

THE TEMPLE (SALINA INNNOVATION FOUNDATION)

ELEVATOR REHABILITATION PROJECT

SALINA,

25-3499

KANSAS

REFERENCE LEGEND

T-A1

DETAIL REFERENCE
REF # - SHT. #

A-A1
SM

DETAIL REFERENCE
REF # - SHT. #

100'-0"
FIN. FLR.

ELEVATION
DESIGNATION

A

DOOR MARK

WINDOW MARK

CUT LINE

REVISIONS

WAITING
[101]

ROOM NAME
& NUMBER

A-A1

PROJECTED VIEW
OF PHOTOGRAPH
REF # - SHT. #

PROJECT NORTH

TRUE NORTH

DRAWING NAME

A

DETAIL

SCALE

DRAWING SCALE

DRAWING REF #

MATERIAL LEGEND

BATT INSULATION

BRICK MASONRY

COMPACTED EARTH

RIGID INSULATION

POURED CONCRETE

WALL W/ BRICK
VENEER

METAL STUD WALL

CONCRETE WALL

WOOD STUD WALL

C.M.U. WALL

PLYWOOD

ROUGH WOOD

FINISH WOOD

METAL STUD

GLASS LARGE SCALE

STRUCTURAL STEEL

CONC. MASONRY
UNIT SECTION

MTL JOIST

MTL FURRING

PRECAST CONC.
SLAB

ABBREVIATIONS

& Z @ C #	AND Angle At Centerline Diameter or Round Pound or Number	Cntr. Col. Conc. C.T. CMU Ctr.	Counter Column Concrete Ceramic Tile Concrete Masonry Unit Center	Exp. Ext.	Expansion Exterior	Hr. Hgt.	Hour Height	N. N.I.C. No. or Nom. N.T.S.	North Not In Contract Number Nominal Not To Scale	Reinf. Req'd Resil. Rm. R.O.	Reinforced Required Resilient Room Rough Opening	Temp. T.&G. Thk. T.O.M. T.O.S. T.P. T.P.D. T.V. T.W. Typ. Trd.	Tempered Tongue & Groove Thick Top Of Masonry Top Of Steel Top Of Pavement Toilet Paper Dispenser Television Tackwall Typical Tread				
Acous. Adj. A.F.F. Aggr. Al. Approx. Arch. Asb. Asph. A.V.	Acoustical Adjustable Above Finished Floor Aggregate Aluminum Approximate Architect or Architectural Asbestos Asphalt Audio Visual	Dbl. Det. D.F. Dia. Dim. Dn. Dr. Ds. Dwg. Dwr.	Double Detail Drinking Fountain Diameter Dimension Down Door Downspout Drawing Drawer	F.A. F.D. Fdn. F.E. F.E.C. Fin. Fl. Flash. Fl. Flow line Foot or feet Ftg. Furr. Fut.	Fire Alarm Floor Drain Foundation Fire Extinguisher F.E. Cabinet Finish Floor Flashing Flow line Foot or feet Footing Furring Future	Jan Jt. Kit. Lab. Lam. Lav. Locker Lt.	Janitor Joint Kitchen Laboratory Laminated Lavatory Locker Light	Q/ Obs. O.C. O.D. Off. Opng. Opp.	On or Over Obscure On Center Outside Office Opening Opposite	S. S.B. S.C. Sched. S.D. Sect. Sht. Sheet Sim. S.N.D. S.N.R. Spec. Std. Std. Stor. Stri. Susp. S.V. Sym.	South Splash Block Solid Core Schedule Soap Dispenser Section Shower Sheet Similar Sanitary Napkin Disp. Sanitary Napkin Recep. Specification Square Stainless Steel Standard Storage Structural Suspended Sheet Vinyl Symmetrical	U.O.N. Ur. V.C.T. V.T. V.B. Vert. Vest. Vyl.	Unless Otherwise Noted Urinal Vinyl Composition Tile Vinyl Tile Vapor Barrier Vertical Vestibule Vinyl				
Bd. Bitum. Bldg. Blk. Blk g. Bm. Bot. BO Brg. Brk.	Board Bituminous Building Block Blocking Beam Bottom BY OWNER Bearing Brick	(E) Exist. Exp.	Existing East of Existing Each Expansion Joint Elevation Electrical Elevator Equip. Each Way Elec. Water Cooler Existing Exposed	Ga. Galv. G.B. Gr. Gnd. Gr. Gyp.	Gauge Galvanized Grab Bar Glass Ground Grade Gypsum	H.B. H.C. Hdw. Hdw. H.M. Horiz.	Hose Bibb Hollow Core Hardware Hollow Metal Horizontal	M. Mas. Max. M.C. Mech. Mem. Met. Mfr. Mh. Min. Mir. Misc. M.O. Mtd.	Masonry Maximum Medicine Cabinet Mechanical Membrane Metal Manufacturer Manhole Minimum Mirror Miscellaneous Masonry Opening Mounted	P. Pl. P.Lam. Plas. Plywd. P. Pt. P.T.D. Ptn. P.T.R.	Paint Plate Plastic Laminate Plaster Plywood Fair Point Paper Towel Dispenser Partition Paper Towel Receptacle Quarry Tile	Q. Rad. R.D. Ref.	Quarry Radius Roof Drain Reference	Tex. T.B. T.Bd.	Texture Towel Bar Tack Board	W. w/o W. W.C. Wd. Wp. Wdw. Wsc. Wt.	West Without Wall Covering Wood Waterproof Window Wainscot Weight

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BUILDING PERMIT SET (8-5-2025)



REVISION:
8-14-2025

DATE: 8-5-2025
JOB: 25-3499

SHEET NO.:

A1.1

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ARCHITECTURAL SPECIFICATIONS

GENERAL WORK REQUIREMENTS

1. ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED, CONDITIONED AS DIRECTED BY THE MANUFACTURERS.
2. IT IS CLEARLY UNDERSTOOD THAT THE OWNER RESERVES THE RIGHT TO INSTALL VARIOUS EQUIPMENT IN THE BUILDING PRIOR TO COMPLETION AND ACCEPTANCE, AND IT SHALL BE THE DUTY OF THE CONTRACTOR TO COOPERATE WITH THE OWNER'S EMPLOYEES/REPRESENTATIVES RENDERING SUCH ASSISTANCE AND SO ARRANGING HIS WORK THAT THE ENTIRE PROJECT WILL BE DELIVERED COMPLETE IN THE BEST POSSIBLE CONDITION WHEN REQUIRED.
3. THE GENERAL CONTRACTOR SHALL SECURE AND PAY FOR THE BUILDING PERMIT, UNLESS OTHER ARRANGEMENTS ARE WORKED OUT WITH THE OWNER.
4. EACH CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR HIS MATERIALS STORED ON THE PREMISES.
5. GENERAL CONTRACTOR SHALL TAKE CHARGE AND ASSUME GENERAL RESPONSIBILITY FOR PROPER PROTECTION FOR PROJECT DURING CONSTRUCTION.
6. THE OWNER RESERVES THE RIGHT TO TAKE POSSESSION OF ANY USE ANY COMPLETED OR PARTIALLY COMPLETED PORTIONS OF THE BUILDING AND FURTHER RESERVES THE RIGHT TO INSTALL EQUIPMENT AND FACILITIES WHICH ARE NOT A PART OF THE CONTRACT, NOTWITHSTANDING THE FACT THAT THE TIME OF COMPLETION OF ENTIRE WORK OR PORTIONS THEREOF MAY NOT HAVE EXPIRED; BUT SUCH TAKING POSSESSION OR INSTALLATION OF FACILITIES SHALL NOT BE DEEMED AND ACCEPTANCE OF ANY WORK NOT COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE OWNER, IN TAKING POSSESSION OF COMPLETED PORTIONS OR INSTALLING SUCH EQUIPMENT AND FACILITIES, SHALL DO SO AT HIS/HER OWNER EXPENSE ANY DAMAGE THAT MAY OCCUR EITHER DIRECTLY OR INDIRECTLY BY REASON OF SUCH ACTION.
7. EACH CONTRACTOR SHALL SCHEDULE HIS/HER WORK SO AS TO CAUSE A MINIMUM OF INTERFERENCE WITH BUSINESS OPERATIONS DURING ALL THE CONSTRUCTION WORK.
8. CONTRACTOR IS TO NOTIFY THE OWNER 7 DAYS IN ADVANCE BEFORE ANY UTILITY IS TO BE INTERRUPTED.
9. BEFORE BEING ELIGIBLE FOR FINAL PAYMENT, THE CONTRACTOR SHALL DELIVER TO OWNER, THROUGH ARCHITECT, ALL SPECIAL WARRANTIES SPECIFIED FOR MATERIALS, EQUIPMENT AND INSTALLATION. CONTRACTOR SHALL ALSO DELIVER TO THE OWNER, (3) COPIES OF THE MANUFACTURER'S OPERATION INSTRUCTIONS, 1 COMPLETE SET OF SHOP DRAWINGS ON EACH PIECE OF EQUIPMENT, AND OTHER FRAMED INSTRUCTIONS AS NEEDED/REQUESTED BY THE OWNER.
10. BEFORE BEING ELIGIBLE FOR FINAL PAYMENT, THE ELECTRICAL AND MECHANICAL CONTRACTORS SHALL PREPARE AND DELIVER TO THE OWNER, ONE (1) SET OF AS-BUILT DRAWINGS. THESE DRAWINGS CONSIST OF MARKED-UP PRINTS, IF THE CONTRACTOR SO CHOOSES, BUT SHALL SHOW THE CORRECT LOCATION OF EVERY ITEM OF EQUIPMENT, PIPING, CONDUIT, PANEL BOARDS, DUCTWORK, SWITCHES, VALVES, ETC.

SUPPLEMENTARY CONDITIONS

1. CONTRACTOR WARRANTS TO OWNER THAT ON RECEIPT OF NOTICE FROM EITHER OF THEM, WITHIN THE PERIOD OF ONE (1) YEAR FOLLOWING DATE OF SUBSTANTIAL COMPLETION, THAT DEFECTS IN MATERIALS AND/OR WORKMANSHIP HAVE APPEARED IN THE WORK, CONTRACTOR WILL PROMPTLY CORRECT SUCH DEFECTS TO THE STATE OF CONDITION ORIGINALLY REQUIRED BY THE CONTRACT DOCUMENTS AT THE CONTRACTOR'S EXPENSE.
2. ANY AND ALL SHOP DRAWINGS SHALL BE SUBMITTED TO OWNER FOR REVIEW AND APPROVAL.
3. ANY AND ALL SAMPLES SHALL BE SUBMITTED TO THE OWNER FOR REVIEW AND APPROVAL.
4. GENERAL CONTRACTOR SHALL ASSUME GENERAL COORDINATION AND DIRECTION OF THE PROJECT. GENERAL CONTRACTOR SHALL COOPERATE WITH MECHANICAL AND ELECTRICAL CONTRACTORS AND OTHER SUBCONTRACTORS AND/OR SUPPLIERS ON THE WORK AND INSTALL THEIR WORK IN SEQUENCE TO FACILITATE AND NOT DELAY THE COMPLETION OF THE PROJECT.
5. APPLICATIONS FOR PROGRESS PAYMENTS AND CERTIFICATION FOR PAYMENT SHALL BE COORDINATED WITH THE OWNER.
6. CONTRACTOR SHALL COORDINATE BUILDER'S RISK REQUIREMENTS AND CONTRACTOR'S LIABILITY INSURANCE WITH OWNER.
7. THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH TESTING AND INSPECTIONS WHERE REQUIRED BY THE CONSTRUCTION DOCUMENTS, THE CITY OF SALINA AND BY STANDARD CONSTRUCTION PRACTICES.

BATT INSULATION

1. SECTION INCLUDES - UNFACED SOUND BATT INSULATION
2. REFERENCES INCLUDED: ASTM C665 - MINERAL FIBER BLANKET THERMAL INSULATION FOR LIGHT FRAME CONSTRUCTION AND MANUFACTURED HOUSING AND ASTM E84 - TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS
3. PRODUCTS - OWENS CORNING FIBERGLASS PRODUCT - THERMAL BATT INSULATION. SUBSTITUTIONS: AS APPROVED, EQUAL SUBMITTED FOR APPROVAL BASED ON UL LISTING AND TESTED MATERIALS/PRODUCT BRANDS.
4. MATERIALS - BATT INSULATION, FIRE WALLS: PREFORMED GLASS FIBER BATTS, LOOSE LAID AND TAPED, 3-1/2" THICKNESS, UNFACED
5. TAPE - SELF-ADHERING TAPE AS RECOMMENDED BY THE MANUFACTURER, MESH REINFORCED, 2 INCHES WIDE.
6. EXAMINATION - VERIFY SITE CONDITIONS, VERIFY THAT SUBSTRATE, ADJACENT MATERIALS, AND INSULATION ARE DRY AND READY TO BE INSTALLED.
7. INSTALLATION
 - 7.1. INSTALL INSULATION IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - 7.2. TRIM INSULATION NEATLY TO FIT SPACES. INSULATE MISCELLANEOUS GAPS AND VOIDS.
 - 7.3. IF APPLICABLE: FIT INSULATION TIGHT IN SPACES TO EXTERIOR SIDE OF MECHANICAL AND ELECTRICAL SERVICES WITHIN THE PLANE OF INSULATION.

GYPSON BOARD SYSTEMS

1. SECTION INCLUDES - GYPSON BOARD, TAPED AND SANDED JOINT TREATMENT.
2. REFERENCES INCLUDED: ASTM C36 - GYPSON WALL BOARD; ASTM C475 - JOINT TREATMENT MATERIALS FOR GYPSON WALLBOARD CONSTRUCTION; ASTM C630 - WATER RESISTANT GYPSON BACKING BOARD.
3. MANUFACTURERS - UNITED STATES GYPSON OR OTHER MANUFACTURERS OFFERING EQUIVALENT PRODUCTS. SUBSTITUTIONS AS APPROVED
4. GYPSON BOARD MATERIALS
 - 4.1. FIRE RATED GYPSON BOARD: ASTM C56; FIRE-RESISTIVE TYPE, UL RATED; 5/8 INCH THICK, MAXIMUM PERMISSIBLE LENGTH; ENDS SQUARE CUT, TAPERED EDGES
5. ACCESSORIES
 - 5.1. CORNER BEADS: METAL
 - 5.2. EDGE TRIM: GA 201 AND GA 216; TYPE L BEAD
 - 5.3. JOINT MATERIALS: ASTM C475; REINFORCING TAPE, JOINT COMPOUND, ADHESIVE AND WATER
 - 5.4. FASTENERS: ASTM C1002, TYPE S12, W AND GA-216
6. EXAMINATION - VERIFY THAT SITE CONDITIONS ARE READY TO RECEIVE WORK AND OPENING DIMENSIONS ARE AS INDICATED ON DRAWINGS.
7. INSTALLATION
 - 7.1. INSTALL GYPSON BOARD IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS
 - 7.2. ERECT SINGLE LAYER STANDARD GYPSON BOARD VERTICAL, WITH ENDS AND EDGES OCCURRING OVER FIRM BEARING
 - 7.3. USE SCREWS WHEN FASTENING GYPSON BOARD TO METAL FRAMING.
 - 7.4. PLACE SECOND LAYER PERPENDICULAR TO FIRST LAYER. OFFSET JOINTS OF SECOND LAYER FROM JOINTS OF FIRST LAYER OR PER UL LISTING REQUIREMENTS.
 - 7.5. PLACE CORNER BEADS AT EXTERNAL CORNERS AS INDICATED. USE LONGEST PRACTICAL LENGTH. PLACE EDGE TRIM WHERE GYPSON BOARD ABUTS DISSIMILAR MATERIALS.
 - 7.6. CAULK AT EDGES PER UL LISTING'S REQUIREMENTS.
8. JOINT TREATMENT
 - 8.1. TAPE, FILL AND SAND EXPOSED JOINTS, EDGES AND CORNERS TO PRODUCE SMOOTH SURFACE READY TO RECEIVE FINISHES (COORDINATE DESIRED FINISH WITH OWNER)
 - 8.2. FEATHER COATS ONTO ADJOINING SURFACES SO THAT CAMBER IS MAXIMUM 1/32 INCH
9. TOLERANCES - MAXIMUM VARIATION OF FINISHED GYPSON BOARD SURFACE FROM TRUE FLATNESS: 1/8 INCH IN 10 FEET IN ANY DIRECTION.

