50 WHEN TESTED WITH ACCORDANCE WITH ASTM E84, UL 723, ASTM E 2231 AND ASTM C 411. INTERNAL DUCT LINING SHALL BE DURABLE AND TESTED IN ACCORDANCE WITH UL181.
- 9 ALL DUCT JOINTS, SEAMS AND CONNECTIONS SHALL BE SEALED AND FASTENED PER CHAPTER 6, SECTION 603.9, 2024 OMC.
- 10 EQUIPMENT TO BE INSTALLED PER MANUFACTURER'S GUIDELINES. MAINTAIN CODE RECOMMENDED CLEARANCES FOR ACCESS AND MAINTENANCE.
- 11 DUCT SHALL BE SUPPORTED WITH APPROVED HANGERS AT INTERVALS NOT EXCEEDING 10'-0" PER CHAPTER 6, SECTION 603.10, 2024 OMC.
- 12 ALL FIELD-INSTALLED POWER AND CONTROL WIRING FOR ALL MECHANICAL EQUIPMENT AND APPLIANCES SHALL BE IN ACCORDANCE WITH NPFA-70 THE NATIONAL ELECTRIC CODE.
- 13 MAXIMUM FLEXIBLE DUCT LENGTH LIMITED TO 8'-0". FLEXIBLE DUCTS SHALL BE TESTED IN ACCORDANCE WITH UL181 AND SHALL BE LISTED AND LABELED AS CLASS 0 OR CLASS 1 PER CHAPTER 6, 2024 OMC.
- 14 PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO COMPLETELY FURNISH, INSTALL AND PLACE INTO OPERATION, ALL SYSTEMS SHOWN ON THE DRAWINGS AND DELINEATED IN THE SPECIFICATIONS IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND ORDINANCES. REPORT ANY KNOWN DISCREPANCIES TO THE ARCHITECT/ENGINEER PRIOR TO INSTALLATION.
- 15 ALL MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NON-COMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
- 16 ASSUME THAT ALL OF THE HVAC EQUIPMENT'S SHORT-CIRCUIT CURRENT RATINGS MEETS OR EXCEEDS THE AVAILABLE FAULT CURRENT AT THE POINT OF APPLICATION.
- 17 ALL HVAC EQUIPMENT TO BE MARKED WITH THE SHORT-CIRCUIT CURRENT RATING PER NEC.
- 18 COORDINATE ROUTING OF ALL WORK WITH OTHER TRADES.
- 19 COORDINATE WITH ELECTRICAL CONTRACTOR FOR POWER CONNECTIONS TO ALL MECHANICAL EQUIPMENT.
- 20 REFER TO ARCHITECTURAL PLANS FOR DIMENSIONS AND FINAL CEILING DIFFUSERS LOCATIONS.
- 21 MAINTAIN ALL CODE REQUIRED SERVICE CLEARANCES. FOLLOW CLEARANCE TO COMBUSTIBLE DISTANCE PER MANUFACTURER'S INSTRUCTIONS.
- 22 PROVIDE ALL BACKDRAFT DAMPERS FOR ALL EXHAUST SYSTEMS AND EITHER LOUVER, BRICK VENT OR CAPS AT ALL EXTERIOR BUILDING PENETRATIONS.
- 23 PROVIDE AN AUXILIARY DRAIN PAN WITH AN OVERFLOW SWITCH UNDERNEATH HORIZONTAL UNITS, WHICH WILL SHUT-OFF THE UNIT ON HIGH WATER LEVEL.
- 24 ROUTE ALL AIR CONDITIONER CONDENSATE TO NEARBY FLOOR DRAIN. PROVIDE MINIMUM SLOPE OF 1/8" PER FOOT. SIZE CONDENSATE PER SECTION 307.2.2 OF THE 2024 OHIO MECHANICAL CODE.
- 25 MOUNT THERMOSTATS AT 60" ABOVE FINISHED FLOOR.
- 26 ANY EQUIPMENT THAT IS SUBSTITUTED SHALL FIT IN THE SPACE PROVIDED WITH ADEQUATE ROOM FOR SERVICING, INCLUDING SUBSTITUTE EQUIPMENT NAMED IN THE SPECIFICATIONS. SUBMIT A 1/4" SCALE DRAWING OF ALL EQUIPMENT SUBSTITUTED FOR APPROVAL PRIOR TO INSTALLATION, INCLUDING, BUT NOT LIMITED TO, STRUCTURAL AND ARCHITECTURAL IMPACT, CLEARANCE REQUIREMENTS AND UTILITY REQUIREMENTS. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE ALL NEW ELECTRICAL AND PLUMBING REQUIREMENTS WITH THE ELECTRICAL AND PLUMBING CONTRACTORS.
- 27 MAINTAIN CODE REQUIRED CLEARANCE TO COMBUSTIBLES FOR ALL GAS-FIRED EQUIPMENT.
- 28 DUCTWORK TO BE GALVANIZED, FABRICATED AND INSTALLED PER SMACNA AND SECTION M-603 OF THE 2024 OMC. DUCTWORK SHALL BE CONSTRUCTED WITH A MINIMUM THICKNESS AS SPECIFIED IN SMACNA HVAC, "DUCT CONSTRUCTION STANDARD - METAL AND FLEXIBLE," PER CHAPTER 6, SECTION 603.4, 2024 OMC.



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MECHANICAL LEGENDS AND SYMBOLS

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**M000**

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**ROOFTOP UNIT SCHEDULE**

OPTIONS/ACCESSORIES:																			
A.) SPACE TEMPERATURE SENSOR					D.) RA SMOKE DETECTOR														
B.) ROOF CURB - 14" TALL					E.) ANNUNCIATOR														
C.) ENTHY. STANDARD LEAK ECONOMISER W/BARO RELIEF					F.) VAV-RTU OPEN CONTROLLER														
TAG	BASIS OF DESIGN (OR APPROVED EQUAL)	MODEL NUMBER	TONS	FAN INFORMATION			ENERGY INFORMATION		COOLING INFORMATION		HEATING INFORMATION		PIPE CONNECTIONS		ELECTRICAL INFORMATION			OPTIONS/ACCESSORIES	
				SUPPLY CFM	ESP (IN WG)	OA CFM	EER	IEER	SENSIBLE (MBH)	TOTAL (MBH)	INPUT (MBH)	OUTPUT (MBH)	GAS CONNECTION	CONDENSATE CONNECTION	VOLTAGE/PHASE	MCA	MOCP		WEIGHT (LBS)
RTU-1	Carrier	48LCEB24B1A5-1E0A0	20	6,570	0.50	1,930	12	18	182.5	252.0	310.0	251.0	3/4"	3/4"	208/3	113.7	125	3,100	A,B,C,D,E,F
RTU-2	Carrier	48LCEB24B1A5-1E0A0	20	7,080	0.50	1,770	12	18	184.2	250.0	310.0	251.0	3/4"	3/4"	208/3	113.7	125	3,100	A,B,C,D,E,F
RTU-3	Carrier	48LCEB24B1A5-1E0A0	20	6,330	0.50	1,850	12	18	176.3	247.3	310.0	251.0	3/4"	3/4"	208/3	113.7	125	3,100	A,B,C,D,E,F

**VAV BOX SCHEDULE**

OPTIONS/ACCESSORIES:																	
A.) DOOR-INTERLOCKING FUSED DISCONNECT																	
B.) SSR ELECTRIC HEAT																	
C.)																	
TAG	BASIS OF DESIGN (OR APPROVED EQUAL)	MODEL NUMBER	CFM INFORMATION		DUCT CONNECTIONS		DESIGN CONDITIONS		ELECTRIC HEAT INFORMATION				ELECTRICAL INFORMATION				OPTIONS/ACCESSORIES
			MIN	MAX	INLET Ø	OUTLET WIDTH X HEIGHT	EAT DB(°F)	LAT DB(°F)	HEATING ELECTRIC CFM (MINIMUM)	HEATING (KW)	STAGES OF HEAT	VOLTAGE/PHASE	MCA	MOCP	CONTROL BOX SIDE	WEIGHT (LBS)	
VAV1-1	Carrier	35E	159	920	8"	12X10	60	102	225	3.0	1	208/3	10	15	RIGHT	34	A,B
VAV1-2	Carrier	35E	248	1,430	10"	14X12 1/2	60	102	490	6.5	1	208/3	23	25	RIGHT	45	A,B
VAV1-3	Carrier	35E	129	920	8"	12X10	60	113	300	5.0	1	208/3	17	20	RIGHT	45	A,B
VAV1-4	Carrier	35E	129	920	8"	12X10	60	113	300	5.0	1	208/3	17	20	RIGHT	34	A,B
VAV1-5	Carrier	35E	89	515	6"	12X8	60	110	125	2.0	1	208/3	7	15	RIGHT	32	A,B
VAV1-6	Carrier	35E	159	920	8"	12X10	60	118	325	6.0	1	208/3	20	25	RIGHT	34	A,B
VAV1-7	Carrier	35E	159	920	8"	12X10	60	102	300	4.0	1	208/3	14	15	LEFT	34	A,B
VAV1-8	Carrier	35E	159	920	8"	12X10	60	106	240	3.5	1	208/3	12	15	LEFT	34	A,B
VAV1-9	Carrier	35E	129	920	8"	12X10	60	96	350	4.0	1	208/3	14	15	RIGHT	34	A,B
VAV1-10	Carrier	35E	159	920	8"	12X10	60	117	335	6.0	1	208/3	21	25	RIGHT	34	A,B
VAV1-11	Carrier	35E	357	2,060	12"	16X15	60	99	850	10.5	1	208/3	36	40	RIGHT	51	A,B
VAV2-1	Carrier	35E	248	1,430	10"	14X12 1/2	60	99	485	6.0	1	208/3	21	25	LEFT	45	A,B
VAV2-2	Carrier	35E	159	920	8"	12X10	60	117	220	4.0	1	208/3	14	15	RIGHT	34	A,B
VAV2-3A	Carrier	35E	248	1,430	10"	14X12 1/2	60	98	630	7.5	1	208/3	26	30	RIGHT	45	A,B
VAV2-3B	Carrier	35E	248	1,430	10"	14X12 1/2	60	98	630	7.5	1	208/3	26	30	RIGHT	45	A,B
VAV2-4	Carrier	35E	89	515	6"	12X8	60	115	200	3.5	1	208/3	12	15	RIGHT	32	A,B
VAV2-5	Carrier	35E	89	515	6"	12X8	60	102	150	2.0	1	208/3	7	15	RIGHT	32	A,B
VAV2-6	Carrier	35E	159	920	8"	12X10	60	97	300	3.5	1	208/3	12	15	RIGHT	45	A,B
VAV2-7	Carrier	35E	248	1,430	10"	14X12 1/2	60	95	495	5.5	1	208/3	19	20	LEFT	45	A,B
VAV2-8	Carrier	35E	159	920	8"	12X10	60	107	400	6.0	1	208/3	21	25	RIGHT	45	A,B
VAV3-1	Carrier	35E	248	1,430	10"	14X12 1/2	60	103	475	6.5	1	208/3	23	25	LEFT	45	A,B
VAV3-2	Carrier	35E	159	920	8"	12X10	60	97	300	3.5	1	208/3	12	15	LEFT	45	A,B
VAV3-3	Carrier	35E	159	920	8"	12X10	60	113	300	5.0	1	208/3	17	20	RIGHT	45	A,B
VAV3-4A	Carrier	35E	159	920	8"	12X10	60	115	400	7.0	1	208/3	24	25	RIGHT	45	A,B
VAV3-4B	Carrier	35E	159	920	8"	12X10	60	115	400	7.0	1	208/3	24	25	RIGHT	45	A,B
VAV3-5	Carrier	35E	89	515	6"	12X8	60	110	188	3.0	1	208/3	10	15	RIGHT	32	A,B
VAV3-6	Carrier	35E	40	230	4"	12X8	60	107	100	1.5	1	208/3	5	15	RIGHT	32	A,B
VAV3-7	Carrier	35E	159	920	8"	12X10	60	111	375	6.0	1	208/3	21	25	RIGHT	45	A,B
VAV3-8	Carrier	35E	89	515	6"	12X8	60	107	200	3.0	1	208/3	10	15	RIGHT	32	A,B
VAV3-9	Carrier	35E	159	920	8"	12X10	60	101	350	4.5	1	208/3	16	20	LEFT	45	A,B
VAV3-10	Carrier	35E	89	515	6"	12X8	60	114	175	3.0	1	208/3	10	15	RIGHT	32	A,B
VAV3-11	Carrier	35E	159	920	8"	12X10	60	98	250	3.0	1	208/3	10	15	RIGHT	45	A,B

**AIR DEVICE SCHEDULE**

OPTIONS/ACCESSORIES:										
A.) DRYWALL FRAME										
B.) SQUARE TO ROUND ADAPTOR - SEE PLANS FOR SIZE										
TAG	BASIS OF DESIGN (OR APPROVED EQUAL)	MODEL	MODULE SIZE	NECK CONNECTION			MOUNTING	MATERIAL	OPTIONS/ACCESSORIES	
				DIAMETER	WIDTH	HEIGHT				
CD-1	Price Industries	SPD	24"X24"	6"	0"	0"	ACT CEILING	STEEL		
CD-2	Price Industries	SPD	24"X24"	8"	0"	0"	ACT CEILING	STEEL		
CD-3	Price Industries	SPD	24"X24"	10"	0"	0"	ACT CEILING	STEEL		
CD-4	Price Industries	SPD	12"X12"	6"	0"	0"	GYP CEILING	STEEL	A	
CD-5	Price Industries	SPD	24"X24"	8"	0"	0"	GYP CEILING	STEEL	A	
CD-6	Price Industries	SPD	12"X12"	6"	0"	0"	ACT CEILING	STEEL		
EG-1	Price Industries	80	12"X12"	0"	10"	10"	GYP CEILING	ALUMINUM	A,B	
EG-2	Price Industries	80	12"X12"	0"	10"	10"	ACT CEILING	ALUMINUM	B	
EG-3	Price Industries	80	24"X12"	0"	22"	10"	ACT CEILING	ALUMINUM	B	
RG-1	Price Industries	80	24"X12"	0"	22"	10"	ACT CEILING	ALUMINUM		
RG-2	Price Industries	80	24"X24"	0"	22"	22"	ACT CEILING	ALUMINUM		
RG-3	Price Industries	80	24"X12"	0"	22"	10"	GYP CEILING	ALUMINUM	A	

**FIRE DAMPER SCHEDULE**

OPTIONS/ACCESSORIES:										
A.) RETAINING ANGLES										
B.) 185°F FUSIBLE LINK										
TAG	BASIS OF DESIGN (OR APPROVED EQUAL)	MODEL NUMBER	TYPE	DAMPER SIZE				RATING	SLEEVE LENGTH	OPTIONS/ACCESSORIES
				DIAMETER	WIDTH	HEIGHT	LENGTH			
FD1-1	Greenheck Fan Corporation	DFD-150X	FLOOR	0"	26"	20"	0"	1.5	16"	A,B
FD1-2	Greenheck Fan Corporation	DFD-150X	FLOOR	0"	30"	20"	0"	1.5	16"	A,B
FD1-3	Greenheck Fan Corporation	DFDR-510	FLOOR	12"	0"	0"	16"	1.5	0"	A,B
FD1-4	Greenheck Fan Corporation	DFD-150X	FLOOR	0"	26"	20"	0"	1.5	16"	A,B
FD1-5	Greenheck Fan Corporation	DFD-150X	FLOOR	0"	30"	20"	0"	1.5	16"	A,B
FD1-6	Greenheck Fan Corporation	DFD-150X	FLOOR	0"	16"	14"	0"	1.5	16"	A,B
FD1-7	Greenheck Fan Corporation	DFD-150X	FLOOR	0"	34"	20"	0"	1.5	20"	A,B
FD1-8	Greenheck Fan Corporation	DFD-150X	FLOOR	0"	26"	20"	0"	1.5	16"	A,B

**HEATER SCHEDULE**

OPTIONS/ACCESSORIES:							
A.) INTEGRAL THERMOSTAT							
B.) SURFACE FRAME							
C.) WALL BRACKETS							
TAG	BASIS OF DESIGN (OR APPROVED EQUAL)	MODEL NUMBER	HEATING (KW)	ELECTRICAL INFORMATION		MOUNTING	OPTIONS/ACCESSORIES
				VOLTAGE/PHASE	AMPS		
EWH1-1	Marley Engineered Products	MUH03-21	2.2	208/1	11.0	WALL	A,C
EWH1-1	Marley Engineered Products	CHW1208DSF	2.0	208/1	9.6	WALL	A,B
EWH1-1	Marley Engineered Products	CHW1208DSF	2.0	208/1	9.6	WALL	A,B

**FAN SCHEDULE**

OPTIONS/ACCESSORIES:												
A.) CURB - 14" TALL												
B.) REVERSE ACTING THERMOSTAT												
C.) PRESSURE SENSOR												
D.) UL LISTED 705												
TAG	BASIS OF DESIGN (OR APPROVED EQUAL)	MODEL NUMBER	CFM	ESP (IN WG)	ELECTRICAL INFORMATION						WEIGHT (LBS)	OPTIONS/ACCESSORIES
					VOLTAGE/PHASE	MCA	MOCP	AMPS	RPM	HORSEPOWER		
EF-1	Greenheck	CUE-180-VG	2,060	1.00	208/1	15	30	12.0	1,325	2.00	180	A
EF-2	Greenheck	CUE-070-VG	300	0.30	208/1	2	15	1.3	1,725	0.06	45	A,B
EF-3	Greenheck	SP-B200	165	0.50	120/1	0	0	2.7	980	0.00	10	B
DBF-1	Fantech	DEDPV-705	150	0.20	120/1	0	0	0.7	2,600	0.00	10	C,D
DBF-2	Fantech	DEDPV-705	150	0.20	120/1	0	0	0.7	2,600	0.00	10	C,D
DBF-3	Fantech	DEDPV-705	150	0.20	120/1	0	0	0.7	2,600	0.00	10	C,D

**DUCT PRESSURE CLASS AND INSULATION SPECIFICATIONS**

APPLICATION	DUCT TYPE	PRESSURE CLASS	INSULATION LOCATION	INSULATION THICKNESS	COMMENTS
RETURN AIR DUCTWORK	GALVANIZED	-2"	EXTERNAL	2.2"	3/4 LB/CU FT DENSITY; R6 MINIMUM
SUPPLY AIR DUCTWORK DOWNSTREAM OF VAV BOXES - RECTANGULAR	GALVANIZED	+2"	EXTERNAL	2.2"	3/4 LB/CU FT DENSITY; R6 MINIMUM
SUPPLY AIR DUCTWORK DOWNSTREAM OF VAV BOXES - ROUND RUN-OUTS	GALVANIZED	+2"	EXTERNAL	2.2"	3/4 LB/CU FT DENSITY; R6 MINIMUM
SUPPLY AIR DUCTWORK UPSTREAM OF VAV BOXES - RECTANGULAR	GALVANIZED	+4"	EXTERNAL	2.2"	3/4 LB/CU FT DENSITY; R6 MINIMUM
TOILET OR GENERAL EXHAUST AIR DUCTWORK	GALVANIZED	-2"	N-A	N-A	

**DUCTLESS SPLIT SYSTEM SCHEDULE**

OPTIONS/ACCESSORIES:														
A.) EQUIPMENT RAILS														
B.) WIRELESS REMOTE														
C.) LOW AMBIENT KIT														
TAG	BASIS OF DESIGN (OR APPROVED EQUAL)	MODEL NUMBER	SEER RATING	COOLING/HEATING INFORMATION		PIPING INFORMATION			ELECTRICAL INFORMATION				WEIGHT (LBS)	OPTIONS/ACCESSORIES
				COOLING TOTAL (BTU/HR)	HEATING TOTAL (BTU/HR)	DRAIN SIZE	LIQUID SIZE	SUCTION SIZE	VOLTAGE	PHASE	MCA	MOCP		
DSSI2-1	Mitsubishi Electric	MSZ-FS12NA	26.3	12,000	12300	3/4"	1/4"	3/8"	208	1	1	0	29	B,C
DSSI-1	Mitsubishi Electric	MSZ-FS12NA	26.3	12,000	12300	3/4"	1/4"	3/8"	208	1	1	0	29	B,C
DSSO2-2	Mitsubishi Electric	MUZ-FS12NAH	26.3	12,000	12000	0"	1/4"	3/8"	208	1	10	15	85	A,C
DSSO-1	Mitsubishi Electric	MUZ-FS12NAH	26.3	12,000	12000	0"	1/4"	3/8"	208	1	10	15	85	A,C

**PIPE, FITTING, AND VALVE SPECIFICATIONS**

APPLICATION	PIPE TYPE	FITTING TYPE	VALVE TYPE	COMMENTS
CONDENSATE PIPING	TYPE "K" COPPE	SWEAT	N-A	
REFRIGERATION PIPING	ACR COPPER	BRAZED	N-A	INSULATED LINE SETS



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Zone RTU-1 Ventilation					
System Primary Airflow:	$V_{ps}$	6,490 CFM	Zone Air Distribution Effectiveness:	$E_z$	0.8
Average Outdoor Air Fraction:	$X_o$	0.249	Primary Air Fraction to Zone:	$E_p$	1
Occupant Diversity:	$D$	1	Secondary Air Fraction to Zone:	$E_s$	1
Uncorrected Air Intake:	$V_{ou}$	1,620 CFM	Fraction of Supply Air to Zone from Outside Zone:	$F_o$	1
System Ventilation Efficiency:	$E_v$	0.824	Fraction of Supply Air to Zone from Fully Mixed Primary Air:	$F_b$	1
Outdoor Air Intake:	$V_{ot}$	1,860 CFM	Fraction of Outdoor Air to Zone from Outside Zone:	$F_c$	1
		0.302			

Room Information												
Room	Room Type	People Outdoor Air			Area Outdoor Air			Breathing Zone Outside Airflow (CFM) $V_{bz}$	Zone Outdoor Airflow (CFM) $V_{oz}$	Zone Discharge Airflow (CFM) $V_{dz}$	Discharge Outdoor Air Fraction $Z_d$	Zone Ventilation Efficiency $E_{vc}$
		Rate (CFM/person) $R_p$	People $P_o$	Total (CFM) $R_p \cdot P_o$	Rate (CFM/ft <sup>2</sup> ) $R_a$	Area (ft <sup>2</sup> ) $A_o$	Total (CFM) $R_a \cdot A_o$					
101A - FAMILY WAITING	Office-Office Spaces	5	2	10	0.06	224	14	24	30	143	0.21	1.08
101B - WAITING	Office-Main Entry Lobbies	5	3	15	0.06	249	15	30	38	474	0.0802	1.21
102 - RECEPTION	Office-Reception Areas	5	9	45	0.06	268	17	62	78	187	0.417	0.824
103 - CHECK-IN	Public Spaces-Corridors	0	0	0	0.06	102	7	7	9	31	0.29	1
105 - WAITING	Office-Main Entry Lobbies	5	2	10	0.06	162	10	20	25	71	0.352	0.941
106 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	299	18	18	23	90	0.256	1.04
107 - PRIVATE CHECK IN	Office-Office Spaces	5	1	5	0.06	51.7	4	9	11	52	0.212	1.08
109 - CLINICAL GROUP RM	Office-Conference Rooms	5	12	60	0.06	535	33	93	116	323	0.359	0.934
111 - IOP GROUP RM	Office-Conference Rooms	5	12	60	0.06	494	30	90	113	397	0.285	1.01
113 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	451	28	28	35	136	0.257	1.04
114 - INTAKE OFFICE	Office-Office Spaces	5	1	5	0.06	140	9	14	18	71	0.254	1.04
115 - INTAKE ASSESS OFFICE	Office-Office Spaces	5	1	5	0.06	127	8	13	16	64	0.25	1.04
116 - INTAKE COORD OFFICE	Office-Office Spaces	5	1	5	0.06	132	8	13	16	66	0.242	1.05
119 - IOP COUNSELOR	Office-Office Spaces	5	1	5	0.06	113	7	12	15	57	0.263	1.03
120 - DOSING	Office-Office Spaces	5	2	10	0.06	311	19	29	36	156	0.231	1.06
121 - DOSING/ PHARMACY	FGI-Pharmacy/ med prep	0	5	0	0	475	0	143	179	499	0.359	0.934
122 - STORAGE	Storage-Warehouses	10	0	0	0.06	36.4	3	3	4	11	0.364	0.929
123 - ESR	Storage-Warehouses	10	0	0	0.06	45.3	3	3	4	14	0.286	1.01
126 - RESIDENT CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	316	19	19	24	95	0.253	1.04
130 - DINING ROOM	Food-Dining rooms	7.5	24	180	0.18	529	96	276	345	1,320	0.261	1.03
131 - SERVERY	Food-Kitchen (cooking)	7.5	5	38	0.12	227	28	66	83	342	0.243	1.05
133 - CORRIDOR	Public Spaces-Toilet rooms - public	0	0	0	0	728	0	0	0	72	0	1.29
134 - OFFICE	Office-Office Spaces	5	1	5	0.06	120	8	13	16	60	0.267	1.03
135 - OFFICE	Office-Office Spaces	5	1	5	0.06	120	8	13	16	60	0.267	1.03
136 - OFFICE	Office-Office Spaces	5	1	5	0.06	103	7	12	15	78	0.192	1.1
137 - CONSULT	Office-Office Spaces	5	1	5	0.06	106	7	12	15	79	0.19	1.1
138 - CARE COORD	Office-Office Spaces	5	1	5	0.06	104	7	12	15	80	0.188	1.11
139 - OFFICE MANAGER	Office-Office Spaces	5	1	5	0.06	103	7	12	15	67	0.224	1.07
140 - CONSULT	Office-Office Spaces	5	1	5	0.06	102	7	12	15	52	0.288	1
141 - PEER SUPPORT	Office-Office Spaces	5	1	5	0.06	104	7	12	15	73	0.205	1.09
142 - CONSULT	Office-Office Spaces	5	1	5	0.06	101	7	12	15	51	0.294	0.999
143 - CONSULT	Office-Office Spaces	5	1	5	0.06	104	7	12	15	70	0.214	1.08
144 - CONSULT	Office-Office Spaces	5	1	5	0.06	102	7	12	15	52	0.288	1
145 - CONSULT	Office-Office Spaces	5	1	5	0.06	104	7	12	15	72	0.208	1.08
146 - CONSULT	Office-Office Spaces	5	1	5	0.06	102	7	12	15	52	0.288	1
147 - CONSULT	Office-Office Spaces	5	1	5	0.06	104	7	12	15	72	0.208	1.08
148 - CONSULT	Office-Office Spaces	5	1	5	0.06	106	7	12	15	77	0.195	1.1
150 - OFFICE	Office-Office Spaces	5	1	5	0.06	95.3	6	11	14	103	0.136	1.14
151 - COPY ROOM	Office-Office Spaces	5	1	5	0.06	95.2	6	11	14	52	0.269	1.02
151 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	161	10	10	13	49	0.265	1.03
152 - STORAGE	Storage-Warehouses	10	0	0	0.06	22.8	2	2	3	65	0.0462	1.25
155 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	304	19	19	24	92	0.261	1.03
156 - LAB/BLOOD DRAW	FGI-Laboratory Work Room	0	1	0	0	118	0	36	45	169	0.266	1.03
157 - STORAGE	Storage-Warehouses	10	0	0	0.06	34.5	3	3	4	68	0.0588	1.23
158 - CONSULT	Office-Office Spaces	5	1	5	0.06	105	7	12	15	140	0.107	1.19
159 - EXAM	Office-Office Spaces	5	1	5	0.06	108	7	12	15	54	0.278	1.01
161 - EXAM	Office-Office Spaces	5	1	5	0.06	108	7	12	15	54	0.278	1.01
162 - CONSULT	Office-Office Spaces	5	1	5	0.06	110	7	12	15	193	0.0777	1.21

VENTILATION CALCULATIONS PER TABLE 403.3.1.1 OF THE 2024 OHIO MECHANICAL CODE

Zone RTU-2 Ventilation					
System Primary Airflow:	$V_{ps}$	7,010 CFM	Zone Air Distribution Effectiveness:	$E_z$	0.8
Average Outdoor Air Fraction:	$X_o$	0.205	Primary Air Fraction to Zone:	$E_p$	1
Occupant Diversity:	$D$	1	Secondary Air Fraction to Zone:	$E_s$	1
Uncorrected Air Intake:	$V_{ou}$	1,440 CFM	Fraction of Supply Air to Zone from Outside Zone:	$F_o$	1
System Ventilation Efficiency:	$E_v$	0.819	Fraction of Supply Air to Zone from Fully Mixed Primary Air:	$F_b$	1
Outdoor Air Intake:	$V_{ot}$	1,760 CFM	Fraction of Outdoor Air to Zone from Outside Zone:	$F_c$	1
		0.251			

Room Information												
Room	Room Type	People Outdoor Air			Area Outdoor Air			Breathing Zone Outside Airflow (CFM) $V_{bz}$	Zone Outdoor Airflow (CFM) $V_{oz}$	Zone Discharge Airflow (CFM) $V_{dz}$	Discharge Outdoor Air Fraction $Z_d$	Zone Ventilation Efficiency $E_{vc}$
		Rate (CFM/person) $R_p$	People $P_o$	Total (CFM) $R_p \cdot P_o$	Rate (CFM/ft <sup>2</sup> ) $R_a$	Area (ft <sup>2</sup> ) $A_o$	Total (CFM) $R_a \cdot A_o$					
200 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	337	21	21	26	102	0.255	0.987
201 - OFFICE	Office-Office Spaces	5	1	5	0.06	175	11	16	20	147	0.136	1.11
202 - CONSULT	Office-Office Spaces	5	1	5	0.06	122	8	13	16	61	0.262	0.98
203 - CONSULT	Office-Office Spaces	5	1	5	0.06	130	8	13	16	132	0.121	1.12
204 - MOTHERS/ HEALTH RM	Office-Office Spaces	5	1	5	0.06	81.1	5	10	13	41	0.317	0.925
205 - CONSULT	Office-Office Spaces	5	1	5	0.06	130	8	13	16	132	0.121	1.12
206 - CONSULT	Office-Office Spaces	5	1	5	0.06	132	8	13	16	133	0.12	1.12
207 - CARE COORD	Office-Office Spaces	5	1	5	0.06	197	12	17	21	296	0.0709	1.17
209 - EXAM	Office-Office Spaces	5	1	5	0.06	122	8	13	16	61	0.262	0.98
212 - OFFICE	Office-Office Spaces	5	1	5	0.06	170	11	16	20	86	0.233	1.01
213 - STAFF LOUNGE	Office-Office Spaces	5	2	10	0.06	320	20	30	38	377	0.101	1.14
214 - EXERCISE ROOM	Sports and Amusement-Health Club/Weight Room	20	4	80	0.06	322	20	100	125	504	0.248	0.994
215 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	592	36	36	45	178	0.253	0.989
217 - COUNSELOR	Storage-Warehouses	10	0	0	0.06	128	8	8	10	39	0.256	0.985
218 - STORAGE	Storage-Warehouses	10	0	0	0.06	107	7	7	9	33	0.273	0.969
220 - RESIDENT LAUNDRY	Dry Cleaner, Laundry-Coin-Operated Laundry	7.5	3	23	0.12	139	17	40	50	140	0.357	0.885
222 - MED DISPENSING STORAGE	Storage-Warehouses	10	0	0	0.06	89.4	6	6	8	27	0.296	0.946
224 - GROUP RM	Office-Conference Rooms	5	19	95	0.06	371	23	118	148	390	0.379	0.919
226 - CLEAN	Storage-Warehouses	10	0	0	0.06	63.1	4	4	5	19	0.263	0.979
227 - LOUNGE	Food-Dining rooms	7.5	33	248	0.18	1,260	227	475	594	2,520	0.236	1.01
229 - QUIET ROOM	Office-Office Spaces	5	1	5	0.06	130	8	13	16	199	0.0804	1.16
231 - VISITATION	Office-Office Spaces	5	1	5	0.06	100	7	12	15	91	0.165	1.08
232 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	180	11	11	14	54	0.259	0.983
235 - ESR	Storage-Warehouses	10	0	0	0.06	42.3	3	3	4	13	0.308	0.934
U200 - DOUBLE 1	Hotel,Motel-Dormitory Sleeping Areas	0	4	0	0.06	175	11	16	20	163	0.123	1.12
U201 - DOUBLE 2	Hotel,Motel-Dormitory Sleeping Areas	0	4	0	0.06	177	11	16	20	164	0.122	1.12
U202 - DOUBLE 3	Hotel,Motel-Dormitory Sleeping Areas	0	4	0	0.06	177	11	16	20	164	0.122	1.12
U203 - DOUBLE 4	Hotel,Motel-Dormitory Sleeping Areas	0	4	0	0.06	176	11	16	20	163	0.123	1.12
U204 - DOUBLE 5	Hotel,Motel-Dormitory Sleeping Areas	0	4	0	0.06	177	11	16	20	163	0.123	1.12
U205 - DOUBLE 6	Hotel,Motel-Dormitory Sleeping Areas	0	4	0	0.06	175	11	16	20	147	0.136	1.11
U206 - ACCESSIBLE SINGLE 1	Hotel,Motel-Dormitory Sleeping Areas	0	3	0	0.06	103	7	12	15	129	0.116	1.13
U207 - SINGLE 2	Hotel,Motel-Dormitory Sleeping Areas	0	3	0	0.06	115	7	12	15	134	0.112	1.13
U208 - SINGLE 3	Hotel,Motel-Dormitory Sleeping Areas	0	3	0	0.06	115	7	12	15	135	0.111	1.13
U209 - SINGLE 4	Hotel,Motel-Dormitory Sleeping Areas	0	3	0	0.06	115	7	12	15	135	0.111	1.13

VENTILATION CALCULATIONS PER TABLE 403.3.1.1 OF THE 2024 OHIO MECHANICAL CODE



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NO.	DESCRIPTION	DATE
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VENTILATION SCHEDULES

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**M002**

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Zone RTU-3 Ventilation												
System Primary Airflow:	$V_{ps}$	5,850 CFM	Zone Air Distribution Effectiveness:	$E_z$	0.8							
Average Outdoor Air Fraction:	$X_o$	0.241	Primary Air Fraction to Zone:	$E_p$	1							
Occupant Diversity:	$D$	1	Secondary Air Fraction to Zone:	$E_s$	1							
Uncorrected Air Intake:	$V_{au}$	1,410 CFM	Fraction of Supply Air to Zone from Outside Zone:	$F_a$	1							
System Ventilation Efficiency:	$E_v$	0.789	Fraction of Supply Air to Zone from Fully Mixed Primary Air:	$F_b$	1							
Outdoor Air Intake:	$V_{oi}$	1,780 CFM	Fraction of Outdoor Air to Zone from Outside Zone:	$F_c$	1							
		0.305										
Room Information												
Room	Room Type	People	Rate	Area	Total	Breathing Zone	Zone Outdoor	Zone Discharge	Discharge Outdoor	Zone Ventilation		
		$R_p$	$P_2$	$R_o$	$A_2$	$R_o \cdot A_2$	$V_{bz}$	$V_{oz}$	$V_{dz}$	$Z_d$	$E_{vz}$	
		(CFM/person)	(CFM/ft <sup>2</sup> )	(ft <sup>2</sup> )	(CFM)	(CFM)	(CFM)	(CFM)	(CFM)			
300 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	283	17	17	21	85	0.247	1.03
301 - OFFICE	Office-Office Spaces	5	1	5	0.06	192	12	17	21	258	0.0814	1.21
303 - OFFICE	Office-Office Spaces	5	1	5	0.06	111	7	12	15	168	0.0893	1.21
304 - OFFICE	Office-Office Spaces	5	1	5	0.06	111	7	12	15	168	0.0893	1.21
305 - HR HUDDLE ROOM	Office-Conference Rooms	5	6	30	0.06	138	9	39	49	132	0.371	0.924
306 - EXEC CONF ROOM	Office-Conference Rooms	5	18	90	0.06	350	22	112	140	567	0.247	1.05
309 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	183	11	11	14	55	0.255	1.04
310 - MED RECORD STORAGE	Storage-Warehouses	10	0	0	0.06	34	3	3	4	11	0.364	0.932
311 - OFFICE	Office-Office Spaces	5	1	5	0.06	99.7	6	11	14	206	0.068	1.23
312 - OFFICE	Office-Office Spaces	5	1	5	0.06	97.8	6	11	14	149	0.094	1.2
313 - OFFICE	Office-Office Spaces	5	1	5	0.06	127	8	13	16	243	0.0658	1.23
314 - OFFICE	Office-Office Spaces	5	1	5	0.06	72.6	5	10	13	70	0.186	1.11
315 - OFFICE	Office-Office Spaces	5	1	5	0.06	73.4	5	10	13	70	0.186	1.11
316 - OFFICE	Office-Office Spaces	5	1	5	0.06	86.7	6	11	14	94	0.149	1.15
317 - OFFICE	Office-Office Spaces	5	1	5	0.06	131	8	13	16	119	0.134	1.16
318 - ALISSA OFFICE	Office-Office Spaces	5	1	5	0.06	102	7	12	15	63	0.238	1.06
319 - OPEN OFFICE	Office-Office Spaces	5	2	10	0.06	258	16	26	33	153	0.216	1.08
320 - LISA OFFICE	Office-Office Spaces	5	1	5	0.06	96.1	6	11	14	60	0.233	1.06
321 - HR STORAGE	Storage-Warehouses	10	0	0	0.06	105	7	7	9	32	0.281	1.01
322 - SHARED OFFICE	Office-Office Spaces	5	2	10	0.06	294	18	28	35	172	0.203	1.09
323 - MEL OFFICE	Office-Office Spaces	5	1	5	0.06	103	7	12	15	64	0.234	1.06
324 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	227	14	14	18	68	0.265	1.03
325 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	188	12	12	15	57	0.263	1.03
327 - EXAM	Office-Office Spaces	5	1	5	0.06	138	9	14	18	89	0.202	1.09
328 - ESR	Storage-Warehouses	10	0	0	0.06	42.6	3	3	4	13	0.308	0.988
329 - THERAPY	Office-Office Spaces	5	1	5	0.06	127	8	13	16	83	0.193	1.1
332 - VISITATION	Office-Office Spaces	5	1	5	0.06	99.4	6	11	14	108	0.13	1.17
334 - QUIET ROOM	Office-Office Spaces	5	1	5	0.06	128	8	13	16	194	0.0825	1.24
335 - LOUNGE	Food Bar, Cocktail Lounges	7.5	27	203	0.18	1,350	243	446	558	1,260	0.444	0.789
339 - GROUP RM	Office-Conference Rooms	5	12	60	0.06	294	18	78	98	360	0.272	1.02
341 - MED DISPENSING STORAGE	Storage-Warehouses	10	0	0	0.06	89.2	6	6	8	27	0.296	0.999
344 - RESIDENT LAUNDRY	Dry Cleaner, Laundry-Coin-Operated Laundry	7.5	3	23	0.12	139	17	40	50	133	0.376	0.919
345 - CORRIDOR	Public Spaces-Corridors	0	0	0	0.06	226	14	14	18	68	0.265	1.03
U300 - DOUBLE 1	Hotel, Motel-Dormitory Sleeping Areas	0	4	0	0.06	175	11	16	20	196	0.102	1.19
U301 - DOUBLE 2	Hotel, Motel-Dormitory Sleeping Areas	0	4	0	0.06	174	11	16	20	195	0.103	1.19
U302 - DOUBLE 3	Office-Office Spaces	5	1	5	0.06	176	11	16	20	125	0.16	1.14
U303 - DOUBLE 4	Office-Office Spaces	5	1	5	0.06	174	11	16	20	124	0.161	1.13

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**M003**



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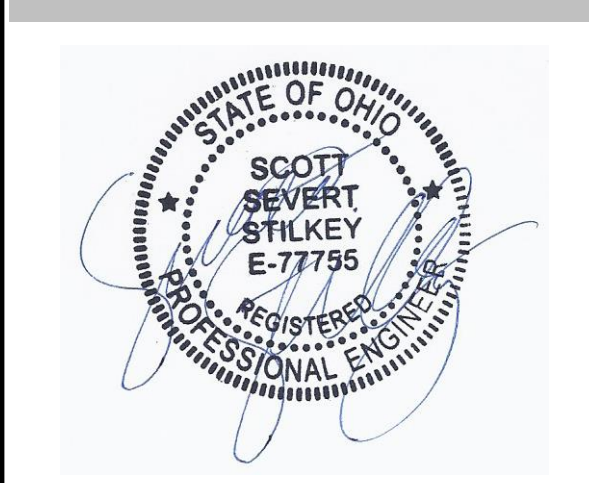
**MECHANICAL SPECIFICATIONS**

- 1. **GENERAL**
  - a. REFER TO ARCHITECTURAL DRAWINGS, GENERAL NOTES, INSTRUCTIONS TO BIDDERS, GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, BASE BUILDING SPECIFICATIONS AND DRAWINGS, SHOP DRAWING MANUALS AND AS-BUILT PLANS, EXCEPT AS NOTED HEREIN, WHICH APPLY IN ALL RESPECTS TO THIS SECTION. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS PRIOR TO BIDDING THE WORK
- 2. **USE OF DRAWINGS AND SPECIFICATIONS**
  - a. EBS DRAWINGS AND SPECIFICATIONS ARE INTENDED TO CONVEY DESIGN INTENT ONLY. ALL MEANS AND METHODS SEQUENCES, TECHNIQUES, AND PROCEDURES OF CONSTRUCTION AS WELL AS ANY ASSOCIATED SAFETY PRECAUTIONS AND PROGRAMS, AND ALL INCIDENTAL AND TEMPORARY DEVICES REQUIRED TO CONSTRUCT THE PROJECT, AND TO PROVIDE A COMPLETE AND FULLY OPERATIONAL MECHANICAL SYSTEM ARE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
- 3. **STANDARDS**
  - a. EQUIPMENT AND MATERIALS SHALL CONFORM WITH APPROPRIATE PROVISIONS OF AGA, ARI, ASME, ASTM, CISPI, UL, NEMA, ANSI, SMACNA, ASHRAE, NFPA, NEC, AS APPLICABLE TO EACH INDIVIDUAL UNIT OR ASSEMBLY. ALL EQUIPMENT MUST BEAR UL LABEL.
- 4. **LICENSE / EXPERIENCE**
  - a. CONTRACTOR MUST BE LICENSED BY THE STATE TO INSTALL HVAC SYSTEMS/EQUIPMENT. CONTRACTOR MUST ALSO HAVE A MINIMUM OF 5 YEARS OF EXPERIENCE AND HAVE INSTALLED AT LEAST (5) SUCCESSFUL PROJECT INSTALLATIONS OF SIMILAR SIZE AND SCOPE. REFERENCES MUST BE PROVIDED UPON REQUEST.
- 5. **CODES**
  - a. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES. THE MECHANICAL CONTRACTOR SHALL SATISFY CODE REQUIREMENTS AT A MINIMUM WITHOUT ANY EXTRA COST TO THE OWNER. IN CASE OF CONFLICT BETWEEN THE DRAWINGS/SPECIFICATIONS AND THE CODES AND ORDINANCES, THE HIGHEST STANDARD SHALL APPLY.
- 6. **PERMITS AND FEES**
  - a. THE MECHANICAL CONTRACTOR SHALL PROCURE AND PAY FOR ALL PERMITS, FEES, TAXES, AND INSPECTIONS NECESSARY TO COMPLETE THE MECHANICAL WORK. FURNISH CERTIFICATE OF APPROVAL FOR WORK FROM INSPECTION AUTHORITY TO OWNER BEFORE FINAL ACCEPTANCE FOR WORK. CERTIFICATE OF FINAL INSPECTION AND APPROVAL SHALL BE SUBMITTED WITH THE CONTRACTOR'S REQUEST FOR PAYMENT. NO FINAL PAYMENT WILL BE APPROVED WITHOUT THIS CERTIFICATE.
- 7. **SITE EXAMINATION**
  - a. THE MECHANICAL CONTRACTOR SHALL THOROUGHLY EXAMINE ALL AREAS OF WORK WHERE EQUIPMENT, DUCTWORK, AND PIPING WILL BE INSTALLED AND SHALL REPORT ANY CONDITION THAT, IN HIS OPINION, PREVENTS THE PROPER INSTALLATION OF THE MECHANICAL WORK PRIOR TO BID. CONTRACTOR SHALL ALSO EXAMINE THE DRAWINGS AND SPECIFICATIONS OF OTHER BRANCHES OF WORK, MAKING REFERENCE TO THEM FOR DETAILS OF NEW OR EXISTING BUILDING CONDITIONS. NO EXTRAS WILL BE ALLOWED FOR FAILURE TO INCLUDE ALL REQUIRED WORK IN BID.
  - b. ALL WORK SHALL BE DONE AT TIMES CONVENIENT TO THE OWNER AND ONLY DURING NORMAL WORKING HOURS, UNLESS SPECIFIED OTHERWISE.
  - c. MECHANICAL CONTRACTOR SHALL TAKE THEIR OWN MEASUREMENTS AND BE RESPONSIBLE FOR THEM.
  - d. ACCESS PANELS ARE NOT SHOWN ON DRAWINGS. DURING SITE EXAMINATION, CONTRACTOR SHALL IDENTIFY ALL AREAS WHERE ACCESS PANELS ARE REQUIRED, AND REPORT TO GENERAL CONTRACTOR. DESIGNATION OF WHO FURNISHES AND WHO INSTALLS ACCESS PANELS MUST BE COORDINATED WITH GENERAL CONTRACTOR PRIOR TO STARTING WORK.
- 8. **CONTRACTOR COORDINATION**
  - a. COORDINATION DRAWINGS SHOWING SYSTEM AND COMPONENT INSTALLATION LAYOUT, ROUTING, DETAILS, ETC. SHALL BE PRODUCED BY THE MECHANICAL CONTRACTOR AND UNDER THE SUPERVISION OF THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER, OR APPROPRIATE PARTY AS APPLICABLE.
  - b. ALL SYSTEMS INSTALLED BY EACH SUB-CONTRACTOR SHALL BE COORDINATED WITH ONE ANOTHER AND APPROVED BY GENERAL CONTRACTOR/CONSTRUCTION MANAGER, ETC. PRIOR TO INSTALLATION AND/OR FABRICATION.
  - c. IF QUESTIONS CONCERNING DESIGN INTENT ARISE DURING COORDINATION, EBS CAN ASSIST WHERE APPROPRIATE.
  - d. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. DO NOT SCALE DISTANCES OFF THE MECHANICAL DRAWINGS; USE ACTUAL BUILDING DIMENSIONS.
- 9. **SHOP DRAWINGS / SUBMITTALS**
  - a. SUBMIT TO THE ARCHITECT ELECTRONIC COPIES OF COMPLETE AND CERTIFIED SHOP DRAWINGS, DESCRIPTIVE DATA, PERFORMANCE DATA AND RATINGS, DIAGRAMS AND SPECIFICATIONS ON ALL SPECIFIED EQUIPMENT, INCLUDING ACCESSORIES, AND MATERIALS FOR REVIEW. THE MAKE, MODEL NUMBER, TYPE, FINISH AND ACCESSORIES OF ALL EQUIPMENT AND MATERIALS SHALL BE REVIEWED AND APPROVED BY THE MECHANICAL CONTRACTOR AND GENERAL CONTRACTOR PRIOR TO SUBMITTING TO THE ARCHITECT FOR THEIR REVIEW AND APPROVAL. APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE MECHANICAL CONTRACTOR/VENDOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DRAWINGS, SPECIFICATIONS AND APPLICABLE CODES.
  - b. SHOP DRAWINGS SHALL BE REQUIRED FOR THE FOLLOWING:
    - HVAC EQUIPMENT
    - VAV BOXES
    - HEATERS
    - FANS
    - DIFFUSERS, REGISTERS, GRILLES, DAMPERS, LOUVERS, AND ALL SHEET METAL ACCESSORIES
    - TEMPERATURE CONTROLS
    - SHEET METAL COORDINATION DRAWINGS
    - DUCT SEALANTS (LEED PROJECTS)
  - c. AIR BALANCE REPORT PRODUCTS INSTALLED BY THE MECHANICAL CONTRACTOR AND PROVIDED BY OTHERS MUST BE SUBMITTED FOR REVIEW PRIOR TO PURCHASING. PRODUCTS SHALL NOT BE SELECTED BASED ON PERMIT DRAWINGS WITHOUT EXPRESS PERMISSION - PRODUCTS SHALL BE SELECTED BASED ON CONSTRUCTION DRAWINGS.
- 10. **RECORD DRAWING**
  - a. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CREATING RECORD DRAWINGS WHERE REQUIRED. DRAWINGS SHALL BE PRODUCED IN AUTOCAD 2004 FORMAT OR LATER.
- 11. **TESTING**
  - a. ALL MECHANICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION.
- 12. **FIRE STOPPING**
  - a. PROVIDE FIRE STOPPING AT ALL PENETRATIONS THROUGH RATED SEPARATIONS PER LOCAL CODES & REGULATIONS & PER UL RECOMMENDATIONS FOR ASSEMBLIES ENCOUNTERED IN PROJECT.
  - b. THE FIRE STOPPING MATERIAL SHALL MEET THE INTEGRITY OF THE FIRE RATED WALL, FLOOR, CEILING & ROOF BEING PENETRATED. REFER TO ARCHITECT'S DRAWINGS FOR WALL, FLOOR, CEILING & ROOF FIRE RATINGS PRIOR TO BIDDING WORK.
  - c. REFER TO ARCHITECT'S DRAWINGS FOR WALL, FLOOR, CEILING, AND ROOF FIRE RATINGS PRIOR TO BIDDING WORK.
- 13. **ACCESS PANELS**
  - a. PROVIDE CEILING AND WALL ACCESS PANEL QUANTITIES & LOCATIONS TO THE GENERAL CONTRACTOR PRIOR TO BIDDING. ACCESS PANELS ARE REQUIRED FOR ALL CONCEALED APPLIANCES, CONTROLS DEVICES, HEAT EXCHANGERS AND HVAC SYSTEM COMPONENTS THAT UTILIZE ENERGY. WHERE ACCESS PANELS ARE USED, THE ACCESS PANEL SHOULD BE SIZED TO ALLOW ACCESSIBILITY FOR INSPECTION, SERVICE, REPAIR AND REPLACEMENT WITHOUT DISABLING THE FUNCTION OF A FIRE-RESISTANCE-RATED ASSEMBLY OR REMOVING PERMANENT CONSTRUCTION. OTHER APPLIANCES, VENTING SYSTEMS OR ANY OTHER PIPING OR DUCTS NOT CONNECTED TO THE APPLIANCE BEING INSPECTED, SERVICED, REPAIRED OR REPLACED, THERE SHALL BE NO EXTRAS FOR HAVING TO ADD ACCESS PANELS AFTER BIDS ARE AWARDED.
- 14. **CUTTING AND PATCHING**
  - a. NEATLY DO ALL CUTTING AS REQUIRED AND PATCH ALL CUT SURFACES TO MATCH BUILDING CONSTRUCTION. THE CONTRACTOR SHALL EMPLOY AND PAY A TRADE TRAINED AND QUALIFIED TO PERFORM THE REQUIRED PATCHING WORK. ALL SURFACES DISTURBED SHALL BE RESTORED WITH LIKE MATERIALS TO THE SATISFACTION OF THE OWNER. ALL PENETRATIONS THROUGH ROOF SHALL BE MADE BY BONDED ROOFER. MECHANICAL CONTRACTOR SHALL PAY ALL FEES REQUIRED.
- 15. **FLASHING & COUNTERFLASHING**
  - a. ROOF FLASHING SHALL BE FURNISHED AND INSTALLED BY THE ROOFING CONTRACTOR. ROOF COUNTERFLASHING SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. COORDINATE WORK WITH ROOFING CONTRACTOR AND PAY ALL FEES.
  - b. OBTAIN APPROVAL FROM GENERAL CONTRACTOR, CONSTRUCTION MANAGER, OWNER AND/OR ROOFING CONTRACTOR PRIOR TO MAKING ANY PENETRATIONS SO THAT WARRANTIES ARE NOT COMPROMISED OR VOIDED.
- 16. **WARRANTY**
  - a. THE MECHANICAL CONTRACTOR SHALL UNCONDITIONALLY WARRANT ALL WORK TO BE FREE OF DEFECTS IN EQUIPMENT, MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY OWNER. THE MECHANICAL CONTRACTOR WILL REPAIR OR REPLACE ANY DEFECTIVE WORK PROMPTLY AND WITHOUT CHARGE TO THE OWNER.
  - b. RESTORE ANY OTHER EXISTING WORK DAMAGED IN THE COURSE OF REPAIRING DEFECTIVE EQUIPMENT, MATERIALS AND WORKMANSHIP.
- 17. **MECHANICAL WORK**
  - a. THE MECHANICAL CONTRACTOR SHALL PROVIDE NEW HVAC EQUIPMENT, FANS, DUCTWORK, PIPING, AIR DEVICES, CONTROLS AS INDICATED ON DRAWINGS AND AS SPECIFIED. STARTUP AND 1ST YEAR PARTS AND LABOR WARRANTY SHALL BE INCLUDED AND MANUFACTURER'S EXTENDED WARRANTIES. EQUIPMENT AND APPLIANCES SHALL BE INSTALLED AS REQUIRED BY THE TERMS OF THEIR APPROVAL, IN ACCORDANCE WITH THE CONDITIONS OF THE LISTING, THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND THE APPLICABLE CODE.
- 18. **OWNER'S INSTRUCTIONS**
  - a. PROVIDE TWO SETS OF COMPLETE OPERATING AND MAINTENANCE INSTRUCTIONS WITH DRAWINGS, TYPEWRITTEN INSTRUCTIONS AND OPERATING SEQUENCES AND DESCRIPTIVE DATA SHEETS. ASSEMBLE EACH SET IN A HARD-BOUND COVER. PROVIDE PDF FILES OF ALL DOCUMENTATION.
- 19. **FINALE**
  - a. PUT ALL EQUIPMENT IN SERVICE AND DEMONSTRATE THAT ALL CONDITIONS OF THE CONTRACT HAVE BEEN FULFILLED. REMOVE ALL TOOLS, DEBRIS, ETC. OCCASIONED BY WORK UNDER THIS CONTRACT. MECHANICAL CONTRACTOR TO PROVIDE A NEW SET OF FILTERS IN ALL HVAC UNITS PRIOR TO TURNOVER. SUBMIT ALL WARRANTIES, TEST REPORTS, OPERATING AND MAINTENANCE MANUALS FOR HVAC SYSTEMS, LOG SHEETS AND CHARTS, AND GUARANTEES AS PREVIOUSLY SPECIFIED. PROVIDE ALL REPORTS, FORMS, ETC. REQUIRED BY INSPECTORS TO THE SATISFACTION OF THE OWNER. PROVIDE AS-BUILT RECORD DRAWINGS (IN AUTOCAD 2007 OR LATER) SHOWING AN ACCURATE ACCOUNT OF THE FINAL INSTALLED SYSTEMS. SYSTEMS INCLUDING BUT NOT LIMITED TO ALL EQUIPMENT AND ASSOCIATED CONTROLS, DUCTWORK/PIPING, AIR DEVICES, ETC.
- 20. **SHEETMETAL DUCTWORK**
  - a. ALL SIZES OF DUCTS SHOWN ON THE DRAWINGS ARE INTERIOR DUCT DIMENSIONS. ALL DUCTWORK SHALL BE RIGID SHEETMETAL CONSTRUCTED FROM GALVANIZED SHEET STEEL IN ACCORDANCE WITH SMACNA LOW VELOCITY DUCT CONSTRUCTION STANDARDS. ALL EXPOSED DUCTWORK SHALL BE ROUND, SPIRAL, OR RECTANGULAR LOCK-SEAM TYPE, AS SHOWN ON HVAC DRAWINGS. ASSEMBLE AND INSTALL DUCTWORK IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICE FOR ACHIEVING AIR TIGHT (5% LEAKAGE) AND NOISELESS (NO OBJECTIONABLE NOISE) SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE. FURNISH ALL REQUIRED DAMPERS, TRANSITIONS, OFFSETS, CONNECTIONS TO AIR DEVICES, AND OTHER ACCESSORIES NECESSARY FOR A COMPLETE OPERATING SYSTEM. FLEXIBLE DUCTWORK SHALL NOT EXCEED 8'-0" LONG.
  - b. ALL 90-DEGREE DUCT TURNS MUST BE 1.5 RADIUS ELBOWS. IF A 1.5 RADIUS ELBOW WILL NOT FIT, SQUARE ELBOWS WITH TURNING VANES CAN BE PROVIDED IN LIEU OF RADIUS BUT SHOULD BE LIMITED TO ONLY AREAS WHERE THERE ARE SPACE CONSTRAINTS.
  - c. ALL TAKEOFF/BRANCH DUCTWORK MUST UTILIZE BOOT OR CONICAL TEE FITTINGS.
- 21. **ADHESIVES AND SEALANTS**
  - a. SEAL ALL LONGITUDINAL AND TRANSVERSE DUCT JOINTS WITH A UL 181A OR 181B NON-HARDENING, NON-MIGRATING MASTIC OR LIQUID ELASTIC SEALANT OF A TYPE RECOMMENDED BY THE MANUFACTURER FOR SEALING JOINTS AND SEAMS IN SHEET METAL DUCTWORK. COVER ALL FIELD JOINTS, JOINTS AROUND SPIN-IN FITTINGS AND FASTENING SCREWS WITH MASTIC. ALL SEALANTS AND GASKETS SHALL HAVE SURFACE-BURNING CHARACTERISTICS WITH A MAXIMUM FLAME-SPREAD INDEX OF 25 AND A MAXIMUM SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED ACCORDING TO UL 723.
  - b. EXPOSED DUCTWORK: TRIM DUCT SEALANTS FLUSH WITH METAL. CREATE A SMOOTH AND UNIFORM EXPOSED BEAD. DO NOT USE TWO-PART TAPE SEALING SYSTEM.
  - c. (LEED ONLY) FOR INDOOR APPLICATIONS, ALL ADHESIVES, SEALANTS, AND SEALANT PRIMERS MUST COMPLY WITH SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE #1168. VOLATILE ORGANIC COMPOUND (VOC) LIMITS LISTED IN THE TABLE BELOW CORRESPOND TO THE TABLE LISTED IN LEED NC 2009 CREDIT IEQ 4.1: LOW-EMITTING MATERIALS - ADHESIVES AND SEALANTS.
- 22. **DUCT SUPPORTS**
  - a. FURNISH AND INSTALL HOT-DIPPED GALVANIZED STEEL FASTENERS, HANGERS, ANCHORS, RODS, STRAPS, TRIM, AND ANGLES FOR SUPPORT OF DUCTWORK.

