A D D E N D U M N O. 1

PHM Science and Space Exploration Center

Penn-Harris-Madison School Corporation
Mishawaka, Indiana

Project No. 225001.00

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Addendum No. 1, 4 items, 2 pages
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Pre-Bid Meeting Agenda
Pre-Bid Sign-in Sheet

August 12, 2025

I hereby certify that this Addendum was prepared by me or under my direct supervision and that I am a duly registered Architect/Engineer under the Laws of the State of Indiana.

FANNING/HOWEY ASSOCIATES, INC.
ARCHITECTS/ENGINEERS/CONSULTANTS

Paul A. Miller, License No. AR10800161
Expiration Date: 12/31/2025

TO: ALL BIDDERS OF RECORD

ADDENDUM NO. 1 to Drawings and Project Manual, dated June 30, 2025, for Penn-Harris-Madison School Corporation, 55900 Bittersweet Road, Mishawaka, Indiana 46545; as prepared by Fanning/Howey Associates, Inc., Indianapolis, Indiana.
This Addendum shall hereby be and become a part of the Contract Documents the same as if originally bound thereto.

The following clarifications, amendments, additions, revisions, changes, and modifications change the original Contract Documents only in the amount and to the extent hereinafter specified in this Addendum.

Each bidder shall acknowledge receipt of this Addendum in his proposal or bid.

NOTE: Bidders are responsible for becoming familiar with every item of this Addendum. (This includes miscellaneous items at the very end of this Addendum.)

RE: ALL BIDDERS

ITEM NO. 1. REVISED PROJECT MANUAL SECTIONS

A. 05 52 13 – Pipe and Tube Railings and 33 46 00 - Subdrainage have been revised, dated 8/12/25, and are included with and hereby made a part of this Addendum.

ITEM NO. 2. PROJECT MANUAL, SECTION 09 96 00 – HIGH-PERFORMANCE COATINGS

A. Add 1.1, B., 2., as follows:

"2. Painting of exposed-to-view interior and exterior fire suppression, plumbing, gas, HVAC, electrical, communication, and electronic safety and security components."

B. Add 3.5, F., 3., as follows:

"3. Paint the following where exposed to view on the exterior of building:
a. Uninsulated metal piping.
b. Uninsulated plastic piping.
c. Pipe hangers and supports.
d. Metal conduit
e. Tanks that do not have factory applied finishes."

C. Add 3.9, A., 1., d., 2) as follows:

"2) Uninsulated metal and galvanized metal piping (gas piping).
3) Metal pipe hangers and supports."

ITEM NO. 3. ACCEPTABLE MANUFACTURERS

The following manufacturers are to be considered acceptable manufacturers (suppliers and fabricators) for the Sections of the Specifications listed. Listed manufacturers are required to bid on products equal in type and design, size, function, and quality to that originally specified. Final decision as to equality of products specified versus those proposed shall be made by the Architect.

Section 07 13 00 – Sheet Waterproofing
- Polyglass USA, Inc., Deerfield Beach, Florida (Mapethene HT60)

Section 07 27 26.02 – Vapor-Permeable, Fluid-Applied Membrane Air Barrier
- Polyglass USA, Inc., Deerfield Beach, Florida (VertiWrap VPL)

Section 07 54 23 – Thermoplastic Polyolefin (TPO) Roofing
- Dura-Last Inc., Saginaw, Michigan

Section 09 67 23 – Decorative Resinous Flooring (Aggregate)
- Dex-O-Tex, Roselle Park, New Jersey

ITEM NO. 4. REVISED DRAWING SHEETS:

A. Drawing Sheets: G1.00, G2.00, G4.00, S-102, S-521, AD101, A-11A, A-307, A-309, A-401, AR102, MH11A, MH12A, EL110, E-501, E-601, and E-602 have been revised, dated 8/12/25, and are included with and hereby made a part of this Addendum. These Drawings supersede the original documents.

END OF ADDENDUM

SECTION 05 52 13 - PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Steel pipe and tube railings.
   2. Aluminum pipe and tube railings (exterior).

B. Mark furnished but installed under other Sections:
   1. Furnish sleeves and anchors to be cast in concrete to Division 03 Section “Cast-in-Place Concrete”.

C. Related Sections include the following:
   1. Division 05 Section "Metal Fabrications" for additional requirements for chemical anchors.
   2. Division 06 Section "Rough Carpentry" for wood blocking for anchoring railings.
   3. Division 09 Section "Gypsum Board Assemblies" for metal backing for anchoring railings.

1.2 COORDINATION AND SCHEDULING

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

C. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

1.3 ACTION SUBMITTALS

A. Separate submittals shall be provided for Work of this Section only. Do not combine submittals for Pipe and Tube Railings with other Division 05 Sections even is supplied by the same Prime Contractor/Subcontractor/Supplier.

B. Product Data: For the following:
   1. Grout, anchoring cement.
   2. Railing brackets.

C. Shop Drawings: For all railing systems, including:
   1. Splices and attachments.
   2. Identify location of all railing systems.
   3. Indicate railing systems in related and dimensional position, with elevations at scale of 1/4 inch equals 12 inches and details at scale of 3 inch equals 12 inch (1:5) or larger.
   4. Show all details and dimensions not governed by field conditions.
   5. Indicate all required field measurements.

D. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
   1. Qualification Data: For professional engineer.

1.4 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to the following:
   1. AWS D1.1, "Structural Welding Code--Steel."
   2. AWS D1.2, "Structural Welding Code--Aluminum."

B. Engineer Qualifications: Professional engineer legally authorized to practice in the jurisdiction where Project is located and experienced in providing engineering services of the kind indicated for handrails and railing systems similar to this Project in material, design, and extent, and that have a record of successful in-service performance.

1.5 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on Shop Drawings.
   1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating railings without field measurements. Coordinate wall and other contiguous construction to ensure that actual dimensions correspond to established dimensions.
   2. Provide allowance for trimming and fitting at site.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Deliver materials to the job site in good condition and properly protected against damage to finished surfaces.

C. Storage on Site
   1. Store material in a location and in a manner to avoid damage. Stacking shall be done in a way which will prevent bending.
   2. Store aluminum, bronze, and stainless steel components and materials in a clean, dry location, away from uncured concrete and masonry. Cover with waterproof paper, tarpaulin or polyethylene sheeting in a manner that will permit circulation of air inside the covering.

D. Keep handling on site to a minimum. Exercise particular care to avoid damage to finishes of materials.
   1. Refer to NAAMM Manual AMP 555-92, Code of Standard Practice for the Architectural Metal Industry, Sections 6 and 7.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

B. Products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product. Requests for Architect/Engineer’s approval must be accompanied by the “Substitution Request Form” and complete technical data for evaluation. All materials for evaluation must be received by the Project Manager and Specification Department at least 10 days prior to bid due date. Additional approved manufacturers will be issued by Addendum.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design railings, posts, and attachments to adjoining construction, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. General: In engineering railings and posts to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:
   1. Steel: 72 percent of minimum yield strength.
   2. Aluminum: The lesser of minimum yield strength divided by 1.65 or minimum ultimate tensile strength divided by 1.95.

C. Structural Performance: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
   1. Handrails and Top Rails of Guards:
      a. Uniform load of 50 lbf/ ft. applied in any direction.
      b. Concentrated load of 200 lbf applied in any direction.
      c. Uniform and concentrated loads need not be assumed to act concurrently.
   2. Infill of Guards:
      a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.
      b. Infill load and other loads need not be assumed to act concurrently.

D. Thermal Movements: Provide exterior railings that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

E. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

2.3 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.
   1. Provide bracket that provides 1-1/2 inch clearance from inside face of handrail to finished wall surface.

2.4 STEEL AND IRON

A. Tubing: ASTM A 500 (cold formed) or ASTM A 513.
   1. Round.

B. Pipe: ASTM A 53, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.

C. Plates, Shapes, and Bars: ASTM A 36.

D. Castings: Either gray or malleable iron, unless otherwise indicated.
   1. Gray Iron: ASTM A 48, Class 30, unless another class is indicated or required by structural loads.
   2. Malleable Iron: ASTM A 47.

2.5 ALUMINUM

A. Aluminum, General: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy and temper designated below for each aluminum form required.

B. Extruded Bars and Tubing: ASTM B 221, Alloy 6063-T5/T52.

C. Extruded Structural Pipe and Round Tubing: ASTM B 429, Alloy 6063-T6.
1. Provide Standard Weight (Schedule 40) pipe, unless otherwise indicated.
2. Where required by loading and performance requirements, provide Schedule 80 pipe for vertical posts and horizontal members.

D. Drawn Seamless Tubing: ASTM B 210, Alloy 6063-T832.

E. Plate and Sheet: ASTM B 209, Alloy 6061-T6.

F. Die and Hand Forgings: ASTM B 247, Alloy 6061-T6.

G. Castings: ASTM B 26, Alloy A356.0-T6.

2.6 FASTENERS

A. General: Provide the following:
1. Steel Railings: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.
2. Aluminum Railings: Type 304 stainless-steel fasteners.
3. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.

C. Fasteners for Interconnecting Railing Components:
1. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless otherwise indicated.

D. Post-Installed Anchors: Provide chemical, anchors, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
1. Refer to Division 05 Section "Metal Fabrications."

E. Brackets, Flanges, Fittings and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnections of pipe and attachment of handrails and guards to other work. Furnish inserts and other anchorage devices for connecting handrails and guards to concrete and masonry work.
1. Wall Bracket: Cast ductile iron wall mount handrail bracket with a projection of 2-1/2 inch. Bracket shall have one 7/16 inch mounting hole, 1-1/2 inch drop and round saddle with two countersunk mounting holes.
a. Manufacturers
1) Julius Blum & Co.
2) R&B Wagner, Inc.
3) J.G. Braun Co.

2. ***Wall Bracket: Cast aluminum wall mount handrail bracket with a projection of 2-1/2 inch. Bracket shall have one 3/8 – 16 tapped hole for concealed mounting and universal saddle with two countersunk mounting holes.***
   a. ***Manufacturers***
      1) ***Julius Blum & Co.***
      2) ***R&B Wagner, Inc.***
      3) ***J.G. Braun Co.***
3. At brackets and fittings fastened to plaster or gypsum board partitions, provide fillers made from crush resistant material, or other means to transfer wall loads through wall finishes to structural supports and prevent bracket of fitting rotation and crushing of substrate.
4. Ease corners and edges of brackets. Brackets shall not have sharp edges.

2.7 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
   1. ***For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.***

B. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI #79 and compatible with topcoat.
   1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.

C. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for exterior applications.

D. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.
   1. Water-Resistant Product: Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended by manufacturer for exterior use.

2.8 FABRICATION

A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

B. Shop assemble railings to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations.
   1. Clearly mark units for reassembly and coordinated installation.
   2. Use connections that maintain structural value of joined pieces equally spaced per code requirements between top rail and finish floor or nosing line of tread.
   3. Locate intermediate rails.

C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

D. Form work true to line and level with accurate angles and surfaces.

E. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.

F. Connections: Fabricate railings with either welded or nonwelded connections, unless otherwise indicated.

G. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
   1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
      a. Do not weld aluminum.
   2. Obtain fusion without undercut or overlap.
   3. Remove flux immediately.
   4. Weld exposed corners and seams continuously, unless otherwise indicated.
   5. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Type 2 welds; completely sanded joint, some undercutting and pinholes okay.

H. Nonwelded Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
   1. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.

I. Form changes in direction as follows:
   1. By bending or by inserting prefabricated elbow fittings.

J. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

K. Close exposed ends of railing members with prefabricated end fittings or by welding metal closure in place.

L. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch or less.

M. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work, unless otherwise indicated.
   1. At brackets and fittings fastened to plaster or gypsum board partitions, provide fillers made from crush-resistant material, or other means to transfer wall loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate.

N. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work.
   1. Fabricate anchorage devices capable of withstanding loads imposed by railings.
   2. Coordinate anchorage devices with supporting structure.

O. Toe Boards: Where indicated, provide toe boards at railings around openings and at edge of open-sided floors and platforms. Fabricate to dimensions and details indicated.

2.9 STEEL AND IRON FINISHES

A. For nongalvanized steel railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves, except galvanize anchors to be embedded in exterior concrete or masonry.

B. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed railings:
   1. Other Railings: SSPC-SP3, "Power Tool Cleaning."

C. Apply shop primer to prepared surfaces of railings, unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.
   1. Do not apply primer to galvanized surfaces.
   2. Stripe paint corners, crevices, bolts, welds, and sharp edges.

2.10 ALUMINUM FINISHES

A. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

B. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

C. Class I, Color Anodic Finish: AA-M12C22A42/A44 or AA-M10C21A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.
   1. Color: Dark bronze.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine gypsum board assemblies, where reinforced to receive anchors, to verify that locations of concealed reinforcements have been clearly marked for Installer. Locate reinforcements and mark locations if not already done.

3.2 INSTALLATION, GENERAL

A. Fit exposed connections together to form tight, hairline joints.

B. Perform cutting, drilling, and fitting required for installing railings.
   1. Set railings accurately in location, alignment, and elevation; measured from established lines and levels.
   2. Fit exposed connections together to form tight, hairline joints.
   3. Install railings level, plumb, square, true to line; without distortion, warp, or rack.
   4. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
   5. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
   6. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

C. Corrosion Protection: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
   1. Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

D. Adjust railings before anchoring to ensure matching alignment at abutting joints.

E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.3 RAILING CONNECTIONS

A. Nonwelded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of railings.

B. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in Part 2 "Fabrication" Article whether welding is performed in the shop or in the field.

C. Expansion Joints: Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches beyond joint on either side, fasten internal sleeve securely to 1 side, and locate joint within 6 inches of post.
   1. Steel: Provide expansion joints on straight runs exceeding 40 feet.
   2. Aluminum: Provide expansion joints on straight runs exceeding 20 feet.

3.4 ANCHORING POSTS

A. Tolerance: Set posts plumb and aligned to within 1/4 inch in 12 feet.

B. Setting Posts, General:
   1. Clean dust and foreign matter from sleeves/holes.
   2. Moisten interior of holes and surrounding surfaces with clean water.
   3. Prepare and use grout in accordance with manufacturer’s directions.
   4. Place posts in position and brace until grout sets.
   5. Pour mixture into annular space until it overflows the hole.
   6. Wipe off excess and leave 1/8 inch build-up sloped away from post.

C. Anchor posts at stair stringers and exposed steel beams/channels via full welded connection in compliance with performance requirements or steel welded stub post welded to steel stringer or other substrate. Stub post shall be smaller diameter than posts allowing posts to slip over top of stub and be welded.

D. Anchor posts to concrete surfaces with oval flanges, angle type, or floor type with expansion anchors as required by conditions, connected to posts and to metal supporting members:
   1. Cover anchorage joint with flange of same metal as post, welded to post after placing anchoring material.
   2. Exterior locations.

E. Anchor posts to metal surfaces with via welding as required by conditions, connected to posts and to metal supporting members as follows:
   1. For steel pipe railings, weld flanges to metal supporting surfaces.
   2. Where face mounting is indicated, provide angles, bolts, and welds as required for mounting of guardrail posts. Refer to Drawings for additional information.

F. Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
   1. Interior Locations: Use either nonshrink nonmetallic grout or anchoring cement.

G. Leave anchorage joint exposed; wipe off surplus anchoring material; and leave 1/8-inch buildup, sloped away from post.

3.5 ANCHORING RAILING ENDS

A. Tolerances: Set rails horizontal or parallel to rake of steps or ramp to within 1/4 inch in 12 feet.

B. Anchor railing ends to concrete and masonry with round flanges connected to railing ends and anchored to wall construction with anchors and bolts.

C. Anchor railing ends to metal surfaces with flanges bolted to metal surfaces and welded to railing ends or connected to railing ends using nonwelded connections.

3.6 ATTACHING HANDRAILS TO WALLS

A. Attach handrails to wall with wall brackets. Provide brackets with 1-1/2-inch clearance from inside face of handrail and finished wall surface.
   1. Use type of bracket with predrilled hole for exposed bolt anchorage.

B. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
   1. Steel Pipes: Spacing shall not be more than 6 feet.
   2. Aluminum Pipe: Spacing shall not be more than 5 feet.

C. Secure wall brackets to building construction as follows:
   1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
   2. For hollow masonry anchorage, use toggle bolts.
   3. For steel-framed gypsum board partitions, fasten brackets either directly to steel framing or concealed steel reinforcements using self-tapping screws of size and type required to support structural loads or with toggle bolts installed through flanges of steel framing or through concealed steel reinforcements or use hanger or lag bolts set into fire-retardant-treated wood backing between studs.

3.7 ADJUSTING AND CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
   1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

3.8 PROTECTION

A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05 52 13

SECTION 334600 - SUBDRAINAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes installation of subdrainage systems and connection to storm drain system for the following:
   1. Wall pipe and fittings
   2. Underdrain conduits

B. Related Sections include the following:
   1. Division 33 Section “Earth Moving”

1.3 DEFINITIONS

A. ABS: Acrylonitrile-butadiene-styrene plastic.

B. HDPE: High-density polyethylene plastic.

C. PE: Polyethylene plastic.

D. PP: Polypropylene plastic.

E. PS: Polystyrene plastic.

F. PVC: Polyvinyl chloride plastic.

G. Subdrainage: Drainage system that collects and removes subsurface or seepage water.

1.4 SUBMITTALS

A. Quality Assurance/Control Submittals:
   1. Product Data: For the following:
      a. Perforated-wall pipe and fittings including rated capacities
      b. Solid-wall pipe and fittings.
      c. Drainage conduits.
      d. Geotextile filter fabrics.
      e. Downspout Boot and fittings

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 PIPING MATERIALS

A. Refer to the "Piping Applications" Article in Part 3 for applications of pipe, tube, fitting, and joining materials.

2.3 PERFORATED-WALL PIPES AND FITTINGS

A. Perforated PE Pipe and Fittings:
   1. NPS 6 and Smaller: ASTM F 405 or AASHTO M 252, Type CP; corrugated, for coupled joints.
   2. NPS 8 and Larger: ASTM F 667; AASHTO M 252, Type CP; or AASHTO M 294, Type CP; corrugated; for coupled joints.
   3. Couplings: Manufacturer's standard, band type.
   4. Filter Fabric

B. Perforated PVC Storm/Sewer Pipe and Fittings: ASTM D 2729, bell-and-spigot ends, for loose joints.

2.4 Geocomposite Underdrain Conduit: Prefabricated geocomposite with perforated corrugated core molded from HDPE complying with ASTM D 3350 and wrapped in geotextile filter fabric.
   1. Basis-of-design product: Subject to compliance with requirements, provide product indicated on drawings or comparable product by the following:
      a. Advanced Drainage Systems (ADS) AdvanEDGE
      b. Hydraway 2000 by Monsanto
      c. Multi-flow as manufactured by Multi-Flow Drainage Systems, Prinsburg, Minnesota
      d. Contech TerraFlow 100 6” (12”) width, with prefabricated pipe outlet fittings and couplers, with backfill of sand meeting the following specifications.
         1) 25% course – 2.00 mm – 5.0 mm
         2) 50% medium – 0.5 mm – 2.0 mm
         3) 25% fine – 0.025 mm – 0.5 mm
         4) Less than 5% should pass a #200 seive. The preceding specified sand is commonly referred to as “ concrete sand”
   2. Filter Fabric” polypropylene geotextile
   3. Fittings: DDPE with combination NPS 4 and NPS 6 outlet connection.
   4. Couplings: Courrugated HDPE band.

B. Pipe Fittings” Same material as pipe, molded to suite pipe size and design, in required tees, elbows, cleanouts, and other required configurations.

2.5 SOLID-WALL PIPES AND FITTINGS

A. PE Drainage Tubing and Fittings: AASHTO M 252, Type S, corrugated, with smooth waterway, for coupled joints.
   1. Couplings: AASHTO M 252, corrugated, band type, matching tubing and fittings.

B. PE Pipe and Fittings: AASHTO M 294, Type S, corrugated, with smooth waterway, for coupled joints.
   1. Couplings: AASHTO M 294, corrugated, band type, matching tubing and fittings.

C. PVC Sewer Pipe and Fittings: ASTM D 3034, SDR 35, bell-and-spigot ends, for gasketed joints.
   1. Gaskets: ASTM F 477, elastomeric seal.

2.6 SPECIAL PIPE COUPLINGS

A. Comply with ASTM C 1173, elastomeric, sleeve-type, reducing or transition coupling, for joining underground non pressure piping. Include ends of same sizes as piping to be joined and corrosion-resistant metal tension band and tightening mechanism on each end.
   1. Sleeve Materials:
      a. For Plastic Pipes: ASTM F 477, elastomeric seal or ASTM D 5926, PVC.
      b. For Dissimilar Pipes: ASTM D 5926, PVC or other material compatible with pipe materials being joined.
   2. Unshielded Flexible Couplings: Elastomeric sleeve with stainless-steel shear ring and corrosion-resistant metal tension band and tightening mechanism on each end.

3. Shielded Flexible Couplings: ASTM C 1460, elastomeric or rubber sleeve with full-length, corrosion-resistant outer shield and corrosion-resistant metal tension band and tightening mechanism on each end.

2.7 CLEANOUTS

A. PVC Cleanouts: ASTM D 3034, PVC cleanout threaded plug and threaded pipe hub.

B. Cast-Iron Cleanouts: ASME A112.36.2M; with round-flanged, cast-iron housing; and secured, scoriated, Medium-Duty Loading class, cast-iron cover. Include cast-iron ferrule and countersunk, brass cleanout plug.

2.8 SOIL MATERIALS

A. Soil material are specified in Section 31 20 00 “Earth Moving”

B. Backfill, drainage course, impervious fill, and satisfactory soil materials are specified in Division 31 Section "Earth Moving."

C. Drainage Fill: 1/2 to 3/4 inch open graded washed gravel.

D. Filter Aggregate
1. Coarse Filter Aggregate: clean, well graded, natural gravel, crushed stone, free from shall, clay, organic materials or debris; graded to municipal standard the following limits:

	Sieve Size	Percent Passing
a.		
b.	1-1/2 inch	100
c.	1 inch	80 to 100
d.	¾ inch	60 to 95
e.	½ inch	30 to 80
f.	3/8 inch	20 to 50
g.	No. 4	0 to 15
h.	No. 8	0 to 10

2.9 GEOTEXTILE FILTER FABRICS

A. Description: Fabric of PP or polyester fibers or combination of both, with flow rate range from 110 to 330 gpm/sq. ft. when tested according to ASTM D 4491.
1. Subject to compliance with requirements, provide product indicated on Drawings or comparable product by the following:
2. Filter Fabric: Geotex 601, or approved equal
3. Structure Type: Nonwoven, needle-punched continuous filament or woven, monofilament or multifilament.
4. Survivability: AASHTO M 288 Class 2
5. Style(s): Flat and sock.

B. Weed Control Barrier; Composite Fabric: Woven, needle-punched polypropylene substrate bonded to a nonwoven polypropylene fabric 4.8 oz./sq.yd.

2.10 DOWNSPOUT BOOT

A. Description: Downspout boot shall be # R4929-09C as manufactured by Neenah foundries or approved equal to fit downspout piping

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces and areas for suitable conditions where subdrainage systems are to be installed.

B. If subdrainage is required for landscaping, located and mark existing utilities, underground structures, and above ground obstructions before beginning installation and avoid disruption and damage of services.

C. Verify that drainage panels installed as part of the foundation wall waterproofing is properly positioned to drain into subdrainage system.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 EARTHWORK

A. Excavating, trenching, and backfilling are specified in Division 31 Section "Earth Moving."

3.3 LANDSCAPING DRAINAGE INSTALLATION

A. Provide trench width to allow installation of drainage conduit. Grade bottom of trench excavations to required slope, and compact to firm, solid bed for drainage system.

B. Lay flat-style geotextile filter fabric in trench and overlap trench sides.

C. Place supporting layer of drainage course over compacted subgrade and geotextile filter fabric, to compacted depth of not less than 4 inches.

D. Install drainage conduits as indicated in Part 3 “Piping Installation” paragraph for landscaping sub-drainage with horizontal distance of at least 6 inches between conduit and trench wall. Wrap drainage conduits without integral geotextile filter fabric with flat-style geotextile filter fabric before installation. Connect fabric sections with adhesive or tape.

E. Add drainage course to top of drainage conduits.

F. After satisfactory testing, cover drainage conduit to within 12 inches of finished grade.

G. Install drainage course and wrap top of drainage course with flat-style geotextile filter fabric.

H. Place layer of flat-style geotextile filter fabric over top of drainage course, overlapping edges at least 4 inches.

I. Fill to Grade: Place satisfactory soil fill material over drainage course. Place material in loose-depth layers not exceeding 6 inches. Thoroughly compact each layer. Fill to finish grade.

3.4 PIPING APPLICATIONS

A. Underground Subdrainage Piping; provide one of the following:
   1. Perforated PE pipe and fittings, couplings, and coupled joints.
   2. Perforated PVC sewer pipe and fittings for loose, bell-and-spigot joints.

B. Header Piping:
   1. Cast-iron soil pipe and fittings, gaskets; and gasketed joints.
   2. PVC sewer pipe and fittings, couplings, and coupled joints.

3.5 CLEANOUT APPLICATIONS

A. In Underground Subdrainage Piping:
   1. At Grade in Earth: PVC cleanouts, unless otherwise noted.

3.6 PIPING INSTALLATION

A. Installing piping beginning at low points of system, true to grades and alignment indicated, with unbroken continuity of invert. Bed piping with full bearing in filtering material. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions and other requirements indicated.
   1. Foundation Subdrainage: Install piping level and with a minimum cover of 36 inches unless otherwise indicated.
   2. Under slab Subdrainage: Install piping level.
   3. Plaza Deck Subdrainage: Install piping level.
   4. Retaining-Wall Subdrainage: When water discharges at end of wall into stormwater piping system, install piping level and with a minimum cover of 36 inches unless otherwise indicated.
   5. Revise first subparagraph below as required for different minimum slope and cover.
   6. Lay perforated pipe with perforations down.
   7. Revise subparagraph below to suit Project or delete.
   8. Excavate recesses in trench bottom for bell ends of pipe. Lay pipe with bells facing upslope and with spigot end entered fully into adjacent bell.

B. Use increases, reducers, and couplings made for different sizes or materials of pipes and fittings being connected. Reduction of pipe size in direction of flow is prohibited.

C. Install thermoplastic piping according to ASTM D 2321
   1. Lay perforated pipe with perforations down.
   2. Excavate recesses in trench bottom for bell ends of pipe. Lay pipe with bells facing upslope and with spigot end entered fully into adjacent bell.

D. Use increasers, reducers, and couplings made for different sizes or materials of pipes and fittings being connected. Reduction of pipe size in direction of flow is prohibited.

E. Install PE piping according to ASTM D 2321.

F. Install PVC piping according to ASTM D 2321.

3.7 PIPE JOINT CONSTRUCTION

A. Join PE pipe, tubing, and fittings with couplings for soil-tight joints according to AASHTO's "Standard Specifications for Highway Bridges," Division II, Section 26.4.2.4, "Joint Properties."

B. Join perforated, PE pipe and fittings with couplings for soil-tight joints according to AASHTO's "Standard Specifications for Highway Bridges," Division II, Section 26.4.2.4, "Joint Properties"; or according to ASTM D 2321.

C. Special Pipe Couplings: Join piping made of different materials and dimensions with special couplings made for this application. Use couplings that are compatible with and fit materials and dimensions of both pipes.

D. Join PVC pipe and fittings according to ASTM D 3034 with elastomeric seal gaskets according to ASTM D 2321.

E. Join perforated PVC pipe and fittings according to ASTM D 2729, with loose bell-and-spigot joints.

3.8 CLEANOUT INSTALLATION

A. Comply with requirements for cleanouts specified in Section 33 41 00 "Storm Utility Drainage Piping."

B. Install cleanouts from piping to grade. Locate cleanouts at beginning of piping run and at changes in direction. Install fittings so cleanouts open in direction of flow in piping.

C. In non-vehicular-traffic areas, use NPS 4 PVC pipe and fittings for piping branch fittings and riser extensions to cleanout. Set cleanout frames and covers in a cast-in-place concrete collar, 18 by 18 by 12 inches deep. Set top of cleanout 1 inch above grade.

D. In vehicular-traffic areas, use NPS 4 PVC pipe and fittings for piping branch fittings and riser extensions to cleanout. Set cleanout frames and covers in a cast-in-place concrete collar, 18 by 18 by 12 inches deep. Set top of cleanout flush with pavement grade.

3.9 CONNECTIONS

A. Coordinate piping installations and specialty arrangements with schematics on drawings and with requirements specified in piping systems. If drawings are explicit enough, these requirements may be reduced or omitted.

B. Comply with requirements for piping specified in Section 33 41 00 “Storm Utility Drainage Piping”. Drawings indicate general arrangement of piping, fittings, and specialties.

C. Drawings indicate general arrangement of piping, fittings, and specialties.

D. Connect low elevations of subdrainage system to building's solid-wall-piping storm drainage system or storm structures.

3.10 IDENTIFICATION

A. Materials and their installation are specified in Division 31 Section "Earth Moving." Arrange for installation of green warning tapes directly over piping.
   1. Install detectable warning tape over nonferrous piping mainlines and over edges of underground structures.

3.11 FIELD QUALITY CONTROL

A. Testing: After installing drainage course to top of piping, test drain piping with water to ensure free flow before backfilling. Remove obstructions, replace damaged components, and repeat test until results are satisfactory.

B. Drain piping will be considered defective if it does not pass test and inspections.

3.12 DOWNSPOUT BOOT

A. Install downspout boot in location as noted on grading and drainage plan and architectural plans and per manufacturers recommendations. Coordinate with other construction trades

3.13 CLEANING

A. Clear interior of installed piping and structures of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed. Place plugs in ends of uncompleted pipe at end of each day or when work stops.

END OF SECTION 334600

FANNING HOWEY

350 East New York St
Suite 300
Indianapolis, IN 46204
317.848.0966
fhai.com

PREBID CONFERENCE AGENDA
Penn-Harris-Madison School Corporation
Mishawaka, IN

Date: August 8, 2025

Re: PHM Science and Space Exploration Center
Project Number: 225001.00

Present: Please Sign-In

1. Advertisement to Bidders: Per the information contained in the Advertisement to Bidders in the Project Manual, bids will be received until 2:00 p.m. on Thursday, **August 28, 2025**, at the Support Services Center, 55910 Bittersweet Road, Mishawaka, Indiana, 46545. Bids received after this time will not be accepted. Bids will be opened and publicly read aloud immediately after the specified closing time. Bids may be held for 60 days.

2. Obtaining Bid Documents: Bid Documents are available as indicated in the Advertisement to Bidders at Eastern Engineering's website (distribution.easternengineering.com).

3. Instructions to Bidders: Per the information contained in the Project Manual, bids shall be executed on the Bid Proposal Form provided. Other information to be included with the bid form is outlined in the Instructions to Bidders. Each bidder is required to bid every item called for on the bid form, including alternates, if applicable, and allowances.

   a. Base Bid:
      Single Lump Sum.

   b. Alternates:
      No. 1: Polished Concrete
      No. 2: Acoustic Ceiling in Space Center

   c. Allowances:
      Amounts to be included in Contract Sum

Allowance No. 1 (General):	$30,000
Allowance No. 2 (Security & Tech):	$35,000
Lump Sum Allow. No. 3 (Signage):	$ 2,000

4. Bonds: See the Instructions to Bidders and the Advertisement to Bidders for the requirements of bid securities and bonds required. Performance and Payment Bonds are for 100% of the bid.

5. Request for Approval of Product Substitution: Written request for approval must be received by A/E at least ten days prior to the date for receipt of Bids. Substitution request form included in the Project Manual (00 26 00.01).

6. Available Project Information:

   a. Existing Construction Documents from original construction.
      i. 1978 Original Construction
      ii. 2002 Administration Remodel
   b. School Year Calendars for 2025-26 (online) and 2026-27 (not published).
   c. Revit File or CAD Files.

7. Identification of Submission of Bid Proposal: Per the Instructions to Bidders, the Bid Proposal shall be submitted in an envelope identified with the name of the project, name of the bidder, base bid package, and the date and closing time of bids. Photocopies of the bid form are acceptable.

   a. Review "Bidder Reminder List" to be completed & included in Bid Package (00 41 16 - 6)

8. General Conditions of the Contract for Construction: Refer to Document 00 72 00 in the Project Manual

   a. General Conditions of the Contract for Construction (AIA A201-2017)

9. Certificate of Insurance: Refer to Exhibit A to the Contract 00 52 01.

10. Criminal History Information: Refer to Document 00 73 60 in Project Manual.

    a. PHM's Background Check Requirements.

11. Time of Commencement and Completion of Project: The School Board will be asked to award a Contract at an upcoming School Board Meeting on September 8. A Preconstruction Conference will be scheduled. A Notice to Proceed will be issued upon board approval, with final completion of Work scheduled as follows:

Notice to Proceed:	Sept. 9, 2025
Construction Work can begin:	Contracts signed
Final Completion:	October 23, 2026

Note: Existing Planetarium must remain operational throughout construction up to the summer of 2026.

12. Permits, Fees, and Notices: The "Certificate of Plan Approval" from the Department of Homeland Security will be required for this project. All other permits, fees, and notices and cost are the responsibility of the Contractor as indicated in the Summary.

    a. Foundation Release in Hand.

b. Construction Design Release is in process.

13. Temporary Facilities and Controls: Information on temporary facilities and controls are listed in Section 01 50 00 of the Project Manual.

a. Temporary water and power, the Owner to make available.

b. Temporary toilets by Contractor.

14. Addenda:

a. Addendum No. 1 – anticipated to be issued Wednesday, August 13,
Addendum No. 2 – anticipated to be issued Thursday, August 21.

15. Progress Cleaning: Refer to Project Manual (01 74 13) for responsibility of the Contractor.

16. Questions and Clarifications: Per the instructions in the Project Manual, questions should be emailed to the appropriate contact person at Fanning Howey and followed up with a telephone call. Contacts and telephone numbers are listed in the Instruction to Bidders. Questions requiring clarifications or revisions will be addressed in an addendum. Any questions can be directed in writing to Mike Schipp at mschipp@fhai.com, phone number (317) 407-7229.

17. Site Access: Any access to be the sites shall be coordinated with Owner's Representative:
Joe Zappia, Facilities Manager
jzappia@phm.k12.in.us
(574) 395-4585 (m)

18. Current Events:
a. Bidding Environment?
b. Procurement of Materials?
c. Bid Date/Completion Date(s)?
d. Interest from Subcontractors?
e. Fully Occupied during the school year.

19. Review of Project Scope:

a. Addition: 4,962 SF with a mezzanine of 1,641 SF
b. Renovation of existing Planetarium Finishes.

20. Discussion Items and Questions:

Michael K. Schipp, AIA, CDT LEED AP BD+C
Project Manager / Principal

PHM Science and Space Exploration Center
Penn-Harris-Madison School Corporation
Mishawaka, IN
Project Nos. 225001.00
August 8, 2025

PLEASE PRINT CLEARLY.

Your name and title will be included in the meeting report.

Thank you.