CAST IN PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Coordination with Structural drawings, notes, direction, details, etc.
- B. Cast-in-place sump pump pit walls & floor
- C. Control, expansion, and contraction joint devices associated with concrete work, including joint sealants.
- D. Equipment pads, etc. as required by elevator manufacturer.

1.02 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301.
- B. Acquire cement and aggregate from same source for all work.
- C. Conform to ACI 305R when concreting during hot weather.
- D. Conform to ACI 306R when concreting during cold weather.

1.03 COORDINATION

- A. Coordinate the placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I - Normal or Type III - High Early Strength Type V - Sulfate Resistant as required Portland Type
- B. Fine and Coarse Aggregates: ASTM C33.
- C. Water: Clean and not detrimental to concrete.

2.02 ADMIXTURES

- A. Air Entrainment: ASTM C260.
- B. Chemical: ASTM C494 Type A - Water Reducing, Type B - Retarding, Type C - Accelerating, Type D - Water Reducing and Retarding, Type E - Water Reducing and Accelerating.

2.03 ACCESSORIES

- A. Bonding Agent: Polymer resin emulsion, polyvinyl acetate, Latex emulsion, two component modified epoxy resin, non-solvent two component polysulfide epoxy, mineral filled polysulfide polymer epoxy, mineral filled polysulfide polymer epoxy resin, or Polyamid cured epoxy as approved.
- B. Vapor Barrier: Grace, Florprufe 120, .021 in (0.5mm) thick, installed to fully adhere to the underside of the slab, after carton forms deform, follow manufacturers recommendations & specs.
- C. Non-Shrink Grout: Premixed compound consisting of nonmetallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 48 hours and 7,000 psi in 28 days.

2.04 JOINT DEVICES AND FILLER MATERIALS

- A. Joint Filler:
 - 1.1. Joint Filler Type A: ASTM D1751; Asphalt impregnated fiberboard or felt, 1/4 inch thick.
 - 1.2. Joint Filler Type B: ASTM D1752; Closed cell polyvinyl chloride foam, resiliency recovery of 95 percent if not compressed more than 50 percent of original thickness.

- B. Expansion and Contraction Joint Devices: ASTM B221 alloy, extruded aluminum; resilient elastomeric, vinyl, or neoprene, filler strip with a Shore A hardness of 35 to permit plus or minus 25 percent joint movement with full recovery; extruded aluminum or vinyl cover plate, of longest manufactured length at each location, recess mounted; color as selected.
- C. Sealant: Rubber or synthetic rubber compound.

2.05 CONCRETE MIX

- A. Mix concrete in accordance with ACI 304. Deliver concrete in accordance with ASTM C94.
- B. Select proportions for normal weight concrete in accordance with ACI 301.
- C. Provide concrete with compressive strength of 4,000 psi at 28 days & 5,000 psi at 28 days. Structural Drawings and notes to take precedence.
- D. Use calcium chloride only when approved by Architect/Engineer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify requirements for concrete cover over reinforcement.
- B. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

3.02 PREPARATION

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
- B. In locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and pack cold with hot-shrink grout.

3.03 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301.
- B. Ensure reinforcement, inserts, embedded parts, formed expansion, and contraction joints are not disturbed during concrete placement.
- C. Install vapor barrier on void box, under interior slabs on grade. Lap joints minimum 6 inches and seal with sealant applied between overlapping edges and ends or lapping edges and ends. Barrier to be installed to fully adhere to the underside of the slab, after carton forms deform, follow manufacturers recommendations & specs.
- D. Repair vapor barrier damaged prior to placement of concrete reinforcing. Repair as recommended by manufacturer.
- E. Separate slabs on grade from vertical surfaces with 1/2 inch thick joint filler.
- F. Place joint filler in floor slab as indicated by the structural drawings and notes. Set top to required elevations. Secure to resist movement by wet concrete.
- G. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface. Conform to Section 07900 for finish joint sealer requirements.
- H. Install joint devices in accordance with manufacturer's instructions.
- I. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- J. Install joint device anchors. Maintain correct position to allow joint cover to be flush with floor and wall finish.
- K. Install joint covers in longest practical length, when adjacent construction activity is complete.
- L. Apply sealants in joint devices in accordance with Section 07800.
- M. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- N. Place concrete continuously between predetermined expansion, control, and construction joints.
- O. Do not interrupt successive placement; do not permit cold joints to occur where possible.
- P. Place floor slabs in checkerboard or saw cut pattern indicated.
- Q. Saw cut joints within 24 hours after placing. Use 3/16 inch thick blade, cut into 1/4 depth of slab thickness.
- R. Scream floors and slabs on grade level, maintaining surface flatness of maximum 1/4 inch in 10 ft.

3.04 CONCRETE FINISHING

- A. Provide formed concrete surfaces to be left exposed concrete walls columns beams joists with smooth rubbed finish.
- B. Finish concrete floor surfaces in accordance with ACI 301.
- C. Wood floor surfaces which will receive quarry tile, ceramic tile, or terrazzo with full bed setting system.
- D. Steel trowel surfaces which will receive carpeting, resilient flooring, seamless flooring, thin set quarry tile, or thin set ceramic tile.
- E. Steel trowel surfaces which are scheduled to be exposed.
- F. In areas with floor drains, maintain floor elevation of walls; pitch surfaces uniformly to drains at 1/4 inch per foot or as indicated on drawings.

3.05 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Cure floor surfaces in accordance with ACI 308.
- D. Ponding: Maintain 100 percent coverage of water over floor slab areas continuously for 4 days.
- E. Spraying: Spray water over floor slab areas and maintain wet for 7 days.

3.06 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed in accordance with ACI 301 and under provisions of the General Requirements. (Per owner's direction and request).

3.07 PATCHING

- A. Excessive honeycomb or embedded debris in concrete is not acceptable.
- B. Patch imperfections as directed or in accordance with ACI 301.

3.08 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by the owner.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of owner for each individual area.

CONCRETE REINFORCEMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Reinforcing steel bars, and accessories for cast-in-place concrete.

1.02 QUALITY ASSURANCE

- A. Perform Work in accordance with CRSI - Manual of Standard Practice and ACI 301.

1.03 QUALIFICATIONS

- A. Design reinforcement under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State of Kansas.

1.04 COORDINATION

- A. Coordinate with placement of formwork, formed openings and other Work.

PART 2 PRODUCTS

2.01 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615, 40, 60, or 75 ksi yield grade as indicated on the drawings; deformed billet steel bars, unfinished.
- B. Reinforcing Steel Plain Bar and Rod Mats: ASTM A704, ASTM A615, Grade 40 or 60 as indicated on the drawings; steel bars or rods, unfinished.
- C. Stirrup Steel: ANSI/ASTM A82, unfinished.

2.02 ACCESSORY MATERIALS

- A. Tie Wire: Minimum 16 gage annealed type.
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions including load bearing pad on bottom to prevent vapor barrier puncture.
- C. Special Chairs, Bolsters, Bar Supports, Spacers Adjacent to Weather Exposed Concrete Surfaces: Plastic coated steel type; size and shape as required.

2.03 FABRICATION

- A. Fabricate concrete reinforcing in accordance with CRSI Manual of Practice.
- B. Weld reinforcement in accordance with ANSI/AWS D1.4.
- C. Locate reinforcing splices not indicated on drawings, at point of minimum stress.

PART 3 EXECUTION

3.01 PLACEMENT

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position.
- B. Do not displace or damage vapor barrier.
- C. Accommodate placement of formed openings.
- D. Maintain concrete cover around reinforcing as indicated on the drawings or if not indicated as follows:

Item	Coverage
Walls (exposed to weather or backfill)	2 inch
Footings and Concrete Formed Against Earth	3 inch
Slabs on Fill	3/4 inch

HANDRAILS/RAILINGS

PART 1 GENERAL

- 1.01 SECTION INCLUDES
 - A. Steel pipe, tube handrails, balusters, and fittings.

1.02 DESIGN REQUIREMENTS

- A. Railing assembly, wall rails, and attachments to resist lateral force of 75 lbs. at any point without damage or permanent set.

1.03 SUBMITTALS

- A. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size, and type of fasteners, and accessories.

1.04 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings.

PART 2 PRODUCTS

2.01 STEEL RAILING SYSTEM

- A. Rails and Posts: As detailed and indicated on the drawings.
- B. Fittings: Elbows, T-shapes, wall brackets, escutcheons; machined steel.
- C. Mounting: Adjustable brackets and flanges, with steel inserts for casting in concrete and/or steel brackets for embedding in masonry. Prepare backing plate for mounting in wall construction.
- D. Exposed Fasteners: Flush countersunk screws or bolts; consistent with design of railing.
- E. Splice Connectors: Steel concealed spigots, welding collars.

2.02 FABRICATION

- A. Fit and shop assemble components in largest practical sizes, for delivery to site.
- B. Fabricate components with joints tightly fitted and secured.
- C. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- D. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.
- E. Continuously seal joined pieces by continuous welds.
- F. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- G. Accurately form components to suit stairs and landings, to each other and to building structure.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Beginning of installation means erector accepts existing conditions.

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply items required to be cast into concrete and/or embedded in masonry, placed in partitions with setting templates, to appropriate Sections.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install components plumb and level, accurately fitted, free from distortion or defects.
- C. Provide anchors, plates angles required for connecting railings to structure. Anchor railing to structure.
- D. Field weld anchors as indicated on Drawings. Touch-up welds with primer. Grind welds smooth.
- E. Conceal bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

3.04 ERECTION TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.

COLD-FORMED METAL FRAMING

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes the following:
1. interior non-load-bearing wall framing
 2. Ceiling joist framing.
- B. Structural Performance: Provide cold-formed metal framing capable of withstanding design loads within limits and under conditions indicated.
- C. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure as follows:
- a. Upward and downward movement of 1 inch.
- C. Cold-Formed Steel Framing, General: Design according to AISI's "Standard for Cold-Formed Steel Framing – General Provisions."
4. Headers: Design according to AISI's "Standard for Cold-Formed Steel Framing – Header Design."
5. Design exterior non-load-bearing wall framing to accommodate horizontal deflection without regard for contribution of sheathing materials.

1.3 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code—Steel," and AWS D1.3, "Structural Welding Code—Sheet Steel."
- B. Fire-Test-Response Characteristics: Where indicated, provide cold-formed metal framing identical to that of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.
- C. AISI Specifications and Standards: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" and its "Standard for Cold-Formed Steel Framing – General Provisions."

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- C. Available Manufacturers: Subject to compliance with requirements, manufacturers offering cold-formed metal framing that may be incorporated into the Work include, but are not limited to, the following:
1. Allied Studco, AllSteel Products, Inc., California Expanded Metal Products Company, Clark Steel Framing, Consolidated Fabricators Corp.; Building Products Division, Orco Metals Manufacturing, LLC, Custom Stud, Inc., Dale/Incor., Design Shapes in Steel, Dietrich Metal Framing; a Worthington Industries Company, Formetal Co. Inc. (The), Innovative Steel Systems, MarinoWare; a division of Ware Industries, Quall Run Building Materials, Inc., SCAFCO Corporation, Southeastern Stud & Components, Inc., Steel Construction Systems, Steeler, Inc., Super Stud Building Products, Inc., United Metal Products, Inc.

2.2 MATERIALS

- E. Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:
6. Grade: 50 KSI.
 7. Coating: G60.
- F. Steel Sheet for Vertical Deflection Clips: ASTM A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:
28. Grade: 60 (340), Class 1 or 2.
 29. Coating: G60.

2.3 INTERIOR NON-LOAD-BEARING WALL FRAMING

- G. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:
30. Minimum Base-Metal Thickness: 20 gauge, 30 mil
 31. Flange Width: 1-5/8 inches (41 mm).
 32. Sizes: As indicated on drawings
- B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with stiffened flanges, and as follows:
33. Minimum Base-Metal Thickness: Matching steel studs.
 34. Flange Width: 1-1/4 inches (32 mm).
- C. Vertical Deflection Clips: Manufacturer's standard bypass clips, capable of accommodating upward and downward vertical displacement of primary structure through positive mechanical attachment to stud web.
35. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
36. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- a. Dietrich Metal Framing; a Worthington Industries Company.
 - b. MarinoWare, a division of Ware Industries.
 - c. SCAFCO Corporation
 - d. The Steel Network, Inc.
- D. Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track; unpunched, with stiffened flanges, of web depth to contain studs while allowing free vertical movement, with flanges designed to support horizontal and lateral loads and transfer them to the primary structure, and as follows:
37. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
38. Minimum Base-Metal Thickness: 0.0428 inch (1.09 mm).
 39. Flange Width: 2 3/4"

2.4 CEILING JOIST FRAMING

- E. Steel Ceiling Joists: Manufacturer's standard C-shaped steel sections, of web depths indicated, unpunched, with stiffened flanges, and as follows:
40. Minimum Base-Metal Thickness: 0.0329 inch (0.84 mm).
 41. Flange Width: 1-5/8 inches (41 mm).

2.5 FRAMING ACCESSORIES

- F. Fabricate steel-framing accessories from steel sheet, ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of some grade and coating weight used for framing members.
- G. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
1. Supplementary framing: Bracing, bridging, and solid blocking; Web stiffeners; Anchor clips; End clips; Foundation clips; Gusset plates; Stud kickers, knee braces, and girts; Joist hangers and end closures; Hole reinforcing plates; Backer plates.
- 2.6 ANCHORS, CLIPS, AND FASTENERS
- A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123/A 123M.
- I. Anchor Bolts: ASTM F 1554, Grade 36 threaded carbon-steel hex-headed bolts headless, hooked bolts and carbon-steel nuts and flat, hardened-steel washers; zinc coated by mechanically deposition according to ASTM B 695, Class 50.
- J. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
- K. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified independent testing agency.
- L. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping steel drill screws.
42. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.
- F. Welding Electrodes: Comply with AWS standards.

2.7 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: ASTM A 780.
- B. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.
- C. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents, complying with ASTM C 1107, with fluid consistency and 30-minute working time.
- D. Shims: Load bearing, high-density multimonomer plastic, nonleaching.
- E. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch (6.4 mm) thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

2.8 FABRICATION

- A. Fabricate cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
1. Fabricate framing assemblies using jigs or templates.
 2. Cut framing members by sawing or shearing; do not torch cut.
 3. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.
 4. Fasten other materials to cold-formed metal framing by welding, bolting, or screw fastening, according to Shop Drawings.

- A. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.
- B. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet (1:960) and as follows:
1. Spacing: Space individual framing members no more than plus or minus 1/8 inch (3 mm) from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
 2. Squariness: Fabricate each cold-formed metal framing assembly to a maximum out-of-square tolerance of 1/8 inch (3 mm).

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance.
1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- B. Before sprayed fire-resistive materials are applied, attach continuous angles, supplementary framing, or tracks to structural members indicated to receive sprayed fire-resistive materials.
- C. After applying sprayed fire-resistive materials, remove only as much of these materials as needed to complete installation of cold-formed framing without reducing thickness of fire-resistive materials below that are required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.
- D. Install load bearing shims or girt between the underside of wall bottom track or rim track and the top of foundation wall or slab at stud or joist locations to ensure a uniform bearing surface on supporting concrete or masonry construction.
- E. Install sealer gaskets to isolate the underside of wall bottom track or rim track and the top of foundation wall or slab at stud or joist locations.