- 23. **FLEXIBLE CONNECTIONS**
  - a. FURNISH AND INSTALL NEOPRENE FLEXIBLE DUCT CONNECTIONS AT THE INLET AND DISCHARGE OF UNITS AND FANS.
- 24. **DUCT MANUAL VOLUME DAMPERS**
  - a. FURNISH AND INSTALL EXPOSED-BLADE, LEAK-PROOF VOLUME CONTROL DAMPERS WHERE INDICATED ON DRAWINGS AND LOCATIONS IN SUPPLY, RETURN AND EXHAUST DUCTS WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS OR AT EACH INDIVIDUAL DUCT REGISTER IN ORDER TO ACHIEVE SYSTEM AIR BALANCE QUANTITIES. BALANCING DEVICES MUST BE PROVIDED IN ACCORDANCE WITH IMC 603.18. ALL MANUAL VOLUME DAMPERS MUST BE SHOWN ON COORDINATION DRAWINGS WHEN SUBMITTED FOR REVIEW.
- 25. **DUCT ACCESS DOORS**
  - a. FURNISH AND INSTALL CONVENIENTLY LOCATED DUCT ACCESS DOORS OF AMPLE SIZE AND QUANTITY FOR SERVICING THE DAMPERS.
- 26. **FIRE DAMPERS**
  - a. FURNISH AND INSTALL UL555 LISTED FIRE DAMPERS AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH NFPA AND LOCAL AND STATE CODES. REFER TO ARCHITECTURAL DRAWINGS FOR ALL RATED WALLS, FLOORS, AND ROOFS. FIRE DAMPERS SHALL BE UL LABELED AND INSTALLED AS SHOWN ON THE DRAWINGS OR AS REQUIRED BY NFPA AND CODES. DAMPERS AND SLEEVES SHALL MEET CONSTRUCTION REQUIREMENTS OF NFPA 90A, 92A, AND 92B. DAMPERS SHALL BE AMCA LICENSED FOR AIR PERFORMANCE. DAMPER CONSTRUCTION SHALL BE A MINIMUM 16-GAUGE STEEL FRAME FOR SQUARE OR RECTANGULAR DUCTS AND 14-GAUGE STEEL FRAME FOR ROUND DUCTS. DAMPER BLADES SHALL BE 16-GAUGE GALVANIZED STEEL. BEARINGS AND JAMB SEALS SHALL BE STAINLESS STEEL. EACH FIRE DAMPER SHALL HAVE A RATING THAT MEETS THE FIRE RESISTANCE REQUIREMENT OF THE ASSEMBLY RATING AND SHALL BE SUPPLIED WITH A 165-DEGREE F FUSIBLE LINK. PROVIDE ALL NECESSARY SLEEVES, ANGLES, ETC. REQUIRED TO PROVIDE AN INSTALLATION IN ACCORDANCE WITH THE DAMPER MANUFACTURER'S INSTALLATION INSTRUCTIONS. DAMPERS SHALL BE APPROVED FOR VERTICAL OR HORIZONTAL MOUNTING AS REQUIRED BY THE LOCATION SHOWN AND SHALL BE LABELED FOR USE IN DYNAMIC SYSTEMS.
- 27. **DIFFUSERS, GRILLES AND REGISTERS**
  - a. DIFFUSERS, GRILLES AND REGISTERS SHALL BE MANUFACTURED BY TITUS, PRICE, OR ENGINEERED APPROVED EQUAL AND SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. DIFFUSERS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS AND SCHEDULES. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS ITEMS NECESSARY FOR A COMPLETE AND PROPER INSTALLATION IN THE TYPE OF CEILING AND WALLS USED IN THIS PROJECT.
- 28. **EXHAUST FAN**
  - a. FAN MANUFACTURER SHALL BE PANASONIC, COOK, GREENECCO, OR ENGINEERED APPROVED EQUAL.
  - b. REFER TO DRAWINGS AND SCHEDULES FOR UNIT LOCATION, TECHNICAL DATA, AND ANY APPLICABLE ACCESSORIES.
- 29. **WATER SOURCE HEAT PUMPS**
  - a. FACTORY ASSEMBLED, PIPED, INTERNALLY WIRED, FULLY CHARGED WATER SOURCE HEAT PUMPS. UNIT SHALL HAVE MANUFACTURER'S STANDARD WARRANTY ON INSTALLATION OF THE MECHANICAL CONTRACTOR.
  - b. REFER TO DRAWINGS AND SCHEDULES FOR UNIT LOCATION, TECHNICAL DATA, AND APPLICABLE ACCESSORIES.
  - c. HEAT PUMP MANUFACTURER SHALL BE DAIKIN, FLORIDA HEAT PUMP, CLIMATE MASTER, OR ENGINEERED APPROVED EQUAL.
- 30. **ROOFTOP UNIT**
  - a. OUTDOOR, ROOFTOP MOUNTED, ELECTRICALLY CONTROLLED, HEATING AND COOLING UNIT UTILIZING SCROLL COMPRESSORS FOR COOLING AND NATURAL GAS FOR HEATING. UNIT SHALL HAVE STANDARD MANUFACTURER WARRANTY ON PARTS. INSTALL PER MANUFACTURER'S REQUIREMENTS.
  - b. REFER TO DRAWINGS AND SCHEDULES FOR UNIT LOCATION, TECHNICAL DATA, AND ACCESSORIES.
  - c. ROOFTOP MANUFACTURER SHALL BE TRANE, AAO, CARRIER, OR ENGINEERED APPROVED EQUAL.
- 31. **VAV BOXES**
  - a. ELECTRICALLY CONTROLLED, ELECTRIC HEATING. UNIT SHALL HAVE STANDARD MANUFACTURER WARRANTY ON PARTS. INSTALL PER MANUFACTURER'S REQUIREMENTS.
  - b. REFER TO DRAWINGS AND SCHEDULES FOR UNIT LOCATION, TECHNICAL DATA, AND ACCESSORIES.
  - c. VAV BOX MANUFACTURER SHALL BE TITUS, TRANE, CARRIER, OR ENGINEERED APPROVED EQUAL.
- 32. **NON-DUCTED MINI-SPLIT SYSTEMS**
  - a. SPLIT SYSTEMS SHALL CONSIST OF INDOOR AIR HANDLER AND ASSOCIATED OUTDOOR HEAT PUMP UNIT.
  - b. EQUIPMENT SHALL HAVE MANUFACTURER'S STANDARD WARRANTY.
  - c. PROVIDE AN IN-LINE CHECK VALVE LOCATED IN THE DRAIN LINE OR TRAP.
  - d. MINI-SPLIT SYSTEM MANUFACTURER SHALL BE MITSUBISHI, DAIKIN, OR ENGINEERED APPROVED EQUAL.
- 33. **ELECTRIC WALL HEATERS**
  - a. BACK BOX: THE BACK BOX SHALL BE DESIGNED AS A RECESSED ROUGH-IN BOX IN EITHER MASONRY OR FRAME INSTALLATIONS AND IS ALSO USED WHEN SURFACE MOUNTING FRAMES ARE USED IN SURFACE MOUNTING INSTALLATIONS. THE BACK BOX SHALL BE HEAVY GAUGE GALVANIZED STEEL AND SHALL BE WARRANTEED FOR 5 YEARS.
  - b. INNER FRAME ASSEMBLY: THE HEATER ASSEMBLY, WHICH FITS INTO THE BACK BOX, SHALL CONSIST OF A HEAVY GAUGE STEEL FAN PANEL TO WHICH ALL OF THE OPERATIONAL PARTS OF THE HEATER ARE MOUNTED. THE INNER FRAME ASSEMBLY SHALL BE COMPLETELY PRE-WIRED.
  - c. HEATING ELEMENT: THE HEATING ELEMENT SHALL BE OF THE NON-GLOWING DESIGN CONSISTING OF AN 80/20 NICKEL-CHROMIUM RESISTANCE WIRE ENCLOSED IN A STEEL SHEATH TO WHICH PLATE FINS ARE COPPER BRAZED. THE ELEMENT SHALL COVER THE ENTIRE AIR DISCHARGE AREA TO ENSURE UNIFORM HEATING OF ALL DISCHARGED AIR. IT SHALL BE WARRANTEED FOR 5 YEARS.
  - d. ON/OFF SWITCH: A DOUBLE-POLE, SINGLE THROW ON/OFF SWITCH SHALL BE MOUNTED ON THE BACK BOX FOR POSITIVE DISCONNECT OF POWER SUPPLY. IT WILL BE COMPLETELY CONCEALED BEHIND THE FRONT COVER.
  - e. MOTOR AND CONTROLS: THE FAN MOTOR SHALL BE IMPEDANCE PROTECTED, PERMANENTLY LUBRICATED. FAN CONTROL SHALL BE OF THE BI-METALLIC, SNAP-ACTION TYPE AND SHALL ACTIVATE FAN AFTER HEATING ELEMENT REACHES OPERATING TEMPERATURE, AND CONTINUE TO OPERATE THE FAN AFTER THE THERMOSTAT IS SATISFIED AND UNTIL ALL HEATED AIR HAS BEEN DISCHARGED. THE THERMOSTAT SHALL BE SINGLE-POLE TYPE ON ALL MODELS. THERMAL CUTOFF SHALL BE SELF-HOLD (MANUAL-RESET) TYPE DESIGNED TO SHUT OFF HEAT IN THE EVENT OF OVERHEATING. THE FAN SHALL BE FOUR-BLADED ALUMINUM. A BACK-UP (END OF LIFE) THERMAL FUSE SHALL BE PROVIDED FOR ADDITIONAL SAFETY.
  - f. SURFACE MOUNTING FRAME: THE SURFACE MOUNTING FRAME SHALL BE HEAVY GAUGE STEEL DESIGNED TO MOUNT AROUND THE BACK BOX FOR A FINISHED SURFACE INSTALLATION. SLOT KNOCK OUTS SHALL BE PROVIDED FOR PWOER SUPPLY CONDUIT.
  - g. FRONT COVER: THE LOUVERED FRONT COVER SHALL BE OF HEAVY GAUGE STEEL WITH A POWDER PAINT FINISH. A PLUG BUTTON WILL BE PROVIDED TO REPLACE THE THERMOSTAT KNOB AND RENDER THE UNIT TAMPER-RESISTANT.
  - h. FINISH: ALL SHEET METAL PARTS, EXCEPT THE GALVANIZED STEEL BACK BOX, SHALL BE PHOSPHATED, THEN COMPLETELY PAINTED BY A POWDER PAINT PROCESS.
  - i. REFER TO DRAWINGS AND SCHEDULES FOR UNIT LOCATION, TECHNICAL DATA AND ANY APPLICABLE ACCESSORIES.
  - j. ELECTRIC WALL HEATER MANUFACTURER SHALL BE MARLEY, QMARK, BERKO OR ENGINEERED APPROVED EQUAL.
- 34. **CONDENSATE DRAIN PIPING**
  - a. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL CONDENSATE DRAINS, P-TRAPS WITH REMOVABLE CLEANOUT CAPS FOR AIR EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. THE P-TRAP DEPTH SHALL BE AT LEAST THE DEPTH SPECIFIED FOR THE RESPECTIVE PRESSURE DROP OF THE UNIT. CONDENSATE DRAIN PIPING SHALL BE SCHEDULE 40 PVC PIPE WITH SOLVENT WELD FITTINGS. ALL CONDENSATE DRAIN LINES SHALL BE CONFIGURED TO PERMIT THE CLEARING OF BLOCKAGES AND PERFORMANCE OF MAINTENANCE WITHOUT REQUIRING THE DRAIN LINE TO BE CUT. FOR CONDENSATE PUMPS LOCATED IN UNINHABITABLE SPACES (I.E. ATTICS AND CRAWL SPACES), PROVIDE CONTROLS THAT WILL SHUT DOWN THE EQUIPMENT IF THE CONDENSATE PUMP FAILS.
  - b. ALL COOLING EQUIPMENT SHALL HAVE A WET SWITCH IN THE PRIMARY DRAIN LINE, THE OVERFLOW DRAIN LINE, OR IN THE EQUIPMENT-SUPPLIED DRAIN PAN LOCATED AT A POINT HIGHER THAN THE PRIMARY DRAIN LINE CONNECTION AND BELOW THE OVERFLOW RIM OF THE PAN) THAT WILL SHUT DOWN THE UNIT WHEN THE CONDENSATE IS CLOGGED.
- 35. **PIPING SUPPORTS (METAL PIPE)**
  - a. FURNISH AND INSTALL HOT-DIPPED GALVANIZED STEEL FASTENERS, HANGERS, ANCHORS, RODS, STRAPS, TRIM AND ANGLES FOR SUPPORT OF PIPING.
- 36. **PIPING SUPPORTS (PLASTIC PIPE)**
  - a. FURNISH AND INSTALL HANGERS FOR PLASTIC PIPING PER MANUFACTURER'S REQUIREMENTS.
- 37. **TEMPERATURE CONTROLS AND CONTROL WIRING**
  - a. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING NECESSARY FOR THE COMPLETE AND PROPER OPERATING TEMPERATURE CONTROL SYSTEM. PROGRAMMABLE THERMOSTATS SHALL BE PROVIDED WITH EQUIPMENT PACKAGES UNLESS OTHERWISE NOTED.
  - b. EXPOSED WIRING: ALL WIRING EXPOSED TO THE SPACE SHALL BE RUN IN CONDUIT. COORDINATE REQUIREMENTS WITH ARCHITECTURAL DRAWINGS.
- 38. **TESTING, BALANCING, AND ADJUSTING**
  - a. THE INDIVIDUAL PERFORMING THE AIR BALANCING SHALL BE A CERTIFIED TEST AND BALANCER AND A MEMBER OF NEBB OR AAEC, USING CALIBRATED EQUIPMENT. THE CERTIFIED AIR BALANCE CONTRACTOR SHALL ACCURATELY BALANCE THE SYSTEMS TO PROVIDE AIR QUANTITIES AS INDICATED ON THE DRAWINGS AND IN THE SCHEDULES/SPECIFICATIONS, OPERATE AUTOMATIC CONTROL SYSTEMS, AND VERIFY SET POINTS DURING BALANCING.
- 39. **SEQUENCE OF OPERATION**
  - a. ELECTRIC WALL HEATERS
    - 1. EWH-X: HEATER SHALL BE CONTROLLED FROM THE INTEGRAL THERMOSTAT. WHEN THE TEMPERATURE OF THE SPACE DROPS BELOW THE THERMOSTAT SETPOINT, THE HEATER FAN SHALL RUN AND THE ELECTRIC HEATING ELEMENT SHALL ENGAGE TO MAINTAIN TEMPERATURE SETPOINT.
  - b. EXHAUST FANS
    - 1. EF-1: EXHAUST FAN SHALL RUN ON A TIMECLOCK (PROVIDED BY THE ELECTRICAL CONTRACTOR), THE FAN SHALL BE SET TO RUN DURING OCCUPIED MODE AS DETERMINED BY THE ARCHITECT/OWNER.
    - 2. EF-2: EXHAUST FAN SHALL RUN ON A REVERSE ACTING THERMOSTAT. WHEN ROOM TEMPERATURE IS ABOVE THERMOSTAT SET POINT OF 85°F, A SIGNAL IS SENT TO TURN ON THE EXHAUST FAN. WHEN THE ROOM TEMPERATURE IS BELOW THE THERMOSTAT SET POINT, A SIGNAL IS SENT TO TURN OFF THE EXHAUST FAN.
    - 3. EF-3: EXHAUST FAN SHALL RUN ON A REVERSE ACTING THERMOSTAT. WHEN ROOM TEMPERATURE IS ABOVE THERMOSTAT SET POINT OF 85°F, A SIGNAL IS SENT TO TURN ON THE EXHAUST FAN. WHEN THE ROOM TEMPERATURE IS BELOW THE THERMOSTAT SET POINT, A SIGNAL IS SENT TO TURN OFF THE EXHAUST FAN.
  - c. ROOFTOP UNITS
    - 1. RTU-X: REFER TO VAV ROOFTOP CONTROL SEQUENCE.
  - d. VAV BOXES
    - 1. VAV-X: REFER TO VAV BOX CONTROL SEQUENCE
  - e. DUCTLESS SPLIT SYSTEMS
    - 1. DSS-X/SDSSO-X:
    - 2. COOLING MODE - WHEN THE THERMOSTAT CALLS FOR COOLING THE HEAT PUMP SHALL ENGAGE, THE INDOOR AIR HANDLER FAN SHALL RUN, AND THE DX COOLING COIL SHALL COOL THE AIR TO MAINTAIN TEMPERATURE SETPOINT.
  - f. ELECTRIC UNIT HEATERS
    - 1. EUH-X: HEATER SHALL BE CONTROLLED FROM THE INTEGRAL THERMOSTAT. WHEN THE TEMPERATURE OF THE SPACE DROPS BELOW THE THERMOSTAT SETPOINT, THE HEATER FAN SHALL RUN AND THE ELECTRIC HEATING ELEMENT SHALL ENGAGE TO MAINTAIN TEMPERATURE SETPOINT.

**DOMESTIC DRYER EXHAUST SYSTEM NOTES:**

- 1. EXHAUST DUCTS SHALL HAVE A SMOOTH INTERIOR FINISH AND BE CONSTRUCTED OF METAL A MINIMUM OF 28 GAGE.
- 2. DUCT SIZE SHALL BE 4 INCHES NOMINAL DIAMETER.
- 3. DUCTS SHALL BE SUPPORTED AT 4-FOOT INTERVALS AND SECURED IN PLACE. THE INSERT END OF THE DUCT SHALL EXTEND INTO THE ADJOINING DUCT OR FITTING IN THE DIRECTION OF AIRFLOW.
- 4. DUCTS SHALL NOT BE JOINED WITH SCREWS OF SIMILAR FASTENERS THAT PROTRUDE MORE THAN 1/8 INCH INTO THE INSIDE OF THE DUCT.
- 5. PROTECTIVE SHIELD PLATES SHALL BE PLACED WHERE NAILS OR SCREWS FROM FINISH OR OTHER WORK ARE LIKELY TO PENETRATE THE CLOTHES DRYER EXHAUST DUCT. SHIELD PLATES SHALL BE PLACED ON THE FINISHED FACE OF ALL FRAMING MEMBERS WHERE THERE IS LESS THAN 1-1/4 INCHES BETWEEN THE DUCT AND THE FINISHED FACE OF THE FRAMING MEMBER. SHIELD PLATES SHALL BE CONSTRUCTED OF STEEL, HAVE A THICKNESS OF 0.062 INCHES, AND EXTEND NOT LESS THAN 2 INCHES ABOVE SOLE PLATES AND BELOW TOP PLATES.
- 6. TRANSITION DUCTS USED TO CONNECT THE DRYER TO THE EXHAUST DUCT SYSTEM SHALL BE A SINGLE LENGTH THAT IS LISTED AND LABELED IN ACCORDANCE WITH UL 2158A. TRANSITION DUCTS SHALL BE NOT GREATER THAN 8 FEET IN LENGTH AND SHALL NOT BE CONCEALED WITHIN CONSTRUCTION.
- 7. PROVIDE DRYER WALL BOX EQUAL TO DRYERBOX MODEL DB-480 NEAR DRYER.
- 8. PROVIDE A PERMANENT LABEL OR TAG (EQUAL TO DRYER-PLACARD) INDICATING ACTUAL EQUIVALENT LENGTH OF EXHAUST DUCT. LABEL TAG MUST INCLUDE 5' FOR 90 DEGREE ELBOW AND 5' FOR 90 DEGREE ELBOW AND 5 FEET FOR A RADIUS MITERED 45-DEGREE ELBOW AND 5 FEET FOR A RADIUS MITERED 90-DEGREE ELBOW.



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**MECHANICAL SPECIFICATIONS**

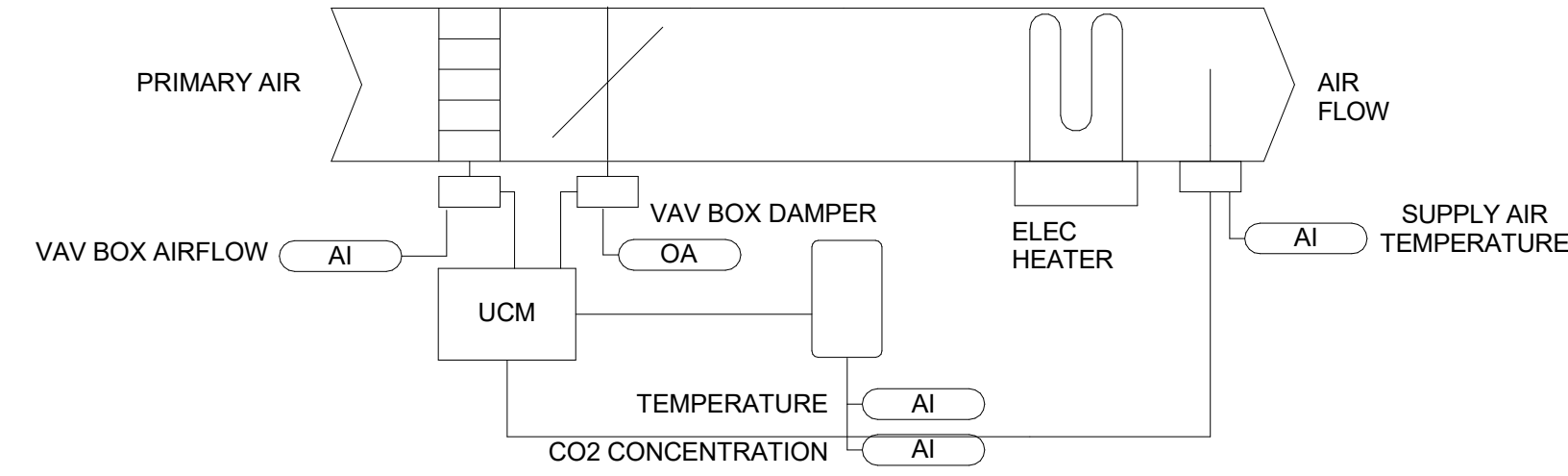
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**SINGLE-DUCT VARIABLE AIR VOLUME (VAV) WITH ELECTRIC REHEAT SEQUENCE OF OPERATIONS**

1. General
  - A. Single-duct Variable Air Volume (VAV) boxes with hot water reheat coils.
  - B. VAV boxes are indexed to Occupied or Unoccupied operation based on the current time period of the Occupancy Zone the VAV box is associated with.
  - C. The rooftop unit serving a VAV box must be operating and providing cool primary air for the VAV box to condition its space.
2. Occupied Operation
  - A. VAV box controller indexed to Occupied when the current time period of the Occupancy Zone the VAV box is associated with is "Occupied."
  - B. Cooling Operation
    1. Controller enters Cooling Operation when space temperature goes above Occupied Cooling Setpoint.
    2. Controller CFM setpoint proportionally increased from minimum to maximum CFM setpoint as space cooling demand increases from 0% to 100%.
    3. Controller CFM setpoint proportionally decreased from maximum to minimum CFM setpoint as space cooling demand decreases from 100% to 0%.
    4. Electric reheat coil is off.
  - C. Deadband Operation
    1. Controller enters Deadband Operation when space temperature between Occupied Heating Setpoint and Occupied Cooling Setpoint.
    2. Controller CFM setpoint remains at minimum.
  - D. Heating Operation
    1. Controller enters Heating Operation when space temperature goes below Occupied Heating Setpoint.
    2. Controller CFM setpoint indexed to Heating CFM setpoint and box's electric reheat coil operated to provide heat to the space.
3. Preoccupied Operation
  - A. VAV box controller indexed to Occupied when the current time period of the Occupancy Zone the VAV box is associated with is "Preoccupied."
  - B. Rooftop unit serving VAV boxes may be providing warm or cool primary air depending on rooftop unit's current mode of operation = Occupied, Warm-up or Cool-down.
    - a. Refer to rooftop unit sequence of operation for detailed information on what determines rooftop unit's Occupied, Warm-up or Cool-down mode of operation.
  - C. Cooling Operation
    1. Controller enters cooling mode if room temperature increases above controller's Occupied Cooling setpoint and rooftop unit is providing cool primary air.
    2. Controller CFM setpoint set to maximum CFM setpoint.
    3. Electric reheat coil is off.
  - D. Deadband Operation
    1. Controller enters deadband mode if either of the following are true:
      - a. Room temperature between controller's Occupied Heating and Occupied Cooling setpoints.
      - b. Room temperature above controller's Occupied Cooling setpoint but rooftop unit is providing warm primary air.
    2. Controller primary air damper is closed.
    3. Electric reheat coil is off.
  - E. Heating Operation
    1. Controller enters Heating Operation when space temperature goes below Occupied Heating Setpoint.
      - a. Controller will enter heating mode whether the rooftop unit is providing warm or cool primary air. Rooftop unit's warm primary air will be used to provide heating if available; VAV box reheat coil will be utilized to provide heating if rooftop unit is providing cool primary air.
    2. The following occurs if the rooftop unit providing warm primary air and the VAV controller enters Heating Operation.
      - a. Controller CFM setpoint set to maximum CFM setpoint.
      - b. Electric reheat coil is off.
    3. The following occurs if the rooftop unit providing cool primary air and the VAV controller enters Heating Operation.
      - a. Controller primary air damper is closed.
      - b. Controller operates the box's electric reheat coil to provide heat to the space.
4. Unoccupied Operation:
  - A. VAV box controller indexed to Unoccupied when current time period of the Occupancy Zone the VAV box is associated with is "Unoccupied."
  - B. VAV box Unoccupied operation is the same as Preoccupied operation except VAV box controllers enter Heating, Cooling or Deadband operation based on controller's Unoccupied Heating and Cooling setpoints.
5. Heating/Cooling Setpoints:
  - A. Occupied Heating/Cooling Setpoints:
    1. Occupied Heating/Cooling setpoints are determined based on a heating/cooling offset applied to a Nominal Space Temperature setpoint.
    2. Default "Nominal Space Temperature" setpoint is 72 degrees F (adj.) and default heating/cooling offset is +/-2 degrees F. This results in a nominal Occupied Cooling setpoint of 74 degrees F and a nominal Occupied Heating setpoint of 70 degrees F.
    3. Setpoint knob on face or room temperature sensor permits occupant to locally adjust DDC controller nominal space temperature setpoint command +/- 2 degrees F.
      - a. BAS operator can enable/disable operation of individual room sensor local set point adjustment via graphical user interface (GUI).
  - B. Unoccupied Heating/Cooling Setpoints:
    1. Unoccupied Cooling = Rooftop Unit's Unoccupied Cooling Setpoint minus 3 degrees F.
    2. Unoccupied Heating = Rooftop Unit's Unoccupied Heating Setpoint plus 3 degrees F.
    3. VAV box controller unoccupied setpoints are offset from rooftop unit's unoccupied setpoints to help ensure a minimum number of boxes are calling for heating or cooling when rooftop unit restarts. A minimum number of VAV boxes need to be calling for heating or cooling to provide the rooftop unit's minimum airflow.
6. Local Occupant Unoccupied Override
  - A. Unoccupied override button on VAV box space temperature sensor allows occupant to override Occupancy Zone's scheduled time period, and force the Occupancy Zone to Occupied, for a fixed time period of one hour when pressed.
  - B. BAS operator can enable/disable operation of individual room sensor's local Unoccupied Override button via graphical user interface.
7. Space Temperature:
  - A. Modulate damper and valve to maintain space temperature set points.
    1. Occupied Cooling Temperature: 74 deg F (adjustable).
    2. Occupied Heating Temperature: 70 deg F (adjustable).
    3. Unoccupied Cooling Temperature: 80 deg F (adjustable).
    4. Unoccupied Heating Temperature: 60 deg F (adjustable).
8. BAS Alarms:
  - A. BAS alarms are divided into four different alarm classes.
    1. Critical
    2. Manual Reset
    3. Informational
    4. Maintenance
  - B. Critical Alarms:
    1. There are no VAV box critical alarms.
  - C. Manual Reset Alarms:
    1. There are no VAV box manual alarms.
  - D. Informational Alarms:
    1. VAV box space temperature falls below 52 degrees F for more than five minutes.
    2. VAV box space temperature goes above 88 degrees F for more than five minutes.
    3. VAV discharge air temperature rises above 120 degrees F for more than five minutes.
  - E. Maintenance Alarms:
    1. There are no VAV box maintenance alarms.



① VAV BOX CONTROL DIAGRAM  
N.T.S.



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MECHANICAL VAV CONTROL SEQUENCE OF OPERATIONS

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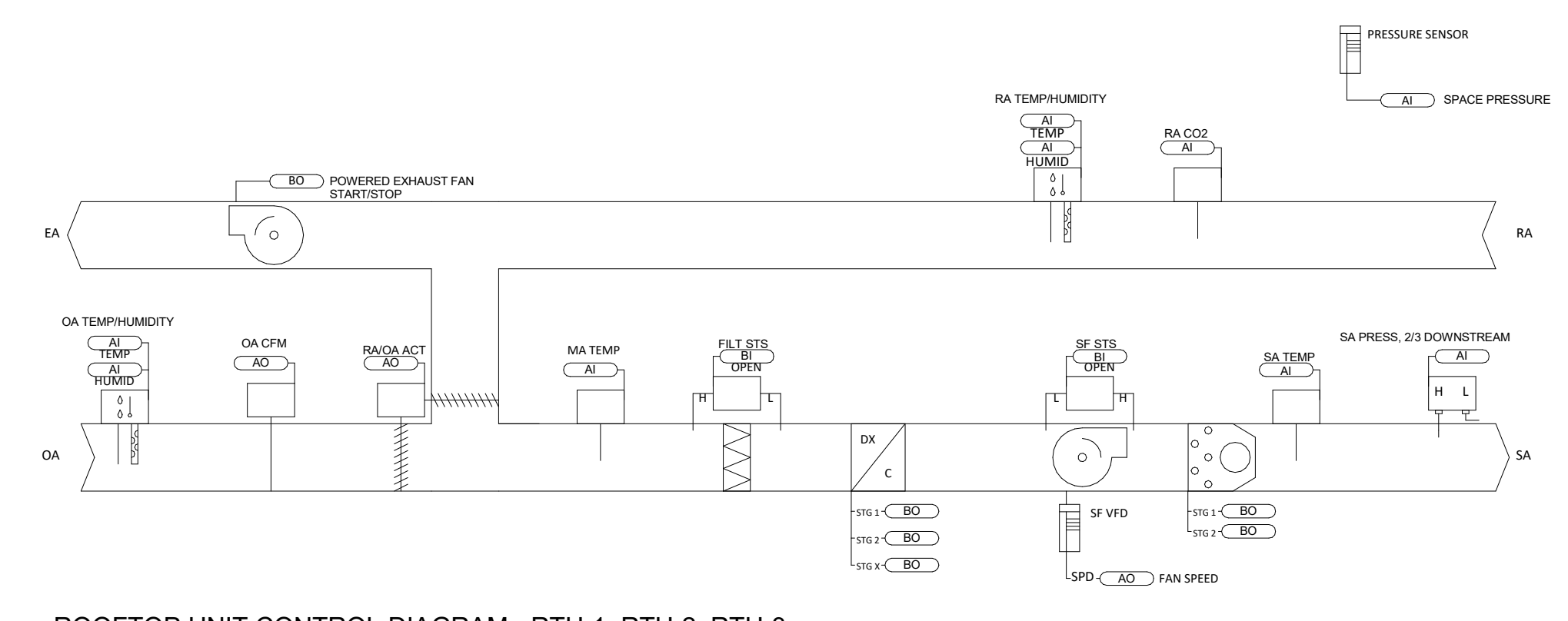
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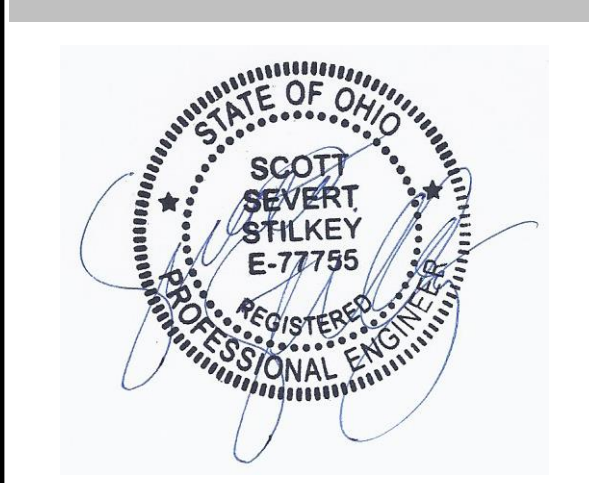
**ROOFTOP UNIT RTU CONTROLS SEQUENCE**

1. GENERAL
  - A. ROOFTOP UNIT SERVING VAV BOXES LOCATED IN THE SPACE.
  - B. UNIT COMPRISED OF:
    - a. SUPPLY FAN WITH VARIABLE SPEED DRIVE.
    - b. DIRECT EXPANSION (DX) COOLING COIL.
    - c. MODULATING GAS-FIRED HEAT EXCHANGER.
    - d. MODULATING OUTSIDE AIR AND RETURN AIR DAMPERS.
    - e. BAROMETRIC RELIEF/POWER EXHAUST.
    - f. FILTERS, COMPRESSORS, ETC.
  - C. ROOFTOP UNIT SHALL COME COMPLETE WITH ALL OPERATING AND SAFETY CONTROLS.
    - a. PROVIDE SUPERVISORY MONITORING AND CONTROL OF THE UNIT THROUGH THE BUILDING AUTOMATION SYSTEM (BAS).
      1. TEMPERATURE AND FLOW CONTROL SHALL COME COMPLETELY FROM THE UNIT.
  - D. UNIT SHALL BE EQUIPPED WITH CONTROLLERS AND INTERFACE AS REQUIRED BY OWNERS CONTROLS CONTRACTOR.
    - a. COMMUNICATION INTERFACE SHALL ALLOW THE UNIT CONTROLLER AND BAS TO SHARE DATA POINTS.
    - b. BAS SHALL UTILIZE THE SHARED DATA POINTS TO MONITOR THE UNIT'S OPERATION AND TO ISSUE SUPERVISORY COMMANDS TO UNIT'S CONTROLLER.
2. OCCUPIED OPERATION
  - A. THE BAS INDEXES UNIT TO OCCUPIED OPERATION IF ANY BUILDING OCCUPANCY ZONE ASSOCIATED WITH THE ROOFTOP UNIT IS "OCCUPIED."
  - B. WHEN IN OCCUPIED MODE THE UNIT'S RETURN AIR HEATING/COOLING CHANGEOVER SETPOINTS TO 60 DEGREES F HEATING AND 65 DEGREES F COOLING TO ASSURE UNIT REMAINS IN COOLING MODE TO DELIVER COOLING PRIMARY AIR.
  - C. SUPPLY FAN CONTROL
    - a. START/STOP: THE SUPPLY FAN OPERATION SHALL RUN CONTINUOUSLY DURING OCCUPIED OPERATION. WHEN THE FAN IS RUNNING, THE OA DAMPERS SHALL BE OPEN TO THE MINIMUM POSITION. WHENEVER THE FAN IS OFF, ALL DAMPERS SHALL ASSUME THEIR FAILED POSITIONS.
    - b. SUPPLY FAN SHALL MODULATE SPEED TO MAINTAIN SUPPLY DUCT STATIC PRESSURE (ADJ.). IF THE DUCT STATIC PRESSURE FALLS BELOW THE SUPPLY AIR STATIC SETPOINT PLUS DEADBAND, THE UNIT CONTROLLER SHALL INCREASE THE OUTPUT TO THE SUPPLY FAN TO MAINTAIN SETPOINT. IF THE DUCT STATIC PRESSURE RISES ABOVE THE SUPPLY AIR STATIC SETPOINT PLUS DEADBAND, THE UNIT CONTROLLER SHALL DECREASE THE OUTPUT TO THE SUPPLY FAN TO MAINTAIN SETPOINT.
    - c. FAN-PRESSURE OPTIMIZATION: PROVIDE DUCT STATIC PRESSURE RESET PROGRAMMING THAT WILL MINIMIZE DUCT PRESSURE TO SAVE ENERGY. THE BAS SHALL CONTINUOUSLY POLL THE INDIVIDUAL VAV CONTROLLERS AND LOOK FOR THE VAV TERMINAL WITH THE FURTHEST-OPEN DAMPER. THE SETPOINT FOR THE SUPPLY FAN SHALL THEN RESET TO PROVIDE JUST ENOUGH PRESSURE SO THAT AT LEAST ONE DAMPER IS NEARLY WIDE OPEN. THIS RESULTS IN THE SUPPLY FAN GENERATING ONLY ENOUGH STATIC PRESSURE TO PUSH THE REQUIRED QUANTITY OF AIR THROUGH THE "CRITICAL" (FURTHEST-OPEN) VAV TERMINAL. THESE OPTIMIZATION CONTROLS SHALL ALLOW THE BUILDING OPERATOR TO IDENTIFY "ROGUE ZONES" OR ZONES THAT PREVENT THE SYSTEM FROM REDUCING THE PRESSURE SETPOINT TO REDUCE FAN ENERGY (I.E. UNDERSIZED VAV BOXES, DUCT FLOW RESTRICTIONS, ZONE TEMPERATURE SETPOINTS TOO LOW/HIGH, OR ZONE SENSORS NEAR HEAT SOURCES.). THE BAS SHALL HAVE THE CAPABILITY OF TEMPORARILY EXCLUDING ROGUE ZONES FROM THE CONTROL SEQUENCE TO ALLOW REDUCED PRESSURE OPERATION WHILE THE ZONES ARE IDENTIFIED AND FIXED.
      1. BAS WILL DETERMINE VAV BOX WITH GREATEST DAMPER OPEN POSITION ONCE EVERY TEN MINUTES (ADJ.).
      2. UNIT'S SUPPLY AIR STATIC PRESSURE SETPOINT WILL BE DECREASED BY 0.1" WC IF VAV BOX WITH GREATEST DAMPER OPEN POSITION IS 85% OR LESS (ADJ.) AND INCREASED BY 0.1" WC IF DAMPER OPEN POSITION IS GREATER THAN 95% (ADJ.).
      3. SETPOINT IS RESET BETWEEN MINIMUM AND MAXIMUM SETPOINT OF 0.5" WC AND 2.0" WC (ADJ.).
  - D. SUPPLY AIR PRESSURE CONTROL
    - a. A PRESSURE TRANSDUCER MEASURES DUCT STATIC PRESSURE AND THE VFD SHALL MODULATE THE SUPPLY AIR STATIC PRESSURE WITHIN AN ADJUSTABLE USER-DEFINED RANGE. PRESSURE SENSOR SHALL BE LOCATED 2/3 DOWNSTREAM IN THE SUPPLY DUCTWORK. WHERE MAJOR BRANCHES OCCUR AT THE UNIT PROVIDE MULTIPLE STATIC PRESSURE SENSORS. DUCT STATIC PRESSURE CONTROL LOOP WILL DETERMINE THE SETPOINT.
  - E. BUILDING PRESSURE CONTROL. THE POWER EXHAUST SHALL ENABLE WHEN THE ECONOMIZER DAMPER POSITION IS EQUAL TO OR GREATER THAN THE EXHAUST FAN SETPOINT. THE POWER EXHAUST SHALL ALSO RUN TO MAINTAIN A STATIC PRESSURE SETPOINT OF +0.02" (ADJ.).
  - F. MINIMUM OUTSIDE AIR CONTROL
    - a. RTU CONTROLLER WILL SET THE UNIT'S MINIMUM OUTSIDE AIR DAMPER POSITION SETTING BASED ON USER INPUT.
    - b. THE MINIMUM OUTSIDE AIR DAMPER POSITION SETTING COMMAND MUST BE PROGRAMMED TO VARY THE SUPPLY FAN SPEED.
      1. PROVIDE A CO2 SENSOR IN THE RETURN DUCT MAIN AND A SENSOR IN THE DENSELY OCCUPIED SPACES (AS INDICATED ON THE DRAWINGS) THAT WILL MONITOR THE CO2 CONCENTRATION IN REAL TIME. AS THE CO2 CONCENTRATION INCREASES ABOVE THE CO2 SETPOINT OF 1,000 PPM (ADJ.), THE MINIMUM OUTDOOR AIR CFM SETPOINT SHALL INCREASE AND THE DAMPER SHALL OPEN INCREASING THE AMOUNT OF FRESH AIR ENTERING THE UNIT. THE SETPOINT SHALL BE ADJUSTED UPWARD UNTIL THE CO2 MAXIMUM RESET VALUE IS REACHED (I.E. THE VENTILATION DESIGN CFM). THE MAXIMUM EFFECTIVE (RESET) SETPOINT VALUE FOR FRESH AIR ENTERING THE UNIT IS LIMITED TO THE MAXIMUM RATED AIRFLOW FOR THE UNIT. AS THE CO2 CONCENTRATION DECREASES, THE EFFECTIVE (RESET) SETPOINT VALUE SHALL BE ADJUSTED DOWNWARD TOWARD THE MINIMUM OUTDOOR AIR CFM SETPOINT OF 10% OF THE MAXIMUM RATED VENTILATION AIRFLOW OF THE UNIT (ADJ.). LOCATE SENSOR IN RETURN DUCT ACCESSIBLE BY MAINTENANCE PERSONNEL. DURING UNOCCUPIED MODE THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED.
      2. RTU CONTROLLER SHALL ADJUST THE MINIMUM OA DAMPER SETTING TO FULLY-CLOSED DURING WARM UP AND COOL DOWN OPERATION.
  - G. DISCHARGE AIR TEMPERATURE CONTROL
    - a. THE UNIT'S DISCHARGE AIR TEMPERATURE CONTROL LOOP WILL CONTROL THE UNIT'S OUTSIDE AND RETURN AIR DAMPERS IN SEQUENCE WITH THE UNIT'S DX COOLING AND GAS-FIRED HEATING TO MAINTAIN THE UNIT'S DISCHARGE AIR TEMPERATURE SETPOINT.
      1. SUPPLY AIR TEMPERATURE RESET: THE BAS WILL RESET THE UNIT'S DISCHARGE AIR SETPOINT BASED ON ZONE TEMPERATURE. ZONE RESET IS APPLIED TO THE ZONE IN A BUILDING THAT TENDS TO OVERCOOL OR OVERHEAT. THE DISCHARGE AIR TEMPERATURE SETPOINT IS ADJUSTED BASED ON THE TEMPERATURE OF THE CRITICAL ZONE(S). THESE ARE USER ADJUSTED PARAMETERS. LOGIC FOR ZONE RESET CONTROL IS PROVIDED BY THE ZONE SENSOR. THE AMOUNT OF RESET APPLIED IS DEPENDENT UPON HOW FAR THE ZONE IS BELOW THE SUPPLY AIR RESET SETPOINT.
    - c. DX COOLING OPERATION
      1. UNIT WILL ENABLE DX COOLING OPERATION WHEN OUTSIDE AIR TEMPERATURE IS ABOVE THE UNIT'S COOLING LOW OUTSIDE AIR TEMPERATURE LOCKOUT SETPOINT (50 DEGREES F ADJ.). THE UNIT'S DISCHARGE AIR TEMPERATURE IS GREATER THAN THE UNIT'S MINIMUM DISCHARGE AIR TEMPERATURE LIMIT AND EITHER OF THE FOLLOWING IS TRUE:
        - a. ECONOMIZER OPERATION OF THE OUTSIDE AND RETURN AIR DAMPERS IS ENABLED AND OUTSIDE AIR DAMPERS HAVE BEEN COMMANDED TO FULL OPEN.
        - b. ECONOMIZER OPERATION OF THE OUTSIDE AND RETURN AIR DAMPERS IS DISABLED.
      2. THE UNIT'S DISCHARGE AIR TEMPERATURE CONTROL WILL STAGE THE UNIT'S DX COOLING STAGES TO MAINTAIN UNIT'S DISCHARGE AIR TEMPERATURE SETPOINT.
      3. THE UNIT WILL DISABLE DX COOLING OPERATION WHEN OUTSIDE AIR TEMPERATURE FALLS BELOW UNIT'S LOW OUTSIDE AIR TEMP COOLING LOCKOUT SETPOINT.
  - H. OA/R/E ECONOMIZER OPERATION
    - a. THE UNIT WILL DISABLE THE DRY BULB (OA/R/E) ECONOMIZER OPERATION WHEN THE OUTSIDE AIR DRY BULB TEMPERATURE IS GREATER THAN OR EQUAL TO THE ECONOMIZER OUTSIDE AIR ENABLE SETPOINT (60 F ADJ.) PLUS SETPOINT DIFFERENTIAL (2 F).
      1. THE UNIT'S OUTSIDE AND RETURN AIR DAMPERS WILL REVERT TO THEIR MINIMUM OUTSIDE AIR DAMPER POSITION SETTING WHEN ECONOMIZER OPERATION IS DISABLED.
    - b. THE UNIT WILL ENABLE ECONOMIZER OPERATION WHEN THE OUTSIDE AIR ENTHALPY IS LOWER THAN THE RETURN AIR ENTHALPY AND OUTSIDE AIR TEMPERATURE IS BELOW ECONOMIZER OUTSIDE AIR ENABLE SETPOINT (60 F ADJ.).
      1. UNIT'S OUTSIDE AND RETURN AIR DAMPERS WILL MODULATE TO MAINTAIN UNIT'S DISCHARGE AIR TEMPERATURE AT SETPOINT WHEN ECONOMIZER OPERATION IS ENABLED.
        - NOTE: THE DISCHARGE AIR TEMPERATURE CONTROL OF UNIT'S OA/R/E DAMPERS SHALL NOT OVERRIDE THE UNIT'S MINIMUM OUTSIDE AIR DAMPER POSITION SETTING.
      2. GAS HEATER OPERATION
        - a. THE UNIT WILL ENABLE HEATER OPERATION IF THE OA/R/E DAMPERS ARE COMMANDED TO MINIMUM OUTSIDE AIR DAMPER POSITION SETTING AND DISCHARGE AIR TEMPERATURE IS BELOW CURRENT DISCHARGE AIR SETPOINT BY MORE THAN 2 DEGREES F (ADJ.).
        - b. ONCE ENABLED FOR OPERATION THE UNIT SHALL MODULATE THE HEATER'S GAS VALVE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT.
      3. RELIEF AIR CONTROL
        - a. RELIEF/EXHAUST AIR DAMPER IS A GRAVITY BACKDRAFT DAMPER OR POWER EXHAUST (FIRST FLOOR UNITS) WHICH WILL RELIEVE EXCESS RETURN AIR TO THE OUTSIDE WHEN OA/R/E DAMPERS ARE POSITIONED TO INCREASE OA FLOW.
3. WARM-UP OPERATION
  - A. THE BAS INDEXES UNIT TO WARM-UP OPERATION IF NO BUILDING OCCUPANCY ZONES ASSOCIATED WITH UNIT ARE "OCCUPIED" AND AT LEAST ONE BUILDING OCCUPANCY ZONE ASSOCIATED WITH UNIT HAS A WARM-UP REQUEST.
  - B. BAS SHALL ISSUE THE FOLLOWING COMMANDS TO UNIT WHEN WARM-UP OPERATION IS NEEDED:
    1. COMMANDS UNIT'S WARM-UP SETPOINT TO 75 DEGREES F.
    2. DELAYS FIVE MINUTES AND THEN COMMANDS UNIT'S OCCUPANCY POINT TO "OCCUPIED."
      - a. UNIT ENTERS MORNING WARM-UP IF UNIT'S RETURN AIR TEMPERATURE IS BELOW MORNING WARM-UP SETPOINT WHEN UNIT TRANSITIONS FROM "UNOCCUPIED" TO "OCCUPIED."
      - b. THE BAS DELAY IN ISSUING THE OCCUPANCY COMMAND IS TO ALLOW THE UNIT CONTROLLER TIME TO ACCEPT AND OPERATE BASED ON A NEW HIGHER MORNING WARM-UP SETPOINT.
    3. COMMANDS UNIT'S MINIMUM OUTSIDE AIR DAMPER TO 0% (CLOSED).
  - C. SUPPLY FAN CAPACITY CONTROL
    1. SUPPLY FAN UTILIZES SAME CONTROL SEQUENCE AS OCCUPIED MODE.
  - D. OUTSIDE/RETURN AIR DAMPERS
    1. UNIT COMMANDS OUTSIDE/RETURN AIR DAMPERS TO FULL RETURN AIR.
  - E. DX COOLING
    1. UNIT DISABLES OPERATION OF ITS DX COOLING.
  - F. GAS-FIRED HEATER OPERATION
    1. UNIT ENABLES HEATER OPERATION AND MODULATES HEATER'S GAS VALVE TO MAINTAIN UNIT'S DISCHARGE AIR TEMPERATURE SETPOINT (95 F ADJ.).
  - G. BAS WILL STOP WARM-UP OPERATION WHEN EITHER OF THE FOLLOWING OCCURS:
    1. A ZONE ASSOCIATED WITH THE ROOFTOP UNIT IS INDEXED TO "OCCUPIED."
      - a. BAS WILL COMMAND UNIT'S MORNING WARM-UP SETPOINT TO 60 F (ADJ.) BUT WILL LEAVE UNIT'S OCCUPANCY COMMAND TO "OCCUPIED." UNIT SWITCHES TO "OCCUPIED MODE" AS DESCRIBED ABOVE.
    2. THERE ARE NO WARM-UP REQUESTS FROM ANY BUILDING OCCUPANCY ZONE ASSOCIATED WITH THE ROOFTOP UNIT.
      - a. BAS COMMANDS UNIT'S MORNING WARM-UP SETPOINT TO 60 F AND COMMANDS UNIT'S OCCUPANCY COMMAND TO "UNOCCUPIED." UNIT THEN GOES OFF.

4. COOL-DOWN OPERATION
  - A. THE BAS INDEXES UNIT TO COOL-DOWN OPERATION IF NO BUILDING OCCUPANCY ZONES ASSOCIATED WITH UNIT ARE "OCCUPIED" AND AT LEAST ONE BUILDING OCCUPANCY ZONE ASSOCIATED WITH UNIT HAS A COOL-DOWN REQUEST.
  - B. BAS SHALL ISSUE THE FOLLOWING COMMANDS TO UNIT WHEN COOL-DOWN OPERATION IS NEEDED:
    1. COMMANDS UNIT'S OCCUPANCY POINT TO "OCCUPIED."
    2. COMMANDS UNIT'S RETURN AIR HEATING/COOLING CHANGEOVER SETPOINTS TO 60 F HEATING AND 65 F COOLING TO ASSURE UNIT REMAINS IN COOLING MODE TO DELIVER COOL PRIMARY AIR.
    3. COMMANDS UNIT'S MINIMUM OUTSIDE AIR DAMPER POSITION SETTING TO 0% (CLOSED).
  - C. SUPPLY FAN CAPACITY CONTROL
    1. SUPPLY FAN UTILIZES SAME CONTROL SEQUENCE AS OCCUPIED MODE.
  - D. DISCHARGE AIR TEMPERATURE CONTROL
    1. UNIT'S DISCHARGE AIR TEMPERATURE CONTROL LOOP OPERATES OUTSIDE AND RETURN AIR DAMPERS IN SEQUENCE WITH ITS DX COOLING TO MAINTAIN THE UNIT'S DISCHARGE AIR TEMPERATURE AT SETPOINT.
    2. BAS SETS THE UNIT'S DISCHARGE AIR SETPOINT TO A CONSTANT 55 DEGREES F.
  - E. DX COOLING OPERATION
    1. UNIT ENABLES DX COOLING OPERATION WHEN OUTSIDE AIR TEMPERATURE IS ABOVE UNIT'S COOLING LOW OUTSIDE AIR TEMPERATURE LOCKOUT SETPOINT (50F ADJ.). UNIT'S DISCHARGE AIR TEMPERATURE IS GREATER THAN UNIT'S MINIMUM DISCHARGE AIR TEMPERATURE LIMIT AND EITHER OF THE FOLLOWING IS TRUE:
      - a. ECONOMIZER OPERATION OF THE OUTSIDE AND RETURN AIR DAMPERS IS ENABLED AND OUTSIDE AIR DAMPERS HAVE BEEN COMMANDED TO FULL OPEN.
      - b. ECONOMIZER OPERATION OF THE OUTSIDE AND RETURN AIR DAMPERS IS DISABLED.
    2. UNIT'S DISCHARGE AIR TEMPERATURE CONTROL THEN STAGES THE UNIT'S DX COOLING STAGES TO MAINTAIN UNIT'S DISCHARGE AIR TEMPERATURE AT SETPOINT.
    3. OA/R/E ECONOMIZER OPERATION
      1. UNIT DISABLES OA/R/E ECONOMIZER OPERATION WHEN OUTSIDE AIR ENTHALPY IS GREATER THAN OR EQUAL TO THE ECONOMIZER OUTSIDE AIR ENABLE SETPOINT (60 F ADJ.) PLUS SETPOINT DIFFERENTIAL (2 DEGREES F).
        - a. UNIT'S OUTSIDE AND RETURN AIR DAMPERS GO TO FULL RETURN AIR WHEN OA/R/E ECONOMIZER OPERATION IS DISABLED.
      2. UNIT ENABLES OA/R/E ECONOMIZER OPERATION WHEN OUTSIDE AIR TEMPERATURE IS BELOW ECONOMIZER OUTSIDE AIR ENABLE SETPOINT (60 F ADJ.).
        - a. UNIT'S OUTSIDE AND RETURN AIR DAMPERS MODULATE TO MAINTAIN UNIT'S DISCHARGE AIR TEMPERATURE AT SETPOINT WHEN OA/R/E ECONOMIZER OPERATION IS ENABLED.
        - b. DISCHARGE AIR TEMPERATURE CONTROL OF UNIT'S OUTSIDE AND RETURN AIR DAMPERS SHALL DRIVE OA DAMPER TO 0% OPEN.
  - F. GAS-FIRED HEATER OPERATION
    1. UNIT KEEPS ITS GAS-FIRED HEATER OFF SINCE MINIMUM OUTSIDE AIR IS NOT BEING USED AND UNIT'S MIXED TEMPERATURE SHOULD NOT FALL BELOW 55 F.
  - H. BAS TERMINATES UNIT COOL-DOWN OPERATION WHEN EITHER OF THE FOLLOWING OCCURS:
    1. A ZONE ASSOCIATED WITH THE ROOFTOP UNIT IS INDEXED TO "OCCUPIED."
      - a. BAS LEAVES UNIT'S OCCUPANCY COMMAND AT "OCCUPIED" AND UNIT SWITCHES TO "OCCUPIED OPERATION" AS DESCRIBED ABOVE.
    2. THERE ARE NO COOL-DOWN REQUESTS FROM ANY BUILDING OCCUPANCY ZONE ASSOCIATED WITH THE ROOFTOP UNIT.
5. OPTIMAL START
  - A. THE BAS SHALL MONITOR THE SCHEDULED OCCUPIED TIME, OCCUPIED SPACE SETPOINTS, AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL START OCCURS.
6. OPTIMAL STOP
  - A. THE BAS SHALL MONITOR THE SCHEDULED UNOCCUPIED TIME, OCCUPIED SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL STOP OCCURS. WHEN THE OPTIMAL STOP MODE IS ACTIVE THE UNIT CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE TO THE SPACE TEMPERATURE OFFSET SETPOINT.
7. OCCUPIED BYPASS
  - A. THE BAS SHALL MONITOR THE STATUS OF THE "ON" AND "CANCEL" BUTTONS OF THE SPACE TEMPERATURE SENSORS. WHEN AN OCCUPIED BYPASS REQUEST IS RECEIVED FROM A SPACE SENSOR, THE UNIT SHALL TRANSITION FROM ITS CURRENT OCCUPANCY MODE TO OCCUPIED BYPASS MODE AND THE UNIT SHALL MAINTAIN THE SPACE TEMPERATURE TO THE OCCUPIED SETPOINTS (ADJ.).
8. ROOFTOP UNIT INTERFACE POINTS:
  - A. THE FOLLOWING DATA POINTS ARE INTEGRATED FROM THE UNIT CONTROLLER INTO THE DDC SYSTEM. THESE ARE SUGGESTIONS ONLY. COORDINATE FINAL POINTS WITH OWNERS CONTROLS CONTRACTOR.
    1. READ-ONLY POINTS
      - a. BUILDING STATIC PRESSURE
      - b. DX COOLING STAGE
      - c. MIXED AIR TEMPERATURE
      - d. OUTSIDE AIR CFM
      - e. OUTSIDE AIR DAMPER POSITION (% OPEN)
      - f. OUTSIDE AIR TEMPERATURE/HUMIDITY
      - g. PERCENTAGE OF HEAT ON
      - h. RETURN AIR DAMPER POSITION (% OPEN)
      - i. RETURN AIR TEMPERATURE/HUMIDITY
      - j. SUPPLY AIR TEMPERATURE
      - k. SUPPLY AIR STATIC PRESSURE
      - l. SUPPLY FAN SPEED
      - m. SUPPLY FAN START/STOP
    2. WRITE POINTS
      - a. BUILDING STATIC PRESSURE SETPOINT
      - b. MINIMUM OUTSIDE AIR CFM SETPOINT
      - c. MAXIMUM OUTSIDE AIR CFM SETPOINT
      - d. SUPPLY AIR TEMPERATURE SETPOINT
      - e. SUPPLY AIR STATIC PRESSURE SETPOINT
    3. DDC SYSTEM ALARMS
      - A. DDC SYSTEM ALARMS SHALL BE DIVIDED INTO FOUR DIFFERENT ALARM CLASSES:
        1. CRITICAL
          - a. OUTSIDE AIR TEMPERATURE LESS THAN 40 DEGREES F AND SUPPLY FAN HAS FAILED TO RUN FOR MORE THAN FIFTEEN MINUTES INDICATED BY UNITS SUPPLY AIR STATIC PRESSURE BEING LESS THAN 0.3" WC FOR MORE THAN FIFTEEN MINUTES A FAN FAILURE ALARM WILL BE INDICATED AT THE BAS.
        2. LOW TEMPERATURE SHUTDOWN
          - a. OUTSIDE AIR TEMPERATURE LESS THAN 40 DEGREES F AND UNIT DISCHARGE AIR TEMPERATURE LESS THAN 50 DEGREES F FOR MORE THAN FIFTEEN MINUTES THE SUPPLY AND RETURN FANS WILL SHUT DOWN, THE OUTSIDE AIR DAMPERS WILL CLOSE AND A LOW TEMPERATURE ALARM WILL BE SENT TO THE BAS.
        3. UNIT CONVEYS A FAULT ALARM, RESULTING IN UNIT SHUTDOWN, TO THE DDC SYSTEM (REFER TO ROOFTOP UNIT DOCUMENTATION FOR INFORMATION ON FAULT ALARM MESSAGES PROVIDED BY THE UNIT'S COMMUNICATION INTERFACE).
        4. FIRE/SMOKE OPERATION
          - a. WHEN THE DUCT MOUNTED SMOKE DETECTORS ALARM, THEY WILL SEND A SIGNAL TO THE FIRE ALARM PANEL, WHICH WILL SIGNAL AN "ALARM CONDITION." THE SIGNAL FROM THE FIRE ALARM PANEL WILL SHUT DOWN THE UNIT'S SUPPLY AND RETURN FANS AND SEND AN ALARM TO THE BAS.
      - B. MANUAL RESET ALARMS:
        1. IF THE OVER-PRESSURIZATION CONDITION (REFER TO INFORMATION ALARM III) OCCURS ON THE FOURTH RESTART, THE UNIT SHALL SHUT DOWN AND A MANUAL RESET DIAGNOSTIC SHALL BE DISPLAYED AT THE BAS.
        2. FILTER STATUS
          - a. A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER WHEN THE FAN IS RUNNING. IF THE SWITCH CLOSURES FOR 2 MINUTES AFTER A REQUEST FOR FAN OPERATION A DIRTY FILTER ALARM SHALL BE ANNUNCIATED AT THE BAS.
      - D. INFORMATIONAL ALARMS:
        1. UNIT'S SUPPLY AIR STATIC PRESSURE IS LESS THAN 0.3" WC FOR MORE THAN FIFTEEN MINUTES.
        2. UNIT DISCHARGE AIR TEMPERATURE RISES ABOVE 105 DEGREES F OR FALLS BELOW 50 DEGREES F FOR LONGER THAN FIFTEEN MINUTES DURING OCCUPIED OPERATION.
        3. UNIT SUPPLY AIR STATIC PRESSURE RISES ABOVE 2.0" WC (ADJ.) OR FALLS BELOW 0.5" WC (ADJ.) FOR LONGER THAN FIFTEEN MINUTES DURING OCCUPIED OPERATION.
        4. WHEN THE ACTUAL OUTDOOR AIRFLOW RATE VARIES BY 15% OR MORE FROM THE OUTDOOR AIRFLOW SETPOINT.
    4. MAINTENANCE ALARMS:
      1. THERE ARE NO DDC SYSTEM MAINTENANCE ALARMS.



2 ROOFTOP UNIT CONTROL DIAGRAM - RTU-1, RTU-2, RTU-3  
N.T.S.



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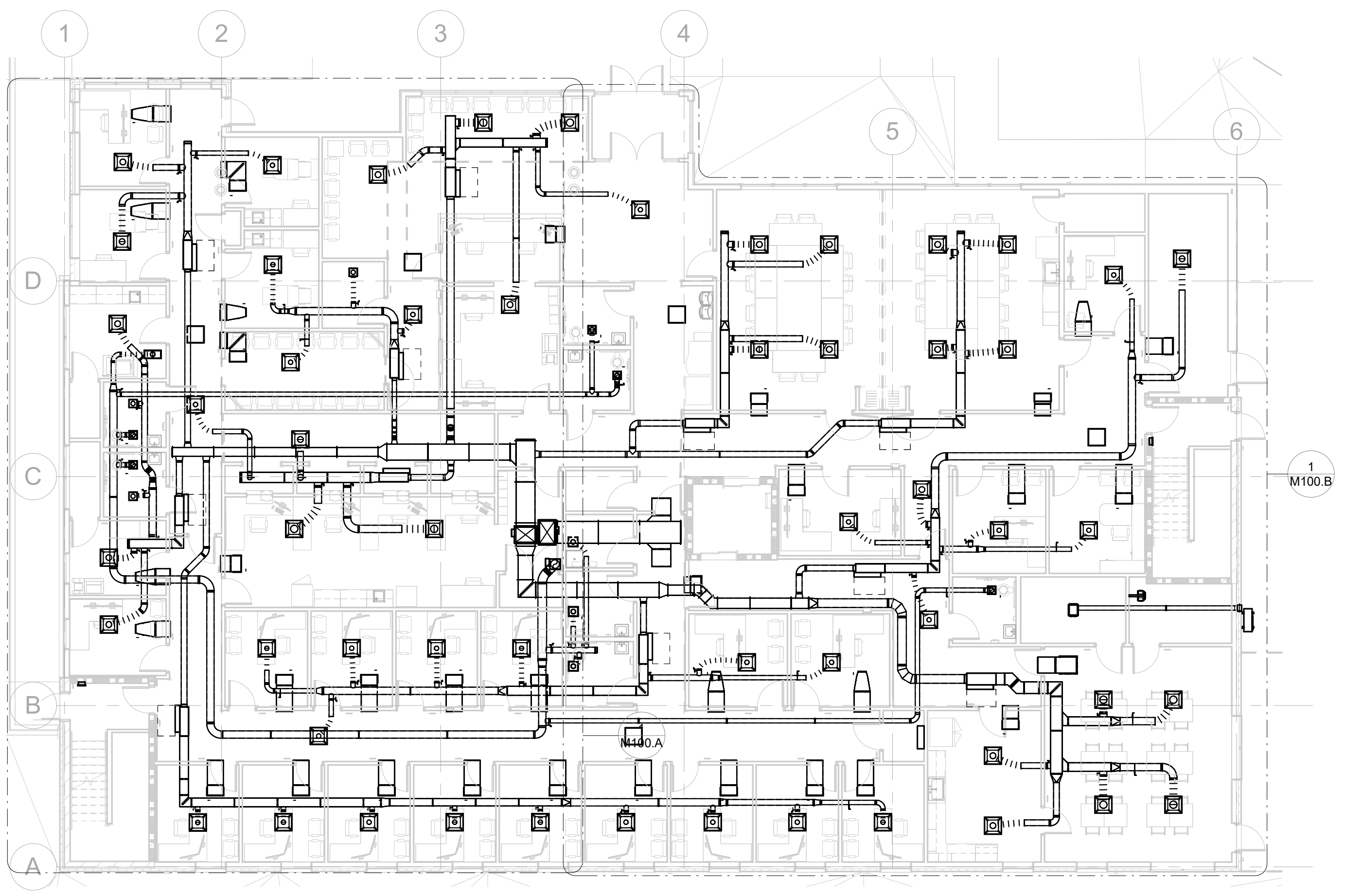
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**MECHANICAL RTU CONTROL SEQUENCE OF OPERATIONS**

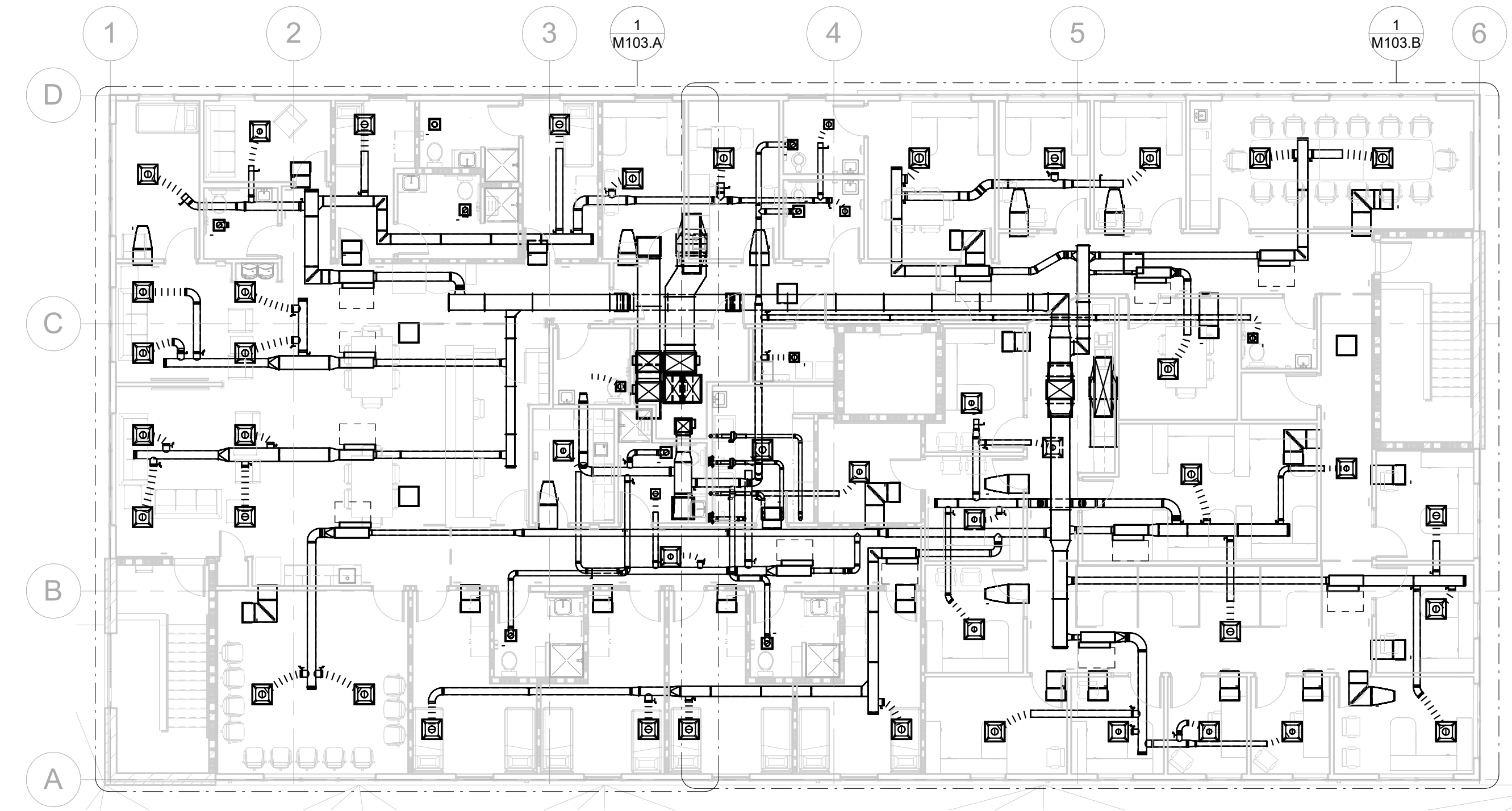
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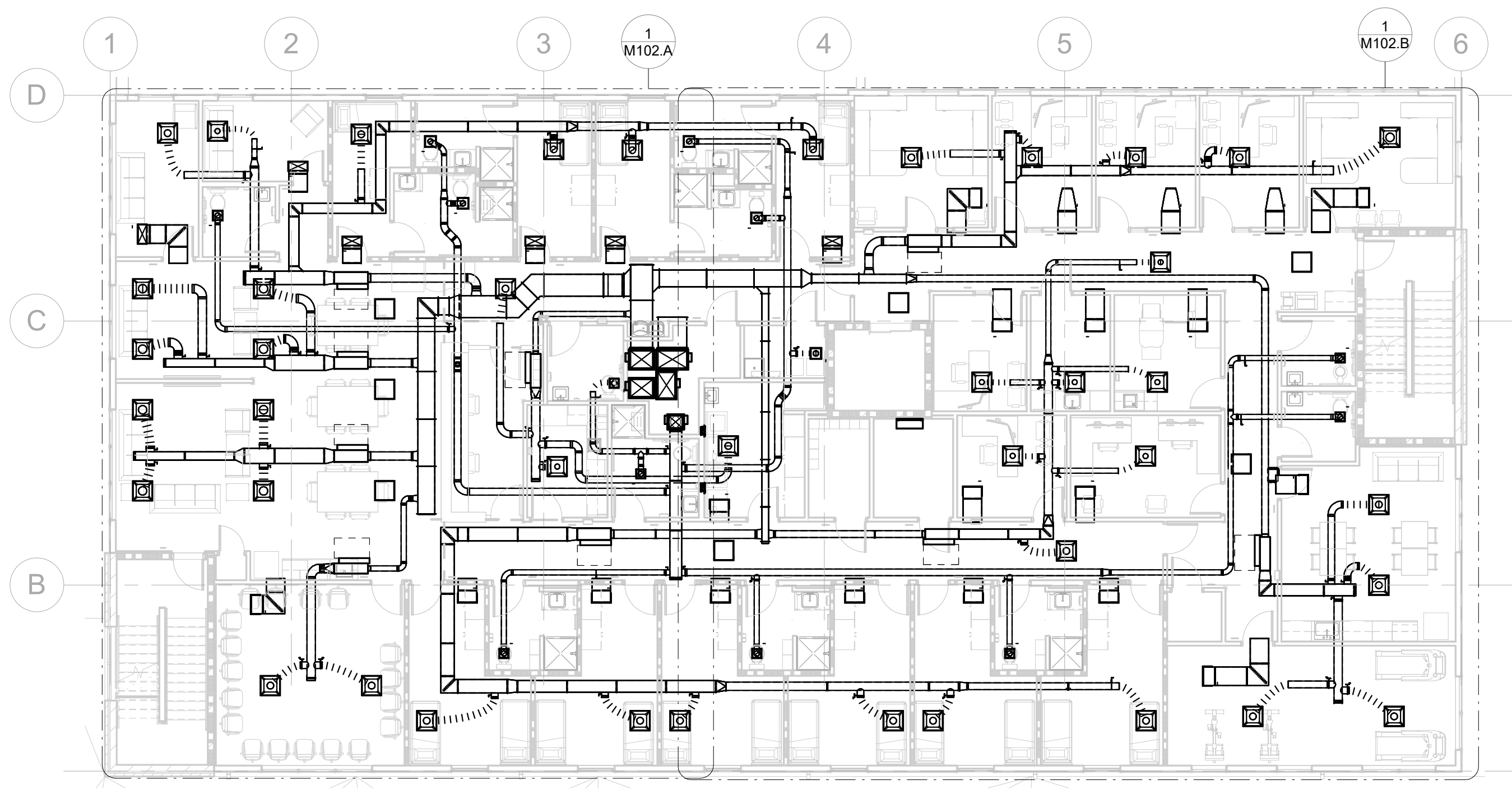
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MAGNETIC PLAN  
 1 MECHANICAL PLAN - 1ST FLOOR OVERALL PLAN  
 M100 SCALE: 3/32" = 1'-0"



MAGNETIC PLAN  
 3 MECHANICAL PLAN - 3RD FLOOR OVERALL PLAN  
 M100 SCALE: 3/32" = 1'-0"



MAGNETIC PLAN  
 2 MECHANICAL PLAN - 2ND FLOOR OVERALL PLAN  
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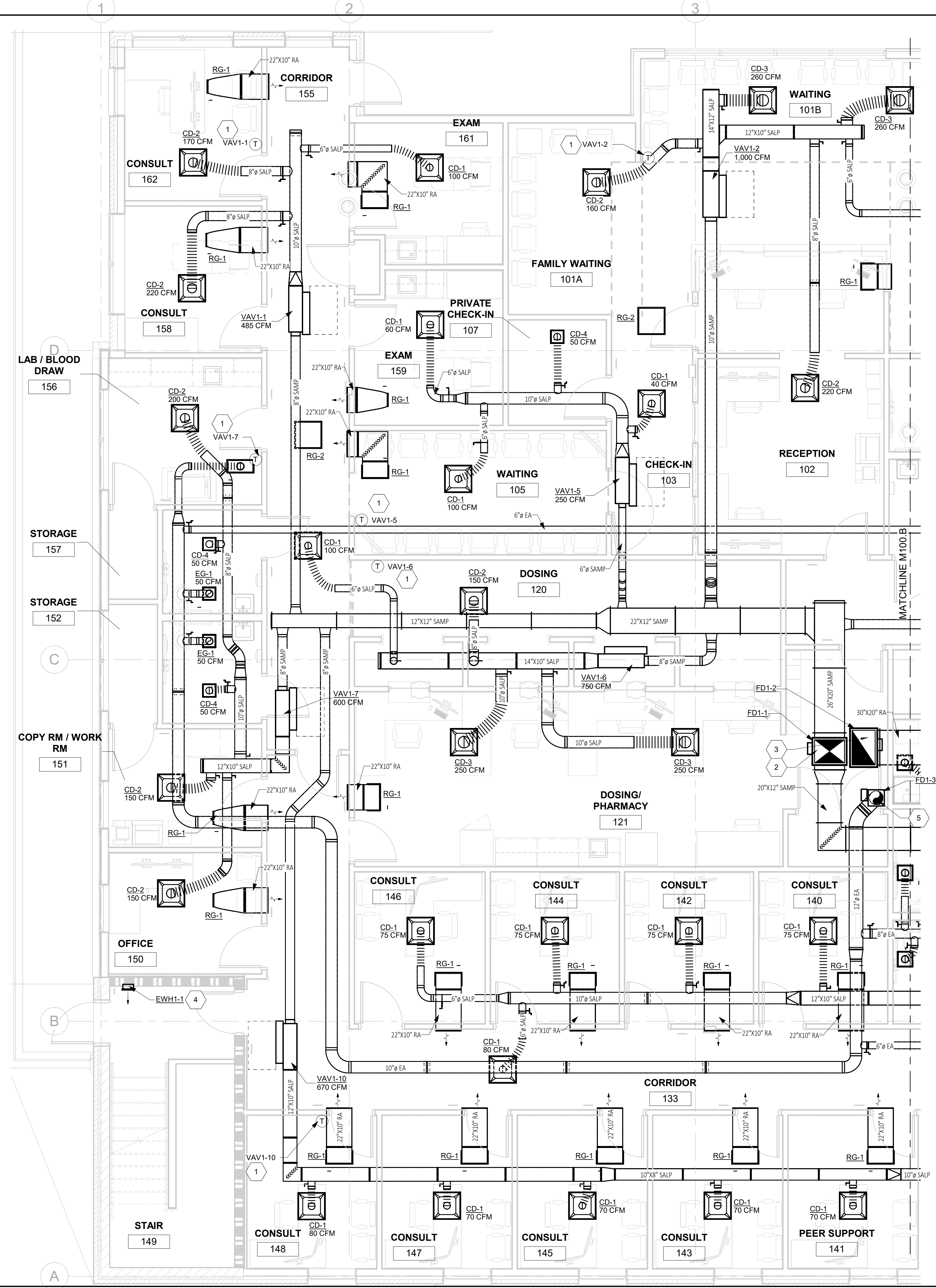
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MECHANICAL PLAN -  
 1ST/2ND/3RD FLOOR  
 OVERALL VIEW

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**M100**

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KEYED SHEET NOTES	
1	PROVIDE AND INSTALL A PROGRAMMABLE THERMOSTAT. INTERLOCK WITH EQUIPMENT AS SHOWN. VERIFY FINAL LOCATION AND HEIGHT WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.
2	26X20 SA UP TO 2ND FLOOR.
3	30X20 RA UP TO 2ND FLOOR.
4	INSTALL ELECTRIC WALL HEATER 12" AFF.
5	12"Ø EA UP TO 2ND FLOOR.