PREBID MEETING SIGN IN SHEET (PLEASE PRINT)

NAME (Please Print)	TITLE	COMPANY (Including Address Info)	TELEPHONE NO. FAX NO. CELL NO.(optional)	E-MAIL
Adam Noffsinger	estimator	Almac- Sotebeer	574-518-1997	adam.noffsinger@almacsotebeer
Kalei Lidgard	estimator	Almac-Sotebeer	574-952-0066	kalei.lidgard@almacsotebeer
Greg Hicks	"	Gibson Lewis	574-259-8581	ghicks@gl.nccusa.com
Colin Campbell	PM/Estimator	Ziolkowski	574-287-1811	ccampbell@Zbuild.com
Bill Emmons	Project manager	R. Yoder	574-993-3397	Estimating@RYoderConstruction.com
MIKE SCHIPP	ARCHITECT	FANNING HOWEY	317 407 -7229	MSCHIPP@FHAI.COM

PLEASE PRINT CLEARLY.

Your name and title will be included in the meeting report.

Thank you.

PRE-BID SIGN IN SHEET (PLEASE PRINT)

NAME (Please Print)	TITLE	COMPANY (Including Address Info)	TELEPHONE NO. FAX NO. CELL NO.(optional)	E-MAIL
Becky Hill	ESTIMATOR	ALMAR SOTEBEER KEPPNER RD, GOSHEN	574-264-5507	becky.hill@almarsoteber.com
Tim Morey	PM	Brown & Brown	269-330-4039	bids@bbgc.US
DAN GIL	PRESIDENT	OA CONSTRUCTION	312-985-3582	dgil@OACONSTRUCTION.NET
LUIS NAVARRO	VICE PRESIDENT	OA CONSTRUCTION	219-670-3955	Luis@nevangroup.com
Matt Coleman	PM	TRHC	574-229-7183	MColeman@robertHenrycorp.com
Matt Kazmierzak	PM	Dynamic Mechanical	574-257-0123	mattk@dynamicMechanical.net
STEVE MISKIN	Asst Dir Facilities	PHM	574-250-8997	SMISKIN@PHM.K12.IN.US

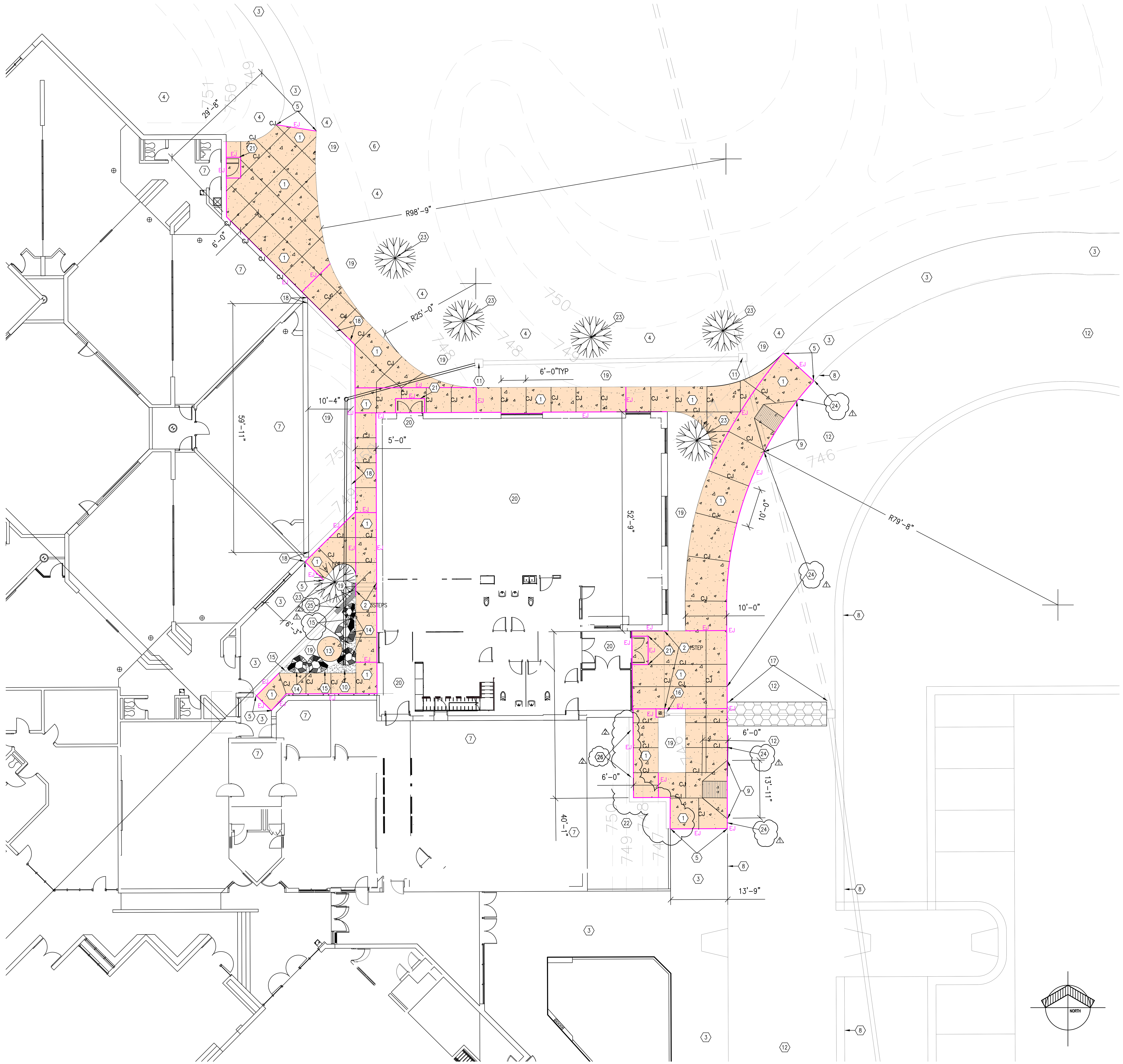
PLEASE PRINT CLEARLY.

Your name and title will be included in the meeting report.

Thank you.

PRE-BID SIGN IN SHEET (PLEASE PRINT)

NAME (Please Print)	TITLE	COMPANY (Including Address Info)	TELEPHONE NO. FAX NO. CELL NO.(optional)	E-MAIL
Bob Stout	Sales Manager	Pyt Barker / Vermillion 603 Roosevelt Rd. Walkerton, IN	574-341-9703	bob@vermillion-systems.com
Rob Henrickson		STANS PAINTING 1821 Clover RD, MISH	574-258-1558	robh@stans-painting.com
Tim Popenhagen	Estimator	Core Mechanical	574-526-3300	tim.popenhagen@core-m-s.com
Myah Garcia	Estimator	Core Mechanical	(574) 526-3300	myah.garcia@core-m-s.com



SITE LAYOUT PLAN: BSE

SCALE: 1" = 10'-0"

PROPOSED SITE LEGEND

Symbol	Description	Symbol	Description
(hatch)	CONC. PAD – SEE PLAN NOTES	(blank)	EX. WALK
EJ	EXPANSION JOINT SEE DETAILS #2 & #3 SHT G1.00	(hatch)	RIVER GRAVEL – SEE PLAN NOTE 15
CJ	CONTROL JOINT SEE DETAILS #2 & #3 SHT G1.00	(hatch)	NEW REINFORCED CONCRETE RETAINING WALL TO MATCH EXISTING (2)

CITY GENERAL NOTES

1. NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORMWATER MANAGEMENT PERMIT.
2. UTILITY RELOCATIONS REQUIRED BY THE PROJECT SHALL BE THE RESPONSIBILITY OF THE OWNER. UTILITY LINE RELOCATIONS REQUIRED FOR ROAD PROJECTS THAT RESULT IN A CONFLICT WITH PROPOSED DEVELOPMENT SHALL BE THE OWNER'S RESPONSIBILITY TO RESOLVE WITH THE UTILITY. EXISTING POLE LINES REQUIRED TO BE RELOCATED TO WITHIN ONE FOOT OF PROPOSED RIGHT-OF-WAY LINE.
3. DAMAGE TO THE EXISTING RIGHT-OF-WAY SHALL BE RESTORED/REPAIRED TO THE SATISFACTION OF THE CITY AT THE COMPLETION OF THE PROJECT. THE CONTRACTOR IS ENCOURAGED TO INSPECT THE RIGHT-OF-WAY WITH THE CITY PRIOR TO THE START OF CONSTRUCTION TO DOCUMENT THE EXISTING CONDITION OF THE RIGHT-OF-WAY.

GENERAL SITE NOTES

THE SITE SHALL BE STRIPPED OF EXISTING IMPROVEMENTS AS NOTED. ALL THE REMOVED MATERIALS SHALL BE REMOVED FROM THE SITE BY THE GENERAL CONTRACTOR OR SUBCONTRACTOR

REMOVAL OF THE EXISTING IMPROVEMENTS ARE AS NOTED ON THE PLANS OR AS REQUIRED BY THE PROJECT. THE MATERIALS REMOVED FROM THE SITE SHALL BE DISPOSED OF IN A PROPER AND LEGAL MANNER PER FEDERAL, STATE, AND OR LOCAL LAWS AND ORDINANCES.

EXISTING PAVEMENT, SIDEWALKS CURBS DRIVEWAYS, ELECTRICAL TRANSFORMER, DITCHES, DRAINAGE PIPES AND STRUCTURES, FENCES, LAWNS, TREES, BUSHES, MAILBOXES, SIGNS, POWER POLES ETC., TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. ANY DAMAGE DURING CONSTRUCTION SHALL BE RESTORED, RECONSTRUCTED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE. ALL DAMAGES SHALL BE RESTORED OR REPLACED TO AT LEAST THEIR ORIGINAL CONDITION OR AS REQUIRED OR DICTATED BY FEDERAL, STATE, COUNTY, CITY OR LOCAL

SAW CUT THE EDGES OF PAVED AREAS CLEAN, NEAT AND TRUE TO LINE SO NO UNWANTED CHIPPING OR BREAKING OF EXISTING PAVEMENT TO REMAIN WILL OCCUR.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT EACH DAY AND REMOVE ALL MUD, DIRT, GRAVEL AND LOOSE MATERIALS TRACKED, DUMPED, SPILLED OR WIND BLOWN FROM THIS SITE ONTO OTHER SITES, RIGHT OF WAYS, PUBLIC OR PRIVATE STREETS OR ROADS, DRIVEWAYS, YARDS OR SIDEWALKS. THE CONTRACTOR MUST CLEAN OR PICK UP DAILY IF NECESSARY. THE CONTRACTOR SHALL REDUCE THE AIRBORNE DUST DURING THE ENTIRE DEMOLITION SCHEDULE. WATER MAY BE USED AS A REDUCER.

(2) THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL DEVICES AS SPECIFIED OR AS REQUIRED DURING DEMOLITION BY GOVERNING AGENCIES.

IT IS THE CONTRACTOR'S RESPONSIBLITY TO NOTIFY ALL THE UTILTY COMPANIES AND DEPARTMENTS 72 HOURS BEFORE DEMOLITION IS TO START TO VERIFY ANY UTILITIES THAT MAY BE PRESENT ON SITE. ALL VERIFICATIONS, LOCATIONS, SIZE AND DEPTHS SHALL BE MADE BY THE APPROPRIATE UTILITY COMPANIES OR DEPARTMENTS. WHEN EXCAVATING AROUND OR OVER EXISTING UTILITIES, THE CONTRACTOR MUST NOTIFY THE UTILITY COMPANY SO A REPRESENTIVE OF THE UTILITY MAY BE PRESENT DURING THE EXCAVATION TO INSTRUCT AND OBSERVE DURING THE EXCAVATION.

IT IS THE RESPONSIBILTY OF THE CONTRACTOR OR CONTRACTORS TO OBTAIN ALL FEDERAL, STATE, COUNTY, CITY, AND LOCAL PERMITS FOR ANY AND ALL WORK REQUIRED UNLESS OTHERWISE NOTED. THIS SHALL INCLUDE ALL SUBMITTALS AS REQUIRED INCLUDING STORMWATER RUNOFF CONTROL (RULE 5). THE CONTRACTOR OR CONTRACTORS ARE RESPONSIBLE TO PAY FOR ALL REQUIRED PERMITS BY ANY OR ALL AGENIES MENTIONED ABOVE UNLESS OTHERWISE NOTED BY THE CONTRACT OR SPECIFICATIONS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WITH EACH UTILITY COMPANY AND OR AGENT WHO IS RESPONSIBLE TO REMOVE OR RELOCATE EACH EXISTING UTILITY. IT FURTHER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BEAR THE COST FOR THE REMOVAL, TERMINATION OR RELOCATION OF UTILITIES IF THE RESPONSIBILITY IS NOT COVERED BY THE UTILITY COMPANY.

THE UTILITIES INDICATED ON THESE PLANS AND ON THE SURVEY MAY NOT BE A COMPLETE INVENTORY OF ALL THE EXISTING UTILITIES PRESENT ON AND AROUND THIS SITE. THE LOCATIONS AND SIZE OF THESE UTILITIES ARE APPROXIMATE. THIS INFORMATION WAS GATHERED OR SUPPLIED FROM OTHERS AND USED BY THE ARCHITECT AND OR ENGINEER AND MAY NOT BE ACTUAL. THE ARCHITECT AND OR ENGINEER MAY NOT BE HELD LIABLE FOR ANY INCORRECT OR MISLEADING UTILITY INFORMATION INDICATED, IMPLIED OR NOT INDICATED ON THESE PLANS.

ALL CONTRACTORS MUST TAKE PARTICULAR CARE WHEN EXCAVATING IN AND AROUND EXISTING UTILITY LINES AND EQUIPMENT. ACTUAL FIELD LOCATIONS OF ALL THE EXISTING UTILITIES ARE THE CONTRACTORS RESPONSIBILTY AND MUST BE LOCATED EITHER BY THE REPRESENTIVE OF THE UTILITY COMPANY OR BY A PRIVATE UNDERGROUND UTILITY LOCATING COMPANY PRIOR TO THE START OF DEMOLITION ACTIVITIES.

(2) REMOVAL OF EXISTING CONCRETE OR OTHER PAVED AREAS INDICATED ON THE PLANS SHALL DOES NOT INCLUDE EXISTING AGGREGATE BASE MATERIALS. AREAS TO BE REMOVED SHALL BE SAW CUT CLEAN, NEAT AND TRUE TO LINE. REMOVE ALL NONE ORGANIC MATTER THAT WOULD INTERFERE WITH THE GROWTH OF TURF OR PLANT MATERIAL.

THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO COMMENCEMENT OF DEMOLITION OPERATIONS. NO DEMOLITION, GRADING OR OTHER WORK SHALL COMMENCE WITHIN EASEMENTS ON ADJACENT PROPERTIES UNTIL A COORDINATION MEETING HAS BEEN HELD BETWEEN THE CITY, SCHOOL CORP. REPRESENTATIVE, ARCHITECT AND ADJACENT PROPERTY OWNERS.

THE CONTRACTOR SHALL BE RESPONSIBILE TO PROVIDE AT HIS EXPENSE ALL AUTOMOBILE AND PEDESTRAIN TRAFFIC CONTROL DEVICES REQUIRED BY FEDERAL, STATE, COUNTY, CITY OR LOCAL AGENCIES.

SITE PLAN NOTES

1. 4" THICK CONCRETE PAD (CONCRETE HATCH), SEE SITE GRADING PLAN G2.00 AND DETAILS #2-4,#6 SHT G4.00 FOR FURTHER INFORMATION
2. NEW CONCRETE STAIRWAY WITH RAILING WHERE REQUIRED PER LOCAL ORDNANCES- SEE DETAIL #13 SHT G4.00 FOR FURTHER INFORMATION
3. EXISTING CONCRETE WALKS, RAMPS AND RETAINING WALLS TO REMAIN – PROTECT DURING CONSTRUCTION
4. EXISTING LAWN TO REMAIN – PROTECT DURING CONSTRUCTION. ALL DISTURBED LAWN AREAS ARE TO BE RE-SEEDED AND RETURNED BACK TO PRE-EXISTING CONDITIONS PRIOR TO THE CONCLUSION OF CONSTRUCTION EFFORTS
5. NEW TO EXISTING CONCRETE SLAB , SEE DETAIL #8 SHT G4.00 FOR FURTHER INFORMATION
6. EXISTING SHADE TREE – TO REMAIN TYP
7. EX. BUILDING TO REMAIN TYP
8. ALL EXISTING CURBING TO REMAIN – PROTECT DURING CONSTRUCTION TYP
9. (1) NEW ADA ACCESS RAMPS ; SEE DETAILS #7,#10,#11 TYPE B,#12 G4.00
10. NEW LAWN DRAIN ; SEE G2.00 FOR FURTHER INFORMATION – INSTALL PER MANUF. WRITTEN RECOMMENDATIONS AND STANDARD CONSTRUCTION DETAILS TYP
11. (1) NEW NENAAH R-2554 ROUND INLET FRAME AND GRATE ON PRECAST DRAINAGE STRUCTURE WITH 6" THICK X 6" WIDE COLLAR. – SEE G2.00
12. EXISTING ASPHALT PAVING TO REMAIN – PROTECT DURING CONSTRUCTION TYP
13. NEW 6" THICK CONC. PAD ; TO HOUSE FUTURE ROCKET SCULPTURE TO BE PROVIDED BY OWNER AND INSTALLED AT A LATER DATE – SEE DETAIL #5 G4.00
14. NEW LANDSCAPING BOULDERS : SEE G2.00 PLAN NOTE 10 FOR FURTHER INFORMATION
15. 6" DEEP LAYER OF WASHED 2" DIA. WASHED RIVER GRAVEL OVER FILTER FABRIC IN HATCHED AREAS AS NOTED.
16. NEW DOWNSPOUT AND STORM DRAINAGE – SEE G2.00 FOR FURTHER INFORMATION
17. NEW HEAVY DUTY ASPHALT PAVING – SEE DETAIL #1 G4.00
18. NEW SEAT WALL – SEE DETAIL #9 G4.00
19. NEW SITE LANDSCAPING BEDS – SEE L1.00 FOR FURTHER INFORMATION
20. NEW BUILDING ADDITION – SEE ARCHITECTURAL DRAWINGS
21. NEW ENTRY STOOP – SEE STRUCTURAL DRAWINGS FOR FURTHER INFORMATION
22. EX. SLOPED LAWN AREA TO REMAIN – PROTECT DURING CONSTRUCTION
23. NEW TREES – SEE L1.00 FOR FURTHER INFORMATION
24. (1) REINFORCED MONOLITHIC CURB AND SIDEWALK. SEE DETAIL 2 G4.0.
25. (2) CONSTRUCT REINFORCED CONCRETE RETAINING WALL TO MATCH EXISTING IN HATCHED AREA AS NOTED ON PLAN. DRILL AND EPOXY SET 15" LONG, COATED #7 REBAR @ 12" MAX. O.C. INTO EXISTING RETAINING WALL AND FOUNDATION. CLEAN AND PARGE NEW RETAINING WALL. THOROUGHLY CLEAN EXISTING RETAINING WALL AND PARGE TO MATCH NEW RETAINING WALL.
26. (2) CONSTRUCT REINFORCED CONCRETE RETAINING WALL IN LOCATION AS NOTED ON PLAN. DRILL AND EPOXY SET 15" LONG, COATED #7 REBAR @ 12" MAX. O.C. INTO EXISTING RETAINING WALL AND FOUNDATION. SEE DETAIL 14 G4.0.

811
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PHM Science and Space Exploration Center

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PENN-HARRIS-MADISON SCHOOL CORPORATION

ARCHITECT

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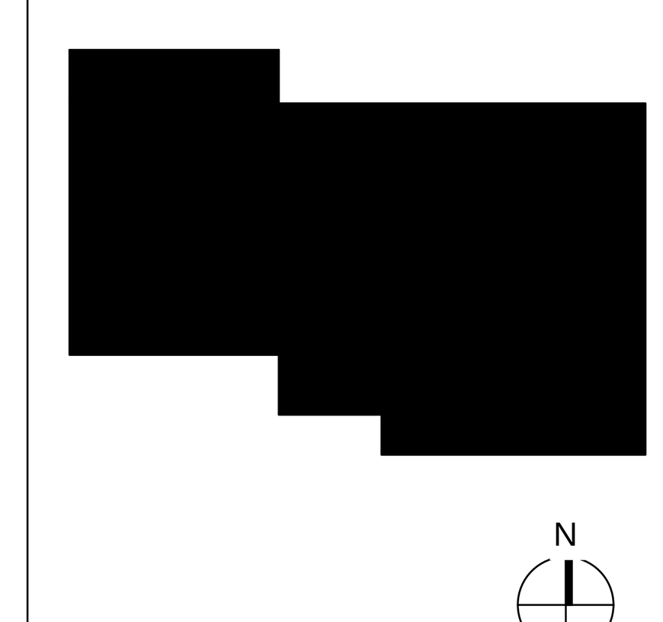


KEY PLAN

CONSTRUCTION DOCUMENTS

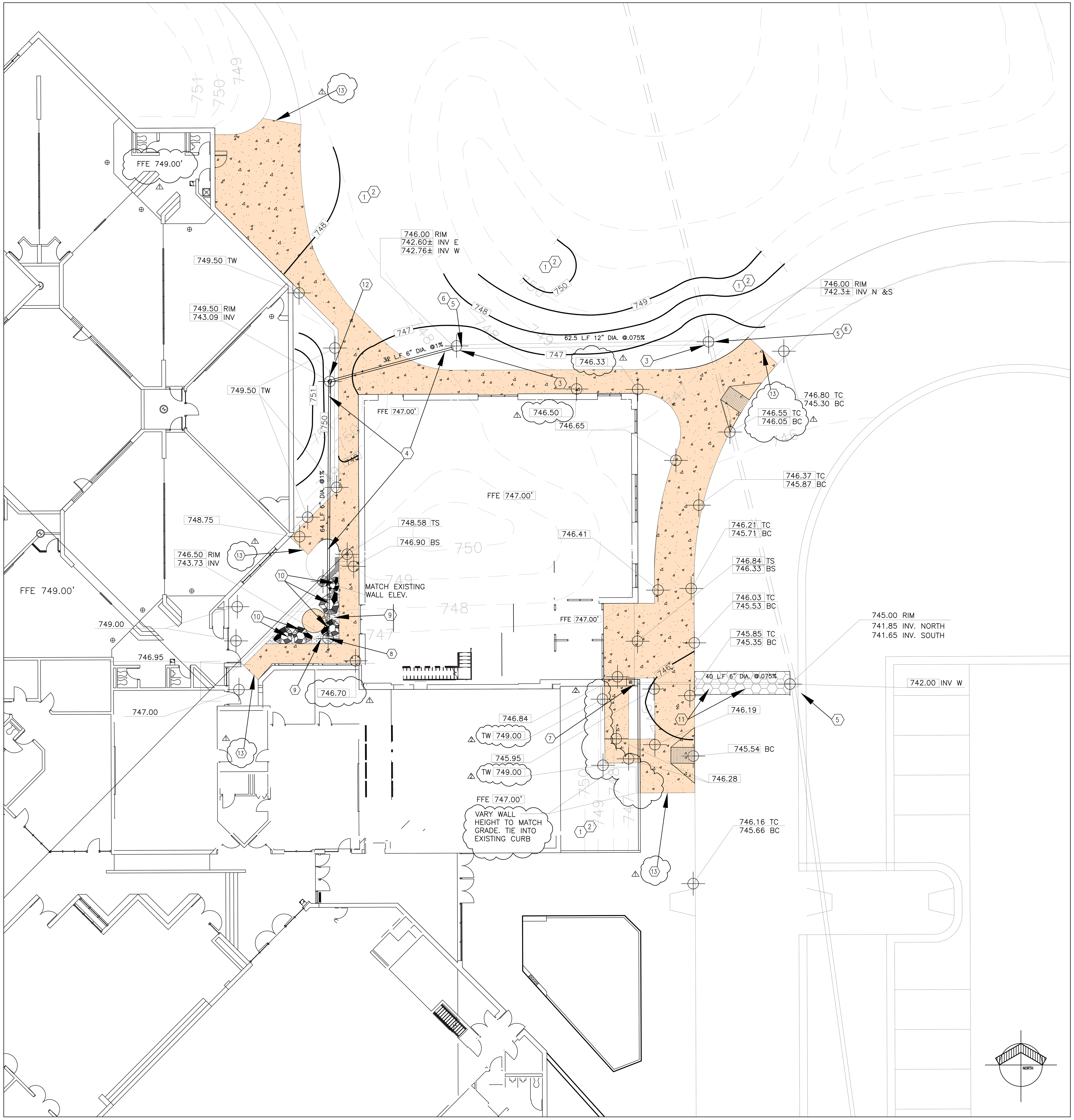
PAUL A. MILLER REGISTERED No. AR10800161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: MKS
DRAWN BY: JB,EB
PROJECT NUMBER: 225001.00
PROJECT ISSUE DATE: 07.25.2025

REV. NO.	DESCRIPTION	DATE
1	ADDIT INFO	7-30-25
2	ADDENDUM #1	8-12-25

SITE LAYOUT PLAN

G1.00



GRADING AND DRAINAGE PLAN: BSE

SCALE: 1" = 10'-0"

GRADING PLAN NOTES

1. INSTALL 6" APPROVED TOPSOIL IN DISTURBED AREAS AS NOTED.
2. FINE GRADE AND RESEED DISTURBED LAWN AREAS AS NOTED.
3. 12" DIA. PVC SCHEDULE 80 STORM WATER PIPING. DRILL AND GROUT AROUND PIPING SOLID AT DRAINAGE STRUCTURE.
4. 6" DIA. PVC SCHEDULE 80 STORM WATER PIPING.
5. CORE DRILL DRAINAGE STRUCTURE AND GROUT AROUND PIPE SOLID.
6. INSTALL NENAAH R-2554 ROUND INLET FRAME AND GRATE ON PRECAST DRAINAGE STRUCTURE WITH 6" THICK X 6" WIDE COLLAR.
7. INSTALL NENAAH R4929-09C DOWNSPOUT BOOT WITH BRASS CLEANOUT. PAINT TO MATCH BUILDING TRIM.
8. INSTALL SQUARE JAY R SMITH #D2405B AREA DRAIN WITH SEDIMENT BUCKET AND HINGED NICKEL BRONZE NB GRATE IN LOCATION NOTED
9. 6" DEEP LAYER OF WASHED 2" DIA. WASHED RIVER GRAVEL OVER FILTER FABRIC IN HATCHED AREAS AS NOTED.
10. INSTALL 4' X5' X 15-18" DEEP WEATHERED LIMESTONE BOULDERS AS SELECTED BY LANDSCAPE ARCHITECT IN LOCATIONS NOTED. ACCEPTABLE WEATHERED LIMESTONE BOULDERS AS AVAILABLE FROM EARTHWORKS, 4287 N. HWY. 51, PERRYVILLE , MO, 800-887-4555. BOULDERS SHALL BE SET AS AN OUTCROPPING INTO THE SLOPE AS APPROVED BY LANDSCAPE ARCHITECT.
11. SAWCUT AND REMOVE EXISTING ASPHALT PAVING AND EXCAVATE AS REQUIRED TO INSTALL DOWNSPOUT PIPING TO EXISTING MANHOLE. FOLLOWING INSTALLATION BACKFILL AS REQUIRED AND REPAVE TO EXISTING GRADES.
12. INSTALL 6" DIA. PVC CLEANOUT.
13. MEET EXISTING GRADES FLUSH.

SPOT ELEVATION KEY

TC- TOP OF CURB
BC- BOTTOM OF CURB
TW- TOP OF RETAINING WALL
BW- BOTTOM OF RETAINING WALL
TS-TOP OF STEP
BS-BOTTOM OF STEP

THE EXISTING IMPROVEMENTS, LAYOUT, GRADES AND UTILITIES INDICATED ON THESE PLANS MAY NOT BE ACCURATE OR A COMPLETE INVENTORY OF ALL THE EXISTING IMPROVEMENTS PRESENT ON AND AROUND THIS SITE. THE LOCATIONS AND SIZE OF UTILITIES ARE APPROXIMATE. THIS INFORMATION WAS GATHERED OR SUPPLIED FROM OTHERS AND USED BY THE ARCHITECT AND OR ENGINEER AND MAY NOT BE ACTUAL. THE CONTRACTOR SHALL CONFIRM ALL EXISTING DIMENSIONS, LAYOUT, GRADES AND UTILITIES. THE ARCHITECT AND OR ENGINEER MAY NOT BE HELD LIABLE FOR ANY INCORRECT OR MISLEADING UTILITY INFORMATION INDICATED, IMPLIED OR NOT INDICATED ON THESE PLANS.

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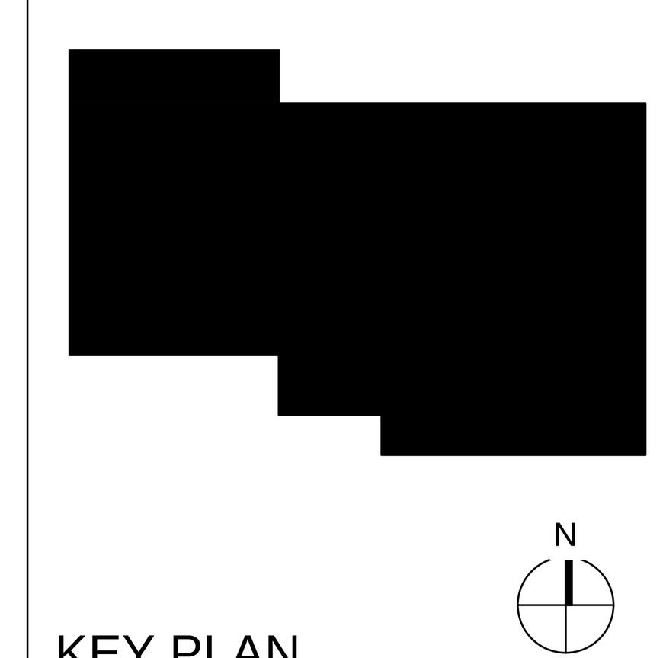


KEY PLAN

CONSTRUCTION DOCUMENTS

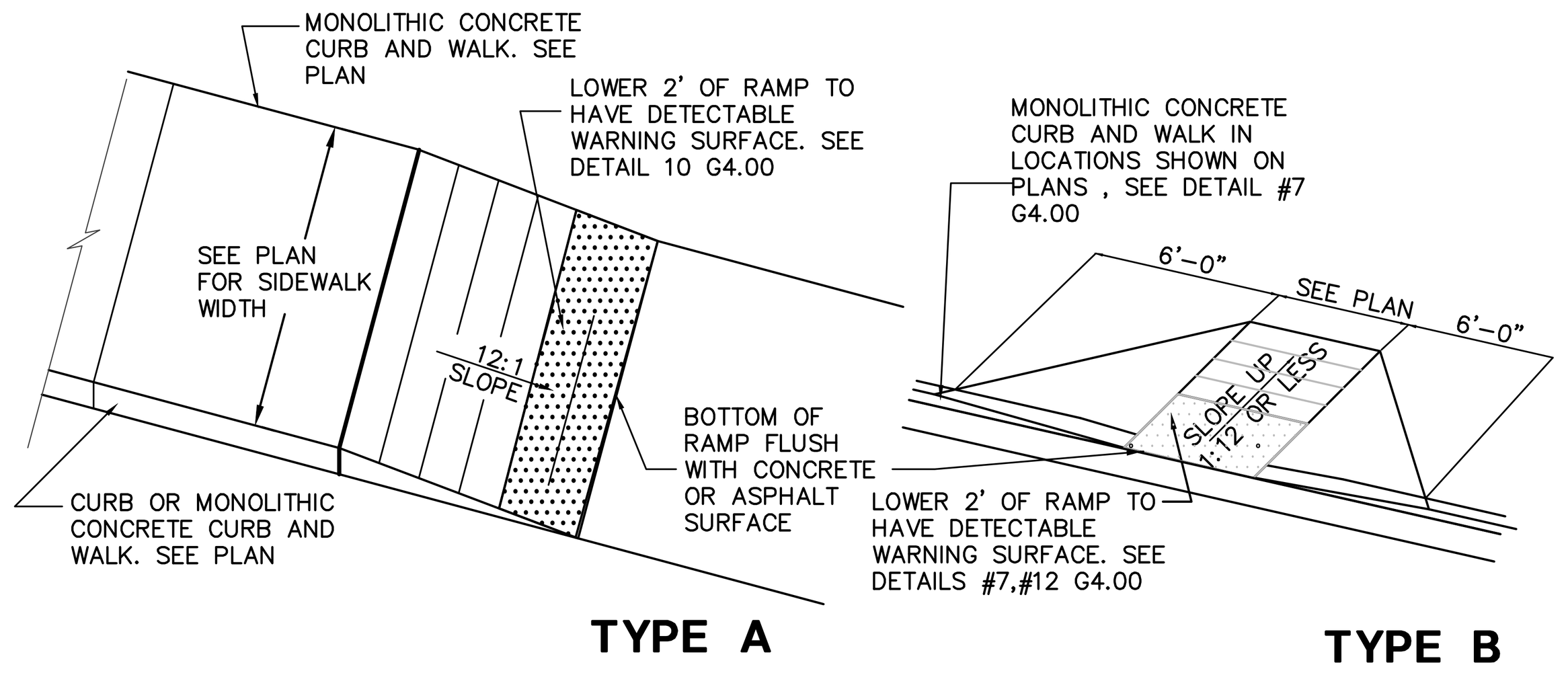
PAUL A. MILLER REGISTERED No. AR10800161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: MKS
DRAWN BY: JB,EB
PROJECT NUMBER: 225001.00
PROJECT ISSUE DATE: 07.25.2025