3.3 INSTALLATION, GENERAL

- F. Cold-formed metal framing may be shop or field fabricated for installation, or it may be field assembled.
- G. Install cold-formed metal framing according to AISI's "Standard for Cold-Formed Steel Framing – General Provisions" and to manufacturer's written instructions unless more stringent requirements are indicated.
- H. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.
1. Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch (1.6 mm).
- D. Install cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened.
1. Cut framing members by sawing or shearing; do not torch cut.
 2. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install according to Shop Drawings, and complying with requirements for spacing, edge distances, and screw penetration.
- E. Install framing members in one-piece lengths unless splice connections are indicated for track or joist members.
- F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- G. Do not bridge building expansion and control joints with cold-formed metal framing. Independently frame both sides of joints.
- H. Install insulation, specified in Division 07 Section "Thermal Insulation," in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.
- I. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's standard punched openings.
- J. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet (1:960) and as follows:
1. Space individual framing members no more than plus or minus 1/8 inch (3 mm) from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.4 EXTERIOR NON-LOAD-BEARING WALL INSTALLATION

- K. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.
- L. Fasten both flanges of studs to bottom track, unless otherwise indicated. Space studs as follows:
1. Stud Spacing: 16 inches (406 mm).
- M. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.
- N. Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while in place, and as follows:
1. Install single-leg deflection tracks and anchor to building structure.
 2. Install double deep-leg deflection tracks and anchor outer track to building structure.
 3. Connect vertical deflection clips to infill studs and anchor to building structure.
- O. Install horizontal bridging in wall studs, spaced in rows indicated on Shop Drawings but not more than 18 inches (1220 mm) apart. Fasten at each stud intersection.
5. Top Bridging for Single Deflection Track: Install row of horizontal bridging within [12 inches (305 mm) of single deflection track. Install a combination of flat, taut, steel sheet straps of width and thickness indicated and stud or stud-track solid blocking of width and thickness matching studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
 - a. Install solid blocking at 96-inch centers.
6. Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs.
7. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
8. Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.
- F. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, fasteners, and stud girts, to provide a complete and stable wall-framing system.

3.5 JOIST INSTALLATION

- G. Install perimeter joist track sized to match joists. Align and securely anchor or fasten track to supporting structure at corners, ends, and spacings indicated on Shop Drawings.
- H. Install joists bearing on supporting frame, level, straight, and plumb; adjust to final position, brace, and reinforce. Fasten joists to both flanges of joist track.
9. Install joists over supporting frame with a minimum end bearing of 1-1/2 inches (38 mm).
 10. Reinforce ends and bearing points of joists with web stiffeners, end clips, joist hangers, steel clip angles, or steel-stud sections as indicated on Shop Drawings.
- I. Space joists not more than 2 inches (51 mm) from abutting walls, and as follows:
1. Joist Spacing: As indicated.
- J. Frame openings with built-up joist headers consisting of joist and joist track, nesting joists, or another combination of connected joists if indicated.
- K. Install joist reinforcement at interior supports with single, short length of joist section located directly over interior support, with lapped joists of equal length to joist reinforcement, or as indicated on Shop Drawings.
- L. Install bridging at intervals indicated on Shop Drawings. Fasten bridging at each joist intersection as follows:
1. Bridging: Joist-track solid blocking of width and thickness indicated, secured to joist webs.
 2. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and joist-track solid blocking of width and thickness indicated. Fasten flat straps to bottom flange of joist and secure solid blocking to joist webs.
- G. Secure joists to load-bearing interior walls to prevent lateral movement of bottom flange.
- H. Install miscellaneous joist framing and connections, including web stiffeners, cleare plates, clip angles, continuous angles, hold-down angles, anchors, and fasteners, to provide a complete and stable joist-framing assembly.

3.6 FIELD QUALITY CONTROL

- I. Testing: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- J. Field and shop welds will be subject to testing and inspecting.
- K. Testing agency will report test results promptly and in writing to Contractor and Architect.
- L. Remove and replace work where test results indicate that it does not comply with specified requirements.
- M. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.7 REPAIRS AND PROTECTION

- N. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed metal framing is without damage or deterioration at time of Substantial Completion.

METAL FABRICATIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Rough Hardware, Loose Bearing and Leveling Plates, Loose Steel Lintels, Ladders: Elevator Pit Ladder, Support Angles for Elevator Door Sills, Elevator Sump Pit Cover, Miscellaneous Metal Trim, Steel Framing and Supports for Applications where framing and supports are not specified in other Sections.

1.02 QUALITY ASSURANCE

- A. Fabricator Qualifications: Firm experienced in successfully producing metal fabrications similar to that indicated for this Project, with sufficient production capacity to produce required units without causing delay in the Work.
- B. Installer Qualifications: Arrange for installation of metal fabrications specified in this Section by same firm that fabricated them.
- C. Quality welding processes and welding operators in accordance with the following: AWS D1.1 "Structural Welding Code – Steel", D1.3 "Structural Welding Code – Sheet Steel", D1.2 "Structural Welding Code – Aluminum"
- D. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.
- 1.03 PROJECT/SITE CONDITIONS
- A. Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit, by accurate field measurements before fabrication; show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of Work.

1.04 COORDINATION

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

Part 2 PRODUCTS

10.2 FERROUS METALS

- A. Metal Surfaces, General: For metal fabrications exposed to view upon completion of the Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials whose exposed surfaces exhibit pitting, seam marks, roller marks, rolled trade names, roughness, and, for steel sheet, variations in flatness exceeding those permitted by reference standards for stretcher-leveled sheet.
- B. Steel Plates, Shapes, and Bars: ASTM A 36
- C. Steel Pipe: ASTM A53
- a. Black finish, unless otherwise indicated.
 2. Galvanized finish for exterior installations, unless shown to receive special coatings.
1. Type E, OR S, Grade B, Fy = 35 KSI, unless otherwise indicated, or another weight, type, and grade required by structural loads.
- D. Gray Iron Castings: ASTM A 48, Class 30
- E. Malleable Iron Castings: ASTM A 47, Grade 32510
- F. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.
- G. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers, and shims as required, hot-dip galvanized per ASTM A 153.
- H. Welding Rods: Select in accordance with AWS Specifications for the metal alloy to be welded.

2.02 FASTENERS

- A. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade, and class required for each application and complying with applicable standards.
1. Bolts and Nuts: Regular hexagon head bolts, ASTM A-307, Grade A with hex nuts ASTM A 563; and, where indicated, flat washers.
 2. Anchor Bolts: ASTM F 1554, Grade30
 3. Lag Bolts: Square head type, ASME B18.2.1
 4. Machine Screws: Cadmium plated steel, ASME B18.6.3
 5. Wood Screws: Flat head carbon steel, ASME B18.6.1
 6. Plain Washers: Round, carbon steel, ASME B18.2.1
 7. Lock Washers: Helical, spring type, carbon steel, ASME B18.2.1
 8. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below 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. Interior Use – Material: Carbon-steel components zinc-plated to comply with ASTM F 633, Class F/Zn 5.
2. Exterior Use – Material: Alloy Group 1 or 2 stainless-steel bolts complying with ASTM F 593, and nuts complying with ASTM F 594.
3. Toggle Bolts: FS TT-B-585, turnbuckle-wing type, class, and style as needed.

2.03 GROUT AND ANCHORING CEMENT

- A. Nonshrink Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior heavy-duty loading applications of type specified in this Section.
- B. Interior 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. Use for interior applications only.
- C. Erosion-Resistant 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. Provide formulation that is resistant to erosion from water exposure without need for protection by a sealer or waterproof coating and is recommended for exterior use by manufacturer.

2.04 CONCRETE FILL AND REINFORCING MATERIALS

- A. Concrete Materials and Properties: Comply with requirements of Section 03300, and as shown on Drawings, with minimum 28-day compressive strength of 3,000 PSI, unless otherwise indicated.
- B. Non-slip Aggregate Finish: Factory-graded, packaged material containing fused aluminum oxide grits or crushed emery as abrasive aggregate; rustproof and non-glazing; unaffected by freezing, moisture, or cleaning materials.
- C. Reinforcing Bars: ASTM A-615, Grade 60, unless noted otherwise.

2.05 PAINT

- A. Shop Primer for Ferrous Metal: Manufacturer's or fabricator's standard, fast-curing, lead and chromate-free, universal modified alkyl primer selected for good resistance to normal atmospheric corrosion, for compatibility with final paint system indicated, and for capability to provide a sound foundation for field-applied topcoats despite prolonged exposure complying with performance requirements of FS TT-P-664.
- B. Galvanizing Repair Paint: High zinc dust content paint for reglazing welds in galvanized steel, with dry film containing not less than 94 percent zinc dust by weight, and complying with DOD-P-21035 or SSPC-Paint-20.
- C. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC-Paint 12 except containing no asbestos fibers.

2.06 FABRICATION – GENERAL

- A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.
- B. Allow for thermal movement resulting from the following maximum change (range) of exterior metalwork in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss. Temperature Change (Range): 120 degrees F, ambient; 130 degrees F, material surfaces.
- C. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flathead (countersunk) screws or bolts. Locate joints where least conspicuous.
- D. Weld corners and seams continuously to comply with AWS recommendations and the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour.
- E. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.
- F. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation. Cut, reinforce, drill, and tap miscellaneous metal work as indicated to receive finish hardware, screws, and bolts.
- G. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.07 ROUGH HARDWARE

- A. Furnish bolt or otherwise custom fabricated bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Fabricate items to sizes, shapes, and dimensions required. Furnish malleable-iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.

2.08 STEEL LADDERS

- A. General: Fabricate ladders for the locations shown, with dimensions, spacings, and anchorages as indicated. Comply with requirements of ANSI A14.3.
- B. Siderails: Continuous, steel, 1/2" x 2-1/2" flat bars, with eased edges, space 18" apart.
- C. Bar Rungs: 3/4" diameter steel bars, spaced 12" o.c.
- D. Fit rungs in centerline of side rails, plug weld and grind smooth on outer rail faces.
- E. Support each ladder at top and bottom and at intermediate points; space, not more than 5' o.c. with welded or bolted steel brackets.
- F. Provide nonslip surfaces on top of each rung, either by coating the rung with aluminum-oxide granules set in epoxy-resin adhesive, or by using a type of manufacture rung that is filled with aluminum-oxide granules.
- G. Provide ladder safety cages where required by local codes, to comply with ANSI A14.3.

2.09 LOOSE BEARING AND LEVELING PLATES

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction, made flat, free from warps or twists, and of required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required. Galvanize after fabrication.

2.10 LOOSE STEEL LINTELS

- A. Fabricate loose structural steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated. Weld adjoining members together to form a single unit where indicated.
- B. Hot-dipped galvanize loose steel lintels located in exterior walls.
- C. Size loose lintels for equal bearing of one inch per foot of clear span but not less than 8 inches bearing at each side of openings, if not indicated on Drawings.

2.11 MISCELLANEOUS FRAMING AND SUPPORTS

- A. Generally: Provide steel framing and supports for applications indicated or which are not a part of structural steel framework, as required to complete work.
- B. Fabricate units to sizes, shapes, and profiles indicated and required to receive adjacent other construction, retained by framing and supports. Fabricate from structural steel shapes, plates, and steel bars of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware, hangers, and similar items.
1. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed. Spacing of anchors shall not be more than 24" o.c.

2.13 MISCELLANEOUS STEEL TRIM

- A. Provide shapes and sizes indicated for profiles shown. Unless otherwise indicated, fabricate units from structural steel shapes, plates, and steel bars, with continuously welded joints and smooth exposed edges. Use concealed field splices wherever possible. Provide cutouts, fittings, and anchorages as required for coordination of assembly and installation with other work.
1. Galvanize miscellaneous framing and supports in exterior locations and where shown to be painted.

2.14 FINISHES, GENERAL

- A. Comply with NAAMM "Metal Finishes Manual" for "Architectural and Metal Products" for recommendations relative to application and designations of finishes. Finish metal fabrications after assembly.

2.15 STEEL AND IRON FINISHES

- A. Galvanizing: For those items indicated for galvanizing, apply zinc-coating by the hot-dip process in compliance with the following requirements:
1. ASTM A-153 for galvanizing iron and steel hardware.
 2. ASTM A-123 for galvanizing both fabricated and unfabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299 inch thick and heavier.
- 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 metal fabrications: Interiors (SSPC Zone 1A): SSPC-SP3 "Power Tool Cleaning". C. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finish or to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA1 "Paint Application Specification No. 1" for shop painting. Stripe paint all edges, corners, crevices, bolts, welds, and shop edges.

Part 3 EXECUTION

3.01 PREPARATION

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.
- B. Set sleeves in concrete with tops flush with finish surface elevations; protect sleeves from water and concrete entry.

3.02 INSTALLATION

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place structure; include threaded fasteners for concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors as required.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rock; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.
- D. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, methods used in correctly welding work, and the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surface matches those adjacent.

3.03 SETTING BEARING AND LEVELING PLATES

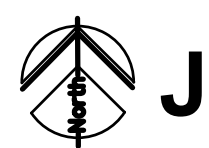
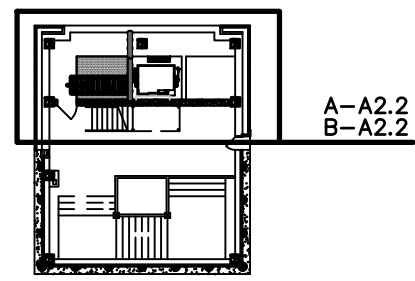
- A. Clean concrete and masonry bearing surfaces of any bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.
- B. Set leveling and bearing plates on wedges, shims, or leveling nuts. After the bearing members have been positioned and plumbed, tighten the anchor bolts, washers or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout.
1. Use nonmetallic nonshrink grout, unless otherwise indicated.
 2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.04 INSTALLING PIPE BOLLARDS

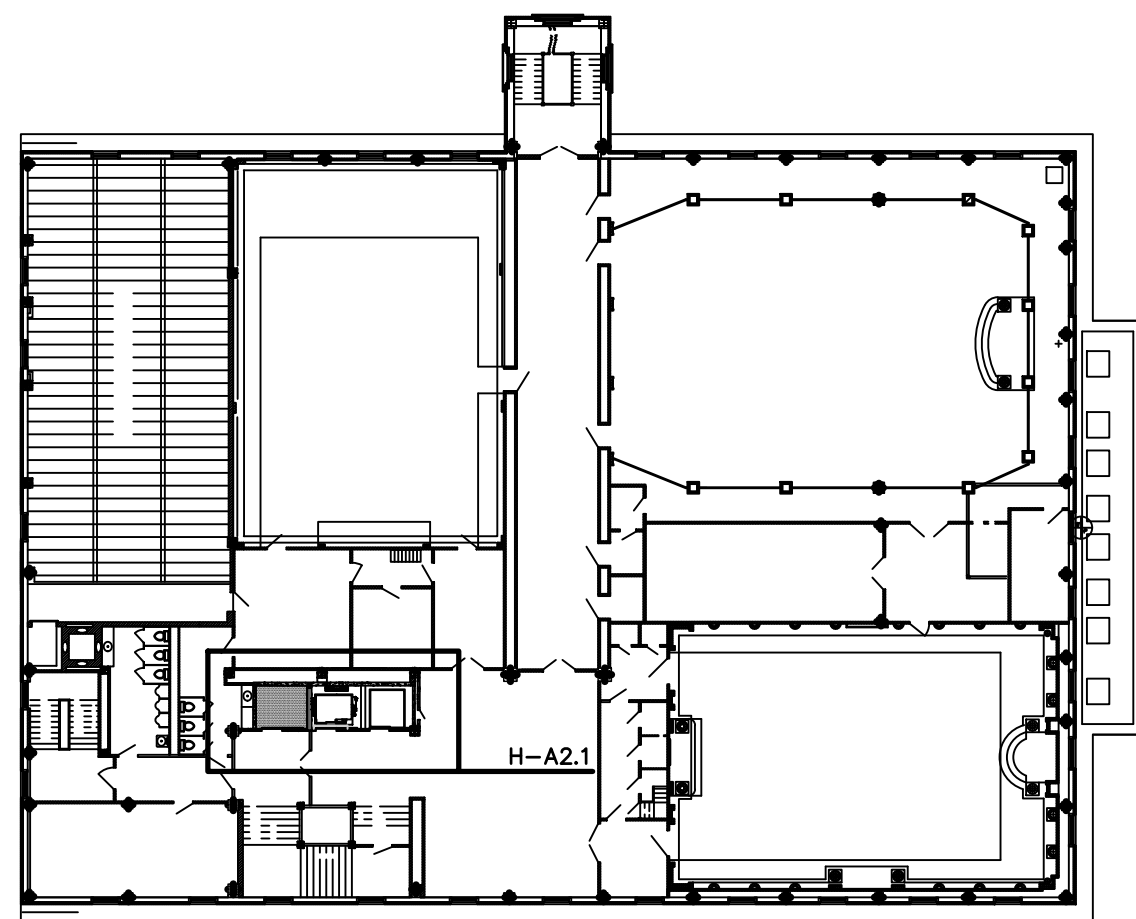
- A. Anchor bollards in concrete with pipe sleeves preest and anchored into concrete. After bollards have been inserted into sleeves, fill annular space between bollard and sleeve solidly with nonshrink, nonmetallic grout, mixed and placed to comply with grout manufacturer's written instructions. Slope group up approximately 1/8" toward bollard.
- B. Paint bollards yellow in front of dumpsters.