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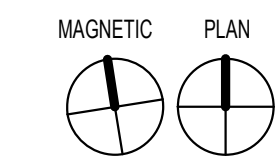
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MECHANICAL PLAN 1ST FLOOR AREA A

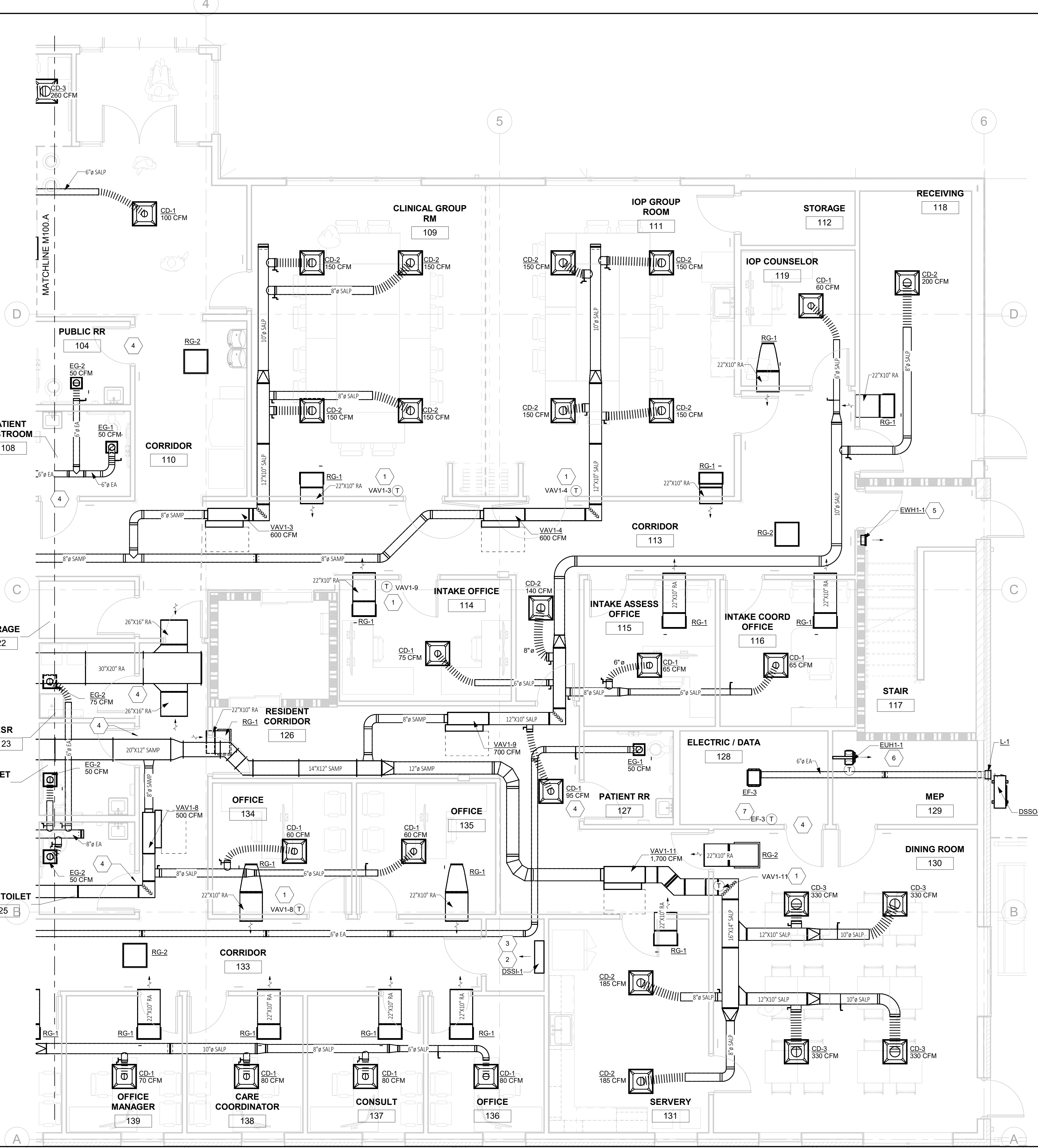
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**M100.A**



1 MECHANICAL PLAN - 1ST FLOOR AREA A  
 M100.A SCALE: 1/4" = 1'-0"

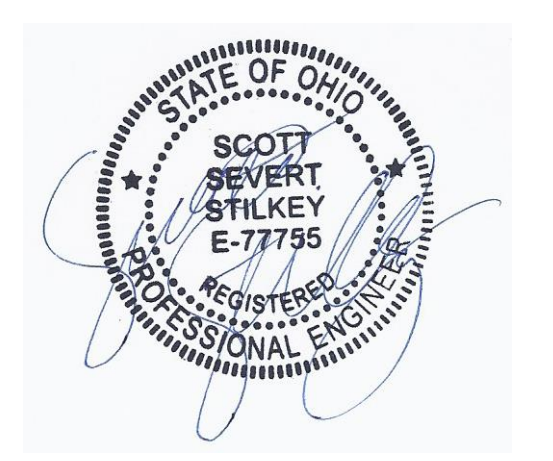
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- KEYED SHEET NOTES**
- 1 PROVIDE AND INSTALL A PROGRAMMABLE THERMOSTAT. INTERLOCK WITH EQUIPMENT AS SHOWN. VERIFY FINAL LOCATION AND HEIGHT WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.
  - 2 FIELD COORDINATE ROUTING INSULATED LINE SET TO OUTDOOR UNIT. VERIFY SIZE WITH MANUFACTURER PRIOR TO INSTALLATION.
  - 3 FIELD COORDINATE ROUTING OF CONDENSATE PIPING TO NEAREST FLOOR DRAIN OR MOP SINK.
  - 4 GENERAL CONTRACTOR TO UNDERCUT DOOR 1" TO ALLOW FOR MAKE-UP AIR OF EXHAUSTED AIR.
  - 5 INSTALL ELECTRIC WALL HEATER 12" AFF.
  - 6 PROVIDE AND INSTALL AN ELECTRIC UNIT HEATER. MOUNT UNIT HEATER AT 8'-0" AFF.
  - 7 PROVIDE AND INSTALL A REVERSE ACTING THERMOSTAT AND INTERLOCK WITH EQUIPMENT AS SHOWN. SET THERMOSTAT AT 85°F. IF ROOM TEMPERATURE IS ABOVE 85°F, A SIGNAL IS SET TO TURN ON THE EXHAUST FAN. WHEN THE ROOM TEMPERATURE IS BELOW THE SET POINT, A SIGNAL IS SENT TO TURN OFF THE EXHAUST FAN.



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MECHANICAL PLAN - 1ST FLOOR AREA B

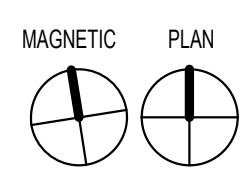
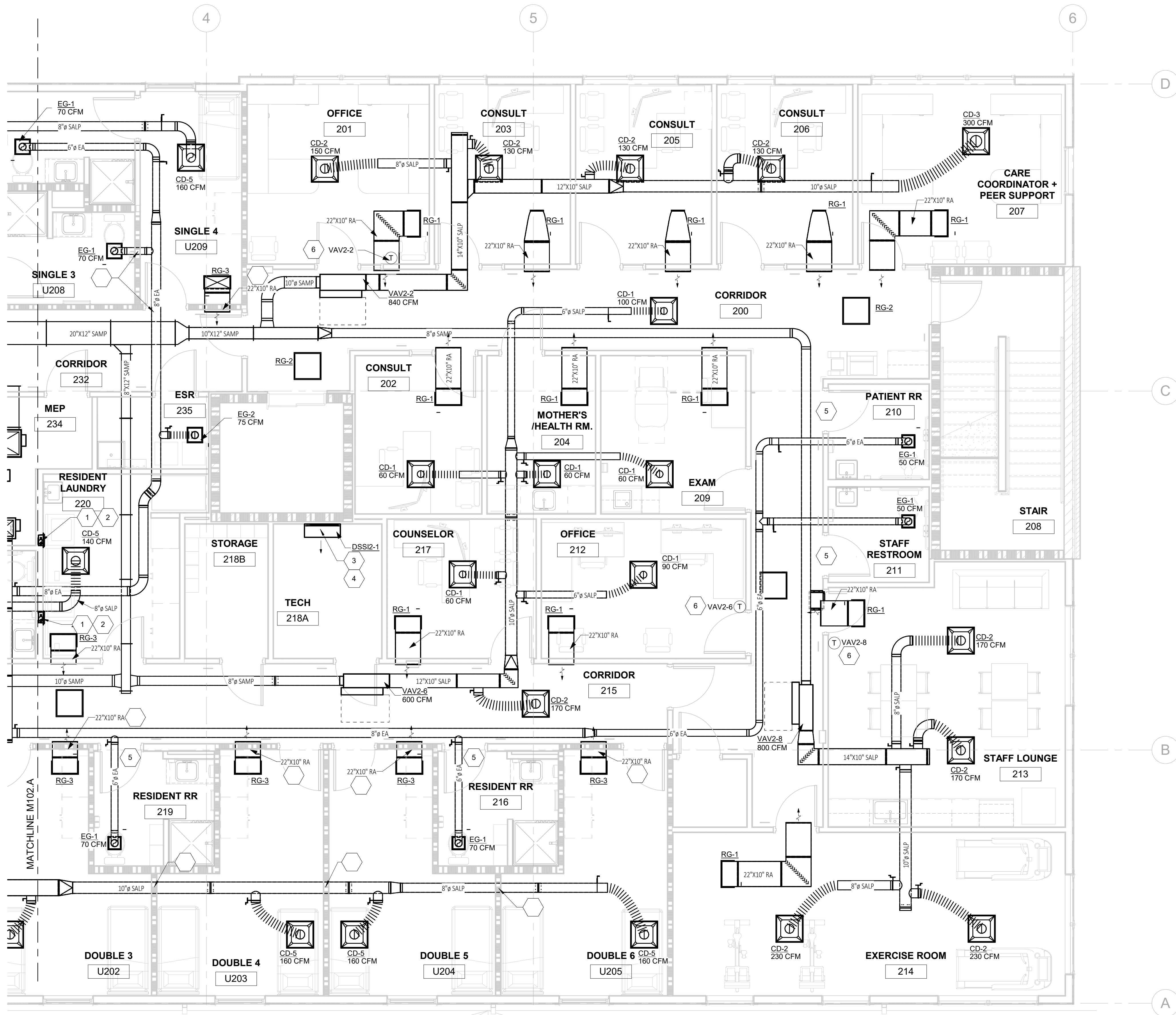
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**M100.B**

MAGNETIC PLAN 1 MECHANICAL PLAN - 1ST FLOOR AREA B  
 M100.B SCALE: 1/4" = 1'-0"



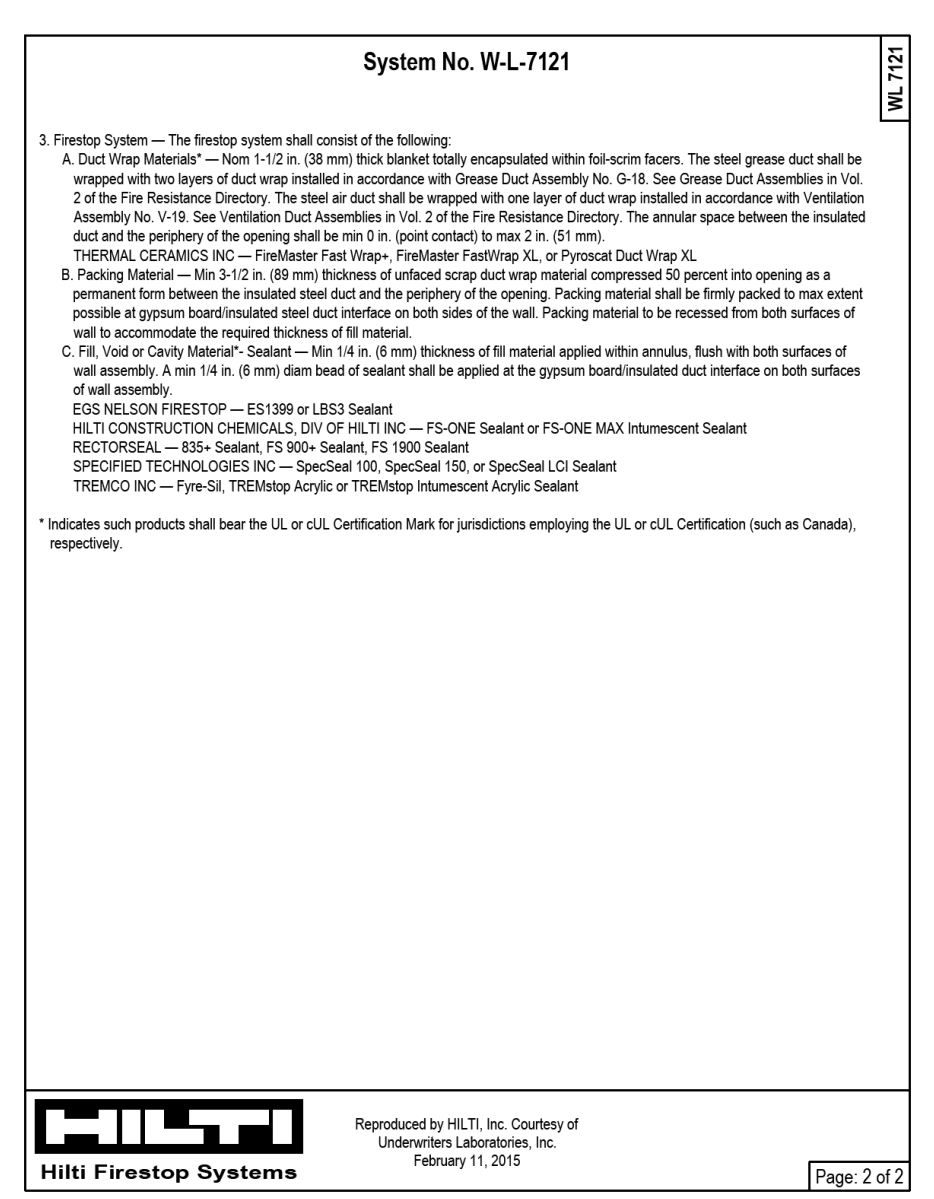
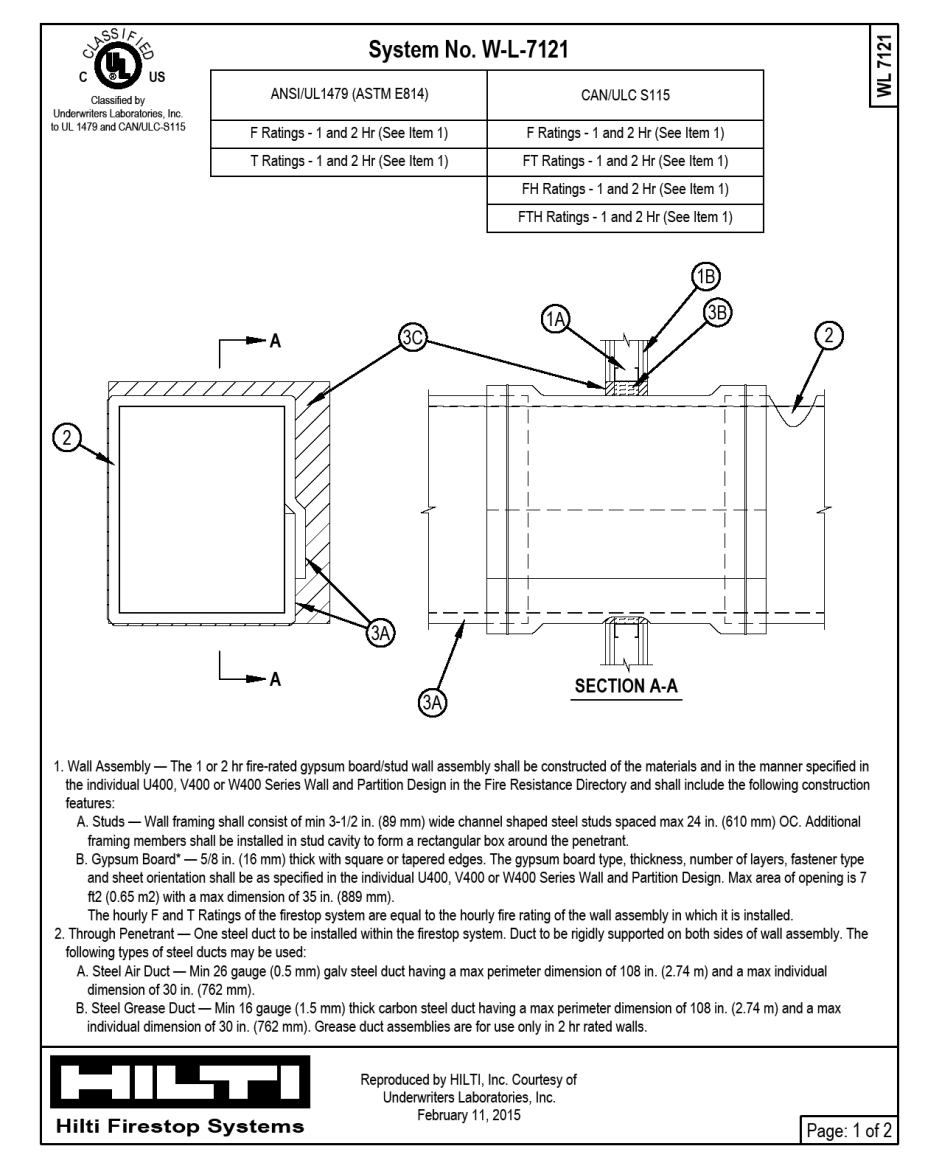
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**1** MECHANICAL PLAN - 2ND FLOOR AREA B  
 M102.B SCALE: 1/4" = 1'-0"

**KEYED SHEET NOTES**

- <varies>
- 1 4"Ø DRYER EXHAUST DUCT UP TO 3RD FLOOR.
- 2 PROVIDE AND INSTALL A DRYER BOX. MOUNT BOTTOM OF DRYER BOX 12" AFF.
- 3 FIELD COORDINATE ROUTING INSULATED LINE SET TO OUTDOOR UNIT. VERIFY SIZE WITH MANUFACTURER PRIOR TO INSTALLATION.
- 4 FIELD COORDINATE ROUTING OF CONDENSATE PIPING TO NEAREST FLOOR DRAIN OR MOP SINK.
- 5 GENERAL CONTRACTOR TO UNDERCUT DOOR 1" TO ALLOW FOR MAKE-UP AIR OF EXHAUSTED AIR.
- 6 PROVIDE AND INSTALL A PROGRAMMABLE THERMOSTAT. INTERLOCK WITH EQUIPMENT AS SHOWN. VERIFY FINAL LOCATION AND HEIGHT WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.



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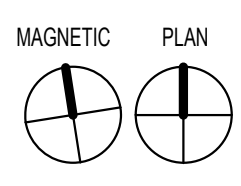
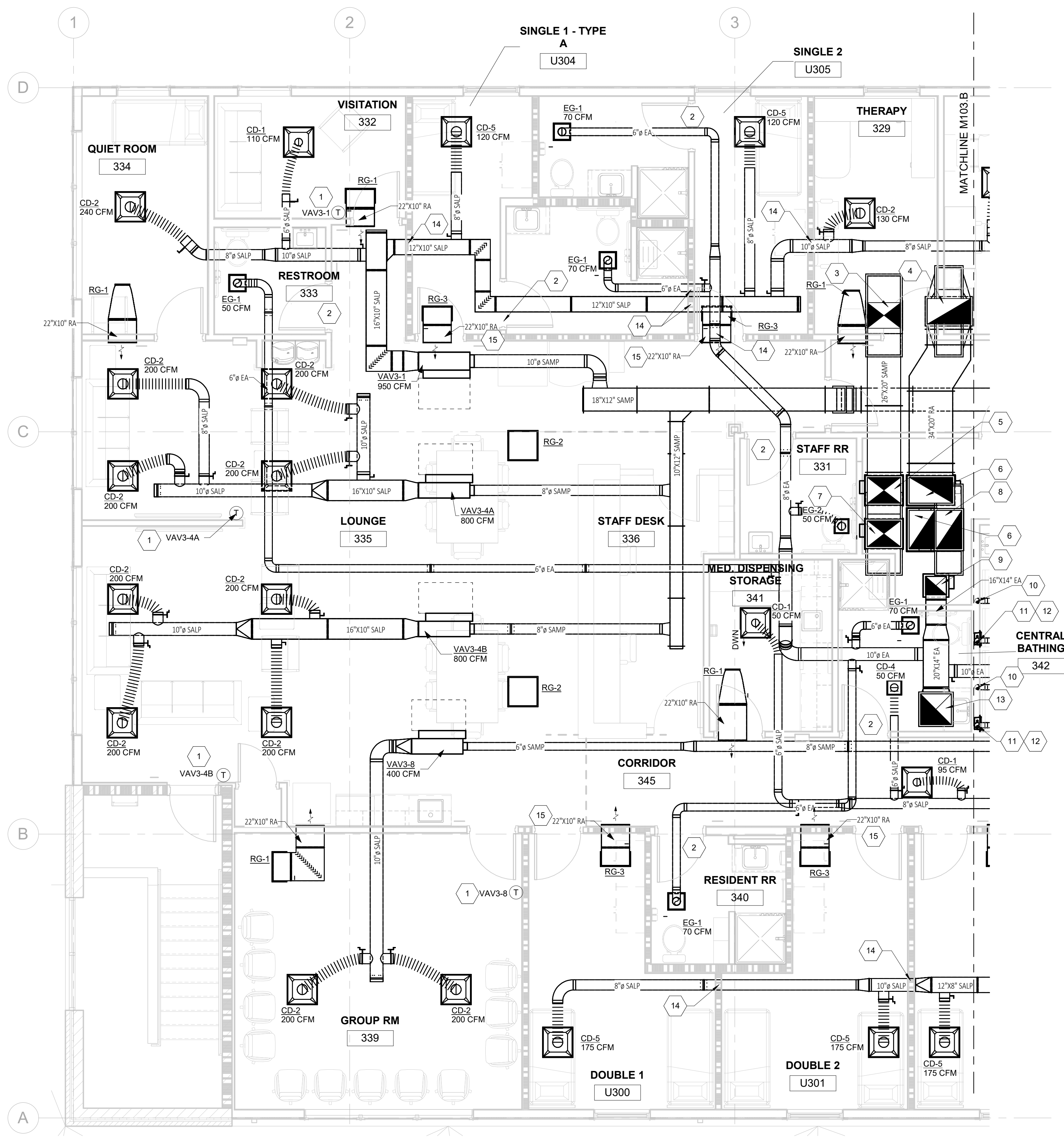
MECHANICAL PLAN - 2ND FLOOR AREA B

10637

**M102.B**

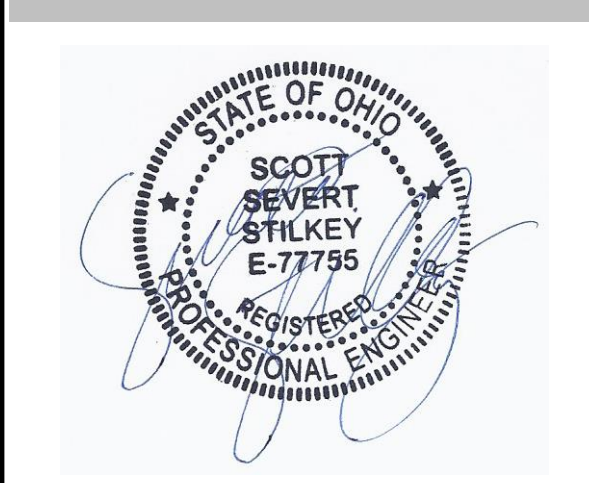
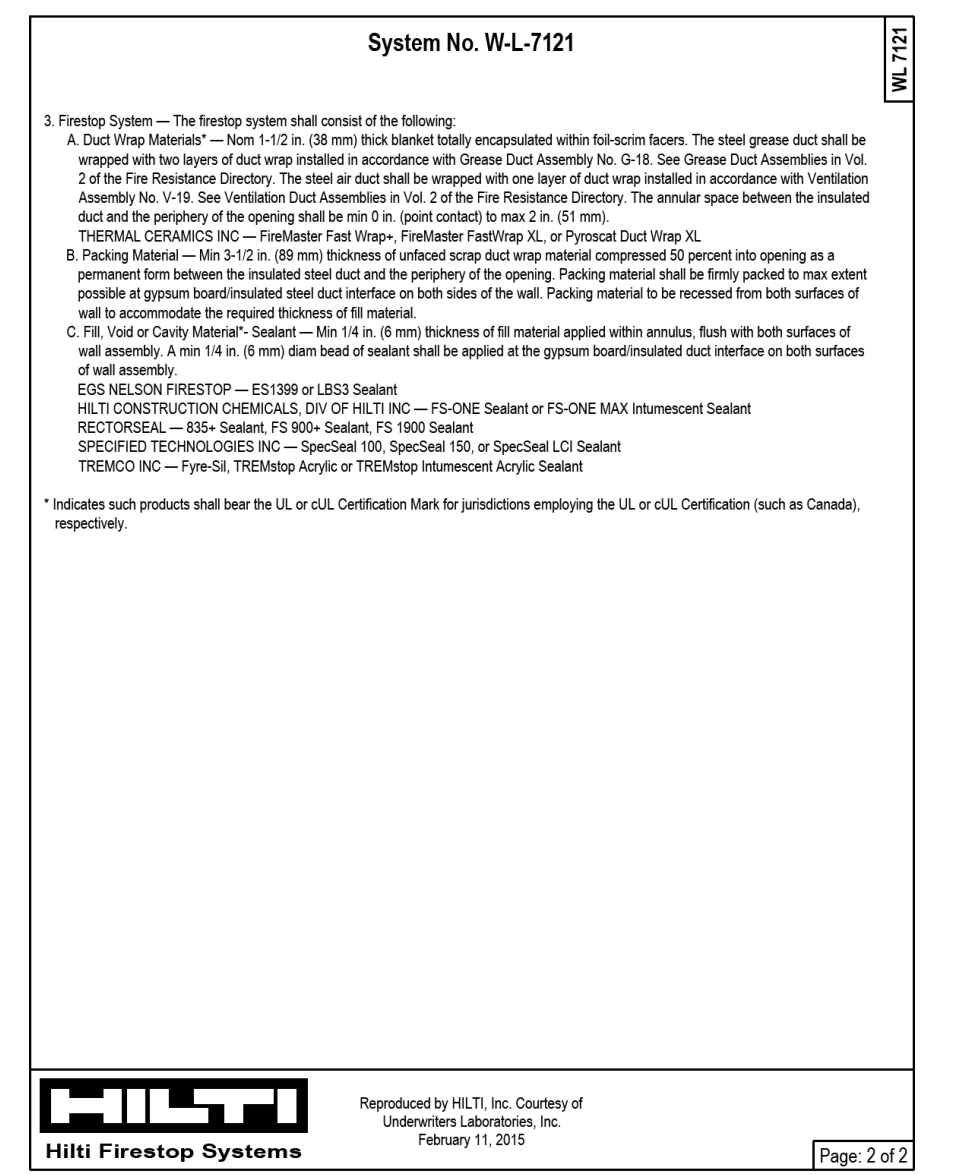
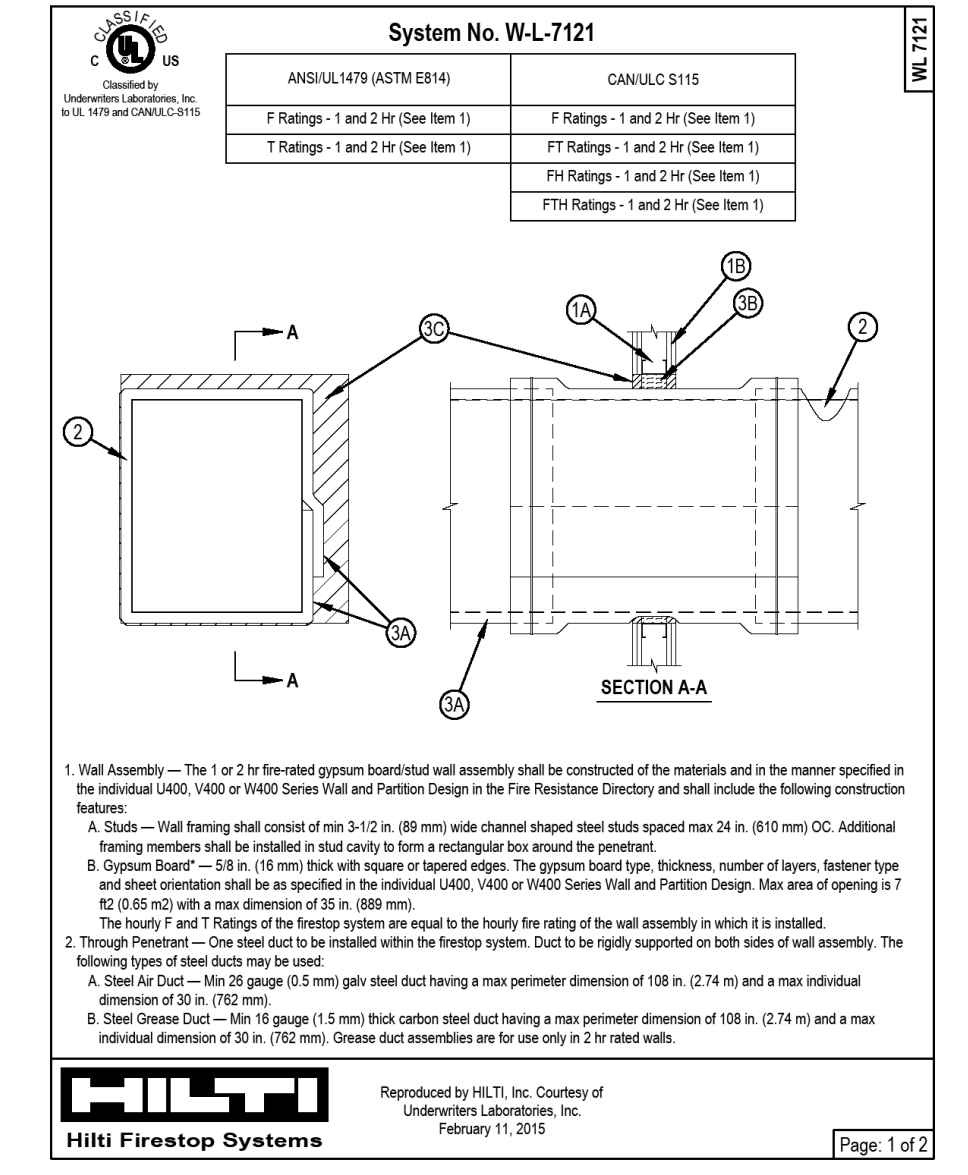


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**1** MECHANICAL PLAN - 3RD FLOOR AREA A  
 M103.A SCALE: 1/4" = 1'-0"

- KEYED SHEET NOTES**
- 1 PROVIDE AND INSTALL A PROGRAMMABLE THERMOSTAT. INTERLOCK WITH EQUIPMENT AS SHOWN. VERIFY FINAL LOCATION AND HEIGHT WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.
  - 2 GENERAL CONTRACTOR TO UNDERCUT DOOR 1" TO ALLOW FOR MAKE-UP AIR OF EXHAUSTED AIR.
  - 3 26X20 SA UP TO RTU-2 ON THE ROOF.
  - 4 34X20 RA UP TO RTU-2 ON THE ROOF.
  - 5 26X20 SA DOWN TO THE 2ND FLOOR.
  - 6 34X20 RA DOWN TO THE 2ND FLOOR.
  - 7 26X20 SA UP TO RTU-1 ON THE ROOF AND DOWN TO THE 2ND FLOOR.
  - 8 34X20 UP RA TO RTU-1 ON THE ROOF.
  - 9 16X14 EA DOWN TO THE 2ND FLOOR.
  - 10 4"Ø DRYER EXHAUST DUCT UP TO ROOF AND DOWN TO THE 2ND FLOOR.
  - 11 4"Ø DRYER EXHAUST DUCT UP TO ROOF.
  - 12 PROVIDE AND INSTALL A DRYER BOX. MOUNT BOTTOM OF DRYER BOX 12" AFF.
  - 13 24X24 EA UP TO EF-1 ON THE ROOF.
  - 14 ALL FULLY DUCTED SYSTEMS, 26 GAUGE MATERIAL, GOING THRU RATED WALLS ARE EXEMPT FROM FIRE DAMPERS PER 2021 OMC, SECTION 607.5.3, EXCEPTION 4.
  - 15 ALL RETURN AIR TRANSFER DUCTS TO THE CORRIDORS TO BE PROTECTED PER HILTI WALL ASSEMBLY, W-L-7121. SEE HILTI DETAIL PAGES THIS SHEET.



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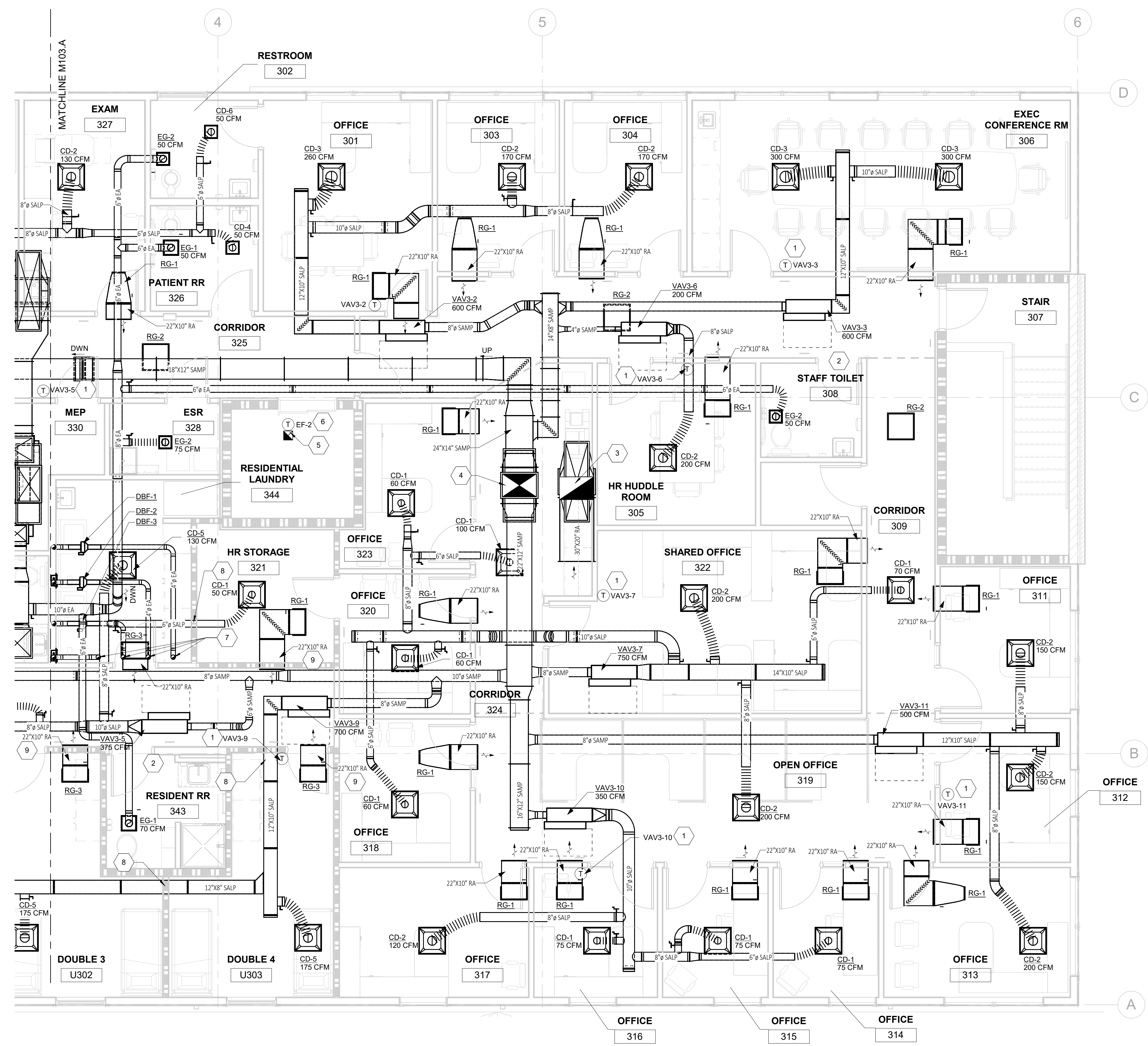
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MECHANICAL PLAN - 3RD FLOOR AREA A

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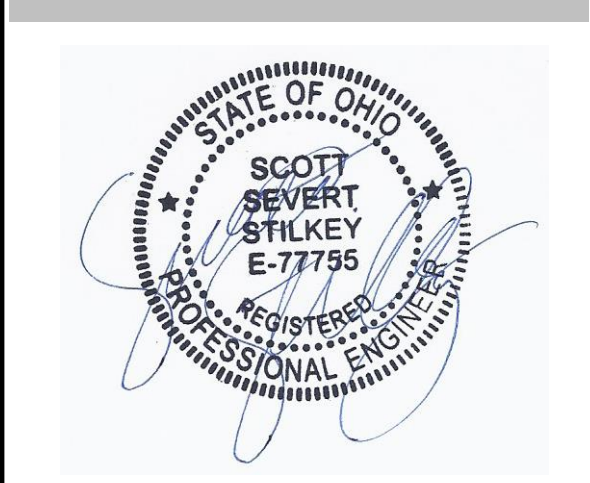
**M103.A**

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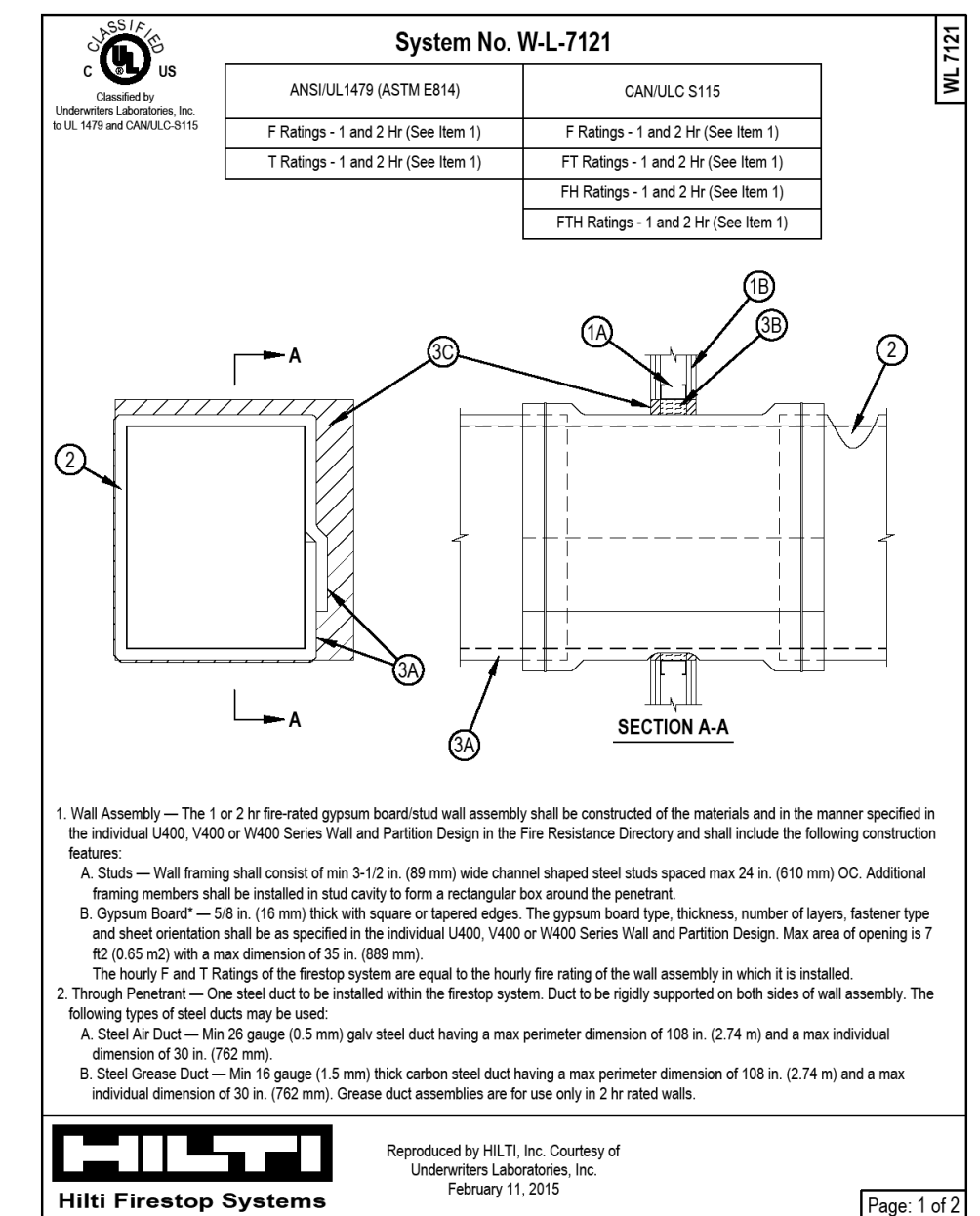


1 MECHANICAL PLAN - 3RD FLOOR AREA B  
 M103.B SCALE: 1/4" = 1'-0"  
 MAGNETIC PLAN

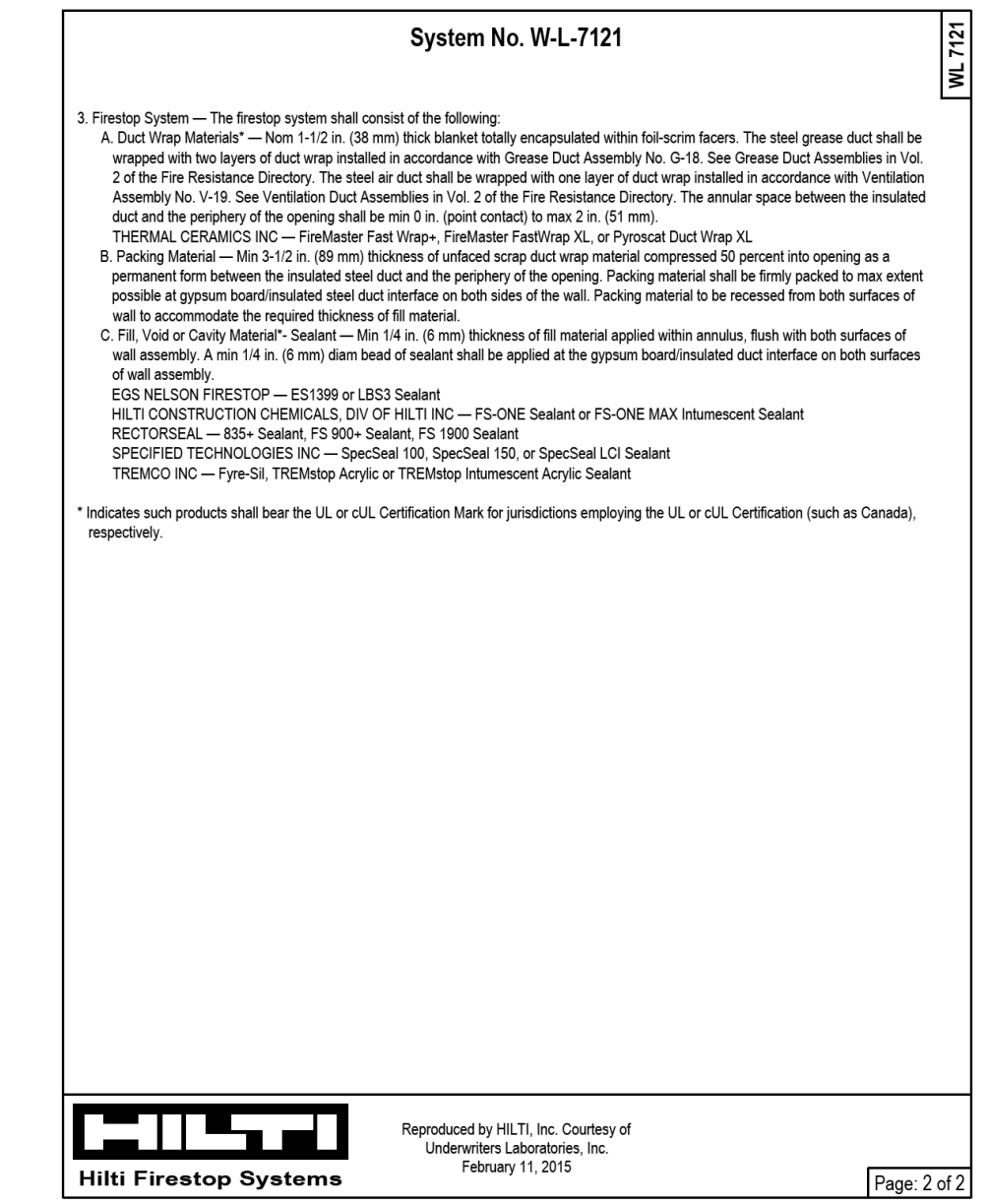
- KEYED SHEET NOTES**
- 1 PROVIDE AND INSTALL A PROGRAMMABLE THERMOSTAT. INTERLOCK WITH EQUIPMENT AS SHOWN. VERIFY FINAL LOCATION AND HEIGHT WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.
  - 2 GENERAL CONTRACTOR TO UNDERCUT DOOR 1" TO ALLOW FOR MAKE-UP AIR OF EXHAUSTED AIR.
  - 3 30X22 RA UP TO RTU-3 ON THE ROOF.
  - 4 30X20 SA UP TO RTU-3 ON THE ROOF.
  - 5 8X8 EA UP TO EF-2 ON THE ROOF. PROVIDE A 1/2"x1/2" WIRE MESH SCREEN AT THE BOTTOM OF THE DUCT OPENING.
  - 6 PROVIDE AND INSTALL A REVERSE ACTING THERMOSTAT AND INTERLOCK WITH EQUIPMENT AS SHOWN. SET THERMOSTAT AT 85°F. IF ROOM TEMPERATURE IS ABOVE 85°F, A SIGNAL IS SET TO TURN ON THE EXHAUST FAN. WHEN THE ROOM TEMPERATURE IS BELOW THE SET POINT, A SIGNAL IS SENT TO TURN OFF THE EXHAUST FAN.
  - 7 4"Ø DRYER EXHAUST DUCT UP TO ROOF.
  - 8 ALL FULLY DUCTED SYSTEMS, 26 GAUGE MATERIAL, GOING THRU RATED WALLS ARE EXEMPT FROM FIRE DAMPERS PER 2021 OMC, SECTION 607.5.3, EXCEPTION 4.
  - 9 ALL RETURN AIR TRANSFER DUCTS TO THE CORRIDORS TO BE PROTECTED PER HILTI WALL ASSEMBLY, W-L-7121. SEE HILTI DETAIL PAGES THIS SHEET.



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1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board wall assembly shall be constructed of the materials and in the manner specified in the individual U400, V400 or V400 Series Wall and Partition Design in the Fire Resistance Directory and shall include the following construction features:  
 A. Studs — Wall framing shall consist of min 3-1/2 in. (89 mm) wide channel shaped steel studs spaced max 24 in. (610 mm) OC. Additional framing members shall be installed in stud cavity to form a rectangular box around the penetration.  
 B. Gypsum Board — 5/8 in. (16 mm) thick with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and steel orientation shall be as specified in the individual U400, V400 or V400 Series Wall and Partition Design. Max area of opening is 7 sq. ft. (0.65 m<sup>2</sup>) with a max dimension of 65 in. (1653 mm).  
 The hourly and T Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.  
 2. Through Penetration — One steel duct to be installed within the firestop system. Duct to be rigidly supported on both sides of wall assembly. The following types of steel ducts may be used:  
 A. Steel Air Duct — Min 26 gauge (0.5 mm) galv steel duct having a max perimeter dimension of 108 in. (2743 mm) and a max individual dimension of 30 in. (762 mm).  
 B. Steel Exhaust Duct — Min 18 gauge (1.5 mm) thick carbon steel duct having a max perimeter dimension of 108 in. (2743 mm) and a max individual dimension of 30 in. (762 mm). Exhaust duct assemblies are for use only in 2 hr rated walls.  
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 Page 1 of 2



3. Firestop System — The firestop system shall consist of the following:  
 A. Duct Wrap Material — Non 1-1/2 in. (38 mm) thick blanket lath encapsulated within foil-sheath floor. The steel sheet duct shall be wrapped with two layers of duct wrap installed in accordance with Greater Duct Assembly No. D-18. See Greater Duct Assemblies in Vol. 2 of the Fire Resistance Directory. The steel air duct shall be wrapped with one layer of duct wrap installed in accordance with Ventilation Assembly No. V-18. See Ventilation Duct Assemblies in Vol. 2 of the Fire Resistance Directory. The annular space between the insulated duct and the perimeter of the opening shall be min 2 in. (51 mm).  
 THERMAL CERAMICS INC. — FireMaster Fast Wrap — FireMaster FastWrap XL or Pyrocoat Duct Wrap XL  
 B. Packing Material — Min 2-1/2 in. (64 mm) thickness of fibrous rope duct wrap material compressed 50 percent into opening as a permanent form between the insulated steel duct and the perimeter of the opening. Packing material shall be firmly packed to max extent possible at gypsum board-insulated steel duct interface on both sides of the wall. Packing material to be recessed from both surfaces of wall to accommodate the required thickness of fill material.  
 C. Fill Void or Cavity Material — Sealant — Min 1/4 in. (6 mm) thickness of fill material applied within annulus. Flush with both surfaces of wall assembly. A min 1/4 in. (6 mm) diam bead of sealant shall be applied at the gypsum board-insulated duct interface on both surfaces of wall assembly.  
 EGS NELSON PRESTOP — ES1399 or LBS3 Sealant  
 HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC. — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant  
 RESTORSAL — RS-5 Sealant, FS-900 Sealant, FS-1900 Sealant  
 SPECIFIED TECHNOLOGIES INC. — SpecSeal 100, SpecSeal 150, or SpecSeal LCI Sealant  
 TREBAC INC. — Fire-Sil, TrebSeal Acrylic or TrebSeal Intumescent Acrylic Sealant  
 \*Indicate such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.  
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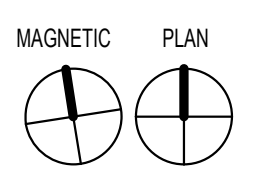
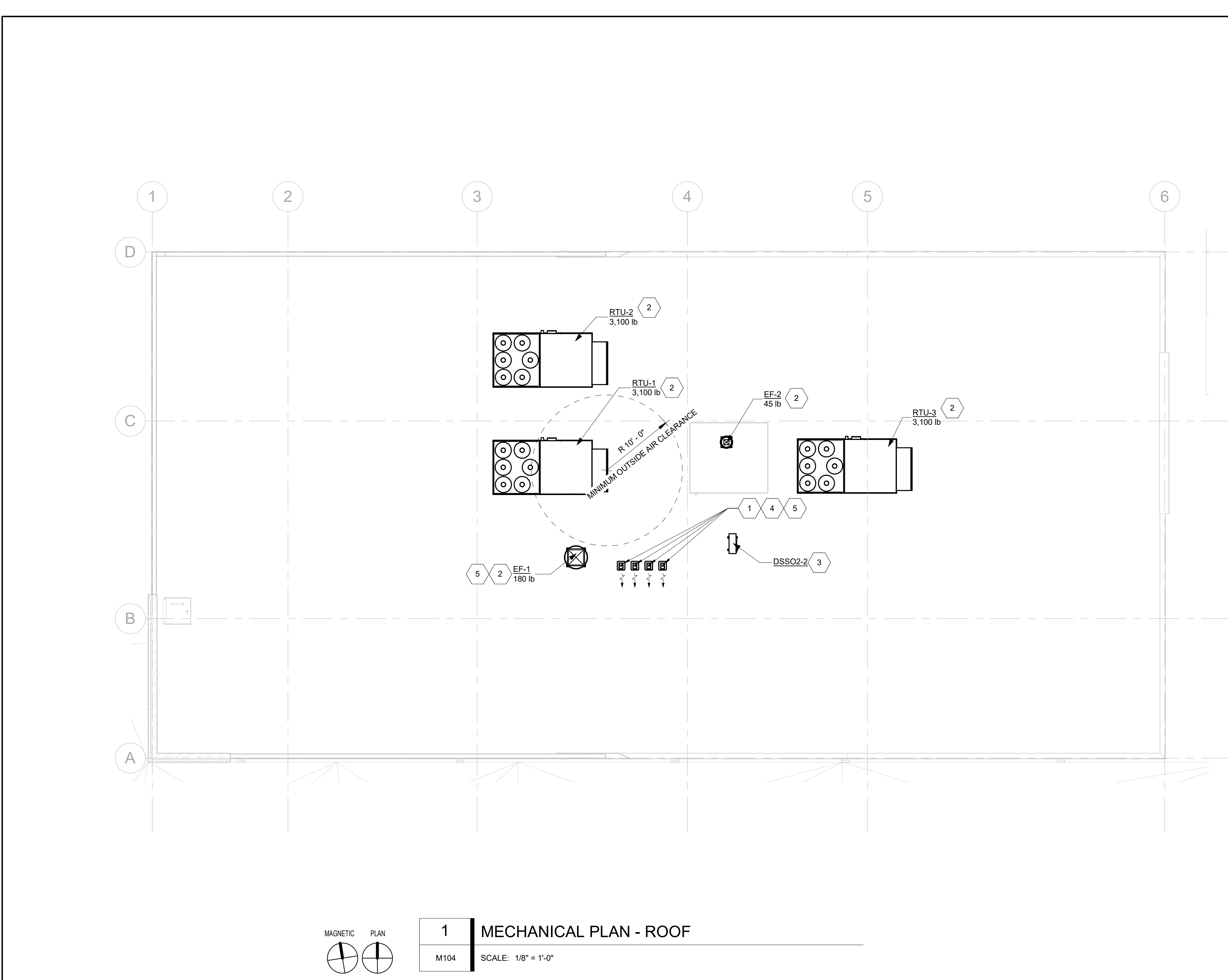
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MECHANICAL PLAN - 3RD FLOOR AREA B

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**M103.B**

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**1** MECHANICAL PLAN - ROOF  
 M104 SCALE: 1/8" = 1'-0"

KEYED SHEET NOTES	
1	4"Ø DRYER DUCT DOWN TO THE 3RD FLOOR. MECHANICAL CONTRACTOR TO COORDINATE ROOF OPENING SIZE AND LOCATION WITH THE GENERAL CONTRACTOR. FLASHING OF ROOF OPENING BY OTHERS.
2	MECHANICAL CONTRACTOR TO COORDINATE ROOF OPENING SIZE AND LOCATION WITH THE GENERAL CONTRACTOR. FLASHING OF ROOF OPENING IS BY OTHERS.
3	INSTALL NEW OUTDOOR UNIT ON 18" TALL EQUIPMENT RAILS.
4	PROVIDE AND INSTALL A DRYER ROOF JACK EQUAL TO "DRYERJACK MODEL # DJK477." MECHANICAL CONTRACTOR TO COORDINATE ROOF OPENING SIZE AND LOCATION WITH THE GENERAL CONTRACTOR. ROOF FLASHING BY OTHERS.
5	ALL EXHAUST AIR AND PLUMBING VENTS TO MAINTAIN 10'-0" MINIMUM CLEARANCE FROM ALL OUTSIDE AIR INTAKES.