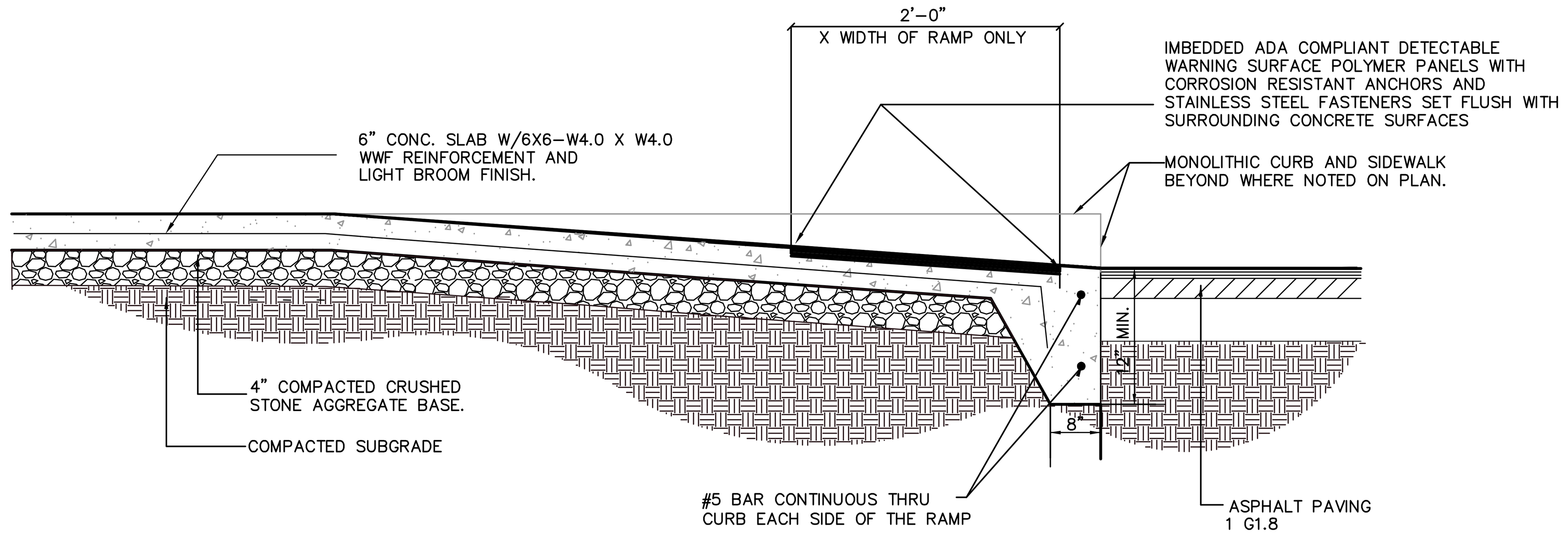
REV. NO.	DESCRIPTION	DATE
1	ADDIT INFO	7-30-25
2	ADDENDUM #1	8-12-25

GRADING AND DRAINAGE PLAN

G2.0



11 **ACCESSIBLE RAMP**
NTS



12 **ACCESSIBLE RAMP**
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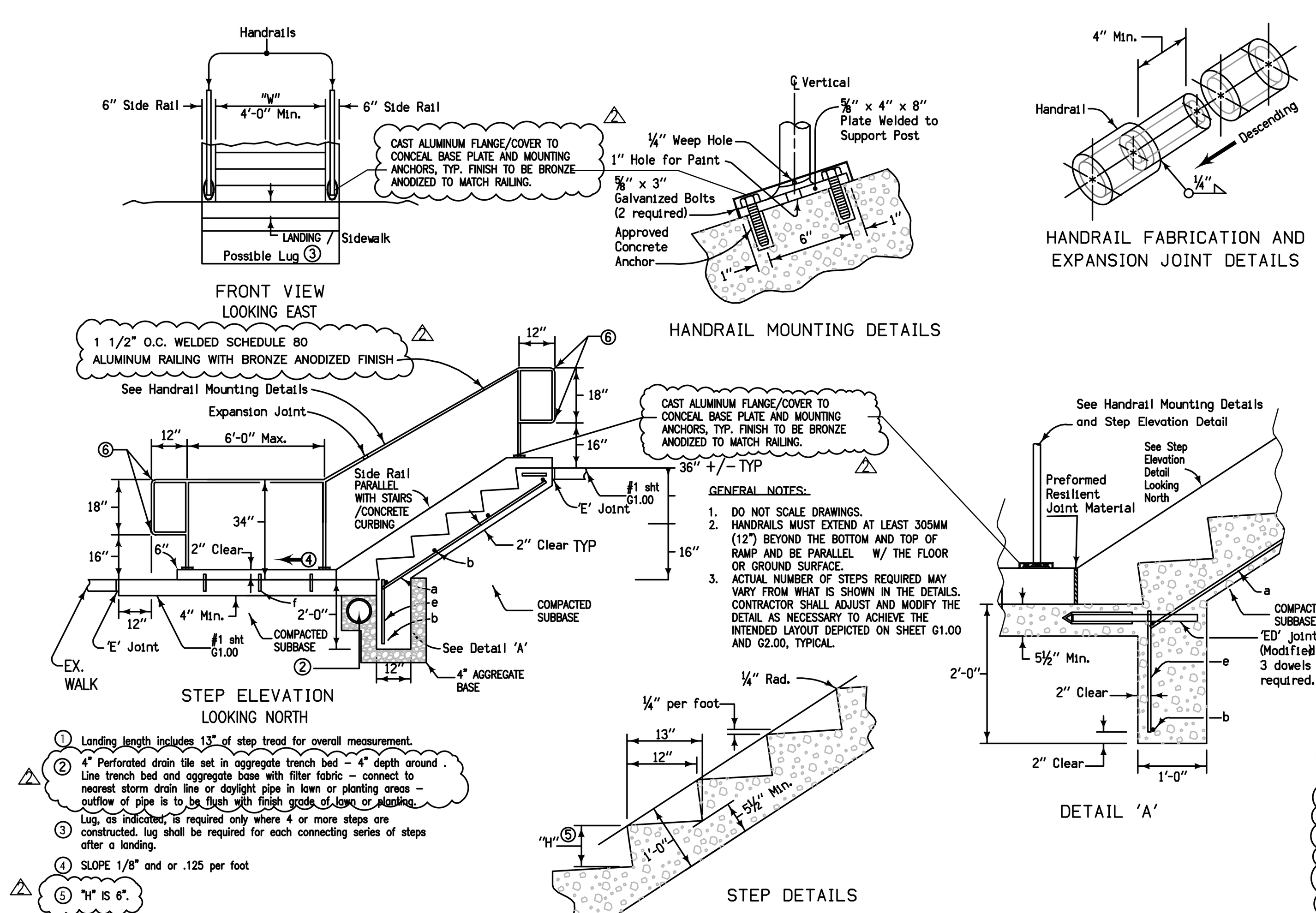

GENERAL NOTES:

1. DO NOT SCALE DRAWINGS.
2. HANDRAILS MUST EXTEND AT LEAST 305MM (12") BEYOND THE BOTTOM AND TOP OF RAMP AND BE PARALLEL W/ THE FLOOR OR GROUND SURFACE.
3. ACTUAL NUMBER OF STEPS REQUIRED MAY VARY FROM WHAT IS SHOWN IN THE DETAILS. CONTRACTOR SHALL ADJUST AND MODIFY THE DETAIL AS NECESSARY TO ACHIEVE THE INTENDED LAYOUT DEPICTED ON SHEET G1.00 AND G2.00, TYPICAL.

① Landing length includes 13" of step tread for overall measurement.
② 4" Perforated drain tile set in aggregate trench bed – 4" depth around . Line trench bed and aggregate base with filter fabric – connect to nearest storm drain line or daylight pipe in lawn or planting areas – outflow of pipe is to be flush with finish grade of lawn or planting. (2)
③ Lug, as indicated, is required only where 4 or more steps are constructed. lug shall be required for each connecting series of steps after a landing.
④ SLOPE 1/8" and or .125 per foot
⑤ "H" IS 6". (2)
⑥ Edges shall be free of sharp or abrasive elements. Edges shall have a minimum radius of ⅛ inch.

SCHEDULE FOR CONCRETE STEPS "W" = 4'-0"						
No. of Steps	1	2	3	4	5	+/- TYP
Concrete (Cu. Yds.) ⑧	0.4	0.6	0.9	1.2	1.5	+/- TYP

One 4'-0" Lug = 0.3 yd.3. +/– One 3' x 0' Landing = 0.34yd.3. +/–
Landing quantity excludes 13" of step tread in the calculations.
⑧ Quantities shown are computed up to the dashed line shown in 'STEP DETAILS'.

SEE PLAN G1.00 FOR STEP LAYOUT LOCATIONS AND NUMBER OF STEPS NEEDED FOR EACH NOTED STAIR AREA – REVISE AS NEED FOR STEPS REQUIRED TYP

GENERAL NOTES:

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3. ACTUAL NUMBER OF STEPS REQUIRED MAY VARY FROM WHAT IS SHOWN IN THE DETAILS. CONTRACTOR SHALL ADJUST AND MODIFY THE DETAIL AS NECESSARY TO ACHIEVE THE INTENDED LAYOUT DEPICTED ON SHEET G1.00 AND G2.00, TYPICAL.

REINFORCING SCHEDULE					
Mark	Size	Length	Spacing	No. Req.	Shape
a	#4	Varies	11"	Varies	——
b	#4	"W" + 8"	24" Max.	Varies	——
c	#4	Varies	Shown	Varies	—_
d	#4	Varies	Shown	Varies	└─┘
e	#4	20"	11"	Varies	——
f	#4	5"	Shown	Varies	——

⑥ One required for each additional 1'-0" of "W" over 4'-0"
⑦ Two for each landing.

DETAIL NOTES:
MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT STANDARDS AND SUPPLEMENTAL SPECIFICATIONS.

DETAILS FOR CONSTRUCTION OF CONCRETE STEPS AND HANDRAILS SHOWN HEREON ARE TYPICAL – REFER TO PROJECT PLANS FOR REQUIREMENTS OF INDIVIDUAL LOCATIONS. ALTERNATE DESIGN DETAILS MAY BE SUBMITTED FOR APPROVAL, INCLUDING ALUMINUM HANDRAIL INSTALLATIONS.

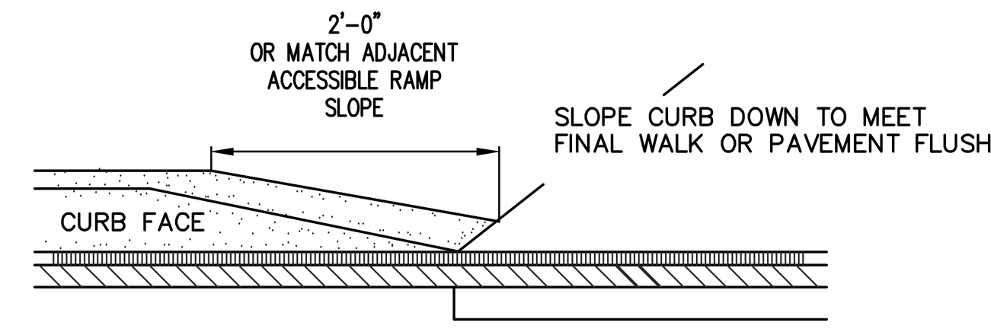
ALL CONCRETE FOR STEPS SHALL BE CLASS 'C' STRUCTURAL CONCRETE. ALL CONCRETE SHALL BE THOROUGHLY TAMPED AGAINST FORMS TO LEAVE A SMOOTH SURFACE WITHOUT HONEYCOMB. FINISH OF STEP TREADS AND TOP OF OF SIDE RAILS TO BE STEEL TROWELED AND THE BRUSH FINISHED WITH BRUSH STROKES ON TREADS AT RIGHT ANGLES TO WIDTH AND ON THE SIDE RAILS PARALLEL TO THE HANDRAIL.

ALL REINFORCING USED IN CONSTRUCTION OF STEPS SHALL BE #4 BARS PLACED AS SHOWN.

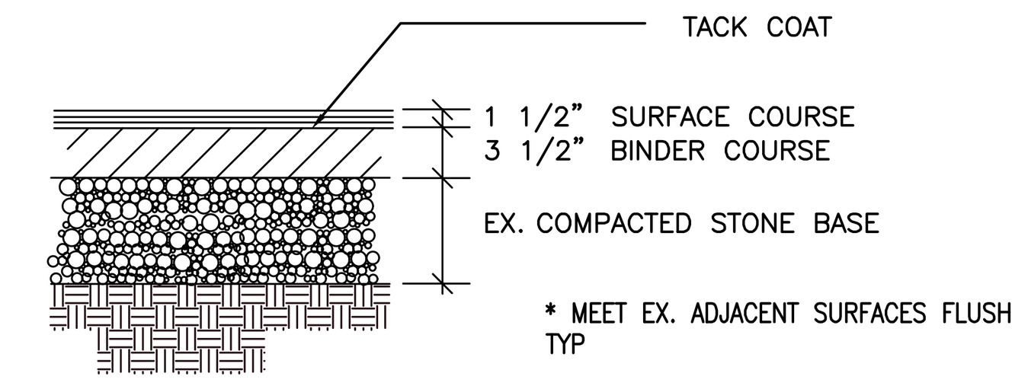
NOTE: WELDED AND GROUND SMOOTH (SCHEDULE 80, BRONZE ANNODIZED ALUMINUM RAILING.) (2)

DETAILS SHOWN ARE TYPICAL – RAIL SHALL BE STANDARD 1 ½" ROUND, SCHEDULE 80, BRONZE /ANODIZED PIPE WITH ALL WELDED CONNECTIONS GROUND SMOOTH. RAILING SHALL NOT ROTATE WITHIN THEIR FITTINGS. ANY EXPOSED ENDS OF RAILING SHALL BE CAPPED. MAXIMUM LENGTH OF RAIL SEGMENT BETWEEN SUPPORT POSTS IS 6'–0"MAX (SEE PLANS). SUPPORTS SHALL BE EVENLY SPACED FOR THE LENGTH OF RAILING REQUIRED. BOLTS AND HARDWARE USED IN CONSTRUCTION OF RAILING REQUIRED SHALL BE STAINLESS STEEL TYP. HANDRAIL IS REQUIRED ON BOTH SIDES WHEN THREE OR MORE STEPS ARE CONSTRUCTED. (2)

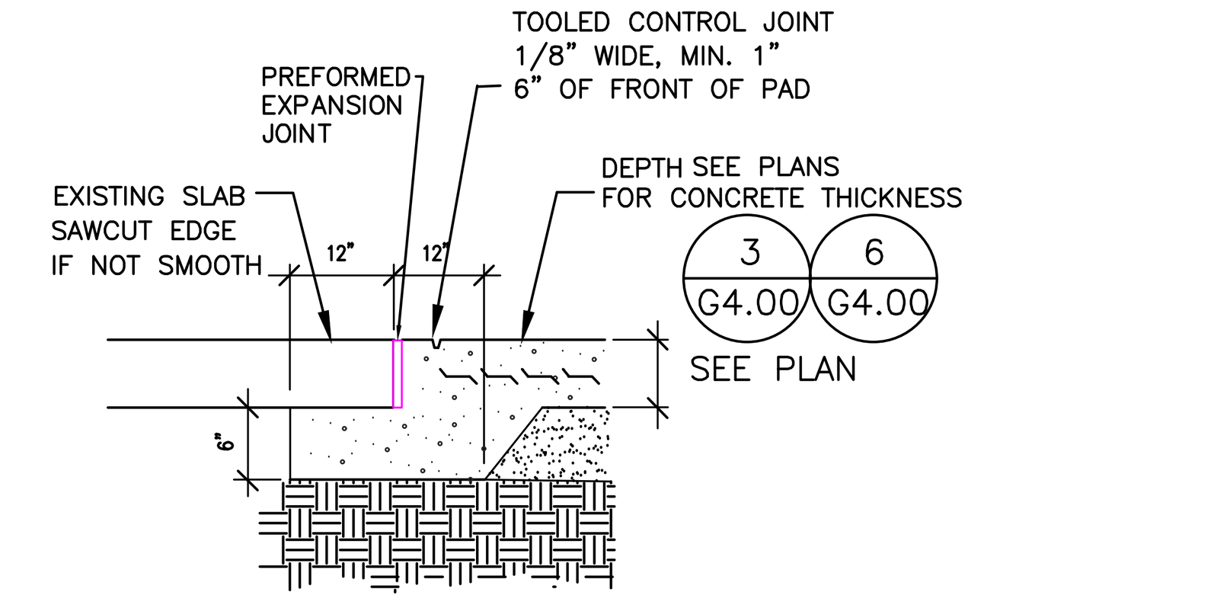
13 **CONCRETE STAIR AND HANDRAIL DETAIL**
NTS



7 **SLOPED CURB END**
NTS



1 **HEAVY DUTY ASPHALT PAVING**
NTS



8 **NEW TO EXISTING SLAB DETAIL**
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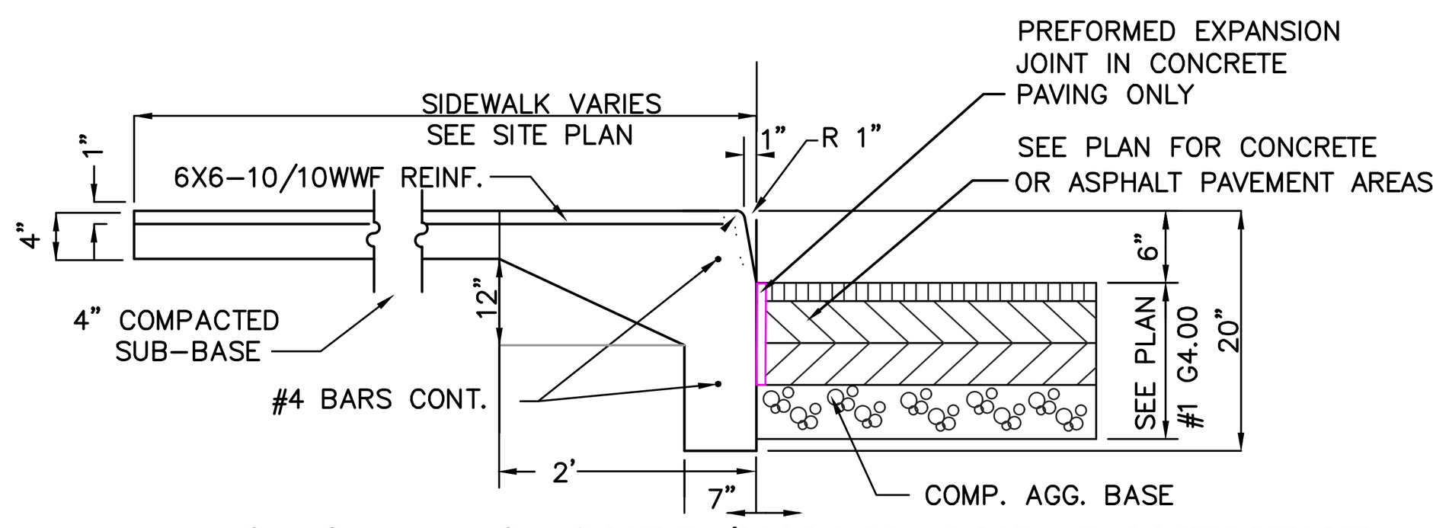
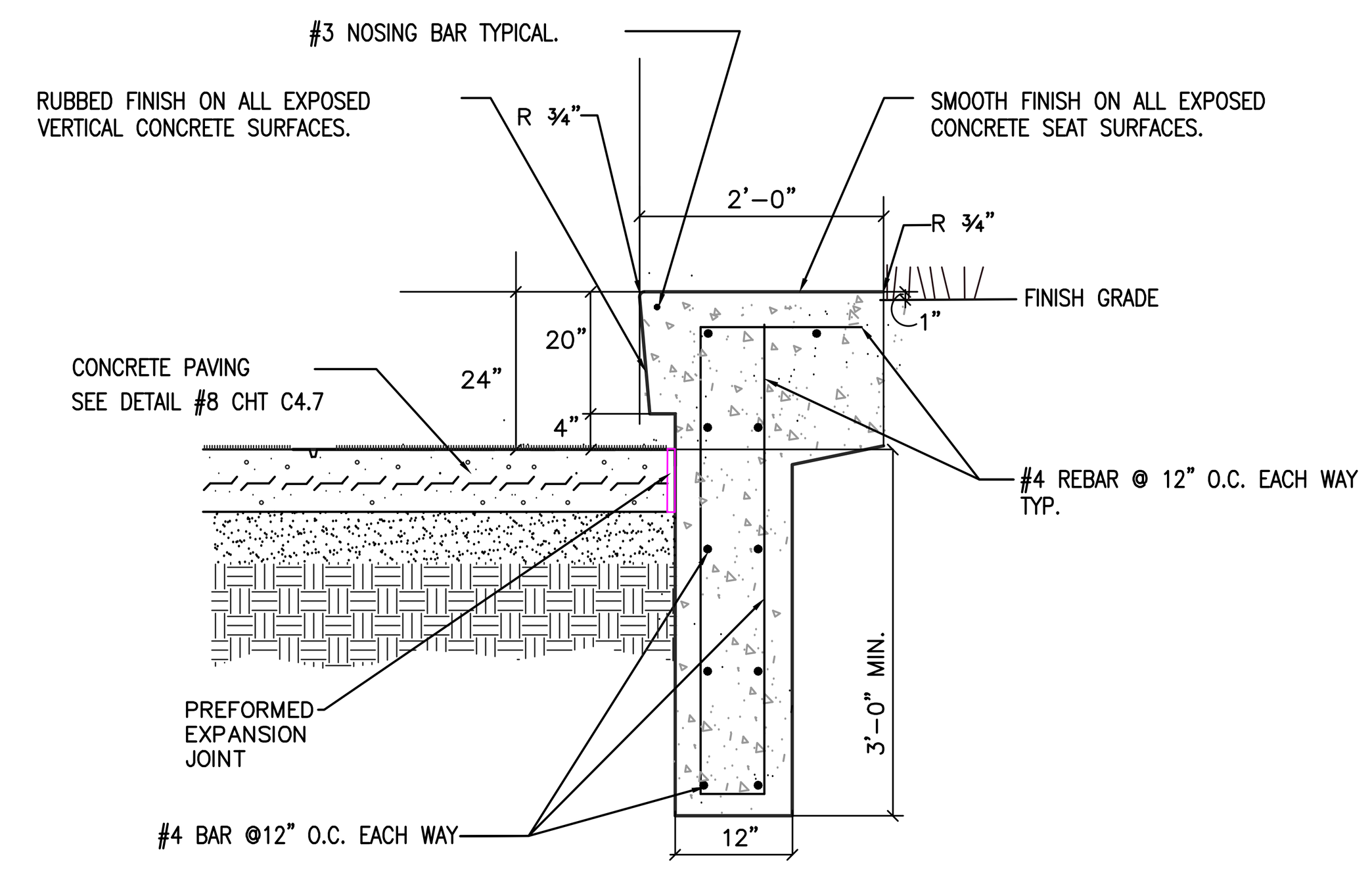
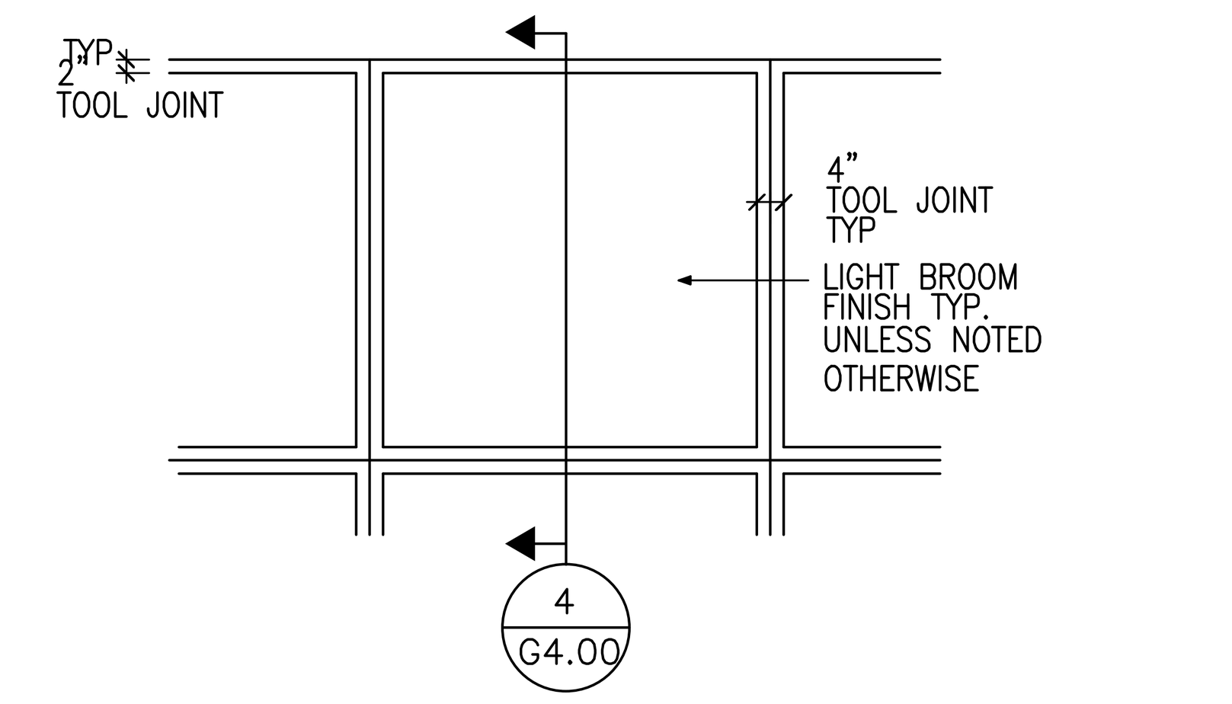


2 **MONOLITHIC CURB/WALK AND PAVEMENT**
NTS



9 **SEAT WALL**
NTS



3 **CONCRETE SURFACE DETAIL**
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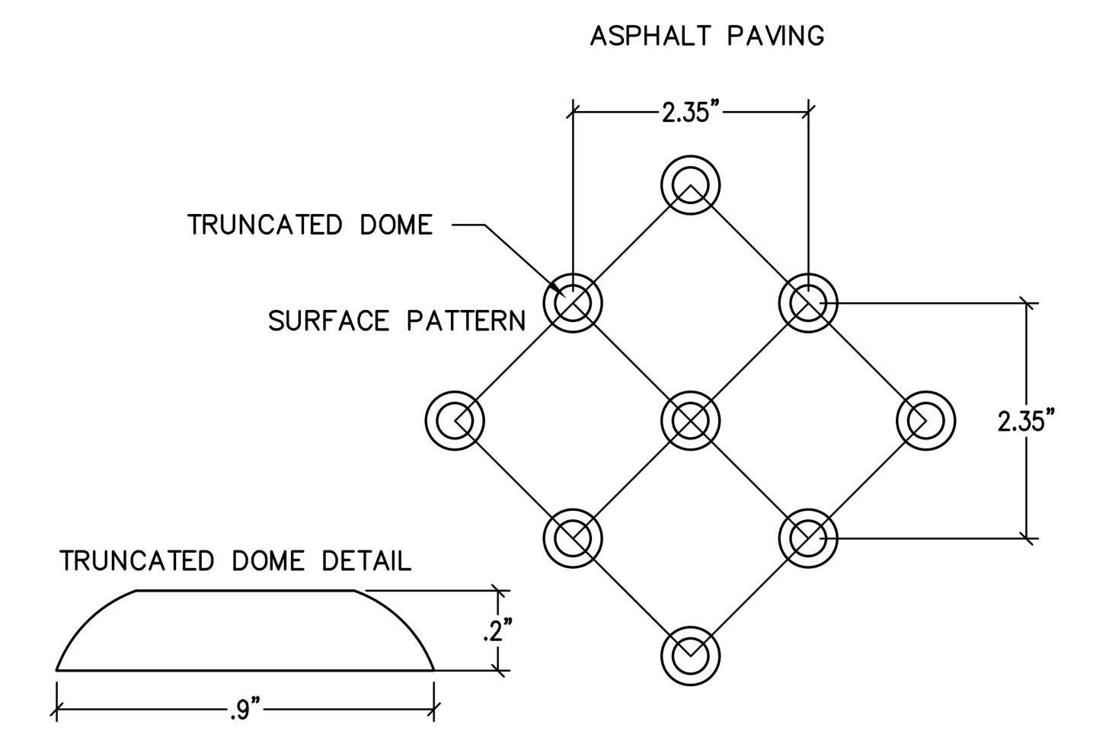

10 **DETECTABLE WARNING SURFACE**
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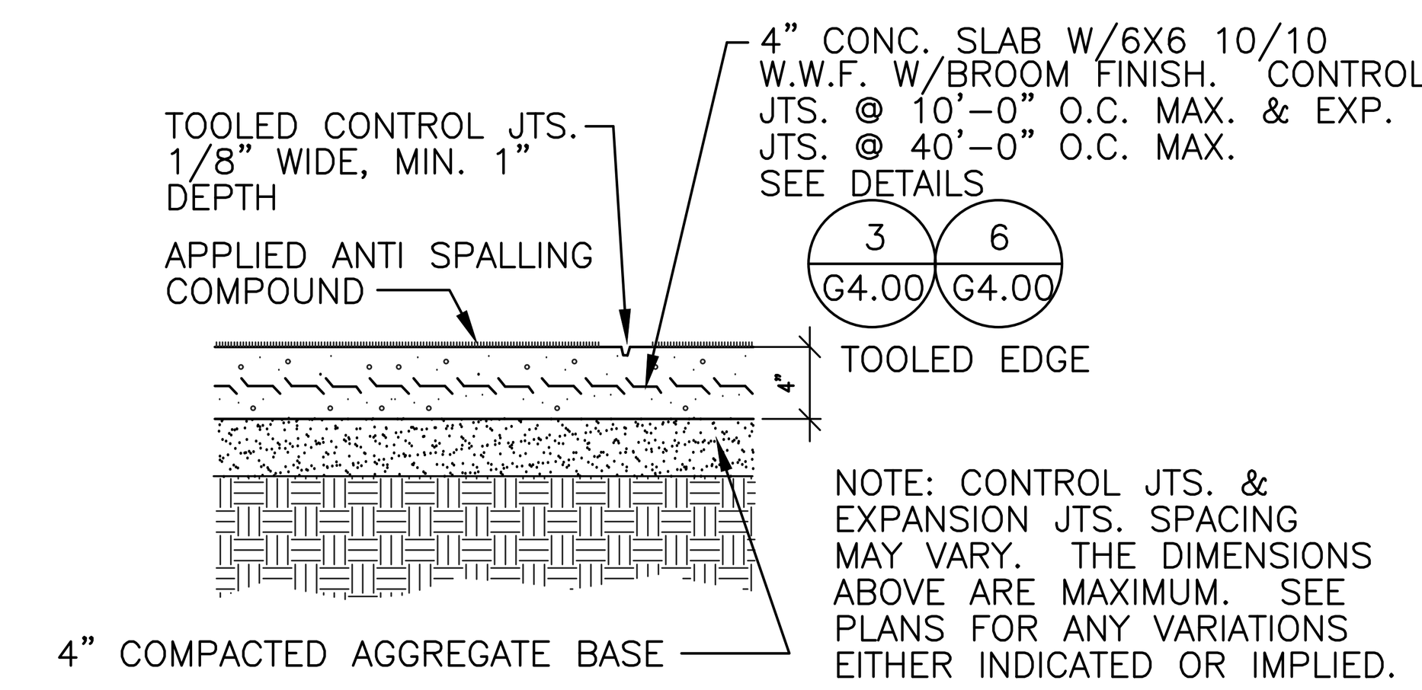