3.05 TOUCH-UP PAINTING:

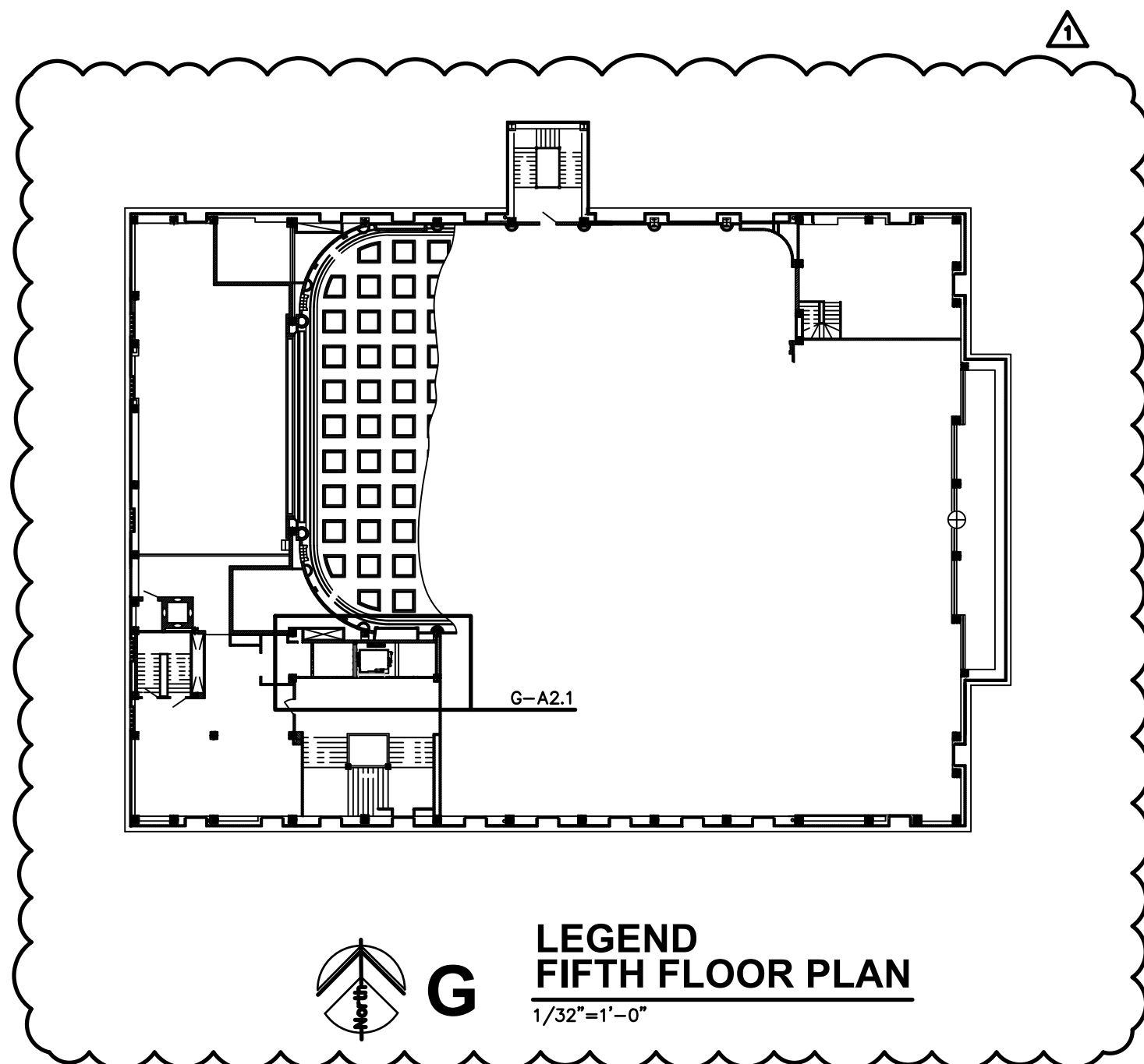
- Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA1 requirements for touch-up of field painted surfaces.
- A. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- B. For galvanized surfaces clean welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A 780.



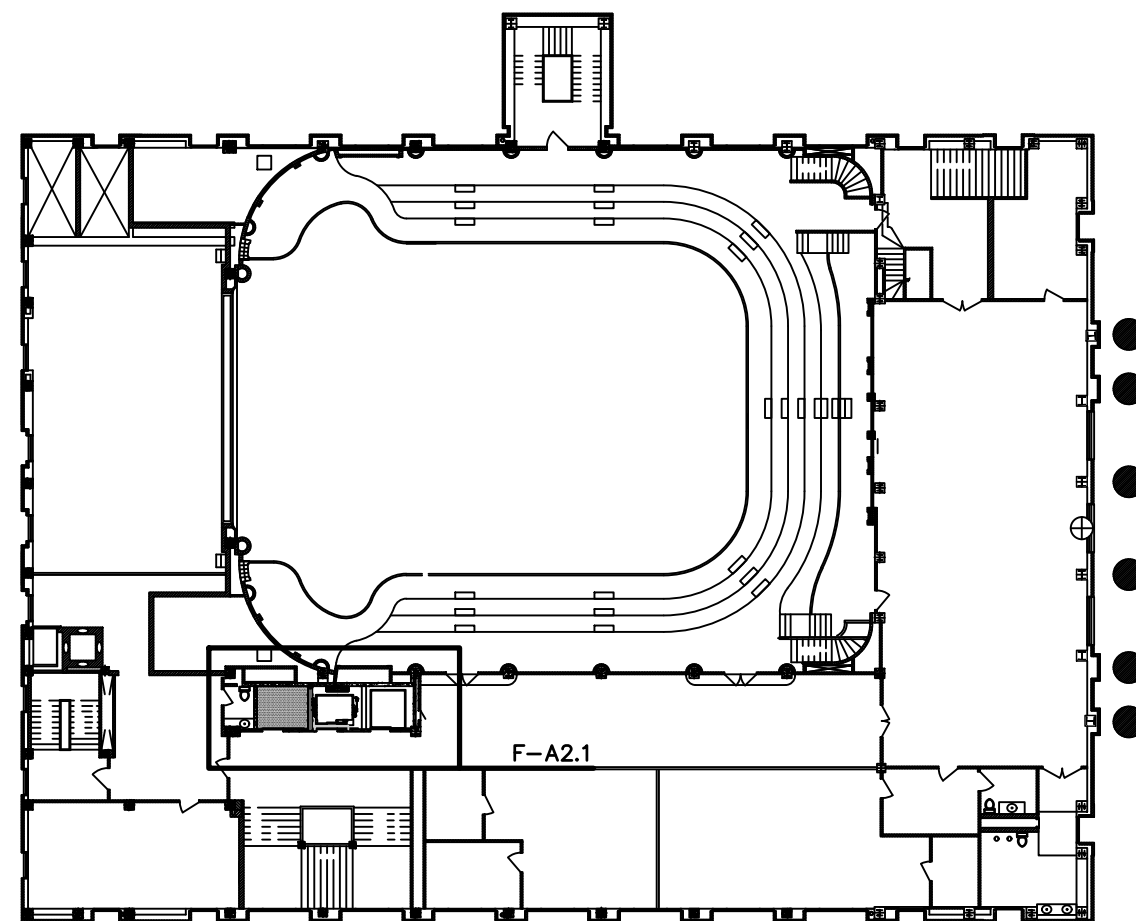
**LEGEND
PENTHOUSE FLOOR PLAN**
1/32"=1'-0"



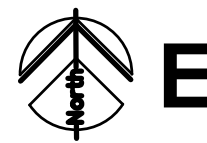
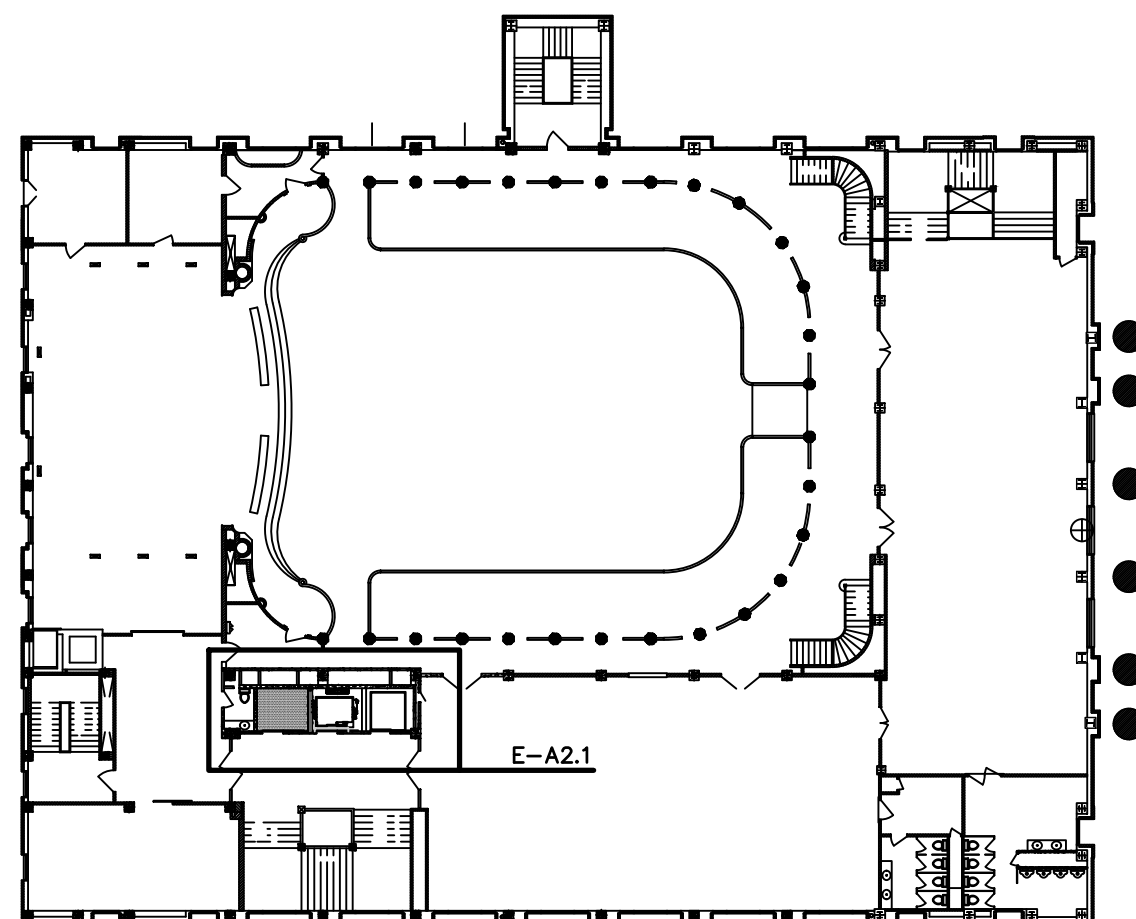
**LEGEND
SIXTH FLOOR PLAN**
1/32"=1'-0"



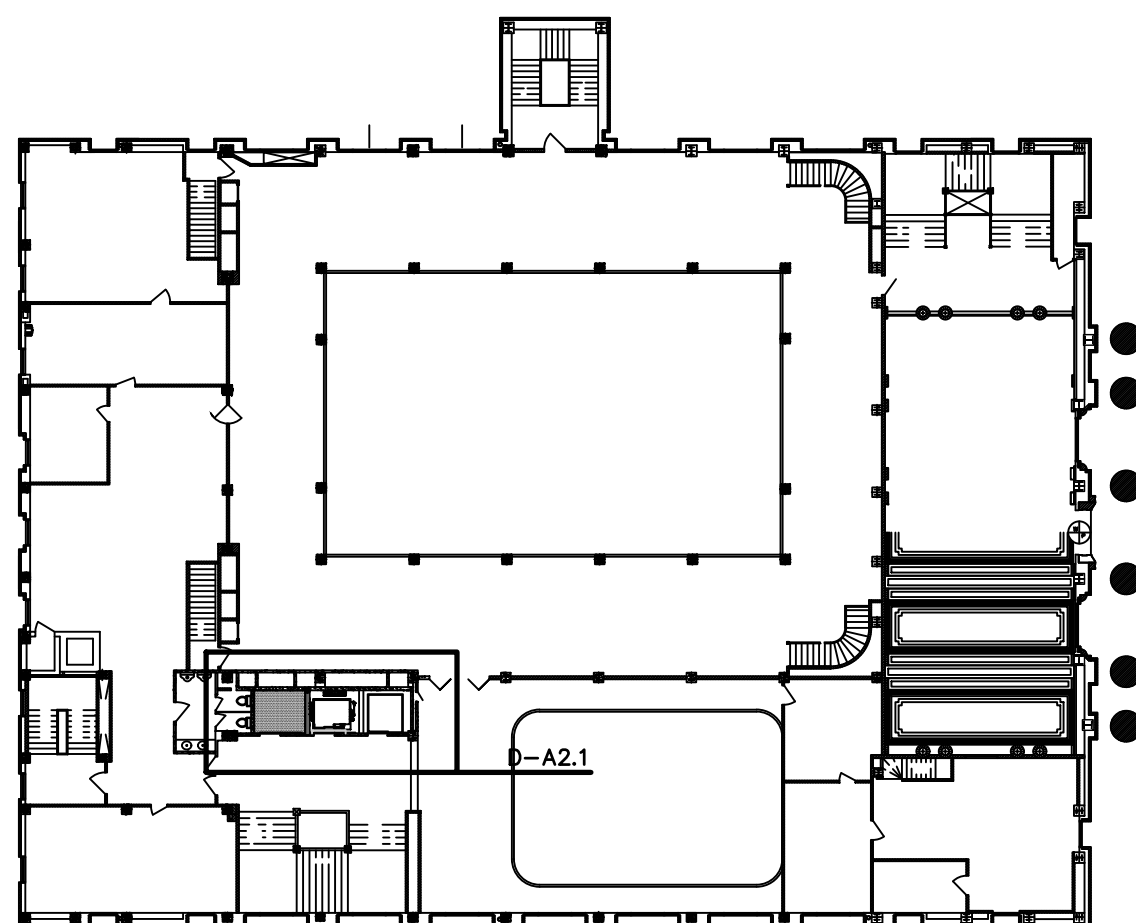
**LEGEND
FIFTH FLOOR PLAN**
1/32"=1'-0"