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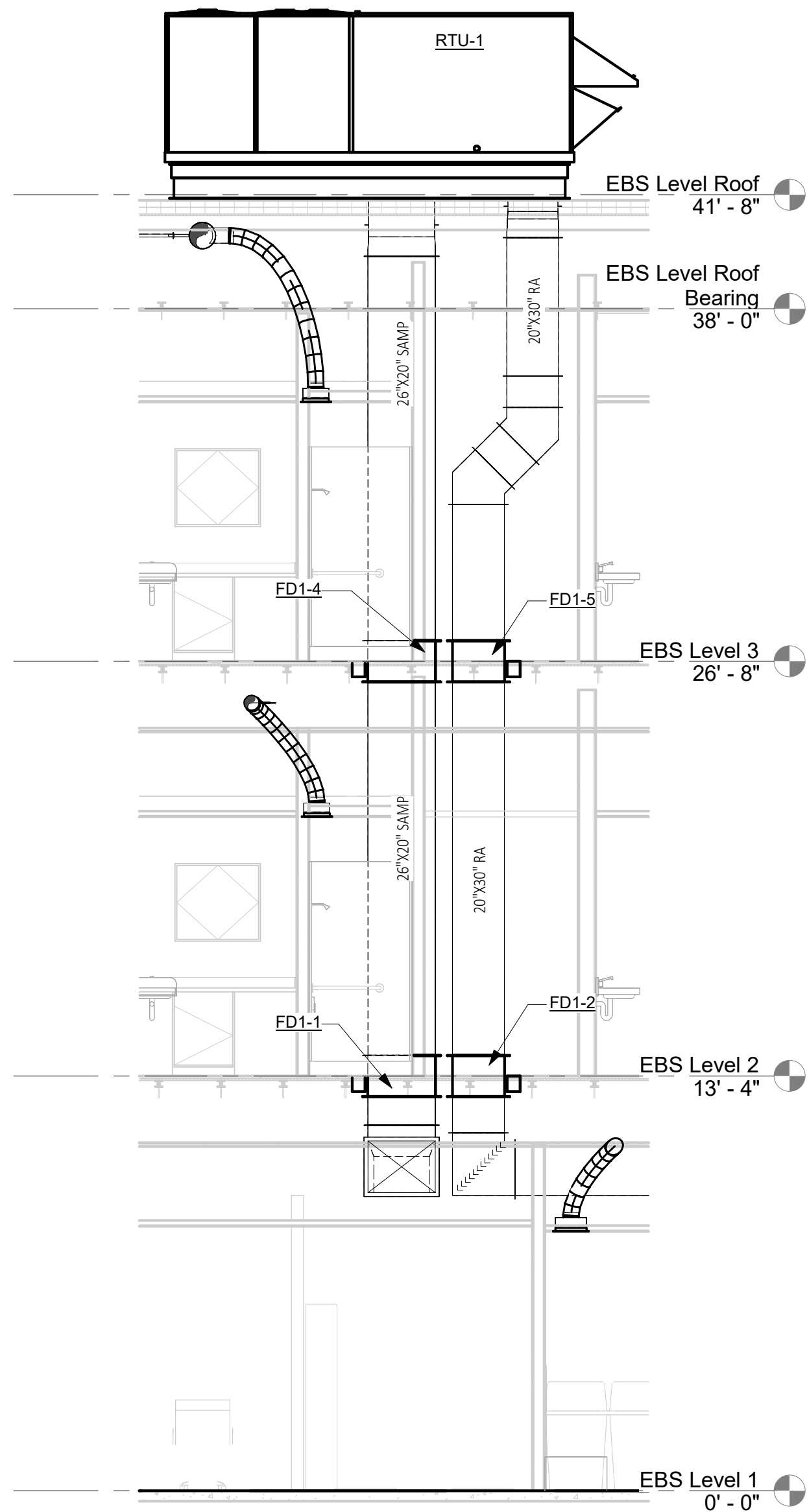
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MECHANICAL PLAN - ROOF

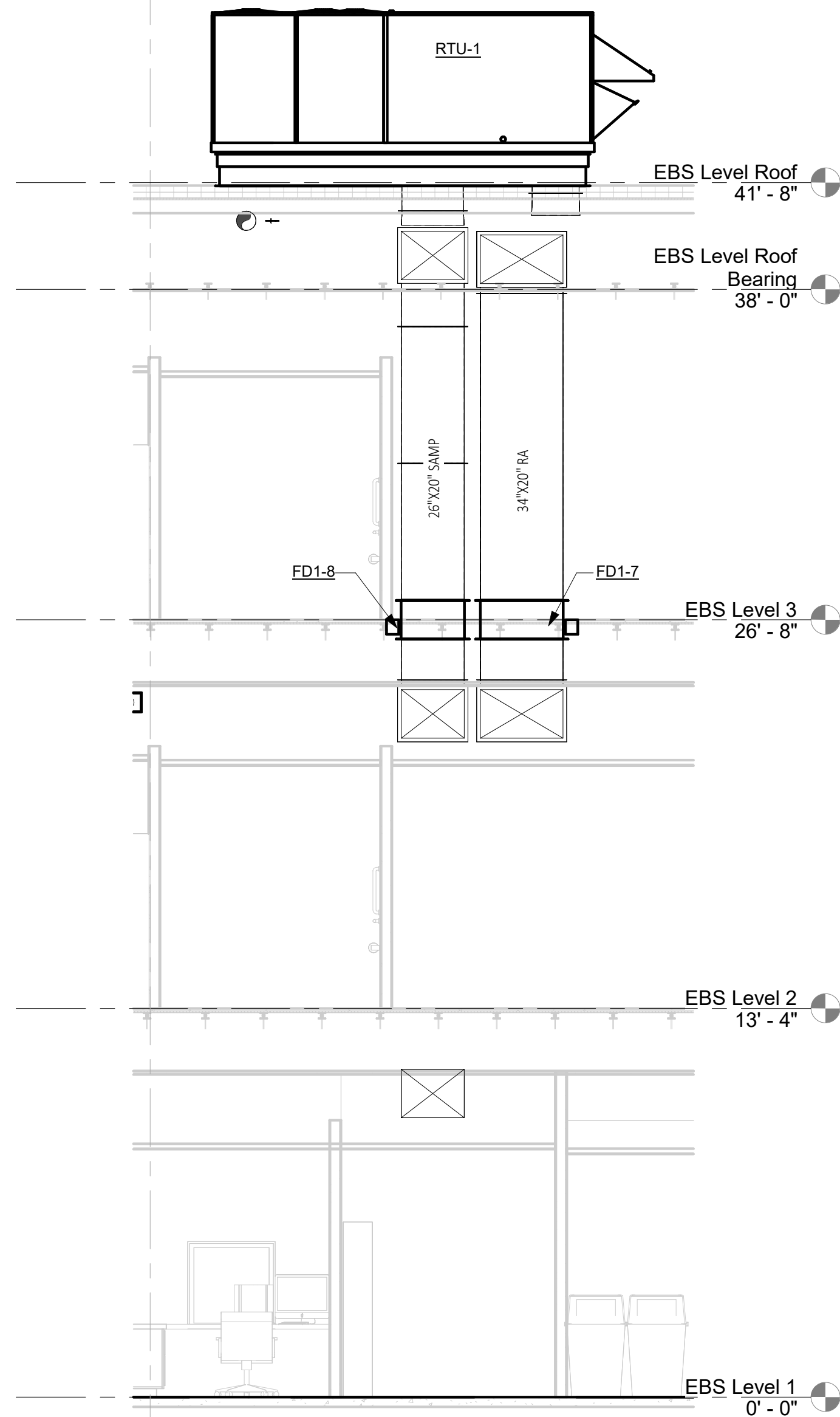
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**M104**

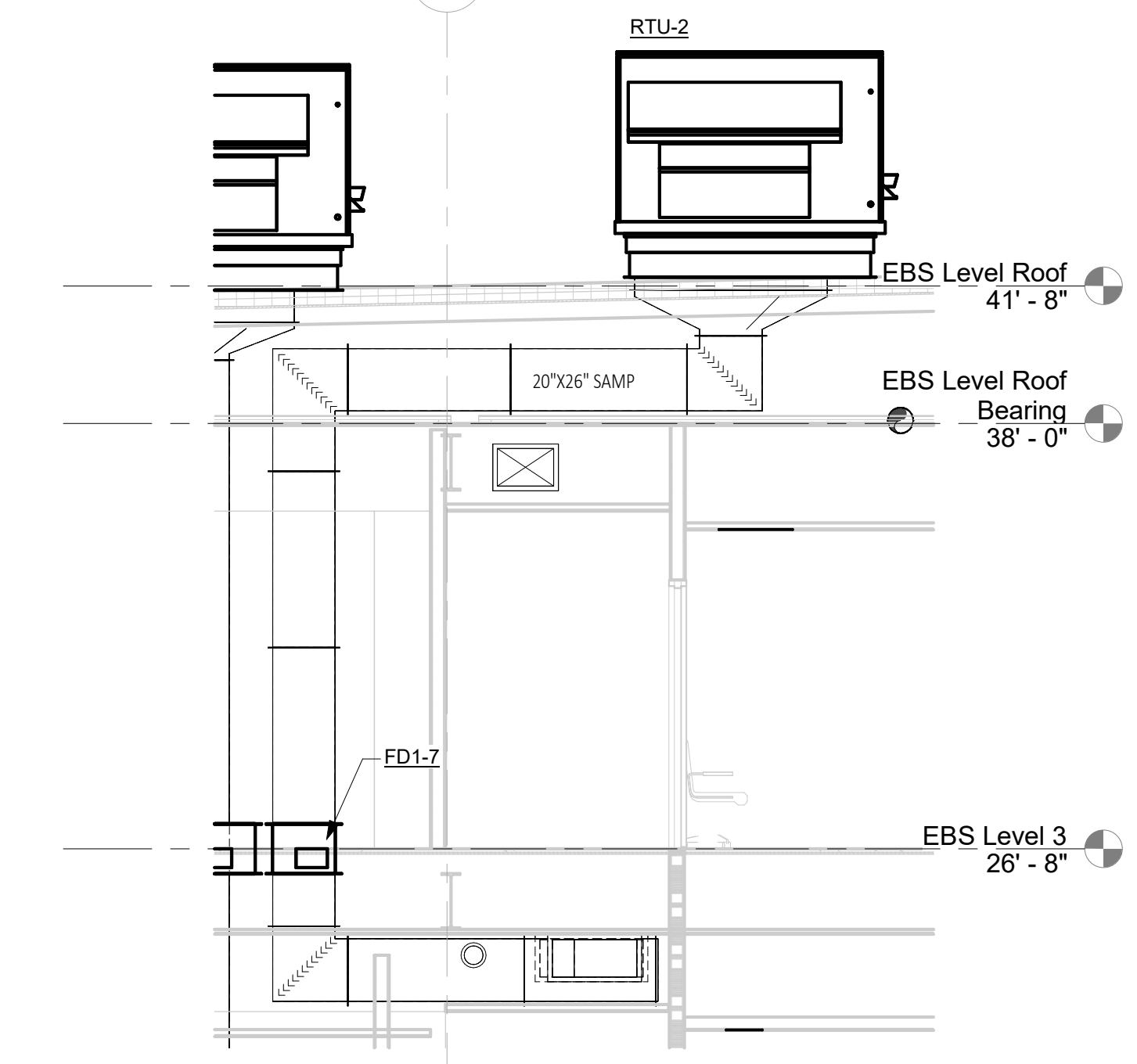
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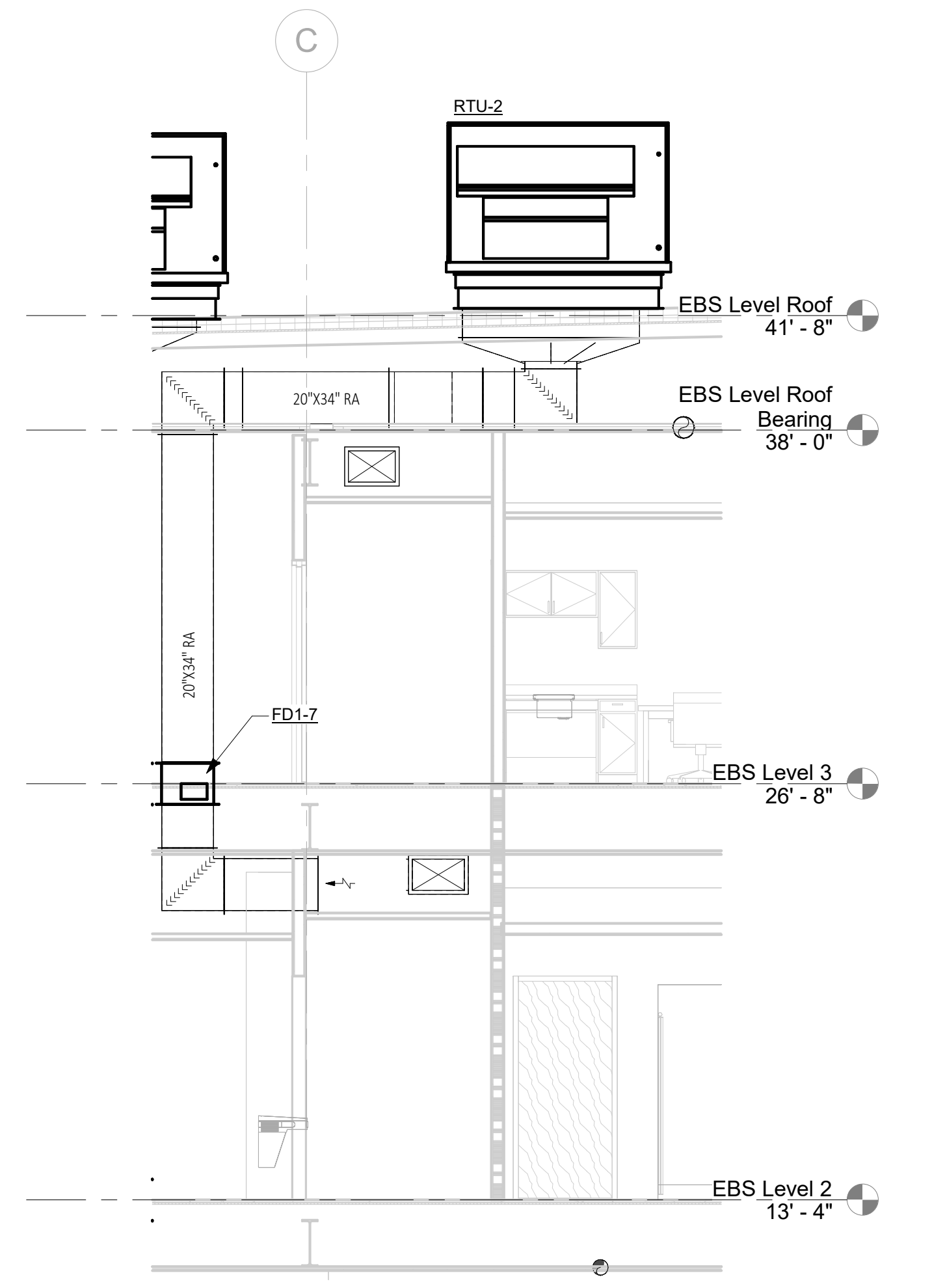
**1 RTU-1 RISERS**  
M200 SCALE: 1/4" = 1'-0"



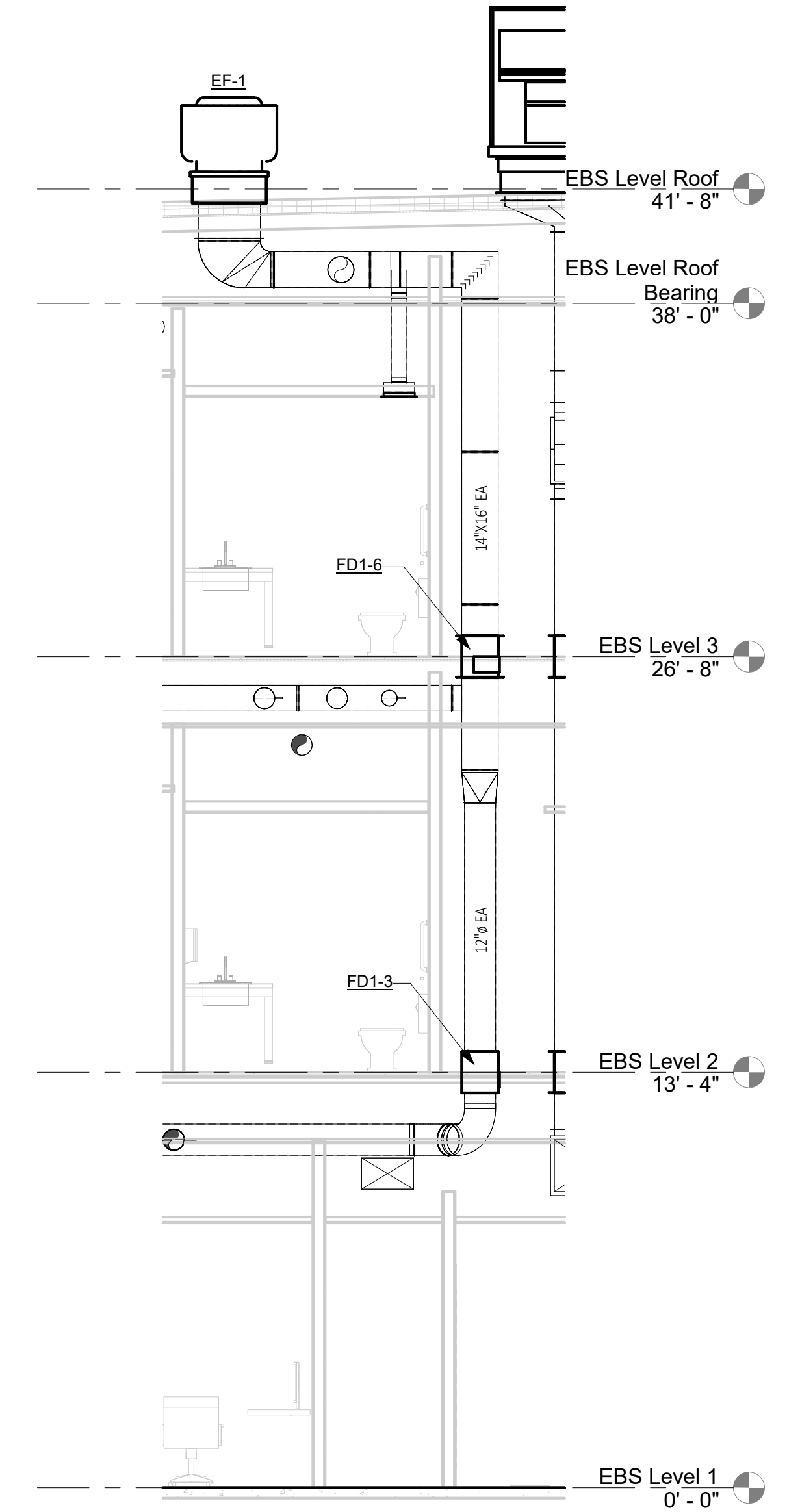
**2 RTU-2 RISERS**  
M200 SCALE: 1/4" = 1'-0"



**3 RTU-2 SA RISER**  
M200 SCALE: 1/4" = 1'-0"



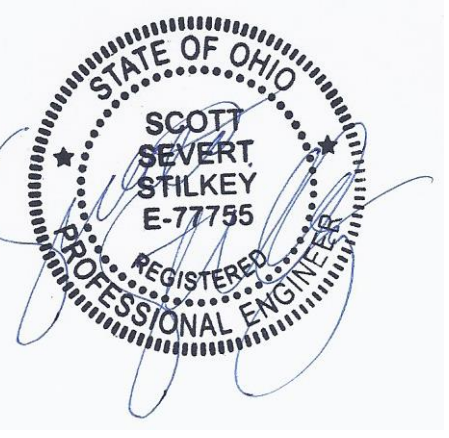
**4 RTU-2 RA RISER**  
M200 SCALE: 1/4" = 1'-0"



**5 EF-1 RISER**  
M200 SCALE: 1/4" = 1'-0"



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MECHANICAL DUCT RISERS

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## ELECTRICAL LEGEND

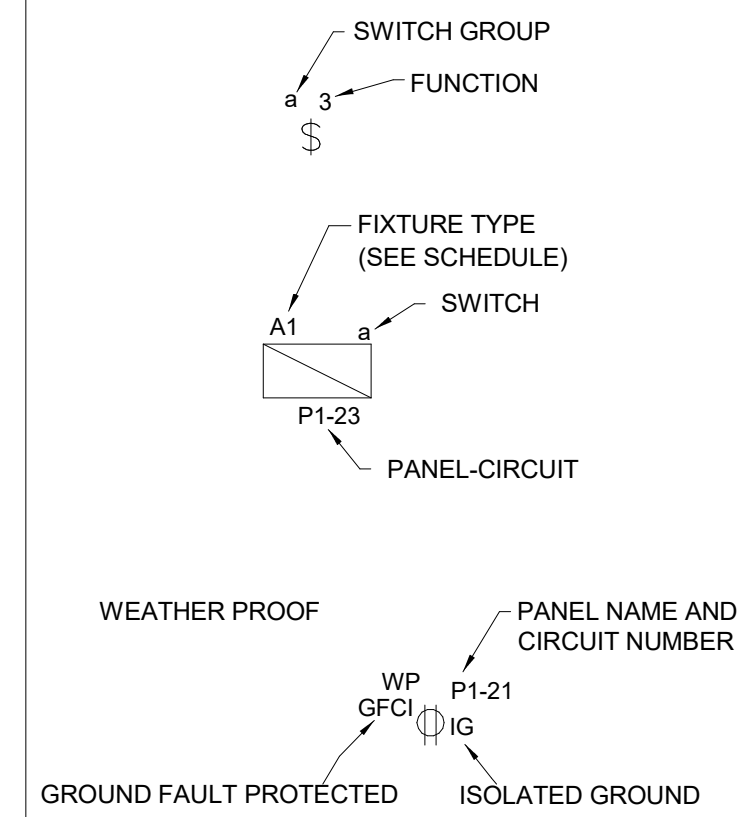
\*SEE LIGHT FIXTURE SCHEDULE FOR FIXTURE TYPES.

	SINGLE POLE LIGHT SWITCH	L5-20R	LOCKING 125V/20 AMP - RECEPTACLE
	THREE WAY LIGHT SWITCH	L6-20R	LOCKING 250V/20 AMP (1-PHASE) - RECEPTACLE
	FOUR WAY LIGHT SWITCH	L5-30R	LOCKING 125V/30 AMP - RECEPTACLE
	DIMMER SWITCH	L6-30R	LOCKING 250V/20 AMP (1-PHASE) - RECEPTACLE
	MASTER SWITCH	NL GFCI	DUPLEX RECEPTACLE WITH GFCI PROTECTION (FOR REFERENCE - LEGRAND RADIANT COLLECTION #N1L85STRW03)
	KEYED SWITCH	PP	FURNITURE POWER POLE - RECEPTACLE
	OCC SENSOR - CEILING - DUAL TECHNOLOGY	RFF	FURNITURE RECESSED FLOOR FEED
	OCC SENSOR - CEILING - PASSIVE INFRARED	WFF	FURNITURE WALL FEED
	OCC SENSOR - WALL - DUAL TECHNOLOGY	FB	RECESSED FLOOR BOX - MULTI-SERVICE (POWER/DATA)
	OCC SENSOR - WALL - PASSIVE INFRARED	AV	RECESSED FLOOR BOX - MULTI-SERVICE W/AV
	OCC SENSOR POWER PACK	PT	RECESSED MULTI-SERVICE POKE THRU
	OCC SENSOR POWER PACK - 2 CKT		
	DUPLEX RECEPTACLE		
	DUPLEX RECEPTACLE W/USB JACKS		
	COUNTER HEIGHT DUPLEX RECEPTACLE		
	QUAD RECEPTACLE		
	COUNTER HEIGHT QUAD RECEPTACLE		
	CEILING (SHOW WINDOW) RECEPTACLE		
	DUPLEX RECEPTACLE WITH GFCI PROTECTION		
	COUNTER HEIGHT DUPLEX RECEPTACLE WITH GFCI PROTECTION		
	SPLIT-WIRED (SWITCHED) RECEPTACLE		
	WEATHER PROOF RECEPTACLE WITH GFCI PROTECTION		
	DISHWASHER RECEPTACLE WITH GFCI PROTECTION		
	GARBAGE DISPOSAL		
	MICROWAVE RECEPTACLE		
	REFRIGERATOR RECEPTACLE		
	RANGE - 208-240V/ 1-PHASE 50 AMP RECEPTACLE		
	WASHER RECEPTACLE WITH GFCI PROTECTION		
	DRYER - 208-240V/ 1-PHASE 30 AMP RECEPTACLE		
	STACKED WASHER/DRYER - 208-240V/ 1-PHASE 30 AMP RECEPTACLE		
	DUPLEX - MONUMENT FLOOR BOX		
	DUPLEX - RECESSED FLOOR BOX		
	PANELBOARD		
	PANELBOARD W/ BUS (MCB OR MLO) - SINGLE LINE DIAGRAM		
	TRANSFORMER - SINGLE LINE DIAGRAM		
	TRANSFORMER W/ GROUND - SINGLE LINE DIAGRAM		
	PADMOUNT TRANSFORMER - SINGLE LINE DIAGRAM		
	AUTOMATIC TRANSFER SWITCH (ATS) - SINGLE LINE DIAGRAM		
	STANDBY/EMERGENCY GENERATOR - SINGLE LINE DIAGRAM		
	* METER BASE - SINGLE LINE DIAGRAM		
	FUSED DISCONNECT - SINGLE LINE DIAGRAM		
	* CT CABINET - SINGLE LINE DIAGRAM		
	* FINAL METER CONFIGURATION TBD/ APPROVED BY LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.		

## ABBREVIATIONS:

#	Number	HP	Heat Pump
Ω	Ohm	HZ	Hertz
∅	Phase	IG	Isolated Ground
A	Amperes	IMC	Intermediate Metal Conduit
AC	Alternating Current	KCMIL	Thousand Circular Mils
A/C	Air Conditioning	KVA	Kilovolt-Amperes
AFCI	Arc Fault Current Interrupter	LFMC	Liquid Tight Metal Conduit
AHU	Air Handling Unit	LTG	Lighting
AIC	Ampere Interrupting Capacity	LRA	Locked Rotor Amperes
AL	Aluminum	MC	Metal Clad Cable
ATS	Automatic Transfer Switch	MCC	Main Circuit Breaker
ATC	Automatic Temperature Control	NC	Motor Control Center
AWG	American Wire Gauge	MLO	Main Lug Only
C	Conduit	NC	Normally Closed
CATV	Cable Television	NEC	National Electrical Code
CB	Critical Branch	NEMA	National Electrical Manufacturers Association
CIB	Circuit Breaker	NFPA	National Fire Protection Association
CKT	Circuit	NL	Night Lighting (Egress Illumination)
CCTV	Closed Circuit Television	NO	Normally Open
CT	Current Transformer	NTS	Not To Scale
CU	Condensing Unit	P	Pole
DC	Direct Current	PB	Push Button or Panic Button or Pull Box
DIA	Diameter	PNL	Panel
EC	Electrical Contractor	PWR	Power
EF	Exhaust Fan	QTY	Quantity
ELEV	Elevator	REQ	Required
EM	Emergency	RMC	Rigid Metal Conduit
EMT	Electrical Metallic Tubing	RNC	Rigid Non-Metallic Conduit
EPO	Emergency Power Off	RTU	Roof Top Unit
EWC	Electric Water Cooler	ST	Shunt Trip
EWH	Electric Water Heater	SW	Switch
FA	Fire Alarm	TSTAT	Thermostat
FAA	Fire Alarm Annunciator	TYP	Typical
FLA	Full Load Amperes	UG	Underground
FMC	Flexible Metal Conduit	UL	Underwriters Laboratory
GF	Gas Furnace	UNO	Unless Noted Otherwise
GFCI	Ground Fault Current Interrupter	V	Volt
GND	Ground	VA	Volt-Amperes
GWH	Gas Water Heater	W	Watt or Wire
HOA	Hand-Off-Automatic Switch	WP	Weather Proof
HVAC	Heating, Ventilation, Air Conditioning	XFMR	Transformer

## EXAMPLES:



## FIRE ALARM - DELEGATED DESIGN

- COMPLY WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA CONTAINED ON DRAWINGS. RESPONSIBILITY FOR PROVIDING A COMPLIANT, OPERATIONAL FIRE ALARM SYSTEM LIES WITH THIS CONTRACTOR. REFER TO ARCHITECT'S CODE SHEET FOR USE GROUP AND OCCUPANT INFORMATION WHEN PROVIDING THE FIRE ALARM DESIGN. VERIFY REQUIREMENTS SPECIFIC TO PROJECT LOCALITY AND INCLUDE IN SCOPE.
- [THESE FIRE ALARM DRAWINGS SHOW THE INTENDED DEVICE LOCATIONS COORDINATED WITH ARCHITECT/OWNER, AND DEMONSTRATE COMPLIANCE WITH BUILDING CODES]. INSTALLING CONTRACTOR SHALL FURNISH ALL REQUIRED DRAWINGS AND CALCULATIONS REQUIRED FOR FIRE ALARM PERMIT. DRAWINGS AND CALCULATIONS SHALL BE PREPARED BY AN INDIVIDUAL CARRYING ALL CERTIFICATIONS REQUIRED BY THE AGENCY RESPONSIBLE FOR REVIEW AND APPROVAL.
- REQUIRED COMPONENTS THAT ARE NOT SHOWN ON DRAWINGS SUCH AS; RELAY MODULES MONITOR MODULES, BOOSTER PANELS, ANNUNCIATORS, ETC. ARE THE RESPONSIBILITY OF THIS CONTRACTOR AND ARE INCLUDED IN THIS SCOPE OF WORK.

## GENERAL NOTES - ELEVATOR

- FURNISH AND INSTALL ALL REQUIRED ELECTRICAL COMPONENTS AND CONNECTIONS FOR ELEVATOR OPERATION. REFER TO ELEVATOR SHOP DRAWINGS FOR COMPLETE INFORMATION. PROVIDE SHUNT-TRIP OPERATION FOR ELEVATOR CIRCUIT WHERE REQUIRED. INCLUDE CONNECTIONS FOR SHAFT, SUMP PUMP, PIT LIGHT, RECEPTACLE, CAB LIGHT, ETC. BASIS OF DESIGN HP AND CIRCUIT CHARACTERISTICS SHOWN ON DRAWINGS MUST BE VERIFIED WITH ELEVATOR SUPPLIER PRIOR TO ROUGH-IN OR INSTALLATION.

## SCOPE OF WORK

NEW CONSTRUCTION OF A DRUG REHAB AND DETOX FACILITY. SCOPE TO INCLUDE NEW LIGHTING, POWER, AND ELECTRICAL DISTRIBUTION EQUIPMENT. SEE SINGLE LINE FOR MORE INFORMATION.

## GENERAL NOTES - OVERALL PROJECT

- EBS DRAWINGS INDICATE DESIGN INTENT AND REQUIRED OUTCOMES. IF CONDITIONS ARISE IN THE FIELD THAT REQUIRE DEVIATIONS FROM THE DRAWINGS IT IS ASSUMED THAT THE CONTRACTOR WILL DETERMINE THE APPROPRIATE DEVIATION WITH APPROVAL FROM THE OWNER. EBS IS AVAILABLE TO ASSIST WHEN REQUIRED IF ISSUES ARISE.

## GENERAL NOTES - POWER

- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CONDUIT/CABLE ROUTING. COORDINATE ROUTING WITH ALL OTHER TRADES AND BUILDING CONDITIONS.
- SEE SINGLE LINE DIAGRAM FOR FEEDER WIRE AND CONDUIT SIZE. ALL CIRCUITS NOT SIZED ON DRAWING SHALL BE INSTALLED TO MEET MINIMUM SIZE REQUIRED BY NEC.
- PROVIDE MOTOR STARTERS FOR EQUIPMENT AS INDICATED ON DRAWINGS. COORDINATE ANY INTERLOCKING WIRING WITH HVAC CONTRACTOR AND PROVIDE WIRING, COILS, AND AUXILIARY CONTACTS AS NECESSARY. SIZE ALL CIRCUITS FOR ACTUAL EQUIPMENT TO BE CONNECTED.
- ALL PANELS AND DISCONNECTS LOCATED OUTDOORS SHALL BE LABELED NEMA 3R.
- ALL DISCONNECTS SHALL BE HEAVY DUTY TYPE.
- ROOF MOUNTED AND OUTDOOR EQUIPMENT SHALL HAVE 120V RECEPTACLE MOUNTED WITHIN 25' OF EACH PIECE. RECEPTACLES SHALL BE IN WEATHER PROOF BOX AND HAVE GFCI PROTECTION.
- FOR ITEMS FURNISHED BY OTHER TRADES, ELECTRICAL CONTRACTOR TO FULLY COORDINATE BREAKER AND WIRE SIZES WITH ACTUAL EQUIPMENT BEING CONNECTED PRIOR TO ROUGH-IN OR INSTALLATION. THE SIZES ON PANEL SCHEDULES REFER TO BASIS OF DESIGN SELECTIONS, AND ACTUAL ITEMS MAY DEVIATE FROM BASIS OF DESIGN. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO CONFIRM REQUIRED WIRE AND BREAKER SIZES WITH THE CONTRACTOR FURNISHING THE EQUIPMENT.
- REFER TO ARCHITECT'S PLANS AND ELEVATIONS FOR ALL DEVICE MOUNTING HEIGHTS.
- CONTRACTOR TO PROVIDE GROUNDING AND BONDING AS REQUIRED FOR ELECTRICAL SYSTEMS. GROUNDING AND BONDING IS CONSIDERED MEANS AND METHODS OF CONSTRUCTION, AND SHOULD BE COMPLETED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH NEC 250. GAS PIPING SYSTEMS MUST BE BONDED PER UTILITY PROVIDER'S INSTALLATION GUIDELINES WHERE REQUIRED.
- CEILING CLEARANCES ARE CRITICAL FOR THIS PROJECT. GENERAL CONTRACTOR MUST COORDINATE ALL TRADES TO AVOID POTENTIAL INTERFERENCES. CONFLICTS BETWEEN TRADES SHALL BE REFERRED TO THE ARCHITECT FOR RESOLUTION.
- LOW VOLTAGE WIRING SHALL NOT BE PERMITTED TO RUN IN WALLS WITHOUT A RACEWAY. A 3/4" MINIMUM EMT CONDUIT SHALL BE PROVIDED TO STUB UP TO THE NEAREST ACCESSIBLE CEILING.

## GENERAL NOTES - LIGHTING

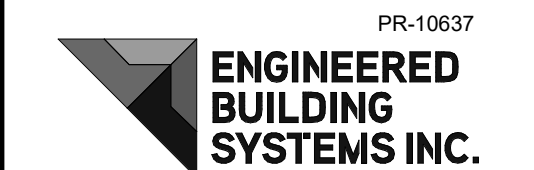
- REFER TO ARCHITECT'S PLANS AND ELEVATIONS FOR DIMENSIONED LOCATIONS OF LIGHT FIXTURES.
- PROVIDE HOLD-ON-TYPE BREAKERS FOR EGRESS/EMERGENCY LIGHTING CIRCUITS. WIRE ALL EGRESS/EMERGENCY FIXTURES AHEAD OF ANY LOCAL SWITCHING.
- LIGHT FIXTURES CONTROLLED BY SWITCH IN SAME ROOM UNLESS OTHERWISE NOTED.
- WHERE DIMMERS AND/OR DIMMING SYSTEMS ARE REQUIRED, CONTRACTOR TO FURNISH DIMMERS THAT ARE COMPATIBLE WITH FIXTURE SOURCE AND RATED FOR THE WATTAGE OF THE DIMMING ZONE. PROVIDE ADDITIONAL DIMMERS AS REQUIRED TO MEET ZONE LOAD REQUIREMENTS.
- CEILING CLEARANCES ARE CRITICAL FOR THIS PROJECT. GENERAL CONTRACTOR MUST COORDINATE ALL TRADES TO AVOID POTENTIAL INTERFERENCES. CONFLICTS BETWEEN TRADES SHALL BE REFERRED TO THE ARCHITECT FOR RESOLUTION.

## GENERAL NOTES - GENERATOR

- GENERATORS, TRANSFER SWITCHES, FUEL CAPACITY/RUN-TIMES, AND START-UP/OPERATION REQUIREMENTS SHALL CONFORM TO THE REQUIREMENTS FOR THEIR USE - STAND-BY, LEGALLY REQUIRED STAND-BY, EMERGENCY, ETC.
- CONTRACTOR SHALL COORDINATE PAD REQUIREMENTS WITH GENERATOR SUPPLIER AND LOCATE ALL CONDUIT OPENINGS PER MANUFACTURER'S INSTALLATION GUIDES.
- PROVIDE ALL AXILLARY WIRING FOR CONTROL, COMMUNICATION, BATTERY CHARGE, BLOCK HEATER, ETC.
- INSTALL PAD AND GENERATOR SUCH THAT REQUIRED CLEARANCES FROM BUILDINGS, BUILDING OPENINGS, AND OTHER OBSTRUCTIONS ARE MAINTAINED.
- COORDINATE GENERATOR CIRCUIT BREAKER/FEEDER REQUIREMENTS WITH ACTUAL EQUIPMENT BEING CONNECTED - FIRE PUMP, ETC.
- WHERE THE GENERATOR IS REQUIRED TO OPERATE AS A SEPARATELY DERIVED SYSTEM (GENERATOR SERVING MULTIPLE BUILDINGS/STRUCTURES FOR EXAMPLE) PROVIDE PROPER GROUNDING AND USE 4-POLE TRANSFER SWITCHES AS REQUIRED BY NEC 250.



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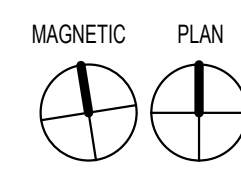
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ELECTRICAL LEGENDS  
AND SYMBOLS

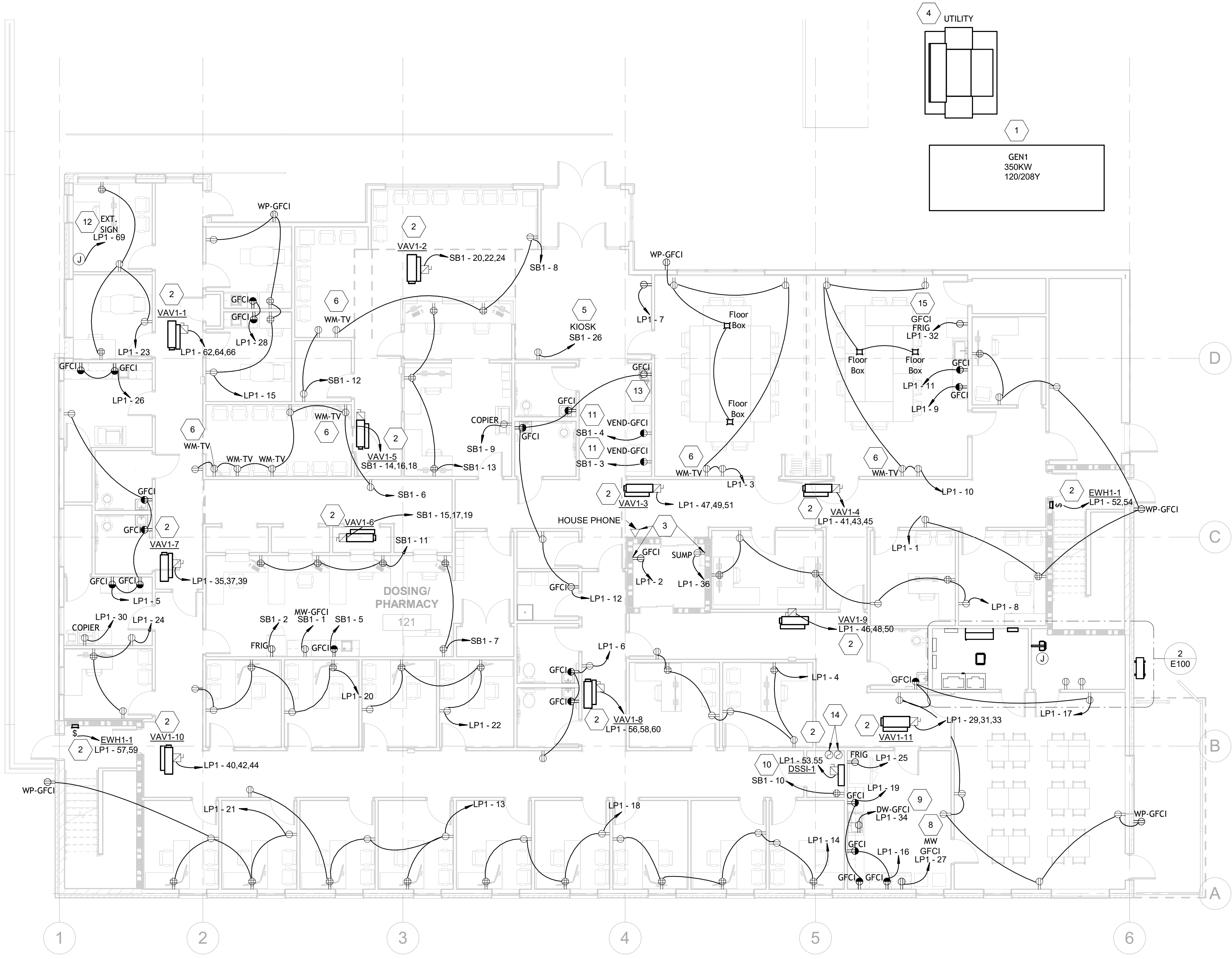
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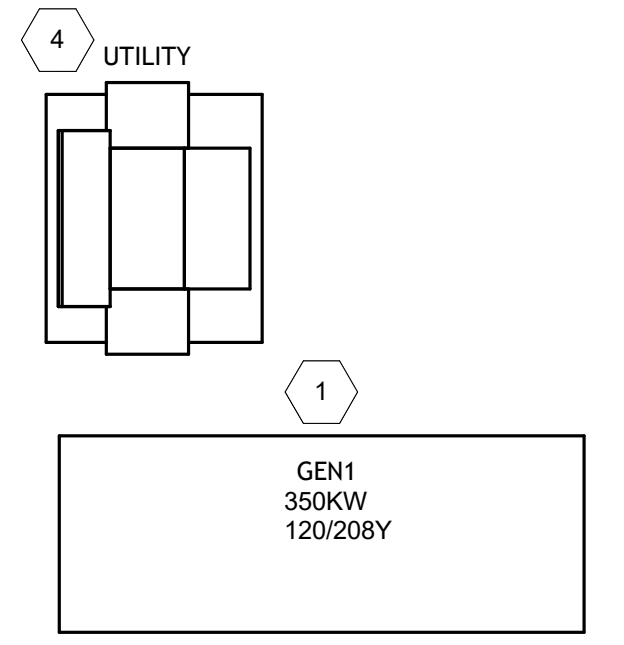
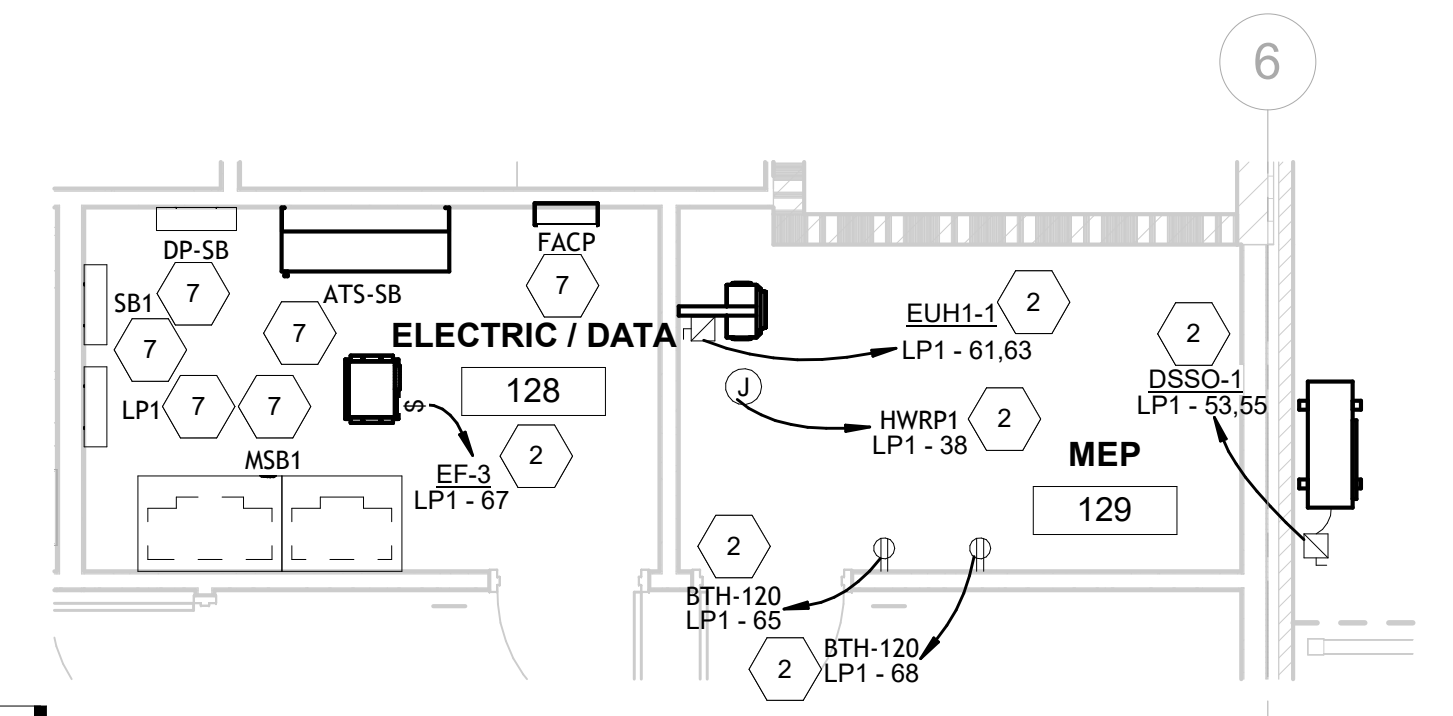
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**1** POWER - 1ST FLOOR  
 E100 SCALE: 1/8" = 1'-0"



**2** POWER - 1ST FLOOR ENLARGED ELEC/MECH  
 E100 SCALE: 1/4" = 1'-0"



KEYED SHEET NOTES	
1	PROPOSED LOCATION OF NATURAL GAS GENERATOR. ITEMS SHOWN CIRCUITED FROM "SB#" PANELS ARE TO BE BACKED-UP BY GENERATOR. SEE DETAILS SHEETS FOR MORE INFORMATION.
2	MECHANICAL EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR. WIRING BY THE ELECTRICAL CONTRACTOR. VERIFY LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3	ITEMS TO BE INSTALLED FOR THE ELEVATOR. CONFIRM ALL ELECTRICAL CONTRACTOR RESPONSIBLE WORK PRIOR TO ROUGH-IN. REFER TO ELEVATOR SHOP DRAWINGS FOR MORE INFORMATION. ALL ITEMS PERTAINING TO THE ELEVATOR TO BE INSTALLED PER NEC AND MANUFACTURER REQUIREMENTS.
4	PROVIDE PROTECTIVE BOLLARDS AROUND UTILITY TRANSFORMER PER DUKE ENERGY REQUIREMENTS.
5	PROVIDE DEDICATED RECEPTACLE FOR PATIENT KIOSK.
6	RECEPTACLE SERVES WALL MOUNT TV. COORDINATE MOUNTING HEIGHT AND REQUIRED DATA CABLING WITH OWNER'S REP, ARCHITECT, AND DATA CONSULTANT PRIOR TO CONSTRUCTION.
7	ELECTRICAL EQUIPMENT LOCATION(S). SEE DETAILS SHEETS FOR MORE INFORMATION.
8	LOCATE MICROWAVE OUTLET IN SHELF, UNDER COUNTERTOP. SEE ARCH ELEVATIONS FOR EXACT LOCATION.
9	LOCATE GFCI RECEPTACLE SERVING DISHWASHER UNDER SINK IN BASE CABINET, AND PROVIDE 120V-20A UL LISTED 5-20P CORD WHIP (6' MIN.).
10	PROPOSED LOCATION OF DATA/PHONE UTILITY DEMARC. PROVIDE REQUIRED UNDERGROUND CONDUITS TO UTILITY POLE AS DETERMINED BY SERVICE PROVIDER. PROVIDE 3/4" X 4' X 4' PLYWOOD BACKBOARD. PROVIDE DEDICATED QUAD RECEPT TO SERVE EQUIPMENT. COORDINATE ALL ASSOCIATED WORK WITH OWNER'S REP, ARCHITECT, AND IT CONSULTANT PRIOR TO CONSTRUCTION.
11	PROVIDE GFCI BREAKER FOR VENDING MACHINE BRANCH CIRCUIT.
12	PROVIDE DEDICATED POWER ABOVE ACT CEILING TO SERVE INTERNALLY ILLUMINATED EXTERIOR SIGN. CONTROL WITH PHOTOCELL DEVICE AND COORDINATE ALL WORK WITH OWNER'S REP, AND ARCHITECT PRIOR TO CONSTRUCTION.
13	COORDINATE LOCATION OF GFCI RECEPTACLE SERVING DRINKING FOUNTAIN WITH INSTALLING CONTRACTOR PRIOR TO CONSTRUCTION.
14	PROPOSED LOCATION (2) 4" CONDUIT SLEEVES FOR DATA CABLING TO PASS THROUGH THE CEILING TO THE NEXT FLOOR UP. COORDINATE CORE DRILLING SLEEVES WITH OTHER TRADES, OWNER'S REP, AND ARCHITECT PRIOR TO CONSTRUCTION.
15	FRIDGE IS LOCATED UNDER COUNTER. COORDINATE LOCATION OF DEVICE WITH ARCH ELEVATION PRIOR TO ROUGH-IN. PROVIDE GFCI BREAKER FOR EQUIPMENT.



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POWER PLAN - 1ST FLOOR

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**E100**

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KEYED SHEET NOTES	
1	ELECTRICAL EQUIPMENT LOCATION(S). SEE DETAILS SHEETS FOR MORE INFORMATION.
2	MECHANICAL EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR. WIRING BY THE ELECTRICAL CONTRACTOR. VERIFY LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3	PROVIDE DEDICATED RECPT FOR EXERCISE EQUIPMENT.
4	RECEPTACLE SERVES WALL MOUNT TV. COORDINATE MOUNTING HEIGHT AND REQUIRED DATA CABLING WITH OWNER'S REP, ARCHITECT, AND DATA CONSULTANT PRIOR TO CONSTRUCTION.
5	FRIDGE IS LOCATED UNDER COUNTER. COORDINATE LOCATION OF DEVICE WITH ARCH ELEVATION PRIOR TO ROUGH-IN. PROVIDE GFCI BREAKER FOR EQUIPMENT.
6	PROVIDE DEDICATED CIRCUIT FOR IT EQUIPMENT (L5-30R). LOCATE DEVICE AT TOP OF RACK. COORDINATE LOCATION WITH IT CONSULTANT PRIOR TO CONSTRUCTION.
7	PROVIDE GFCI BREAKER FOR VENDING MACHINE BRANCH CIRCUIT.
8	PROPOSED LOCATION (2) 4" CONDUIT SLEEVES FOR DATA CABLING TO PASS THROUGH THE CEILING TO THE NEXT FLOOR UP. COORDINATE CORE DRILLING SLEEVES WITH OTHER TRADES, OWNER'S REP, AND ARCHITECT PRIOR TO CONSTRUCTION.
9	LOCATE MICROWAVE OUTLET IN SHELF, UNDER COUNTERTOP. SEE ARCH ELEVATIONS FOR EXACT LOCATION.
10	COORDINATE LOCATION OF GFCI RECEPTACLE SERVING DRINKING FOUNTAIN WITH INSTALLING CONTRACTOR PRIOR TO CONSTRUCTION.



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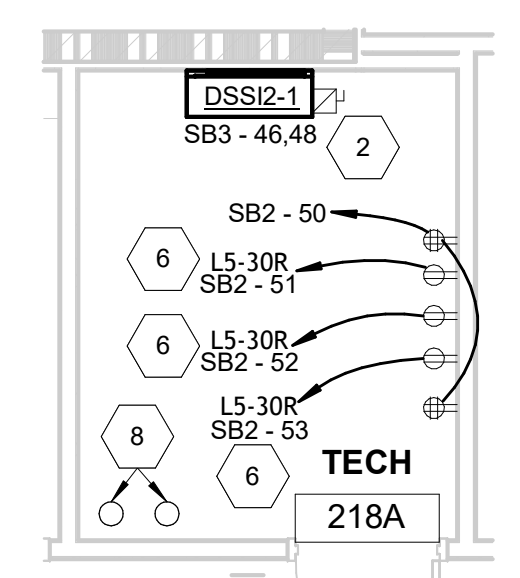
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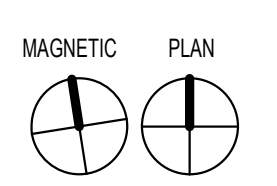
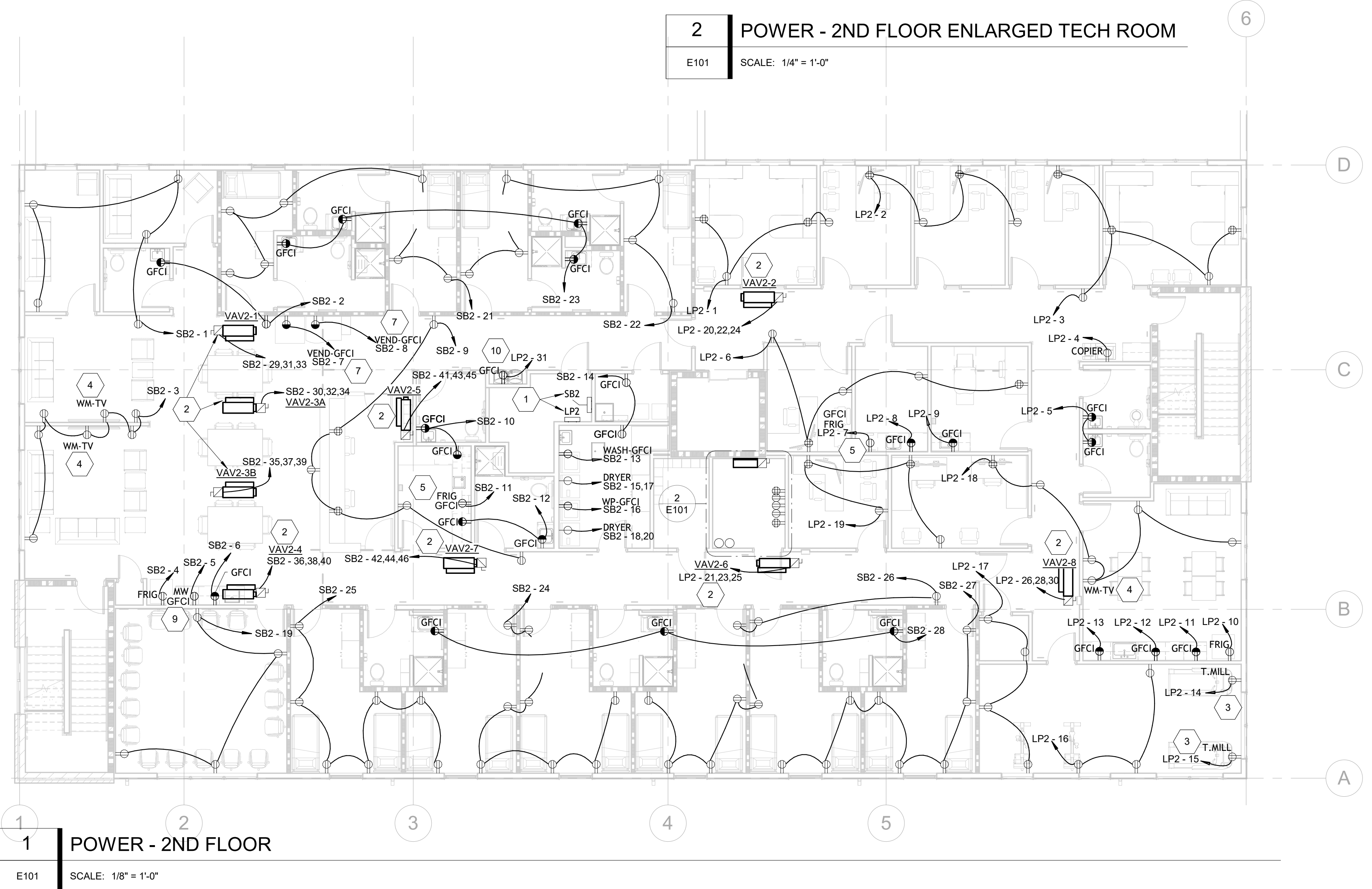
POWER PLAN - 2ND FLOOR

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**E101**

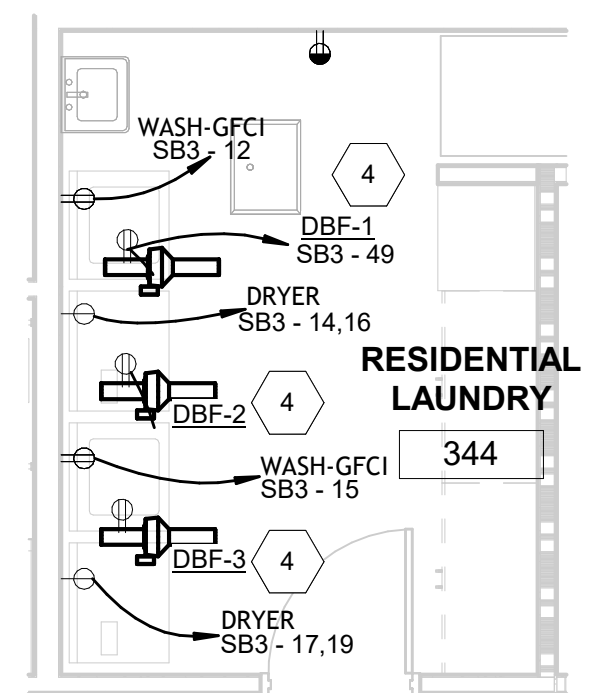


**2 POWER - 2ND FLOOR ENLARGED TECH ROOM**  
 E101 SCALE: 1/4" = 1'-0"



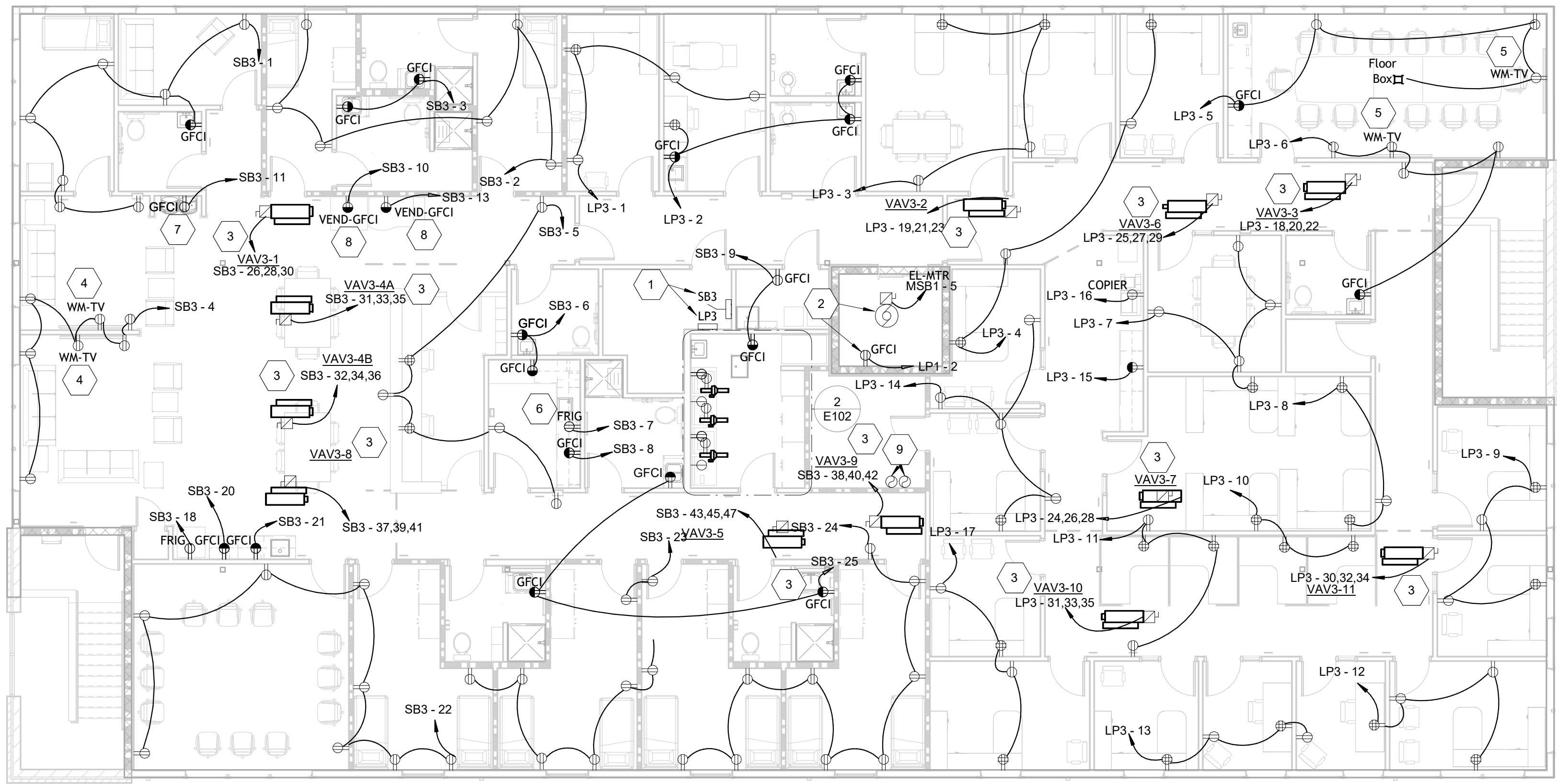
**1 POWER - 2ND FLOOR**  
 E101 SCALE: 1/8" = 1'-0"

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KEYED SHEET NOTES	
1	ELECTRICAL EQUIPMENT LOCATION(S). SEE DETAILS SHEETS FOR MORE INFORMATION.
2	ITEMS TO BE INSTALLED FOR THE ELEVATOR. CONFIRM ALL ELECTRICAL CONTRACTOR RESPONSIBLE WORK PRIOR TO ROUGH-IN. REFER TO ELEVATOR SHOP DRAWINGS FOR MORE INFORMATION. ALL ITEMS PERTAINING TO THE ELEVATOR TO BE INSTALLED PER NEC AND MANUFACTURER REQUIREMENTS.
3	MECHANICAL EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR. WIRING BY THE ELECTRICAL CONTRACTOR. VERIFY LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
4	RECEPTACLE SERVING DRYER BOOSTER FAN (DBF#) IS LOCATED ABOVE ACT CEILING. COORDINATE FINAL LOCATION WITH INSTALLING CONTRACTOR PRIOR TO CONSTRUCTION.
5	RECEPTACLE SERVES WALL MOUNT TV. COORDINATE MOUNTING HEIGHT AND REQUIRED DATA CABLING WITH OWNER'S REP, ARCHITECT, AND DATA CONSULTANT PRIOR TO CONSTRUCTION.
6	FRIDGE IS LOCATED UNDER COUNTER. COORDINATE LOCATION OF DEVICE WITH ARCH ELEVATION PRIOR TO ROUGH-IN. PROVIDE GFCI BREAKER FOR EQUIPMENT.
7	COORDINATE LOCATION OF GFCI RECEPTACLE SERVING DRINKING FOUNTAIN WITH INSTALLING CONTRACTOR PRIOR TO CONSTRUCTION.
8	PROVIDE GFCI BREAKER FOR VENDING MACHINE BRANCH CIRCUIT.
9	PROPOSED LOCATION (2) 4" CONDUIT SLEEVES FOR DATA CABLING TO PASS THROUGH THE CEILING TO THE NEXT FLOOR UP. COORDINATE CORE DRILLING SLEEVES WITH OTHER TRADES, OWNER'S REP, AND ARCHITECT PRIOR TO CONSTRUCTION.

**2** Power - Level 3 - enlarged laundry room  
 E102 SCALE: 1/4" = 1'-0"



MAGNETIC PLAN  
**1** POWER - 3RD FLOOR  
 E102 SCALE: 1/8" = 1'-0"



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POWER PLAN - 3RD FLOOR

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KEYED SHEET NOTES	
1	MECHANICAL EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR. WIRING BY THE ELECTRICAL CONTRACTOR. VERIFY LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.



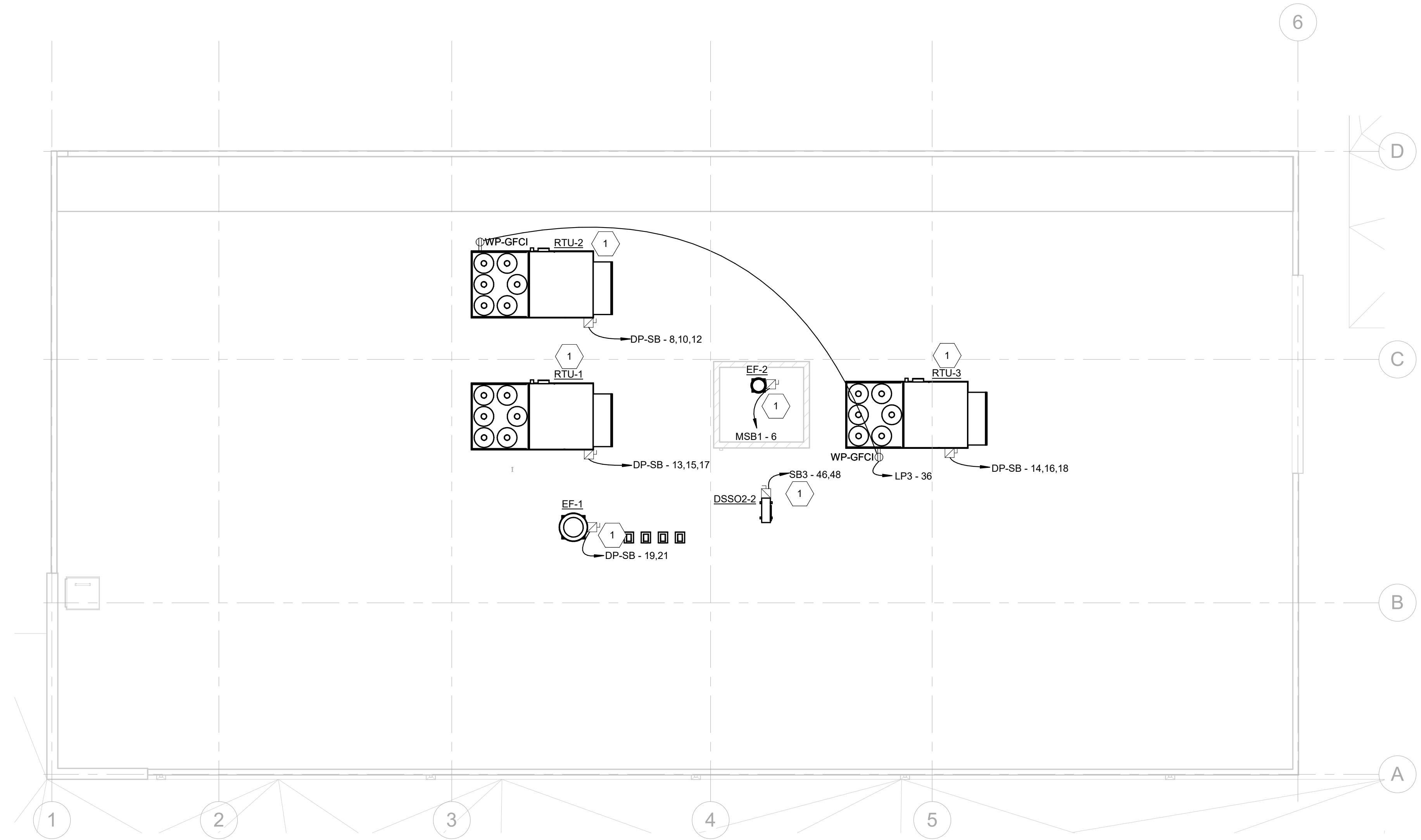
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MAGNETIC PLAN  
**1** Power - Roof  
 E103 SCALE: 1/8" = 1'-0"

NO.	DESCRIPTION	DATE
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POWER PLAN - ROOF

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**E103**

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Crossroads Lighting Fixture Schedule						
Type Mark	Lamp	Description	Manufacturer	Model	Wattage	Comments
B	LED	2X4 CENTER BASKET INDIRECT LED TROFFER	Cooper Lighting	24CZSCT3-UNV	<varies>	
C	LED	6" RECESSED LED CAN	Spectrum Lighting	SGE6LEDFX30L35KDX/BH27/AR62 23FXSGMFSO AR6223FXSGMFSO	22 W	
CW	LED	6" RECESSED LED CAN - WET LISTED	Spectrum Lighting	SGE6LEDFX30L35KDX/BH27/AR62 23FXSGMFSOW	22 W	
D	LED	SURFACE MOUNT DECORATIVE FIXTURE - SLEEPING ROOMS	Millennium Lighting	4531	25 W	
EMX	LED	EXIT EMERGENCY COMBO W/ 90 MIN. BATTERY BACKUP	Securitylighting	APCH7R	4 W	PROVIDE REMOTE CAPABILITIES AS REQUIRED
ER	LED	DUAL HEAD LED REMOTE FOR EMERG EXTERIOR ILLUMINATION	Compass Products	ARWR2		FED FROM ADJACENT EMX FIXTURE
GL1	LED	GROUND MOUNTED SPOT LIGHT	Acuity Brands Lighting	D-SERIES FLOOD SIZE 1 W/2 COB 4000K	21 W	
PIT	LED	VAPOR TIGHT LIGHT	Cooper Lighting	VT1730	17 W	
PL1	LED	POLE MOUNTED AREA LIGHTING; SINGLE HEAD 180 DEGREES	LSI Industries	MRM-LED-30L-SIL-2-40-70CRI (1 HEAD)	232 W	20' MOUNTING HEIGHT MAX BRONZE
PL2	LED	POLE MOUNTED AREA LIGHTING; DUAL HEAD 180 DEGREES	LSI Industries	MRM-LED-30L-SIL-2-40-70CRI (2-HEADS 180 DEGREES)	464 W	20' MOUNTING HEIGHT MAX BRONZE
ROUND POLE	N/A	STEEL ROUND POLE	LSI Industries	5RPU B3 S07G 17 S BRZ DGP		BRONZE FINISH. SEE POLE DETAIL FOR MORE INFO.
S2	LED	WALLMOUNT VANITY FIXTURE	Efficient Lighting	EL328-20LEDAC-BN	<varies>	
S4	LED	4' SURFACE MOUNT LED STRIP FIXTURE	Cooper Lighting	4SNLED-LD5-28SL-UNV-L835-CD1-U	37 W	
S4/NL	LED	4' STAIR FIXTURE W/ EM BATTERY BACKUP	Cooper Lighting	4BCLED-LD4-36SL-F-UNV-EL14W-L835-CD1-U	37 W	
WP1	LED	LED WALLPACK BRONZE FINISH	ELCO LIGHTING	EWP 70 M 40	70 W	
WS1	LED	OUTDOOR CAST SCONCE W/DR3 FROSTED LENS; BROWN	Acuity Brands Lighting	OLCS 8 DDB W/DR3 FROSTED LENS	9 W	

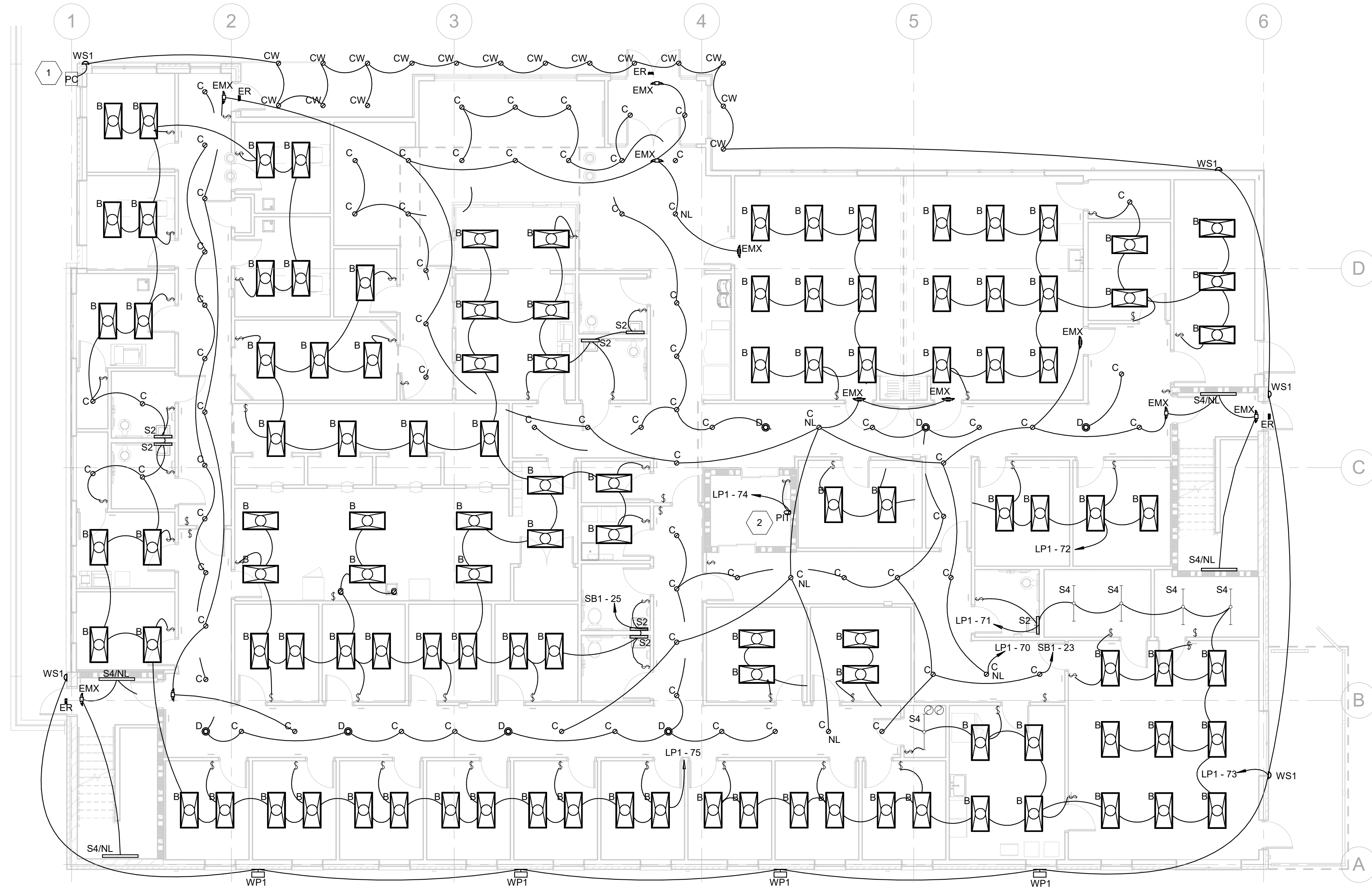
- KEYED SHEET NOTES**
- ALL EXTERIOR LIGHTING TO BE CONTROLLED BY PHOTOCELL DEVICE LOCATED ON WEST SIDE OF BUILDING. COORDINATE FINAL LOCATION WITH OWNER'S REP. AND ARCHITECT PRIOR TO CONSTRUCTION.
  - ITEMS TO BE INSTALLED FOR THE ELEVATOR. CONFIRM ALL ELECTRICAL CONTRACTOR RESPONSIBLE WORK PRIOR TO ROUGH-IN. REFER TO ELEVATOR SHOP DRAWINGS FOR MORE INFORMATION. ALL ITEMS PERTAINING TO THE ELEVATOR TO BE INSTALLED PER NEC AND MANUFACTURER REQUIREMENTS.