4 **4" CONCRETE SLAB DETAIL**
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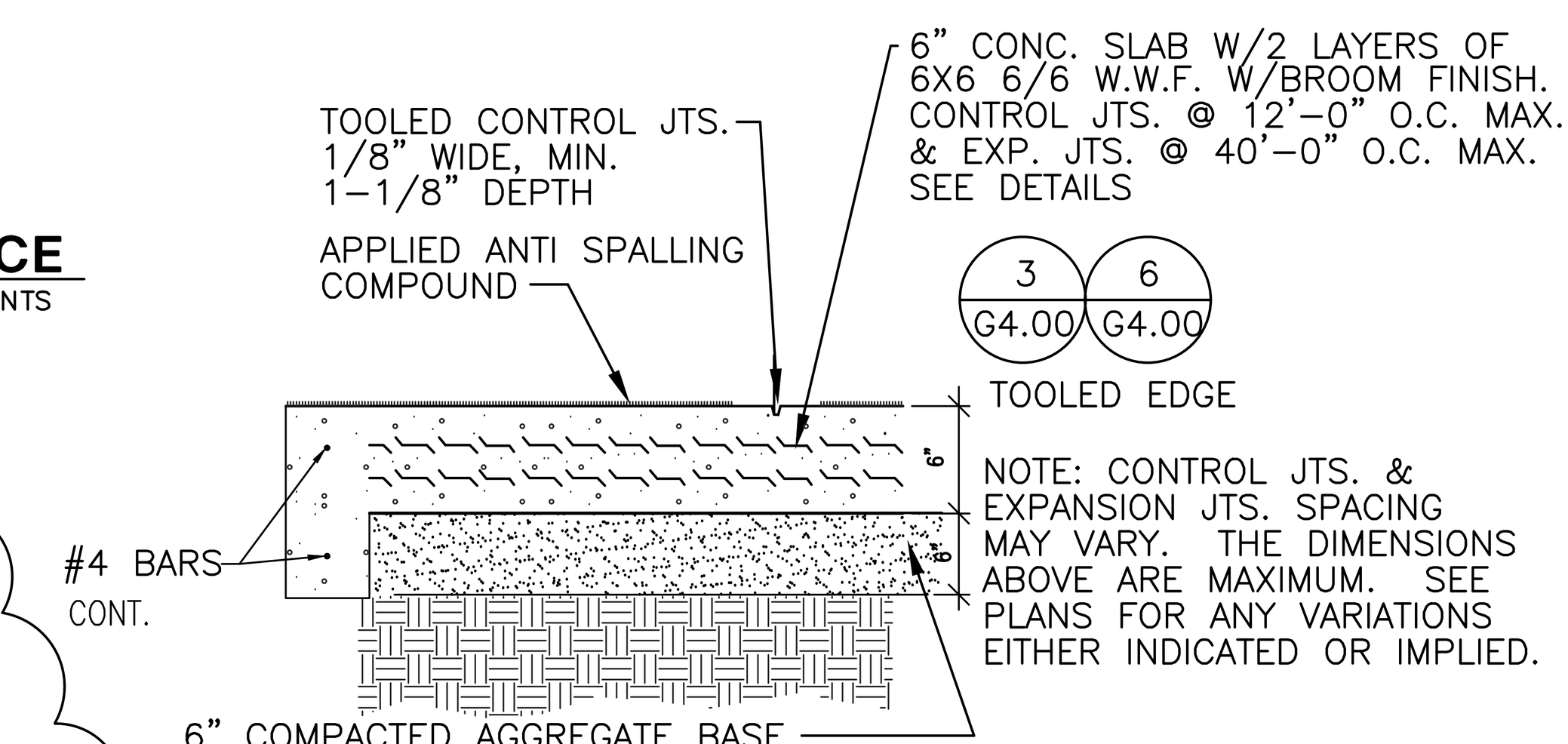
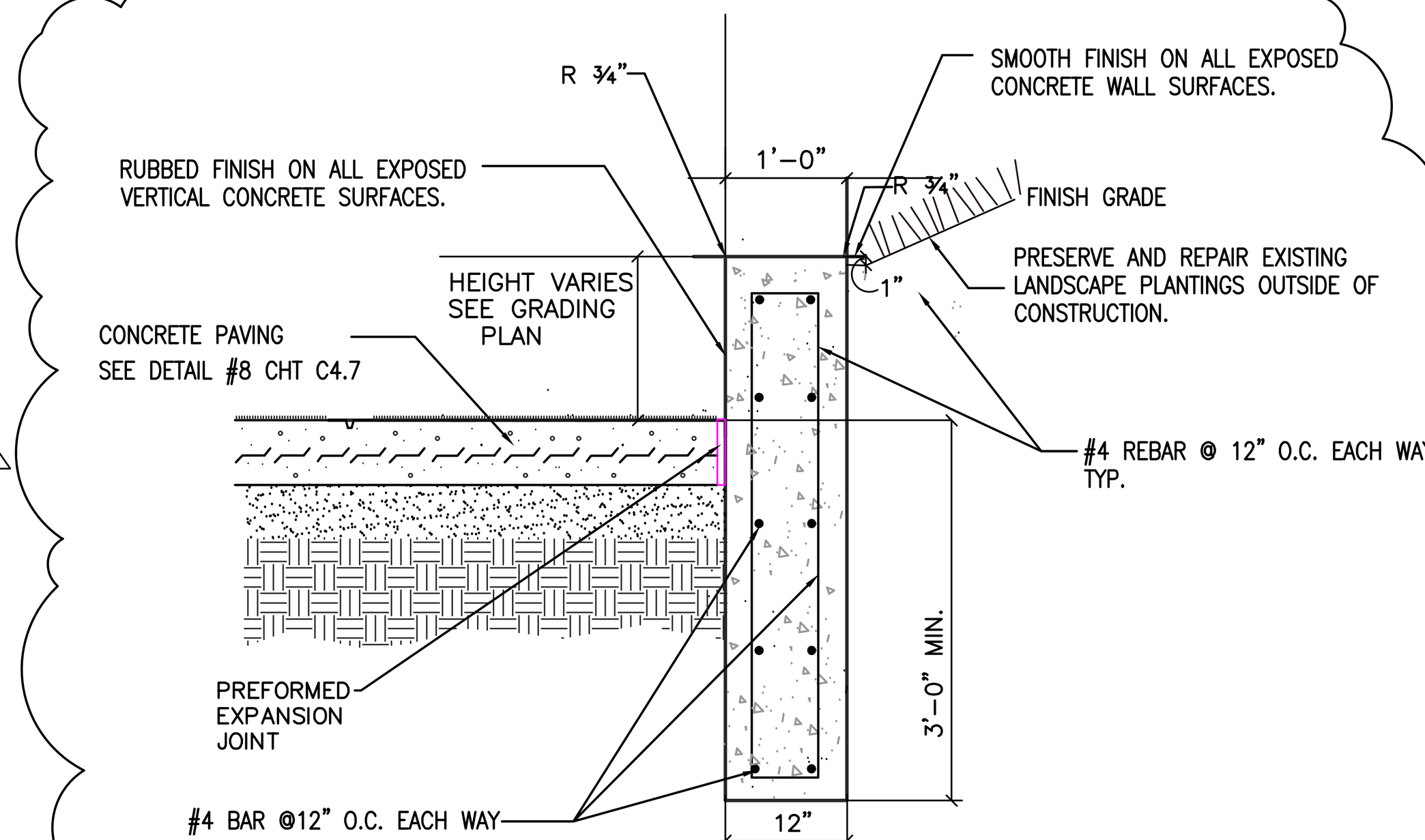
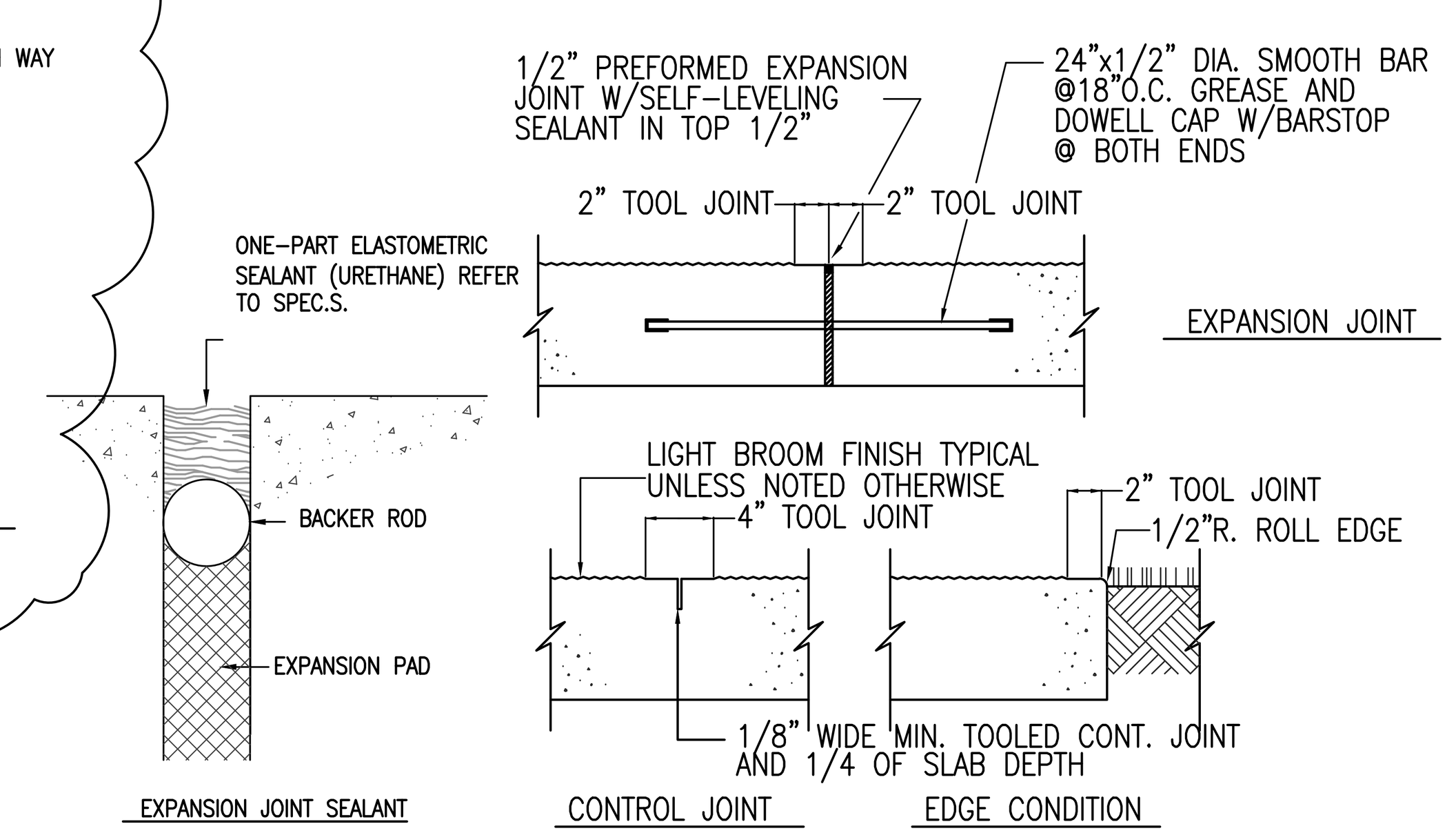


5 **6" CONCRETE SLAB - TURN DOWN DETAIL**
NTS



14 **LOW CONCRETE RETAINING WALL**
NTS



6 **TYPICAL CONCRETE JOINT DETAILS**
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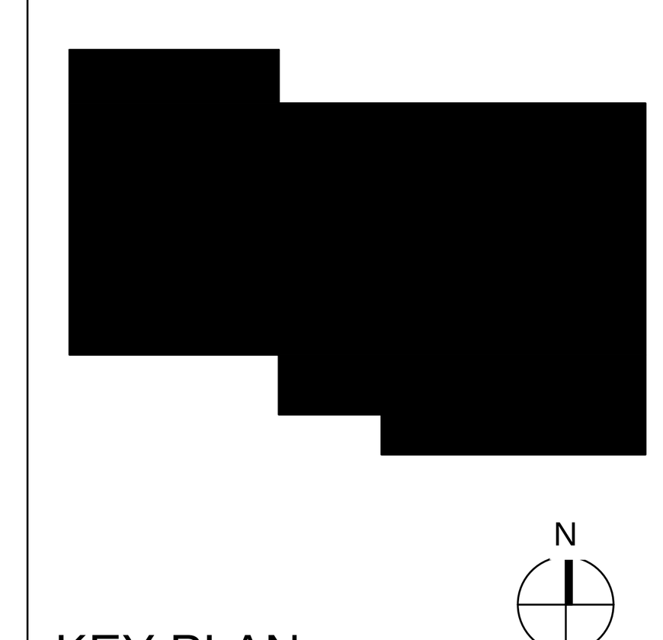


KEY PLAN

CONSTRUCTION DOCUMENTS

PAUL A. MILLER REGISTERED No. AR10800161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: MKS
DRAWN BY: JB,EB
PROJECT NUMBER: 225001.00
PROJECT ISSUE DATE: 07.25.2025

REV. NO.	DESCRIPTION	DATE
2	ADDENDUM #1	8-12-25

SITE DETAILS

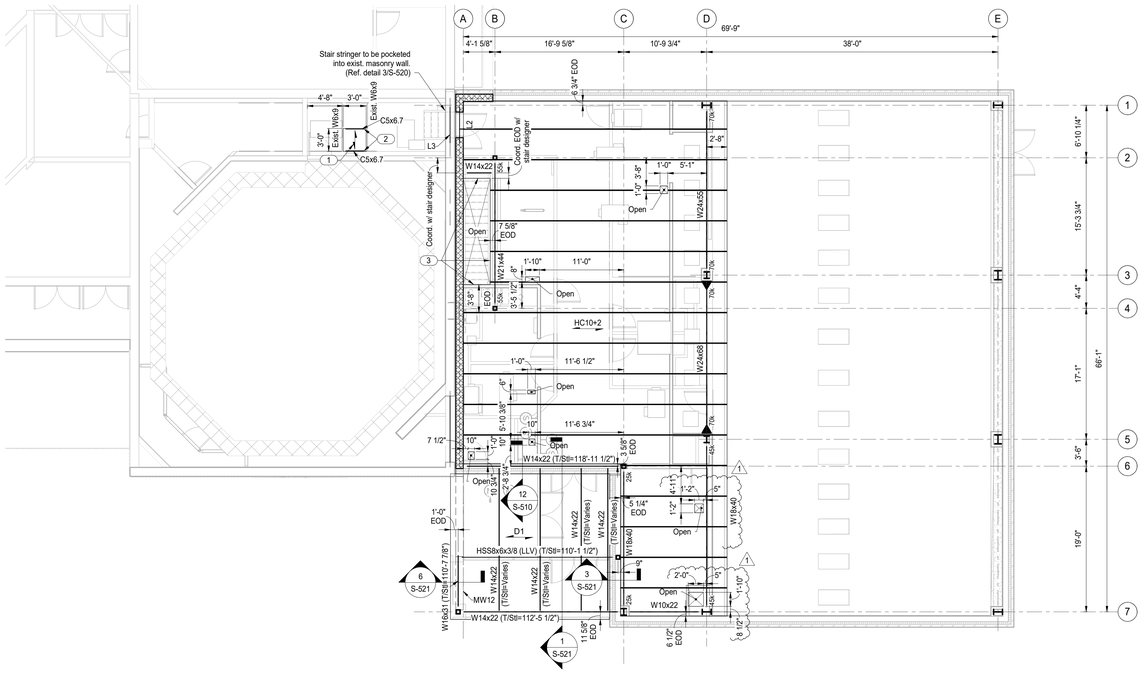
G4.00

Plan Notes:

1. Reference elevation = 100'-0" (789.00' USGS).
2. Refer to Architectural drawings for all dimensions not shown. Contractor shall verify all dimensions & elevations prior to construction and notify Architect & SEOR of any discrepancies.
3. All walls shall be laid out from the arch. drawings.
4. All contractor's shall coord. their work w/ all disciplines to avoid conflicts & identify all req'd materials and work.
5. Coord. exact size & location of all mech. openings in floor slabs, roof decks & walls w/ the Mech. Contractor. Location & size of all duct openings, louvers, etc. shall be verified prior to construction.
6. Provide channel frames at all supported slab openings and angle frames at all roof openings per typical details.
7. Horiz. & diag. bridging for steel joists shall be designed, located & provided by joist supplier in accordance w/ "SJI" requirements. All diag. bridging shall be coordinated w/ mech. plans to avoid conflicts w/ duct runs.
8. T/Stl = 111'-0" UNO
9. HC10+2 = 10" Hollowcore Plank w/ 2" composite concrete topping w/ 6x6 W1.4xW1.4 WWF.

Keynote:

1. 1/4" raised pattern steel floor plate. Fasten steel floor plate to C5x6.7's with 13/16" Ø plug welds @ 1'-6" spa.
2. C5x6.7's offset 1" inwards from edge of existing opening.
3. 1/4"x16"x4 1/4" (LLV) bent closure plate fastened to hollow-core plank @ stair opening. Coordinate finish with Arch.



1 Mezzanine Floor Framing Plan - Unit A
Scale: 1/8" = 1'-0"

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ARCHITECT

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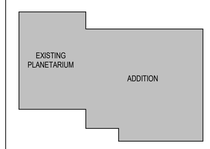


KEY PLAN

CONSTRUCTION DOCUMENTS

TROY A. MADDUX REGISTERED No. PE10100188 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY: KRO

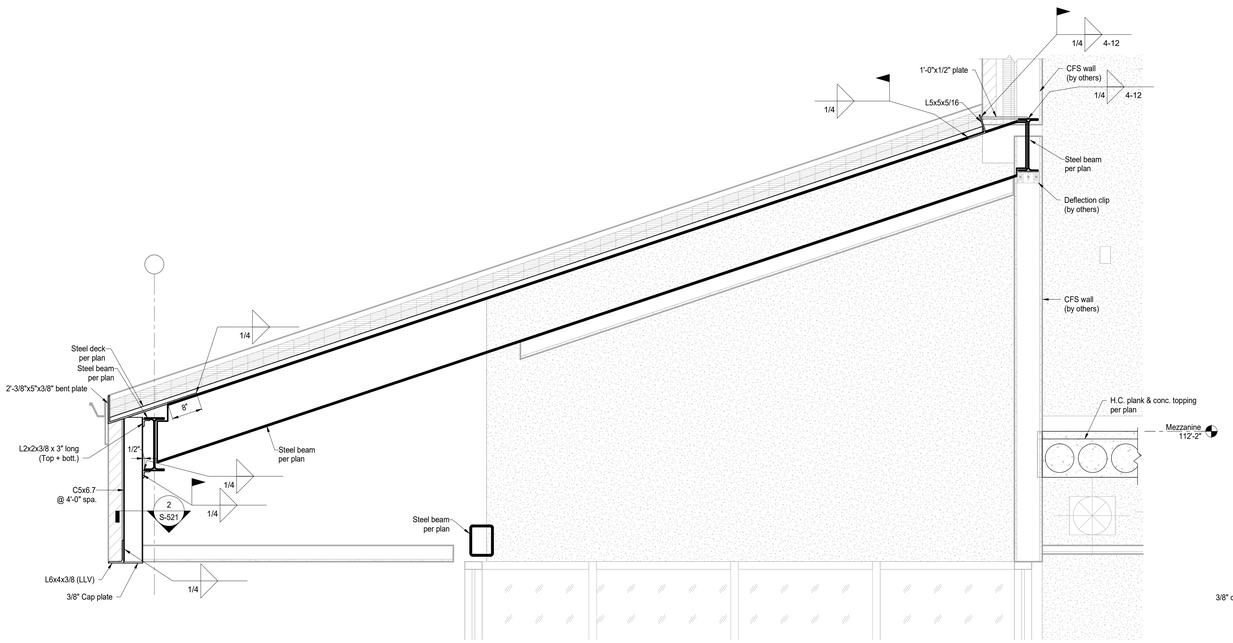
PROJECT NUMBER: 225001.00

PROJECT ISSUE DATE: 06.30.2025

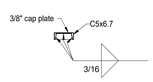
REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	08/12/2025

MEZZANINE FLOOR FRAMING PLAN - UNIT A

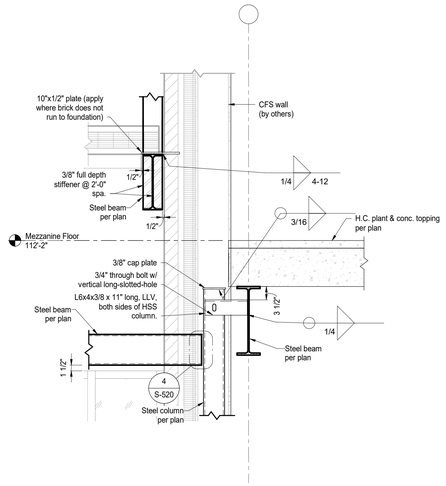
S-102



1 Section
Scale: 3/4" = 1'-0"



2 3/8" Cap plate Weldment Typ. Detail
Scale: 3/4" = 1'-0"



3 Section
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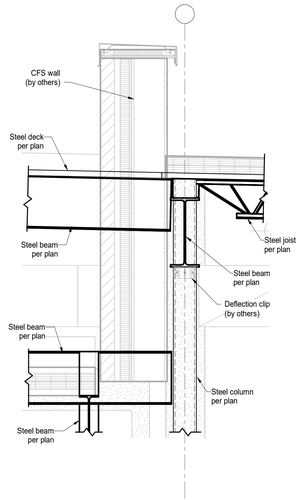
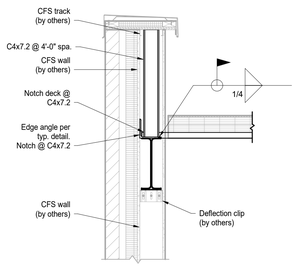


4 Section
Scale: 3/4" = 1'-0"



5 Section
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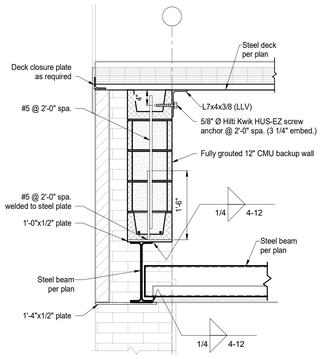
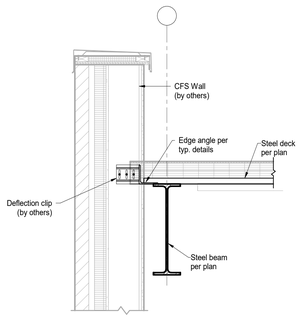


6 Section
Scale: 3/4" = 1'-0"



7 Section
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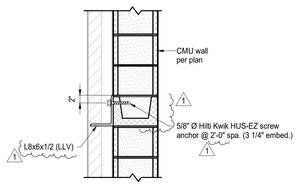

Notes:
1. Locate angle per Arch. detail 14/A-308

8 Section
Scale: 3/4" = 1'-0"

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1415 Lincolnway West, Ste D, Osceola, IN 46561
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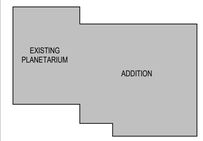


KEY PLAN

CONSTRUCTION DOCUMENTS

DRAWN BY: KRO

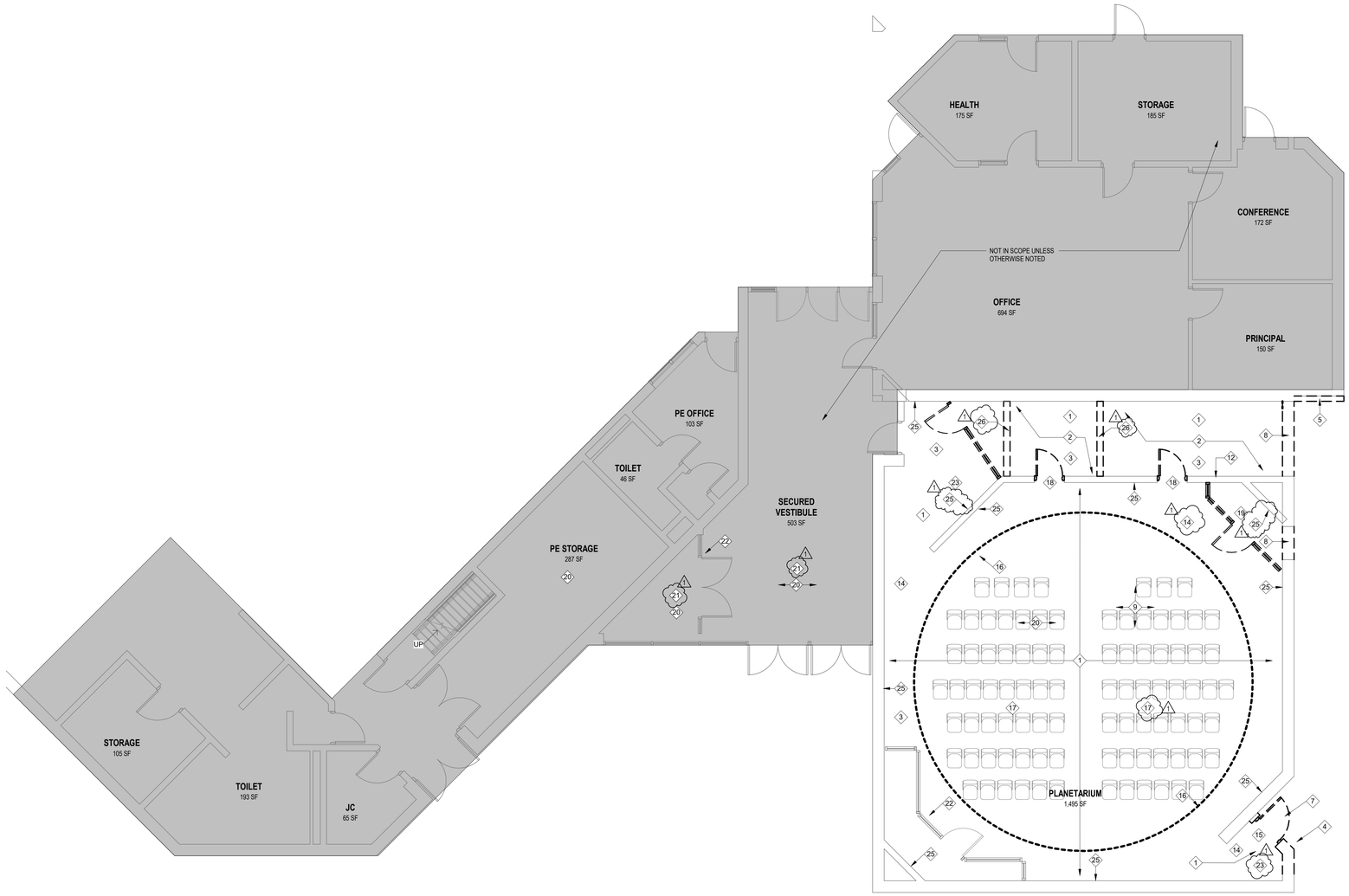
PROJECT NUMBER: 225001.00

PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	08/12/2025

STEEL FRAMING DETAILS

S-521



1 FIRST FLOOR DEMOLITION PLAN

SCALE: 3/16" = 1'-0"

ARCHITECTURAL DEMOLITION GENERAL NOTES

A. EXISTING DOME TO BE CLEANED BY OWNER AFTER CONSTRUCTION BY SPECIALITY CONTRACTOR.
B. DEMOLITION IS TO FOLLOW ESTABLISHED CONSTRUCTION SEQUENCE. CONTRACTOR IS TO VERIFY THEIR WORK IN THE FIELD WITH THE DEMOLITION DRAWINGS, NEW CONSTRUCTION DRAWINGS, AND THE EXISTING IN-FIELD CONDITIONS. REPORT DISCREPANCIES TO THE ARCHITECT.
C. "FLOORING" DENOTES FLOOR COVERING MATERIALS INCLUDING BACKINGS, ADHESIVES, BASES, DOWN TO BUT EXCLUSIVE OF FLOOR SLABS AND STRUCTURAL MATERIALS, UNLESS NOTED OTHERWISE.
D. "CEILING" DENOTES CEILING MATERIALS INCLUDING SUSPENSION SYSTEMS ADHESIVE RESIDUES, MOLDINGS, UP TO BUT EXCLUSIVE OF STRUCTURAL MATERIALS.
E. WALLS TO BE REMOVED SHALL BE REMOVED TO A POINT 2" (MIN.) BELOW THE EXISTING FLOOR SLAB (UNLESS SETTING ON SLAB). PATCH WITH NEW CONCRETE TO BE FLUSH WITH THE EXISTING FLOOR SLAB.
F. WHEN OPENINGS ARE CUT INTO AN EXISTING WALL, THE OPENING SHALL BE A MINIMUM OF 1'-4" LONGER THAN THE FINISHED OPENING REQUIRED TO ALLOW FOR 8" (MIN) OF NEW CMU TOOTHED-IN AT EDGES.
G. AFTER THE DEMOLITION OF MATERIALS, THE RESULTING EXPOSED SURFACE SHALL BE SMOOTH AND FLUSH WITH EXISTING CONDITIONS.
H. MECHANICAL AND ELECTRICAL ITEMS THAT ARE CAPPED AND ABANDONED SHALL BE LOCATED BEHIND FINAL FINISH SYSTEMS.
I. COORDINATE THIS WORK WITH DEMOLITION WORK ON SITE, STRUCTURAL, PLUMBING, MECHANICAL, AND ELECTRICAL.
J. PROVIDE INTERIOR AND EXTERIOR SHORING, BRACING, OR SUPPORT TO PREVENT MOVEMENT OR SETTLEMENT OF EXISTING STRUCTURES.
K. CONTRACTOR TO FIELD VERIFY PORTIONS OR SECTIONS OF EXISTING WALLS TO BE FILLED IN AND SALVAGE NECESSARY MATERIAL.
L. MATERIALS OF DEMOLITION SHALL BE DISPOSED OF OFF-SITE UNLESS OTHERWISE DIRECTED BY OWNER.
M. OWNER TO REMOVE EXISTING FURNITURE AND MISCELLANEOUS ITEMS NOT SHOWN AND NOT TO BE DEMOLISHED. CONTRACTOR TO NOTIFY OWNER IN ADVANCE WHEN ITEMS NEED TO BE REMOVED. CONTRACTOR IS RESPONSIBLE FOR OTHER ITEMS TO BE REMOVED.
N. ITEMS TO BE PATCHED. REMOVE ALL LOOSE OR DAMAGED MATERIAL. REFINISH TO LIKE NEW CONDITION, OR IF CONDITION WARRANTS REPLACE IN ENTIRETY.
O. THE OWNER SHALL RESERVE RIGHT TO CLAIM ANY MATERIALS THAT ARE BEING DEMOLISHED PRIOR TO THE CONTRACTOR DISPOSING OF THEM OFF SITE.
P. "TURNED OVER TO THE OWNER" DENOTES: 1) TAG AND IDENTIFY ITEMS: 2) STORE IN AN ORDERLY FASHION IN A LOCATION DESIGNATED BY THE OWNER.
Q. ITEMS MADE OBSOLETE TO ACCOMODATE NEW CONSTRUCTION OR RENOVATION SHALL BE REMOVED.
R. ITEMS TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY.
S. AFTER REMOVAL OF ITEMS, THE EXISTING WALL SURFACES (IF EXPOSED) SHALL BE REPAIRED/PATCHED AS REQUIRED TO RECEIVE NEW FINISHES.

DEMOLITION PLAN NOTES

(ALL NOTES MAY NOT BE INDICATED ON THIS SHEET)

DEMOLITION FLOOR PLAN NOTES

#	NOTE
1	REMOVE EXISTING CARPET, WALL BASE, AND TRANSITIONS. REMOVE ADHESIVES DOWN TO EXISTING SLAB. PREPARE SURFACE TO RECEIVE NEW FINISHES.
2	REMOVE RESILIENT BASE. REMOVE ADHESIVES DOWN TO EXISTING WALL SURFACE. PREPARE SURFACE TO RECEIVE NEW FINISHES.
3	DEMOLISH EXISTING SUSPENDED ACOUSTIC CEILING SYSTEM COMPLETELY IN AREA OF SCOPE. PREPARE FOR NEW SUSPENDED ACOUSTIC CEILING SYSTEM.
4	REMOVE CONCRETE STOOP CONSTRUCTION
5	DEMOLISH AND REMOVE EXISTING BRICK, INSULATION, AND ALL ASSOCIATED MATERIALS DOWN TO CMU TO REMAIN. REFER TO WALL SECTION 310.
7	REMOVE CONCRETE STOOP CONSTRUCTION
8	REMOVE MASONRY WALL AS REQUIRED FOR INSTALLATION OF NEW OPENING AND LINTEL
9	REMOVE SEATING FOR REINSTALLATION PLANETARIUM SEATING (APPROX. 94) . STORE AND REINSTALL IN THE SAME CONFIGURATION AS EXISTING UNLESS DIRECTED BY OWNER. .
12	EXISTING ELECTRICAL PANELS TO REMAIN.
14	EXISTING LAY IN CEILING TO REMAIN
15	DEMOLISH EXISTING SUSPENDED ACOUSTIC CEILING SYSTEM COMPLETELY IN AREA OF SCOPE. PREPARE FOR NEW SUSPENDED ACOUSTIC CEILING SYSTEM.
16	EXISTING BULKHEAD AT BOTTOM OF DOME TO REMAIN (REPAINT).
17	PROTECT AND COVER EXISTING DOME DURING ANY WORK IN THE PLANETARIUM
18	REMOVE EXISTING DOOR AND FRAME IN ITS ENTIRETY
19	REMOVE EXISTING DISPLAY CASE AND TURN OVER TO OWNER. REPLACE CUT CEILING TILES WITH OTHER SALVAGE TILES.
20	REFER TO PLUMBING DRAWING PF10A FOR SAW CUTTING OF FLOOR TO ACCOMMODATE SANITARY CONNECTION
21	EXISTING LAY IN CEILING TO REMAIN IN LOBBY
22	EXISTING DISPLAY CASE TO REMAIN
23	REWORK CEILING AND GRID TO ACCOMMODATE NEW ENTRY DOORS INTO PLANETARIUM.
25	REMOVE EXISTING FULL HEIGHT TACKABLE WALL. THE EXISTING PANELS STOP AT THE BOTTOM OF CEILING GRID. PREP FOR INSTALLATION OF PLYWOOD, CORK, AND ACCOUSTICAL PANELS.
26	DEMOLISH AND REMOVE EXISTING 8" CMU IN ITS ENTIRETY

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.

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CONSTRUCTION DOCUMENTS

PAULA A. MILLER REGISTERED No. AR10800161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: MKS

DRAWN BY: AME

PROJECT NUMBER: 225001.00

PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	08/12/2025

FIRST FLOOR DEMOLITION PLAN

AD101

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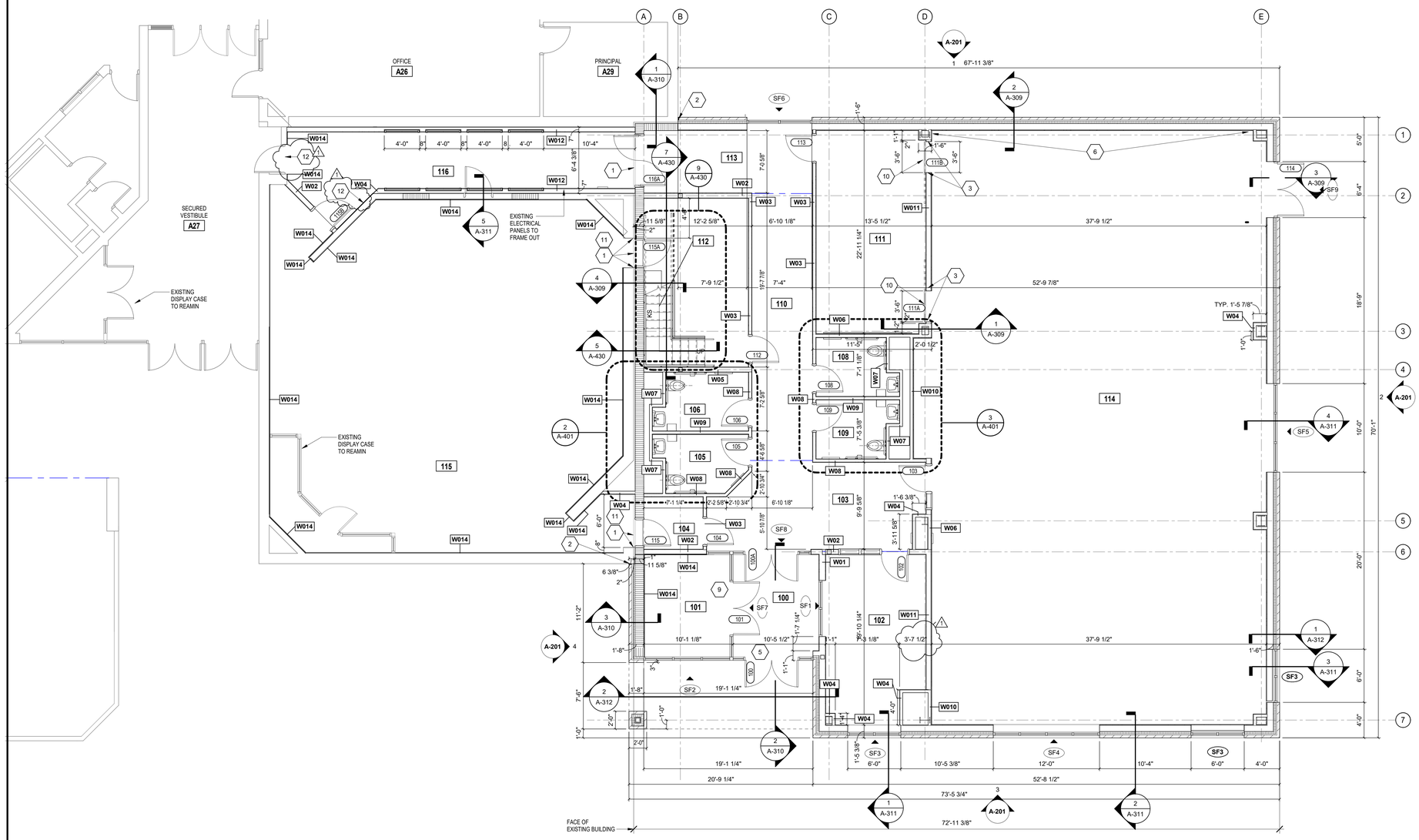
ROOM LEGEND

ROOM NO.	OWNER ROOM NO.	ROOM NAME	AREA (SF)
100		VESTIBULE	117 SF
101		DISPLAY	113 SF
102		OFFICE	204 SF
103		LOBBY	222 SF
104		VESTIBULE	40 SF
105		TOILET	63 SF
106		TOILET	66 SF
108		TOILET	57 SF
109		TOILET	57 SF
110		CORRIDOR	206 SF
111		PRESENTATION	284 SF
112		WORKROOM	223 SF
113		CORRIDOR	135 SF
114		SPACE CENTER	2,553 SF
115		PLANETARIUM	1,495 SF
116		CORRIDOR	271 SF
A26		OFFICE	694 SF
A27		SECURED VESTIBULE	503 SF
A28		CONFERENCE	172 SF
A29		PRINCIPAL	150 SF
A32		PE STORAGE	287 SF
A33		TOILET	46 SF
A34		PE OFFICE	103 SF
A38		COURTYARD	796 SF



1 FIRST FLOOR ARCHITECTURAL PLAN - UNIT A

SCALE: 3/16" = 1'-0"

ARCHITECTURAL PLAN GENERAL NOTES

A. ALL CMU WALLS THAT DO NOT LAY OUT IN FULL OR HALF LENGTHS SHOULD BE BALANCED SO AS NOT TO HAVE ANY PIECES LESS THAN 4" IN SIZE EXPOSED TO VIEW.
B. WHERE DISSIMILAR FLOOR MATERIALS MEET, THEY SHALL DO SO UNDER THE CENTERLINE OF THE DOOR, UNLESS NOTED OTHERWISE.
C. THERE SHALL BE PERIMETER INSULATION CONTINUOUS AROUND THE ENTIRE PERIMETER OF THE BUILDING EXTENDING 2'-0" MINIMUM BELOW GRADE.
D. THE BASE FLOOR ELEVATION INDICATED FOR THE PROJECT IS 100'-0". REFER TO SITE PLAN FOR CORRELATION TO USGS DATUM.
E. ALL INTERIOR MASONRY WALLS THAT RUN TO UNDERSIDE OF DECK ABOVE SHALL HAVE A 2" JOINT (U.N.O.) AT THE DECK TO BE FILLED WITH FIRE STOPPING AT RATED WALLS PER PROJECT MANUAL, AND MINERAL WOOL AT THE NON-RATED WALLS, TO ALLOW FOR DEFLECTION.
F. FOR TYPICAL COMMON JOINT DETAILS AND CONSTRUCTION MOVEMENT JOINT DETAILS REFER TO DETAILS ON SHEET A502.
G. ALL DIMENSIONS ON FLOOR PLANS ARE TO FINISH FACE OF CMU, CONCRETE, BRICK OR FINISH FACE OF GWB AT METAL STUD WALLS, UNLESS NOTED OTHERWISE. EXCEPTION: EXTERIOR METAL STUD WALLS ARE TO FACE OF METAL STUDS.
H. HINGE SIDE DOOR JAMB AT WALLS WILL TYPICALLY BE LOCATED 4" MINIMUM FROM ADJACENT WALL UNLESS NOTED OTHERWISE.
I. ALL EXPOSED CONCRETE MASONRY UNITS (CMU) CORNERS ARE TO BE BULLNOSE, EXCEPT AT WINDOW JAMBS, BULKHEADS, WINDOW AND DOOR HEADS.
J. SEE REFLECTED CEILING PLANS FOR BULKHEAD LOCATIONS AND DETAIL REFERENCES.
K. REFER TO ROOM FINISH SCHEDULE OR PLAN AND EQUIPMENT PLANS FOR LOCATION AND EXTENT OF FINISH FLOOR MATERIALS.
L. PROVIDE WOOD BLOCKING AS REQUIRED. WITHIN METAL STUD WALLS FOR WALL MOUNTED ITEMS.
M. REFER TO MASTER/CODE PLANS FOR CODE INFORMATION AND FIRE RATED WALL LOCATIONS.
N. PROVIDE SPRAY FOAM INSULATION AND THERMAL BARRIER CONTINUOUS AT INTERSECTION OF EXTERIOR WALLS AND DECK.