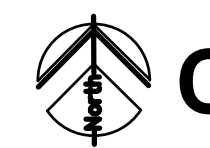
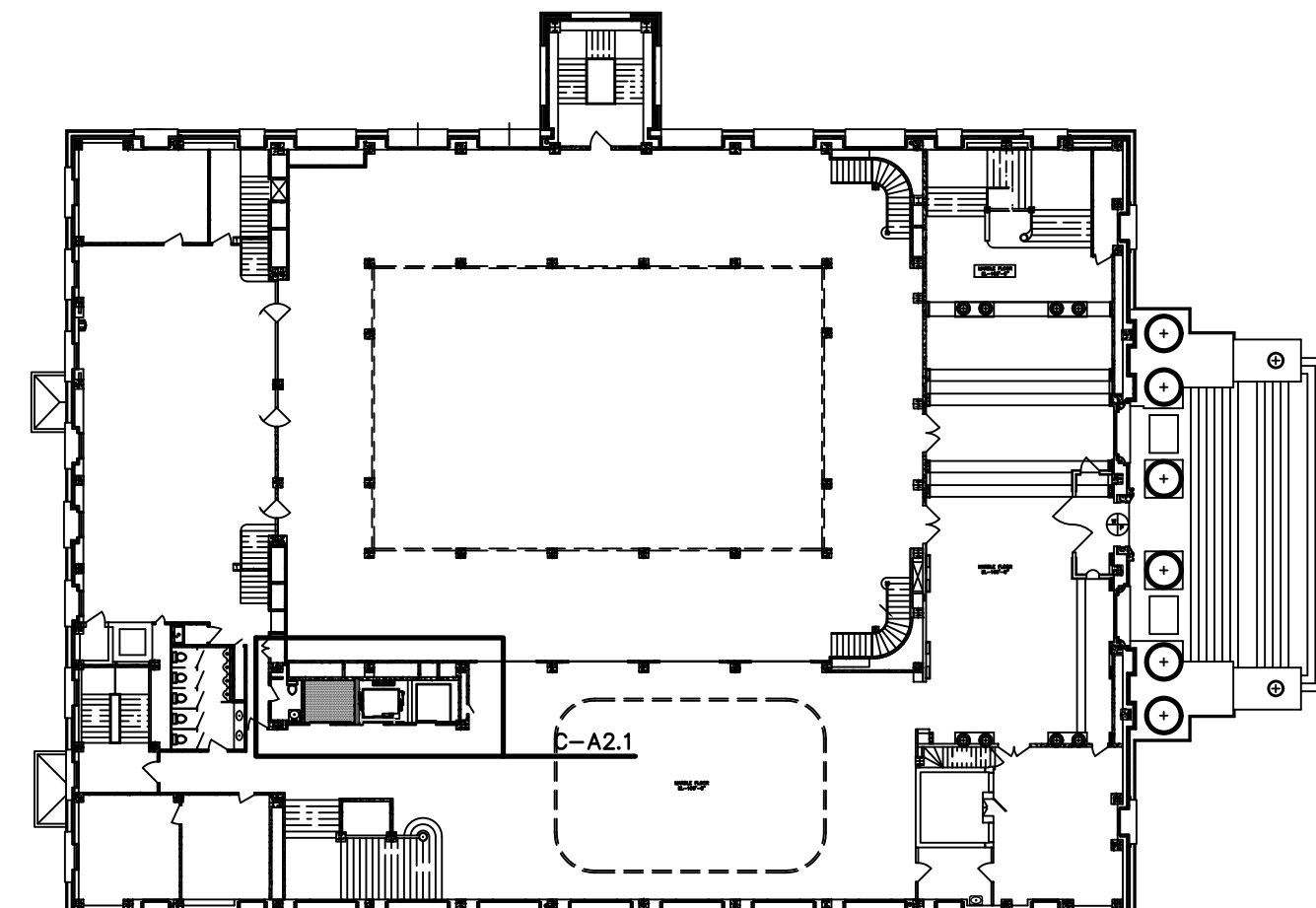
**LEGEND
FOURTH FLOOR PLAN**
1/32"=1'-0"



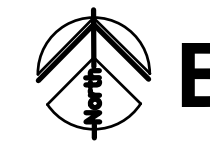
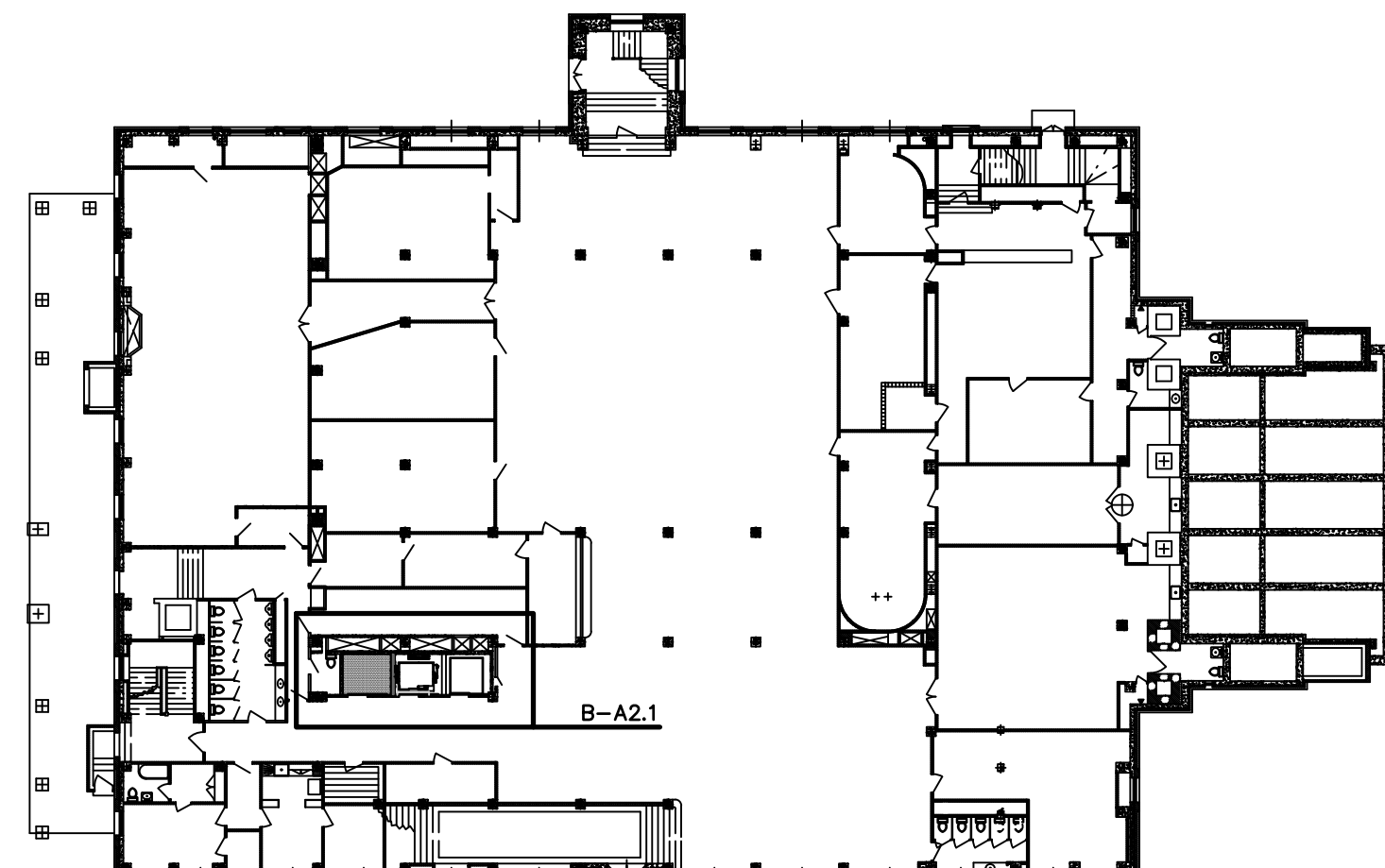
**LEGEND
THIRD FLOOR PLAN**
1/32"=1'-0"



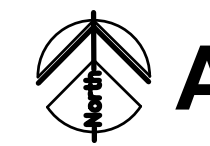
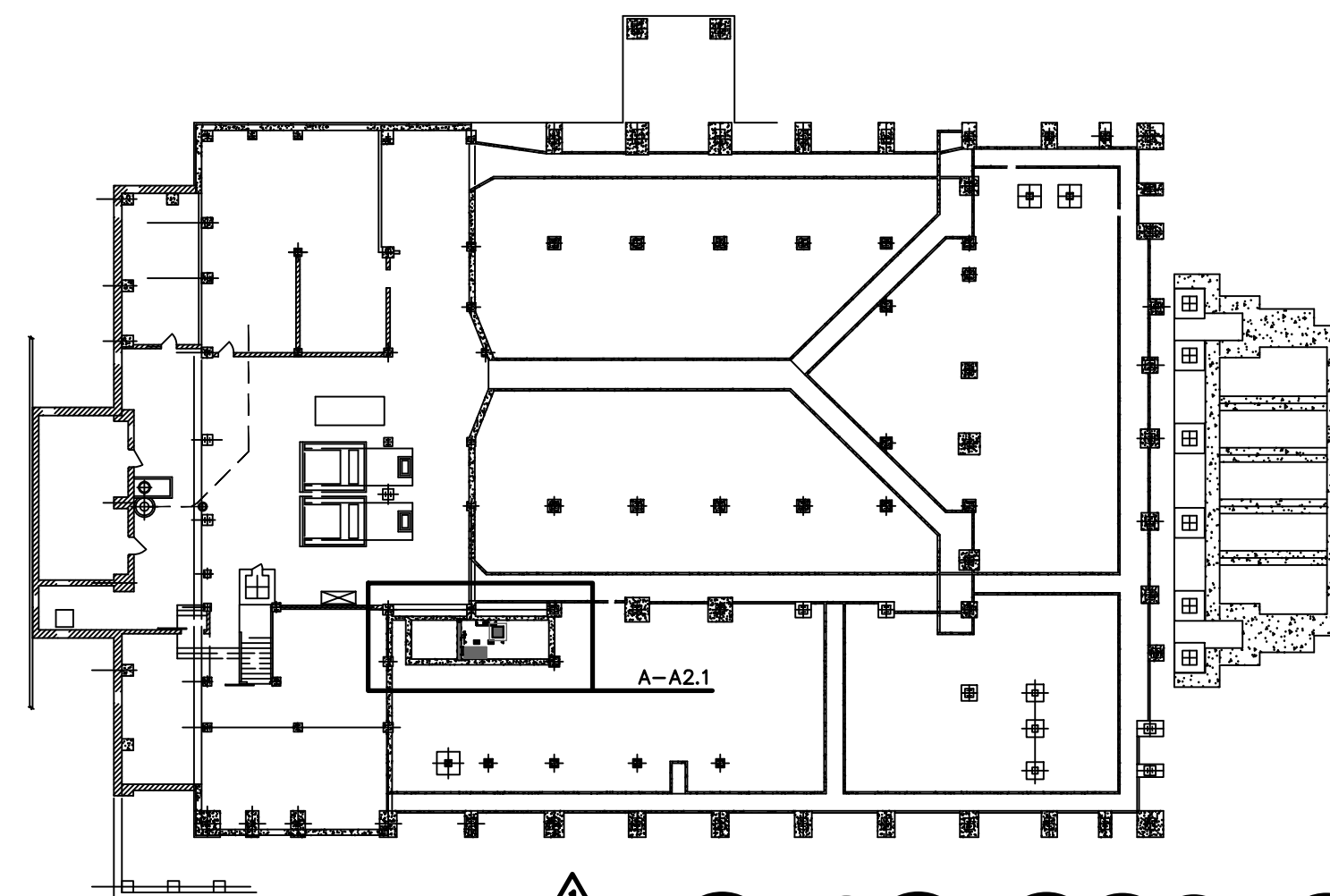
**LEGEND
SECOND FLOOR PLAN**
1/32"=1'-0"



**LEGEND
FIRST FLOOR PLAN**
1/32"=1'-0"



**LEGEND
LOWER LEVEL FLOOR PLAN**
1/32"=1'-0"



**LEGEND
SUB-BASEMENT FLOOR PLAN**
1/32"=1'-0"

GENERAL CONSTRUCTION NOTES

1. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS BEFORE WORK BEGINS.
2. CONTRACTOR(S) SHALL CONDUCT A SITE WALKTHROUGH AND CONFIRM EXISTING CONDITIONS AND FIELD VERIFY DIMENSIONS.
3. INSTALL MATERIALS AND/OR FINISHES AS INDICATED, IMPLIED OR AS REQUIRED FOR COMPLETE & FINISHED INSTALLATION.
4. ALL WORK SHALL BE IN CONFORMANCE W/ APPLICABLE BUILDING CODES & ORDINANCES.
5. ALL NEW CONSTRUCTION SHALL BE IN CONFORMANCE TO ADA REQUIREMENTS. REFERENCE ADA FOR TYPICAL MIN. CLEARANCE REQUIRED.
6. IF THERE IS A DISCREPANCY BETWEEN DRAWINGS AND FIELD CONDITIONS NOTIFY ARCHITECT PRIOR TO PROCEEDING WITH WORK SO THAT ANY ISSUES MAY BE CLARIFIED.
7. CONTRACTOR TO VERIFY THAT ALL CONSTRUCTION MATERIALS WILL MEET US EPA CRITERIA PARTICULARLY MATERIALS THAT WILL BE OBTAINED FROM INTERNATIONAL SOURCES. ALSO VERIFY THAT THE CONSTRUCTION WILL NOT RESULT IN OR CONTAIN HAZARDOUS MATERIALS.
8. CONTRACTOR SHALL PROTECT ALL ADJACENT AREAS NOT IN THE SCOPE OF WORK FROM DUST AND DAMAGE. CONTRACTOR SHALL ALSO PROTECT STRUCTURAL ELEMENTS AND UTILITIES TO REMAIN.
9. CONTRACTOR SHALL REMOVE DEBRIS REGULARLY TO MAINTAIN A SAFE AND CLEAN JOB SITE.
10. CONTRACTOR SHALL FOLLOW ALL STRUCTURAL, ARCHITECTURAL AND MEP DETAILS, DO NOT MODIFY LOAD-BEARING ELEMENTS WITHOUT APPROVAL.
11. CONTRACTOR SHALL COORDINATE LAYOUT AND ROUTING OF ANY EXISTING AND NEW MEP ELEMENTS.
12. ALL PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES MUST BE SEALED AND COMPLIANT.
13. ALL REQUIRED CITY INSPECTIONS SHALL BE COORDINATED BY THE CONTRACTOR.
14. FOR PROJECT CLOSE OUT - CONTRACTOR SHALL ENSURE ALL REQUIRED INSPECTIONS ARE PASSED (BUILDING, ELECTRICAL, PLUMBING, ETC.).
15. CONTRACTOR SHALL ALLOW OWNER TO PERFORM A PUNCH LIST AND INSPECTION WALKTHROUGH AND ADDRESS ALL PUNCH ITEMS IN A TIMELY AND PROFESSIONAL MANNER.
16. CONTRACTOR TO PROVIDE WARRANTIES, MANUALS AND AS BUILT DOCUMENTATION WHERE APPLICABLE TO THE OWNER.
17. CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING THE STATE FIRE MARSHAL AND MAKE SURE THE ELEVATOR IS PROPERLY REGISTERED AND MEETS ALL STATE ELEVATOR CODES.

HISTORIC PRESERVATION NOTES

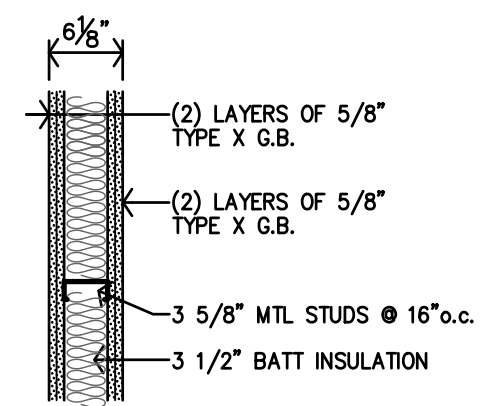
1. IT IS THE OWNERS RESPONSIBILITY TO COORDINATE ALL WORK AND OBTAIN ANY APPROVALS AS REQUIRED BY THE KANSAS STATE HISTORIC PRESERVATION OFFICE.
2. CONTRACTOR SHALL COORDINATE WITH OWNER AND THE KANSAS STATE HISTORIC PRESERVATION OFFICE ON ANY ADDITIONAL WORK OR REQUIREMENTS FOR HISTORIC PRESERVATION.
3. WORK SHALL NOT DAMAGE ANY EXISTING ORNAMENT MARBLE OR CHARACTER-DEFINING FEATURES & MOLDING. CONTRACTOR TO PROTECT DURING CONSTRUCTION WHERE PENETRATIONS NEED TO BE MADE AT THE ADJACENT ELEVATOR SHAFT WALLS FOR NEW SIGNALS, HOLES SHALL BE KEPT HAS MINIMAL AS POSSIBLE AND ANY EXPOSED CONDUITS SHALL BE KEPT AT A MINIMUM.
4. ANY EXISTING BRICK/STONE TO BE REMOVED SHOULD BE SALVAGED FOR REUSE.
5. ELECTRICAL CONDUIT SHALL RUN ABOVE CEILINGS AND WITHIN WALLS. ANY EXPOSED CONDUIT SHALL BE PAINTED TO MATCH ADJACENT SURFACES.