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MAGNETIC PLAN  
 1 LIGHTING - 1ST FLOOR  
 E200 SCALE: 1/8" = 1'-0"

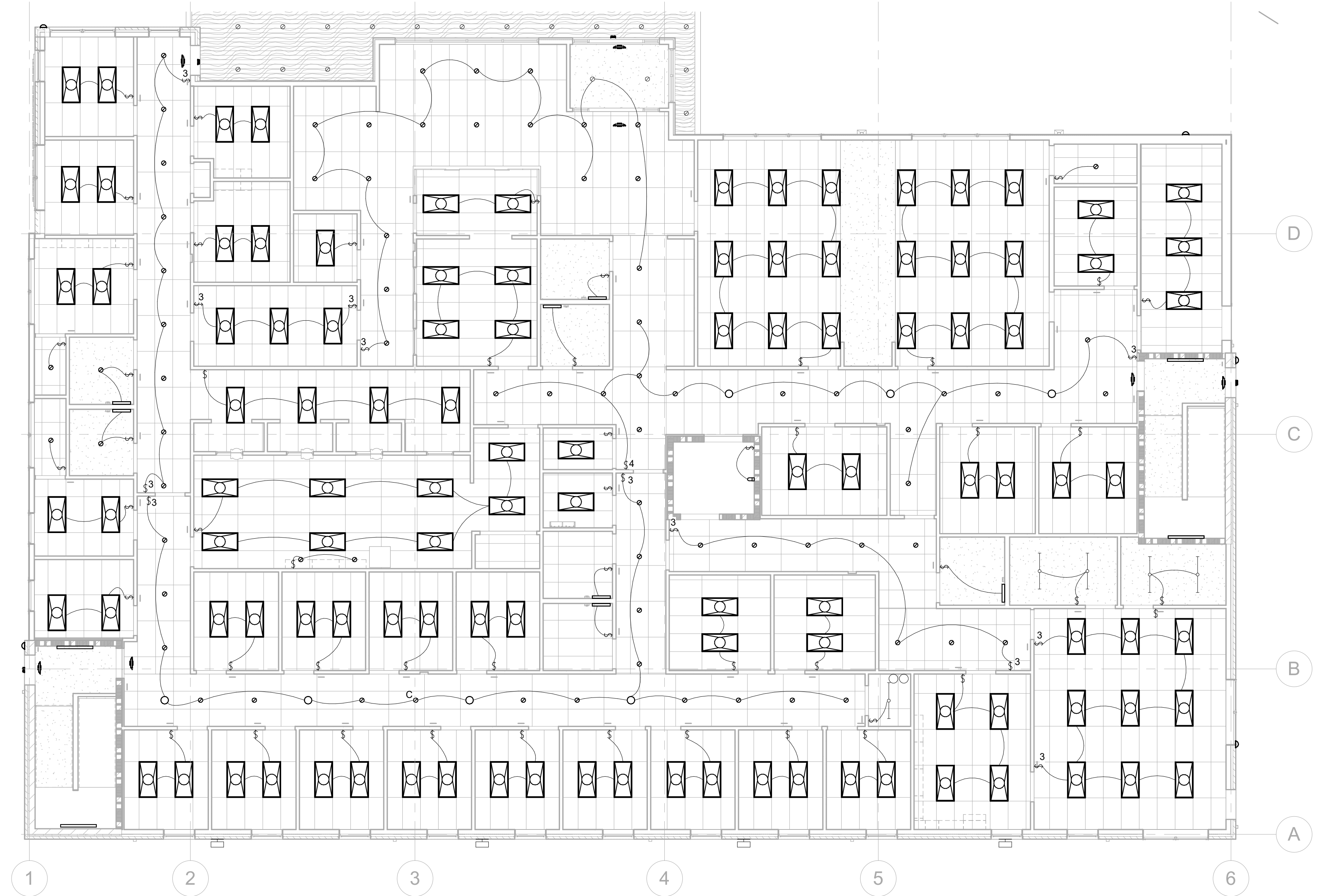
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LIGHTING PLAN - 1ST FLOOR

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**E200**

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MAGNETIC PLAN  
**1** REFLECTED CEILING PLAN 1ST FLOOR  
 E200.1 SCALE: 1/8" = 1'-0" \*SHOWS SWITCHING INTENT ONLY, SEE NEXT SHEET FOR CIRCUITING INFORMATION



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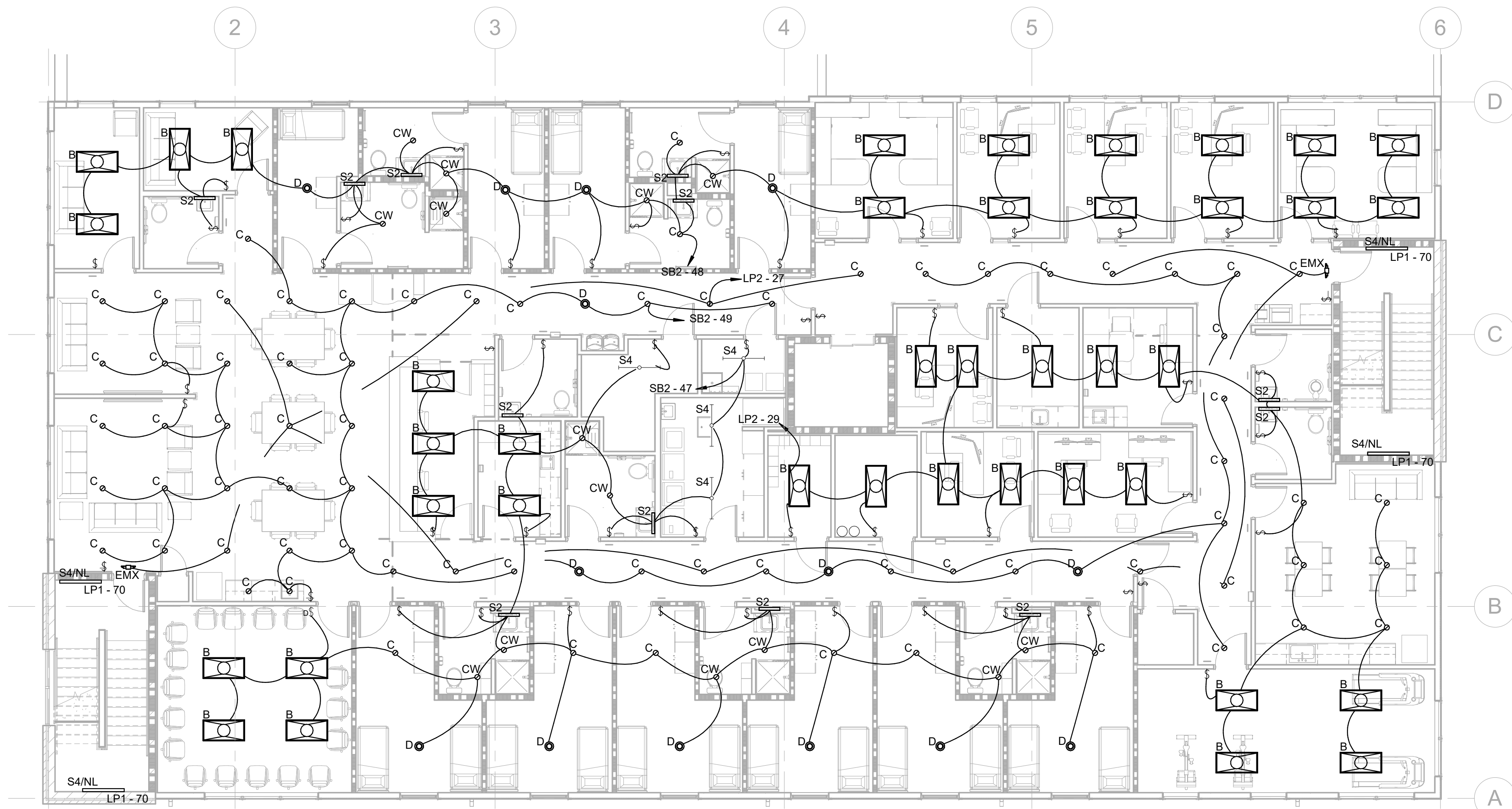
REFLECTED CEILING PLAN 1ST FLOOR

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PL1	LED	POLE MOUNTED AREA LIGHTING; SINGLE HEAD	LSI Industries	MRM-LED-30L-SIL-2-40-70CRI (1 HEAD)	232 W	20' MOUNTING HEIGHT MAX BRONZE
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MAGNETIC PLAN  
 1 LIGHTING - 2ND FLOOR  
 E201 SCALE: 1/8" = 1'-0"



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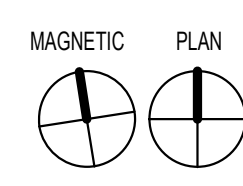
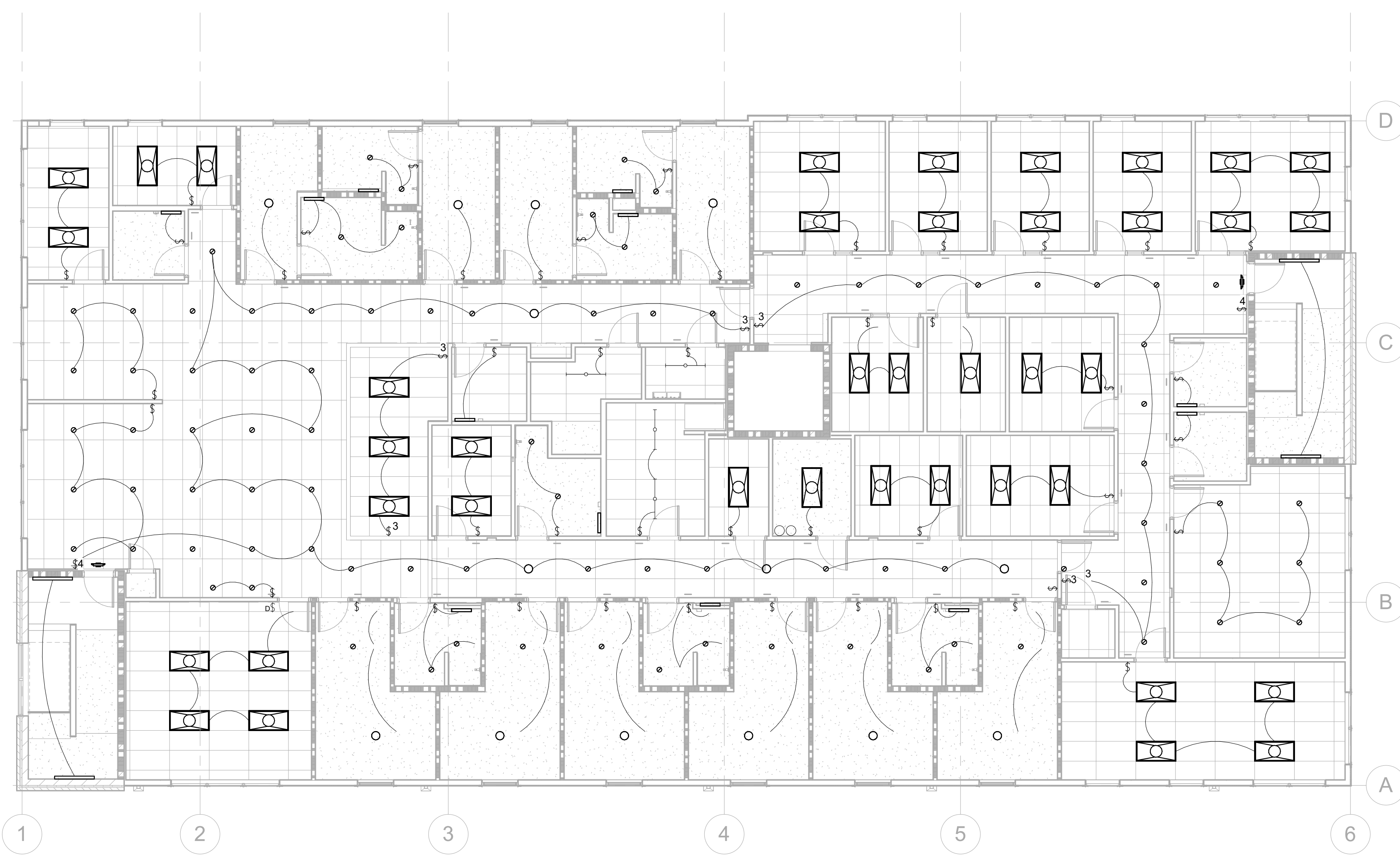
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LIGHTING PLAN - 2ND FLOOR

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**E201**

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**1 REFLECTED CEILING PLAN 2ND FLOOR**  
 E201.1 SCALE: 1/8" = 1'-0" \*SHOWS SWITCHING INTENT ONLY, SEE NEXT SHEET FOR CIRCUITING INFORMATION



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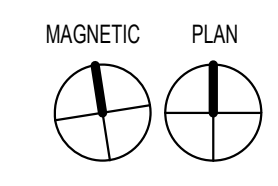
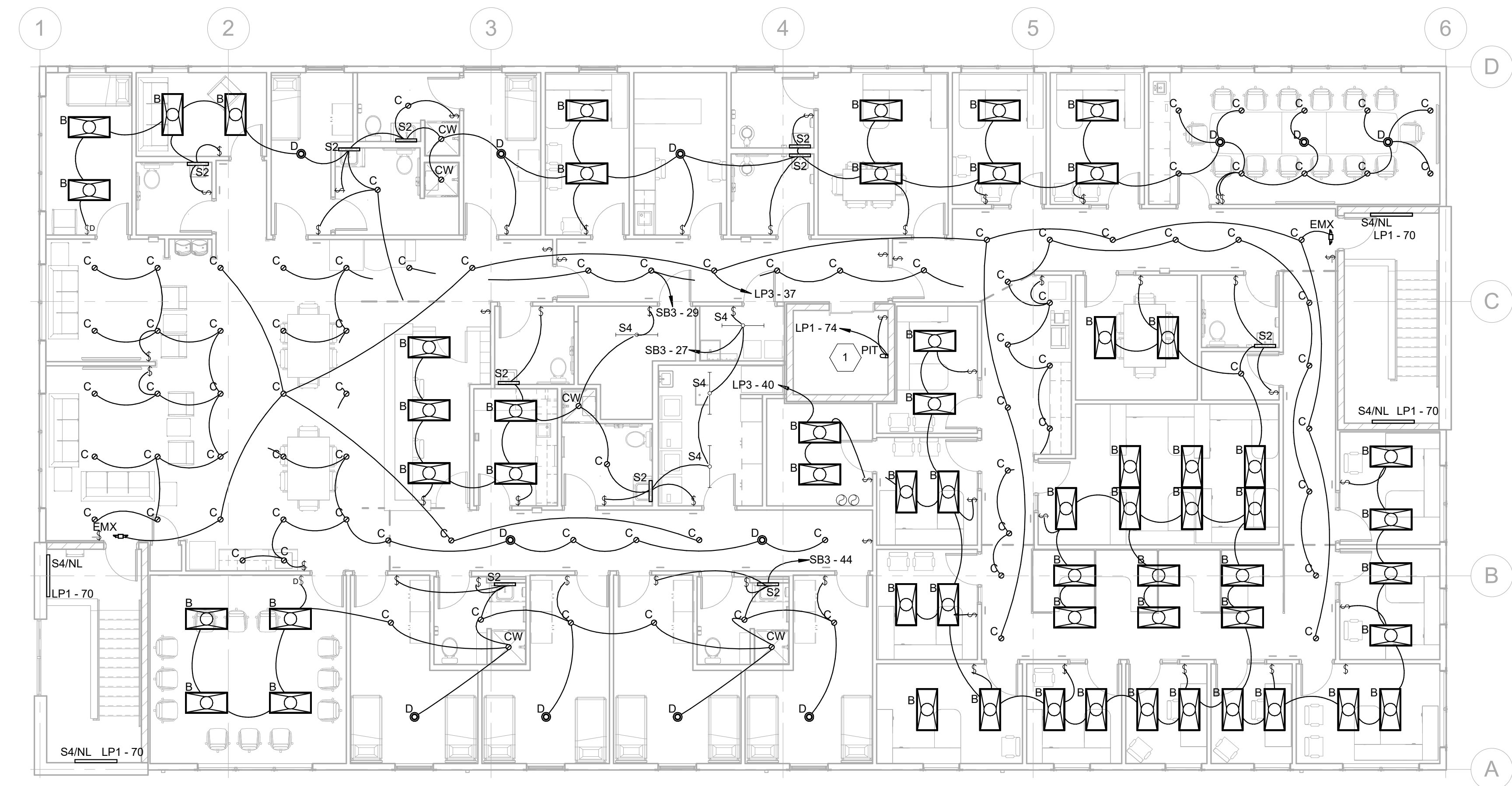
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LIGHTING PLAN - 3RD FLOOR

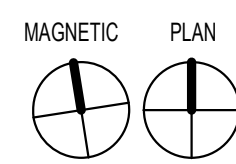
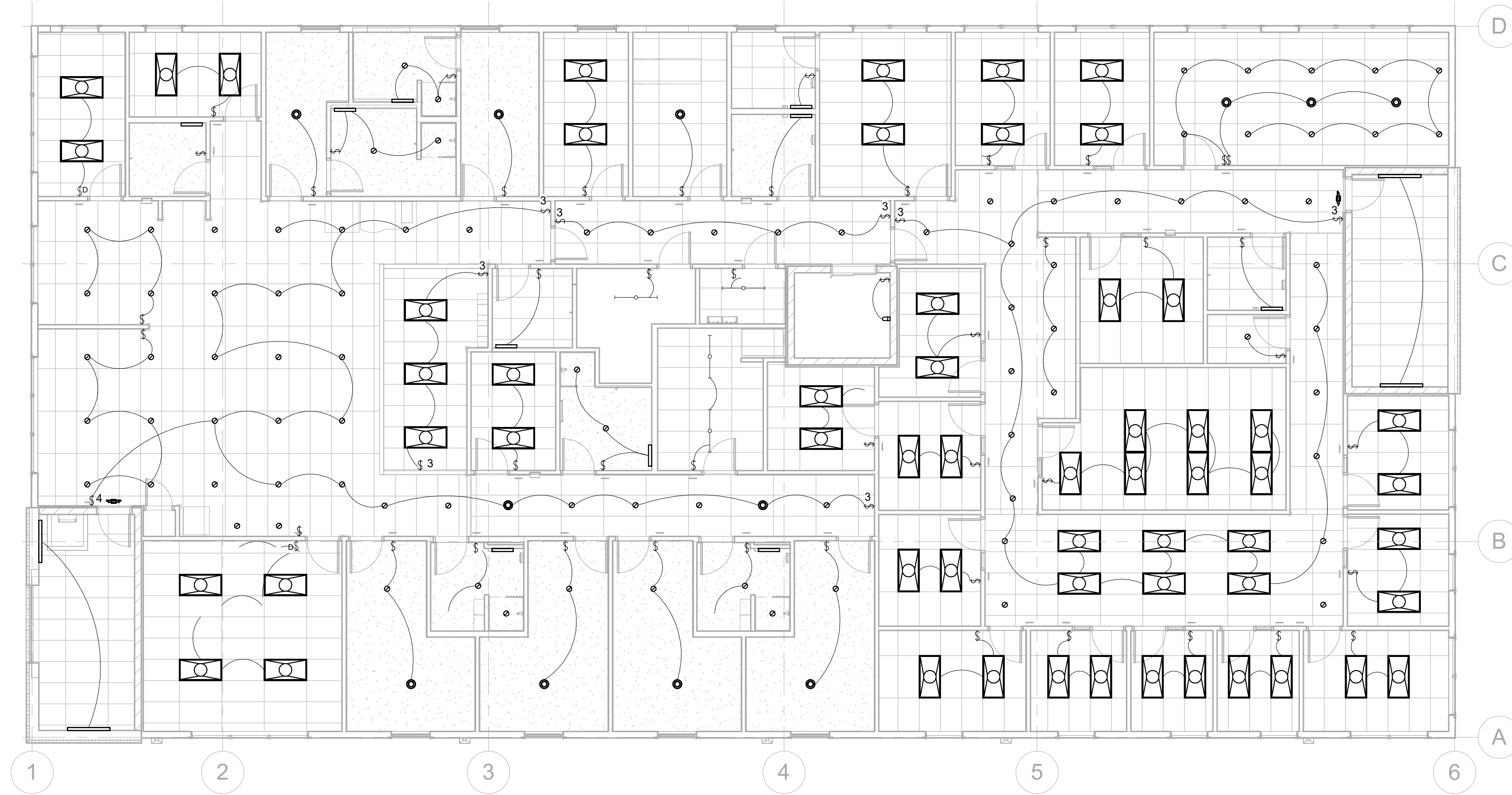
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**E202**



**1 LIGHTING - 3RD FLOOR**  
E202 SCALE: 1/8" = 1'-0"

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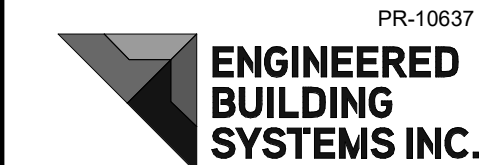


**1 REFLECTED CEILING PLAN 3RD FLOOR**

E202.1 SCALE: 1/8" = 1'-0" \*SHOWS SWITCHING INTENT ONLY, SEE NEXT SHEET FOR CIRCUITING INFORMATION



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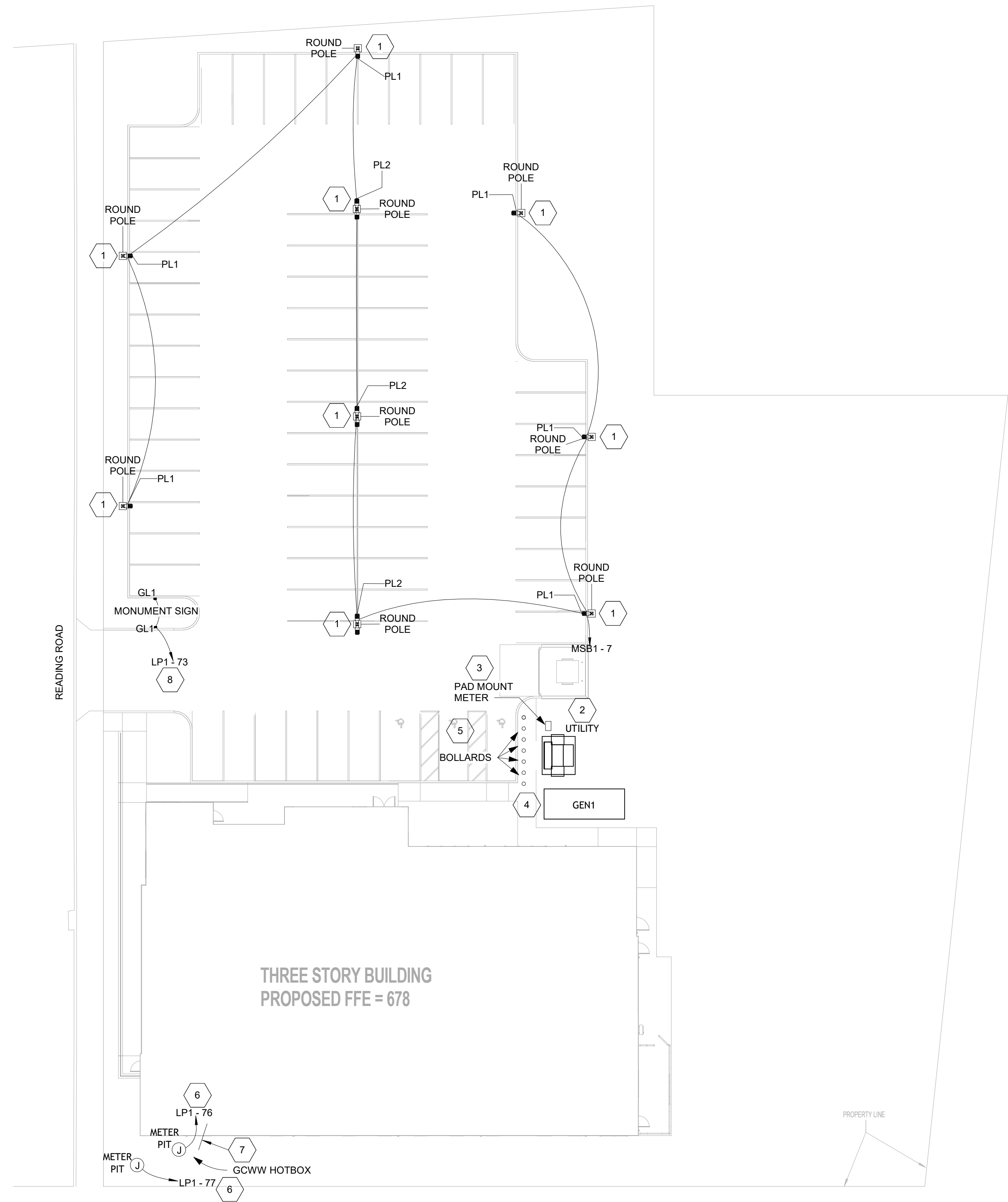
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REFLECTED CEILING  
 PLAN 3RD FLOOR

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**E202.1**

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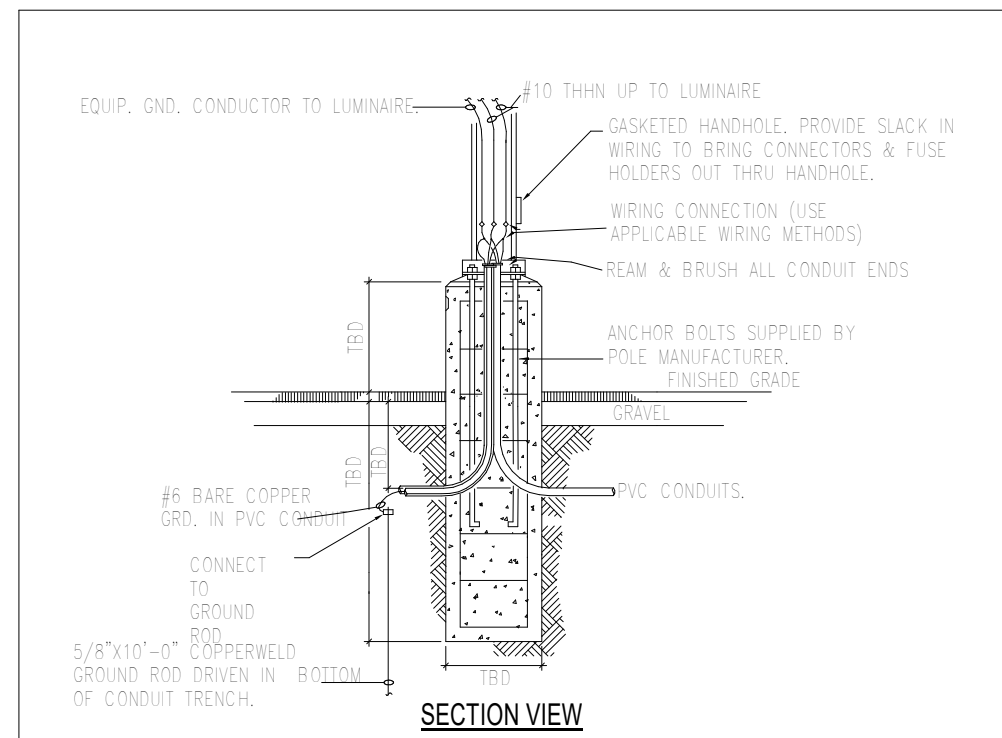


MAGNETIC PLAN  
**1** ELECTRICAL SITE PLAN  
 E300 SCALE: 1" = 20'-0"

- ### GENERAL NOTES - SITE
- A. ALL EQUIPMENT LOCATED OUTDOORS SHALL BE LABELED NEMA 3R.
  - B. PERFORM ALL EXCAVATION, TRENCHING AND BACKFILL REQUIRED FOR THE INSTALLATION OF THIS WORK. ALL BACKFILL SHALL BE BROUGHT TO FINISHED GRADE AND MATCH SURROUNDING CONDITIONS. RESTORE ALL DISTURBED PAVING AND LANDSCAPING TO ORIGINAL CONDITIONS. PULL BOXES SHALL BE PROVIDE OF A TYPE MEETING THE REQUIREMENTS AND CONDITIONS OF THE USE INTENDED.
  - C. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL SITE WORK WITH GENERAL CONTRACTOR AND OTHER BUILDING TRADES.
  - D. SEE SINGLE LINE DIAGRAM FOR FEEDER WIRE AND CONDUIT SIZE. ALL UNDERGROUND FEEDERS IN PVC SHALL HAVE AN EQUIPMENT GROUND WIRE SIZED PER NEC 250.
  - E. COORDINATE ALL UNDERGROUND UTILITY WORK INCLUDING BUT NOT LIMITED TO THE FOLLOWING: EC RESPONSIBLE FOR ALL PRIMARY/SECONDARY UG CONDUITS INSTALLED FROM UTILITY DEMARC TO PAD OR NEW POLE-MOUNT TRANSFORMER LOCATION, (WHEN REQUIRED). CONFIRM ALL UTILITY WORK WITH OWNER, ARCH, GC, UTILITY REPRESENTATIVE, ETC PRIOR TO CONSTRUCTION.
  - F. AS-BUILT DRAWINGS SHALL INCLUDE AN OVERALL SITE PLAN SHOWING ROUTING OF ALL CIRCUITRY AND LOCATIONS OF ALL TRANSFORMERS, ETC. AND PULL BOXES, ETC.
  - G. PROVIDE APPROPRIATE POWER AND GFCI PROTECTION FOR ALL ABOVE GROUND PIPING HEAT TRACE. COORDINATE VOLTAGE/PHASE WITH CONTRACTOR FURNISHING HEAT TRACE.

### KEYED SHEET NOTES

1	SEE POLE BASE DETAIL FOR MORE INFORMATION.
2	PROPOSED LOCATION OF PAD MOUNT TRANSFORMER. COORDINATE ALL REQUIRED WORK WITH OWNER'S REP, ARCHITECT, AND DUKE ENERGY PRIOR TO CONSTRUCTION.
3	UTILITY METER TO BE INSTALLED PAD MOUNTED NEXT TO UTILITY TRANSFORMER. INSTALL PER DETAIL IN CURRENT EDITION OF METER INSTALLERS GUIDE (DUKE RED BOOK).
4	PROPOSED LOCATION OF STANDBY GENERATOR. PROVIDE CONCRETE PAD PER MANUFACTURER'S REQUIREMENTS.
5	PROVIDE PROTECTIVE BOLLARDS AROUND UTILITY TRANSFORMER PER DUKE ENERGY REQUIREMENTS.
6	PROVIDE DEDICATED 120V/20A CIRCUIT IN HOTBOX AND METER PIT FOR FUTURE HEAT TRACE. COORDINATE TRENCH/PIT LOCATION WITH INSTALLING CONTRACTOR PRIOR TO CONSTRUCTION.
7	PROVIDE 1" EMPTY CONDUIT AND PULL STRING FROM ACCESSIBLE INTERIOR LOCATION TO METER PIT LOCATION FOR FIRE ALARM CABLING.
8	PROVIDE POWER TO LIGHTS AS SHOWN AND DATA (IF REQUIRED) FOR EXTERIOR MONUMENT SIGN. GROUND MOUNTED FLOOD LIGHTS TO BE CONTROLLED VIA PHOTOCELL (SEE 1ST FLOOR LIGHTING PLAN FOR CONTINUATION OF BRANCH CIRCUIT). COORDINATE ALL ASSOCIATED WORK WITH OWNER'S REP AND ARCHITECT PRIOR TO CONSTRUCTION.



**2** POLE BASE DETAIL - PARKING LOT  
 BY OTHERS INTS

NOTE - DETAIL ONLY SHOWS REQUIRED ELECTRICAL ITEMS. POLE BASE DIAMETER, DEPTH, AND REBAR TO BE DESIGNED BY STRUCTURAL ENGINEER AND/OR LIGHTING MANUFACTURERS GUIDELINES.



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ELECTRICAL SITE PLAN

10637

**E300**



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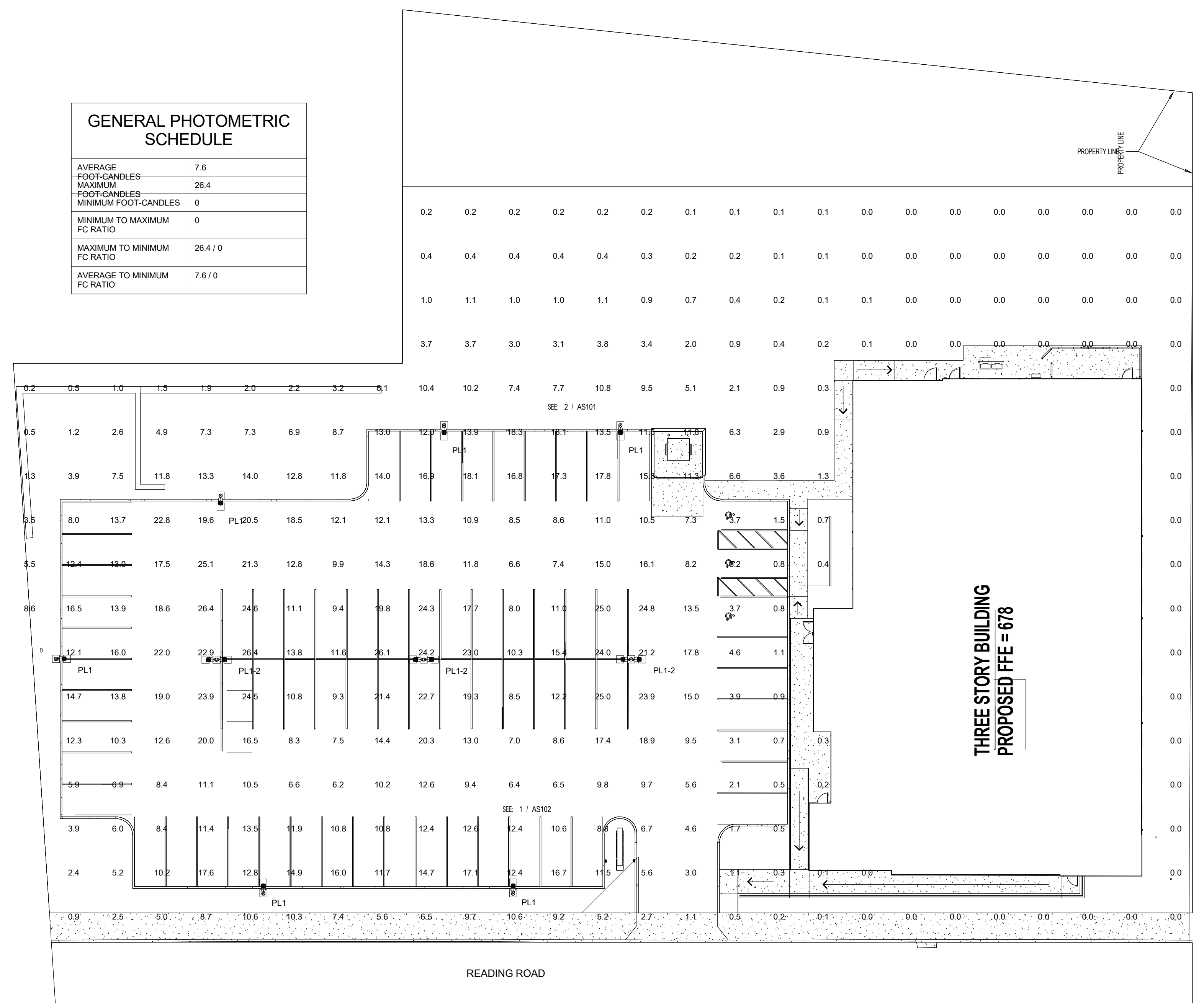
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ELECTRICAL SITE  
PHOTOMETRIC PLAN

10637

**E301**

AVERAGE FOOT-CANDLES	7.6
MAXIMUM FOOT-CANDLES	26.4
MINIMUM FOOT-CANDLES	0
MINIMUM TO MAXIMUM FC RATIO	0
MAXIMUM TO MINIMUM FC RATIO	26.4 / 0
AVERAGE TO MINIMUM FC RATIO	7.6 / 0



**1** ELECTRIC SITE PHOTOMETRIC  
E301 SCALE: 1" = 20'-0"

### Switchboard: MSB1

Location: ELECTRIC / DATA 128  
Supply From: 500 KVA, 120 V/208 V, Three...  
Mounting: Floor  
Enclosure: NEMA 1

Volts: 120/208 Wye  
Phases: 3  
Wires: 4

A.I.C. Rating: TBA  
Mains Type: MCB  
Mains Rating: 1600 A  
MCB Rating: 1600 A

Notes:

CKT	Circuit Description	# of Poles	Frame Size	Trip Rating	Load	Remarks
1	LP1	3	400 A	400 A	97858 VA	
2	LP2	3	125 A	125 A	34089 VA	
3	LP3	3	150 A	150 A	47300 VA	
4	ATS-SB	3	1000 A	1000 A	306102 VA	
5	ELEV-MOTOR 50HP	3	200 A	200 A	41040 VA	
6	EF-2	2	20 A	20 A	270 VA	
7	EXTERIOR POLE LIGHTING	2	20 A	20 A	2784 VA	
8						
9						
10						
11						
12						
<b>Total Conn. Load:</b>					529439 VA	
<b>Total Amps:</b>					1470 A	

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Cooling	416 VA	100.00%	416 VA	
Heating	197442 VA	100.00%	197442 VA	<b>Total Conn. Load:</b> 529439 VA
Lighting - Exterior	280 VA	125.00%	350 VA	<b>Total Est. Demand:</b> 496696 VA
Motor	44313 VA	123.27%	54624 VA	<b>Total Conn.:</b> 1470 A
Other	0 VA	0.00%	0 VA	<b>Total Est. Demand:</b> 1379 A
Receptacle	106180 VA	54.71%	58090 VA	
Power	1500 VA	100.00%	1500 VA	
Lighting	20554 VA	125.00%	25692 VA	
HEATING AND COOLING MOTOR	122796 VA	100.00%	122796 VA	
Non-Continuous	36700 VA	100.00%	36700 VA	

### Branch Panel: LP1

Location: ELECTRIC / DATA 128  
Supply From: MSB1  
Mounting: Surface  
Enclosure: 1

Volts: 120/208 Wye  
Phases: 3  
Wires: 4

A.I.C. Rating: TBD  
Mains Type: MLO  
Mains Rating: 400 A  
MCB Rating: 0 A

Notes:

CKT	Load Name	Trip	Poles	A	B	C	Poles	Trip	Load Name	CKT		
1	Duplex Receptacle_EBS, Receptacle	20 A	1	1440...	1180...		1	20 A	Duplex Receptacle_EBS	2		
3	Duplex Receptacle_EBS, Receptacle	20 A	1		1620...	1440...	1	20 A	Duplex Receptacle_EBS, Receptacle	4		
5	Duplex Receptacle_EBS, Receptacle	20 A	1			900 VA 720 VA	1	20 A	Duplex Receptacle_EBS	6		
7	Duplex Receptacle_EBS	20 A	1	1000...	1620...		1	20 A	Duplex Receptacle_EBS, Receptacle	8		
9	Duplex Receptacle_EBS	20 A	1		180 VA 1440...		1	20 A	Duplex Receptacle_EBS, Receptacle	10		
11	Duplex Receptacle_EBS, Receptacle	20 A	1		1260...	1620...	1	20 A	Duplex Receptacle_EBS, Receptacle	12		
13	Duplex Receptacle_EBS, Receptacle	20 A	1		1260...	360 VA	1	20 A	Duplex Receptacle_EBS, Receptacle	14		
15	Duplex Receptacle_EBS, Receptacle	20 A	1			1440...	1080...	1	20 A	Duplex Receptacle_EBS, Receptacle	16	
17	Duplex Receptacle_EBS, Receptacle	20 A	1		360 VA 1260...		1	20 A	Duplex Receptacle_EBS, Receptacle	18		
19	Duplex Receptacle_EBS, Receptacle	20 A	1		1260...	1080...	1	20 A	Duplex Receptacle_EBS, Receptacle	20		
21	Duplex Receptacle_EBS, Receptacle	20 A	1			1080...	720 VA	1	20 A	Duplex Receptacle_EBS, Receptacle	22	
23	Duplex Receptacle_EBS, Receptacle	20 A	1		500 VA 360 VA		1	20 A	Duplex Receptacle_EBS	24		
25	FRIG	20 A	1		1500...	360 VA	1	20 A	Duplex Receptacle_EBS	26		
27	MICROWAVE	20 A	1				4320...	1440...	1	20 A	Receptacle	28
29	VAV1-11	50 A	3		4320...	500 VA					30	
31				4320...	500 VA						32	
33						4320...	1200...				34	
35	VAV1-7	20 A	3				1680...	500 VA	1	20 A	SUMP	36
37				1680...	500 VA						38	
39						1680...	2520...		3	30 A	VAV1-10	40
41	VAV1-4	30 A	3				2040...	2520...				42
43				2040...	2520...							44
45						2040...	1656...		3	20 A	VAV1-9	46
47	VAV1-3	30 A	3				2040...	1656...				48
49				2040...	1656...							50
51						2040...	998 VA		2	20 A	EWH1-1	52
53	DSSI-1, DSSO-1	20 A	2				156 VA 998 VA					54
55				156 VA 1440...					3	20 A	VAV1-8	56
57	EWH1-1	20 A	2				998 VA 1440...					58
59							998 VA 1440...					60
61	EUH1-1	20 A	2	1144...	1200...				3	20 A	VAV1-1	62
63					1144...	1200...						64
65	BTH-120	20 A	1				500 VA 1200...					66
67	EF-3	20 A	1	324 VA 500 VA					1	20 A	BTH-120	68
69	EXT. SIGN	20 A	1			500 VA 943 VA			1	20 A	Lighting	70
71	Lighting	20 A	1				1189...	1526...	1	20 A	Lighting	72
73	Lighting, Lighting - Exterior	20 A	1	713 VA 34 VA					1	20 A	Lighting	74
75	Lighting	20 A	1		1346...	500 VA			1	20 A	METER PIT	76
77	METER PIT	20 A	1			500 VA						78
79												80
81												82
83												84
				<b>Total Load:</b>	31340 VA	34922 VA	31599 VA					
				<b>Total Amps:</b>	261 A	291 A	264 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Cooling	312 VA	100.00%	312 VA	
Heating	56970 VA	100.00%	56970 VA	<b>Total Conn. Load:</b> 97858 VA
Lighting - Exterior	280 VA	125.00%	350 VA	<b>Total Est. Demand:</b> 90539 VA
Motor	324 VA	125.00%	405 VA	<b>Total Conn.:</b> 272 A
Other	0 VA	0.00%	0 VA	<b>Total Est. Demand:</b> 251 A
Receptacle	27560 VA	68.14%	18780 VA	
Power	1500 VA	100.00%	1500 VA	
Lighting	5469 VA	125.00%	6836 VA	
Non-Continuous	5700 VA	100.00%	5700 VA	

### Branch Panel: LP3

Location: MEP 330  
Supply From: MSB1  
Mounting: Surface  
Enclosure: 1

Volts: 120/208 Wye  
Phases: 3  
Wires: 4

A.I.C. Rating: TBD  
Mains Type: MLO  
Mains Rating: 150 A  
MCB Rating: 0 A

Notes:

CKT	Load Name	Trip	Poles	A	B	C	Poles	Trip	Load Name	CKT	
1	Duplex Receptacle_EBS, Receptacle	20 A	1	900 VA 900 VA			1	20 A	Duplex Receptacle_EBS, Receptacle	2	
3	Receptacle	20 A	1		1080...	1080...	1	20 A	Receptacle	4	
5	Duplex Receptacle_EBS, Receptacle	20 A	1		1080...	900 VA	1	20 A	Duplex Receptacle_EBS, Receptacle	6	
7	Duplex Receptacle_EBS, Receptacle	20 A	1	1080...	900 VA		1	20 A	Receptacle	8	
9	Receptacle	20 A	1	1080...	1080...		1	20 A	Receptacle	10	
11	Receptacle	20 A	1			1080...	1080...	1	20 A	Receptacle	12
13	Receptacle	20 A	1	1080...	1080...		1	20 A	Duplex Receptacle_EBS, Receptacle	14	
15	Receptacle	20 A	1	1000...	1440...		1	20 A	Receptacle	16	
17	Receptacle	20 A	1		1080...	2040...	3	30 A	VAV3-3	18	
19	VAV3-2	20 A	3	1440...	2040...					20	
21				1440...	2040...					22	
23						1440...	2520...	3	30 A	VAV3-7	24
25	VAV3-6	20 A	3	624 VA 2520...						26	
27					624 VA 2520...					28	
29					624 VA 1200...		3	20 A	VAV3-11	30	
31	VAV3-10	20 A	3	1200...	1200...					32	
33					1200...	1200...				34	
35						1200...	360 VA	1	20 A	Receptacle	36
37	Lighting	20 A	1	314 VA							38
39						1732...		1	20 A	Lighting	40
41											42
				<b>Total Load:</b>	15263 VA	17438 VA	14604 VA				
				<b>Total Amps:</b>	128 A	146 A	122 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Heating	27072 VA	100.00%	27072 VA	
Receptacle	18280 VA	77.35%	14140 VA	<b>Total Conn. Load:</b> 47300 VA
Lighting	2046 VA	125.00%	2557 VA	<b>Total Est. Demand:</b> 43649 VA
				<b>Total Conn.:</b> 131 A
				<b>Total Est. Demand:</b> 121 A

Notes:

### Branch Panel: LP2

Location: MEP 234  
Supply From: MSB1  
Mounting: Surface  
Enclosure: 1

Volts: 120/208 Wye  
Phases: 3  
Wires: 4

A.I.C. Rating: TBD  
Mains Type: MLO  
Mains Rating: 125 A  
MCB Rating: 0 A

Notes:

CKT	Load Name	Trip	Poles	A	B	C	Poles	Trip	Load Name	CKT	
1	Receptacle	20 A	1	1080...	1080...		1	20 A	Receptacle	2	
3	Receptacle	20 A	1		1440...	1440...	1	20 A	Receptacle	4	
5	Duplex Receptacle_EBS	20 A	1			360 VA 1260...	1	20 A	Receptacle	6	
7	Duplex Receptacle_EBS	20 A	1	500 VA 180 VA			1	20 A	Duplex Receptacle_EBS	8	
9	Duplex Receptacle_EBS	20 A	1		180 VA 500 VA		1	20 A	Duplex Receptacle_EBS	10	
11	Duplex Receptacle_EBS	20 A	1			180 VA 180 VA	1	20 A	Duplex Receptacle_EBS	12	
13	Duplex Receptacle_EBS	20 A	1	180 VA 1440...			1	20 A	Receptacle	14	
15	Receptacle	20 A	1		1440...	540 VA	1	20 A	Receptacle	16	
17	Receptacle	20 A	1			720 VA 1260...	1	20 A	Receptacle	18	
19	Receptacle	20 A	1	1080...	1680...		3	20 A	VAV2-2	20	
21	VAV2-6	20 A	3		1440...	1680...				22	
23						1440...	1680...			24	
25				1440...	2520...		3	30 A	VAV2-8	26	
27	Lighting	20 A	1		314 VA 2520...					28	
29	Lighting	20 A	1			872 VA 2520...				30	
31	Receptacle	20 A	1	1000...						32	
33										34	
35										36	
37										38	
39										40	
41										42	
				<b>Total Load:</b>	12180 VA	11479 VA	10432 VA				
				<b>Total Amps:</b>	103 A	97 A	87 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Heating	16920 VA	100.00%	16920 VA	
Receptacle	15040 VA	83.24%	12520 VA	<b>Total Conn. Load:</b> 34089 VA
Lighting	1186 VA	125.00%	1483 VA	<b>Total Est. Demand:</b> 31853 VA
Non-Continuous	1000 VA	100.00%	1000 VA	<b>Total Conn.:</b> 95 A
				<b>Total Est. Demand:</b> 88 A

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Branch Panel: DP-SB											
Location: ELECTRIC / DATA 128				Volts: 120/208 Wye				A.I.C. Rating: TBD			
Supply From: ATS-SB				Phases: 3				Mains Type: MLO			
Mounting: Surface				Wires: 4				Mains Rating: 1000 A			
Enclosure: 1								MCB Rating: 0 A			
Notes:											
CKT	Load Name	Trip	Poles	A	B	C	Poles	Trip	Load Name	CKT	
1	SB1	125 A	3	1224...	2765...	9720...	2496...		3 225 A	SB2	2
3	--	--	--						--	--	4
5	--	--	--						--	--	6
7	SB3	225 A	3	2337...	1364...				3 150 A	RTU-2	8
9	--	--	--						--	--	10
11	--	--	--						--	--	12
13	RTU-1	150 A	3	1364...	1364...				3 150 A	RTU-3	14
15	--	--	--						--	--	16
17	--	--	--						--	--	18
19	EF-1	20 A	2	1248...					--	--	20
21	--	--	--						--	--	22
23											24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42
<b>Total Load:</b>				105452 VA	100556 VA	100097 VA					
<b>Total Amps:</b>				879 A	839 A	834 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Cooling	104 VA	100.00%	104 VA	
Heating	96480 VA	100.00%	96480 VA	<b>Total Conn. Load:</b> 306102 VA
Motor	2683 VA	125.03%	3354 VA	<b>Total Est. Demand:</b> 291314 VA
Other	0 VA	0.00%	0 VA	<b>Total Conn.:</b> 850 A
Receptacle	45300 VA	61.04%	27650 VA	<b>Total Est. Demand:</b> 809 A
Lighting	9188 VA	125.00%	11485 VA	
HEATING AND COOLING MOTOR	122796 VA	100.00%	122796 VA	
Non-Continuous	30000 VA	100.00%	30000 VA	

Notes:

Branch Panel: SB2											
Location: MEP 234				Volts: 120/208 Wye				A.I.C. Rating: TBD			
Supply From: DP-SB				Phases: 3				Mains Type: MLO			
Mounting: Surface				Wires: 4				Mains Rating: 225 A			
Enclosure: 1								MCB Rating: 0 A			
Notes:											
CKT	Load Name	Trip	Poles	A	B	C	Poles	Trip	Load Name	CKT	
1	Receptacle	20 A	1	900 VA	1180...				Duplex Receptacle_EBS	2	
3	Receptacle	20 A	1		1260...	500 VA			FRIG	4	
5	Duplex Receptacle_EBS	20 A	1			1500...	180 VA		Duplex Receptacle_EBS	6	
7	Receptacle	20 A	1	960 VA	960 VA				Receptacle	8	
9	Receptacle	20 A	1		1440...	360 VA			Duplex Receptacle_EBS, Receptacle	10	
11	Duplex Receptacle_EBS	20 A	1			500 VA	360 VA		Duplex Receptacle_EBS, Receptacle	12	
13	WASH-GFCI	20 A	1	1500...	1180...				Duplex Receptacle_EBS, Receptacle	14	
15	DRYER	30 A	2		2500...	180 VA			WP-GFCI	16	
17	--	--	--			2500...	2500...		2 30 A	DRYER	18
19	Duplex Receptacle_EBS, Receptacle	20 A	1	720 VA	2500...				--	--	20
21	Duplex Receptacle_EBS, Receptacle	20 A	1		1260...	1080...			1 20 A	Duplex Receptacle_EBS, Receptacle	22
23	Duplex Receptacle_EBS	20 A	1			720 VA	1440...		1 20 A	Receptacle	24
25	Receptacle	20 A	1	1260...	1440...				1 20 A	Receptacle	26
27	Duplex Receptacle_EBS, Receptacle	20 A	1		1440...	540 VA			1 20 A	Duplex Receptacle_EBS	28
29	VAV2-1	30 A	3			2520...	3120...		3 40 A	VAV2-3A	30
31	--	--	--	2520...	3120...				--	--	32
33	--	--	--		2520...	3120...			--	--	34
35	VAV2-3B	40 A	3			3120...	1440...		3 20 A	VAV2-4	36
37	--	--	--		3120...	1440...			--	--	38
39	--	--	--		3120...	1440...			--	--	40
41	VAV2-5	20 A	3			840 VA	2280...		3 30 A	VAV2-7	42
43	--	--	--	840 VA	2280...				--	--	44
45	--	--	--		840 VA	2280...			--	--	46
47	Lighting	20 A	1			1042...	1117...		1 20 A	Lighting	48
49	Lighting	20 A	1	1064...	720 VA				1 20 A	Receptacle	50
51	L5-30R	30 A	1		540 VA	540 VA			1 30 A	L5-30R	52
53	L5-30R	30 A	1			540 VA					54
55											56
57											58
59											60
<b>Total Load:</b>				27652 VA	24960 VA	25620 VA					
<b>Total Amps:</b>				231 A	208 A	214 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Heating	39960 VA	100.00%	39960 VA	
Other	0 VA	0.00%	0 VA	<b>Total Conn. Load:</b> 78228 VA
Receptacle	21200 VA	73.58%	15600 VA	<b>Total Est. Demand:</b> 73397 VA
Lighting	3222 VA	125.00%	4028 VA	<b>Total Conn.:</b> 217 A
Non-Continuous	14000 VA	100.00%	14000 VA	<b>Total Est. Demand:</b> 204 A

Notes:

Branch Panel: SB1											
Location: ELECTRIC / DATA 128				Volts: 120/208 Wye				A.I.C. Rating: TBD			
Supply From: DP-SB				Phases: 3				Mains Type: MLO			
Mounting: Surface				Wires: 4				Mains Rating: 125 A			
Enclosure: 1								MCB Rating: 0 A			
Notes:											
CKT	Load Name	Trip	Poles	A	B	C	Poles	Trip	Load Name	CKT	
1	MW-GFCI	20 A	1	1500...	500 VA				1 20 A	FRIG	2
3	VEND-GFCI	20 A	1		960 VA	960 VA			1 20 A	VEND-GFCI	4
5	GFCI	20 A	1						180 VA	1260...	6
7	Receptacle	20 A	1	720 VA	720 VA				1 20 A	Duplex Receptacle_EBS, Receptacle	8
9	Receptacle	20 A	1		1440...	360 VA			1 20 A	Receptacle	10
11	Receptacle	20 A	1			1080...	360 VA		1 20 A	Duplex Receptacle_EBS	12
13	Receptacle	20 A	1	1080...	840 VA				3 20 A	VAV1-5	14
15	VAV1-6	30 A	3		2400...	840 VA			--	--	16
17	--	--	--			2400...	840 VA		--	--	18
19	--	--	--	2400...	2760...				3 30 A	VAV1-2	20
21						2760...			--	--	22
23	Lighting	20 A	1			1226...	2760...		--	--	24
25	Lighting	20 A	1	1620...	180 VA				1 20 A	Duplex Receptacle_EBS	26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42
<b>Total Load:</b>				12249 VA	9720 VA	10052 VA					
<b>Total Amps:</b>				103 A	81 A	84 A					

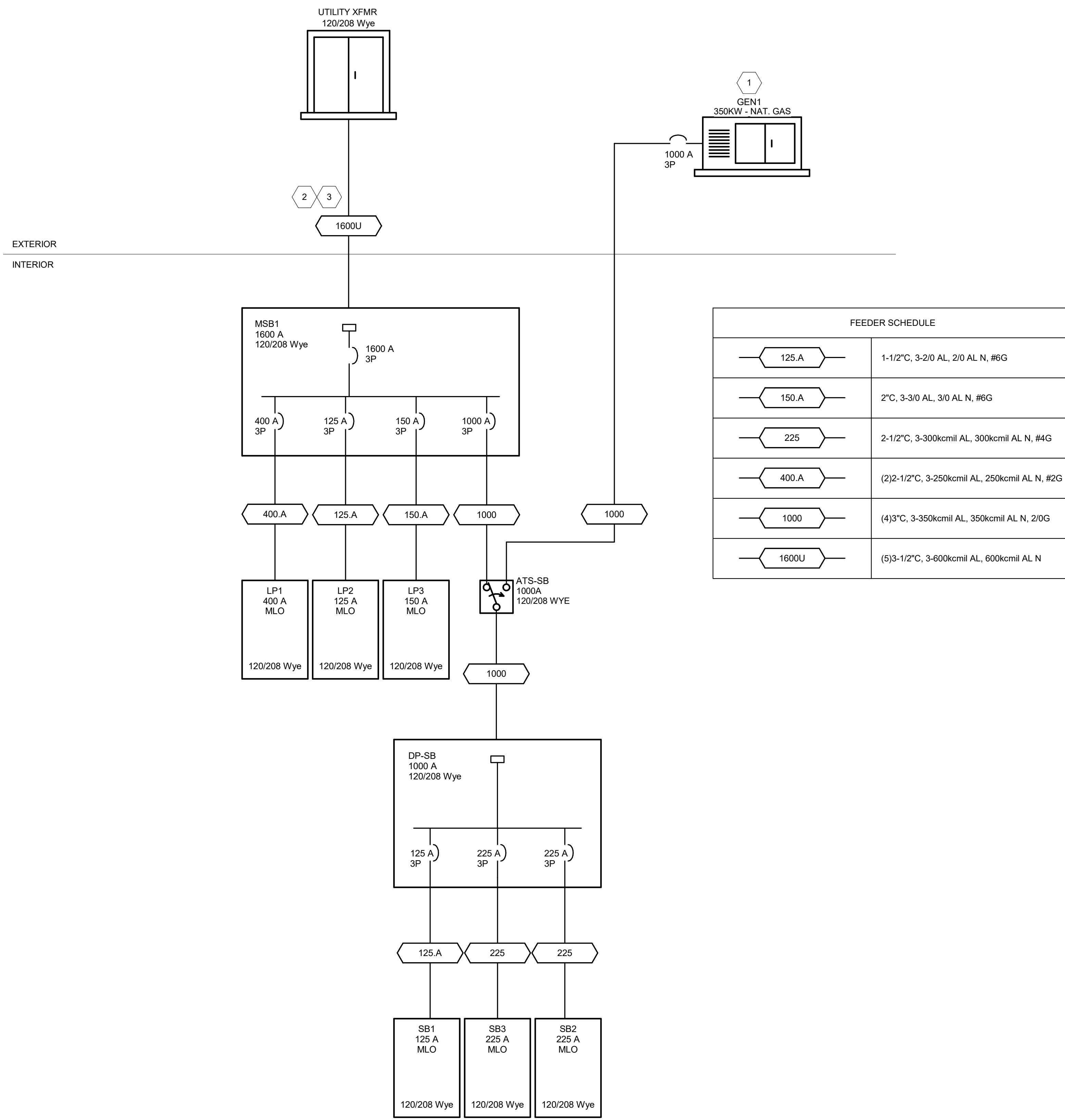
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Heating	18000 VA	100.00%	18000 VA	
Receptacle	9300 VA	100.00%	9300 VA	<b>Total Conn. Load:</b> 32016 VA
Lighting	2846 VA	125.00%	3558 VA	<b>Total Est. Demand:</b> 32698 VA
Non-Continuous	2000 VA	100.00%	2000 VA	<b>Total Conn.:</b> 89 A
				<b>Total Est. Demand:</b> 91 A

Notes:

Branch Panel: SB3											
Location: MEP 330				Volts: 120/208 Wye				A.I.C. Rating: TBD			
Supply From: DP-SB				Phases: 3				Mains Type: MLO			
Mounting: Surface				Wires: 4				Mains Rating: 225 A			
Enclosure: 1								MCB Rating: 0 A			
Notes:											
CKT	Load Name	Trip	Poles	A	B	C	Poles	Trip	Load Name	CKT	
1	Duplex Receptacle_EBS, Receptacle	20 A	1	1440...	1080...				1 20 A	Receptacle	2
3	Duplex Receptacle_EBS	20 A	1		360 VA	1260...			1 20 A	Duplex Receptacle_EBS, Receptacle	4
5	Receptacle	20 A	1			1440...	360 VA		1 20 A	Duplex Receptacle_EBS, Receptacle	6
7	FRIG	20 A	1	500 VA	180 VA				1 20 A	Duplex Receptacle_EBS	8
9	Duplex Receptacle_EBS	20 A	1		1180...	960 VA			1 20 A	Receptacle	10
11	Duplex Receptacle_EBS, Receptacle	20 A	1			180 VA	1500...		1 20 A	WASH-GFCI	12
13	Receptacle	20 A	1	960 VA	2500...				2 30 A	DRYER	14
15	WASH-GFCI	20 A	1		1500...	2500...			--	--	16
17	DRYER	30 A	2		2500...	500 VA			1 20 A	FRIG	18
19	--	--	--	2500...	180 VA				1 20 A	Duplex Receptacle_EBS	20
21	Duplex Receptacle_EBS	20 A	1		180 VA	1440...			1 20 A	Duplex Receptacle_EBS, Receptacle	22
23	Duplex Receptacle_EBS, Receptacle	20 A	1			1440...	1620...		1 20 A	Duplex Receptacle_EBS, Receptacle	24
25	Duplex Receptacle_EBS	20 A	1	540 VA	2760...				3 30 A	VAV3-1	26
27	Lighting	20 A	1		1497...	2760...			--	--	28
29	Lighting	20 A	1			1123...	2760...		--	--	30
31	VAV3-4A	30 A	3	2880...	2880...				3 30 A	VAV3-4B	32
33	--	--	--		2880...	2880...			--	--	34
35	--	--	--			2880...	2880...		--	--	36
37	VAV3-8	20 A	3	1200...	1920...				3 20 A	VAV3-9	38
39	--	--	--		1200...	1920...			--	--	40
41	--	--	--			1200...	1920...		--	--	42
43	VAV3-5	20 A	3	1200...	499 VA				1 20 A	Lighting	44
45	--	--	--			1200...	52 VA		2 20 A	DSSO2-2	46
47	--	--	--				1200...	52 VA	--	--	48
49	Motor	20 A</									

THESE DRAWINGS AND SPECIFICATIONS ARE NOT AUTHORIZED TO BE USED AS CONTRACT DOCUMENTS. THESE DRAWINGS HAVE BEEN PREPARED TO DEMONSTRATE COMPLIANCE WITH APPLICABLE CODES, AND ARE INTENDED TO PROVIDE THE AUTHORITIES HAVING JURISDICTION WITH INFORMATION TO DETERMINE CODE COMPLIANCE. THE INSTALLING CONTRACTOR IS RESPONSIBLE TO ENSURE THAT MEANS, METHODS, AND MATERIALS USED IN CONSTRUCTION ARE INSTALLED IN ACCORDANCE WITH ANY CONTRACTUAL AGREEMENT THAT MAY EXIST WITH AN OWNER. CONSTRUCTION MANAGER, GENERAL CONTRACTOR, ETC. EBS ACCEPTS NO RESPONSIBILITY OR LIABILITY FOR THE COMPLIANCE OR CONDITION OF EXISTING EQUIPMENT AND WIRING.