ARCHITECTURAL PLAN NOTES

(ALL NOTES MAY NOT BE INDICATED ON THIS SHEET)

—— W### INDICATES WALL TYPE. REFER TO DRAWING ____ FOR WALL THICKNESS, HEIGHT AND COMPOSITION.

1. WHERE THERE IS AN EXPOSED 2" GAP BETWEEN NEW AND EXISTING MASONRY WALLS AND FLOORS, WALL EXPANSION JOINT COVERS AT SIDES AND HEAD, AND FLOOR EXPANSION JOINT COVER AT FLOOR.
2. PREFORMED JOINT SEAL
3. FINISHED DRYWALL AND CORNER BEAD AT OPENINGS IN LIEU FOR JAMB AND HEAD.
4. PATCH EXISTING FLOOR OPENING, REFER TO STRUCTURAL DRAWINGS ON SHEET S-102
5. PROVIDE SAFETY AND SECURITY FILM ON GLAZING AT DOOR(S)
6. PROVIDE LEVEL 5 FINISH ON NORTH WALL IN ROOM 114 - REFER TO INTERIOR ELEVATIONS
7. INFILL OLD LOUVER OPENING WITH 8" CMU
8. EXISTING CATWALK TO REMAIN
9. REFER TO HARDWARE SET NO. 18 FOR LOCKING REQUIREMENTS FOR DISPLAY CASE DOORS
10. PROVIDE WOOD BLOCKING OR METAL STRAP IN STUD SPACE AND VERIFY POSITION OF OPENING AS REQUIRED FOR SLIDING DOOR AND LATCH. COORDINATE WITH SLIDING DOOR INSTALLER AND DOOR HARDWARE.
11. PROVIDE WALL TYPE W014 ON ALL MASONRY SURFACES (NEW OR EXISTING - DOOR ALCOVE OR RECESS)
12. GWB ADHERED TO EXISTING MASONRY SURFACES

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CONSTRUCTION DOCUMENTS

PAUL A. MILLER REGISTERED No. AR10800161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: MKS
DRAWN BY: AME
PROJECT NUMBER: 225001.00
PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	08/12/2025

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

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FIRST FLOOR ARCHITECTURE PLAN - UNIT A

A-11A

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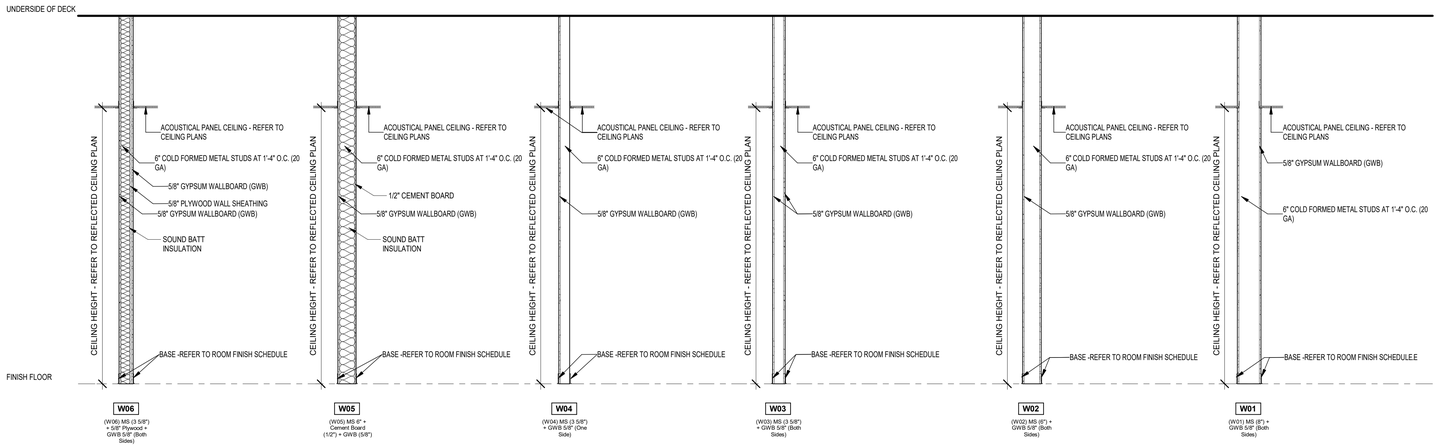

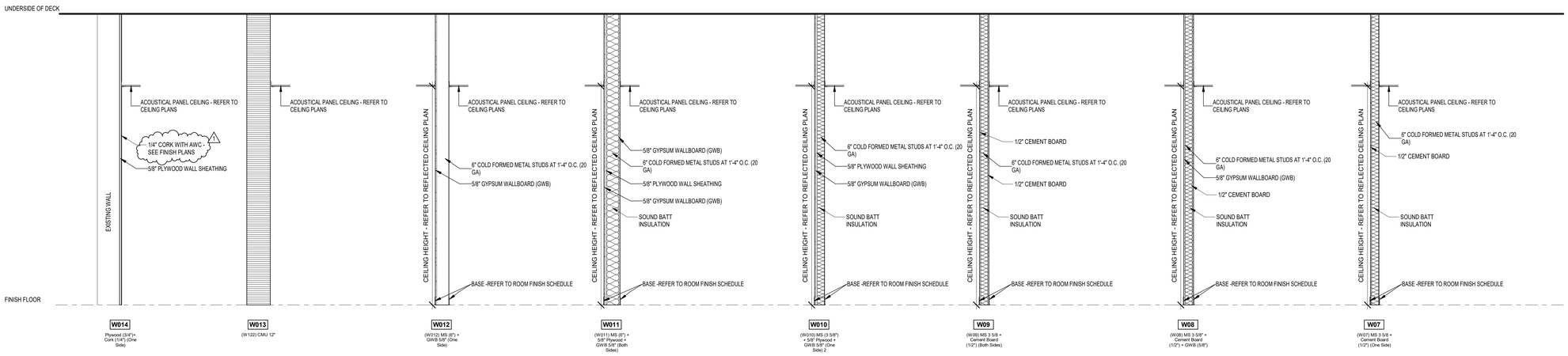

1 **WALL TYPES**
SCALE: 1/2" = 1'-0"

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CONSTRUCTION DOCUMENTS

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PROJECT MANAGER: MKS
DRAWN BY: BGS
PROJECT NUMBER: 225001.00
PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	08/12/2025

WALL TYPES AND DETAILS

A-307

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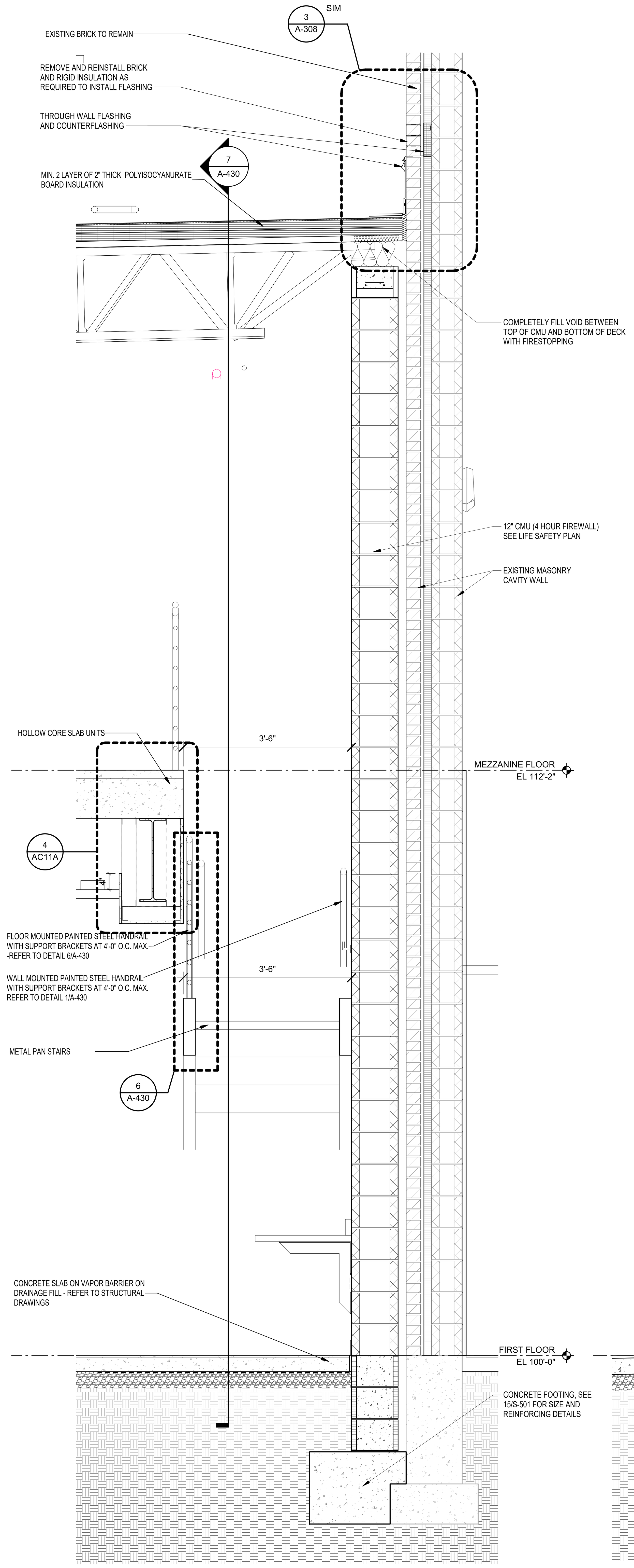
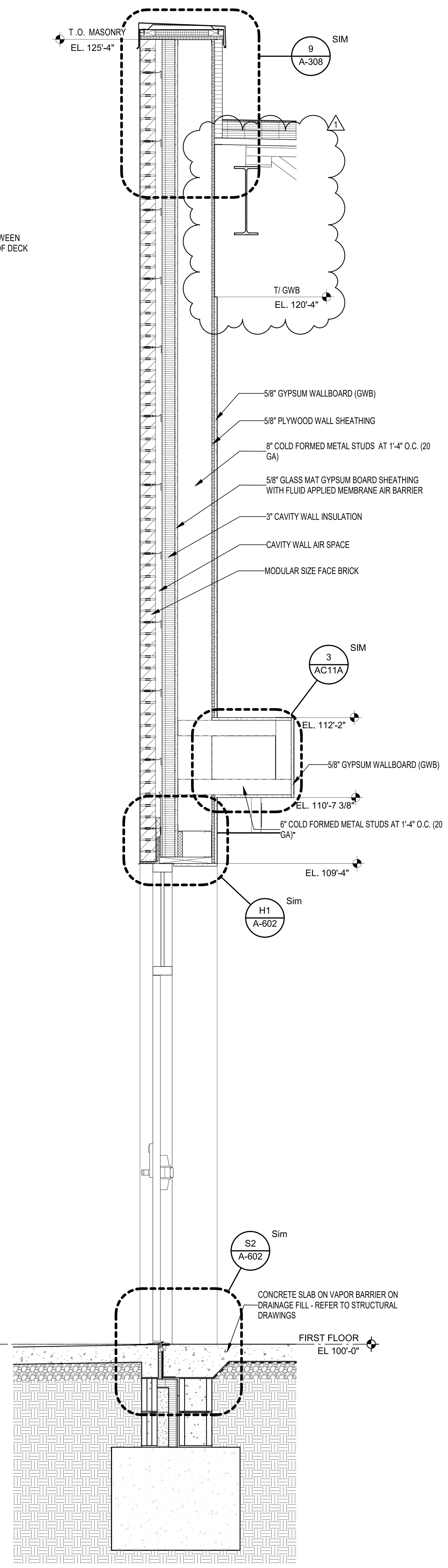


4 SECTION
SCALE: 3/4" = 1'-0"



3 SECTION
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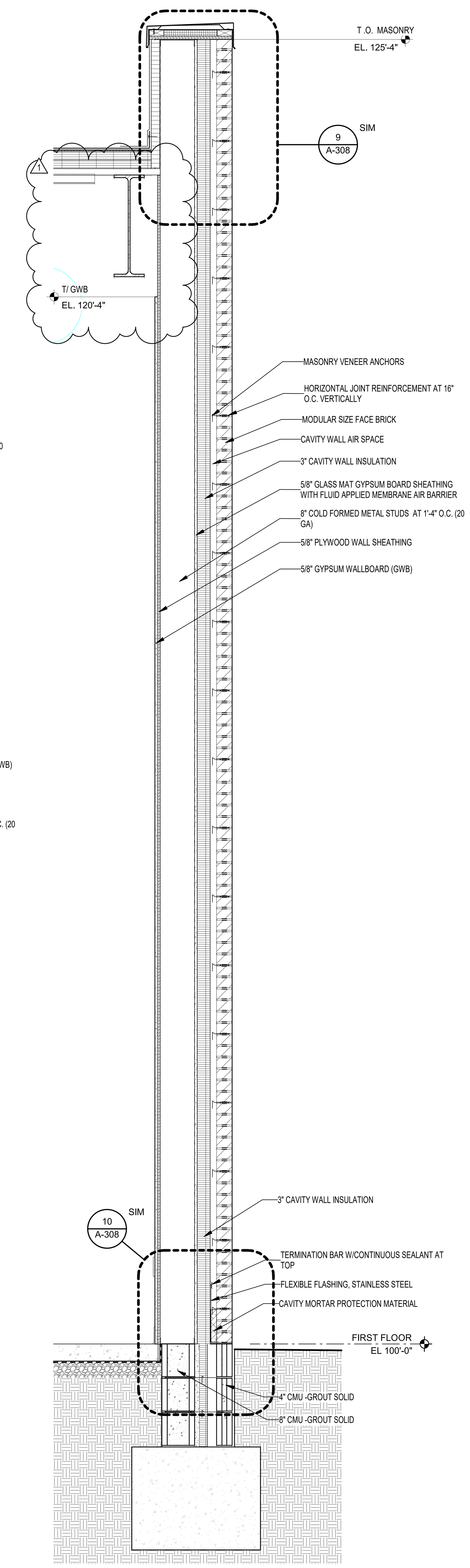
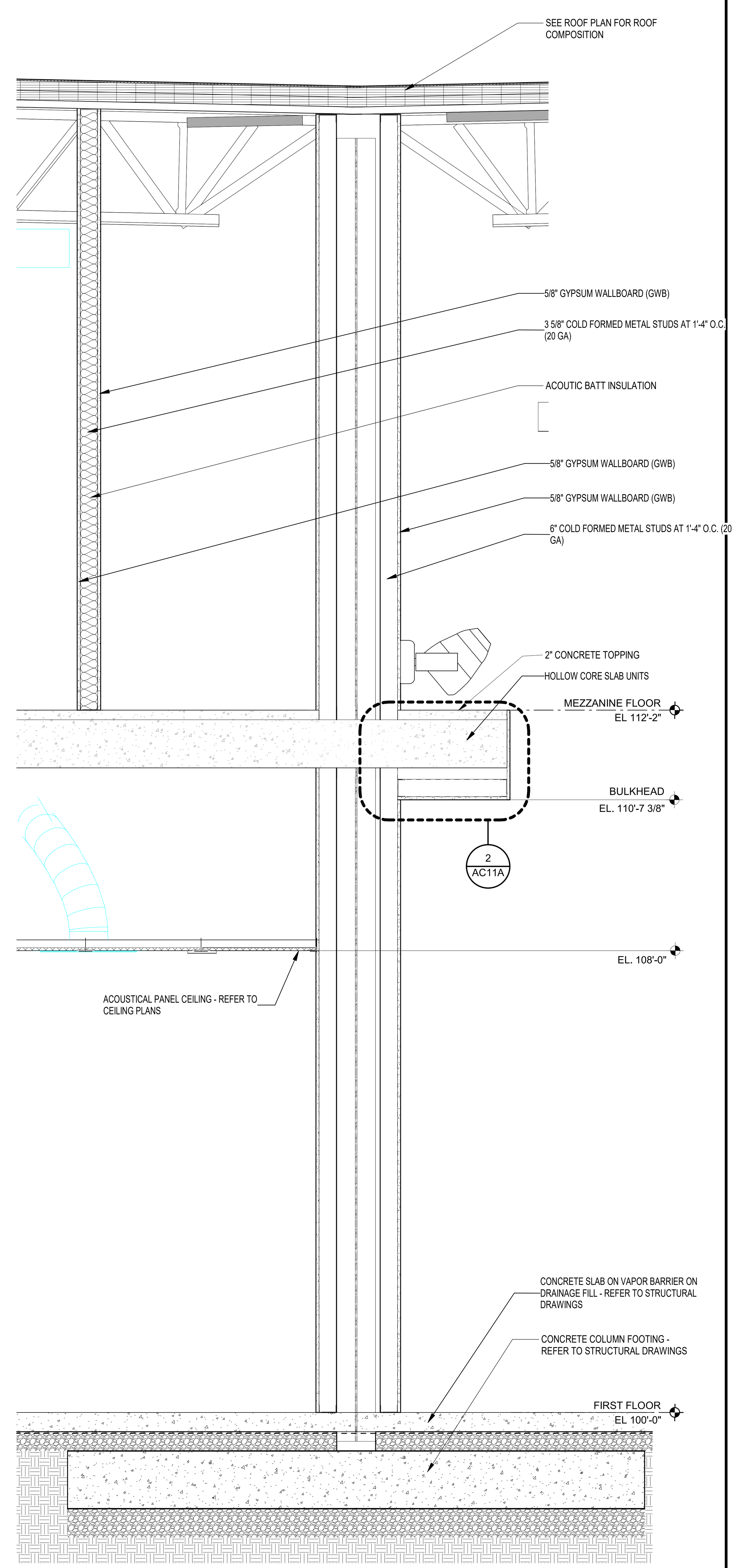


2 SECTION
SCALE: 3/4" = 1'-0"



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

GENERAL NOTES

A. COORDINATE ALL LINTEL AND BOND BEAM REQUIREMENTS WITH STRUCTURAL DRAWINGS AND PROJECT MANUAL.
B. REFER TO THE STRUCTURAL DRAWINGS FOR ALL FOUNDATION AND FOOTING CONDITIONS.
C. PROVIDE HORIZ. JOINT REFINFORCING, TIES, AND OTHER ANCHORAGE/REINFORCEMENT ITEMS AS REQ'D. PER PROJECT MANUAL.
D. ROOF TO EXTERIOR WALL JUNCTIONS: REFER TO DIVISION 07 SECTION "THERMAL INSULATION" FOR SPRAY POLYURETHANE INULATION REQUIRED AT THESE LOCATIONS.
E. WALL INSULATION PENETRATIONS: PROVIDE SPRAY POLYURETHANE INSULATION OR SEALANT AROUND ALL PENETRATIONS OF THE WALL INSULATION BY PIPING, CONDUITS, FRAMING, STRUCTURE, ETC.
F. REFER TO SHEET A-501 FOR TYPICAL EXTERIOR FLASHING AND MASONRY DETAILS

VERIFICATION NOTE

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REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	08/12/2025

WALL SECTIONS

A-309

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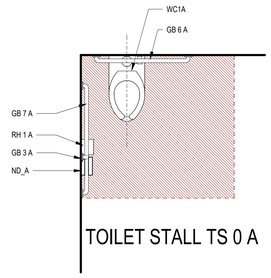
ENLARGED PLAN GENERAL NOTES:

A. REFER TO TOILET STALL LEGEND "TS" FOR CORRESPONDING TOILET ACCESSORIES FOR WATER CLOSETS (WC).
B. DEPTH OF ALL TOILET PARTITIONS SHALL HAVE A MINIMUM 5'-0" CLEAR INSIDE DIMENSION (UNO).
C. SEE EQUIPMENT PLANS FOR TOILET ACCESSORIES IN ROOMS NOT ENLARGED ON THIS SHEET.
D. IN HANDICAP TOILET STALLS, THE FLUSH VALVES SHALL ALWAYS BE LOCATED ON THE CLEAR FLOOR SPACCE SIDE OF THE STALL PER ADA.
E. COORDINATE HEIGHT OF GRAB BAR WITH TANK OF FLOOR MOUNTED WATER CLOSET OR FLUSH VALVE OF WALL MOUNTED CLOSET.
F. REFER TO PLUMBING DRAWINGS FOR FIXTURE TYPES.
G. REFER TO TOILET ACCESSORIES TABLE FOR OWNER FURNISHED ACCESSORIES.
H. UNLESS OTHERWISE INDICATED, ALL TOILET ACCESSORIES ARE NEW.

TOILET ACCESSORIES ABBREVIATIONS:

CH: COAT HOOK
CS: CHANGING STATION
EWC: ELECTRIC WATER COOLER
DF: DRINKING FOUNTAIN
FD: FLOOR DRAIN
FEC: FIRE EXTINGUISHER CABINET
FE: FIRE EXTINGUISHER
GB: GRAB BAR
HD: HAND DRYER
HRD: HAIR DRYER
LA: LAVATORY
M: MIRROR
MH: MOP HOLDER
ND: NAPKIN DISPOSAL
NV: NAPKIN VENDOR
RH: ROLL HOLDER (TOILET PAPAER DISPENSER)
UR: URINAL
US: URINAL SCREEN
SC: SHOWER CURTAIN
SD: SOAP DISPENSER
SR: SHOWER ROD
SS: SHOWER SEAT
ST: SOAP TRAY
TD: TOWEL DISPENSER (PAPER)
TDD: TOWEL DISPENSER / TOWEL DISPOSAL (PAPER)
TH: TOWEL HOOK
WC: WATER CLOSET
WF: WASHFOUNTAIN
WR: WASTE RECEPTACLE

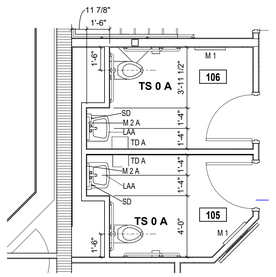
*THIS IS A MASTER LIST OF TOILET ACCESSORIES, NOT ALL ARE APPLICABLE.



TOILET STALL TS 0 A

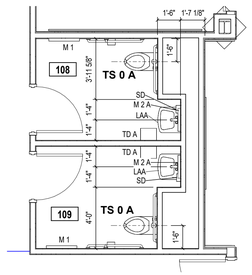
LEGEND - TOILET ACCESSORIES

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



2 ROOMS A9 A10

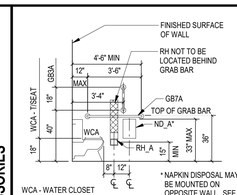
SCALE: 1/4" = 1'-0"



3 ROOMS A11 A12

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

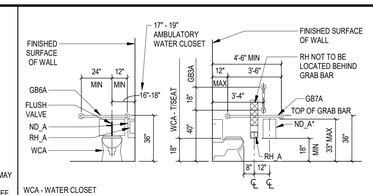
WATER CLOSETS AND ACCESSORIES



WCA - WATER CLOSET
GB_A - GRAB BAR
RH_A - TOILET ROLL HOLDER
ND_A - SANITARY NAPKIN DISPOSAL

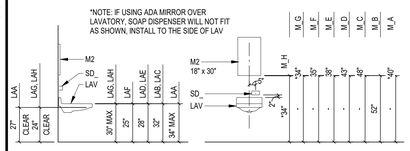
* NAPKIN DISPOSAL MAY BE MOUNTED ON OPPOSITE WALL. SEE PLAN FOR LOCATION

AMBULATORY ADULT ADA WATER CLOSETS



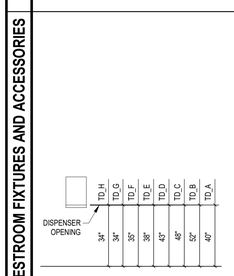
WCA - WATER CLOSET
GB_A - GRAB BAR
RH_A - TOILET ROLL HOLDER
ND_A - SANITARY NAPKIN DISPOSAL

WHEELCHAIR ADULT ADA WATER CLOSETS

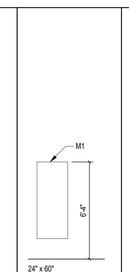


LV - LAVATORY, M - MIRROR, SD - SOAP DISPENSER

RESTROOM FIXTURES AND ACCESSORIES

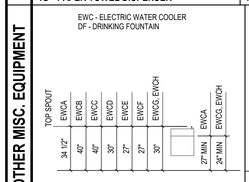


TD - PAPER TOWEL DISPENSER

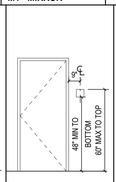


M1 - MIRROR

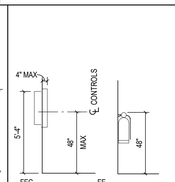
OTHER MISC. EQUIPMENT



ELECTRIC WATER COOLERS
DRINKING FOUNTAINS



INTERIOR SIGN



FIRE EXTINGUISHERS

MOUNTING HEIGHT NOTES:

1. MOUNTING HEIGHTS ARE BASED UPON THE FOLLOWING: TOILET, BATH AND LAUNDRY EQUIPMENT (ACCESSORIES), BOBRICK WASHROOM EQUIPMENT, INC. ; LAVATORIES, URINALS AND WATER CLOSETS, AMERICAN STANDARD, INC. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MOUNTING HEIGHTS OF TOILET ACCESSORIES SUPPLIED BY OTHER MANUFACTURERS.
2. MOUNTING HEIGHT DRAWING INDICATES A TWO PIECE GRAB BAR. GRAB BAR MAY BE A ONE PIECE OR A TWO PIECE GRAB BAR. REFER TO SPECIFICATIONS FOR SPECIFIC TYPE OF GRAB BAR TO BE USED.
3. UNDERSCORE (_): REFER TO ENLARGED PLANS FOR MISSING NUMBER IDENTIFYNG THE SPECIFIC TYPE OF TOILET ACCESSORY

GRAB BAR SCHEDULE
(ALL SIZES MAY NOT BE USED ON THIS PROJECT)

GB1 - 36" x 54" TWO WALL
GB2 - 36"x36" TWO WALL
GB3 - 18" STRAIGHT
GB4 - 24" STRAIGHT
GB5 - 30" STRAIGHT
GB6 - 36" STRAIGHT
GB7 - 42" STRAIGHT
GB8 - 48" STRAIGHT

MIRROR SCHEDULE
(ALL SIZES MAY NOT BE USED ON THIS PROJECT)

M1 - 24"W x 60"H
M2 - 18"W x 30"H
M3 - 48"W x 30"H
M4 - 60"W x 30"H

SAMPLE TOILET ACCESSORY LABELING:

RH1A

RH INDICATES TOILET ACCESSORY NAME (RH = TOILET ROLL HOLDER
1 INDICATES TOILET ACCESSORY TYPE WHEN MORE THAN ONE TYPE IS SPECIFIED (IF NO NUMBER IS USED, ONLY ONE TYPE IS SPECIFIED)
A INDICATES THE GRADE LEVEL, WHICH DETERMINES THE MOUNTING HEIGHT

WCA INDICATES PLUMBING FIXTURE AT MOUNTING HEIGHT "A". REFER TO PLUMBING DRAWINGS FOR PLUMBING FIXTURE SCHEDULE

OWNER FURNISHED / CONTRACTOR INSTALLED TOILET ROOM ACCESSORIES:

(RH) ROLL HOLDERS
(SD) SOAP DISPENSERS
(TD) PAPER TOWELS DISPENSERS

TOILET ACCESSORIES

SYMBOL	DESCRIPTION	OWNER PROVIDED/ OWNER INSTALL	OWNER PROVIDED/ CONTR. INSTALL	CONTR. PROVIDED/ CONTR. INSTALL	CONTR.PROVIDED/ OWNER INSTALL
CS	CHANGING STATIONS				
FCS	FOLDING CHILD SEAT				
FUS	FOLDING UTILITY SHELVES AT SINK				
HD	HAND DRYERS - ELECTRIC				
GB	GRAB BARS			X	
M	MIRRORS			X	
TD	PAPER TOWEL DISPENSERS		X		
NV	SANITARY NAPKIN DISPENSER				
ND	SANITARY NAPKIN DISPOSAL			X	
SC/SR	SHOWER CURTAIN AND ROD				
SS	FOLDING SHOWER SEAT				
SD	SOAP DISPENSER		X		
ST	SOAP TRAY				
RH	TOILET TISSUE ROLL HOLDER		X		
TH	TOWEL HOOKS				
WR	WASTE RECEPTACLE (BUILT-IN)				

PHM Science and Space Exploration Center

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ARCHITECT

FANNING HOWEY

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350 E NEW YORK ST #300, INDIANAPOLIS, IN 46204

CONSTRUCTION DOCUMENTS

PAUL A. MILLER REGISTERED No. AR10800161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: MKS
DRAWN BY: AME/RLG
PROJECT NUMBER: 225001.00
PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE

ENLARGED TOILET ROOM PLANS

A-401

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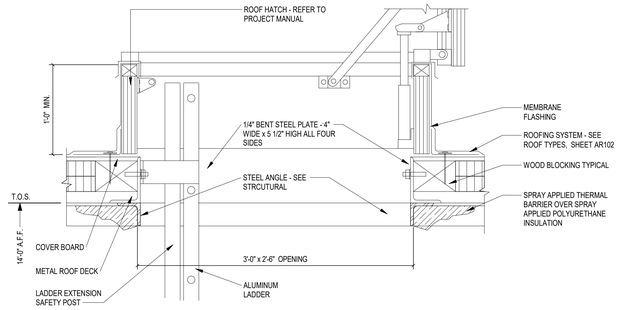
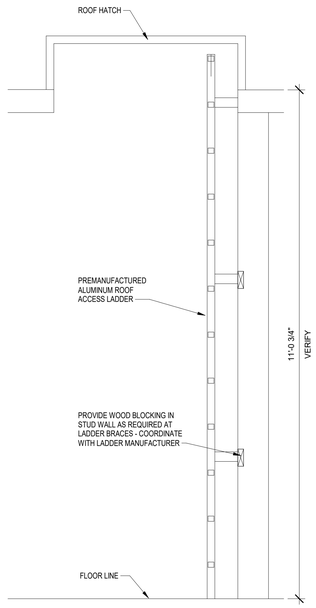
8/13/2025 7:13:27 AM



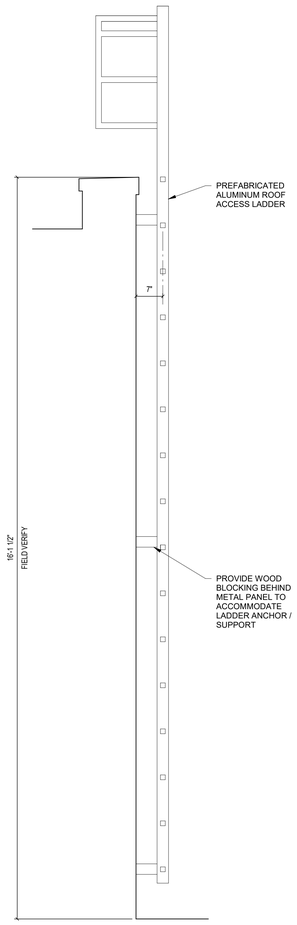
10 ROOF ACCESS HATCH

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



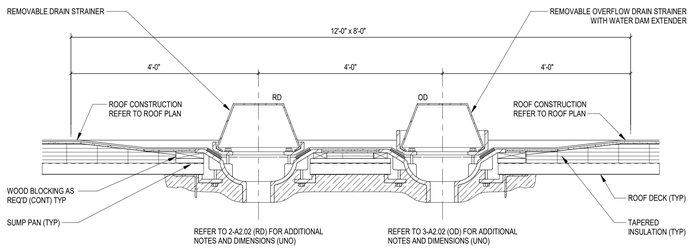
9 ROOF ACCESS HATCH

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



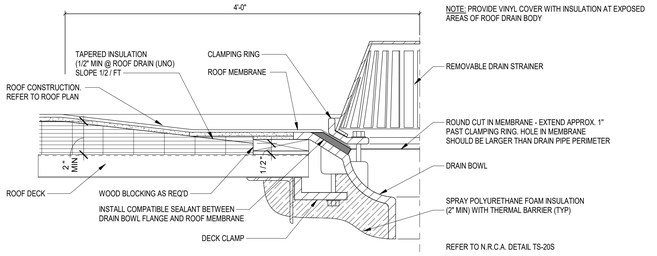
6 ROOF LADDER

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



1 SECTION - ROOF DRAIN (RD) / OVERFLOW DRAIN (OD)

NOT TO SCALE

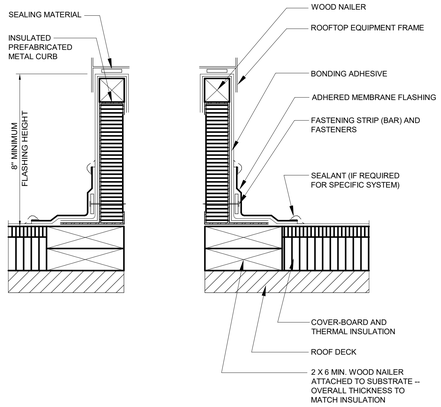


2 ROOF DRAIN (RD)

NOT TO SCALE

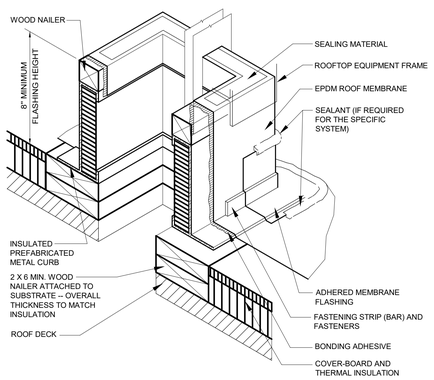
3 OVERFLOW DRAIN (OD)

NOT TO SCALE



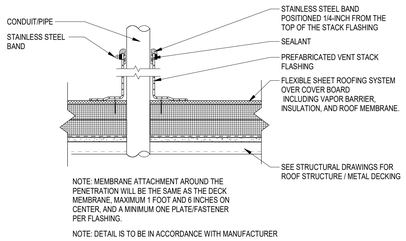
8 INSULATED PREFABRICATED METAL CURB

SCALE: 12" = 1'-0"



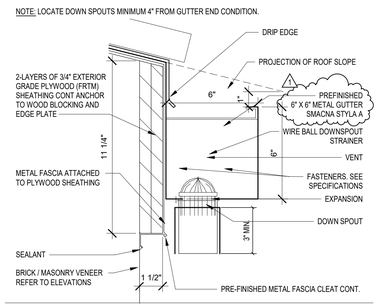
7 INSULATED PREFABRICATED METAL CURB

SCALE: 12" = 1'-0"



5 VENT STACK

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



4 GUTTER-DOWNSPOUT CONNECTION

SCALE: 3" = 1'-0"

CONTRACTOR OPTION

NOTE: TYPE IN TEXT IF APPLICABLE. DELETE AND MOVE ROOF DETAIL NOTES UP IF NOT APPLICABLE

ROOF DETAILS NOTES (X)

(ALL NOTES MAY NOT BE INDICATED ON THIS SHEET)

NO.	DESCRIPTION

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.