ASSOCIATED PRESERVATION BRIEFS INCLUDE

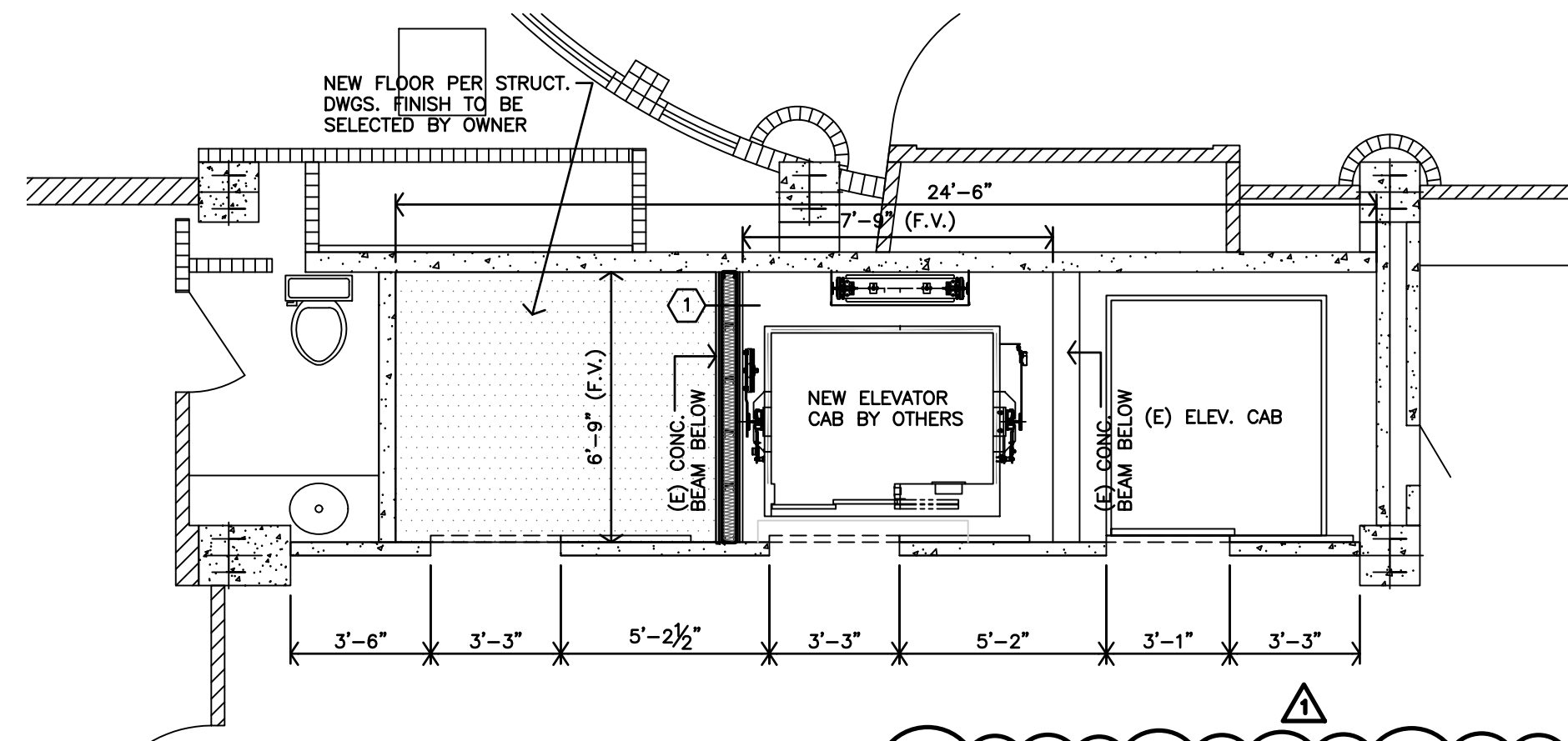
(<https://www.nps.gov/orgs/1739/preservation-briefs.htm>);

- 17. ARCHITECTURAL CHARACTER - IDENTIFYING THE VISUAL ASPECTS OF HISTORIC BUILDINGS AS AN AIR TO PRESERVING THEIR CHARACTER
- 21. REPAIRING HISTORIC FLAT PLASTER - WALLS AND CEILINGS
- 23. PRESERVING HISTORIC ORNAMENTAL PLASTER

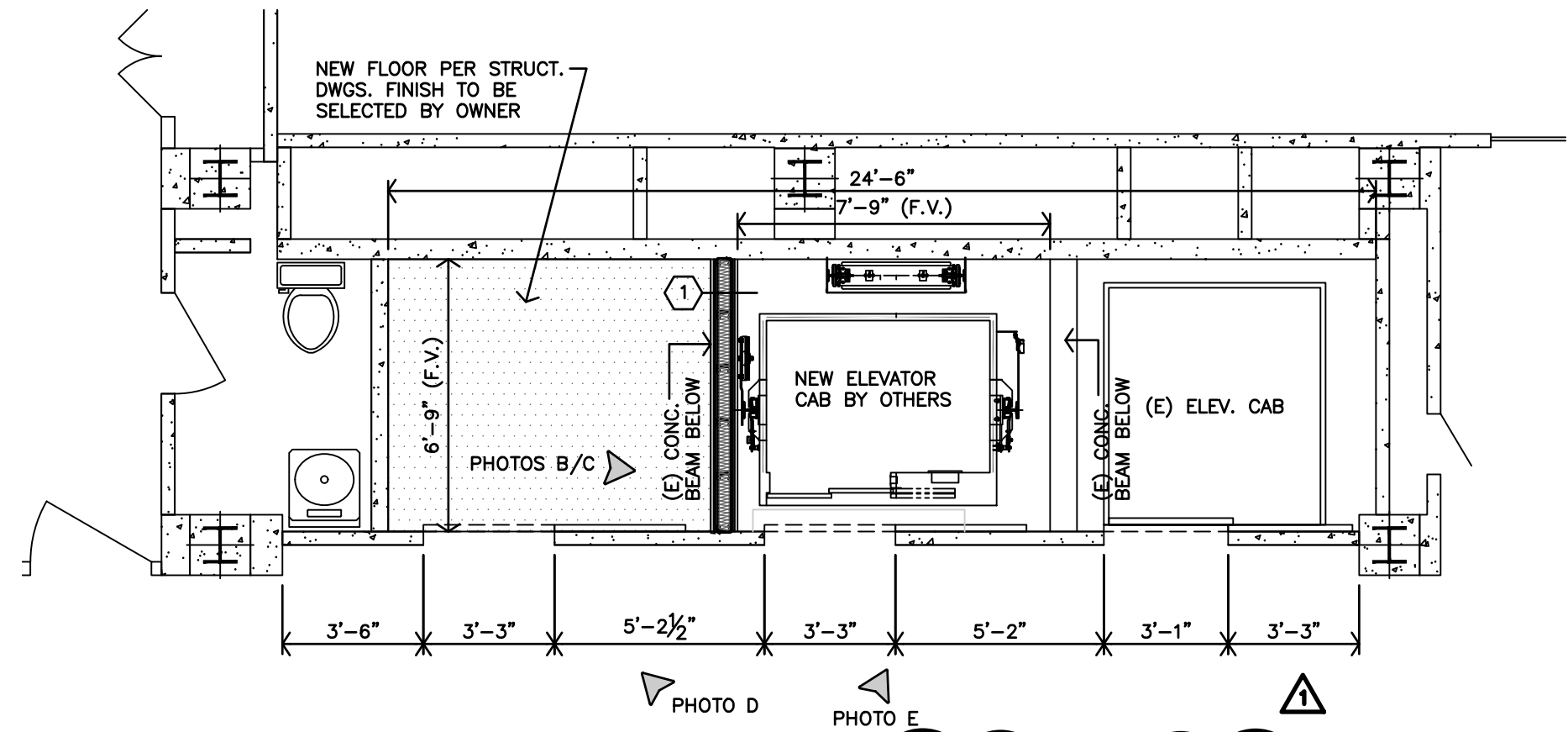
FIRE WALL SCHEDULE



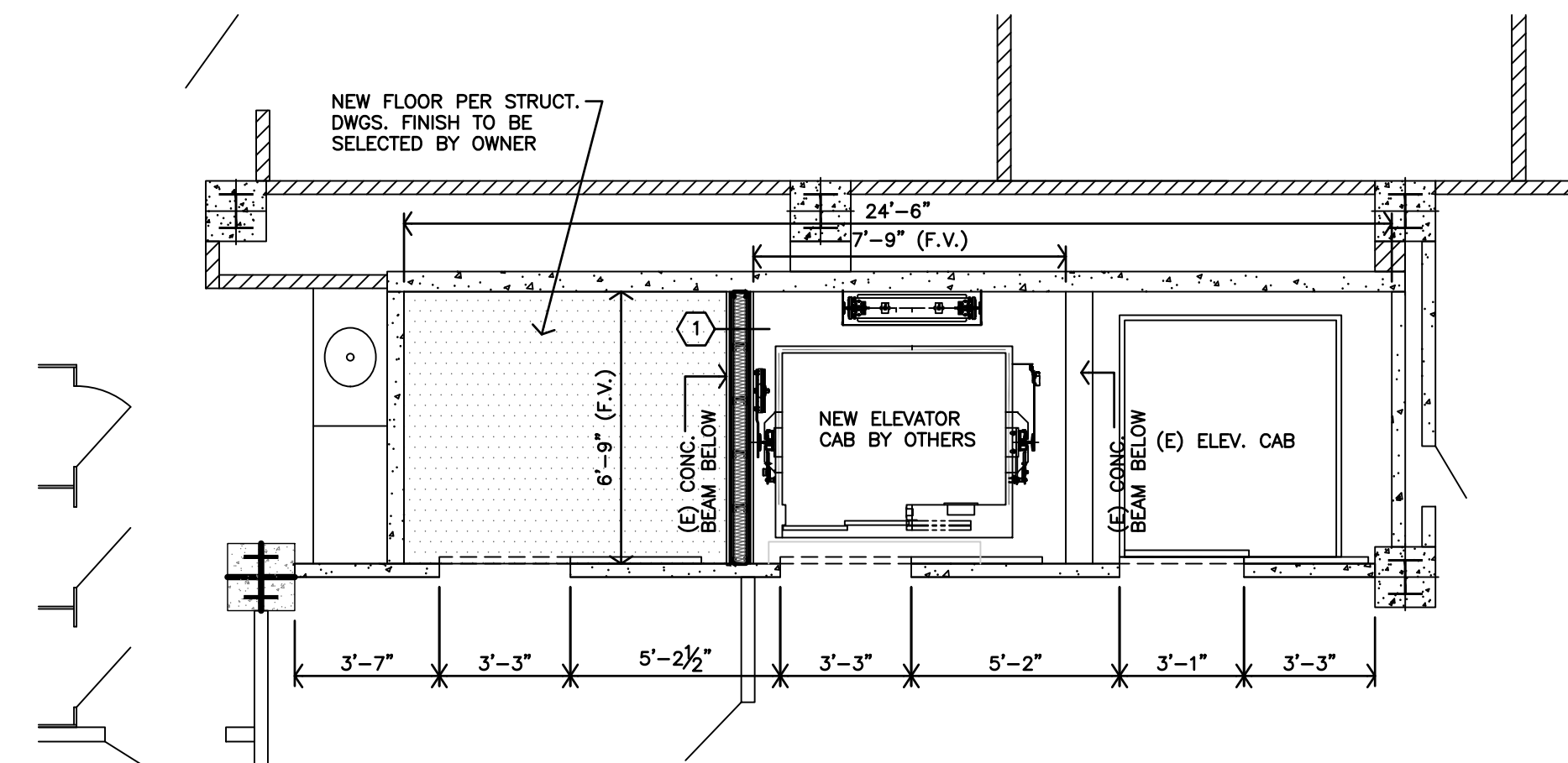
TYPE 1
2-HR RATED (UL U419)
ATTACH PER UL REQUIREMENTS



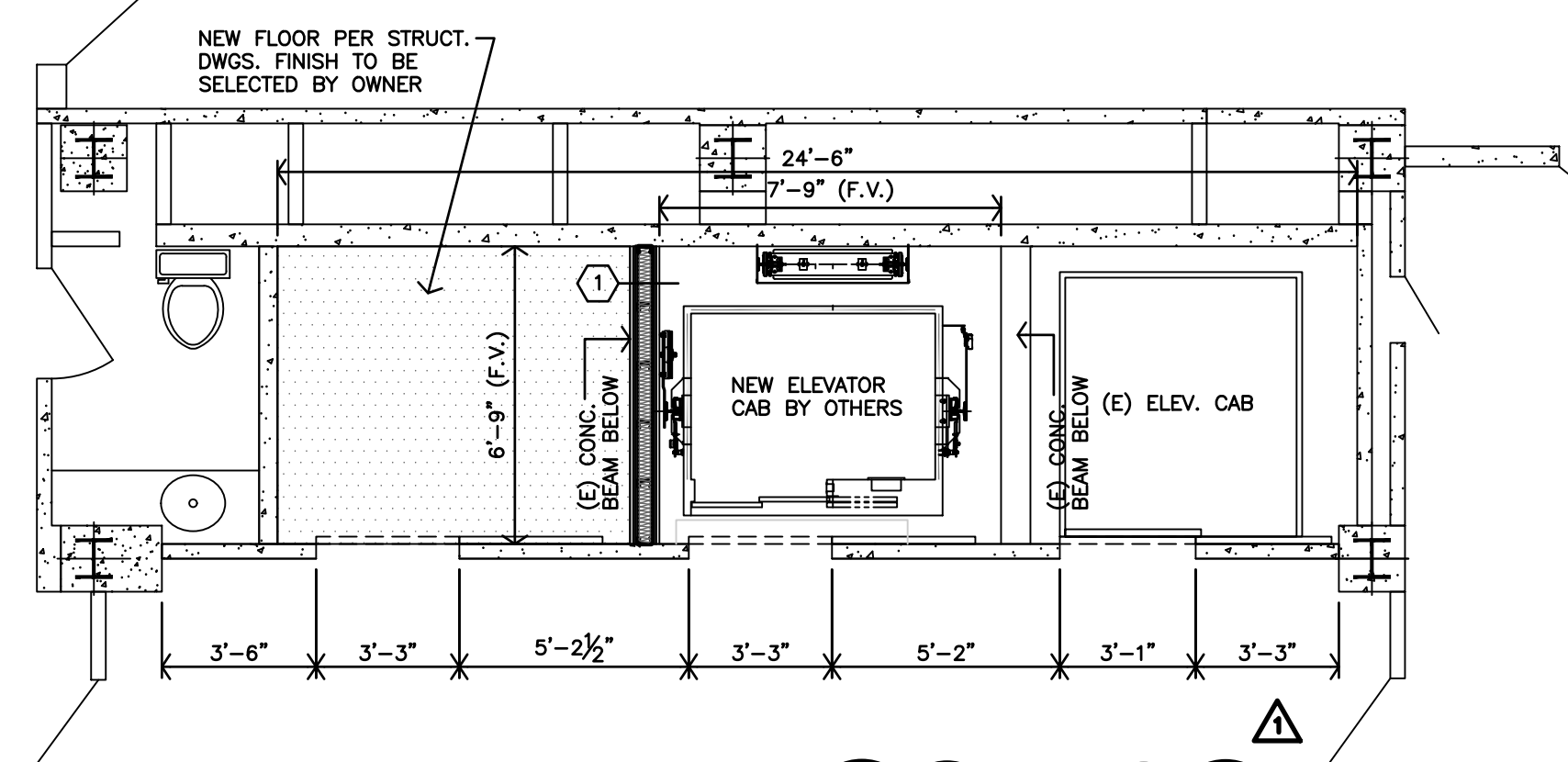
FOURTH (AUDITORIUM BALCONY) FLOOR PLAN
1/4"=1'-0"