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FEEDER SCHEDULE	
125.A	1-1/2" C, 3-2/0 AL, 2/0 AL N, #6G
150.A	2" C, 3-3/0 AL, 3/0 AL N, #6G
225	2-1/2" C, 3-300kcmil AL, 300kcmil AL N, #4G
400.A	(2)2-1/2" C, 3-250kcmil AL, 250kcmil AL N, #2G
1000	(4)3" C, 3-350kcmil AL, 350kcmil AL N, 2/0G
1600U	(5)3-1/2" C, 3-600kcmil AL, 600kcmil AL N

### GENERAL NOTES - SINGLE LINE DIAGRAM

- A. ALL BREAKERS SHALL BE RATED TO WITHSTAND THE AVAILABLE FAULT CURRENT AT THEIR LOCATION. WHERE SERIES-RATED COMBINATIONS ARE USED IN ACCORDANCE WITH NEC 240.86 (B) AND (C) THE CONTRACTOR AND/OR HIS EQUIPMENT SUPPLIER MUST PROVIDE APPROPRIATE DOCUMENTATION AND LABELING.
- B. WHERE BREAKERS WITH ADJUSTABLE SETTINGS ARE FURNISHED TO THE PROJECT, THE MANUFACTURER'S REP SHALL IDENTIFY AND PROVIDE THE APPROPRIATE SETTINGS TO THE ELECTRICAL CONTRACTOR FOR HIS USE IN INSTALLATION.
- C. PANEL SCHEDULES INDICATE BREAKER SIZE ONLY. PROVIDE AFCI/GFCI PROTECTION AS REQUIRED BY NEC. COORDINATE FINAL BREAKER SIZES/TYPES FOR ITEMS FURNISHED BY OTHERS WITH SHOP DRAWINGS OR PRODUCT INFORMATION FOR ACTUAL EQUIPMENT BEING CONNECTED.
- D. ELECTRICAL CONTRACTOR SHALL NOT ORDER OR PURCHASE ANY MATERIALS OR EQUIPMENT UNTIL PERMIT DRAWINGS HAVE BEEN APPROVED BY AHJ.
- E. PROVIDE SELECTIVE COORDINATION FOR EMERGENCY SYSTEM OVERCURRENT PROTECTION DEVICES IN ACCORDANCE WITH NEC 700.27.
- F. PROVIDE GROUND-FAULT PROTECTION FOR EQUIPMENT IN ACCORDANCE WITH NEC 240.13 AND NEC 230.95.
- G. OVERCURRENT PROTECTION DEVICES SUPPLYING TRANSFORMERS WHICH ARE NOT LOCATED WITHIN SIGHT OF THEIR OVERCURRENT PROTECTION SHALL BE LOCKABLE AND THE TRANSFORMER SHALL BE FIELD MARKED WITH THE LOCATION OF THE OVERCURRENT PROTECTION DEVICE.
- H. CONTRACTOR TO PROVIDE GROUNDING AND BONDING AS REQUIRED FOR ELECTRICAL SYSTEMS. GROUNDING AND BONDING IS CONSIDERED MEANS AND METHODS OF CONSTRUCTION, AND SHOULD BE COMPLETED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH NEC 250. GAS PIPING SYSTEMS MUST BE BONDED PER UTILITY PROVIDER'S INSTALLATION GUIDELINES WHERE REQUIRED.
- I. PROVIDE SURGE PROTECTION IN ACCORDANCE WITH NEC 230.67

### KEYED SHEET NOTES

1	BASIS OF DESIGN GENERATOR IS KOHLER 350KW 120/208Y NATURAL GAS TYPE. PROVIDE WEATHERPROOF ENCLOSURE. SEE DETAILS SHEETS FOR MORE INFORMATION.
2	PROVIDE SURGE PROTECTION IN ACCORDANCE WITH NEC 230.67
3	PROVIDE SURGE PROTECTION IN ACCORDANCE WITH NEC 230.67



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ELECTRICAL SINGLE LINE DIAGRAM

10637

**E402**

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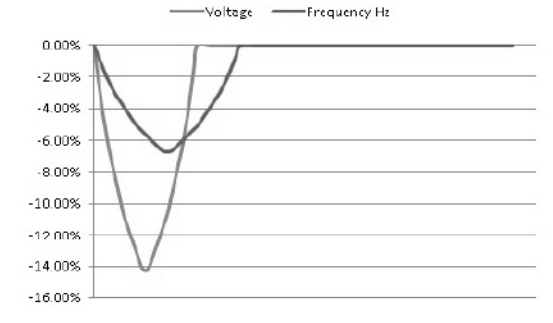


Sizing Report

Model : 350REZXD, Alternator : 4M4019

Load Profile

Step #1	Qty	Run			Start			Volt Dip %	Freq Dip %	Volt. Dist. %
		kW	kVA	PF	kW	kVA	PF			
Motor PANEL DP-SB   MOTOR 3.12 kVA 3 Phase Motor code : K Loaded NEMA Design ACROSS THE LINE	1	2.22	3.12	0.71	12.01	19.69	0.61			
Non Linear Load PANEL DP-SB   COOLING	1	0.09	0.10	0.90	0.09	0.10	0.90			
Non Linear Load PANEL DP-SB   RECEPTACLE	1	22.96	28.70	0.80	22.96	28.70	0.80			
Light PANEL DP-SB   LIGHTING	1	10.34	12.92	0.80	10.34	12.92	0.80			
Non Linear Load PANEL DP-SB   NON-CONTINUOUS	1	22.80	28.50	0.80	22.80	28.50	0.80			
Linear Load PANEL DP-SB   HEATING	1	96.48	96.48	1.00	96.48	96.48	1.00			
<b>Step Total</b>		154.88	161.10	0.96	164.68	174.50	0.94	14	7	2
<b>Cum.Total</b>		154.88	161.10	0.96						



Report prepared by : Josh Matthias  
KOHLER Power Solutions Center  
26 July 2024  
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Sizing Report

Project Name : The Crossroads Center  
Customer's Name : Engineered Building Systems  
Customer contact : Dave Dannenfelser 859-795-3012

Project Information

Site Requirements		Application :	
Voltage :	120/208 V	Application :	Other
Phase :	3	Emission Requirement :	STATIONARY EMERGENCY (US EPA)
Frequency Hz :	60 Hz	Altitude :	750 Feet
Alt. Temp. Rise :	130C STANDBY @40C	Max. Ambient Temp. :	104 F
Duty :		Min. Genset Loading :	30 %
Qty of Gensets :	1	Max. Genset Loading :	90 %
Fuel Type :	NATURAL GAS	Country :	United States

Site Load Requirements Summary

Running kW :	270.27	Max. Starting kW :	156.62 in Step 2
Running kVA :	283.14	Max. Starting kVA :	279.45 in Step 2
Running P.F. :	0.95		

Generator Selection

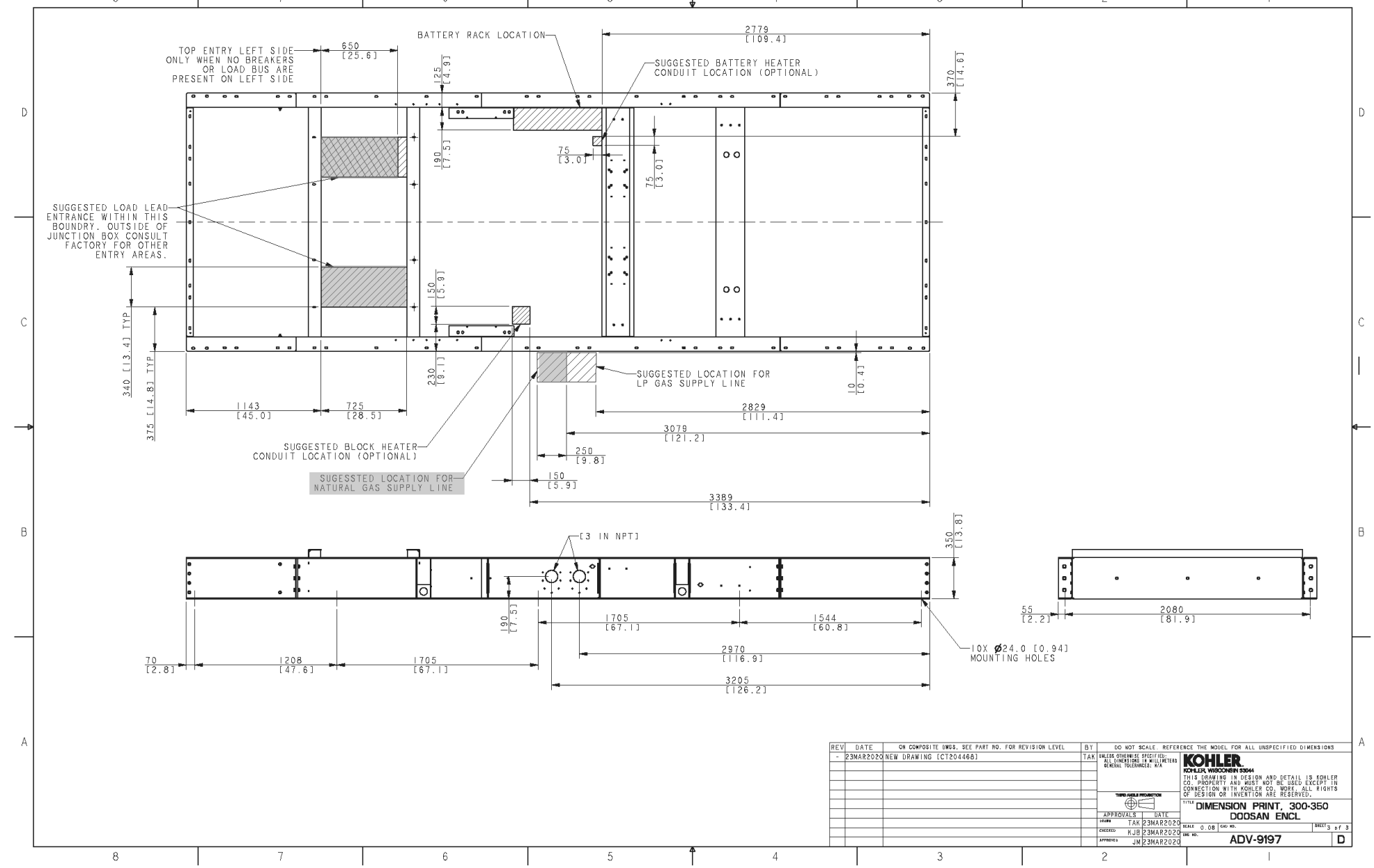
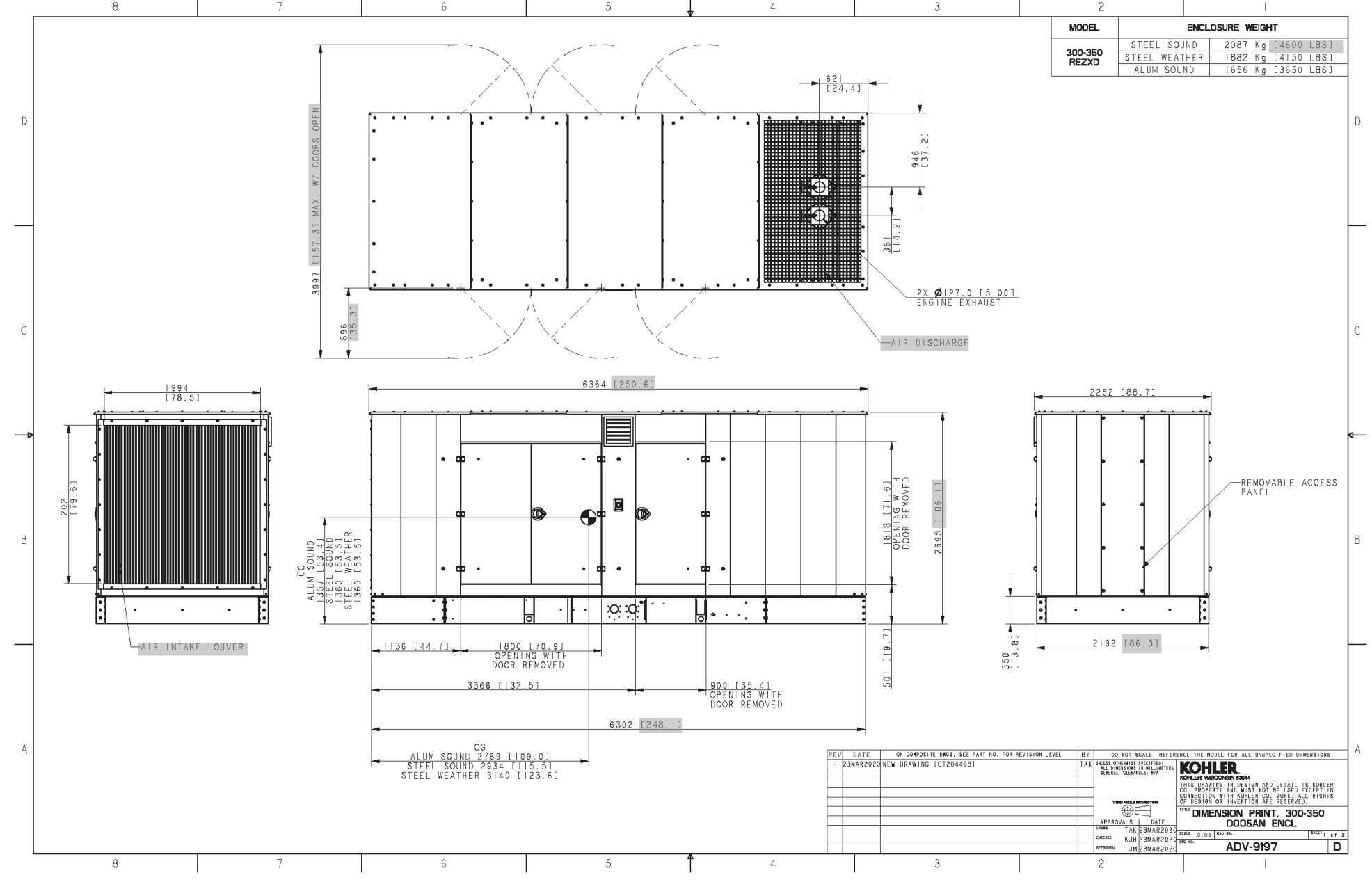
Genset Model :	350REZXD	Alternator :	4M4019
Engine :	D183L	Alternator Leads :	12
Displacement :	1,116.73 cu. In	Alt. Starting kVA at 35% V Dip :	995
RPM :	1800	Cal Alt temp Rise*	125
Rated kW :	350	Excitation System :	PMG
Site Alt / Temp De-Rated kW :	341		
UL 2200 Certified			

Generator Performance Summary

Voltage Dip Limit :	25 %	Calculated Voltage Dip :	18 %
Frequency Dip Limit :	25 %	Calculated Frequency Dip :	7 %
Harmonic Distortion Limit :	10 %	Calculated Harmonic Distortion :	2 %
		Calculated Genset % Loaded :	79 %

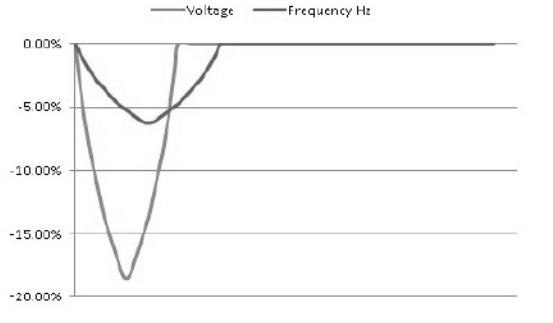
Report prepared by : Josh Matthias  
KOHLER Power Solutions Center  
26 July 2024

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Sizing Report

Step #2	Qty	Run			Start			Volt Dip %	Freq Dip %	Volt. Dist. %
		kW	kVA	PF	kW	kVA	PF			
Air Conditioner PANEL DP-SB   COOLING (RTU-1)	1	38.46	40.72	0.94	78.31	139.72	0.56			
Air Conditioner PANEL DP-SB   COOLING (RTU-2)	1	38.46	40.72	0.94	78.31	139.72	0.56			
<b>Step Total</b>		76.92	81.44	0.94	156.62	279.45	0.56	18	6	2
<b>Cum.Total</b>		231.81	242.45	0.96						

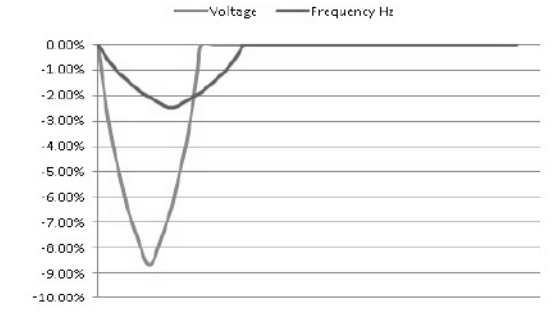


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Sizing Report

Step #3	Qty	Run			Start			Volt Dip %	Freq Dip %	Volt. Dist. %
		kW	kVA	PF	kW	kVA	PF			
Air Conditioner PANEL DP-SB   COOLING (RTU-3)	1	38.46	40.72	0.94	78.31	139.72	0.56	9	2	2
<b>Step Total</b>		38.46	40.72	0.94	78.31	139.72	0.56	9	2	2
<b>Cum.Total</b>		270.27	283.14	0.95						
<b>Grand Total</b>		270.27	283.14	0.95				18	7	2



Report prepared by : Josh Matthias  
KOHLER Power Solutions Center  
26 July 2024  
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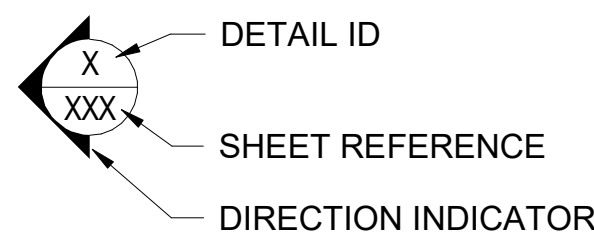
GENERATOR DETAILS  
FOR REFERENCE ONLY

10637

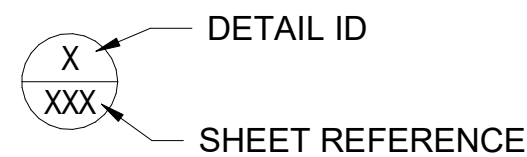
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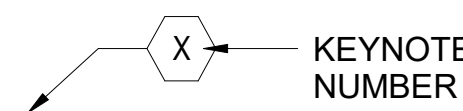
## REFERENCE AND KEYNOTE SYMBOLS



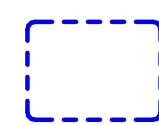
ELEVATION REFERENCE SYMBOL



CALLOUT REFERENCE SYMBOL

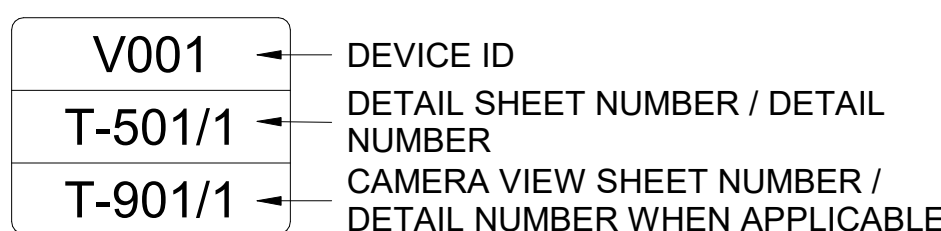


KEYNOTE REFERENCE SYMBOL

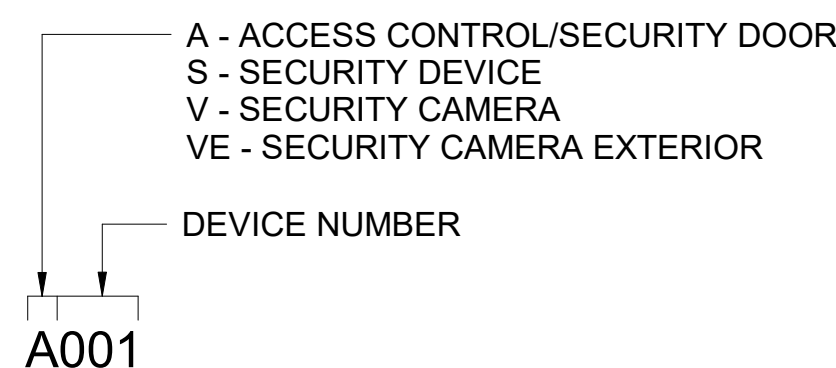


ACCESS CONTROL/SECURITY DOOR SURROUND CALLOUT

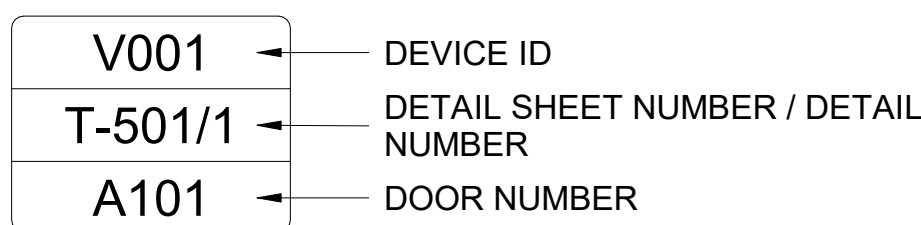
## SHEET AND TAG SYMBOLS



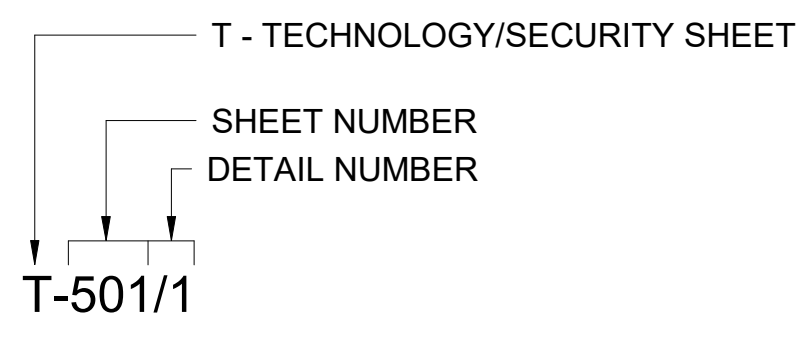
SECURITY CAMERA TAG SYMBOL



DEVICE ID



ACCESS CONTROL/SECURITY TAG SYMBOL



DETAIL AND CAMERA VIEW SHEET NUMBER ID

## GENERAL SYMBOLS

SYMBOL	DESCRIPTION
	JUNCTION BOX WALL MOUNTED
	JUNCTION BOX MOUNTED IN CEILING
	JUNCTION BOX MOUNTED IN FLOOR
	PULL BOX
	POWER POLE WITH DEVICES INDICATED (P-POWER, T-TELECOM, P/T-POWER AND TELECOM)
	VERTICAL CONDUIT - SIZE AND TYPE AS NOTED
	BREAK SYMBOL
	CONDUIT SLEEVE WITH BUSHINGS
	J-HOOK PATHWAYS

## CLOCK SYMBOLS

SYMBOL	SECTION	DESCRIPTION
	275313	WALL-MOUNTED ANALOG DUAL FACE CLOCK.
	275313	WALL-MOUNTED ANALOG SINGLE FACE CLOCK.
	275313	WALL-MOUNTED SINGLE FACE PUBLIC ADDRESS IP SPEAKER WITH DIGITAL CLOCK DISPLAY, LED FLASHERS, AND TALKBACK MICROPHONE.
	275313	WALL-MOUNTED DUAL FACE PUBLIC ADDRESS IP SPEAKER WITH DIGITAL CLOCK DISPLAY, LED FLASHERS, AND TALKBACK MICROPHONE.
	275313	WALL-MOUNTED SINGLE FACE DIGITAL CLOCK DISPLAY AND LED FLASHERS.
	275313	WALL-MOUNTED DUAL FACE DIGITAL CLOCK DISPLAY AND LED FLASHERS.

## SHEET INDEX

SHEET NUMBER SHEET NAME

T001	TECHNOLOGY LEGEND
T002	TECHNOLOGY LEGEND
T003	TECHNOLOGY NOTES
TC101	COMPOSITE PATHWAY FIRST FLOOR REFLECTIVE CEILING PLAN
TC102	COMPOSITE PATHWAY SECOND FLOOR REFLECTIVE CEILING PLAN
TC103	COMPOSITE PATHWAY THIRD FLOOR REFLECTIVE CEILING PLAN

## SHEET INDEX

SHEET NUMBER SHEET NAME

TN010	DATA SITE PLAN
TN101	DATA FIRST FLOOR PLAN
TN102	DATA SECOND FLOOR PLAN
TN103	DATA THIRD FLOOR PLAN
TN401	TECHNOLOGY ROOM 218A ENLARGED AND ELEVATION PLANS
TN501	DATA DETAILS
TN601	TECHNOLOGY DATA DROP COUNT
TA010	AUDIO VISUAL SITE PLAN

## TELECOMMUNICATION SYMBOLS

SYMBOL	SECTION	DESCRIPTION
	270528	WIRE MESH OR SOLID BOTTOM CABLE TRAY SYSTEM (REFER TO PLANS). 12"Wx4"D UNLESS OTHERWISE NOTED. MOUNTING HEIGHT IS TO BOTTOM OF TRAY. HEIGHT VARIES, REFER TO PLANS FOR ADDITIONAL INFORMATION.
	270528	WHEN USING A LADDER RACK CABLE TRAY SYSTEM THE "LADDER RACK. 12" WIDE UNLESS OTHERWISE NOTED."
	271500, 273123	WALL PHONE OUTLET. REFER TO THE FACEPLATE DETAILS FOR ADDITIONAL INFORMATION.
	271500, 273123	DATA OUTLET. "M" SUBSCRIPT INDICATES QUANTITY OF CABLES/JACKS REQUIRED (Z INDICATES A BLANK FACEPLATE). REFER TO THE FACEPLATE DETAILS FOR ADDITIONAL INFORMATION.
	271500	DATA CEILING OUTLET. "M" SUBSCRIPT INDICATES QUANTITY OF CABLES/JACKS REQUIRED (Z INDICATES A BLANK FACEPLATE). REFER TO THE FACEPLATE DETAILS FOR ADDITIONAL INFORMATION.
	271500	DATA FLOOR OUTLET. "M" SUBSCRIPT INDICATES QUANTITY OF CABLES/JACKS REQUIRED (Z INDICATES A BLANK FACEPLATE). REFER TO THE FACEPLATE DETAILS FOR ADDITIONAL INFORMATION.
	271500, 272133	CEILING MOUNTED WIRELESS ACCESS POINT CABLING LOCATION. PROVIDE WITH 15' OF CABLE COILED ABOVE THE ACCESSIBLE CEILING.
	271500, 272133	WIRELESS ACCESS POINT WALL MOUNT CABLING LOCATION. PROVIDE WITH 15' OF CABLE COILED ABOVE THE ACCESSIBLE CEILING.
	271100	TELECOM RACK ENCLOSURE - WALL MOUNTED.
	271100	TELECOM RACK FLOOR MOUNTED WITH 6 INCH VERTICAL CABLE MANAGERS
	271100	TELECOM EQUIPMENT CABINET - FREE STANDING
	271100	FIBER LIU EQUIPMENT CABINET - WALL MOUNTED
	271100	TELECOM MAIN GROUND BUS (PBB) OR TELECOM GROUND BUS (SBB)
	271300, 271500	CONSOLIDATION POINT
	273123	PROVIDE TELEPHONE HANDSET ASSOCIATED WITH ADJACENT FACEPLATE. (REFER TO TELEPHONE SPECIFICATIONS FOR DETAILS).

## AUDIO VISUAL SYMBOLS

SYMBOL	SECTION	DESCRIPTION
	274100	PRESENTATION POINT OUTLET LOCATION. REFER TO THE FACEPLATE DETAILS AND CONNECTIVITY DETAILS FOR ADDITIONAL INFORMATION.
	274100	DISPLAY OUTLET LOCATION. REFER TO THE FACEPLATE DETAILS AND CONNECTIVITY DETAILS FOR ADDITIONAL INFORMATION. -IF P INDICATES OUTLET FOR INTERACTIVE FLAT PANEL, MOUNTED AT 60° AFF. COORDINATE WITH MOUNTING BRACKET AND ARCHITECTURAL.
	274100	PRESENTATION POINT OUTLET LOCATION. REFER TO THE FACEPLATE DETAILS AND CONNECTIVITY DETAILS FOR ADDITIONAL INFORMATION.
	274100	DISPLAY OUTLET LOCATION. REFER TO THE FACEPLATE DETAILS AND CONNECTIVITY DETAILS FOR ADDITIONAL INFORMATION. -IF P INDICATES OUTLET FOR INTERACTIVE FLAT PANEL, MOUNTED AT 60° AFF. COORDINATE WITH MOUNTING BRACKET AND ARCHITECTURAL.
	274100	AUDIO/VIDEO OUTLET. REFER TO THE KEY NOTES ON FLOOR PLAN SHEET FOR OUTLET INFORMATION.
	274100	SOUND REINFORCEMENT AUDIO/VIDEO OUTLET. REFER TO THE FACEPLATE DETAILS AND CONNECTIVITY DETAILS FOR ADDITIONAL INFORMATION.
	274100	WALL-MOUNTED ULTRA SHORT THROW PROJECTOR. REFER TO THE CONNECTIVITY DETAILS FOR ADDITIONAL INFORMATION.
	274100	CEILING-MOUNTED PROJECTOR. REFER TO THE CONNECTIVITY DETAILS FOR ADDITIONAL INFORMATION.
		SINGLE POLE DOUBLE THROW WALL SWITCH FOR PROJECTION SCREEN.
	115213	CEILING MOUNTED ELECTRIC PROJECTION SCREEN.
	274000	AUDIO VISUAL CAMERA W/BROADCASTING CAPABILITIES.
	274000	DISPLAY MONITOR. "X" INDICATES SIZE OF MONITOR EQUIPPED WITH MOUNTING BRACKET. -IF P INDICATES INTERACTIVE FLAT PANEL. COORDINATE WITH ARCHITECTURAL.
	275120	AV RACK ENCLOSURE - WALL MOUNTED. SUBSCRIPT (X); (G) GYM; (AG) AUX GYM; (D) DINING; (T) THEATER; (N) NATATORIUM; (M) MUSIC; (I) INSTRUMENTAL; (V) VOCAL ROOM.
	274100, 275120, 275127	WALL MOUNTED SPEAKER. "S" INDICATES SOUND SYSTEM, OTHER SPEAKERS INCLUDE: (PA) PUBLIC ADDRESS; (CS) CLASSROOM SOUND FIELD; (SW) SUB WOOFER. SUBSCRIPT "V" INDICATES THAT THE SPEAKER IS VOLUME CONTROLLED.
	274100, 275120, 275127	CEILING MOUNTED SPEAKER. "S" INDICATES SOUND SYSTEM, OTHER SPEAKERS INCLUDE: (PA) PUBLIC ADDRESS; (CS) CLASSROOM SOUND FIELD; (SW) SUB WOOFER. SUBSCRIPT "P" INDICATES PENDANT MOUNTED. SUBSCRIPT "V" INDICATES THAT THE SPEAKER IS VOLUME CONTROLLED.
	274100, 275120, 275127	WALL MOUNTED MICROPHONE OUTLET. SUBSCRIPT NUMBER INDICATES QUANTITY OF MIC OUTLETS REQUIRED. (BLANK IMPLIES ONLY ONE).
	274100, 275120, 275127	MICROPHONE FLOOR OUTLET. SUBSCRIPT NUMBER INDICATES QUANTITY OF OUTLETS REQUIRED. (BLANK IMPLIES ONLY ONE) FLOOR BOX SPECIFIED ON THE POWER PLANS UNLESS OTHERWISE NOTED.
	274100, 275120, 275127	HANGING MIC FROM CEILING. SUBSCRIPT (H) FOR HANGING; (A) FOR ARRAY.
	275120	SOUND SYSTEM WALL MOUNTED DIGITAL MEDIA INPUT PLATE (1) HDMI, (1) USB, (1) MINI STEREO, (1) DISPLAY PORT.
	275120	SOUND SYSTEM WALL MOUNTED DIGITAL MEDIA INPUT PLATE (1) HDMI.
	275120	WALL MOUNTED MONITOR SPEAKER OUTLET. SUBSCRIPT NUMBER INDICATES QUANTITY OF OUTLETS REQUIRED. (BLANK IMPLIES ONE)
	275120	MONITOR SPEAKER FLOOR OUTLET. SUBSCRIPT NUMBER INDICATES QUANTITY OF OUTLETS REQUIRED (BLANK IMPLIES ONLY ONE). FLOOR BOX SPECIFIED ON THE POWER PLANS UNLESS OTHERWISE NOTED.
	274000, 275120	TOUCH PANEL - WALL MOUNTED AUDIO VIDEO CONTROL INTERFACE.
	274119	THEATER INTERCOM SPEAKER STATION. (TICM); PRODUCTION INTERCOM MAIN CONTROL.
	274119	PRODUCTION INTERCOM INPUT PLATE
	275116	PUBLIC ADDRESS HORN
	275127	CLASSROOM SOUNDFIELD INFRARED RECEIVER.
	274119	WALL MOUNTED VOLUME CONTROL.
	274119	CEILING MOUNTED SOUND MASKING EMITTER.
	274119	CEILING MOUNTED WIRELESS MICROPHONE ANTENNA. (X INDICATES NUMBER DESIGNATION).
	274119	ASSISTED LISTENING INFRARED TRANSMITTER. SUBSCRIPT (X); (W) WIFI; (U) UHF.

## SHEET INDEX

SHEET NUMBER SHEET NAME

TA101	AUDIO VISUAL FIRST FLOOR PLAN
TA102	AUDIO VISUAL SECOND FLOOR PLAN
TA103	AUDIO VISUAL THIRD FLOOR PLAN
TA501	AUDIO VISUAL DETAILS
TY010	SECURITY SITE PLAN
TY101	SECURITY FIRST FLOOR PLAN
TY102	SECURITY SECOND FLOOR PLAN
TY103	SECURITY THIRD FLOOR PLAN

## SHEET INDEX

SHEET NUMBER SHEET NAME

TY501	SECURITY DETAILS
TY502	SECURITY DETAILS
TY503	SECURITY DETAILS
TY601	SECURITY SCHEDULES

## ACCESS CONTROL SYMBOLS

SYMBOL	SECTION	DESCRIPTION
	281523	INTERCOM DOOR STATION
	281523	INTERCOM DOOR STATION W/VIDEO
	281523	MASTER INTERCOM DOOR STATION
	281523	EMERGENCY CALL STATION
	281300	CARD READER. SUBSCRIPT (X); (L) LONG RANGE; (W) WIRELESS; (VP) VEHICULAR PEDESTAL.
	281300	CARD READER WITH PIN PAD
	281300	BIOMETRIC READER DEVICE ("_" INDICATES F-FINGER, H-HAND, I-IRIS, S-SIGNATURE, V-VOICE)
	281300	DOOR RELEASE STATION
	281300	ELECTRIC LOCK
	281300	MAGNETIC LOCK
	281300	DOOR CONTACT
	281300	REQUEST TO EXIT MOTION
	281300	REQUEST TO EXIT PUSH BUTTON
	281300	LOCAL SOUND
	281300	SCREENING DEVICE
	281300	WIRELESS LOCK
	281300	WIRELESS LOCK GATEWAY
	281300	ACCESS CONTROL PANEL - WALL MOUNTED

## VIDEO SURVEILLANCE SYMBOLS

SYMBOL	SECTION	DESCRIPTION
	282300	SINGLE SENSOR FIXED IP-CCTV SECURITY CAMERA. PROVIDE (1) UTP CABLE AND OUTLET.
	282300	DUAL SENSOR FIXED IP-CCTV SECURITY CAMERA. PROVIDE (1) UTP CABLE AND OUTLET.
	282300	SINGLE SENSOR PTZ IP-CCTV SECURITY CAMERA. PROVIDE (1) UTP CABLE AND OUTLET.
	282300	QUAD SENSOR FIXED IP-CCTV SECURITY CAMERA. PROVIDE (1) UTP CABLE AND OUTLET.
	282300	QUAD SENSOR 180 DEGREE FIXED IP-CCTV SECURITY CAMERA. PROVIDE (1) UTP CABLE AND OUTLET.
	282300	QUAD SENSOR 270 DEGREE FIXED IP-CCTV SECURITY CAMERA. PROVIDE (1) UTP CABLE AND OUTLET.
	282300	SINGLE SENSOR 360 DEGREE FIXED FISH EYE IP-CCTV SECURITY CAMERA. PROVIDE (1) UTP CABLE AND OUTLET.
SYMBOL	EXAMPLE	DESCRIPTION
		CAMERA WALL MOUNT
		CAMERA CORNER MOUNT
		CAMERA POLE MOUNT
		CAMERA PARAPET/TELESCOPIC MOUNT
		CAMERA CEILING MOUNT (NO MOUNTING SYMBOL)

## INTRUSION DETECTION SYMBOLS

SYMBOL	SECTION	DESCRIPTION
	281300	DURESS BUTTON
	281300	LOCK DOWN BUTTON
	281300	KEY SWITCH
	281300	ARM/DISARM KEYPAD
	281300	MOTION DETECTOR
	281300	MOTION DETECTOR - CEILING MOUNTED
	281300	GLASS BREAK SENSOR
	281300	GLASS BREAK SENSOR - CEILING MOUNTED
	281300	VIBRATION SENSOR
	281300	VIBRATION SENSOR - CEILING MOUNTED



EmbossDesign.com 906 Monmouth Street, Newport, KY 41071  
(859)431-8612



The Crossroads Center  
2114 Reading Road, Cincinnati, Ohio

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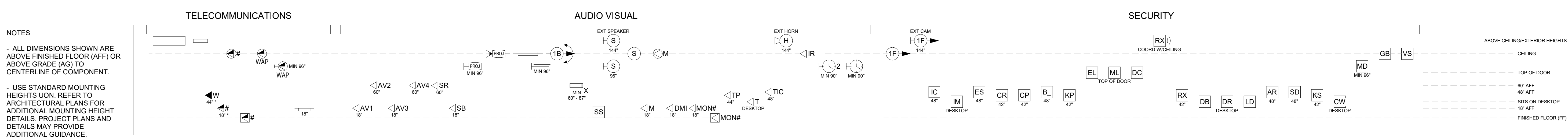
**The Crossroads Center**  
2114 Reading Road, Cincinnati, Ohio

**ABBREVIATIONS**

3R	NEMA 3R ENCLOSURE	CCTV	CLOSED CIRCUIT TELEVISION	ELEC	ELECTRIC, ELECTRICAL	MER	MAIN EQUIPMENT ROOM	PET	PROTECTED ENTRANCE TERMINAL	UL	UNDERWRITERS LABORATORIES
4X	NEMA 4X ENCLOSURE	GFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED	EMT	ELECTRIC METALLIC TUBING	MH	MAINTENANCE HOLE	PR	PAIR	UNIV	UNIVERSAL
A	AMPERES			EQUIP	EQUIPMENT	MIN	MINIMUM	PT	POKE THRU	UON	UNLESS OTHERWISE NOTED
AC	ABOVE COUNTER	CKT	CIRCUIT	ER	EQUIPMENT ROOM	MISC	MISCELLANEOUS	PTZ	PAN-TILT-ZOOM	UTP	UNSHIELDED TWISTED PAIR
ACS	ACCESS CONTROL SYSTEM	CLG	CEILING	ESS	ELECTRONIC SAFETY & SECURITY	MLO	MAIN LUGS ONLY	PVC	POLYVINYL CHLORIDE	V	VOLTS
AFC	ABOVE FINISHED CEILING	CLST	CLOSET	EXIST	EXISTING	MM	MULTIMODE FIBER	PWR	POWER	VIF	VERIFY IN FIELD
AFF	ABOVE FINISHED FLOOR	CO	COMMUNICATIONS OUTLET	FT	FEET	MNS	MASS NOTIFICATION SYSTEM	R	RECESSED	VOIP	VOICE OVER INTERNET PROTOCOL
AHJ	AUTHORITY HAVING JURISDICTION	COAX	COAXIAL	GEN	GENERATOR	MON	MONITOR	RGS	RIGID GALVANIZED STEEL	VSS	VIDEO SURVEILLANCE SYSTEM
AL	ALUMINUM	COMM	COMMUNICATIONS	GFI	GROUND FAULT INTERRUPT	MTD	MOUNTED	RM	ROOM	W	WATTS
ALT	ALTERNATIVE BID OPTIONS	CT	CABLE TRAY	GND	GROUND	MTG	MOUNTING	RMC	RIGID METAL CONDUIT	W/	WITH
ANNUN	ANNUNCIATOR	CU	COPPER	HH	HANDHOLE	NC	NORMALLY CLOSED	RU	NORMALLY CLOSED	WAP	WIRELESS ACCESS POINT
ARCH	ARCHITECT	DC	DIRECT CURRENT	IAW	IN ACCORDANCE WITH	NEC	NATIONAL ELECTRICAL CODE	SBB	SECONDARY BUS BAR	WP	WEATHERPROOF
ATS	AUTOMATIC TRANSFER SWITCH	DEG	DEGREE	IBC	INTERNATIONAL BUILDING CODE	NIC	NOT IN CONTRACT	SCR	SHORT CIRCUIT RATING	WPG	WEATHERPROOF WITH GROUND
AV	AUDIO VISUAL	DEMO	DEMOLITION	IDF	INTERMEDIATE DISTRIBUTION FRAME	NL	NIGHT LIGHT CIRCUIT	SCTP	SCREENED TWISTED PAIR	XFMR	TRANSFORMER
AVOIP	AUDIO VISUAL OVER INTERNET PROTOCOL	DEPT	DEPARTMENT	IG	ISOLATED GROUND	NO	NORMALLY OPEN	SF	SQUARE FEET	XP	EXPLOSION PROOF
AWG	AMERICAN WIRE GAUGE	DIA	DIAMETER	IMC	INTERMEDIATE METAL CONDUIT	NTS	NOT TO SCALE	SHT	SHEET	Y	WYE
BFG	BELOW FINISHED GRADE	DISC	DISCONNECT	IP	INTERNET PROTOCOL	OC	ON CENTER	SPEC	SPECIFICATIONS	Δ	DELTA
BKBD	BACKBOARD	DIST	DISTRIBUTION	JB	JUNCTION BOX	OFC	OPTIC FIBER CABLE	STD	STANDARD		
BLDG	BUILDING	DN	DOWN	KVA	KILOVOLT - AMPERES	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED	SURF	SURFACE		
BOTT	BOTTOM	DP	DEEP OR DEPTH	KW	KILOWATTS	OFOI	OWNER FURNISHED OWNER INSTALLED	TBD	TO BE DETERMINED		
C	CONDUIT	DPDT	DOUBLE POLE DOUBLE THROW	LAN	LOCAL AREA NETWORK	OICF	OWNER INSTALLED CONTRACTOR FURNISHED	TEL	TELEPHONE		
C/B	CIRCUIT BREAKER	DWG	DRAWING	LAN	LOCAL AREA NETWORK	OMS	LASER OPTIMIZED MULTIMODE, CLASS 3	TER	TELECOMMUNICATIONS EQUIP. ROOM		
C/T	CURRENT TRANSFORMERS	EA	EACH	MC	MAXIMUM	OS	OCCUPANCY SENSOR	TR	TELECOMMUNICATIONS ROOM		
CAB	CABINET	EC	ELECTRICAL CONTRACTOR	MCB	MAIN CROSS-CONNECT	OSP	OUTSIDE PLANT	TV	TELEVISION		
CAT	CATEGORY	EES	EARTH ELECTRODE SYSTEM	MCC	MOTOR CONTROL CENTER	PB	PULL BOX	TYP	TYPICAL		
CATV	COMMUNITY ANTENNA TELEVISION	EF	ENTRANCE FACILITY	MCM	THOUSAND CIRCULAR MILS	PBB	PRIMARY BUS BAR	U/G	UNDERGROUND		

**TYPICAL COMPONENT MOUNTING HEIGHTS**

**\*NOT ALL SYMBOLOGY MAY BE USED\***



**NOTES**

- ALL DIMENSIONS SHOWN ARE ABOVE FINISHED FLOOR (AFF) OR ABOVE GRADE (AG) TO CENTERLINE OF COMPONENT.
- USE STANDARD MOUNTING HEIGHTS UN. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL MOUNTING HEIGHT DETAILS. PROJECT PLANS AND DETAILS MAY PROVIDE ADDITIONAL GUIDANCE.

NO.	DESCRIPTION	DATE
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23-056

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## GENERAL NOTES

- NOT ALL NOTES INDICATED ON THIS SHEET MAY BE APPLICABLE FOR ALL PROJECT CONDITIONS. NOTES APPEARING ON VARIOUS DRAWINGS FOR DIFFERENT SYSTEMS AND MATERIALS ARE TO BE REVIEWED, COORDINATED AND ARE TO BE APPLIED TO ALL RELATED DRAWINGS AND DETAILS.
- THE DRAWINGS INDICATE THE QUANTITY, TYPE AND GENERAL LOCATION OF VOICE/DATA/CATV/AUDIO/VIDEO OUTLETS REQUIRED IN EACH SPACE. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND PROJECT MANAGEMENT NECESSARY FOR A TURNKEY SYSTEM.
- ALL MATERIALS SPECIFIED OR NOTED SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS, LICENSES, AND ALL UTILITY CHARGES, AND ARRANGE FOR ALL REQUIRED INSPECTIONS.
- REFER TO THE ARCHITECTURAL INTERIOR ELEVATIONS FOR DEVICE LOCATIONS AND MOUNTING HEIGHTS FOR ADDITIONAL DETAILS. COORDINATE EXACT DEVICE LOCATIONS PRIOR TO ROUGH-IN.
- ALL BIDDERS SHALL VISIT AND EXAMINE THE SITE. ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS SHALL BE PROMPTLY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION DURING THE BIDDING PERIOD. NO ALLOWANCE SHALL BE MADE TO THE CONTRACTOR FOR FAILURE TO IDENTIFY DISCREPANCIES DURING THE BIDDING PERIOD.
- THE CONTRACTOR SHALL INCLUDE ALL OVERTIME AND PREMIUM TIME WORK THAT MUST BE PERFORMED DURING THE PERIOD OF PERFORMANCE. NO ADDITIONAL COMPENSATION WILL BE AWARDED FOR OVERTIME WORK.
- COORDINATE EXACT LOCATIONS OF EQUIPMENT WITH OTHER TRADES. VERIFY EXACT WIRING AND CONNECTION REQUIREMENTS WITH SUBMITTAL DOCUMENTS BEFORE INSTALLATION. SPECIALTY OUTLET TYPES SHALL BE VERIFIED BEFORE ORDERING. ALL ELECTRICAL AND COMMUNICATION WORK SHOWN HERE MUST BE VERIFIED AND COORDINATED IN FIELD BEFORE INSTALLATION.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING AND NEW CONSTRUCTION FROM DAMAGE. EXISTING CEILINGS, WALLS, FLOORS AND ALL OTHER BUILDING COMPONENTS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION IF DAMAGED. ALL DAMAGES TO THE BUILDING OR ITS CONTENTS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE TO THE OWNERS SATISFACTION.
- ALL NEW CONSTRUCTION SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) AND CHAPTER 11 OF THE INTERNATIONAL BUILDING CODE.
- ALL WORK REQUIRING POWER OR COMMUNICATION OUTAGES OR DISRUPTION OF OWNER FUNCTIONS SHALL BE COORDINATED WITH THE PROJECT ENGINEER, OWNER AND OWNER ITS DEPARTMENT. REQUESTS FOR, NOTIFICATIONS OF, AND APPROVALS FOR OUTAGES AND DISRUPTIONS SHALL BE MADE TO OWNER AND THE ENGINEER IN WRITING, 2 WEEKS PRIOR TO THE REQUESTED OUTAGE DATE. OUTAGES SHALL NORMALLY OCCUR DURING THE OWNER'S "OFF HOURS".
- ALL COMMUNICATION WORK SHALL BE INSTALLED BY CERTIFIED CONTRACTORS AND THEIR EMPLOYEES PER THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL COORDINATE ALL EQUIPMENT INSTALLATION TO MAINTAIN HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. THE CONTRACTOR SHALL COORDINATE SYSTEMS INSTALLATION TO MINIMIZE CONFLICT WITH EXISTING BUILDING UTILITIES AND OTHER TRADES WORK.
- THE CONTRACTOR SHALL VERIFY EQUIPMENT RACK AND CABINET PLACEMENT AND LAYOUT WITH OWNER AND OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
- ANY LOW VOLTAGE CABLING IN AN OPEN-CEILING AREA (EXAMPLE GYMNASIUM) SHALL BE INSTALLED IN CONDUIT TO THE NEAREST ACCESSIBLE CABLE TRAY OR TELECOM ROOM (TR) UNLESS NOTED OTHERWISE.
- ALL INSTALLATIONS OF EXPOSED EQUIPMENT SHALL BE COORDINATED WITH ASSOCIATED ARCHITECTURAL DETAILS TO MEET INTENDED AESTHETIC APPEARANCE. ALL WIRING, CONDUITS, BACK BOXES AND OTHER ASSOCIATED CONNECTIONS SHALL BE CONCEALED BEHIND EQUIPMENT OR WITHIN EXPOSED MOUNTED BRACKETS. EXPOSED WIRING IS PROHIBITED.
- THE COLOR AND FINISH OF ALL EXPOSED DEVICES IN PUBLIC AREAS SHALL BE REVIEWED AND APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION.
- ALL CONDUIT FRAMING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. CONDUITS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO WALLS. ANGLED CONDUITS ARE PROHIBITED.
- INCLUDE ALL REQUIRED JUNCTION AND PULL BOXES REGARDLESS OF INDICATION ON THE DRAWINGS (WHICH DUE TO THE SYMBOLIC METHODS OF NOTATION, MAY BE OMITTED).
- PULL-BOXES SHALL BE PROVIDED WHERE THE COMBINED SUM OF THE BENDS EXCEEDS 180 DEGREES AND/OR EVERY 100 LINEAR FEET. THE BEND RADIUS FOR CONDUITS SHALL BE 10X THE OUTSIDE DIAMETER FOR OPTICAL FIBER AND 4X THE OUTSIDE DIAMETER FOR MULTIPAIR COPPER.
- PROVIDE LONG SWEEPING BENDS FOR ALL COMMUNICATIONS CONDUITS 2-INCHES AND LARGER. LB FITTINGS FOR COMMUNICATION CONDUITS ARE PROHIBITED.
- PROVIDE PULL TAPE IN ALL EMPTY CONDUIT AND INNERDUT. PULL TAPE SHALL BE RATED FOR 200 LBS IN ALL CONDUIT.
- CABLE TRAY SHALL BE TRAPEZE OR CANTILEVER MOUNTED ONLY. BOND ALL SECTIONS OF TRAY TOGETHER WITH MANUFACTURER APPROVED BONDING METHOD PER NEC. ALL CABLE TRAY TO BE 12-INCHES WIDE. UON. CABLE TRAY SHALL BE PROVIDED WITH 25 PERCENT SPARE CAPACITY.
- PROVIDE A MINIMUM OF FOUR (4) CONDUITS BETWEEN STACKED CLOSETS ON SUCCESSIVE FLOORS.
- ALL COMMUNICATIONS OUTLET BOXES SHALL BE 4 1/16-INCH SQUARE BY 2 1/2-INCH DEEP WITH A MUD RING UON. PROVIDE A MINIMUM OF ONE (1) 1-INCH CONDUIT FOR ALL COMMUNICATIONS OUTLET BOXES. REFER TO COMMUNICATIONS DETAILS FOR SPECIFIC OUTLET BOX AND CONDUIT QUANTITY AND SIZE INFORMATION.
- ALL EQUIPMENT SHALL BE NEW. UON.
- BOND ALL METALLIC EQUIPMENT, RACKS, CABINETS, CABLE TRAY, CONDUITS, SLEEVES, ETC. TO THE PBB, OR THE SBB IN CONNECTION WITH THE BONDING ELECTRODE SYSTEM WITH 2-HOLE IRREVERSIBLE COMPRESSION TYPE CONNECTORS WITH 2-HOLE LUGS. ALL CONDUITS SHALL BE REAMED WITH BUSHINGS INSTALLED.
- PROVIDE ALL CORE DRILLING, CUTTING, AND PATCHING AND RESTORATION OF ALL FINISHED AREAS REQUIRED TO INSTALL ALL CONDUITS, SLEEVES, BOXES, ETC. SEAL ALL CORE DRILLS AFTER RACEWAY, CONDUITS, ETC. ARE INSTALLED.
- PLACEMENT OF UNAUTHORIZED CABLING IN THE COMMUNICATIONS PATHWAYS I.E. CABLE TRAY, J HOOKS, RACEWAY, ETC. IS PROHIBITED.
- ALL SLEEVES AND PENETRATIONS SHALL BE ACOUSTICALLY AND FIRE TREATED TO MEET WALL RATING. FIRESTOPPING ASSEMBLIES SHALL BE PROVIDED AT PENETRATIONS OF CONDUITS, BUS DUCTS, CABLES, CABLE TRAYS AND OTHER COMMUNICATION ITEMS. REFER TO THE THROUGH PENETRATION FIRESTOPPING SPECIFICATION FOR COMPLETE REQUIREMENTS.
- CONTRACTORS RESPONSIBILITY TO WHEEL OFF CABLE DISTANCES FROM TERMINATION TO DEVICE PRIOR TO INSTALLATION.

## GENERAL AUDIO VISUAL NOTES

- SUPPLY ALL JACKS, RACKS, WIRE, CABINETRY, CONNECTORS, MATERIALS, PARTS, EQUIPMENT AND LABOR NECESSARY FOR THE COMPLETE INSTALLATION OF THE SYSTEMS, IN FULL ACCORDANCE WITH THE RECOMMENDATIONS OF THE EQUIPMENT MANUFACTURERS AND WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- REFER TO FLOW DIAGRAMS, RISERS, AND SPECIFICATIONS FOR COMPLETE OPERATIONAL REQUIREMENTS. CONTRACTOR IS TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
- WHERE SIGNAL TYPES ARE PROVIDED AND NO CABLE TYPE INDICATED THE CONTRACTOR SHALL PROVIDE THE APPROPRIATE INTERCONNECT CABLE BASED ON THE SIGNAL TYPE REQUIREMENTS.
- ALL JUNCTION BOXES IN WALLS AND CEILINGS SHALL BE FLUSH MOUNTED. CONDUITS SHALL BE CONCEALED, UON.
- STRUCTURAL SUPPORT FOR AUDIOVISUAL EQUIPMENT SHALL BE PROVIDED BY OTHERS AT LOCATIONS DESIGNATED ON THESE DRAWINGS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, BLOCKING FOR WALL MOUNTED DEVICES AND OVERHEAD SUPPORT FOR CEILING MOUNTED PROJECTORS AND PROJECTION SCREENS. REFER TO ARCHITECTURAL DRAWINGS FOR SUPPORT DETAILS AND REQUIREMENTS.
- CEILING MOUNTED SPEAKER ENCLOSURES SHALL BE SUPPORTED FROM OVERHEAD STRUCTURE.
- ALL EXPOSED INTERCONNECT CABLES SHALL BE MOLDED CONNECTOR TYPE. FIELD TERMINATED INTERCONNECT CABLES ARE PROHIBITED.
- FURNITURE LAYOUT INDICATED ON DRAWINGS IS NOT FINAL AND MAY DIFFER. COORDINATE FINAL FURNITURE CONFIGURATION WITH OWNER PRIOR TO FABRICATION/CONSTRUCTION.
- TERMINAL BLOCK, BOARDS, STRIPS, OR CONNECTORS SHALL BE FURNISHED FOR ALL CABLES, WHICH INTERFACE WITH RACKS, CABINETS, CONSOLES, OR EQUIPMENT MODULES.
- ROUTE ALL CABLE AND WIRING WITHIN EQUIPMENT RACKS ACCORDING TO FUNCTION, SEPARATING WIRES OF DIFFERENT SIGNAL LEVELS, MICROPHONE, LINE LEVEL, AMPLIFIER OUTPUT, AC, ETC.) BY AS MUCH DISTANCE AS POSSIBLE. NEATLY ARRANGE AND BUNDLE ALL CABLE LOOSELY WITH HOOK-N-LOOP TIES.
- POWER CABLES, CONTROL CABLES, AND HIGH-LEVEL CABLES SHALL BE INSTALLED ON THE LEFT SIDE OF AN EQUIPMENT RACK, AS VIEWED FROM THE REAR. ALL OTHER CABLES SHALL BE INSTALLED ON THE RIGHT SIDE OF THE EQUIPMENT RACK, AS VIEWED FROM THE REAR.
- CABLING WITHIN RACKS SHALL BE CONTAINED IN "FINGER TRAY" OR HOOK-N-LOOP TIED TO THE SIDE OF THE RACK IN A NEAT AND ORDERLY FASHION.
- ALL CABLES ROUTED OUTSIDE OF RACKS AND CONDUIT SHALL BE CONTAINED IN A SUITABLE HARNESS OR WIREWAY TO MAINTAIN A NEAT AND CLEAN INSTALLATION.
- OBSERVE PROPER CIRCUIT POLARITY AND LOUDSPEAKER WIRING POLARITY. NO CABLES SHALL BE WIRED WITH A POLARITY REVERSAL BETWEEN CONNECTIONS, AT EITHER END.
- ALL CABLES SHALL BE CONTINUOUS LENGTHS WITHOUT SPLICES. ALL SYSTEM WIRE (EXCEPT SPARE WIRE, AFTER BEING CUT AND STRIPPED) SHALL HAVE THE WIRE STRAND TWISTED BACK TO THEIR ORIGINAL LAY AND BE TERMINATED BY APPROVED SOLDERED OR MECHANICAL MEANS.
- CLEARLY AND PERMANENTLY LABEL ALL JACKS, CONTROLS, CONNECTIONS, AND SO FORTH. ALL LABELING SHALL BE COMPLETED PRIOR TO FINAL SYSTEM EQUALIZATION. HAND LABELING IS PROHIBITED.
- ALL EQUIPMENT SHALL BE HELD FIRMLY IN PLACE WITH APPROPRIATE MOUNTING HARDWARE. ALL EQUIPMENT SHALL BE INSTALLED TO PROVIDE REASONABLE SAFETY TO THE OPERATOR. SUPPLY ADEQUATE VENTILATION FOR ALL ENCLOSED EQUIPMENT ITEMS WHICH PRODUCE HEAT.
- A MOCK-UP AND MEETING SHALL OCCUR FOR TYPICAL PRESENTATION WALL TECHNOLOGY WHERE INTERACTIVE PROJECTORS AND/OR INTERACTIVE FLAT PANELS OCCUR. WALL SHALL BE FINISHED AND PROJECTOR MARKERBOARD AND/OR VISUAL WALL DISPLAY WALL COVERING, INTERACTIVE PROJECTOR AND/OR INTERACTIVE FLAT PANEL, DATA AND AV CONNECTIVITY, ELECTRICAL AND ALL ACCESSORIES SHALL BE INSTALLED. CONSTRUCTION MANAGER, ARCHITECT, PROJECTOR MARKERBOARD AND/OR VISUAL DISPLAY WALL COVERING INSTALLER/CONTRACTOR, TECHNOLOGY INSTALLER/CONTRACTOR, AND ELECTRICAL INSTALLER/CONTRACTOR SHALL BE PRESENT TO REVIEW MOCK-UP. PURPOSE OF MOCK-UP IS TO CONFIRM INTERACTIVE TECHNOLOGY IS FUNCTIONING AS INTENDED, THAT THERE IS PROPER COORDINATION BETWEEN THE WALL SURFACE, THE PROJECTOR MARKERBOARD OR VISUAL DISPLAY WALL COVERING AND THE INTERACTIVE PROJECTOR AND/OR INTERACTIVE FLAT PANEL. ALL FINAL MOUNTING HEIGHTS FOR DIFFERENT ROOMS AND SPACES SHALL BE CONFIRMED AT THE MOCK-UP REVIEW.

## AUDIO VISUAL SYSTEM ROUGH IN AND INFRASTRUCTURE...

- LARGE DISPLAYS (70"AND UP): BACK BOX WITH AC RECEPTACLES AND SURGE PROTECTION WITH FLANGE AND COVER CHIEF PAC525FBP2; PROVIDE A MINIMUM OF ONE NETWORK DATA DROP FOR DISPLAY. (ONE NETWORK DROP FOR WIRELESS GATEWAY).
- DIGITAL SIGNAGE DISPLAYS: BACK BOX WITH FLANGE AND COVER CHIEF PAC525FCW OR CHIEF PAC525FBP2 AC RECEPTACLES AND SURGE PROTECTION WITH FLANGE AND COVER; PROVIDE A MINIMUM OF TWO NETWORK DATA DROPS ONE FOR DISPLAY ONE FOR SIGNAGE PLAYER.
- DISPLAYS (70" AND BELOW): BACK BOX WITH FLANGE AND COVER CHIEF PAC525FCW OR CHIEF PAC525FBP2 AC RECEPTACLES AND SURGE PROTECTION WITH FLANGE AND COVER; PROVIDE A MINIMUM OF ONE NETWORK DATA DROP FOR DISPLAY. (ONE NETWORK DROP FOR WIRELESS GATEWAY).
- AUDIO INPUT PLATE: (PASSIVE) 2 GANG BOX WITH PLASTER RING TOTAL DEPTH OF AT LEAST 3 1/2".
- DIGITAL MEDIA PLATE: (ACTIVE) MIDDLE ATLANTIC EVOLUTION 4-GANG WALL BOX OR 8-GANG WALL BOX.
- DANTE I/O PLATE: (ACTIVE) MIDDLE ATLANTIC EVOLUTION 4-GANG WALL BOX OR 8-GANG WALL BOX.
- SDI CAMERA: SINGLE OR 2 GANG BOX WITH PLASTER RING TOTAL DEPTH OF AT LEAST 3 1/2".
- AV CONTROL TOUCH PANEL: 2 GANG BOX WITH PLASTER RING TOTAL DEPTH OF AT LEAST 3 1/2".
- AUDIO VISUAL FLOOR POKE THRU MIDDLE ATLANTIC EVOLUTION 8" OR 10" POKE THRU WITH RECEPTACLES, COVER AND INTERIOR PLATE OPTIONS.