PHM Science and Space Exploration Center

55860 BITTERSWEET RD,
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PENN-HARRIS-MADISON SCHOOL CORPORTATION

ARCHITECT

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CONSTRUCTION DOCUMENTS

PAUL A. MILLER REGISTERED No. AR10800161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: MKS

DRAWN BY: BGS/RLG

PROJECT NUMBER: 225001.00

PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	08/12/2025

ROOF DETAILS

AR102

VENTILATION PLAN GENERAL NOTES

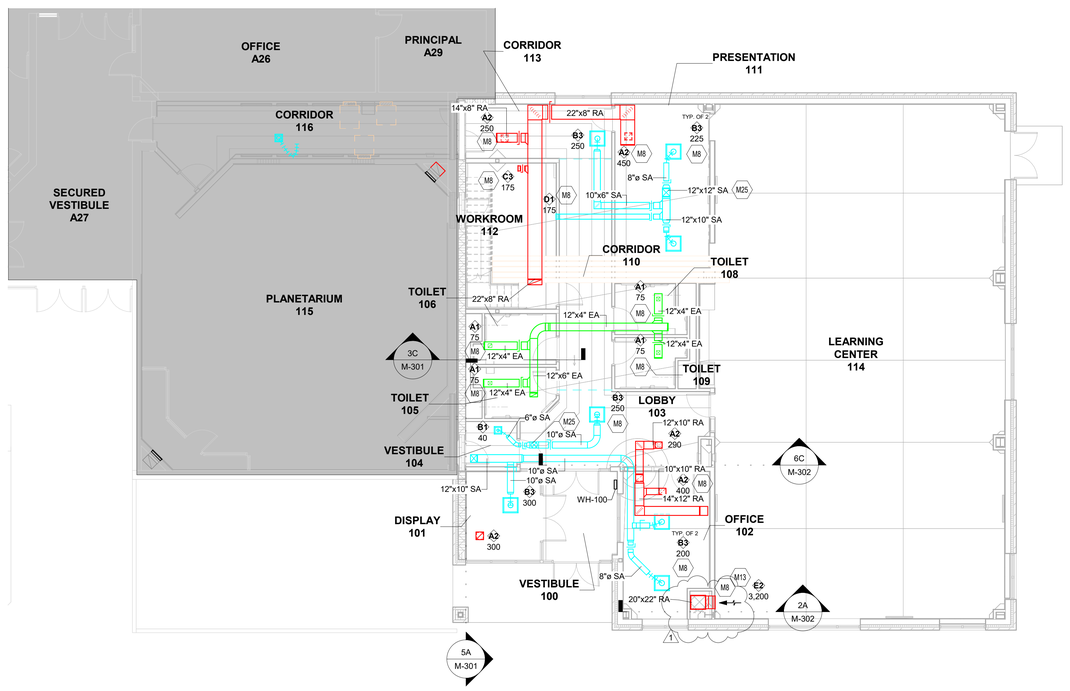
A. ALL DUCTWORK, PIPING AND VALVES SHALL BE CONCEALED ABOVE THE CEILING AND WITHIN WALLS, UNLESS OTHERWISE NOTED.
B. REFER TO THE SPECIFICATIONS FOR REQUIREMENTS RELATED TO EQUIPMENT QUALITY, CONSTRUCTION AND FINISH OF MATERIALS.
C. ARRANGE DUCTWORK, PIPING, ETC. TO ALLOW FOR EASY ACCESS TO COILS, VALVES, DAMPERS AND CONTROLS. KEEP AREAS ADJACENT TO ACCESS PANELS FREE AND CLEAR OF ANY OBSTRUCTIONS.
D. SEAL DUCT PENETRATIONS THROUGH THE FLOOR AND/OR WALLS IN ACCORDANCE WITH MECHANICAL CODE AND SMACNA REQUIREMENTS. SEAL DUCT PENETRATIONS THROUGH FIRE RATED FLOORS AND/OR WALLS WITH A MATERIAL HAVING SAME FIRE RATING AS THE WALL AND/OR FLOOR.
E. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR HIS RESPECTIVE WORK FOR REPAIRING AND PATCHING TO MATCH EXISTING SURFACES, SIDEWALKS, STREETS, FLOORS, WALLS, ROOFS, CEILING AND PAVEMENT.
F. ALL RECTANGULAR SHEET METAL DUCT SIZES SHOWN ARE INSIDE FREE AREA DIMENSIONS. ALL ROUND DUCT SIZES SHOWN ARE INSIDE DIAMETERS.
G. PROVIDE BALANCING DAMPER AT EACH DUCT BRANCH, SERVING DIFFUSER, GRILLE AND REGISTER.
H. INSTALL WALL THERMOSTATS, TEMPERATURE SENSORS, HUMIDISTATS, ETC. 44" ABOVE THE FINISH FLOOR IN ACCORDANCE WITH ADA REQUIREMENTS.
I. COORDINATE ALL REQUIRED WALL, ROOF AND FLOOR OPENINGS (BOTH DIMENSIONS AND LOCATIONS) WITH ALL OTHER TRADES.
J. COORDINATE MECHANICAL SYSTEM INSTALLATION WITH STRUCTURE, FIRE PROTECTION AND LIGHTING LAYOUT.
K. PROVIDE ALL NECESSARY TRANSITIONS TO EQUIPMENT FROM SIZES SHOWN ON PLAN.

VENTILATION PLAN NOTES

(X)

(ALL NOTES MAY NOT BE INDICATED ON THIS SHEET)

NO.	DESCRIPTION
M8	PROVIDE AND INSTALL NEW SUPPLY AIR DIFFUSER/RETURN GRILLE. BALANCE TO INDICATED VALUE.
M13	ROUTE DUCTWORK THROUGH MECHANICAL CHASE DOWN TO LOW RETURN GRILLE. PAINT VISIBLE DUCTWORK/CHASE MATTE BLACK PER ARCHITECTURAL SPECIFICATIONS. PAINT GRILLE CUSTOM COLOR AS SELECTED BY ARCHITECT.
M25	PROVIDE WYE FITTING FOR OPTIMIZED AIRFLOW THROUGH DUCT RUN.



FIRST FLOOR MECHANICAL PLAN - UNIT A

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

PHM Science and Space Exploration Center

55860 Bittersweet Rd
Mishawaka, IN 46545

Penn Harris Madison

ARCHITECT

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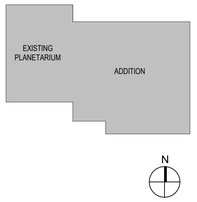
350 E New York St # 300, Indianapolis, IN 46204



CONSTRUCTION DOCUMENTS

MARK Z. HOOF
REGISTERED
No.
PE 12200301
STATE OF
INDIANA
PROFESSIONAL ENGINEER

DRAWN BY: EBR
PROJECT NUMBER: 225001.00
PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	08/12/2025

VERIFICATION NOTE

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FIRST FLOOR MECHANICAL PLAN - UNIT A

MH11A

PHM Science and Space Exploration Center

55860 Bittersweet Rd
Mishawaka, IN 46545

Penn Harris Madison

PENN HARRIS MADISON SCHOOL CORPORATION

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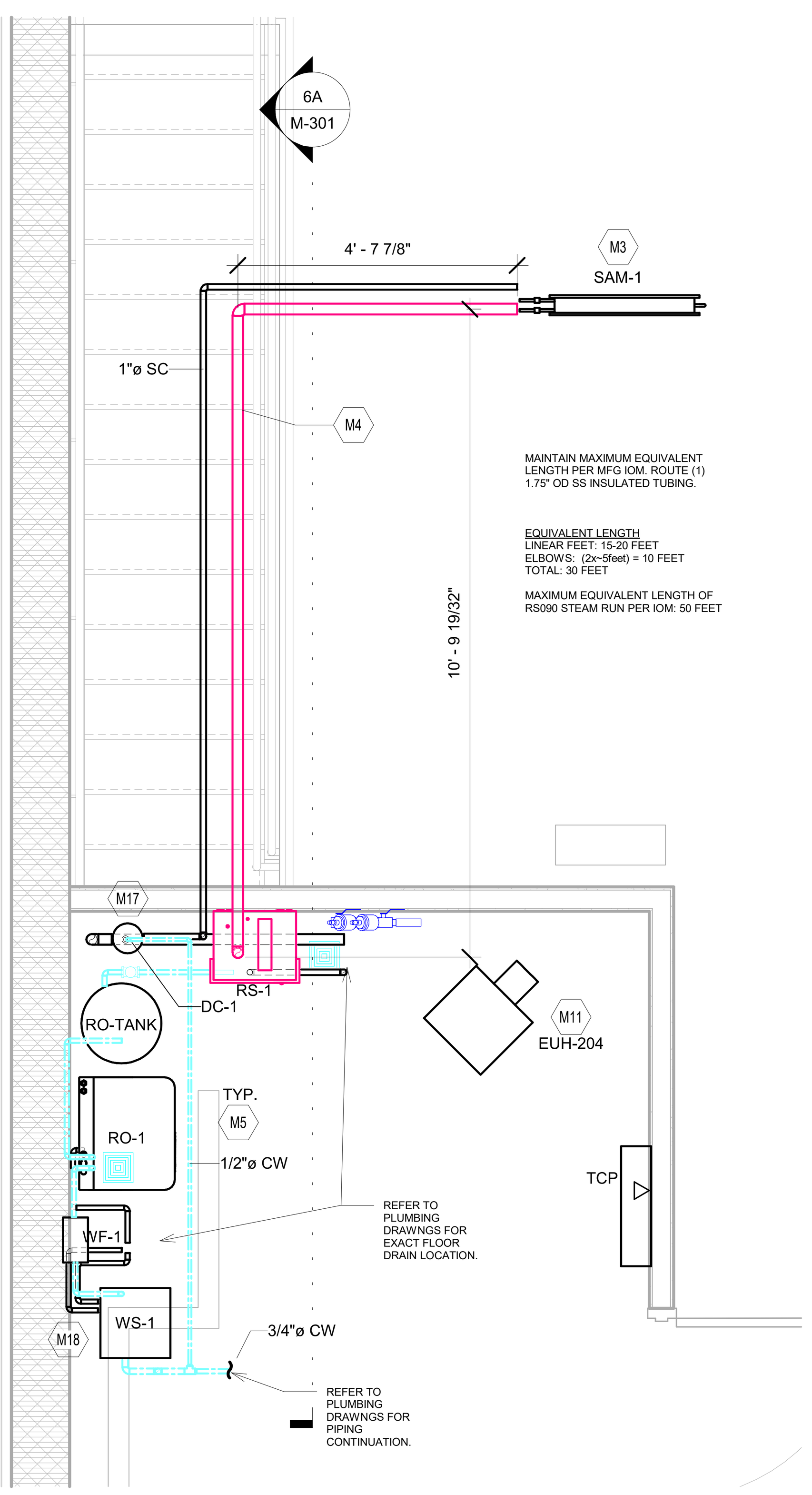
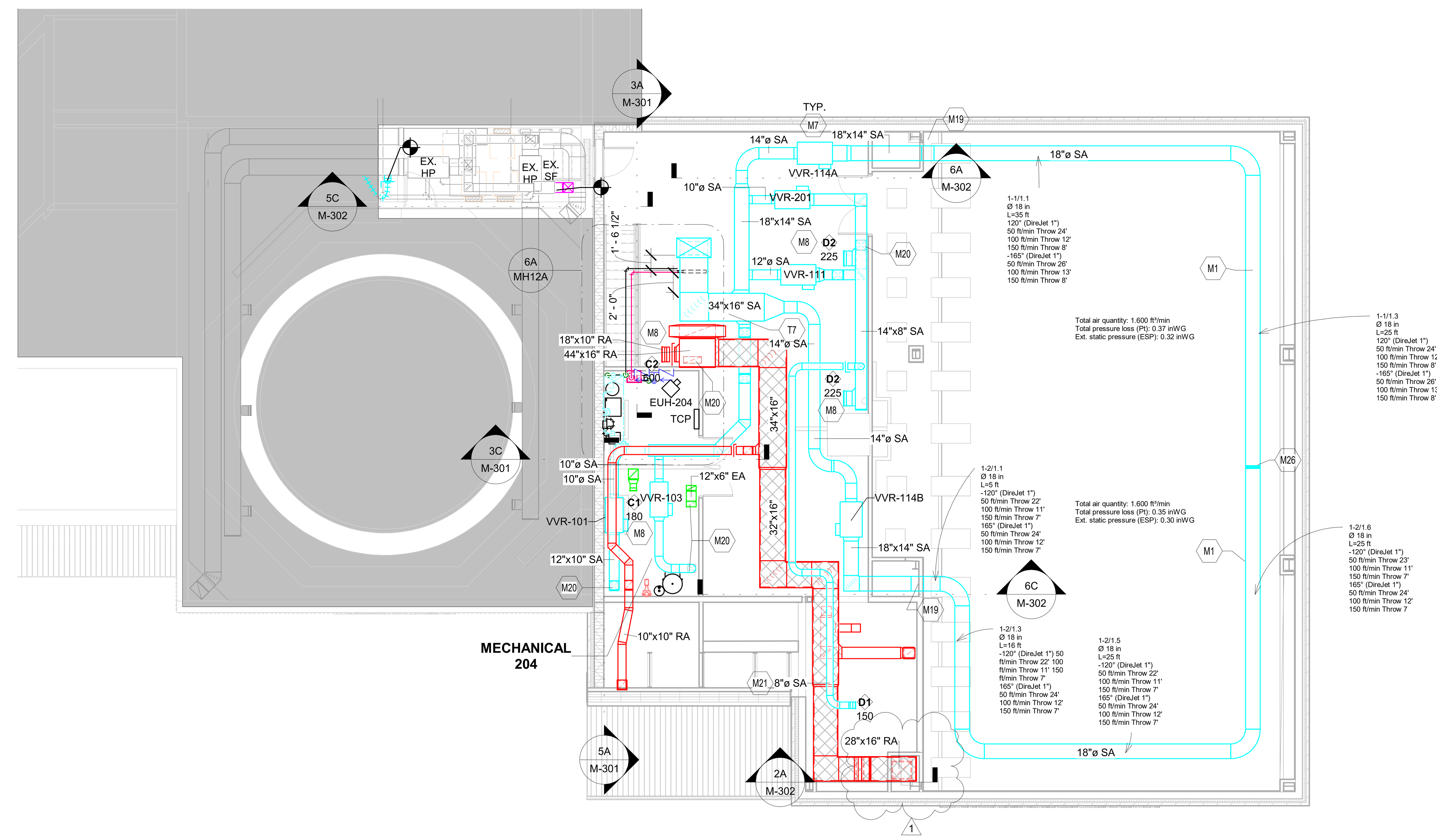


6A ENLARGED PIPING VIEW RO/HUMIDIFER SYSTEM

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



MEZZANINE FLOOR MECHANICAL PLAN - UNIT A

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

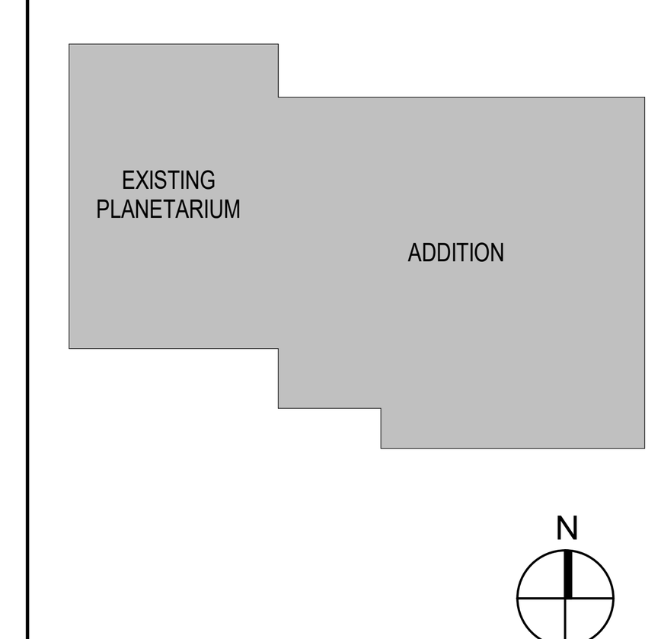
VENTILATION PLAN GENERAL NOTES

A. ALL DUCTWORK, PIPING AND VALVES SHALL BE CONCEALED ABOVE THE CEILING AND WITHIN WALLS, UNLESS OTHERWISE NOTED.
B. REFER TO THE SPECIFICATIONS FOR REQUIREMENTS RELATED TO EQUIPMENT QUALITY, CONSTRUCTION AND FINISH OF MATERIALS.
C. ARRANGE DUCTWORK, PIPING, ETC. TO ALLOW FOR EASY ACCESS TO COILS, VALVES, DAMPERS AND CONTROLS. KEEP AREAS ADJACENT TO ACCESS PANELS FREE AND CLEAR OF ANY OBSTRUCTIONS.
D. SEAL DUCT PENETRATIONS THROUGH THE FLOOR AND/OR WALLS IN ACCORDANCE WITH MECHANICAL CODE AND SMACNA REQUIREMENTS. SEAL DUCT PENETRATIONS THROUGH FIRE RATED FLOORS AND/OR WALLS WITH A MATERIAL HAVING SAME FIRE RATING AS THE WALL AND/OR FLOOR.
E. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR HIS RESPECTIVE WORK FOR REPAIRING AND PATCHING TO MATCH EXISTING SURFACES, SIDEWALKS, STREETS, FLOORS, WALLS, ROOFS, CEILING AND PAVEMENT.
F. ALL RECTANGULAR SHEET METAL DUCT SIZES SHOWN ARE INSIDE FREE AREA DIMENSIONS. ALL ROUND DUCT SIZES SHOWN ARE INSIDE DIAMETERS.
G. PROVIDE BALANCING DAMPER AT EACH DUCT BRANCH, SERVING DIFFUSER, GRILLE AND REGISTER.
H. INSTALL WALL THERMOSTATS, TEMPERATURE SENSORS, HUMIDISTATS, ETC. 44" ABOVE THE FINISH FLOOR IN ACCORDANCE WITH ADA REQUIREMENTS.
I. COORDINATE ALL REQUIRED WALL, ROOF AND FLOOR OPENINGS (BOTH DIMENSIONS AND LOCATIONS) WITH ALL OTHER TRADES.
J. COORDINATE MECHANICAL SYSTEM INSTALLATION WITH STRUCTURE, FIRE PROTECTION AND LIGHTING LAYOUT.
K. PROVIDE ALL NECESSARY TRANSITIONS TO EQUIPMENT FROM SIZES SHOWN ON PLAN.

VENTILATION PLAN NOTES (X)

(ALL NOTES MAY NOT BE INDICATED ON THIS SHEET)

NO.	DESCRIPTION
M1	PROVIDE AND INSTALL FABRIC DUCT AT APPROXIMATELY 18'-7" AFF. REFER TO SPECIFICATION FOR AIR DIFFUSION AND SUPPORT CHARACTERISTICS. COORDINATE EXACT INSTALLATION HEIGHT AND LOCATION WITH ALL TRADES.
M3	PROVIDE AND INSTALL STEAM DISTRIBUTION MANIFOLD IN DUCTWORK. MAINTAIN MFG CLEARANCE ON INLET/OUTLET OF DUCTWORK. PROVIDE ACCESS DOORS ON EACH SIDE OF THE MANIFOLD. INSTALL PER IOM.
M4	PROVIDE AND INSTALL SLOPED STEAM PIPING PER MFG GUIDELINES. INSTALL CONDENSATE TRAPS PER MFG IOM GUIDELINES.
M5	REFER TO MFG IOM ON EXACT PIPING CONFIGURATION AND PIPE SIZES. ROUTE DRAIN/CONDENSATE LINES TO NEAREST FLOOR DRAIN. PROVIDE SHUTOFF VALVES WHERE INDICATED ON IOM.
M7	PROVIDE AND INSTALL VVR, CONTROLS, SUPPORTS, AND ALL RELATED ACCESSORIES.
M8	PROVIDE AND INSTALL NEW SUPPLY AIR DIFFUSER/RETURN GRILLE. BALANCE TO INDICATED VALUE.
M11	PROVIDE AND INSTALL NEW PUH, CONTROLS, SUPPORTS, AND ALL RELATED ACCESSORIES. INTEGRATE INTO BMS.
M17	PROVIDE AND INSTALL CONDAIR FACTORY STAINLESS STEEL CYLINDRICAL SELF ACTUATED CONDENSATE DRAIN WATER COOLER. DRAIN COOLER SHALL INCLUDE: INTEGRAL THERMOSTATIC SENSOR FOR AUTOMATIC OPERATION, 1" NPT MALE DRAIN WATER INLET, 2" NPT MALE TEMPERED WATER OUTLET, 3/4" MANUAL DRAIN VALVE FOR SERVICING. INSTALL PER IOM.
M18	PROVIDE AND INSTALL CONDAIR FACTORY WATER SOFTENER AND DOUBLE FILTER UNIT (5 MICRON) PAIRED WITH RO/HUMIDIFIER SYSTEM CAPACITY.
M19	PROVIDE AND INSTALL METAL TO FABRIC DUCT TRANSITION.
M20	ROUTE DUCTWORK THROUGH MEZZANINE FLOOR.
M21	ROUTE DUCTWORK THROUGH JOISTS.
M26	TERMINATE FABRIC DUCT RUNS NEAR THE SAME LOCATION TO GIVE APPEARANCE OF A CONTINUOUS AIR SYSTEM.
T7	TCC TO PROVIDE AND INSTALL DUCT-MOUNTED CARBON MONOXIDE SENSOR. TCC TO INTEGRATE INTO EMERGENCY SHUTDOWN OF AHU.



CONSTRUCTION DOCUMENTS

MARK Z. HOPF REGISTERED No. PE 12000501 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY: EBR
PROJECT NUMBER: 225001.00
PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 1	08/12/2025

VERIFICATION NOTE

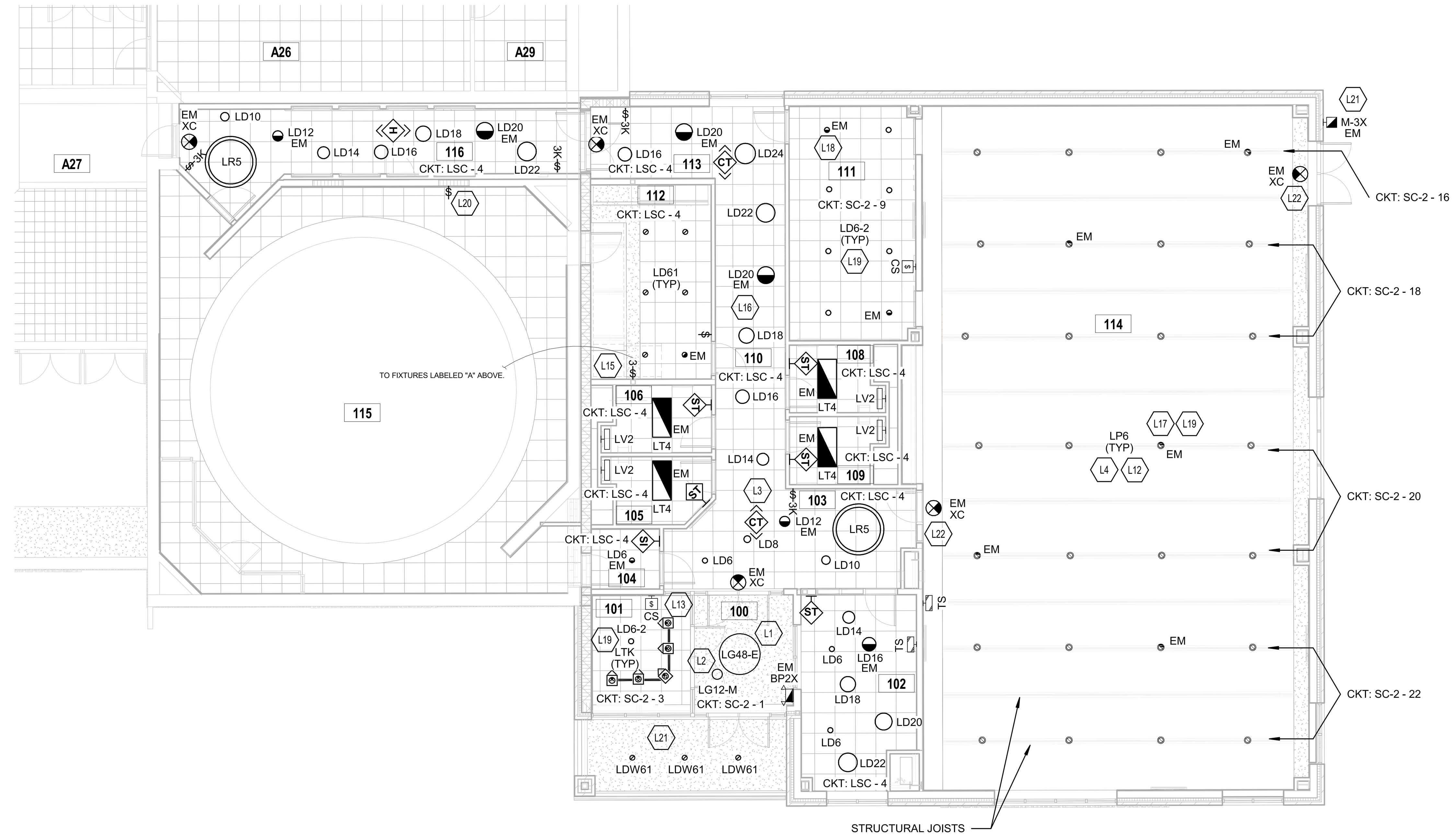
CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.

MEZZANINE FLOOR MECHANICAL PLAN - UNIT A

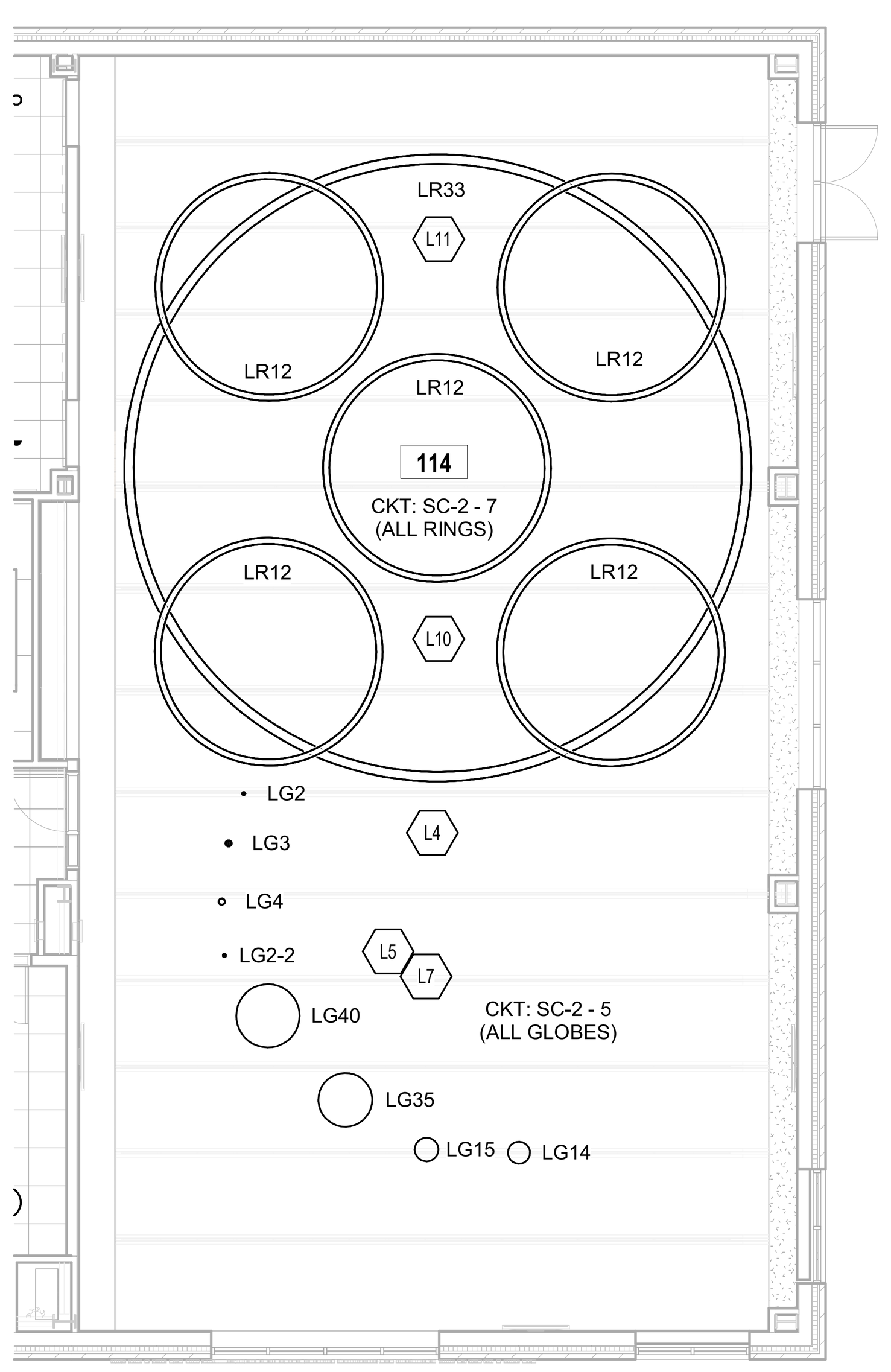
MH12A

8/11/2025 8:22:03 PM



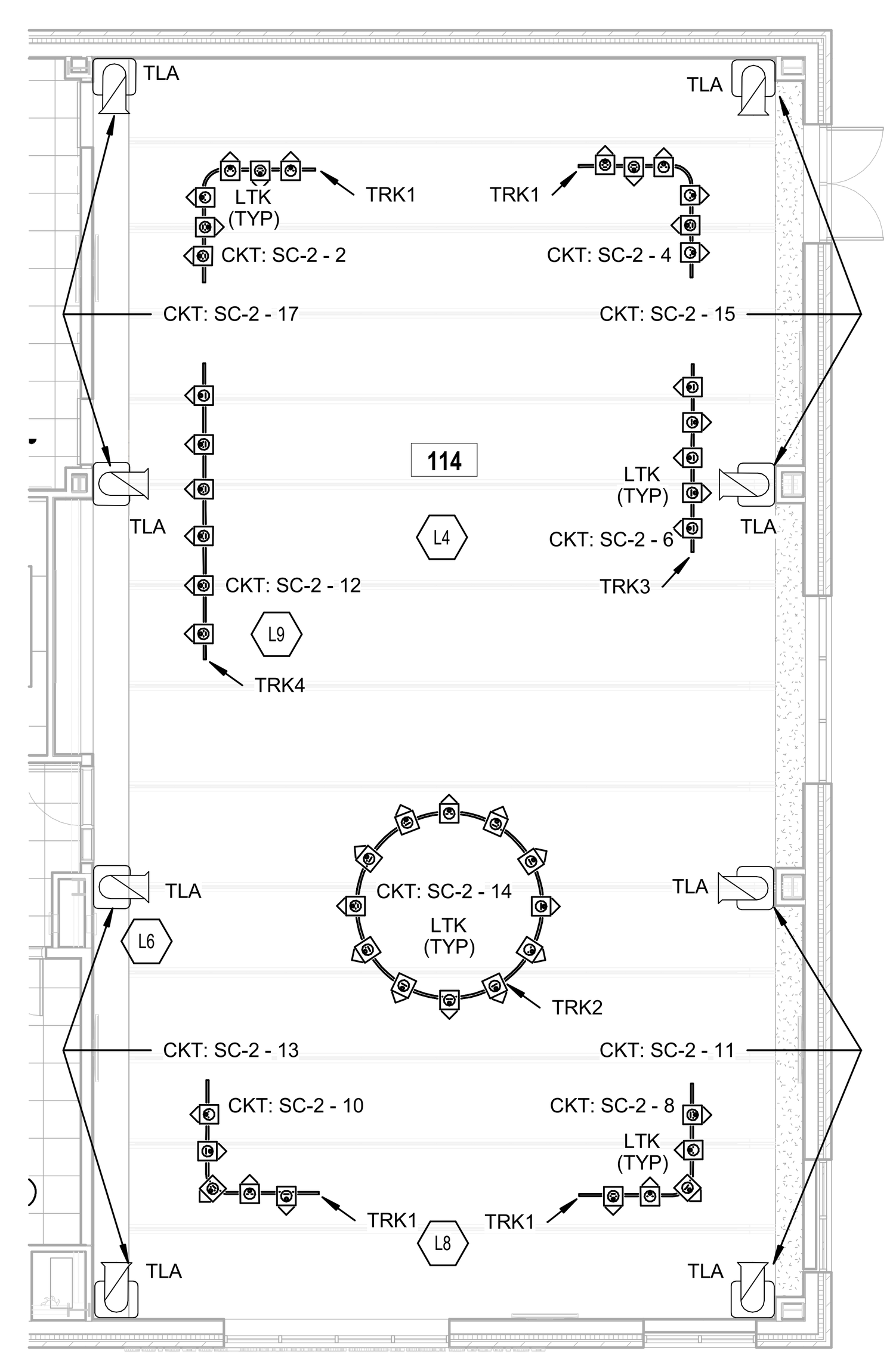
1 FIRST FLOOR LIGHTING PLAN

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



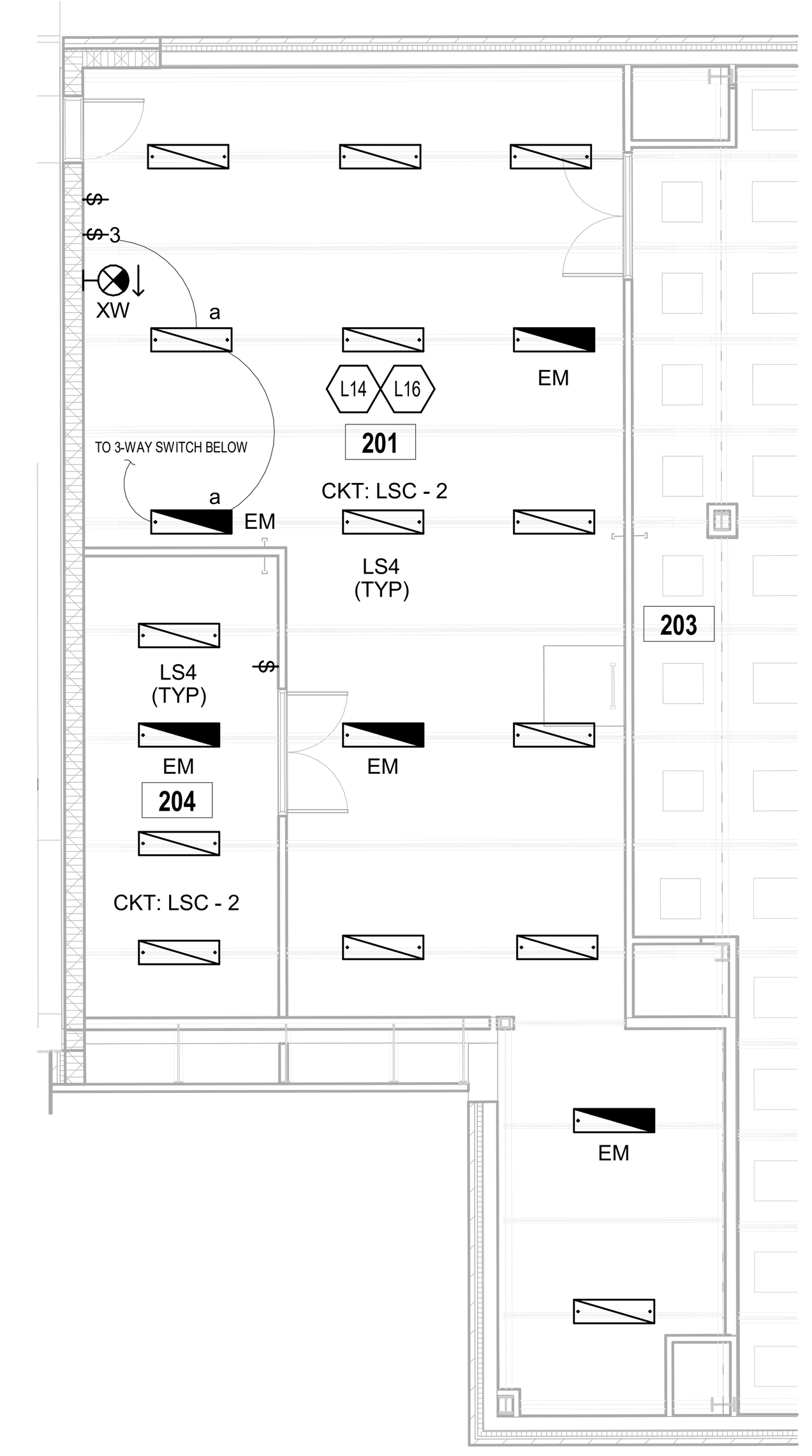
2 SPACE CENTER - DECORATIVE LIGHTING PLAN