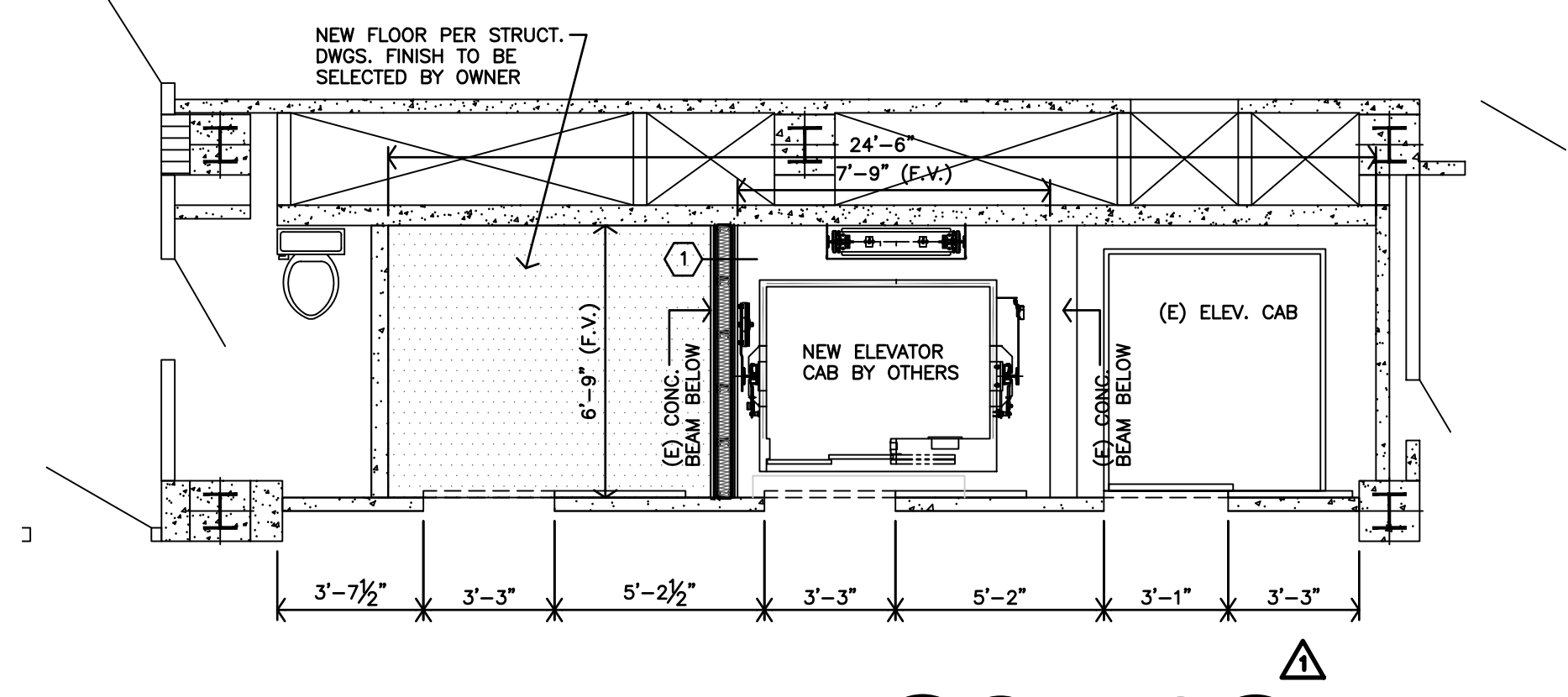
FIRST (BALLROOM) FLOOR PLAN
1/4"=1'-0"



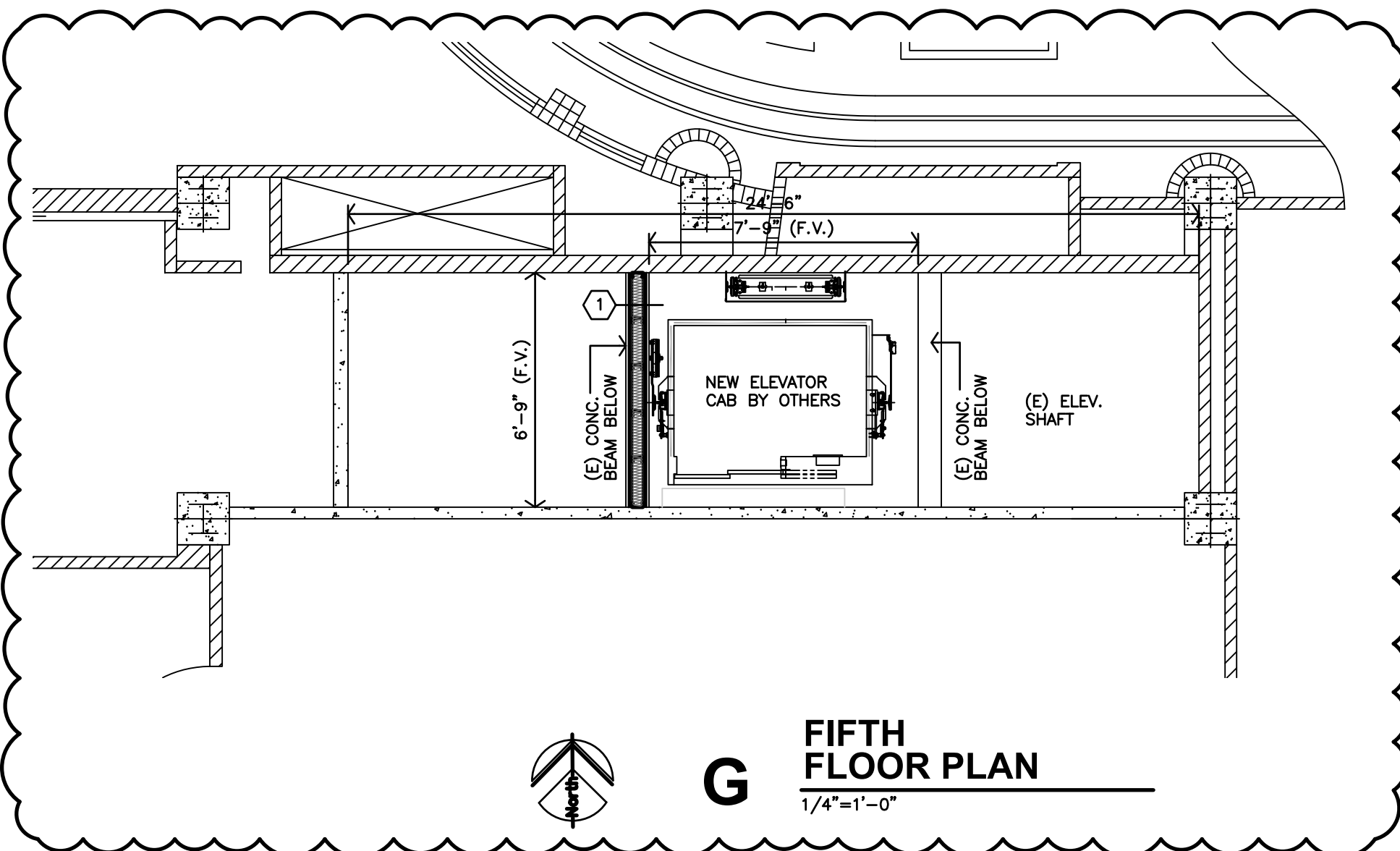
SIXTH (MASONIC) FLOOR PLAN
1/4"=1'-0"



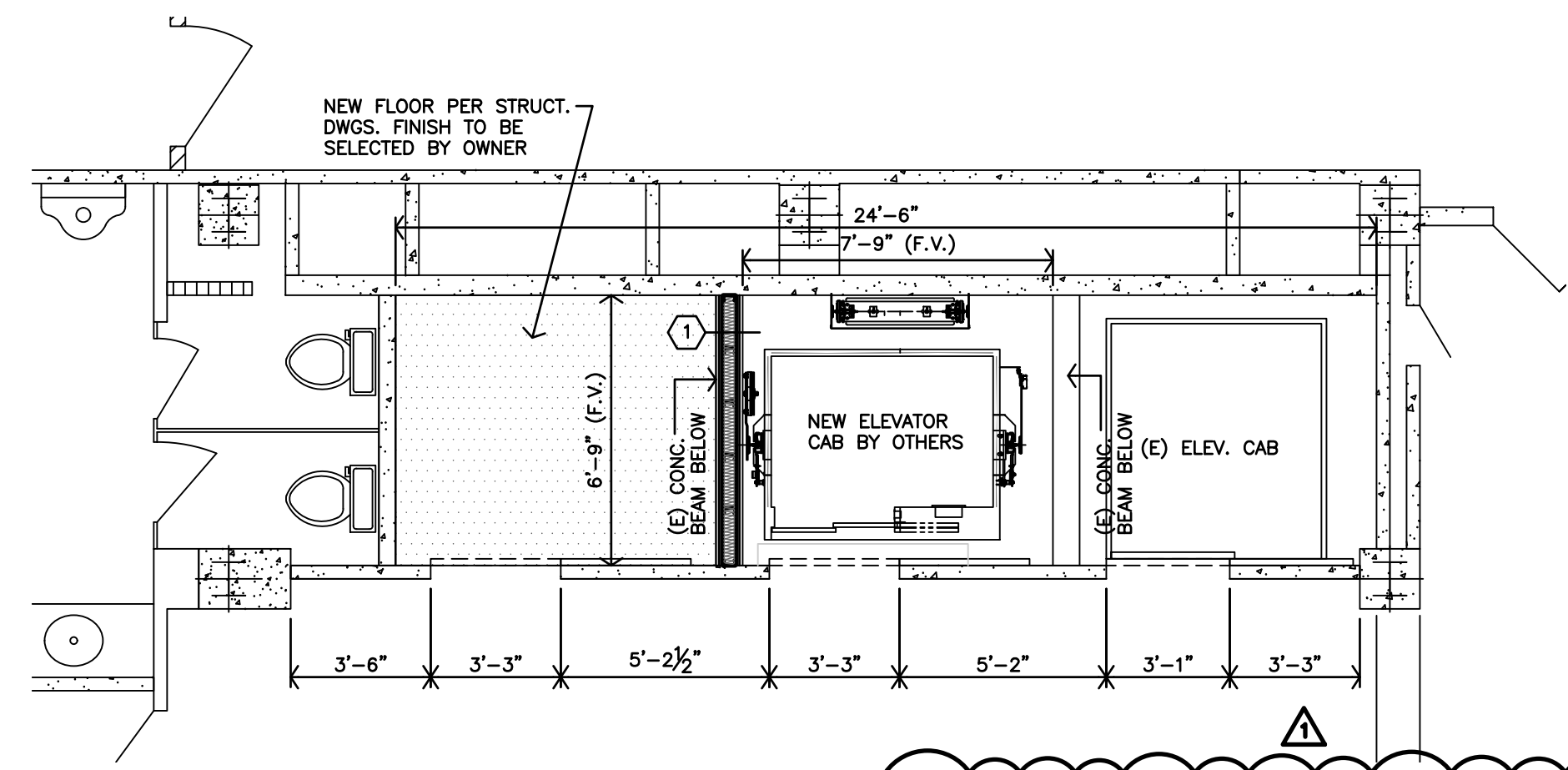
THIRD (AUDITORIUM) FLOOR PLAN
1/4"=1'-0"



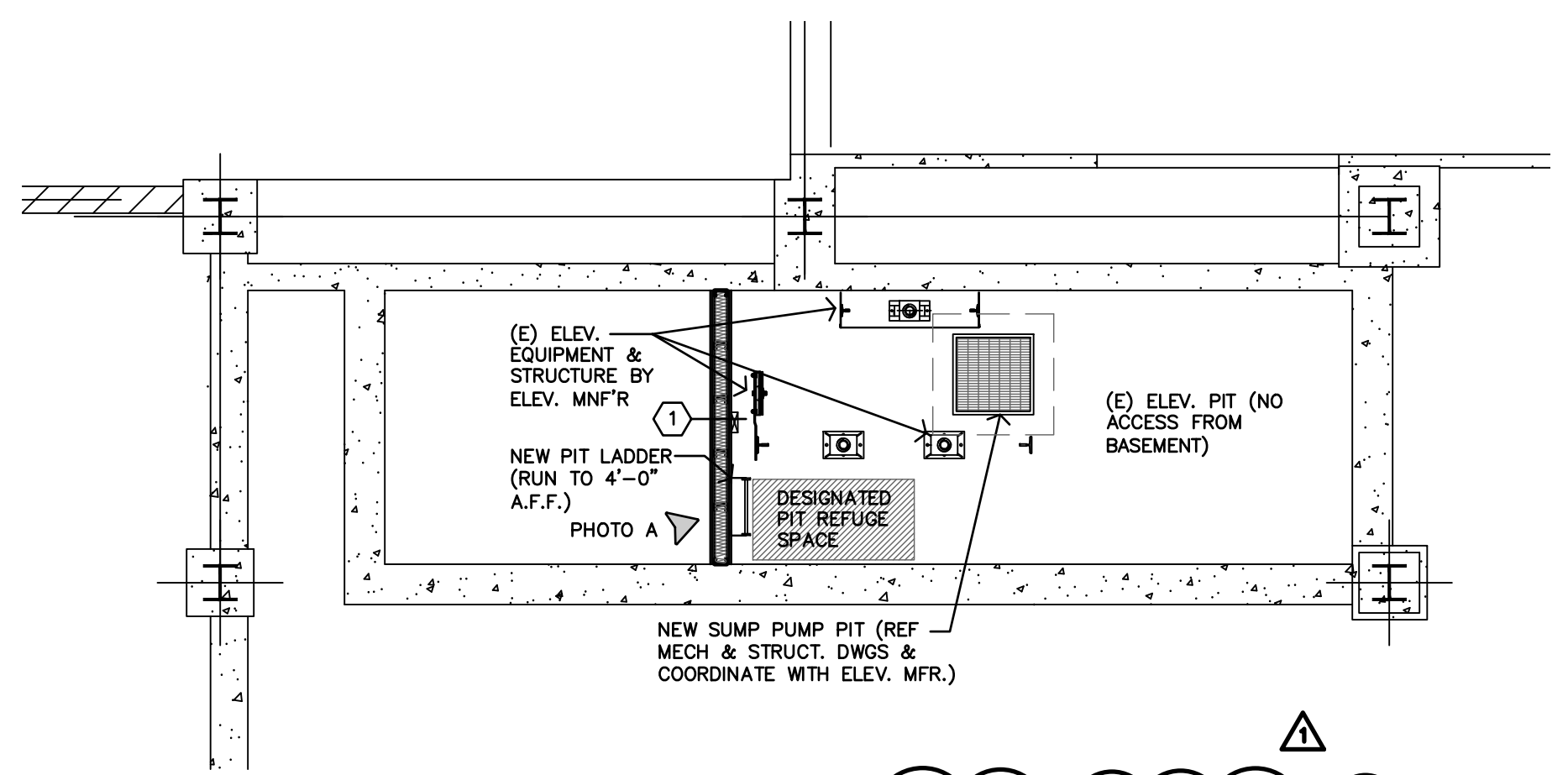
LOWER LEVEL FLOOR PLAN
1/4"=1'-0"