## GENERAL TELECOM NOTES

- ALL WORK SHALL COMPLY WITH APPLICABLE ANSII/TIA/BICSI STANDARDS.
- FIELD COORDINATE THE LOCATION OF COMMUNICATIONS EQUIPMENT IN ALIGNMENT WITH APPLICABLE CODES.
- THE CONTRACTOR SHALL COORDINATE DEVICE OUTLET LOCATIONS WITH ARCHITECTURAL AND CASEWORK DRAWINGS PRIOR TO ROUGH-IN. REPORT ANY CONFLICTS TO THE CM, ARCHITECT, AND ENGINEER FOR RESOLUTION.
- ALL COMMUNICATIONS CABLING SHALL BE INSTALLED IN CONDUITS, CABLE TRAY, OR AN APPROVED RACEWAY SYSTEM, WHERE CABLE TRAY, CONDUIT, OR RACEWAY IS NOT AVAILABLE ALL CABLES SHALL BE INSTALLED IN J-HOOKS SUPPORTED EVERY 5 FEET, SUFFICIENT IN SIZE TO HANDLE ALL BUNDLED CABLES WHILE MINIMIZING CRUSHING. COPPER AND FIBER OPTIC CABLES WILL BE DIVIDED INTO SEPARATE BUNDLES AND INSTALLED IN SEPARATE J-HOOKS. IF CABLE SLACK EXCEEDS 12-INCHES BETWEEN SUPPORTS, ADDITIONAL SUPPORTS WILL BE INSTALLED TO TAKE UP SLACK AND RELIEVE CABLE STRESS.
- CATEGORY 6/6A CABLES SHALL BE CONTINUOUS FROM TELECOM ROOM TO WORK AREA OUTLET AND FREE FROM SPLICES, REVERSES, GROUNDS, OR OTHER CONNECTIONS. PROVIDE A 5-FOOT SERVICE LOOP IN THE CEILING (AT THE WORK AREA END) FOR EACH HORIZONTAL CABLE.
- DO NOT INSTALL CATEGORY 6/6A HORIZONTAL CABLES THAT EXCEED 90 METERS.
- ALL COPPER TERMINATION HARDWARE SHALL BE 110 STYLE IDC, UON.
- COMMUNICATIONS CABLING SHALL NOT BE SPLICED, UON.
- COMMUNICATIONS CONDUIT FILL CAPACITIES ARE GOVERNED BY THE NFPA-70 (NEC) AND SHALL BE FOLLOWED. DO NOT EXCEED 40 PERCENT FILL ON INITIAL PULL ON ANY COMMUNICATIONS CONDUIT.
- CAREFULLY LAY ALL CABLE WITH APPROPRIATE RADIUS OF CURVATURE AND PROTECT AT BENDS AND CORNERS. OBSERVE MINIMUM BEND RADIUS AND TENSION LIMITATIONS AS SPECIFIED BY TIA. ANY ADDITIONAL SLEEVES AND/OR PENETRATIONS REQUIRED FOR THE INSTALLATION OF COMMUNICATIONS SYSTEM CABLING NOT SHOWN ON THESE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL ENSURE THAT ALL INSTALLED CABLES ARE FREE FROM TWISTS, KINKS, SHARP BENDS, CUTS, GOUGES OR ANY OTHER PHYSICAL DAMAGE.
- MONITOR CABLE PULL TENSION TO ENSURE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY STANDARDS ARE NOT EXCEEDED.
- ALL CATEGORY 6/6A CABLING MAY BE ROUTED IN THE SAME PATHWAY.
- THE CONTRACTOR SHALL ENSURE ALL CATEGORY 6/6A CABLING IS SEPARATED FROM LIGHTING, POWER, 70-VOLT AUDIO, MICROPHONE LEVEL, RF, AND SPEAKER LEVEL CIRCUITS LAW ANSII/TIA-568 GENERIC TELECOMMUNICATIONS CABLING FOR CUSTOMER PREMISES.
- CABLING ASSOCIATED WITH THE WIRELESS ACCESS POINTS SHALL BE PROVIDED WITH A COIL OF CABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ADJUST THE LOCATIONS OF THE WIRELESS ACCESS POINTS, AS REQUIRED, AFTER CONDUCTING A SITE VERIFICATION SURVEY TO ENSURE COVERAGE THROUGHOUT THE FACILITY.
- ALL HORIZONTAL AND BACKBONE COMMUNICATIONS CABLING SHALL BE PENUM RATED, UON. ANY LOW VOLTAGE DEVICE INSTALLED IN A PENUM-RATED ENVIRONMENT MUST BE RATED FOR PENUM USE.
- ALL COMMUNICATIONS CABLING INSTALLED UNDER THE FLOOR SLAB SHALL BE WET-LISTED. CONCEAL CABLING WITHIN CONDUIT BACK TO THE TERMINATION LOCATION OR TRANSITION TO PENUM RATED CABLING ABOVE THE CEILING.
- ALL COMMUNICATIONS CABLING SHALL BE PROTECTED FROM EXPOSURE TO PAINT OR ANY OTHER FOREIGN MATERIAL THAT WOULD NEGATIVELY IMPACT THE VALIDITY OF THE MANUFACTURER'S PERFORMANCE WARRANTY. IF ANY CABLE IS EXPOSED TO PAINT AT ANY POINT, REGARDLESS OF THE AMOUNT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE CABLE(S) AFFECTED AND WILL REPLACE THE CABLE(S) AT NO COST TO THE OWNER PER THE INSTALLATION SPECIFICATIONS INCLUDING TESTING.
- PROVIDE ALL COPPER PATCH CORDS AND OPTICAL FIBER JUMPERS AT BOTH THE WORK AREA AND TELECOM ROOM ENDS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL DETAILS.
- ALL LABELING SHALL COMPLY WITH ANSII/TIA-606 ADMINISTRATION STANDARD FOR TELECOMMUNICATIONS INFRASTRUCTURE. PROVIDE LABELING FOR ALL MODULAR OUTLETS, FACEPLATES, PATCH PANELS, CABLES, PATCH CABLES, FIBER SPLICER TRAYS, RACKS, CABINETS, PBB/SBB(S), ETC. REFER ELSEWHERE IN THE DRAWINGS AND SPECIFICATIONS FOR THE OWNER'S EXACT REQUIREMENTS.
- TELECOMMUNICATIONS FACEPLATES SHALL MATCH ELECTRICAL SWITCH AND ELECTRICAL RECEPTACLE PLATE FINISHES.
- EQUIPMENT CABINETS AND PATCH PANELS SHALL BE ARRANGED TO ALLOW FOR A NATURAL WIRING PROGRESSION IN FUNCTIONAL FIELDS. MINIMIZE CROSSING OF WIRES AND ALLOW FOR EASY ACCESS TO ALL COMPONENTS.
- SURFACE MOUNTED RACEWAY SHALL BE USED BELOW LAY-IN CEILING IN REMODED AREA WHERE CONDUIT, WIRING AND DEVICES CANNOT BE CONCEALED. PROVIDE LEGRAND WIREMOLD 4000 SERIES OR EQUAL, UON. PROVIDE COMPLETE WITH ALL FITTINGS, BARRIERS, COVERS AND MOUNTING ACCESSORIES AS RECOMMENDED BY THE MANUFACTURER. COORDINATE ROUTING OF RACEWAY WITH ARCHITECT PRIOR TO ROUGH-IN.
- PROVIDE (2) 1" PENETRATION SLEEVES INTO EVERY CLASSROOM AND OR OFFICE SPACE FROM CORRIDOR. MUST BE FIRESTOPPED PER NFPA 70.
- PROVIDE A FIRESTOP BARRIER FOR EACH PENETRATION WHERE CABLE TRAY EXTENDS OR CONTINUES THROUGH FIRE RATED WALL PER NFPA 70.

## GENERAL SECURITY NOTES

- THE LOCATION OF EQUIPMENT SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EQUIPMENT PRIOR TO THE START OF WORK.
- THE DRAWINGS FOR SECURITY WORK UTILIZE SYMBOLS AND SCHEMATIC DIAGRAMS WHICH HAVE NO DIMENSIONAL SIGNIFICANCE. THE WORK SHALL THEREFORE BE INSTALLED TO FULFILL THE DIAGRAMMATIC INTENT EXPRESSED ON THE SECURITY DRAWINGS, BUT IN CONFORMITY WITH THE DIMENSIONS INDICATED ON THE FINAL WORKING DRAWINGS, FIELD LAYOUTS, AND SHOP DRAWINGS OF ALL TRADES.
- THE ORIENTATION OF THE SYMBOLS REFLECTS THE GENERAL MOUNTING LOCATION AND ORIENTATION OF THE DEVICE. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE CM, ARCHITECT, AND ENGINEER PRIOR TO INSTALLATION OF WORK IF ANY MOUNTING LOCATIONS NOTED ON THE DRAWINGS ARE OBSTRUCTED AND/OR IF ANY MOUNTING LOCATION CONFLICTS OR PROBLEMS ARE DISCOVERED.
- ALL COMPONENTS PROVIDED ARE TO BE LISTED FOR USE IN THE SYSTEM INDICATED INCLUDING, BUT NOT LIMITED TO:  
UL294 STANDARD FOR ACCESS CONTROL SYSTEM UNITS  
UL634 STANDARD FOR CONNECTORS AND SWITCHES FOR USE WITH BURGLAR-ALARM SYSTEMS UL639 STANDARD FOR INTRUSION-DETECTION UNITS  
UL1076 PROPRIETARY BURGLAR ALARM UNITS AND SYSTEMS  
UL2044 STANDARD FOR COMMERCIAL CLOSED-CIRCUIT TELEVISION EQUIPMENT  
UL2802 STANDARD FOR PERFORMANCE TESTING OF CAMERA IMAGE QUALITY
- REFER TO COMMUNICATIONS AND ELECTRICAL DRAWINGS FOR ADDITIONAL SCOPE OF WORK.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE 110 VAC INPUT POWER FOR POWER SUPPLIES. THE SECURITY CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOW VOLTAGE EQUIPMENT NECESSARY FOR SECURITY HARDWARE OPERATION.
- ALL SECURITY INFRASTRUCTURE SHALL BE INSTALLED IN ENCLOSED METALLIC PATHWAYS SUCH AS CONDUIT, ENCLOSED CABLE TRAY, AND ENCLOSED WIREWAYS TO THE ASSOCIATED SECURITY PANEL.
- ALL ENCLOSURES AND INTRUSION DETECTION DEVICES WITH REMOVABLE COVERS SHALL HAVE TAMPER PROTECTION DEVICES CAPABLE OF BEING MONITORED CONTINUOUSLY.
- WHERE APPLICABLE, COORDINATE WITH ELEVATOR CONTRACTOR FOR SPECIAL CONDUCTORS IN THE TRAVEL CABLE FOR ACCESS CONTROL, INTRUSION DETECTION, AND VIDEO SURVEILLANCE DEVICES.
- ALL SECURITY CABLES SHALL BE FROM THE SAME MANUFACTURER AND LISTED FOR THE ENVIRONMENT THEY ARE INSTALLED. FOLLOW ALL MANUFACTURER INSTRUCTION FOR VOLTAGE DROP AND DISTANCE. REFER TO SPECIFICATIONS FOR CABLE TYPES.
- JUNCTION BOXES FOR SECURITY CABLING SHALL HAVE TAMPER-PROOF SCREWS.
- REFER TO THE SECURITY ONE-LINE DIAGRAMS AND DOOR ELEVATION DRAWINGS FOR ADDITIONAL GENERAL NOTES.
- SECURITY EQUIPMENT SCHEDULES ARE PROVIDED AS A GUIDE. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL DEVICES IDENTIFIED AND PROVIDE THE APPROPRIATE NUMBER OF DEVICES AS IDENTIFIED ON THE FLOOR PLANS.
- THE CONTRACTOR SHALL PROVIDE CAMERA LICENSES FOR EACH NEW INSTALLED CAMERA.
- THE CONTRACTOR IS RESPONSIBLE FOR INITIAL CAMERA AIMING, CAMERA PROGRAMING, AND FINAL CHECKOUT WITH THE OWNER AND OWNER'S REPRESENTATIVE.
- WHERE ADVANCED SECURITY SYSTEM INTEGRATION IS REQUIRED THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION ACTIVITIES BETWEEN THE ASSOCIATED SYSTEM PROVIDERS TO THE SATISFACTION OF THE OWNER AND OWNER'S REPRESENTATIVE.

## GENERAL DEMOLITION NOTES

- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS WITH RESPECT TO MATERIALS AND DIMENSIONS TO DETERMINE THE EXACT EXTENT OF DEMOLITION WORK.
- AREAS INDICATED FOR DEMOLITION ARE APPROXIMATE. THERE MAY BE CONDITIONS WHERE DEMOLISHED UTILITIES ARE NOT WHERE INDICATED ON DRAWINGS. FULL EXTENT OF DEMOLITION SHALL BE DETERMINED AT THE JOB SITE BY THE CONTRACTOR.
- ALL NECESSARY CARE SHALL BE TAKEN DURING DEMOLITION AND CONSTRUCTION TO PREVENT DAMAGE TO ADJACENT MATERIALS AND CONCEALED MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER ITEMS.
- PRIOR TO COMMENCING DEMOLITION WORK, VERIFY ALL UTILITIES HAVE BEEN TURNED OFF AND/OR CAPPED AS REQUIRED IN AREAS WHERE DEMOLITION IS TO OCCUR.
- DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
- SEE ARCHITECTURAL, FIRE PROTECTION, PLUMBING, MECHANICAL, ELECTRICAL, AND STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
- ALL WORK AND EQUIPMENT SHALL CONFORM TO NEC. THE MEANS AND METHODS USED BY THIS CONTRACTOR SHALL CONFORM TO NEC SECTION 110.3 (a AND b).
- WHERE INDICATED, ALL FIBER CABLE, DATA CABLE, RF CABLE, AND AUDIO-VISUAL CABLING SHALL BE DISCONNECTED AND REMOVED FROM THE OUTLET BOXES TO THEIR SOURCE ENDPOINTS.
- CONTRACTOR SHALL REMOVE TELECOMMUNICATIONS DATA OUTLETS, EQUIPMENT, CABLING AND ALL RELATED ITEMS. PROPERLY DISPOSE OR RECYCLE ALL DEMOLISHED ITEMS PER LOCAL CODE AND AHJ REQUIREMENTS.
- IN EXISTING COMMUNICATIONS ROOMS, THE CONTRACTOR SHALL COORDINATE THE EXTENT OF COMMUNICATIONS DEMOLITION WITH THE OWNER.

## GENERAL OUTSIDE PLANT (OSP) NOTES

- THE LOCATION OF EQUIPMENT AND STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE. THERE IS NO GUARANTEE AS TO THEIR ACCURACY. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EQUIPMENT WITH THE OWNER AND EXERCISE CAUTION WHEN PERFORMING WORK IN THE AREA.
- FIELD COORDINATE LOCATION OF NEW EQUIPMENT IAW APPLICABLE CODES.
- PRIVATE PROPERTY: TRENCHES ON PRIVATE PROPERTY AND AREAS NOT SUBJECT TO VEHICULAR TRAFFIC MAY BE BACKFILLED WITH NATIVE MATERIAL AND SHALL BE PLACED IN 12" MAXIMUM LOOSE LIFTS AND COMPACTED TO 80% MAXIMUM DENSITY PER ASTM D1557.
- NATIVE MATERIAL: REFER TO SOIL REPORTS.
- COMPACTION: ALL COMPACTION SHALL BE BY HAND-OPERATED, PLATE TYPE, VIBRATORY, OR OTHER SUITABLE HAND-TAMPERS IN AREAS NOT ACCESSIBLE TO LARGER ROLLERS OR COMPACTORS. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGE TO CONDUITS, PIPES, AND ANY APPURTENANCES. WATER DENSIFICATION BY INUNDATION OR JETTING SHALL NOT BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL FROM COMMUNICATIONS DESIGNER OF RECORD.
- OBTAIN THE SIGNATURE OF THE OWNER AND OWNER'S REPRESENTATIVE SIGNIFYING THE ACCEPTABILITY OF THE DUCT PLACEMENT PRIOR TO POURING ANY CONCRETE FOR THE DUCT BANK.
- INSTALL A PERMANENT TRACER WIRE (POLYETHYLENE INSULATED), CENTRALLY LOCATED IN TOP OF CONDUIT FORMATION, OF EACH COMMUNICATIONS DUCT BANK AND CORRESPONDING STUB OUTS. COMPRESSION TYPE CONNECTORS SHALL BE USED FOR ALL SPLICES. TEST THE WIRE FOR CONTINUITY AFTER INSTALLATION AND PROVIDE THE TEST RESULTS WITH THE AS BUILT DOCUMENTS. THE TRACER WIRE SHALL BE INSTALLED INTO ALL MAINTENANCE HOLES AND HAND HOLES.
- JOINTS BETWEEN NON-IDENTICAL DUCT BANK COMPONENTS SHALL USE THE APPROPRIATE CONNECTORS SPECIFICALLY DESIGNED FOR THE PURPOSE.
- FOR DRAINAGE REQUIREMENTS SLOPE DUCT BANKS A MINIMUM OF 4-INCHES PER 100'-FEET MINIMUM TOWARD EACH MAINTENANCE HOLE OR HAND HOLE.
- CHANGES IN DIRECTION OF RUNS EXCEEDING A TOTAL OF 10 DEGREES, EITHER VERTICALLY OR HORIZONTALLY ARE TO BE ACCOMPLISHED WITH LONG SWEEPING BENDS HAVING A MINIMUM RADIUS OF 7.62M (25'). BENDS ARE NOT TO CHANGE THE INTERNAL DIAMETER OF THE DUCT. THERE SHALL BE NO MORE THAN THE EQUIVALENT OF TWO (2) 90 DEGREE BENDS TOTALING 180 DEGREES BETWEEN PULL POINTS INCLUDING OFFSETS AND KICKS. BACK TO BACK 90 DEGREE BENDS ARE TO BE AVOIDED.
- DUCT SHALL BE INSTALLED AS STRAIGHT AS POSSIBLE BETWEEN MAINTENANCE HOLES TO MINIMIZE SIDE WALL PRESSURE DURING CABLE INSTALLATION. DO NOT MAKE UNNECESSARY DIRECTION CHANGES.
- THE TRANSITIONING OF DUCTS FROM THE LOWER MAINTENANCE HOLE WINDOW TO THE NOMINAL TRENCH DEPTH SHALL BE ACCOMPLISHED NO LESS THAN 30 FEET FROM THE MAINTENANCE HOLE TO REDUCE THE RADIUS OF THE BENDS.
- COMMUNICATIONS DUCT BANK SHALL ENTER THE LOWEST AVAILABLE WINDOW OF THE MAINTENANCE HOLE.
- PROVIDE A PULL STRING RATED AT LEAST 200LBS TENSILE STRENGTH AFTER DUCTS HAVE UNDERGONE CLEANING. PROVIDE A MECHANICALLY EXPANDABLE, REUSABLE RUBBER PLUG FOR EACH VACANT DUCT.
- REINFORCED DUCT BANKS SHALL BE STEEL BAR REINFORCED PER THE DIMENSIONS SHOWN ON THE DUCT BANK DETAIL DRAWINGS.
- REINFORCE ALL NEW DUCT BANKS WITHIN 5-FEET OF MAINTENANCE HOLES AND HAND HOLES.
- REFER TO THE SPECIFICATIONS FOR MAINTENANCE HOLE AND HAND HOLE EQUIPMENT AND ACCESSORIES.
- THE TERMS MANHOLE AND MAINTENANCE HOLE ARE INTERCHANGEABLE.



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## TECHNOLOGY NOTES

23-056

# T003



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### GENERAL SHEET NOTES

- A REFER TO SHEET T-002 FOR ALL GENERAL NOTES
- B ALL EXTERIOR CAMERAS MOUNTED BETWEEN 12-15'
- C ALL EXTERIOR DOOR CONTACTS TO BE DPDT, FOR ACCESS AND INTRUSION.

### KEYED NOTES

- 1 J-HOOK PATHWAYS
- 2 2" SLEEVE
- 3 4" SLEEVE
- 7 (3) 4" CONDUIT UP TO SECOND FLOOR.



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COMPOSITE PATHWAY  
 FIRST FLOOR  
 REFLECTIVE CEILING  
 PLAN

23-056

**TC101**



① COMPOSITE PATHWAY FIRST FLOOR REFLECTIVE CEILING PLAN  
 1/8" = 1'-0"

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### KEYED NOTES

- 1 J-HOOK PATHWAYS
- 2 2" SLEEVE
- 3 4" SLEEVE
- 8 (3) 4" CONDUIT UP TO THIRD FLOOR.



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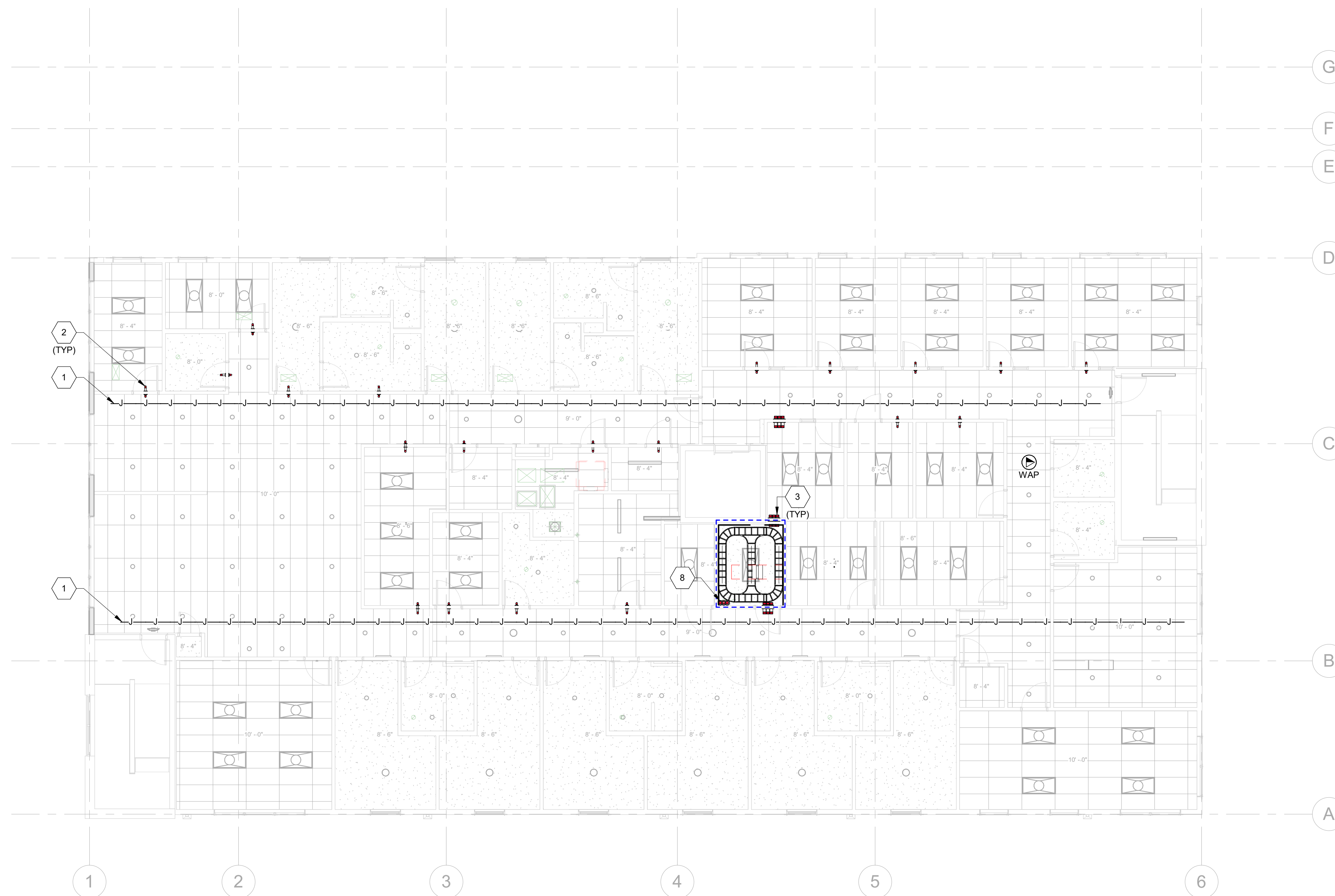
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COMPOSITE PATHWAY SECOND FLOOR  
 REFLECTIVE CEILING PLAN

23-056

**TC102**



1 COMPOSITE PATHWAY SECOND FLOOR REFLECTIVE CEILING PLAN  
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### KEYED NOTES

- 1 J-HOOK PATHWAYS
- 2 2" SLEEVE
- 3 4" SLEEVE



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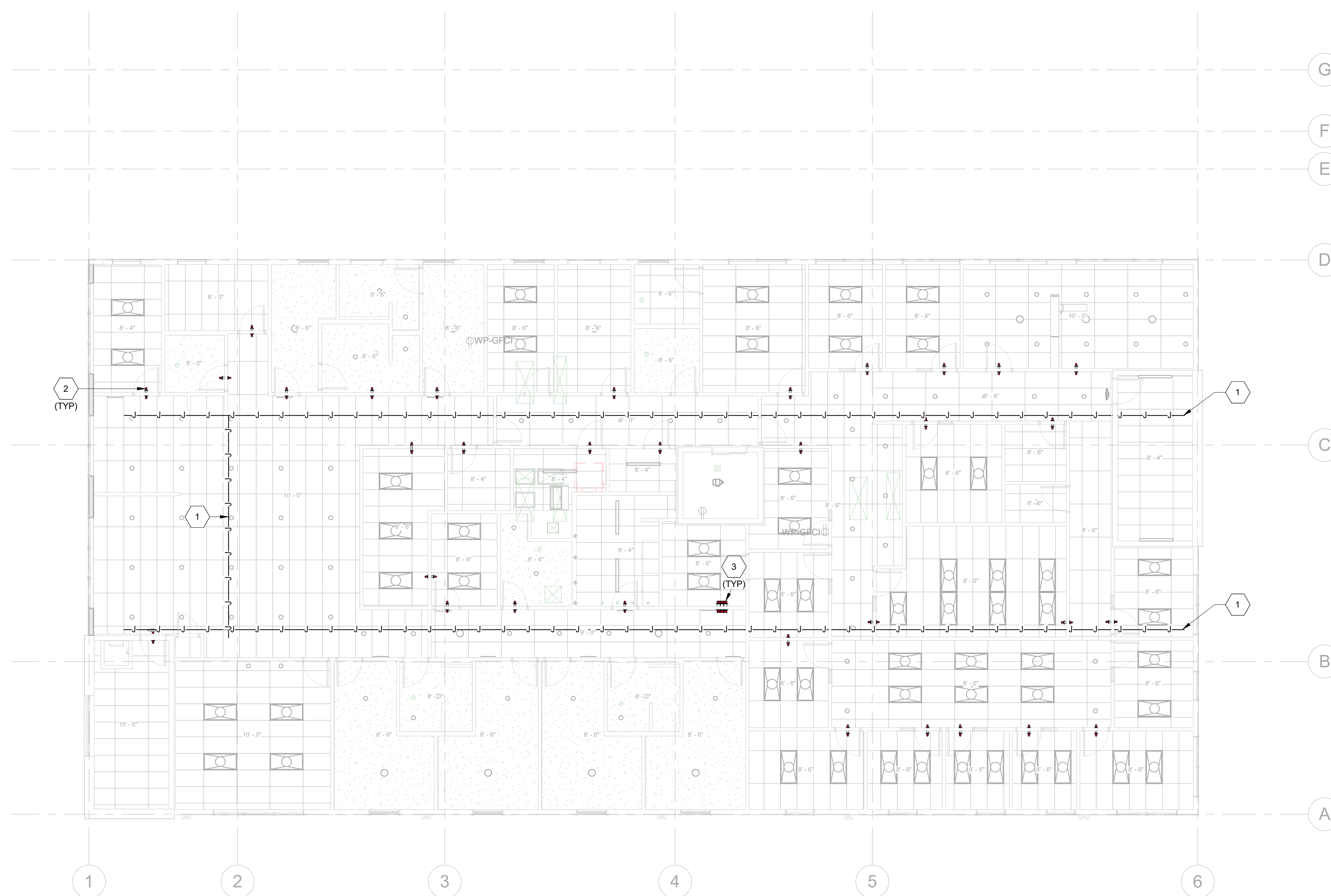
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COMPOSITE PATHWAY  
THIRD FLOOR  
REFLECTIVE CEILING PLAN

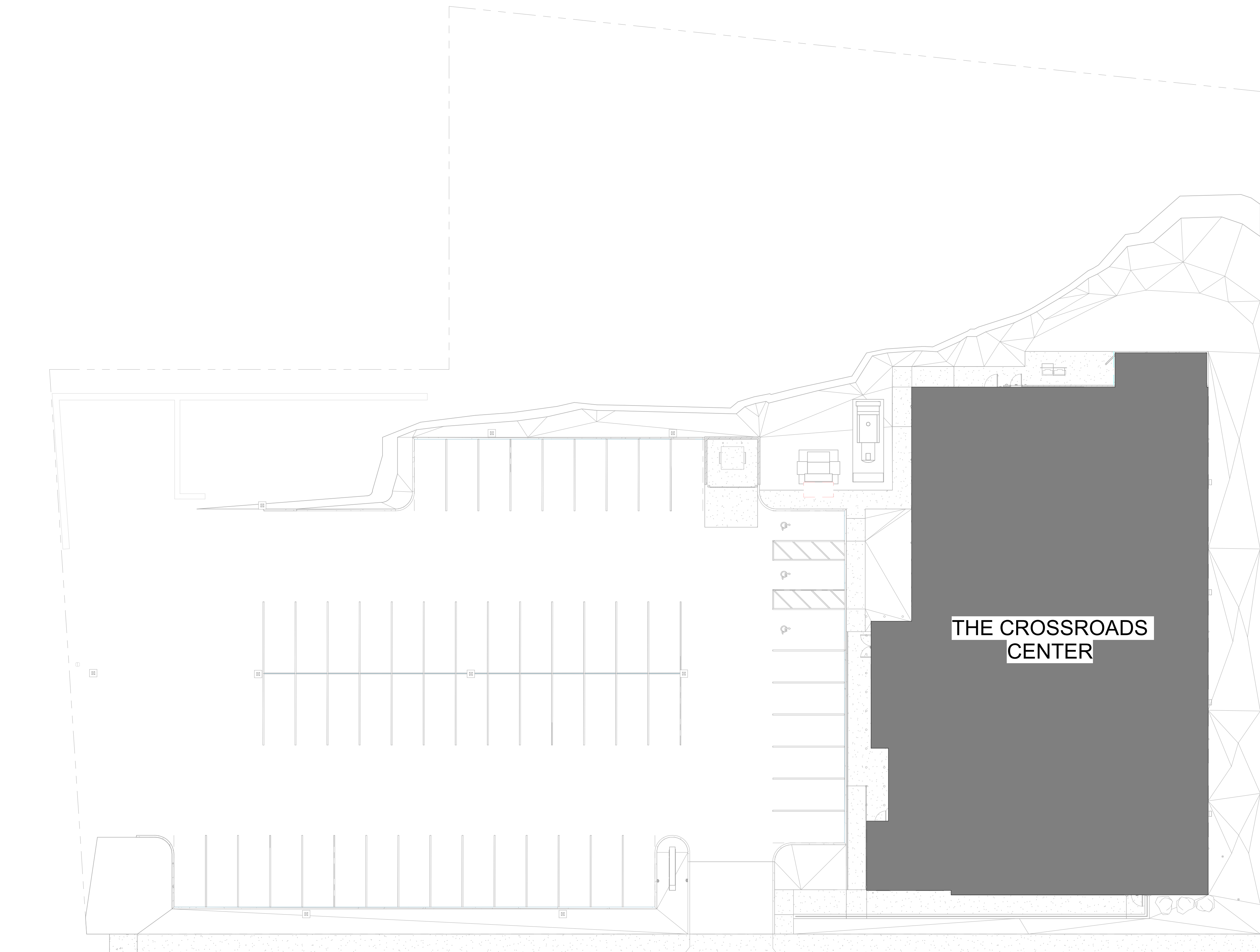
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# TC103



1 COMPOSITE PATHWAY THIRD FLOOR REFLECTIVE CEILING PLAN  
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1 DATA SITE PLAN  
1/16" = 1'-0"

### GENERAL SHEET NOTES

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- C ALL EXTERIOR DOOR CONTACTS TO BE DPDT, FOR ACCESS AND INTRUSION.

### KEYED NOTES



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DATA SITE PLAN

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# TN010

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**GENERAL SHEET NOTES**

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- B ALL EXTERIOR CAMERAS MOUNTED BETWEEN 12-15'
- C ALL EXTERIOR DOOR CONTACTS TO BE DPDT, FOR ACCESS AND INTRUSION.

**KEYED NOTES**

- 9 ONE (1) CAT6A CABLE FROM CLOSET TO LOCATION. WIRELESS ACCESS POINTS PROVIDED BY OWNER. INSTALLED BY CONTRACTOR.
- 10 BLUE CAT6 PLENUM FROM CLOSET TO LOCATION. SIEMON CONNECTIVITY IS BASIS OF DESIGN.



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DATA FIRST FLOOR PLAN

23-056

**TN101**



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

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- A REFER TO SHEET T-002 FOR ALL GENERAL NOTES
- B ALL EXTERIOR CAMERAS MOUNTED BETWEEN 12-15'
- C ALL EXTERIOR DOOR CONTACTS TO BE DPDT, FOR ACCESS AND INTRUSION.

### KEYED NOTES

- 5 CONFIRM FINAL LOCATION AND HEIGHT WITH ELECTRICAL CONTRACTOR.
- 9 ONE (1) CAT6A CABLE FROM CLOSET TO LOCATION. WIRELESS ACCESS POINTS PROVIDED BY OWNER. INSTALLED BY CONTRACTOR.
- 10 BLUE CAT6 PLENUM FROM CLOSET TO LOCATION. SIEMON CONNECTIVITY IS BASIS OF DESIGN.



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DATA SECOND FLOOR PLAN

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

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**GENERAL SHEET NOTES**

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**KEYED NOTES**

- 5 CONFIRM FINAL LOCATION AND HEIGHT WITH ELECTRICAL CONTRACTOR.
- 9 ONE (1) CAT6A CABLE FROM CLOSET TO LOCATION. WIRELESS ACCESS POINTS PROVIDED BY OWNER. INSTALLED BY CONTRACTOR.
- 10 BLUE CAT6 PLENUM FROM CLOSET TO LOCATION. SIEMON CONNECTIVITY IS BASIS OF DESIGN.



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DATA THIRD FLOOR PLAN

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**TN103**

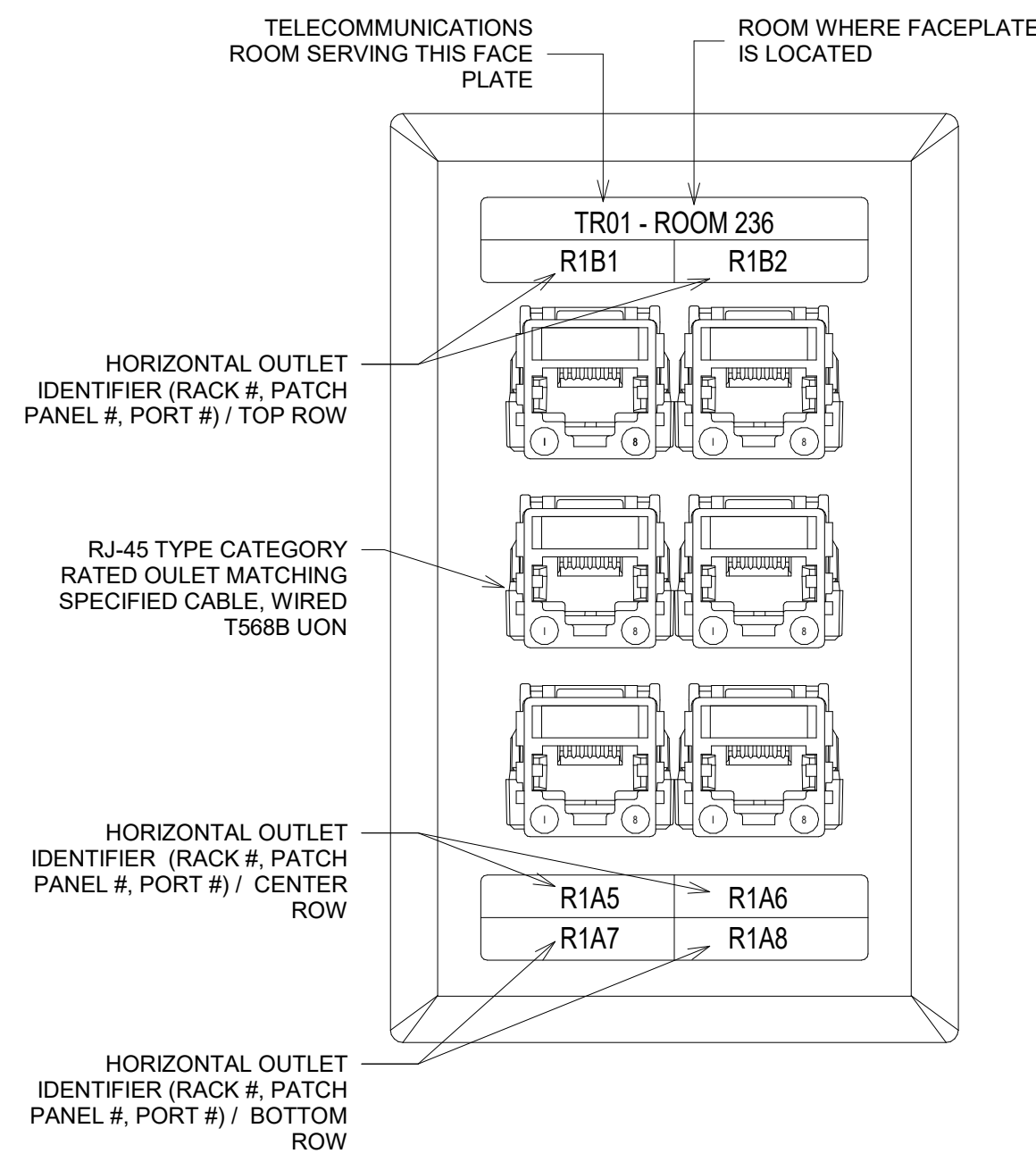


1 DATA THIRD FLOOR PLAN  
1/8" = 1'-0"

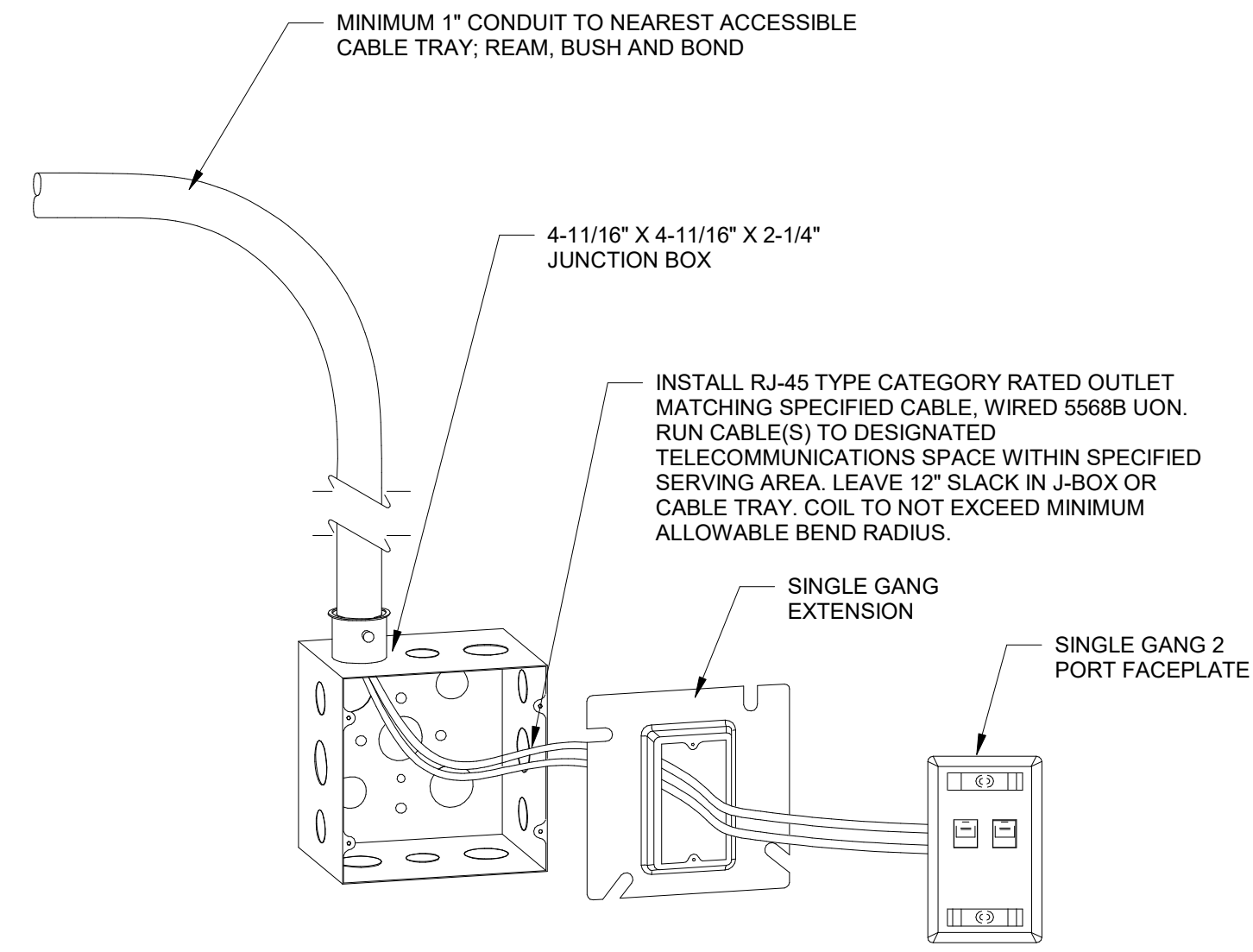




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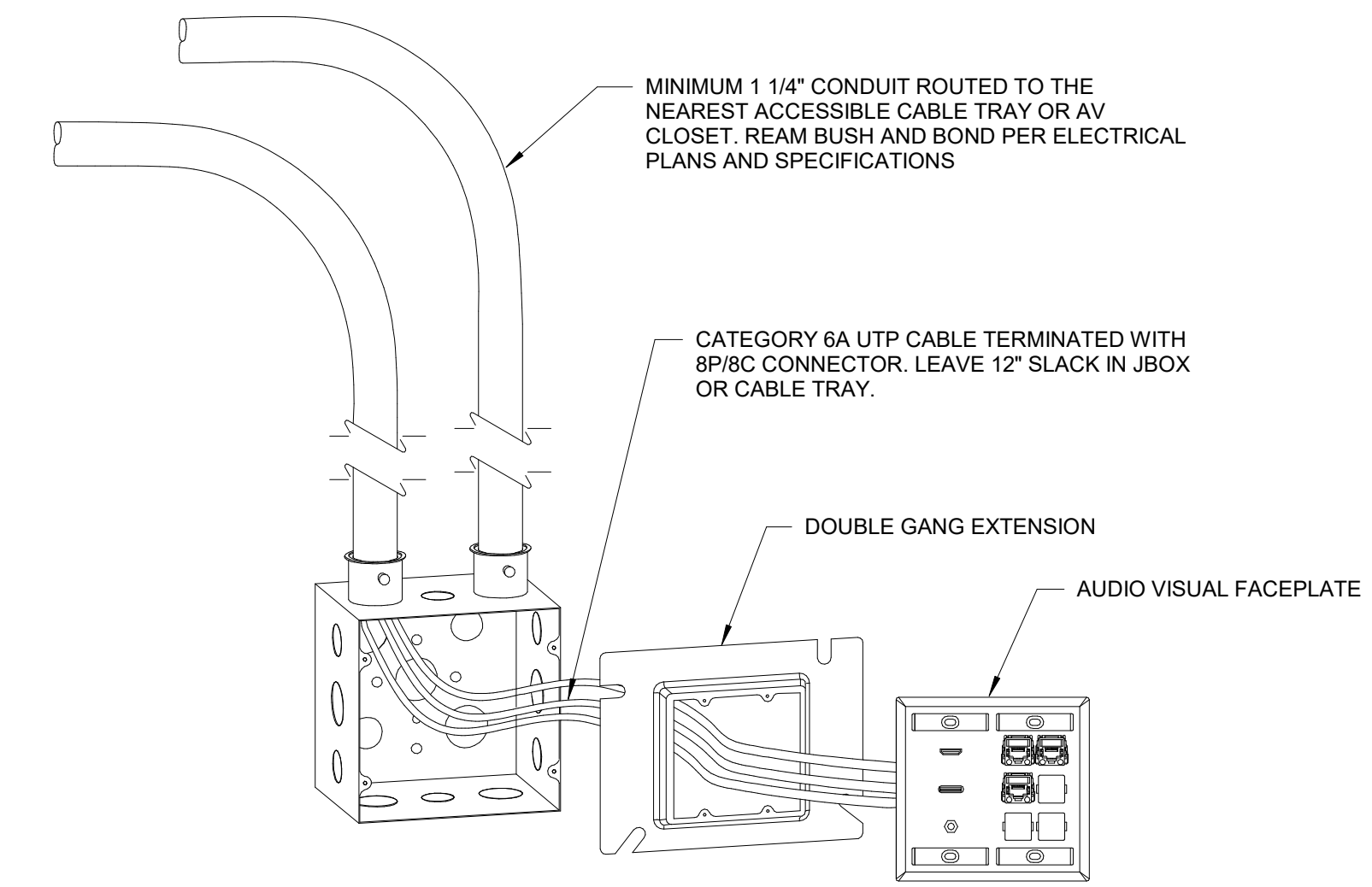


1 1-GANG VOICE/DATA FACEPLATE LABELING DETAIL  
NTS

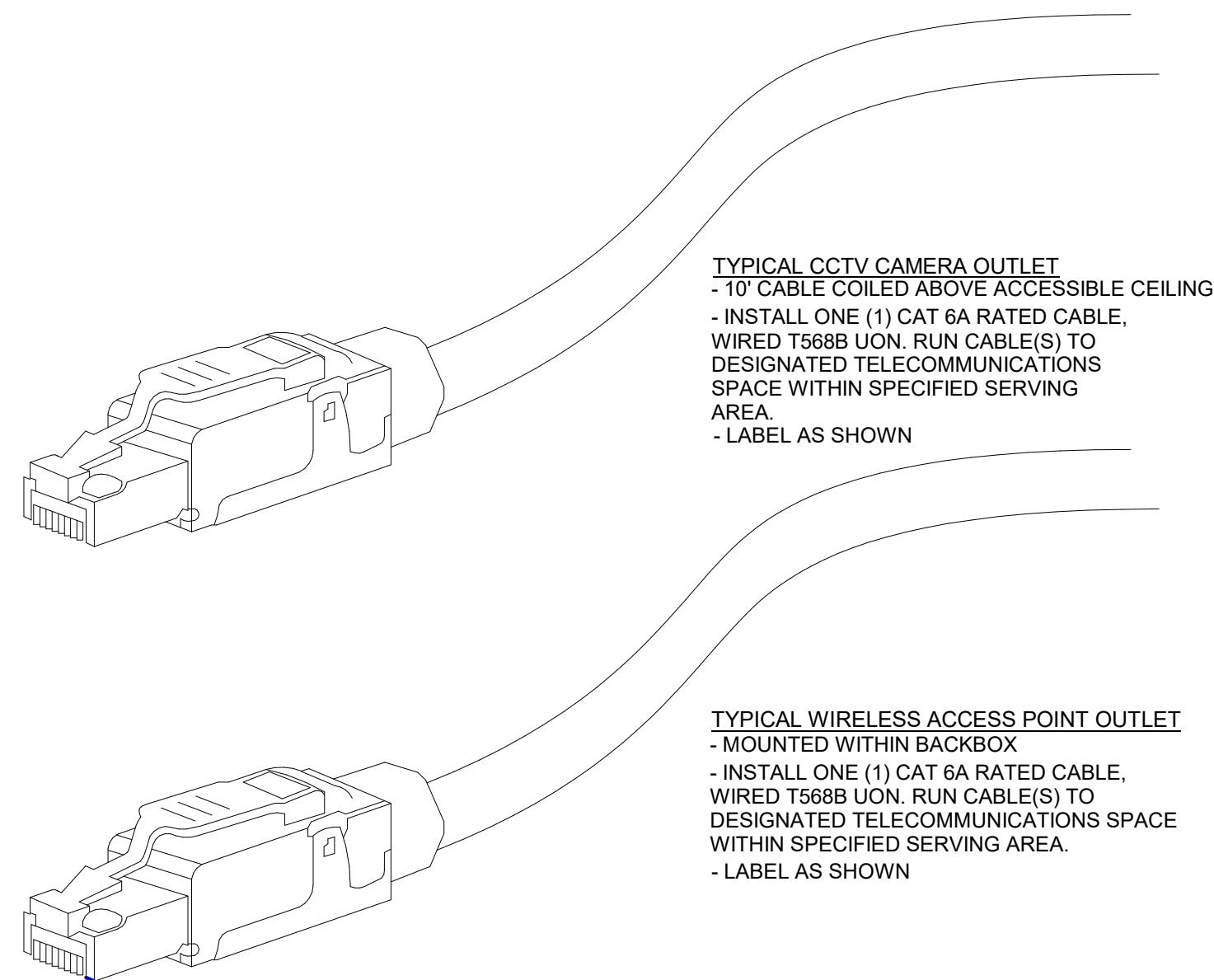


NOTES:  
1. COORDINATE HEIGHT OF OUTLET WITH ELECTRICAL RECEPTACLE.

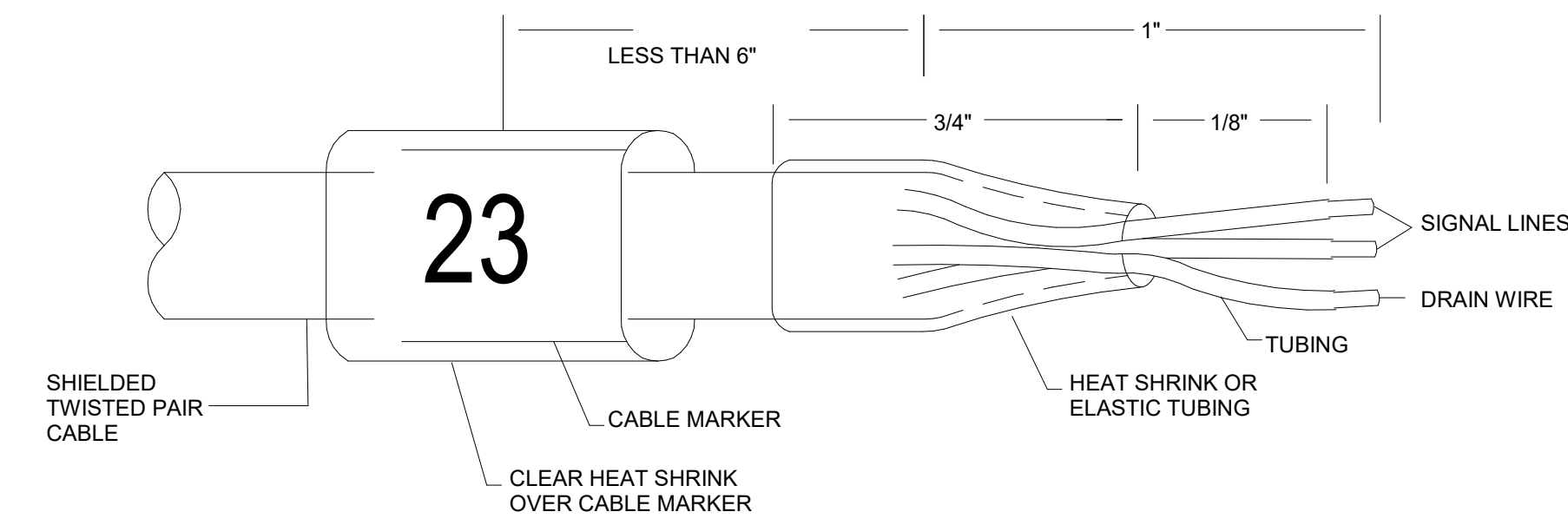
2 TYPICAL TELECOM OUTLET AND BACKBOX DETAIL  
NTS



3 TYPICAL TELECOM OUTLET AND BACKBOX DETAIL  
NTS



4 MODULAR PLUG TERMINATED LINK (MPTL) DETAIL  
NTS



NOTES:  
1. ALL CABLES TO BE LABELED, WITH LABEL SECURED AND PROTECTED BY CLEAR HEAT SHRINK.  
2. ALL DRAIN WIRES TO BE SERVED WITH CLEAR HEAT SHRINK OR INSULATING TUBING. WRAP UNUSED DRAIN WIRES UNDER END DRESS BOOT.  
3. REQUIRED AT EACH CABLE TERMINATION IN RACKS, TERMINAL BOXES AND AT WALL PLATES.

5 STANDARD LABEL AND PREPARATION FOR SHIELDED CABLE TERMINATIONS  
NTS



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DATA DETAILS

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### GENERAL SHEET NOTES

- A REFER TO SHEET T-002 FOR ALL GENERAL NOTES
- B ALL EXTERIOR CAMERAS MOUNTED BETWEEN 12-15'
- C ALL EXTERIOR DOOR CONTACTS TO BE DPDT, FOR ACCESS AND INTRUSION.

### KEYED NOTES



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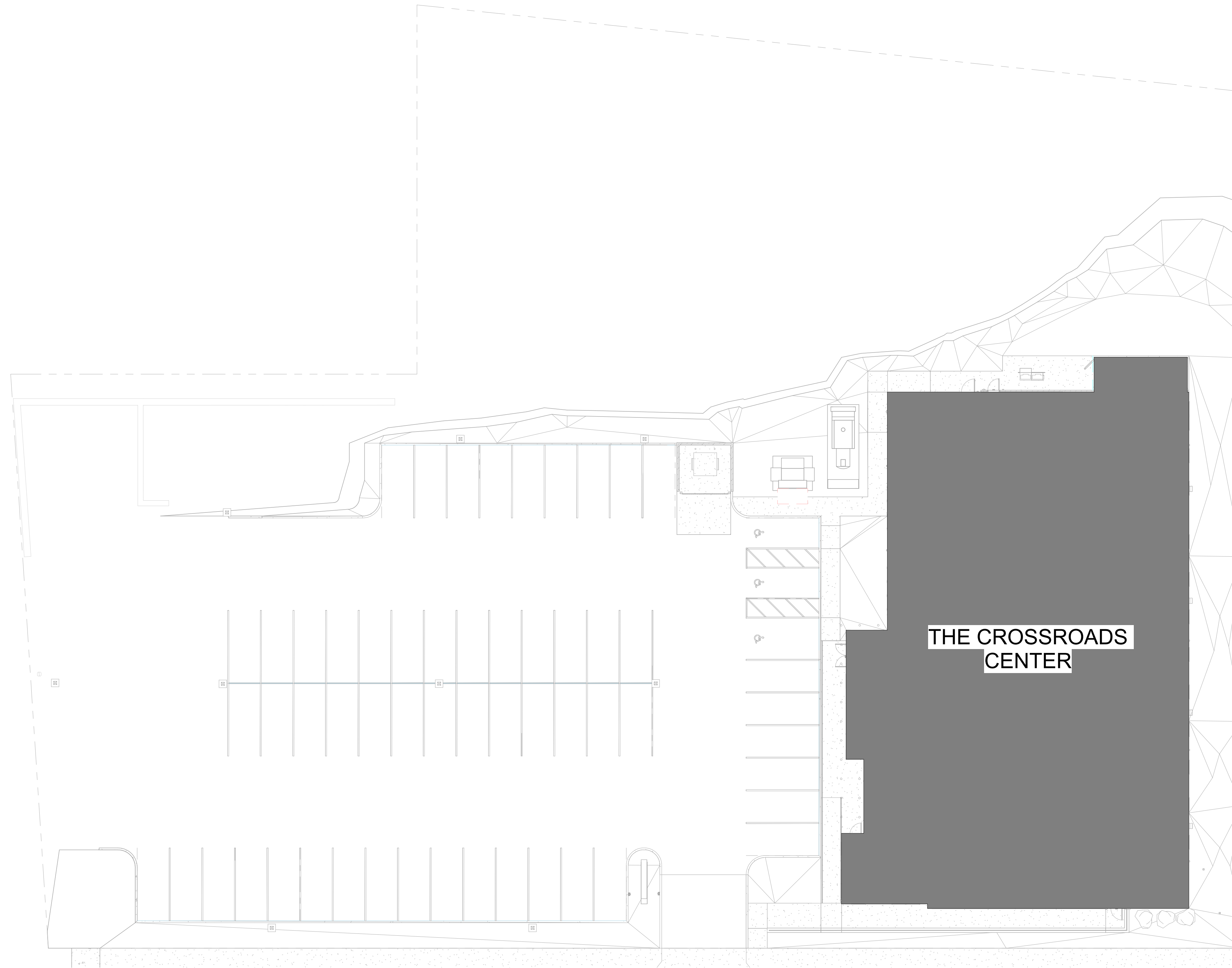
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AUDIO VISUAL SITE PLAN

23-056

# TA010



1 AUDIO VIDEO SITE PLAN  
1/16" = 1'-0"

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AUDIO VISUAL FIRST FLOOR PLAN

23-056

**TA101**



1 AUDIO VISUAL FIRST FLOOR PLAN  
 1/8" = 1'-0"

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### KEYED NOTES



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AUDIO VISUAL SECOND FLOOR PLAN

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# TA102



1 AUDIO VISUAL SECOND FLOOR PLAN  
 1/8" = 1'-0"

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### GENERAL SHEET NOTES

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### KEYED NOTES

- 4 86" DISPLAY WITH LOGITECH RALLY BAR CONFERENCING SYSTEM.



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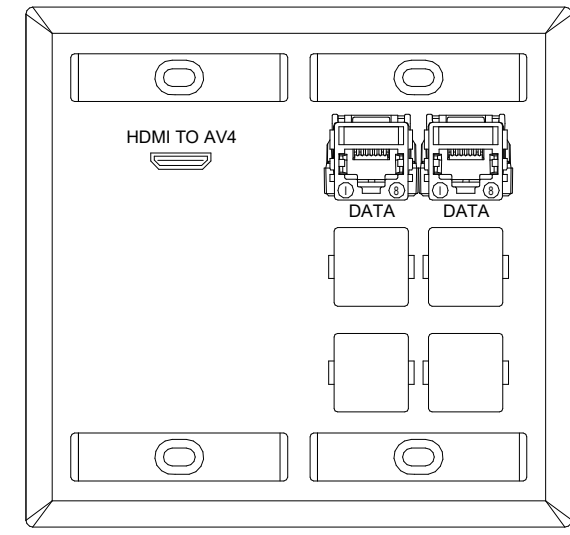
AUDIO VISUAL THIRD FLOOR PLAN

23-056

**TA103**



1 AUDIO VISUAL THIRD FLOOR PLAN  
1/8" = 1'-0"

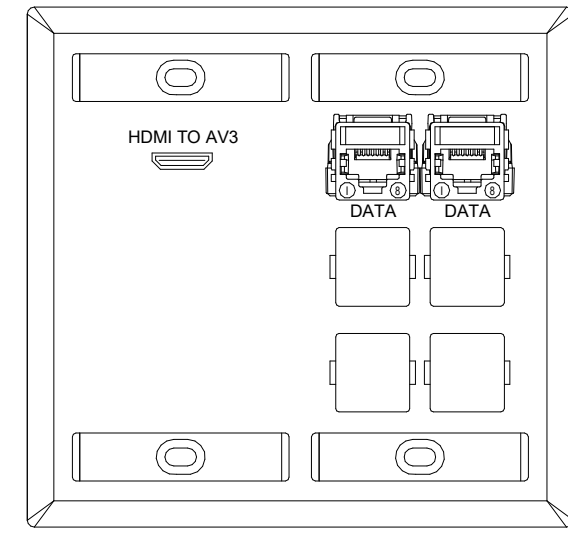


TWO (2) RJ45 CATEGORY CABLE PLENUM TO NEAREST T.R., 2-DATA

ONE (1) HDMI + EXTENDER KIT TO AV4 LOCATION

ONE (1) 3.5 MM STEREO TO SF LOCATION  
2-GANG FACEPLATE BACK BOX @ 18" A.F.F.

◀ AV3



TWO (2) RJ45 CATEGORY CABLE PLENUM TO NEAREST T.R., 2-DATA

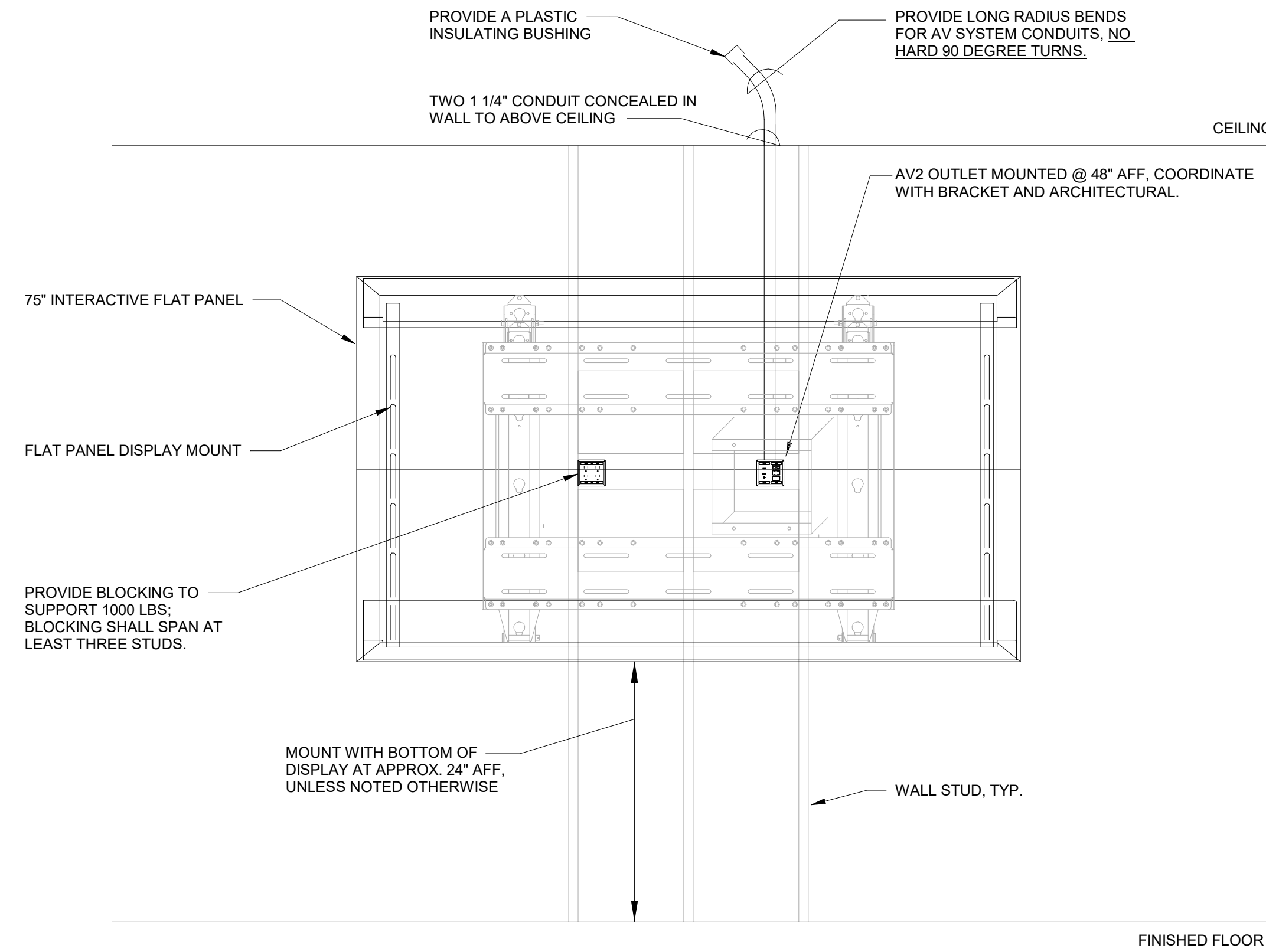
ONE (1) HDMI + EXTENDER KIT TO AV3 LOCATION

ONE (1) 3.5 MM STEREO TO SF LOCATION  
2-GANG FACEPLATE BACK BOX @ 18" A.F.F.

◀ AV4

1 DATA AV FACEPLATES WITHOUT SOUNDFIELD  
NTS

2 TYPICAL FLAT PANEL DETAIL  
NTS



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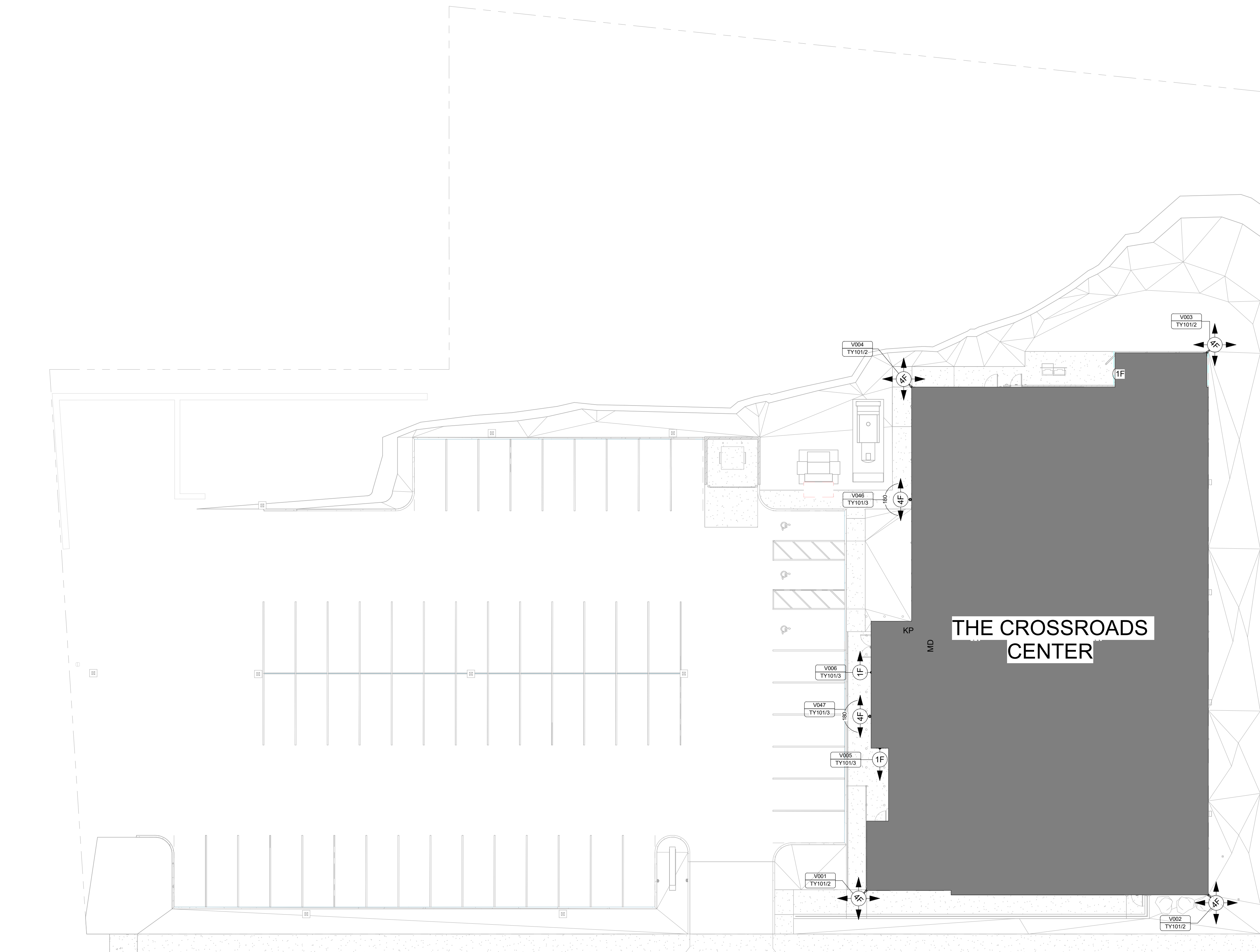
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AUDIO VISUAL DETAILS

23-056

**TA501**

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1 SECURITY SITE PLAN  
1/16" = 1'-0"

### GENERAL SHEET NOTES

- A REFER TO SHEET T-002 FOR ALL GENERAL NOTES
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- C ALL EXTERIOR DOOR CONTACTS TO BE DPDT, FOR ACCESS AND INTRUSION.

### KEYED NOTES



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SECURITY SITE PLAN

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# TY010



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**GENERAL SHEET NOTES**

- A REFER TO SHEET T-002 FOR ALL GENERAL NOTES
- B ALL EXTERIOR CAMERAS MOUNTED BETWEEN 12-15'
- C ALL EXTERIOR DOOR CONTACTS TO BE DPDT, FOR ACCESS AND INTRUSION.

**KEYED NOTES**

- 6 CAMERA TO BE FOCUSED ON MEDICATION DISPENSING CABINET. CONFIRM VIEW WITH CLIENT.
- 13 HANWHA PNM-12082RVD.
- 15 HANWHA QND-8011.
- 16 HANWHA PNM-C16013RVQ.
- 17 AIPHONE IX SERIES DOOR INTERCOM WITH CARD READER.