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



3 SPACE CENTER - SPOT LIGHTING PLAN

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



4 MEZZANINE LIGHTING PLAN

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

ROOM LEGEND			
ROOM NO.	OWNER ROOM NO.	ROOM NAME	AREA (SF)
100		VESTIBULE	117 SF
101		DISPLAY	113 SF
102		OFFICE	204 SF
103		LOBBY	222 SF
104		VESTIBULE	40 SF
105		TOILET	63 SF
106		TOILET	66 SF
108		TOILET	57 SF
109		TOILET	57 SF
110		CORRIDOR	206 SF
111		PRESENTATION	284 SF
112		WORKROOM	223 SF
113		CORRIDOR	135 SF
114		SPACE CENTER	2553 SF
115		PLANETARIUM	1495 SF
116		CORRIDOR	271 SF
201		STORAGE	1037 SF
202		STORAGE	136 SF
203		DISPLAY	177 SF
204		MECHANICAL	222 SF
205		STORAGE	204 SF
A26		OFFICE	694 SF
A27		SECURED VESTIBULE	503 SF
A28		CONFERENCE	172 SF
A29		PRINCIPAL	150 SF
A34		PE OFFICE	103 SF
A38		COURTYARD	796 SF

LIGHTING PLAN GENERAL NOTES

1. GENERATOR TRANSFER DEVICE TO TAKE FIXTURE TO 100% IN EMERGENCY CONDITION.
2. FINALCONNECTION TO RECESSED LUMINAIRES SHALL BE WITH FLEXIBLE METALLIC CONDUIT, MC CABLE OR MANUFACTURED WIRING SYSTEM.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATION OF LUMINAIRES. COORDINATE LOCATION OF LUMINAIRES, LOUDSPEAKERS, DIFFUSERS, GRILLES, AND OTHER CEILING INSTALLED ELEMENTS WITH THEIR RESPECTIVE INSTALLERS.
4. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND ROOM FINISH SCHEDULE TO DETERMINE PROPER TYPE OF LUMINAIRE TRIM REQUIRED FOR CEILING TYPE PRIOR TO ORDERING LUMINAIRES. PROVIDE LUMINAIRES COMPATIBLE WITH CEILING TYPE.
5. RECESSED LUMINAIRE IN GRID CEILING SYSTEMS SHALL BE PROVIDED WITH SEISMIC CLIPS OR PROVIDE ATTACHMENT TO CEILING GRID SYSTEM AND SUPPORTED PER PROJECT MANUAL AND DETAIL ON SHEET **"E-501"**.
6. LUMINAIRE TYPE IS SHOWN ONLY ONCE, AS "TYP." IN EVERY ROOM. PROVIDE SAME TYPE OF LUMINAIRE THROUGH-OUT SAME ROOM UNLESS OTHERWISE INDICATED.
7. SWITCHES IN EACH ROOM TO CONTROL ALL FIXTURES IN THAT ROOM UNLESS OTHERWISE INDICATED.
8. CORRIDORS SHALL HAVE A 3-WAY SWITCH AT EACH END OF CORRIDOR.
9. PROVIDE NO. 10 AWG, MINIMUM, CONDUCTORS FOR EXIT SIGNS AND SECURITY LIGHT CIRCUITS.

LIGHTING PLAN NOTES

X

(ALL NOTES MAY NOT BE INDICATED ON THIS SHEET)

SHEET KEYNOTES	
L1	LIGHT FIXTURE "LG48-E" TO BE MOUNTED TO STRUCTURAL STEEL ABOVE AT 9'-6" AFF. MOUNTING HEIGHT MEASURED FROM BOTTOM OF FIXTURE.
L2	LIGHT FIXTURE "LG15-M" TO BE MOUNTED TO STRUCTURAL STEEL ABOVE AT 8'-6" AFF. PROVIDE UNISTRUT TO ACHIEVE LOCATION INDICATED. MOUNTING HEIGHT MEASURED FROM BOTTOM OF FIXTURE.
L3	ALL ROUND AND RING SURFACE-MOUNTED LIGHT FIXTURES TO BE MOUNTED TO OCTAGONAL JUNCTION BOX WITH TILE BRIDGE.
L4	ALL LIGHTS IN THIS ROOM TO BE SUSPENDED FROM STRUCTURAL STEEL ABOVE UNLESS OTHERWISE NOTED.
L5	PROVIDE UNISTRUT FOR GLOBE LIGHTS IN THIS ROOM TO ACHIEVE INDICATED LOCATIONS.
L6	MOUNT ALL AUTOMATED FIXTURES "TLA" TO VERTICAL FACE OF COLUMNS AND EXTERIOR WALLS, 1'-0" UP FROM TOP OF LIGHT SHELF. MOUNT FIXTURES WITH UNI-BOLT AND P1000 SERIES UNISTRUT TO METAL STUDS.
L7	MOUNT ALL GLOBE LIGHT FIXTURES IN THISE ROOM AT 12'-0" AFF. MOUNTING HEIGHT MEASURED FROM CENTER OF GLOBE.
L8	MOUNT ALL "TRK1", "TRK2", AND "TRK3" LIGHT TRACKS AT 10'-8" AFF.
L9	MOUNT "TRK4" LIGHT TRACK AT 19'-6" AFF.
L10	MOUNT ALL "LR12" LIGHT FIXTURES IN THIS ROOM AT 15'-6" AFF.
L11	MOUNT LIGHT FIXTURE "LR33" AT 17'-0" AFF.
L12	MOUNT ALL "LP6" LIGHT FIXTURES IN THIS ROOM AT 17'-6" AFF. MOUNTING HEIGHT MEASURED FROM BOTTOM OF FIXTURE.
L13	MOUNT "TRK1" LIGHT TRACK AT 9'-0" AFF.
L14	MOUNT ALL "LS4" SUSPENDED LIGHT FIXTURES AT 8'-0" AFF FROM CONDUIT STEMS. COORDINATE EXACT LOCATION WITH OTHER DISCIPLINES TO AVOID EQUIPMENT.
L15	MEASURE SWITCH MOUNTING HEIGHT FROM STAIR LANDING.
L16	PROVIDE SAME FIXTURE AS NON-EMERGENCY FIXTURES, BUT CIRCUIT ALL EMERGENCY FIXTURES (MARKED "EM") IN CORRIDORS, BATHROOMS, OFFICE, WORKROOM, AND MEZZANINE TO EMERGENCY PANEL "SCX", CIRCUIT 1. INCLUDE ALL EXIT SIGNS, AND PROVIDE A GENERATOR TRANSFER DEVICE FOR THE CIRCUIT. SEE NOTE ON PANEL SCHEDULE.
L17	PROVIDE SAME FIXTURE AS NON-EMERGENCY FIXTURES, BUT CIRCUIT ALL EMERGENCY FIXTURES (MARKED "EM") IN THIS ROOM TO EMERGENCY PANEL "SCX", CIRCUIT 3 AND PROVIDE DMX FROM EMERGENCY BYPASS CONTROLLER "EBC". SEE NOTE ON PANEL SCHEDULE.
L18	PROVIDE SAME FIXTURE AS NON-EMERGENCY FIXTURES, BUT CIRCUIT ALL EMERGENCY FIXTURES (MARKED "EM") IN THIS ROOM TO EMERGENCY PANEL "SCX", CIRCUIT 4 ALONG WITH 0-10V CONTROL AND GENERATOR TRANSFER DEVICE. SEE NOTE ON PANEL SCHEDULE.
L19	LIGHTS IN THIS ROOM TO BE CONTROLLED VIA BUTTON STATION AND TIMECLOCK INSTEAD OF OCCUPANCY SENSOR. SEE DETAIL 1 ON SHEET "E-501".
L20	NEW LOCATION FOR REMOVED SWITCHES ON OPPOSITE SIDE OF WALL. REFER TO KEYNOTE "D2" ON SHEET "ED100".
L21	CONNECT NEW WALL-MOUNTED EXTERIOR LIGHT FIXTURE AND RECESSED UNDER CANOPY LIGHT FIXTURES TO CIRCUIT 2 OF PANEL "SCX". PROVIDE LIGHTING CONTACTOR AND CONTROLS COMPATIBLE WITH EXISTING BUILDING MANAGEMENT SYSTEM (BMS). CONTRACTOR SHALL CONNECT NEW FIXTURES SUCH THAT IN AUTOMATIC MODE THE BMS CONTROLS THE ON/OFF OPERATION OF THE EXTERIOR LIGHT FIXTURE THROUGH INTERFACE SIGNAL. DURING LOSS OF NORMAL POWER, FIXTURE WILL COME ON TO 100% OUTPUT.
L22	MOUNT EXIT SIGN TO BOTTOM OF LIGHT SHELF.

SWITCHLEG AND BRANCH CIRCUIT CONNECTIONS SHOWN GRAPHICALLY ON DRAWINGS ONLY WHERE NECESSARY FOR CLARITY. ALL LIGHT FIXTURES IN EACH ROOM ARE CONTROLLED BY SWITCH(ES) AND OCCUPANCY SENSOR(S) LOCATED IN ROOM, UNLESS OTHERWISE INDICATED. CONNECT LIGHT FIXTURES TO BRANCH CIRCUIT INDICATED BY CIRCUIT DESIGNATION IN EACH ROOM ON THE DRAWINGS, UNLESS OTHERWISE INDICATED.

DEVICES SHALL BE INSTALLED AT LOCATIONS SHOWN ON DRAWINGS. LOCATIONS OF DEVICES SHALL BE COORDINATED WITH OTHER ELECTRICAL DEVICES/CASEWORK/ARCHITECTURAL FEATURES AND OTHER TRADES PRIOR TO ROUGH-IN. IF RELOCATION OF DEVICES IS REQUIRED DUE TO LACK OF COORDINATION BETWEEN ELECTRICAL DRAWINGS AND OTHER TRADES, ANY ASSOCIATED COSTS SHALL BE RESPONSIBILITY OF ELECTRICAL CONTRACTOR.

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.

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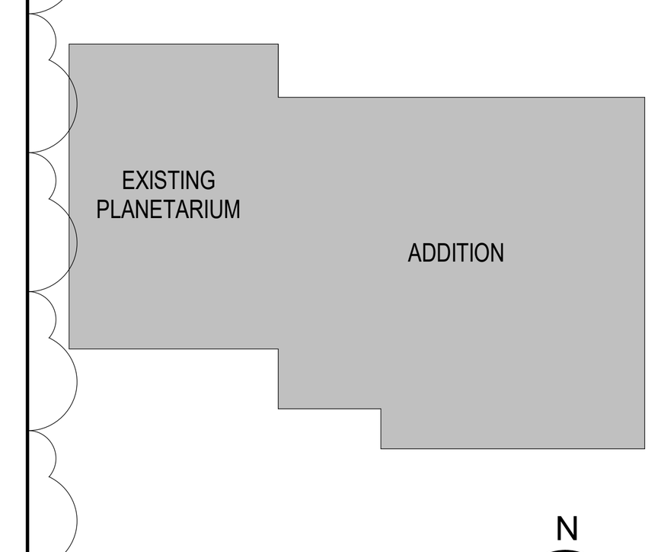

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DRAWN BY: ANE
PROJECT NUMBER: 225001.00
PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE
1	Addendum 1	08/12/2025

LIGHTING PLANS

EL110

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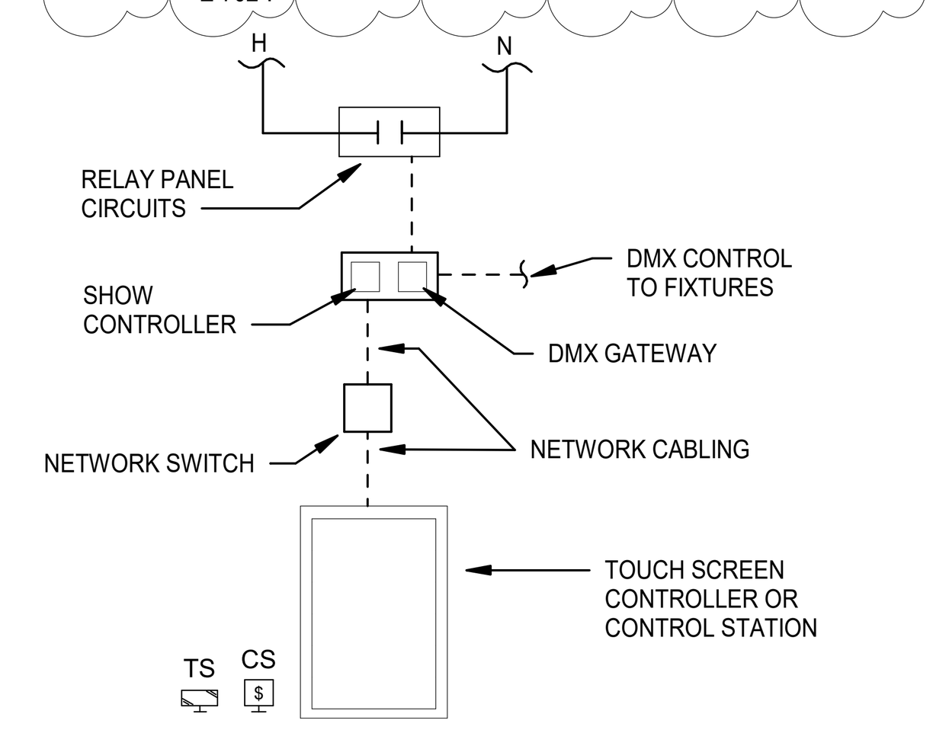
LIGHTING SEQUENCE OF OPERATIONS NOTES:

1. PROVIDE RELAY PACKS AS REQUIRED TO PERFORM NECESSARY SEQUENCE OF OPERATIONS FOR EACH LISTED.
2. PROVIDE LOW VOLTAGE WIRING PER MANUFACTURERS RECOMMENDATION.
3. ALL SWITCHES SHALL BE DECOR STYLE.
4. WHERE MULTIPLE CONTROL SWITCHES ARE IN THE SAME LOCATION, THEY SHALL BE IN THE SAME BACK BOX WITH SINGLE FACE PLATE
5. QUANTITY OF OCCUPANCY/VACANCY SENSORS, DAYLIGHT SENSORS, AND SWITCHES SHALL BE PER PLANS.

1

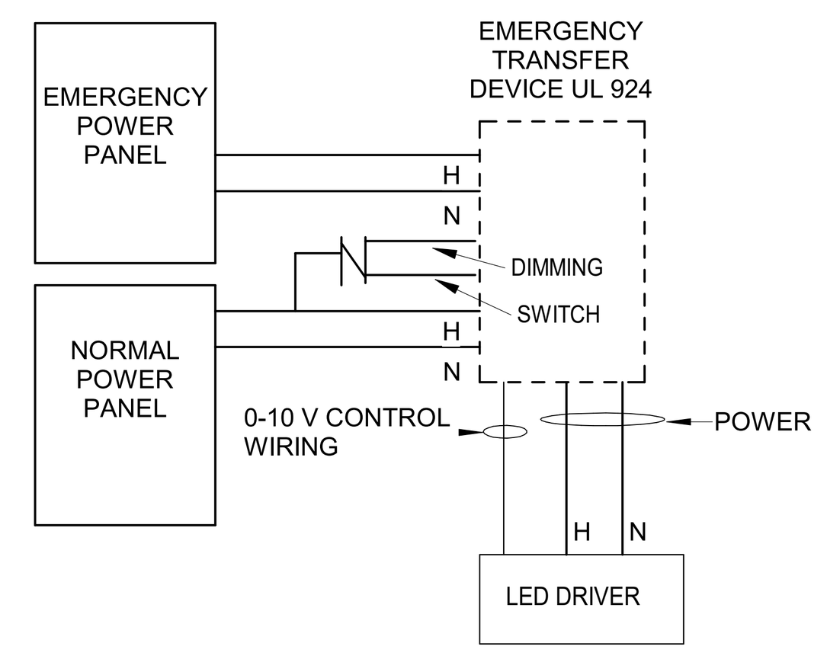
NOTE:
THE LIGHTING IN THE SPACE CENTER (ROOM 114) ARE CONSIDERED SPECIALIZED AND ARE CONTROLLED SEPARATELY FROM THE OTHER ARCHITECTURAL LIGHTS.

1. SYSTEM SHALL BE SET UP SUCH THAT LIGHTING IS CONTROLED BY A TIMECLOCK, ALLOWING FOR AUTOMATIC SHUT OFF OF FIXTURES OVERNIGHT. EXACT TIMES TO BE COORDINATED WITH OWNER.
2. A DEFAULT PRESET WILL BE SET IN COORDINATION WITH THE OWNER, AND ADDITIONAL PRESETS AND SEQUENCES WILL BE PLAYABLE VIA THE TOUCH SCREENS AND CONTROL STATIONS.
3. EMERGENCY FIXTURES SHALL OPERATE AS DESCRIBED ABOVE DURING NORMAL OPERATIONS. IN EMERGENCY SCENARIO TRIGGERED BY NORMAL POWER LOSS, FIXTURES WILL COME ON AT 100% OUTPUT. THIS WILL BE ACHEIVED WITH AN EMERGENCY BYPASS DETECTION KIT AND CONTROLLER AS SHOWN IN THE LIGHTING CONTROL RISER DIAGRAM ON SHEET "E-702".



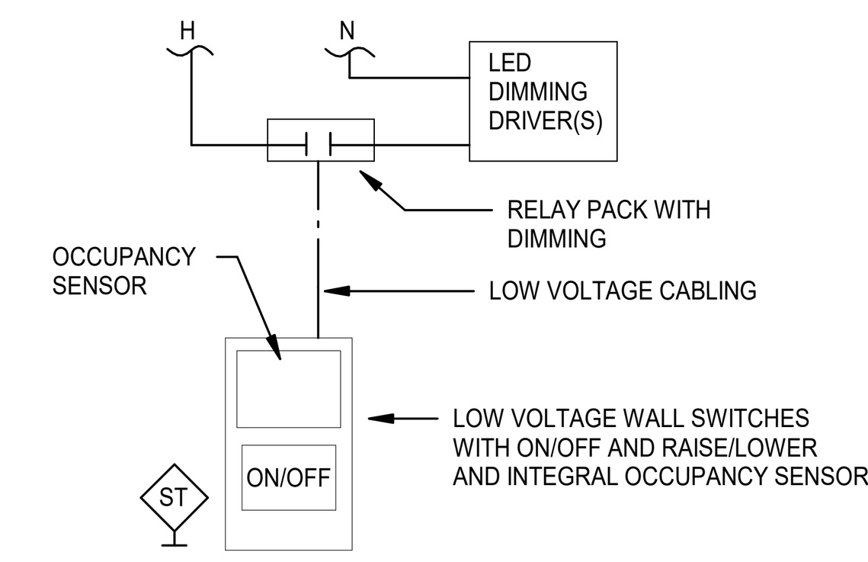
1 **LIGHTING CONTROLS - SPACE CENTER**
NOT TO SCALE

1. SYSTEM SHALL BE SET UP SUCH THAT LIGHTING SHALL OPERATE WITH THE CONTROLS OF THE NORMAL LIGHTING IN THE SPACE. IN AN EMERGENCY SCENARIO TRIGGERED BY NORMAL POWER LOSS, THE EMERGENCY FIXTURES WILL COME ON AT 100%.
2. THE DIAGRAM BELOW INDICATES WIRING FOR EMERGENCY FIXTURES NOT CONTROLLED BY THE SPACE CENTER SHOW CONTROL SYSTEM SHOWN ON SHEET "E-702".



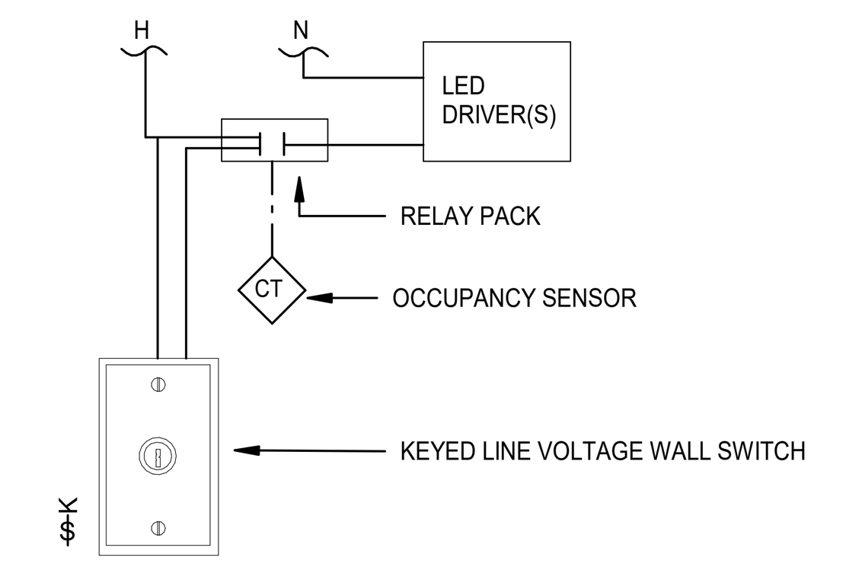
2 **LIGHTING CONTROLS - EMERGENCY**
NOT TO SCALE

1. SYSTEM SHALL BE SET UP SUCH THAT LIGHTING IS AUTOMATICALLY SWITCHED ON BY OCCUPANCY SENSOR THEN SWITCHED OFF BY OCCUPANCY SENSOR AFTER 15 MINUTES OF ROOM VACANCY.
2. WALL SWITCH SHALL OVERRIDE FIXTURES ON/OFF FOR 15 MINUTES, AT WHICH TIME OCCUPANCY SENSORS WILL REGAIN PRECEDENCE.
3. ONCE LIGHTING IS SWITCHED ON, LIGHTS MAY BE DIMMED THROUGH RAISE/LOWER BUTTONS ON WALL SWITCH.
4. EMERGENCY FIXTURES SHALL OPERATE AS DESCRIBED ABOVE DURING NORMAL OPERATIONS. IN AN EMERGENCY SCENARIO TRIGGERED BY NORMAL POWER LOSS, FIXTURES WILL COME ON AT 100% OUTPUT. THIS SHALL BE ACHIEVED WITH FULL CIRCUIT GENERATOR TRANSFER DEVICE.

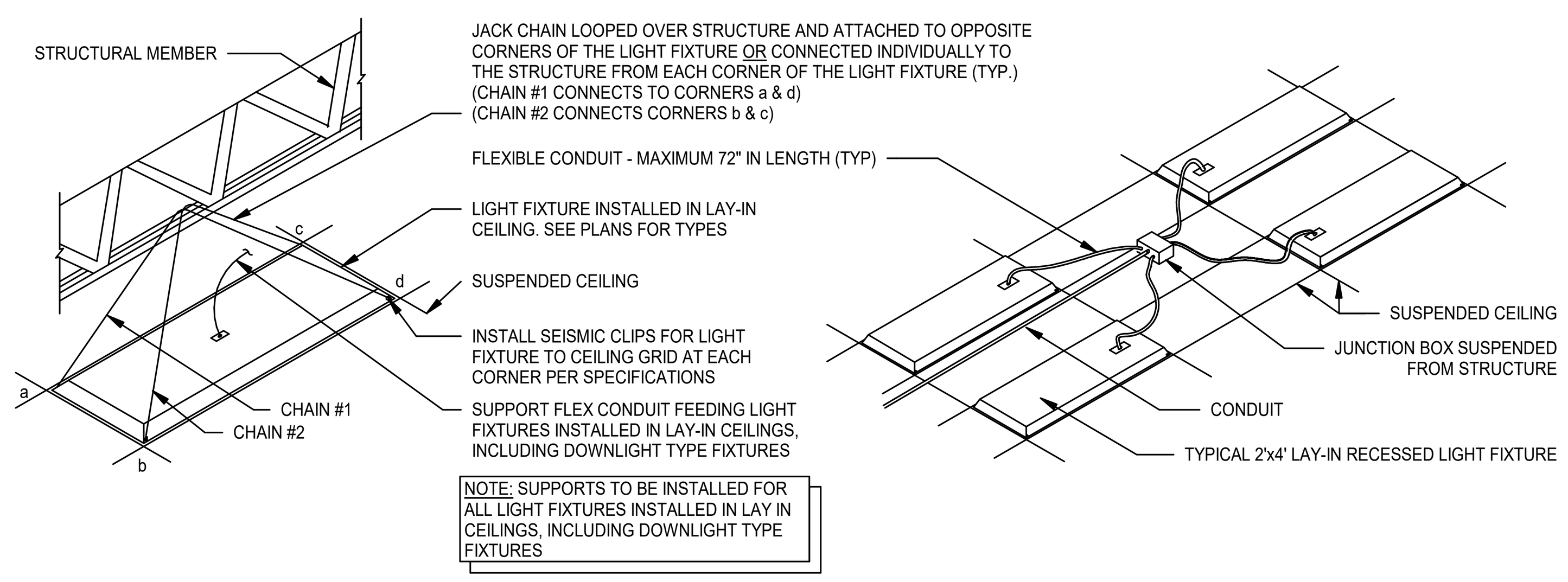


3 **LIGHTING CONTROLS - OFFICES**
NOT TO SCALE

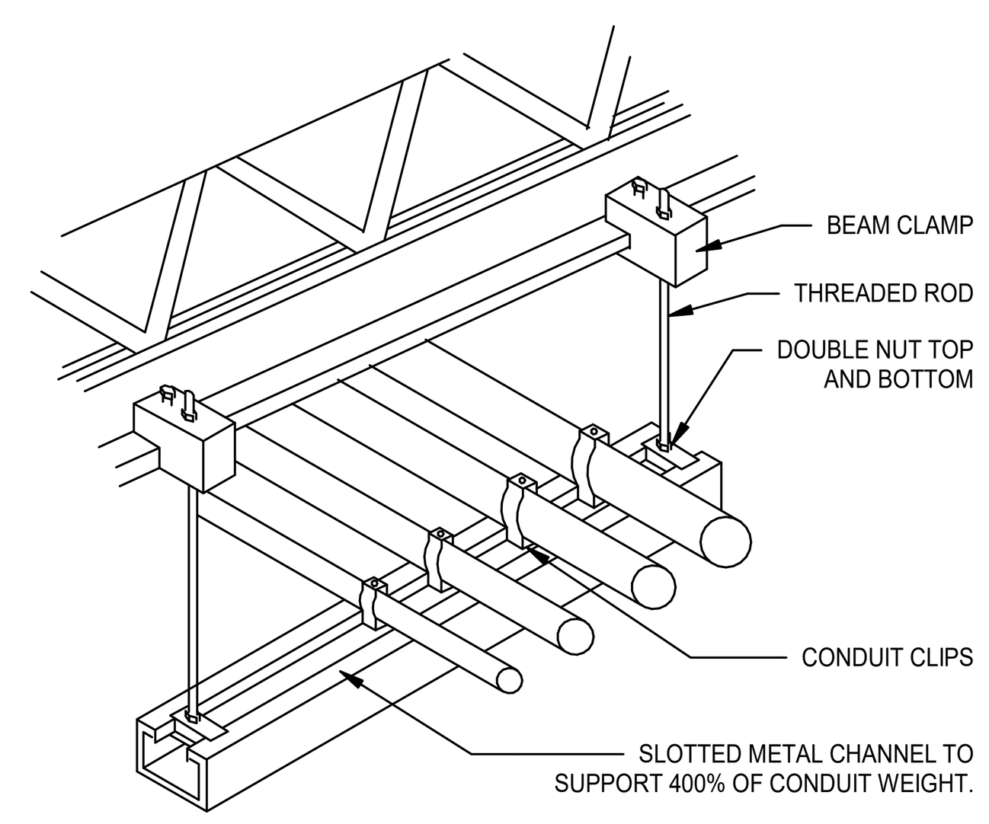
1. SYSTEM SHALL BE SET UP SUCH THAT LIGHTING IS AUTOMATICALLY SWITCHED ON BY OCCUPANCY SENSOR THEN SWITCHED OFF AFTER 15 MINUTES OF VACANCY.
2. HALLWAY LIGHTS SHALL BE CONTROLLED IN ZONES WITH ONE OCCUPANCY SENSOR PER ZONE.
3. WALL SWITCH SHALL OVERRIDE FIXTURES ON/OFF FOR 15 MINUTES, AT WHICH TIME OCCUPANCY SENSORS WILL REGAIN PRECEDENCE.
4. EMERGENCY FIXTURES SHALL OPERATE AS DESCRIBED ABOVE DURING NORMAL OPERATIONS. IN AN EMERGENCY SCENARIO TRIGGERED BY NORMAL POWER LOSS, FIXTURES WILL COME ON AT 100% OUTPUT. THIS CAN BE ACHIEVED WITH FULL CIRCUIT GENERATOR TRANSFER DEVICE.