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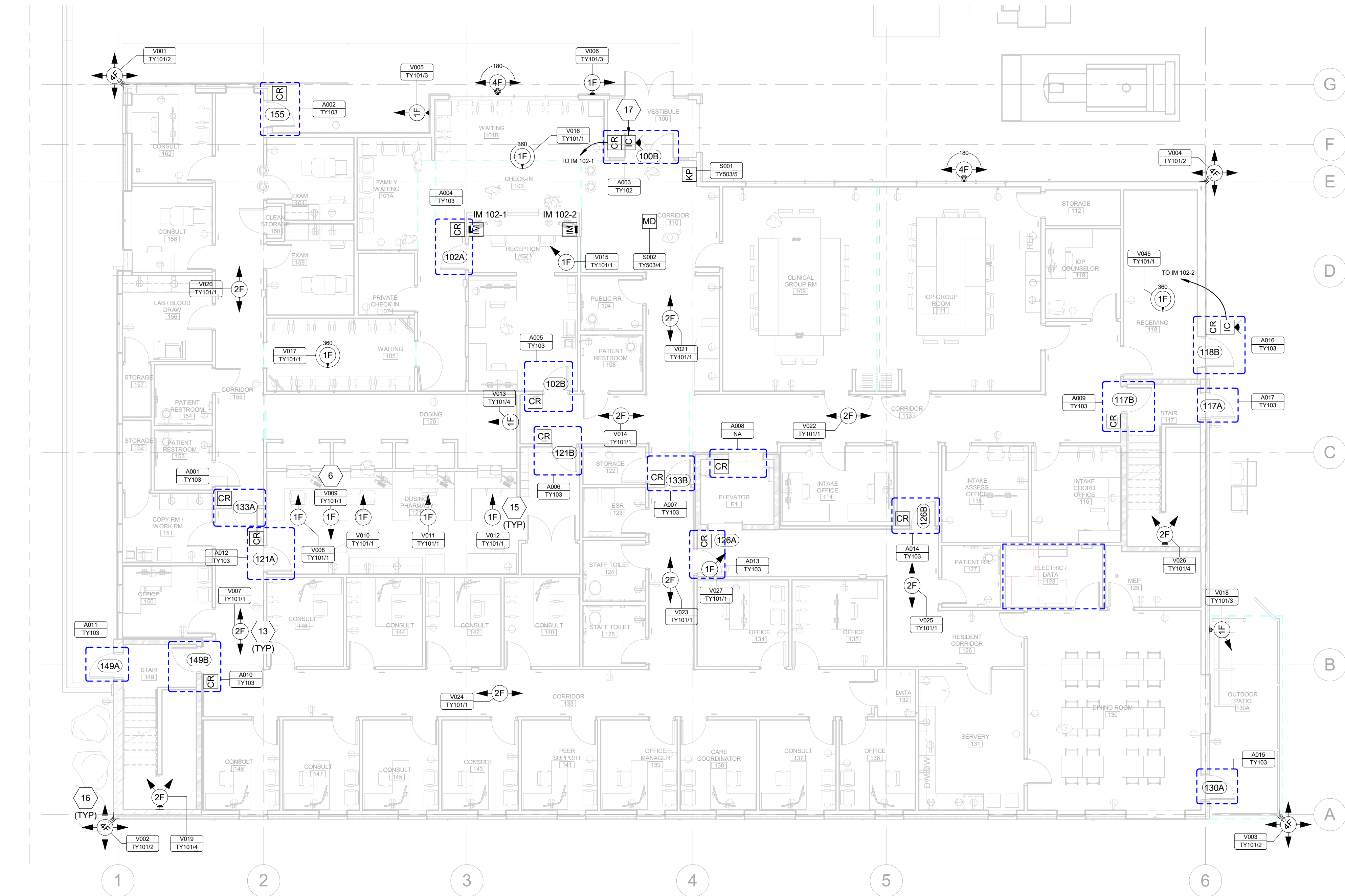
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SECURITY FIRST FLOOR PLAN

23-056

**TY101**



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



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- C ALL EXTERIOR DOOR CONTACTS TO BE DPDT, FOR ACCESS AND INTRUSION.

**KEYED NOTES**

14 HANWHA XNF-8010R.



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**SECURITY THIRD FLOOR PLAN**

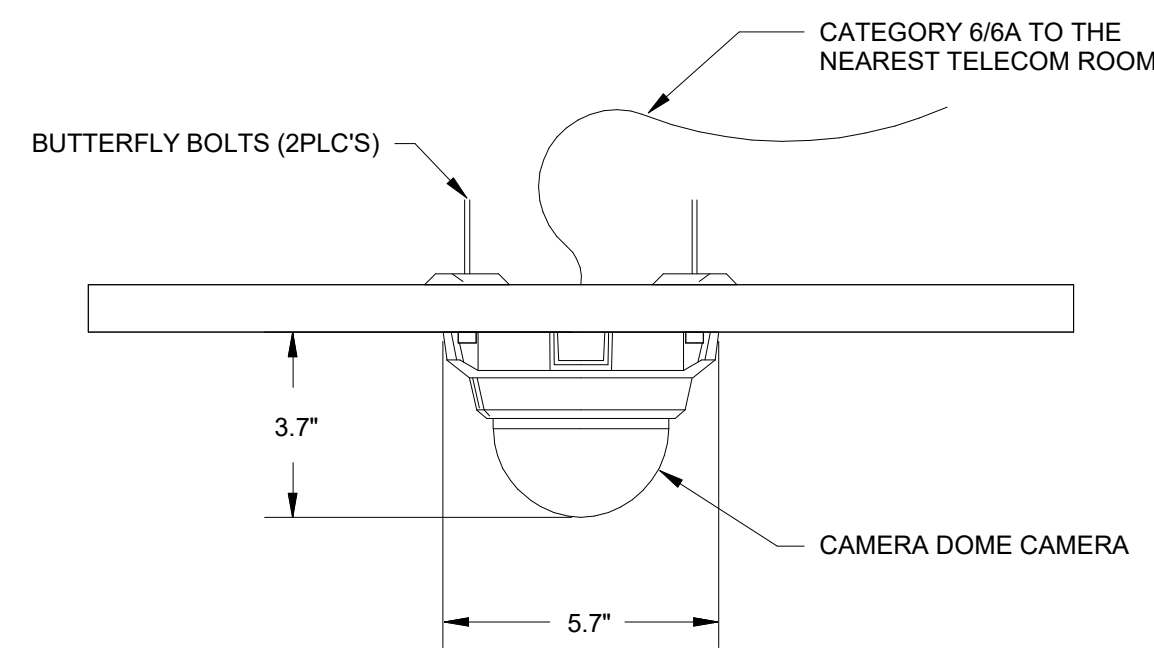
23-056

**TY103**

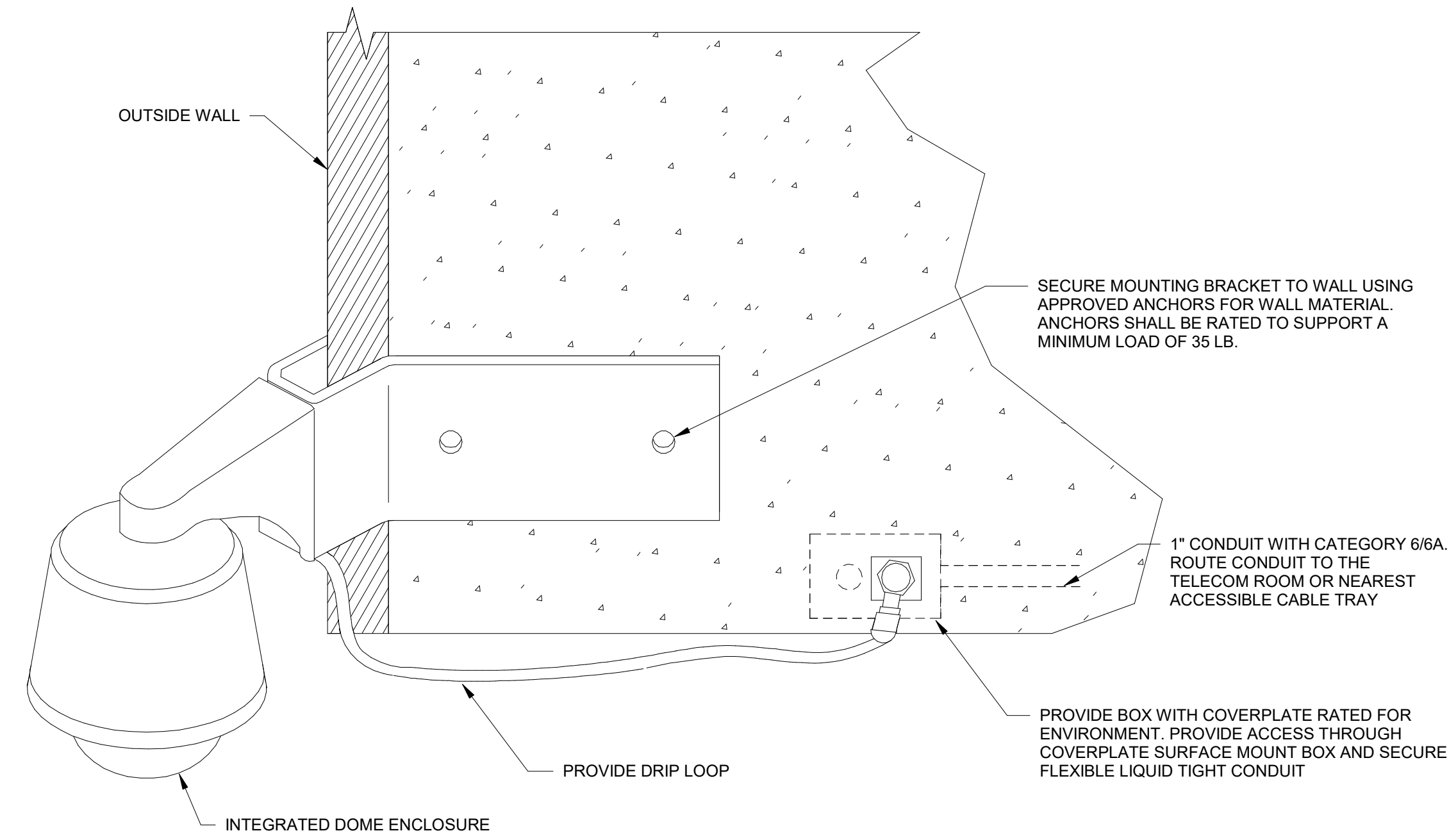


1 SECURITY THIRD FLOOR PLAN  
 1/8" = 1'-0"

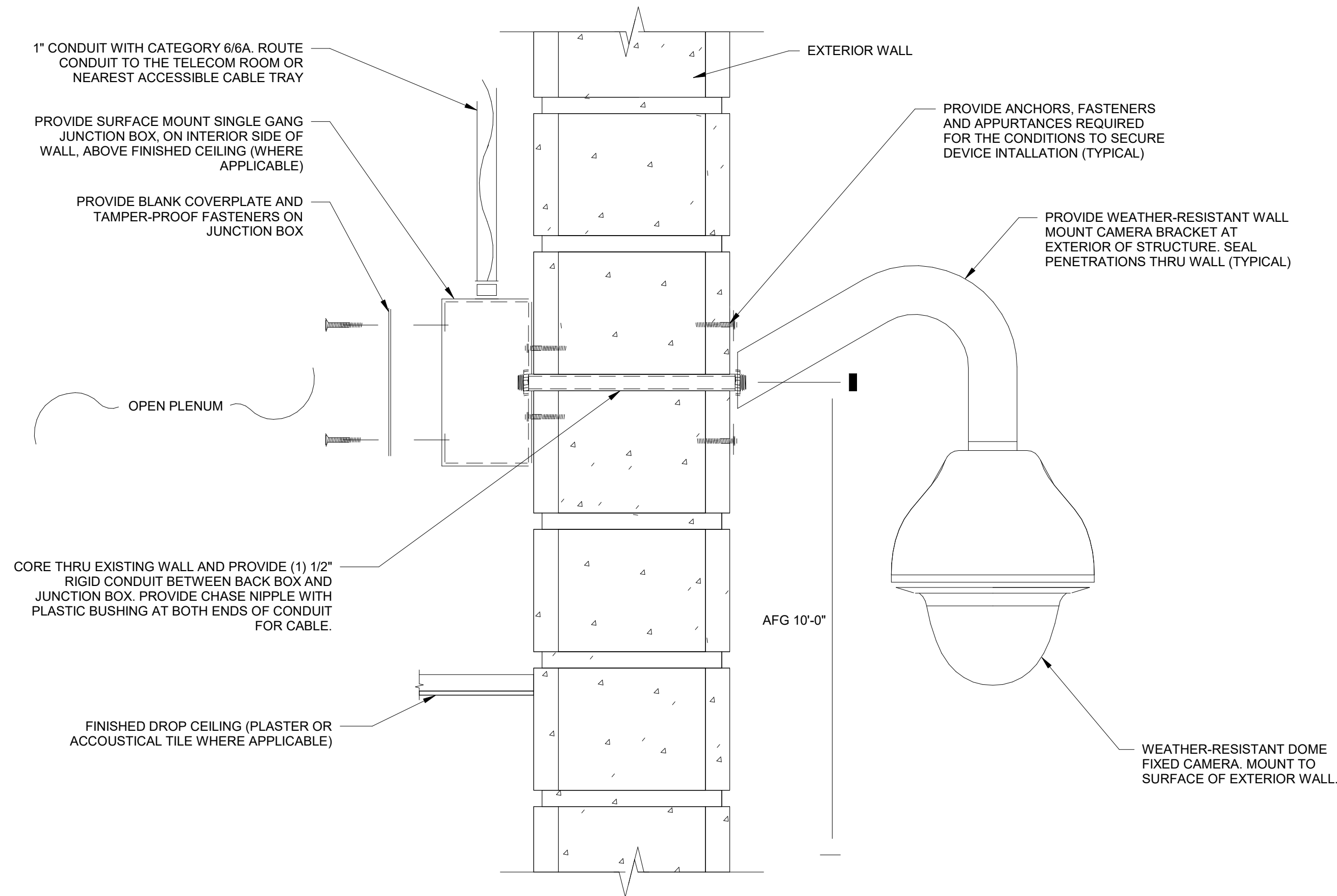
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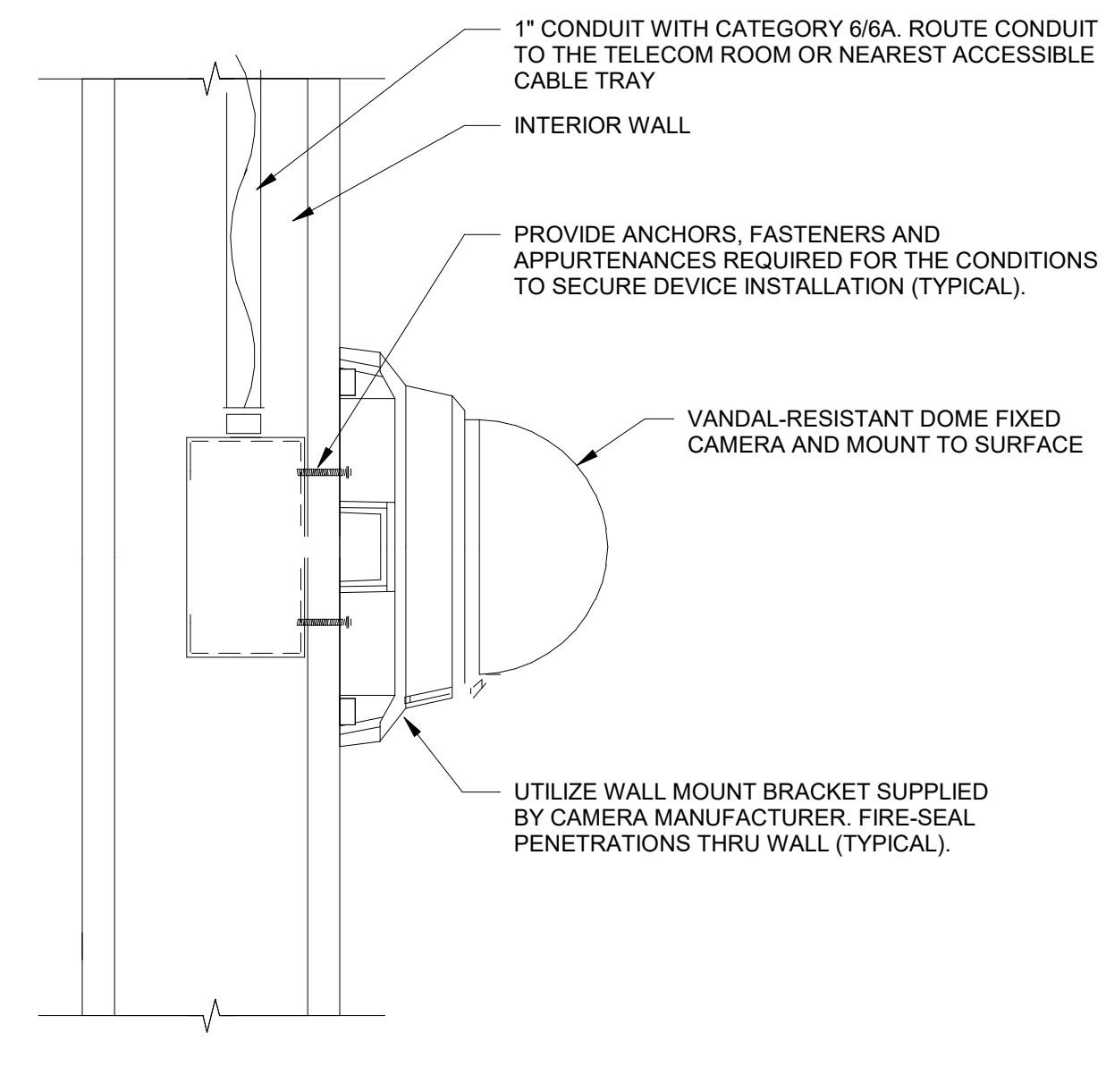
1 ACCESSIBLE CEILING DOME MOUNTED CAMERA DETAIL  
NTS



2 EXTERIOR CORNER MOUNTED DOME CAMERA DETAILS  
NTS



3 DOME CAMERA DETAIL - EXTERIOR WALL MOUNTED WITH GOOSENECK AND INTERIOR SURFACE MOUNTED JBOX IN PLENUM SPACE  
NTS



4 DOME CAMERA DETAIL - INTERIOR WALL MOUNTED WITH INTERIOR SURFACE MOUNTED JBOX  
NTS



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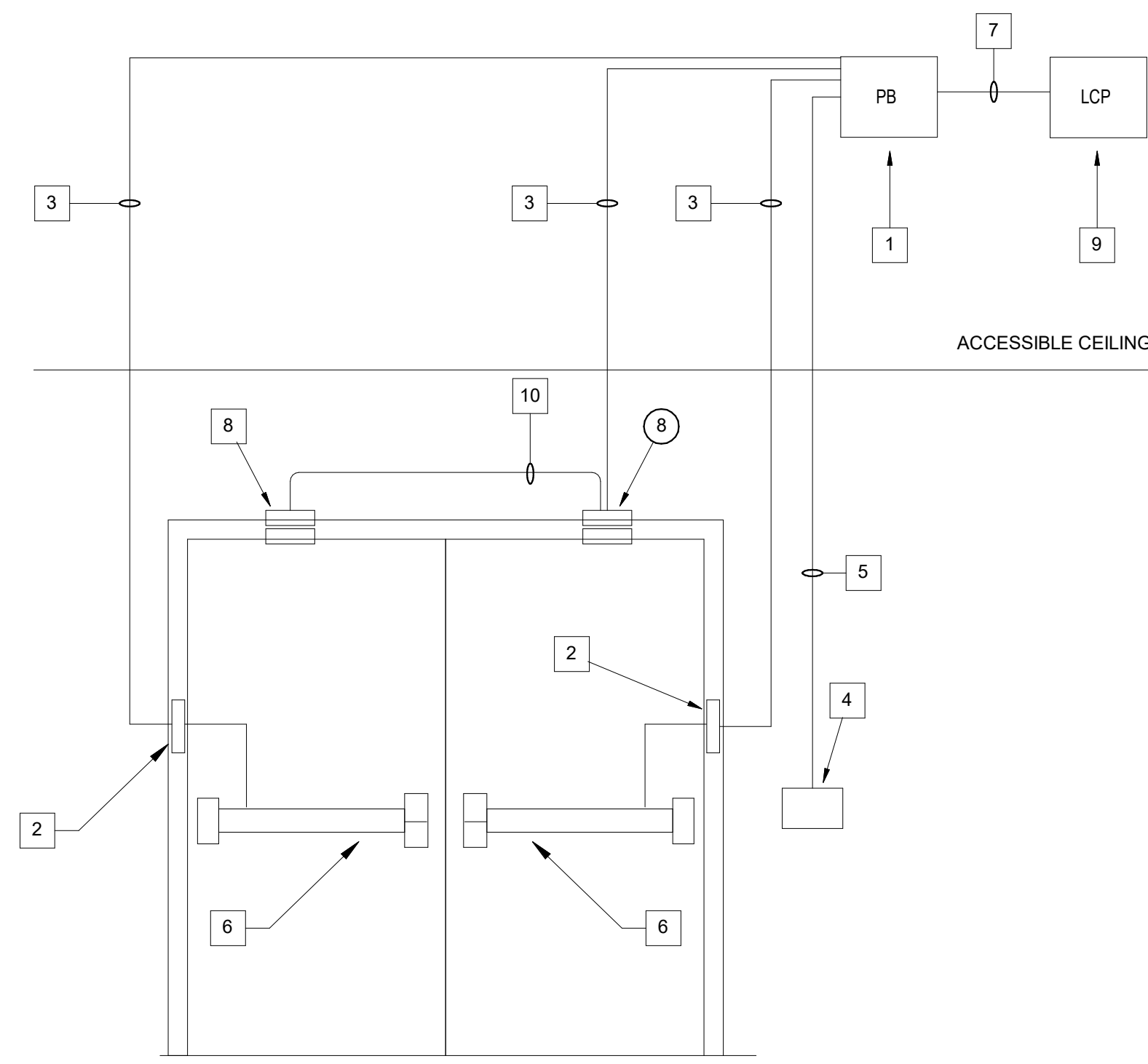
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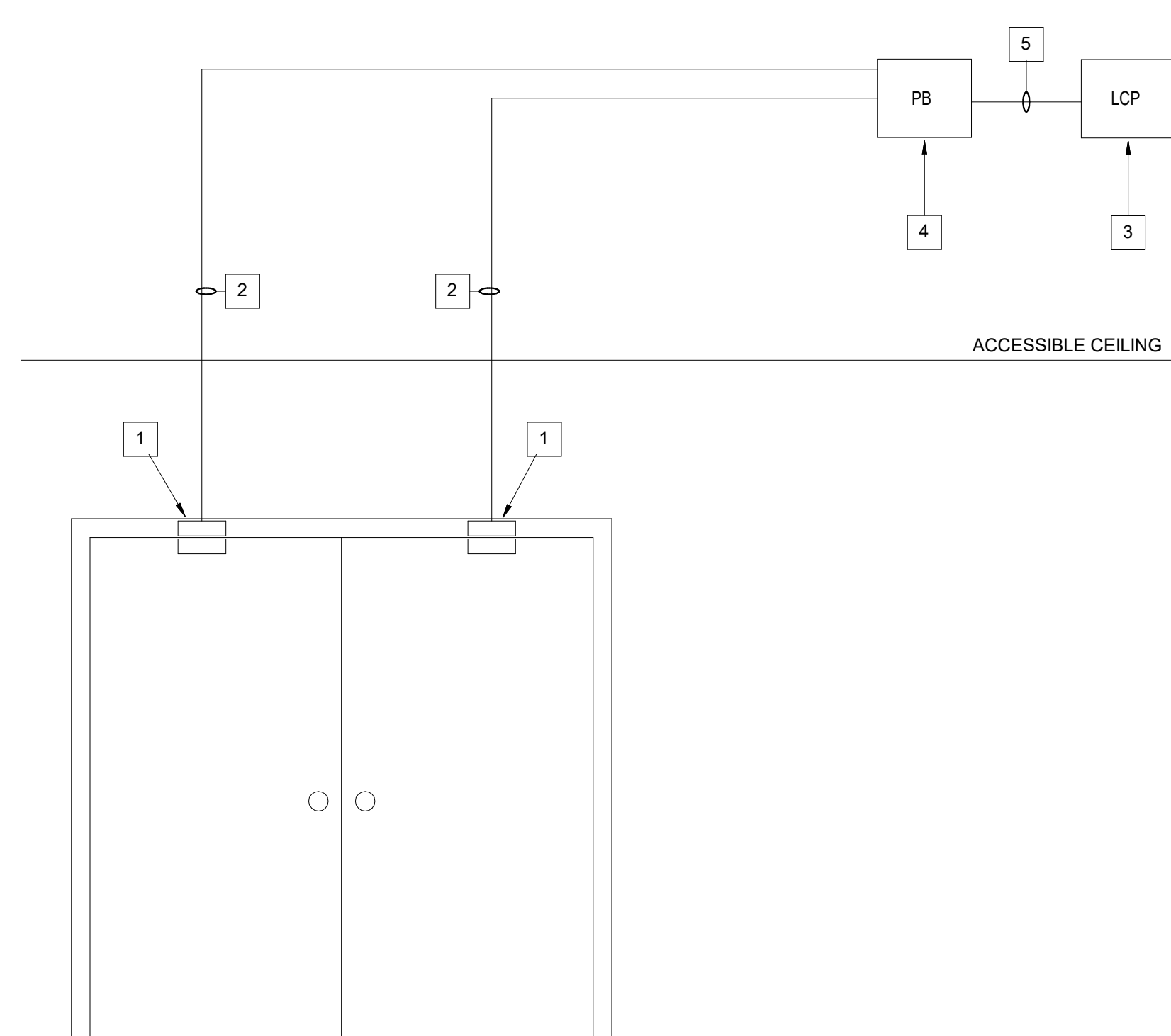
**TY501**



**NOTE:**

- 1 PROVIDE THE JUNCTION BOX ON THE SECURE SIDE OF THE DOOR ABOVE ACCESSIBLE CEILING AND IN A LOCATION THAT PROVIDES EASY ACCESS FOR CONNECTING AND SERVICE.
- 2 SECURITRON EPT POWER TRANSFER DEVICE (OR ENGINEERED APPROVED EQUAL).
- 3 PROVIDE 1" CONDUIT INTO JUNCTION BOX.
- 4 PROVIDE 4" X 4" X 2 1/8" DEEP OUTLET BOX WITH SINGLE GANG PLASTER RING "FLUSH" WITH OUTSIDE WALL SURFACE FOR CARD READER. LOCATED ON PUBLIC SIDE OF DOOR. VERIFY ACTUAL BACKBOX REQUIREMENT WITH ACCESS CONTROL CONTRACTOR.
- 5 PROVIDE 1" CONDUIT INTO JUNCTION BOX.
- 6 ELECTRICALLY HELD PANIC HARDWARE BY OTHERS. (REFER TO FLOOR PLANS FOR DELAYED EGRESS)
- 7 PROVIDE 1-1/4" CONDUIT WHEREVER CABLING MUST BE ROUTED ABOVE AN INACCESSIBLE CEILING OR UNSECURE PATHWAY.
- 8 INSTALL DOOR POSITION SWITCH IN DOOR FRAME. NOTE: INSTALLATIONS ON DOORS WITH CONCRETE FILLED HEADERS WILL REQUIRE A SEPARATE PENETRATION (FROM THE DOOR LOCK) FOR THE DOOR SWITCH.
- 9 LOCAL CONTROL PANEL LOCATED IN TELECOMMUNICATIONS ROOM.
- 10 PROVIDE A 3/4" CONDUIT.

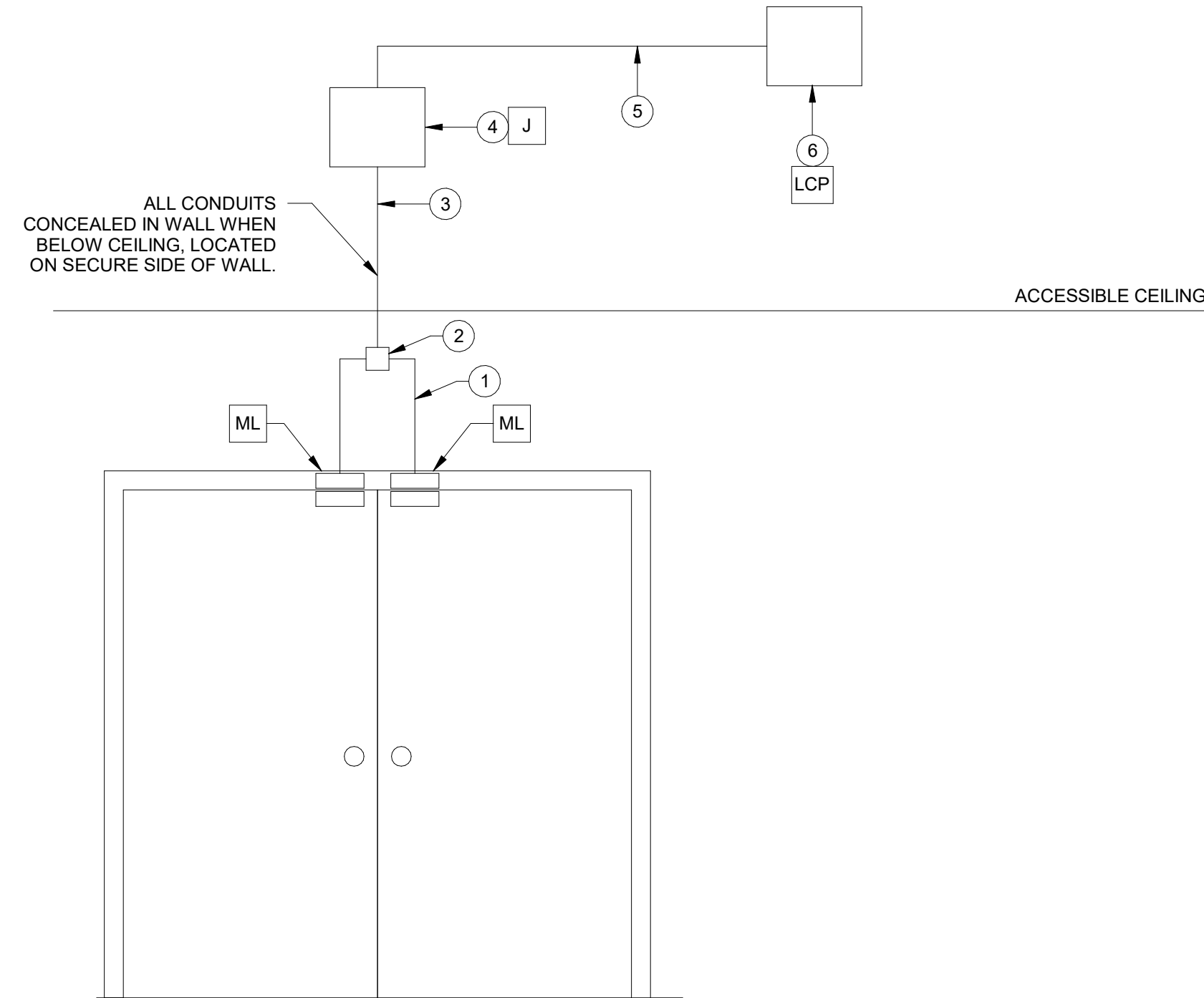
**1 SECURITY DOUBLE DOOR WITH CARD READER DETAIL**  
NTS



**NOTE:**

- 1 PROVIDE DOOR POSITION SWITCH IN DOOR FRAME. NOTE: INSTALLATIONS ON DOORS WITH CONCRETE FILLED HEADERS WILL REQUIRE A SEPARATE PENETRATION (FROM THE DOOR LOCK) FOR THE DOOR SWITCH.
- 2 PROVIDE 1" CONDUIT TO NEAREST ACCESSIBLE CEILING. PROVIDE CONDUIT WHEREVER CABLING MUST BE ROUTED ABOVE AN INACCESSIBLE CEILING OR UNSECURE PATHWAY.
- 3 LOCAL CONTROL PANEL LOCATED IN TELECOMMUNICATIONS ROOM.
- 4 PROVIDE THE JUNCTION BOX ON THE SECURE SIDE OF THE DOOR ABOVE ACCESSIBLE CEILING AND IN A LOCATION THAT PROVIDES EASY ACCESS FOR CONNECTING AND SERVICE.
- 5 PROVIDE 1-1/4" CONDUIT WHEREVER CABLING MUST BE ROUTED ABOVE AN INACCESSIBLE CEILING OR UNSECURE PATHWAY.

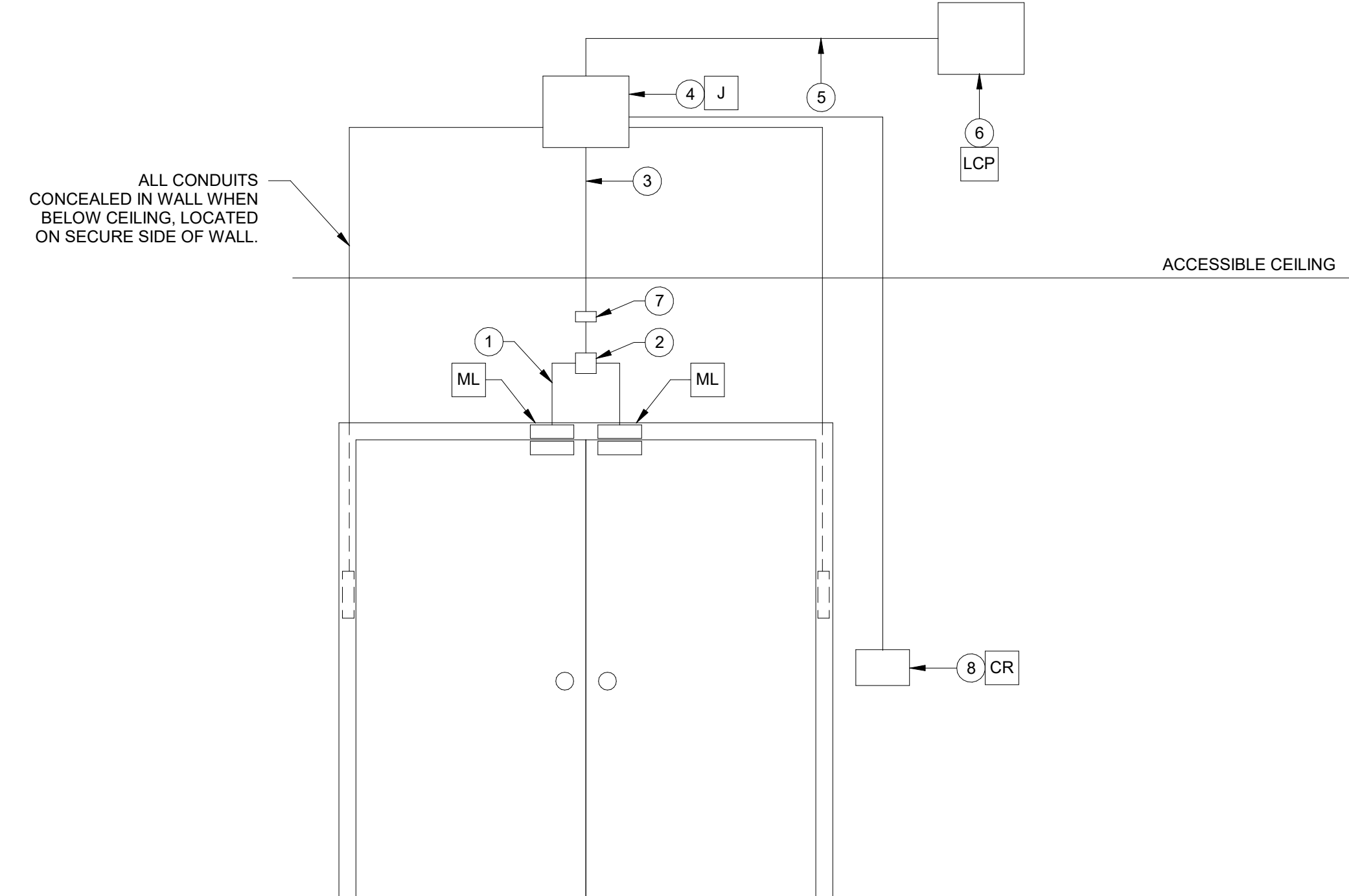
**2 SECURITY DOUBLE DOOR WITH DOOR CONTACT DETAIL**  
NTS



**NOTE:**

- 1 STAINLESS STEEL WHIP PROVIDED WITH MAGNETIC SWITCH (TYP. FOR 2).
- 1 4 11/16" X 4 11/16" X 2 1/2" DEEP JUNCTION BOX WITH BLANK COVER.
- 1 LOCAL CONTROL PANEL LOCATED IN TELECOMMUNICATIONS ROOM.
- 1 8" X 8" JUNCTION BOX SURFACE MOUNTED ABOVE CEILING ON SECURE SIDE OF WALL.
- 1 1" CONDUIT WITH PULLSTRING TO CLOSET LOCAL TR/IDF ROOM.
- 1 3/4" CONDUIT WITH PULLSTRING.

**3 SECURITY DOUBLE DOOR WITH MAGNETIC LOCK DETAIL**  
NTS



**NOTE:**

- 1 STAINLESS STEEL WHIP PROVIDED WITH MAGNETIC SWITCH (TYP. FOR 2).
- 2 4 11/16" X 4 11/16" X 2 1/2" DEEP JUNCTION BOX WITH BLANK COVER.
- 3 3/4" CONDUIT WITH PULLSTRING.
- 4 8" X 8" JUNCTION BOX SURFACE MOUNTED ABOVE CEILING ON SECURE SIDE OF WALL.
- 5 1" CONDUIT WITH PULLSTRING TO CLOSET LOCAL TR/IDF ROOM.
- 6 LOCAL CONTROL PANEL LOCATED IN TELECOMMUNICATIONS ROOM.
- 7 2" X 4" JUNCTION BOX FLUSH MOUNTED ON SECURE SIDE OF WALL FOR MOTION DETECTOR. LAY BOX ON ITS SIDE.
- 8 4 11/16" x 4 11/16" x 2 1/2" DEEP JUNCTION BOX FLUSH MOUNTED ON NON-SECURE SIDE OF WALL FOR CARD READER. LOCATE BOX ON RIGHT HAND SIDE OF DOOR. IF POSSIBLE LOCATE ON ACTIVE LEAFSIDE OF DOUBLE DOORS.

**4 SECURITY DOUBLE DOOR WITH MAGNETIC LOCK AND CARD READER DETAIL**  
NTS



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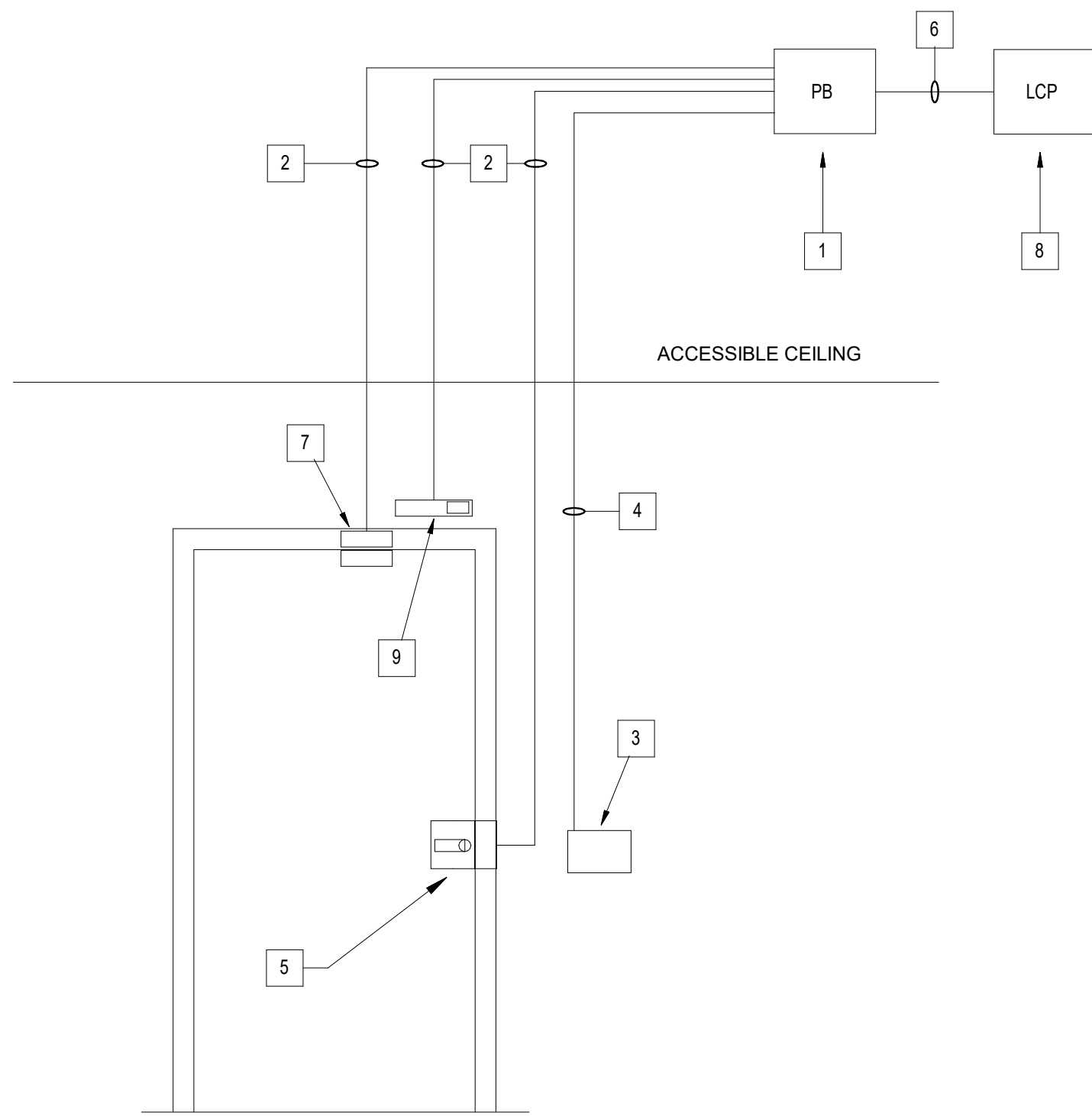
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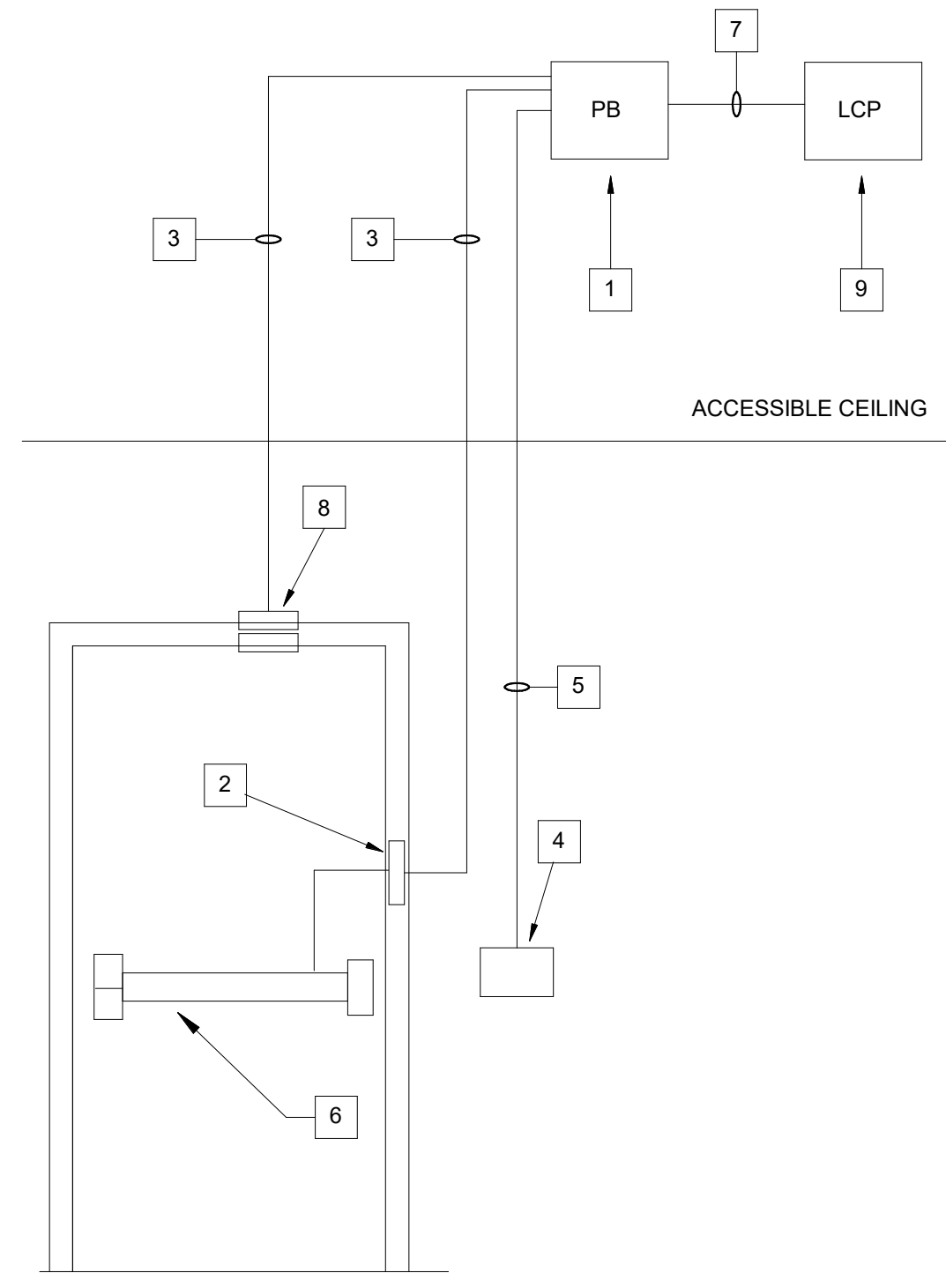
23-056

**TY502**



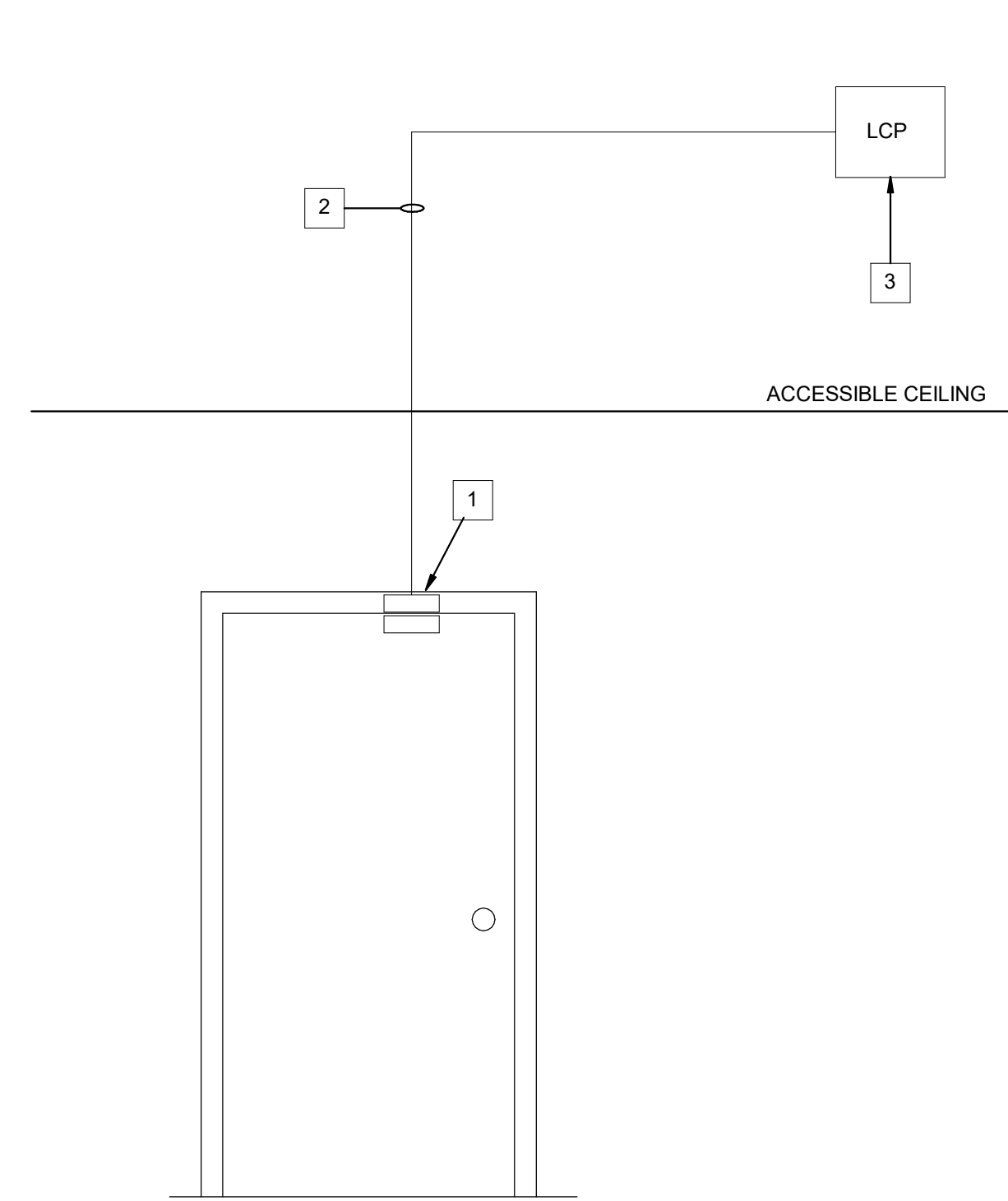
- NOTE:**
- 1 PROVIDE THE JUNCTION BOX ON THE SECURE SIDE OF THE DOOR AND IN A LOCATION THAT PROVIDES EASY ACCESS FOR CONNECTING AND SERVICE.
  - 2 PROVIDE 1" CONDUIT INTO JUNCTION BOX.
  - 3 PROVIDE 4" X 4" X 2 1/8" DEEP OUTLET BOX WITH DOUBLE GANG PLASTER RING "FLUSH" WITH OUTSIDE WALL SURFACE FOR CARD READER, LOCATED ON PUBLIC SIDE OF DOOR.
  - 4 PROVIDE 1" CONDUIT.
  - 5 ELECTRIC STRIKE BY OTHERS.
  - 6 PROVIDE 1-1/4" CONDUIT WHEREVER CABLE MUST BE ROUTED ABOVE AN INACCESSIBLE CEILING OR UNSECURE PATHWAY.
  - 7 INSTALL DOOR POSITION SWITCH IN DOOR FRAME. NOTE: INSTALLATIONS ON DOORS WITH CONCRETE FILLED HEADERS WILL REQUIRE A SEPARATE PENETRATION (FROM THE DOOR LOCK) FOR THE DOOR SWITCH.
  - 8 LOCAL CONTROL PANEL LOCATED IN TELECOMMUNICATIONS ROOM.
  - 9 REQUEST TO EXIT MOTION DETECTOR.

① **SECURITY SINGLE DOOR ELECTRIC STRIKE DETAIL**  
NTS



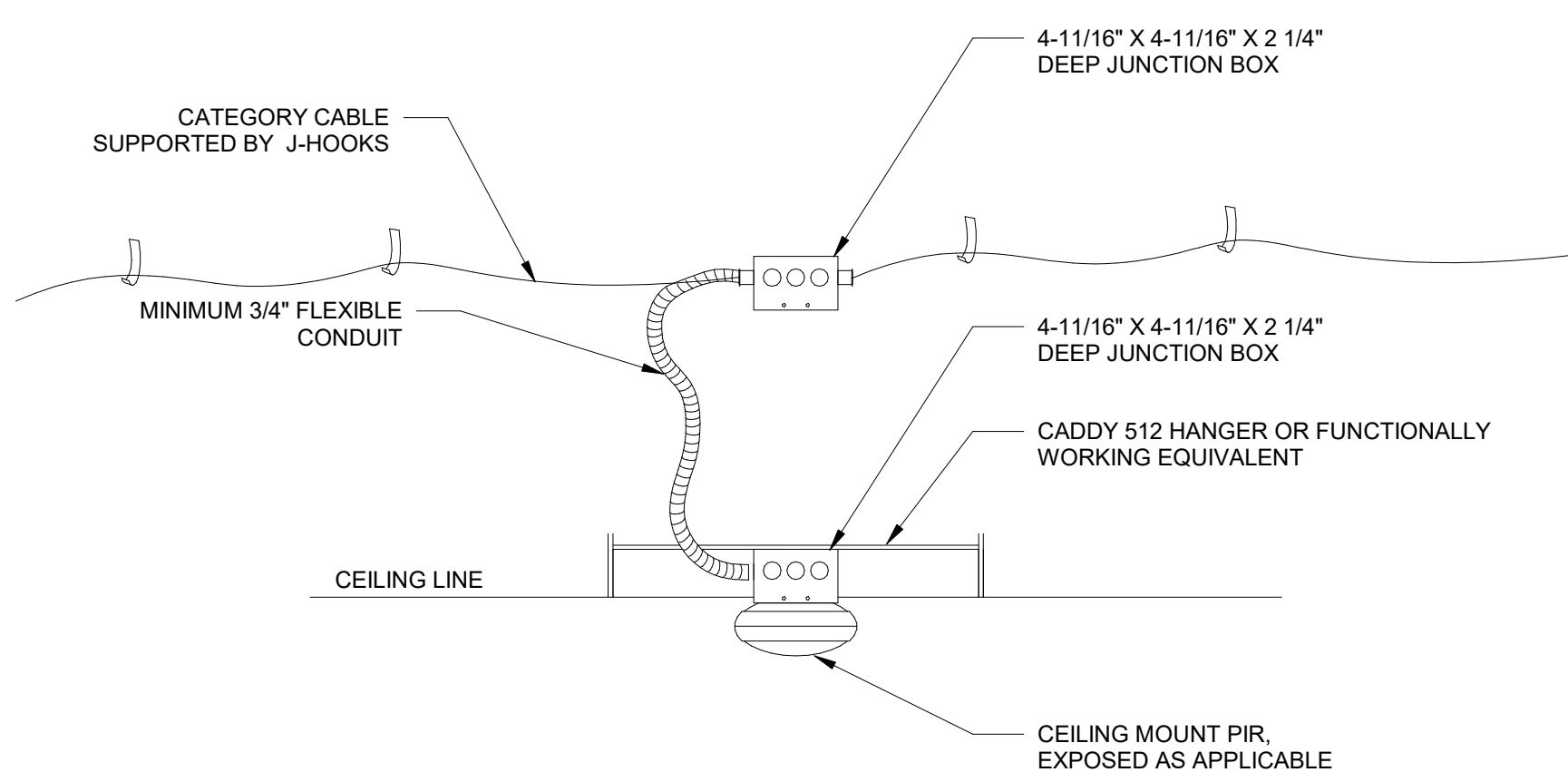
- NOTE:**
- 1 PROVIDE THE JUNCTION BOX ON THE SECURE SIDE OF THE DOOR ABOVE ACCESSIBLE CEILING AND IN A LOCATION THAT PROVIDES EASY ACCESS FOR CONNECTING AND SERVICE.
  - 2 SECURITRON EPT POWER TRANSFER DEVICE (OR ENGINEERED APPROVED EQUAL).
  - 3 PROVIDE 1" CONDUIT INTO JUNCTION BOX.
  - 4 PROVIDE 4" X 4" X 2 1/8" DEEP OUTLET BOX WITH SINGLE GANG PLASTER RING "FLUSH" WITH OUTSIDE WALL SURFACE FOR CARD READER, LOCATED ON PUBLIC SIDE OF DOOR. VERIFY ACTUAL BACKBOX REQUIREMENT WITH ACCESS CONTROL CONTRACTOR.
  - 5 PROVIDE 1" CONDUIT INTO JUNCTION BOX.
  - 6 ELECTRICALLY HELD PANIC HARDWARE BY OTHERS. (REFER TO FLOOR PLANS FOR DELAYED EGRESS)
  - 7 PROVIDE 1-1/4" CONDUIT WHEREVER CABLING MUST BE ROUTED ABOVE AN INACCESSIBLE CEILING OR UNSECURE PATHWAY.
  - 8 INSTALL DOOR POSITION SWITCH IN DOOR FRAME. NOTE: INSTALLATIONS ON DOORS WITH CONCRETE FILLED HEADERS WILL REQUIRE A SEPARATE PENETRATION (FROM THE DOOR LOCK) FOR THE DOOR SWITCH.
  - 9 LOCAL CONTROL PANEL LOCATED IN TELECOMMUNICATIONS ROOM.

② **SECURITY SINGLE DOOR WITH CARD READER DETAIL**  
NTS

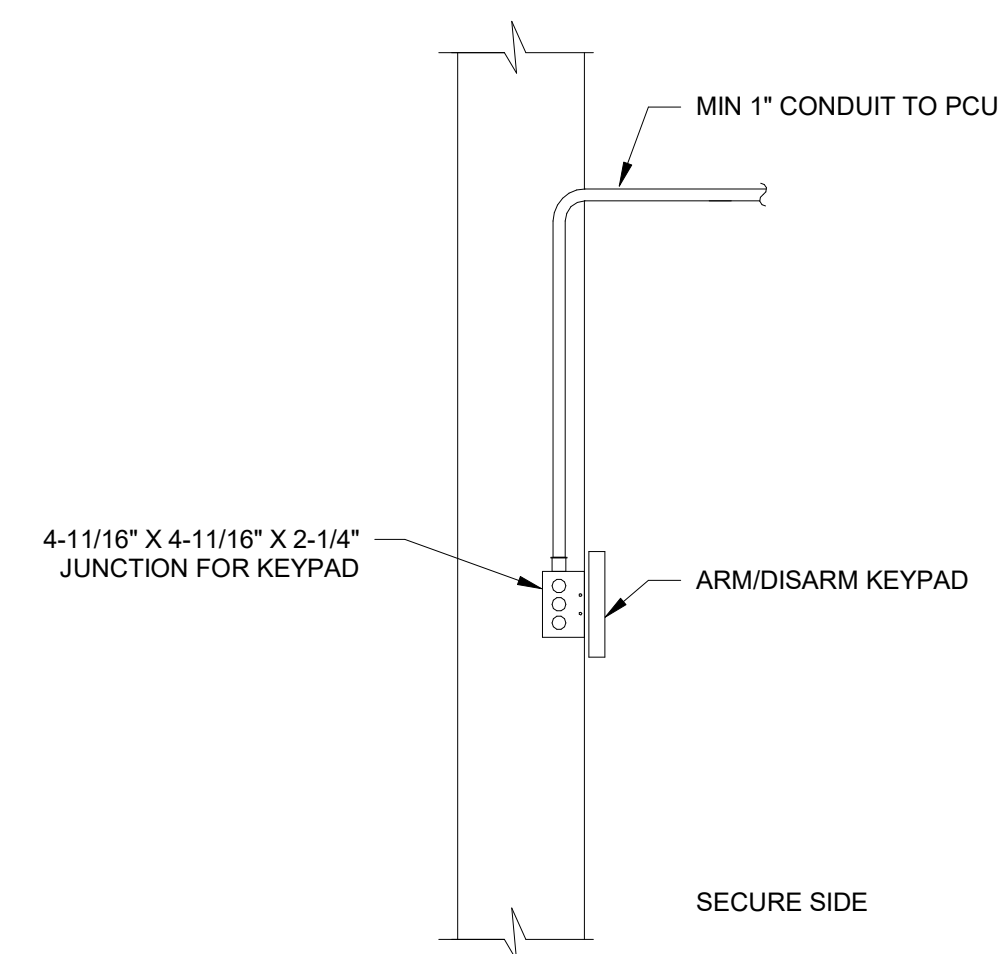


- NOTE:**
- 1 PROVIDE DOOR POSITION SWITCH IN DOOR FRAME OR HATCH.  
NOTE: INSTALLATIONS ON DOORS WITH CONCRETE FILLED HEADERS WILL REQUIRE A SEPARATE PENETRATION (FROM THE DOOR LOCK) FOR THE DOOR SWITCH.
  - 2 PROVIDE 1" CONDUIT TO NEAREST ACCESSIBLE CEILING. PROVIDE CONDUIT WHEREVER CABLING MUST BE ROUTED ABOVE AN INACCESSIBLE CEILING OR UNSECURE PATHWAY.
  - 3 LOCAL CONTROL PANEL LOCATED IN TELECOMMUNICATIONS ROOM.

③ **SECURITY SINGLE DOOR WITH DOOR CONTACT DETAIL**  
NTS



④ **S1 -360 SURFACE MOUNTED PIR MOTION SENSOR**  
NTS



⑤ **S3 - ARM\_DISARM KEYPAD DETAIL**  
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**SECURITY DETAILS**

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**TY503**

### ACCESS CONTROL DOOR SCHEDULE

DEVICE ID	DOOR NUMBER	DETAIL REFERENCE	DATA DROPS	CR - CARD READER IN	CR - CARD READER OUT	IC - INTERCOM	IC - INTERCOM HAVE VIDEO	DC - DOOR CONTACT	EH - ELECTRIC HINGE	EL - ELECTRIC LOCK	RX REQUEST TO EXIT CRASHBAR	
A001	133A	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
A002	133A	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
A003	100B	TY102	1	Yes	No	No	No	Yes	No	Yes	Yes	
A004	100B	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
A005	100B	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
A006	121B	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
A007	133B	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
A008	E1	NA	0	Yes	No	No	No	Yes	No	Yes	Yes	
A009	117B	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
A010	146B	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
A011	146A	TY103	0	No	No	No	No	Yes	No	No	Yes	
A012	121A	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
A013	126A	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
A014	126B	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
A015	130A	TY103	0	No	No	No	No	Yes	No	No	Yes	
A016	114B	TY103	1	Yes	No	No	No	Yes	No	Yes	Yes	
A017	117A	TY103	0	No	No	No	No	Yes	No	No	Yes	
A019	218A	TY103	0	Yes	No	No	No	Yes	No	Yes	Yes	
Grand total:			18									

REFER TO SPECIFICATION SECTION 087100 FOR ALL FINAL COORDINATION FOR DOOR HARDWARE.

### CAMERA SCHEDULE

DEVICE ID	CAM SENSOR COUNT (F=FIXED P=PTZ)	LEVEL	MOUNTING HEIGHT	DETAIL REFERENCE
V001	4F	FIRST FLOOR	12' - 0"	TY101/2
V002	4F	FIRST FLOOR	12' - 0"	TY101/2
V003	4F	FIRST FLOOR	12' - 0"	TY101/2
V004	4F	FIRST FLOOR	12' - 0"	TY101/2
V005	1F	FIRST FLOOR	12' - 0"	TY101/3
V006	1F	FIRST FLOOR	12' - 0"	TY101/3
V007	2F	FIRST FLOOR	8' - 6"	TY101/1
V008	1F	FIRST FLOOR	8' - 6"	TY101/1
V009	1F	FIRST FLOOR	8' - 6"	TY101/1
V010	1F	FIRST FLOOR	8' - 6"	TY101/1
V011	1F	FIRST FLOOR	8' - 6"	TY101/1
V012	1F	FIRST FLOOR	8' - 6"	TY101/1
V013	1F	FIRST FLOOR	8' - 6"	TY101/4
V014	2F	FIRST FLOOR	8' - 6"	TY101/1
V015	1F	FIRST FLOOR	8' - 4"	TY101/1
V016	1F	FIRST FLOOR	10' - 0"	TY101/1
V017	1F	FIRST FLOOR	8' - 4"	TY101/1
V018	1F	FIRST FLOOR	12' - 0"	TY101/3
V019	2F	FIRST FLOOR	15' - 0"	TY101/4
V020	2F	FIRST FLOOR	8' - 6"	TY101/1
V021	2F	FIRST FLOOR	8' - 6"	TY101/1
V022	2F	FIRST FLOOR	8' - 6"	TY101/1
V023	2F	FIRST FLOOR	8' - 6"	TY101/1
V024	2F	FIRST FLOOR	8' - 6"	TY101/1
V025	2F	FIRST FLOOR	8' - 6"	TY101/1
V026	2F	FIRST FLOOR	15' - 0"	TY101/4
V027	1F	FIRST FLOOR	8' - 6"	TY101/1
V028	1F	SECOND FLOOR	10' - 0"	TY101/1
V029	2F	SECOND FLOOR	9' - 0"	TY101/1
V030	2F	SECOND FLOOR	8' - 6"	TY101/1
V031	2F	SECOND FLOOR	8' - 6"	TY101/1
V032	2F	SECOND FLOOR	9' - 0"	TY101/1
V033	2F	SECOND FLOOR	9' - 0"	TY101/1
V034	2F	SECOND FLOOR	15' - 0"	TY101/4
V035	2F	SECOND FLOOR	15' - 0"	TY101/4
V036	1F	THIRD FLOOR	10' - 0"	TY101/1
V037	2F	THIRD FLOOR	15' - 0"	TY101/4
V038	2F	THIRD FLOOR	15' - 0"	TY101/4
V039	2F	THIRD FLOOR	9' - 0"	TY101/1
V040	2F	THIRD FLOOR	10' - 0"	TY101/1
V041	2F	THIRD FLOOR	8' - 6"	TY101/1
V042	2F	THIRD FLOOR	8' - 6"	TY101/1
V043	2F	THIRD FLOOR	8' - 6"	TY101/1
V044	1F	THIRD FLOOR	9' - 0"	TY101/1
V045	1F	FIRST FLOOR	8' - 6"	TY101/1
V046	4F	FIRST FLOOR	12' - 0"	TY101/3
V047	4F	FIRST FLOOR	12' - 0"	TY101/3
V048	2F	THIRD FLOOR	8' - 6"	TY101/1

Total: 48



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**The Crossroads Center**  
2114 Reading Road, Cincinnati, Ohio

NO.	DESCRIPTION	DATE
1	PERMIT SET	08/09/24

SECURITY SCHEDULES

23-056

# TY601