4 **LIGHTING CONTROLS - CORRIDORS & LOBBIES**
NOT TO SCALE



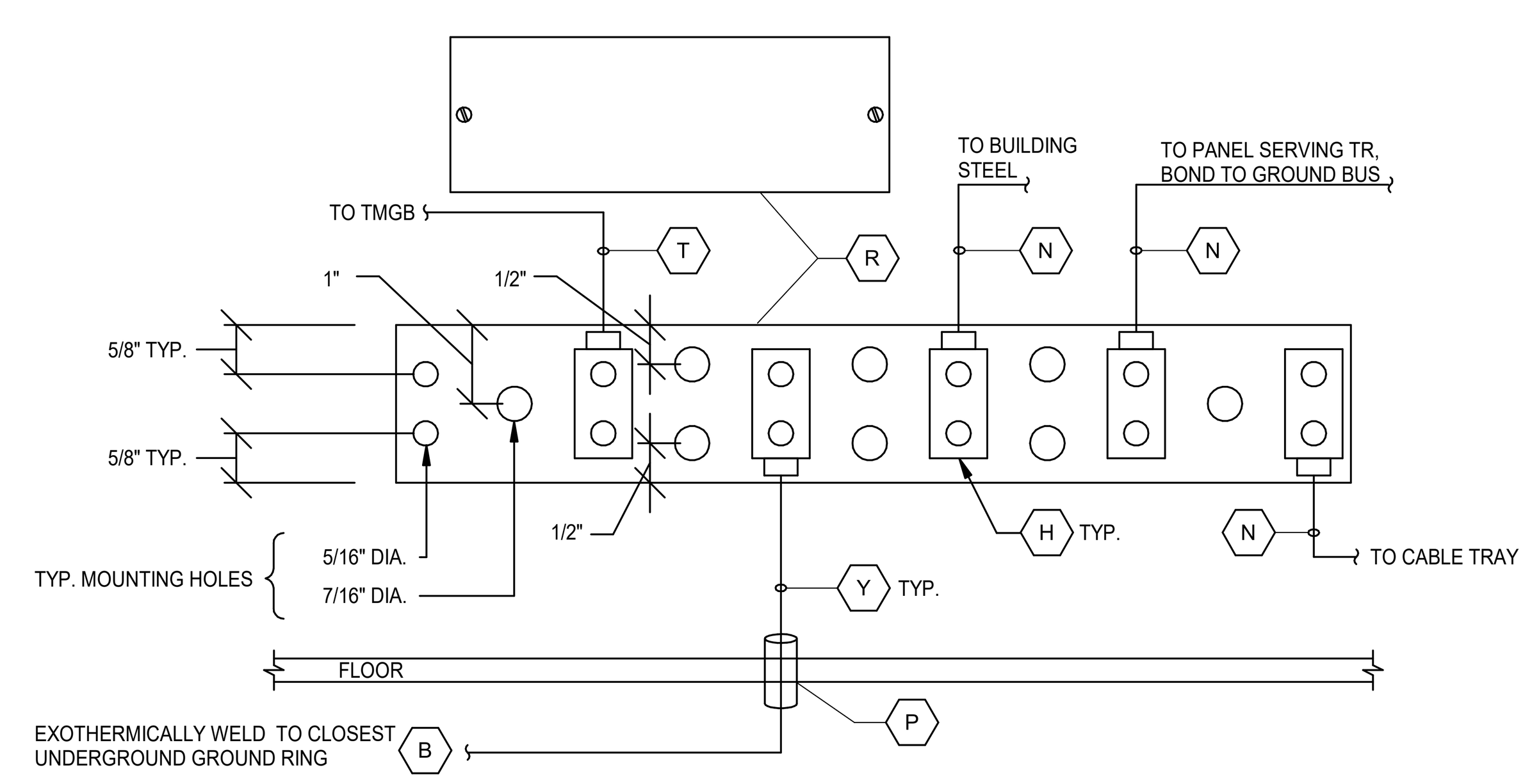
5 **RECESSED LIGHT FIXTURE SUPPORT**
NOT TO SCALE



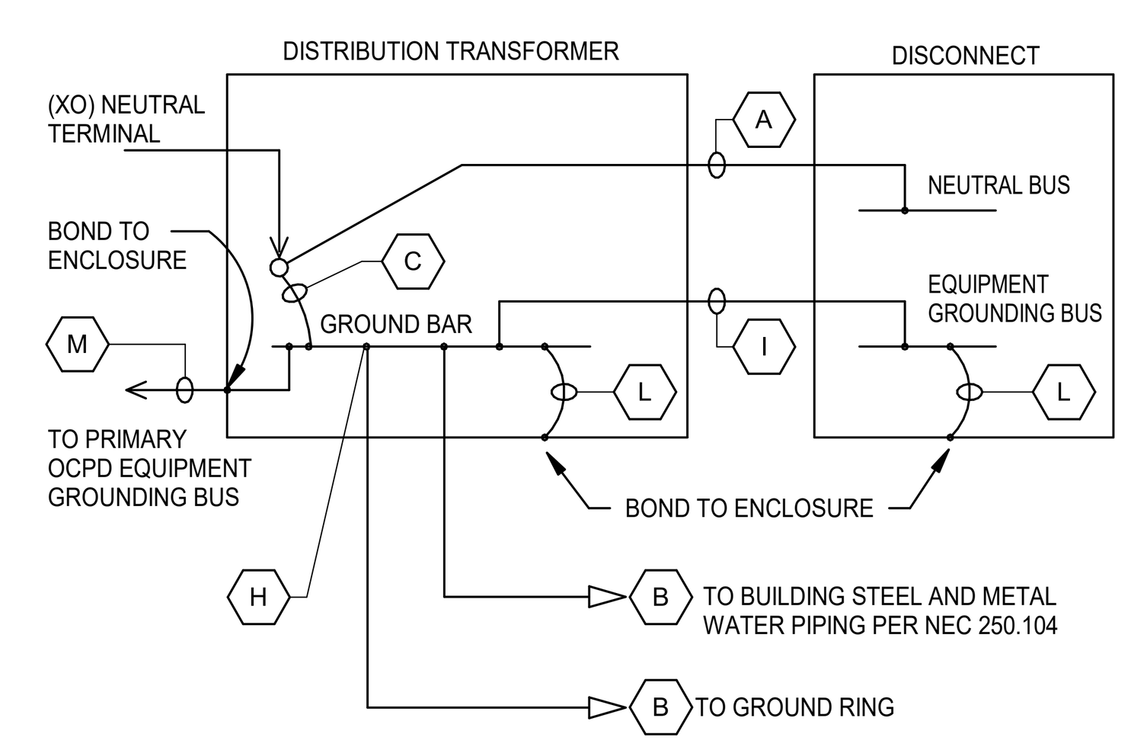
6 **2.5" & UP CONDUIT SUPPORT DETAIL**
NOT TO SCALE

GROUNDING CODED NOTES:

#	NOTE
A	GROUNDING ELECTRODE CONDUCTOR. BARE, TINNED, STRANDED, COPPER-CONDUCTOR. (30 INCHES BELOW GRADE, MIN.) (24 INCHES FROM FOUNDATION, MIN.) FOR ELECTRICAL SERVICE OF 800 AMP OR LESS USE #2/0 AWG. FOR ELECTRICAL SERVICE GREATER THAN 800 AMP USE #4/0 AWG.
B	GROUNDING CONDUCTOR. 2/0 AWG BARE, TINNED, STRANDED, COPPER-CONDUCTOR.
C	IRREVERSIBLE, COPPER, COMPRESSION CONNECTOR. (CABLE TO CABLE)
H	PROVIDE UL 467 LISTED COMPRESSION CONNECTORS, TWO-HOLE LUGS.
I	SYSTEM BONDING JUMPER CONDUCTOR. SYSTEM BONDING JUMPER CONDUCTOR TO BE RUN IN EACH CONDUIT CONTAINING PHASE CONDUCTORS BETWEEN TRANSFORMER AND MAIN SECONDARY DISCONNECT. (REFER TO ONE-LINE DIAGRAM FOR CONDUCTOR SIZE)
L	EQUIPMENT BONDING JUMPER STRANDED, BARE, COPPER. (<110A USE #6, <410A USE #2, <810A USE #2/0, <2100A USE #4/0) SCREW OF BUSBAR MAY BE USED WHEN PROVIDED AS PART OF LISTED SERVICE EQUIPMENT.
M	EQUIPMENT GROUNDING CONDUCTOR (REFER TO ONE LINE DIAGRAM FOR CONDUCTOR SIZE).
N	TELECOMMUNICATIONS BONDING BACKBONE: #4/0 AWG STRANDED BARE COPPER.
P	1" PVC SLEEVE FOR ALL GROUNDING CONDUCTORS THROUGH FLOOR SLABS. NEVER ROUTE GROUNDING CONDUCTORS IN A METAL CONDUIT.
R	PROVIDE UL 467 LISTED, ELECTRO-TIN-PLATED COPPER BUSBAR, 2" x 12" x 1/4" WITH (2) 2-INCH INSULATED STANDOFF SUPPORTS. PROVIDE ENGRAVED NAMEPLATE SCREWED TO WALL, 6" ABOVE GROUNDING BUS BAR WHICH READS, "IF THESE CONNECTORS OR CABLES ARE LOOSE OR MUST BE REMOVED, PLEASE CALL THE BUILDING TELECOMMUNICATIONS MANAGER".
T	CONTINUOUS, UNSPLICED BONDING CONDUCTOR FOR TELECOMMUNICATIONS: 2/0 AWG BARE, TINNED, STRANDED, COPPER-CONDUCTOR IN CABLE TRAYS.
Y	PROVIDE WRAP AROUND PLASTIC LABEL ON EACH CONDUCTOR AT GROUND BAR. IDENTIFY WHAT THE CABLE IS CONNECTED TO.



7 **TYPICAL TR TELECOMMUNICATIONS GROUNDING BUSBAR (TGB) DETAIL**
NOT TO SCALE



8 **DISTRIBUTION TRANSFORMER GROUNDING DETAIL**
NOT TO SCALE

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PROJECT NUMBER: 225001.00
PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE
1	Addendum 1	08/12/2025

ELECTRICAL DETAILS AND SEQUENCE OF OPERATIONS

E-501

LUMINAIRE SCHEDULE

LABEL	QTY	MOUNTING	DESCRIPTION	MANUFACTURER	MODEL / SERIES	ACCESSORIES	FIXTURE SPECS		
							LUMENS	VOLTAGE	VA LOAD
BP2X	1	SURFACE WALL	6-VOLT, 10.8 WATT (MIN.) EMERGENCY LIGHTING UNIT WITH SELF-DIAGNOSTICS AND TIME DELAY,	LITHONIA LIGHITNG OR A/E APPROVED EQUAL	EU2C SERIES		0 lm	277 V	11 VA
LD6	4	SURFACE CEILING	6 INCH DIAMETER ROUND DISC FIXTURE WITH ALUMINUM BASE AND FLAT ACRYLIC LENS.	CAMMAN LIGHTING MARK ARCHITECTURAL LIGHTING	HEINZ MAGELLAN CEILING SURFACE OR A/E APPROVED EQUAL	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	277 V	30 VA
LD6-2	9	SURFACE CEILING	6 INCH DIAMETER ROUND DISC FIXTURE WITH FLAT ACRYLIC LENS.	MARK ARCHITECTURAL LIGHTING CAMMAN	MAGELLAN CEILING RECESSED OR A/E APPROVED EQUAL	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	120 V	30 VA
LD8	1	SURFACE CEILING	8 INCH DIAMETER ROUND DISC FIXTURE WITH ALUMINUM BASE AND FLAT ACRYLIC LENS.	CAMMAN LIGHTING MARK ARCHITECTURAL LIGHTING	HEINZ MAGELLAN CEILING SURFACE OR A/E APPROVED EQUAL	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	277 V	30 VA
LD10	2	SURFACE CEILING	10 INCH DIAMETER ROUND DISC FIXTURE WITH ALUMINUM BASE AND FLAT ACRYLIC LENS.	CAMMAN LIGHTING MARK ARCHITECTURAL LIGHTING	HEINZ MAGELLAN CEILING SURFACE OR A/E APPROVED EQUAL	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	277 V	30 VA
LD12	2	SURFACE CEILING	14 INCH DIAMETER ROUND DISC FIXTURE WITH ALUMINUM BASE AND FLAT ACRYLIC LENS.	CAMMAN LIGHTING MARK ARCHITECTURAL LIGHTING	HEINZ MAGELLAN CEILING SURFACE OR A/E APPROVED EQUAL	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	277 V	30 VA
LD14	3	SURFACE CEILING	14 INCH DIAMETER ROUND DISC FIXTURE WITH ALUMINUM BASE AND FLAT ACRYLIC LENS.	CAMMAN LIGHTING MARK ARCHITECTURAL LIGHTING	HEINZ MAGELLAN CEILING SURFACE OR A/E APPROVED EQUAL	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	277 V	30 VA
LD16	4	SURFACE CEILING	16 INCH DIAMETER ROUND DISC FIXTURE WITH ALUMINUM BASE AND FLAT ACRYLIC LENS.	CAMMAN LIGHTING MARK ARCHITECTURAL LIGHTING	HEINZ MAGELLAN CEILING SURFACE OR A/E APPROVED EQUAL	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	277 V	30 VA
LD18	3	SURFACE CEILING	18 INCH DIAMETER ROUND DISC FIXTURE WITH ALUMINUM BASE AND FLAT ACRYLIC LENS.	CAMMAN LIGHTING MARK ARCHITECTURAL LIGHTING	HEINZ MAGELLAN CEILING SURFACE OR A/E APPROVED EQUAL	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	277 V	30 VA
LD20	4	SURFACE CEILING	20 INCH DIAMETER ROUND DISC FIXTURE WITH ALUMINUM BASE AND FLAT ACRYLIC LENS.	CAMMAN LIGHTING MARK ARCHITECTURAL LIGHTING	HEINZ MAGELLAN CEILING SURFACE OR A/E APPROVED EQUAL	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	277 V	30 VA
LD22	3	SURFACE CEILING	22 INCH DIAMETER ROUND DISC FIXTURE WITH ALUMINUM BASE AND FLAT ACRYLIC LENS.	CAMMAN LIGHTING MARK ARCHITECTURAL LIGHTING	HEINZ MAGELLAN CEILING SURFACE OR A/E APPROVED EQUAL	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	277 V	30 VA
LD24	1	SURFACE CEILING	24 INCH DIAMETER ROUND DISC FIXTURE WITH ALUMINUM BASE AND FLAT ACRYLIC LENS.	CAMMAN LIGHTING MARK ARCHITECTURAL LIGHTING	HEINZ MAGELLAN CEILING SURFACE OR A/E APPROVED EQUAL	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	277 V	30 VA
LD61	6	RECESSED	6-INCH ROUND APERTURE OPEN REFLECTOR LED DOWNLIGHT, MEDIUM DISTRIBUTION, CLEAR SPECULAR FINISH, SELF-FLANGED, 4000K CCT, 80+ CRI, 0-10VDC DIMMING	LITHONIA LIGHITNG	LDN6 SERIES	BAR HANGER ACCESSORY	2000 lm	277 V	22 VA
LDW61	3	RECESSED	6-INCH ROUND APERTURE LED WET RATED LIGHT WITH REGRESSED LENS REFLECTOR, BLACK REFLECTOR AND TRIM, SELF-FLANGED, IP65 WET LOCATION LISTED.	LITHONIA LIGHTING	LDN6 SERIES		1500 lm	277 V	15 VA
LG2	1	PENDANT	2 INCH DIAMETER LED GLOBE FIXTURE, STEM HUNG, RGBW OR ORANGE TINTED DIFFUSER.	CAMMAN LIGHTING OR A/E APPROVED EQUAL	MASON II	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	500 lm	120 V	5 VA
LG2-2	1	PENDANT	2 INCH DIAMETER LED GLOBE FIXTURE, STEM HUNG, RGBW OR RED TINTED DIFFUSER.	CAMMAN LIGHTING OR A/E APPROVED EQUAL	MASON II	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	500 lm	120 V	5 VA
LG3	1	PENDANT	3 INCH DIAMETER LED GLOBE FIXTURE, STEM HUNG, RGBW OR WARN WHITE TINTED DIFFUSER.	CAMMAN LIGHTING OR A/E APPROVED EQUAL	MASON II	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	500 lm	120 V	5 VA
LG4	1	PENDANT	4 INCH DIAMETER LED GLOBE FIXTURE, STEM HUNG, RGBW OR BLUE TINTED DIFFUSER.	CAMMAN LIGHTING OR A/E APPROVED EQUAL	MASON II	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	500 lm	120 V	5 VA
LG12-M	1	PENDANT	1FT DIAMETER LED GLOBE FIXTURE, STEM HUNG, RGBW OR WARM WHITE TINTED DIFFUSER.	CAMMAN LIGHTING OR A/E APPROVED EQUAL	MASON II	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	1000 lm	120 V	15 VA
LG14	1	PENDANT	14 INCH DIAMETER LED GLOBE FIXTURE, STEM HUNG, RGBW OR BLUE TINTED DIFFUSER.	CAMMAN LIGHTING OR A/E APPROVED EQUAL	MASON II	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	1000 lm	120 V	25 VA
LG15	1	PENDANT	15 INCH DIAMETER LED GLOBE FIXTURE, STEM HUNG, RGBW OR COOL WHITE TINTED DIFFUSER.	CAMMAN LIGHTING OR A/E APPROVED EQUAL	MASON II	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	1000 lm	120 V	25 VA
LG35	1	PENDANT	35 INCH DIAMETER LED GLOBE FIXTURE, STEM HUNG, RGBW OR YELLOW TINTED DIFFUSER.	CAMMAN LIGHTING OR A/E APPROVED EQUAL	MASON II	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	2000 lm	120 V	120 VA
LG40	1	PENDANT	40 INCH DIAMETER LED GLOBE FIXTURE, STEM HUNG, RGBW OR ORANGE TINTED DIFFUSER.	CAMMAN LIGHTING OR A/E APPROVED EQUAL	MASON II	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	2000 lm	120 V	150 VA
LG48-E	1	PENDANT	4FT DIAMETER LED GLOBE FIXTURE, STEM HUNG, RGBW OR BLUE TINTED DIFFUSER.	CAMMAN LIGHTING OR A/E APPROVED EQUAL	MASON II	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	4000 lm	120 V	160 VA
LP6	28	PENDANT	6-INCH DIAMETER LED CYLINDER DOWNLIGHT, WIDE DISTRIBUTION, RGBW CAPABLE, DMX CONTROLLED.	AQUARII OR A/E APPROVED EQUAL	VIANITE	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	4000 lm	120 V	100 VA
LR5	2	SURFACE CEILING	5FT DIAMETER LED RING DOWN LIGHT WITH ALUMINUM BASE AND ACRYLIC LENS.	CAMMAN LIGHTING OR A/E APPROVED EQUAL	AVALON 4	ABOVE CEILING JUNCTION BOX TILE BRIDGE	2000 lm	277 V	50 VA
LR12	5	SUSPENDED	12FT DIAMETER LED SUSPENDED RING DOWN LIGHT. RGBW CAPABLE, DMX DRIVER	TMB CAMMAN LIGHTING	FLOPPYFLEX LARGE AVALON 4	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	15000 lm	120 V	75 VA
LR33	1	SUSPENDED	33FT DIAMETER LED SUSPENDED RING DOWN LIGHT. RGBW CAPABLE, DMX DRIVER	TMB CAMMAN LIGHTING	FLOPPYFLEX LARGE AVALON 4	ALL CABLE AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION	40000 lm	120 V	120 VA
LS4	19	SUSPENDED	4-FOOT WRAP AROUND FIXTURE, ACRYLIC PRISMATIC DIFFUSER, 0-10VDC DIMMING.	LITHONIA LIGHTING	SBL SERIES		4000 lm	277 V	48 VA
LT4	4	RECESSED	1 BY 4 FOOT LED FLAT PANEL FIXTURE WITH SATIN WHITE LENS, ALUMINUM FRAME, 4000K CCT, 80 CRI, ADJUSTABLE LUMEN OUTPUT, 0-10VDC DIMMING	LITHONIA LIGHTING	CPX SERIES	(2) JACK CHAINS SEISMIC CLIPS	3900 lm	277 V	45 VA
LTK	50	TRACK	MINI LED ZOOM SPOT TRACK FIXTURE WITH FRAMING. TRACK LENGTHS AND CONFIGURATIONS AS SHOWN ON DRAWINGS.	ELECTRONIC THEATRE CONTROLS	IRIDEON FPZ ON ONETRACK	ONETRACK ADAPTER	1000 lm	120 V	25 VA
LV2	4	SURFACE WALL	2FT ALUMINUM WALL BRACKET, 50% UP, 50% DOWN, VANITY LIGHT, 0-10 VDC DIMMING.	LITHONIA LIGHTING OR A/E APPROVED EQUAL	VANITY SERIES		2500 lm	277 V	12 VA
M-3X	1	SURFACE WALL	LED WALL MOUNTED ARCHITECHTURAL LUMINAIRE, TYPE 3 MEDIUM DISTRIBUTION, 4000K CCT, 70 CRI, DARK BRONZE FINISH. VANDAL RESISTANT.	LITHONIA LIGHTING	WDGE2 SERIES	JUNCTION BOX FOR MOUNTING	3200 lm	0 V	32 VA
TLA	8	SURFACE WALL	AUTOMATED, MOVING HEAD, LED SPOT FIXTURE. BLACK.	HIGH END SYSTEMS	MINISTAR	MOUNTING BRACKET (4) UNI-BOLTS (2) 2FT UNISTRUT P1000 SERIES CHANNELS POWER AND DATA CONNECTION CABLES CUSTOM GOBOS (SEE SPEC SECTION 26 55 00)	10000 lm	120 V	450 VA
XC	5	SURFACE CEILING	CAST ALUMINUM AC ONLY EXIT SIGN, SINGLE FACE, DIRECTIONAL ARROWS INDICATED, WHITE HOUSING. REFER TO PROJECT MANUAL FOR ADDITIONAL REQUIREMENTS.	LITHONIA LIGHTING OR A/E APPROVED EQUAL	SIGNATURE SERIES		0 lm	277 V	3 VA
XW	1	SURFACE WALL	CAST ALUMINUM AC ONLY EXIT SIGN, SINGLE FACE, DIRECTIONAL ARROWS INDICATED, WHITE HOUSING. REFER TO PROJECT MANUAL FOR ADDITIONAL REQUIREMENTS.	LITHONIA LIGHITNG OR A/E APPROVED EQUAL	SIGNATURE SERIES		0 lm	277 V	3 VA

SHOW EQUIPMENT SCHEDULE

LABEL	QTY	DESCRIPTION	INCLUDE	MANUFACTURER	MODEL
Electrical Equipment					
DIN	1	14 INCH DIN RAIL ENCLOSURE WITH (2) HORIZONTAL RAILS	ENCLOSURE CONTENTS: NETWORK SWITCH MOSAIC CONTROLLER MOSAIC REMOTE AUDIO MOSAIC REMOTE I/O	ETC	DIN28
EBC	1	EMERGENCY BYPASS DMX CONTROLLER, SURFACE MOUNT		ETC	DEBC
EBD	1	EMERGENCY BYPASS DETENCTION		ETC	EBDK
SC-2	1	RELAY PANEL, 208Y/120V THREE-PHASE, 24 CIRCUIT	60A MAIN CIRCUIT BREAKER, 22kA SCCR BREAKERS AS INDICATED ON PANEL SCHEDULE SURFACE MOUNT DOOR 0-10V DIMMING CONTROL	ETC	SENSOR IQ 24 CKT
SCX	1	RELAY PANEL, MULTI-VOLT FEED-THROUGH, 4 CIRCUIT, SURFACE MOUNT	20A SINGLE-POLE BREAKERS 0-10V DIMMING CONTROL VOLTAGE DIVIDER KIT	ETC	FOUNDRY MINI PANEL
SNB	1	8-PORT NETWORK SWITCH IN SURFACE MOUNT ENCLOSURE		ETC	SNB
Lighting Devices					
CS	2	PUSH BUTTON LIGHTING CONTROL STATION, WHITE	LOCKING COVER OR PASSCODE LOCK	ETC	SMALL MOSAIC TOUCH SCREEN
TRK1	5	4FT BY 4FT "L" SHAPED TRACK, (2) 120V CIRCUITS, DMX DATA BUS, BLACK	ALL NECESSARY EQUIPMENT FOR COMPLETE STRUCTURAL STEEL SUSPENSION INSTALLATION	ETC	ONETRACK
TRK2	1	10FT DIAMETER CIRCULAR OR 8FT BY 8FT SQUARE TRACK, (2) 120V CIRCUITS, DMX DATA BUS,BLACK	ALL NECESSARY EQUIPMENT FOR COMPLETE STRUCTURAL STEEL SUSPENSION INSTALLATION	ETC	ONETRACK
TRK3	1	8FT LINEAR TRACK, (2) 120V CIRCUITS, DMX DATA BUS,BLACK	ALL NECESSARY EQUIPMENT FOR COMPLETE STRUCTURAL STEEL SUSPENSION INSTALLATION	ETC	ONETRACK
TRK4	1	12FT LINEAR TRACK, (2) 120V CIRCUITS, DMX DATA BUS,BLACK	ALL NECESSARY EQUIPMENT FOR COMPLETE STRUCTURAL STEEL SUSPENSION INSTALLATION	ETC	ONETRACK
TS	2	7 INCH TOUCH SCREEN LIGHTING CONTROL STATION	LOCKING COVER OR PASSCODE LOCK	ETC	MOSAIC TOUCH SCREEN

LUMINAIRE SCHEDULE - GENERAL NOTES

1. SEE SPECIFICATIONS FOR DRIVER REQUIREMENTS.
2. FOR ALL DOWNLIGHTING FIXTURES, PROVIDE REQUIRED MOUNTING HARDWARE FOR MOUNTING IN LAY-IN TYPE CEILINGS.
3. CONTRACTOR TO VERIFY TYPES AND QUANTITY OF LIGHT FIXTURES REQUIRING EMERGENCY TRANSFER DEVICES AND PROVIDE REQUIRED QUANTITY OF EMERGENCY TRANSFER DEVICES. LABOR, MATERIAL, ETC. IN THE PROJECT BID FOR FIELD INSTALLATION OF EMERGENCY TRANSFER DEVICES.
4. LIGHT FIXTURE SUBMITTALS TO INCLUDE DATA SHEETS FOR ALL FIXTURE TYPES. INCLUDING ADDITIONAL DATA SHEETS FOR DRIVER COMBINATIONS REQUIRED TO MEET THE INSTALLATION REQUIREMENTS OF THE VARIOUS FIXTURE TYPES INDICATED IN THE REMARKS COLUMN OF THE FIXTURE SCHEDULES OR ON THE DRAWINGS. SUBMITTALS SHALL ALSO INDICATE COLOR FOR ANY CUSTOM COLOR LIGHT FIXTURES.

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PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE
1	Addendum 1	08/12/2025

LUMINAIRE AND EQUIPMENT SCHEDULES

E-601

Branch Panel: LSC

Location: STORAGE 202
Supply From: MSWB
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65,000
Main Type: MCB
Mains Rating: 400 A
MCB Rating: 400 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Transformer T-SC, 75 kVA	125 A	3	14222...	768 VA					1	20 A	MEZZANINE LTG	2
3	--	--	--			14116...	1048 VA			1	20 A	FIRST FLOOR LTG - All but SC	4
5	--	--	--					14362...	3334 VA	3	20 A	VVR-101, RM.204 (Note 1)	6
7	VVR-103, RM.204 (Note 1)	20 A	3	1458 VA	3334 VA					--	--	--	8
9	--	--	--			1458 VA	3334 VA			--	--	--	10
11	--	--	--					1458 VA	7499 VA	3	30 A	VVR-114B, RM.201 (Note 2)	12
13	VVR-111, RM.201 (Note 1)	20 A	3	4168 VA	7499 VA					--	--	--	14
15	--	--	--			4168 VA	7499 VA			--	--	--	16
17	--	--	--					4168 VA	2915 VA	3	20 A	VVR-201, RM.201 (Note 1)	18
19	VVR-114A, RM.201 (Note 2)	30 A	3	7499 VA	2915 VA					--	--	--	20
21	--	--	--			7499 VA	2915 VA			--	--	--	22
23	--	--	--					7499 VA	26019...	3	110 A	RTU-1, ROOF MOUNTED, RM.201 (Note 4)	24
25	RS-1, RM.201 (Note 3)	50 A	3	10720...	26019...					--	--	--	26
27	--	--	--			10720...	26019...			--	--	--	28
29	--	--	--					10720...	0 VA	1	20 A	SPARE	30
31	SPARE	20 A	3	0 VA	0 VA					1	20 A	SPARE	32
33	--	--	--			0 VA	0 VA			1	20 A	SPARE	34
35	--	--	--					0 VA	0 VA	1	20 A	SPARE	36
37	SPARE	20 A	3	0 VA	0 VA					1	20 A	SPARE	38
39	--	--	--			0 VA	0 VA			1	20 A	SPARE	40
41	--	--	--					0 VA	0 VA	1	20 A	SPARE	42
		Total Load:		78602 VA		78776 VA		77974 VA					
		Total Amps:		284 A		285 A		281 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	173735 VA	111.23%	193249 VA		
Other	34460 VA	100.00%	34460 VA	**Total Conn. Load:**	235351 VA
Spare	10 VA	100.00%	10 VA	**Total Est. Demand:**	253327 VA
Lighting	8646 VA	125.00%	10808 VA	**Total Conn.:**	283 A
Receptacle - Convenience	18500 VA	80.00%	14800 VA	**Total Est. Demand:**	305 A

Notes:
1. 4 #12, #12 G IN 3/4" C
2. 4 #10, #10 G IN 3/4" C
3. 4 #6, #10 G IN 3/4" C
4. 4 #1, #6 G IN 3/4" C

Branch Panel: SC-1

Location: STORAGE 202
Supply From: T-SC
Mounting: Surface
Enclosure: Type 1

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

A.I.C. Rating: 42,000
Main Type: MCB
Mains Rating: 250 A
MCB Rating: 250 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Receptacles - Rm 101	20 A	1	540 VA	1340 VA					1	20 A	SC Receptacle - SW Corner	2
3	Receptacles - Office	20 A	1			1080 VA	1160 VA			1	20 A	SC Receptacles - SE Corner	4
5	Receptacles - Workroom	20 A	1					900 VA	1040 VA	1	20 A	SC Receptacles - N Wall	6
7	Receptacles - Corridor	20 A	1	1120 VA	940 VA					1	20 A	SC Receptacles - E Wall	8
9	Receptacles - Bathrooms	20 A	1			900 VA	1120 VA			1	20 A	SC Receptacles - Presentation	10
11	Receptacles - Planetarium	20 A	1					900 VA	1160 VA	1	20 A	SC Receptacles - Work Area	12
13	Receptacle - AV Rack	20 A	1	360 VA	1440 VA					1	20 A	SC Receptacles - S Floor	14
15	Receptacle - IDF	20 A	1			360 VA	1080 VA			1	20 A	SC Receptacles - Center Floor	16
17	Receptacles - Ceiling	20 A	1					360 VA	540 VA	1	20 A	Receptacle - Mezz. Display	18
19	Receptacles - Mezzanine	20 A	1	720 VA	1080 VA					1	20 A	SC Receptacles - N Floor	20
21	EUH-204, RM.204 (Note 2)	20 A	3			3267 VA	250 VA			1	20 A	WINDOW SHADES, RM.114 (Note 1)	22
23	--	--	--					3267 VA	360 VA	1	20 A	Receptacles - Exterior Wall	24
25	--	--	--	3267 VA	200 VA					1	20 A	TCP (Note 1)	26
27	PANEL FEED: SC-2 (Note 3)	60 A	3			2945 VA	1944 VA			1	20 A	EF-1, EF-2, RM. 204 (Note 1)	28
29	--	--	--					2770 VA	3065 VA	1	20 A	DWH-1, DWCP-1, RM.204 (Note 1)	30
31	--	--	--	3215 VA	0 VA					1	20 A	SPARE	32
33	THTR SENSE FEED	20 A	1			10 VA	0 VA			1	20 A	SPARE	34
35	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	36
37	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	38
39	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	40
41	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	42
		Total Load:		14222 VA		14116 VA		14362 VA					
		Total Amps:		119 A		118 A		120 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	15059 VA	108.30%	16309 VA		
Other	1480 VA	100.00%	1480 VA	**Total Conn. Load:**	42699 VA
Spare	10 VA	100.00%	10 VA	**Total Est. Demand:**	42162 VA
Lighting	7650 VA	125.00%	9563 VA	**Total Conn.:**	119 A
Receptacle - Convenience	18500 VA	80.00%	14800 VA	**Total Est. Demand:**	117 A

Notes:
1. 2 #12, #12 G IN 3/4" C
2. 4 #12, #12 G IN 3/4" C
3. 4 #6, #10 G IN 3/4" C

RELAY Panel: SCX

Location: STORAGE 202
Supply From: LEM, EM
Mounting: WALL, SURFACE

Volts: 120V , 277V
Mains Type: Feed Through

Notes:

CKT	Voltage	Feed Panel	Circuit Description	Trip	Poles	A	B	C
1	277 V	LEM	NON SPACE CENTER EMERGENCY LTG	20 A	1	100 VA		
2	277 V	LEM	EXTERIOR LIGHTS	20 A	1		100 VA	
3	120 V	EM	SPACE CENTER EM LTG (DMX)	20 A	1			660 VA
4	120 V	EM	RM 111 EM LTG (0-10VDC DIMMING)	20 A	1	100 VA		
5			SPARE	20 A	1		0 VA	
6			SPARE	20 A	1			0 VA
7			SPARE	20 A	1	0 VA		
8			SPARE	20 A	1		0 VA	
					Total Load:	200 VA	100 VA	660 VA
			THIS SECTION TOTAL:		**Total Amps:**			
					Total Load:	0 VA	0 VA	0 VA
			TOTAL LOAD CONNECTED TO FEED THROUGH LUGS:		**Total Amps:**			
					Total Load:	200 VA	100 VA	660 VA
			PANEL GRAND TOTALS:		**Total Amps:**			

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Spare	960 VA	100.00%	960 VA		
				Total Conn. Load:	960 VA
				Total Est. Demand:	960 VA
				Total Conn. Current:	Not Computed
				Total Est. Demand Current:	Not Computed

1

Notes:
VERIFY IN FIELD THE CONNECTION OF EMERGENCY PANELS "LEM" AND "EM" TO THE EMERGENCY GENERATOR AND THEIR NEXT AVAILABLE 20A SPARE CIRCUITS.
IF SPARE CIRCUITS ARE NOT AVAILABLE, CONNECT TO NEAREST 120V AND 277V EMERGENCY PANELS WITH 20A SPARE CIRCUITS.

RELAY Panel: SC-2

Location: STORAGE 202
Supply From: SC-1
Mounting: WALL, SURFACE

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

A.I.C. Rating: 22,000
Main Type: MCB
Mains Rating: 60 A
MCB Rating: 60 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	ENTRY GLOBES	20 A	1	175 VA	150 VA					1	20 A	NW CORNER TRACK	2
3	ENTRY TRACK	20 A	1			155 VA	150 VA			1	20 A	NE CORNER TRACK	4
5	GLOBES	20 A	1					340 VA	125 VA	1	20 A	E LINEAR TRACK	6
7	SUSPENDED RINGS	20 A	1	495 VA	125 VA					1	20 A	SE CORNER TRACK	8
9	RM 111	20 A	1			240 VA	125 VA			1	20 A	SW CORNER TRACK	10
11	SE AUTOMATED FIXTURES	20 A	1					900 VA	150 VA	1	20 A	MEZZANINE TRACK	12
13	SW AUTOMATED FIXTURES	20 A	1	900 VA	300 VA					1	20 A	CENTER TRACK	14
15	NE AUTOMATED FIXTURES	20 A	1			900 VA	400 VA			1	20 A	HOUSE LTG ROW 1	16
17	NW AUTOMATED FIXTURES	20 A	1					900 VA	800 VA	1	20 A	HOUSE LTG ROW 2-3	18
19	SPARE	20 A	1	0 VA	800 VA					1	20 A	HOUSE LTG ROW 4-5	20
21	SPARE	20 A	1			0 VA	800 VA			1	20 A	HOUSE LTG ROW 6-7	22
23	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	24
		Total Load:		2945 VA		2770 VA		3215 VA					
		Total Amps:		25 A		23 A		27 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	1280 VA	100.00%	1280 VA		
Lighting	7650 VA	125.00%	9563 VA	**Total Conn. Load:**	8930 VA
				Total Est. Demand:	10843 VA
				Total Conn.:	25 A
				Total Est. Demand:	30 A

Notes:

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PROJECT NUMBER: 225001.00

PROJECT ISSUE DATE: 06.30.2025

REV. NO.	DESCRIPTION	DATE
1	Addendum 1	08/12/2025

PANELBOARD SCHEDULES

E-602