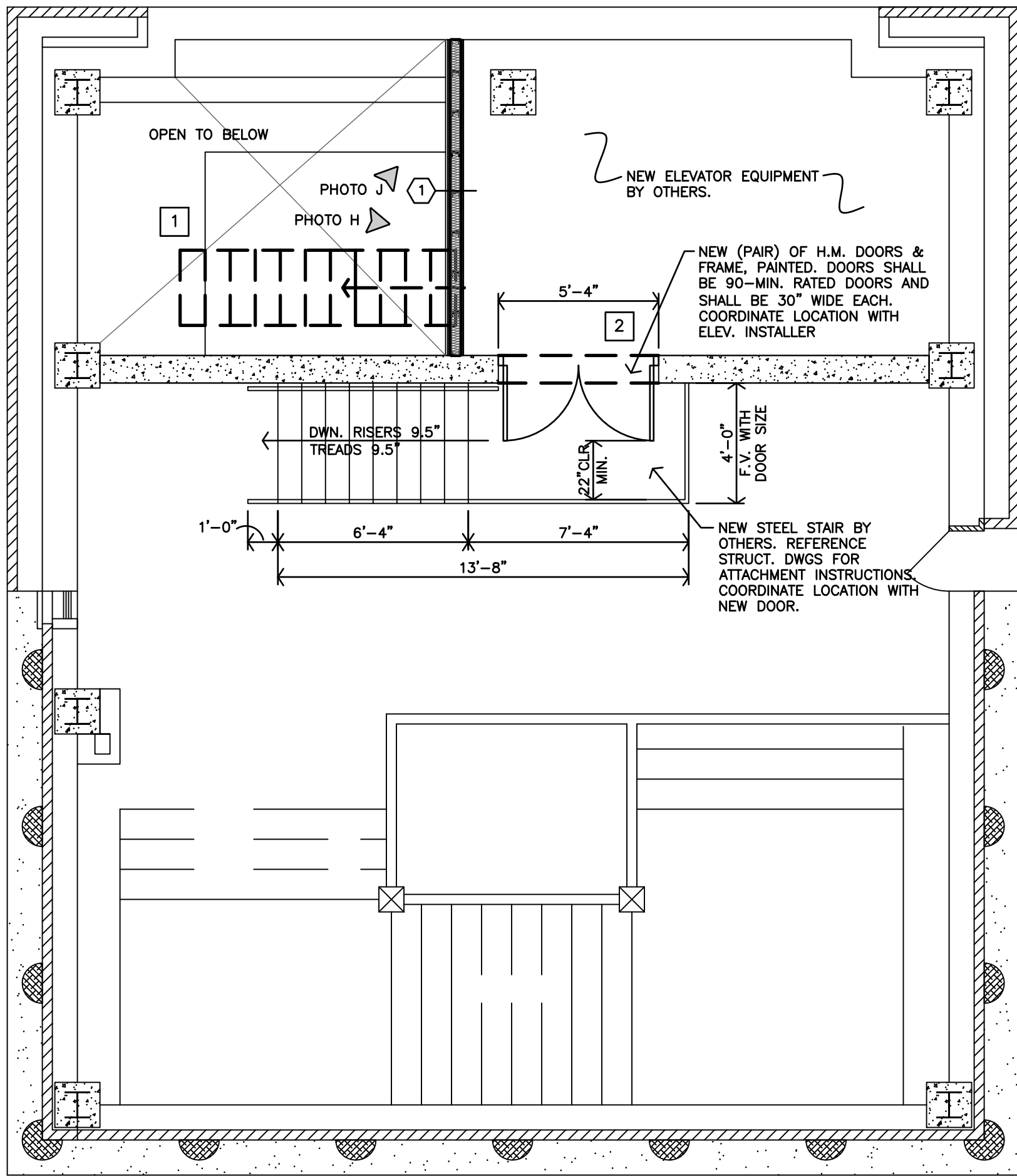
FIFTH FLOOR PLAN
1/4"=1'-0"



SECOND (BALLROOM BALCONY) FLOOR PLAN
1/4"=1'-0"

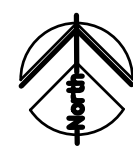
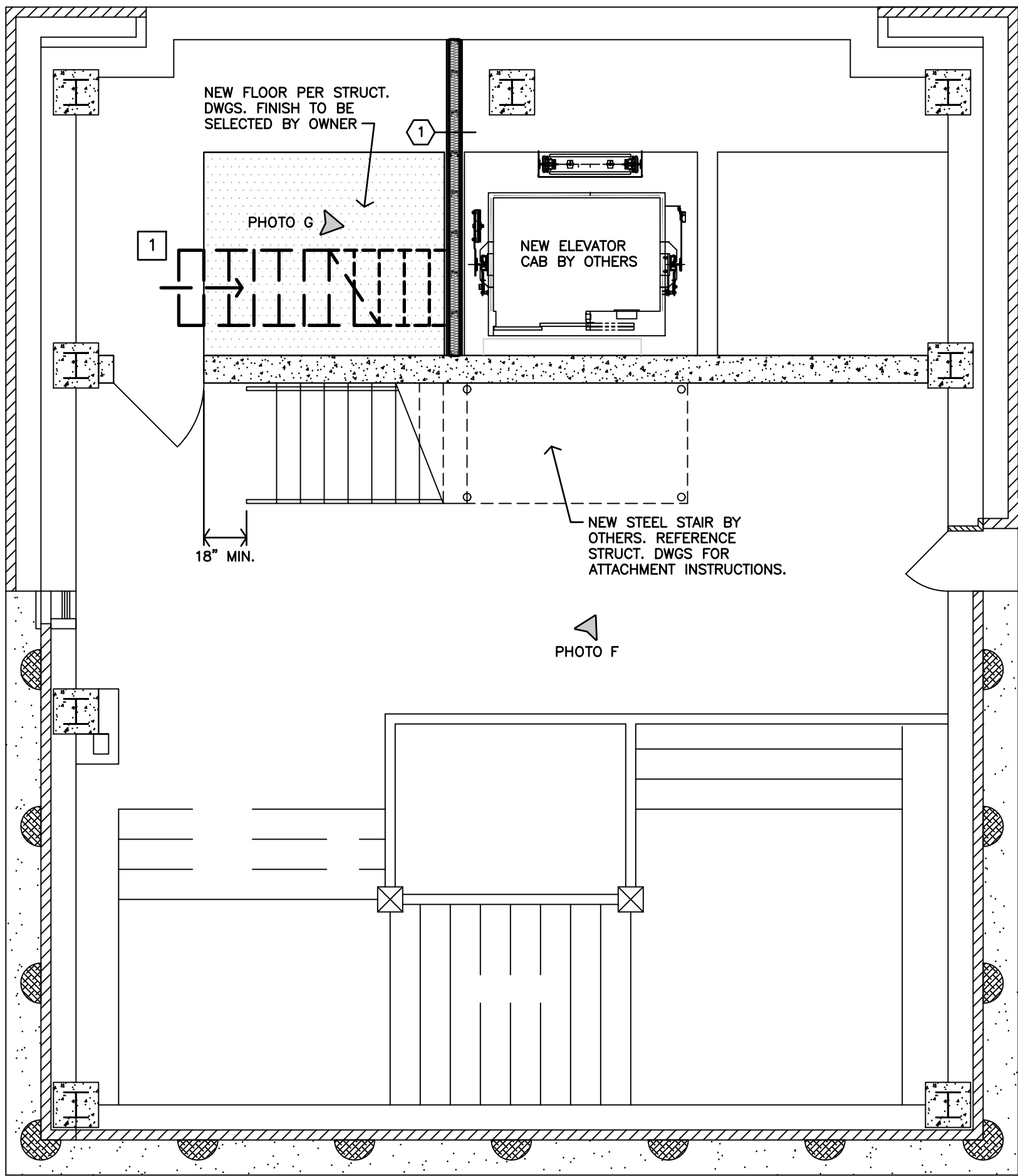


SUB-BASEMENT - PIT FLOOR PLAN
1/4"=1'-0"



B

PENTHOUSE (UPPER)
FLOOR PLAN
1/4"=1'-0"



A

PENTHOUSE (LOWER)
FLOOR PLAN
1/4"=1'-0"

DEMOLITION NOTES

GENERAL NOTES

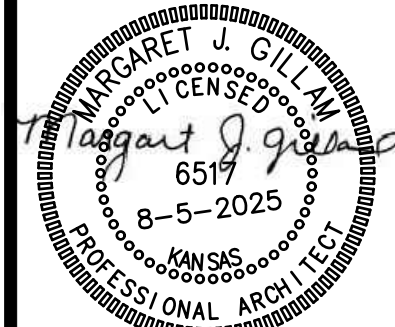
- WHERE EXISTING BLDG. COMPONENTS ARE TO BE REMOVED; PATCH & REPAIR THE SURFACES TO MATCH EXISTING FINISH, UNLESS NEW FINISHES ARE CALLED FOR IN THE FINISH SCHEDULE.
- REMOVE EXISTING BLDG. COMPONENTS AS INDICATED, IMPLIED OR AS REQUIRED SCHEMATICALLY SHOWN AS DASHED LINES. FIELD VERIFY ALL LOCATIONS.
- THE ELECTRICAL & MECHANICAL CONTRACTORS SHALL BE RESPONSIBLE FOR ALL CORE DRILLING FOR PIPING & CONDUIT INSTALLATION.
- ALL OTHER CUTTING, PATCHING & FINISHING, U.N.O. SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- SHORING OF EXISTING STRUCTURE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE THE DEMOLITION BY DIFFERING TRADES.
- CONTRACTOR COORDINATE SCHEDULE & LOCATION OF ANY OR ALL EXISTING RECEPTACLES, SWITCHES, DEVICES, ETC. PRIOR TO DEMOLITION, RELOCATE OR ABANDON ACCORDINGLY.
- COORDINATE & REFERENCE MECHANICAL & ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION ITEMS AND DETAILS

GENERAL & BASEMENT

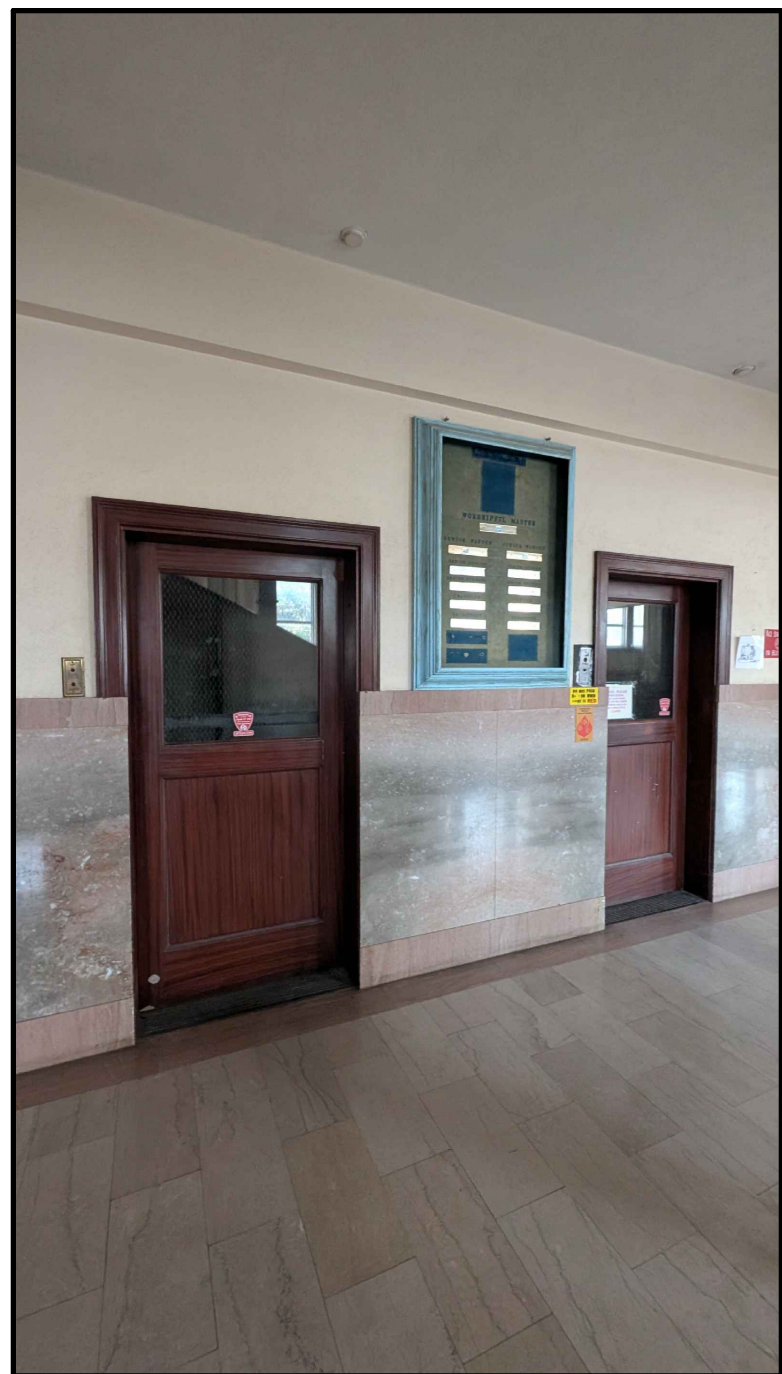
- REMOVE EXISTING WOODEN ACCESS STAIR AND RAIL AT UPPER PENTHOUSE
- REMOVE PORTION OF EXISTING CLAY BLOCK WALL AND PLASTER FINISH. PREP OPENING FOR THE INSTALLATION OF NEW DOOR AND FRAME.

OSHA NOTE

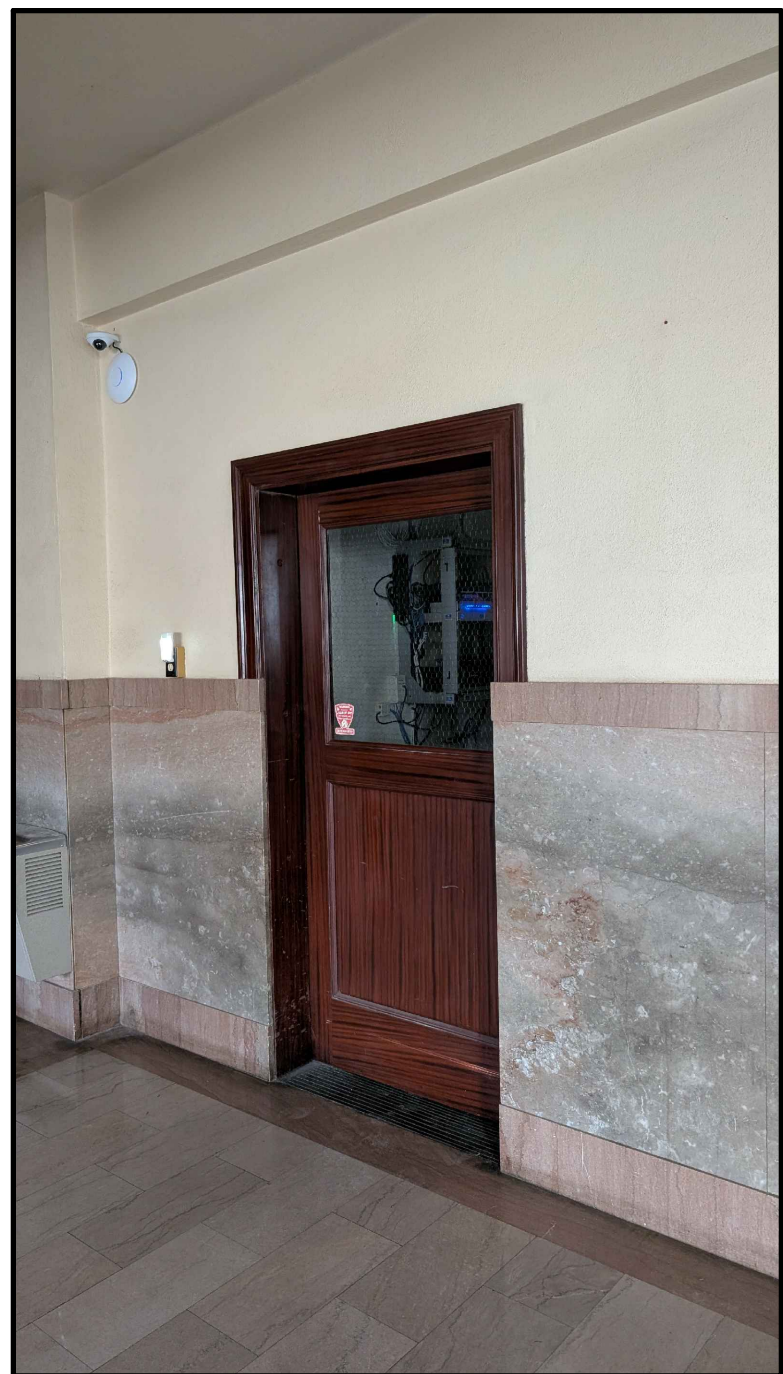
- MECHANICAL ROOM ACCESS STAIRS SHALL BE CONSTRUCTED PER OSHA STANDARDS IN CHAPTER 1910.25.
- STAIR MAXIMUM RISE SHALL BE 9.5". STAIR TREAD MINIMUM SHALL BE 9.5"
- DOOR SWINGING INTO LANDING SHALL RETAIN A 22" CLEAR TO THE HANDRAIL.



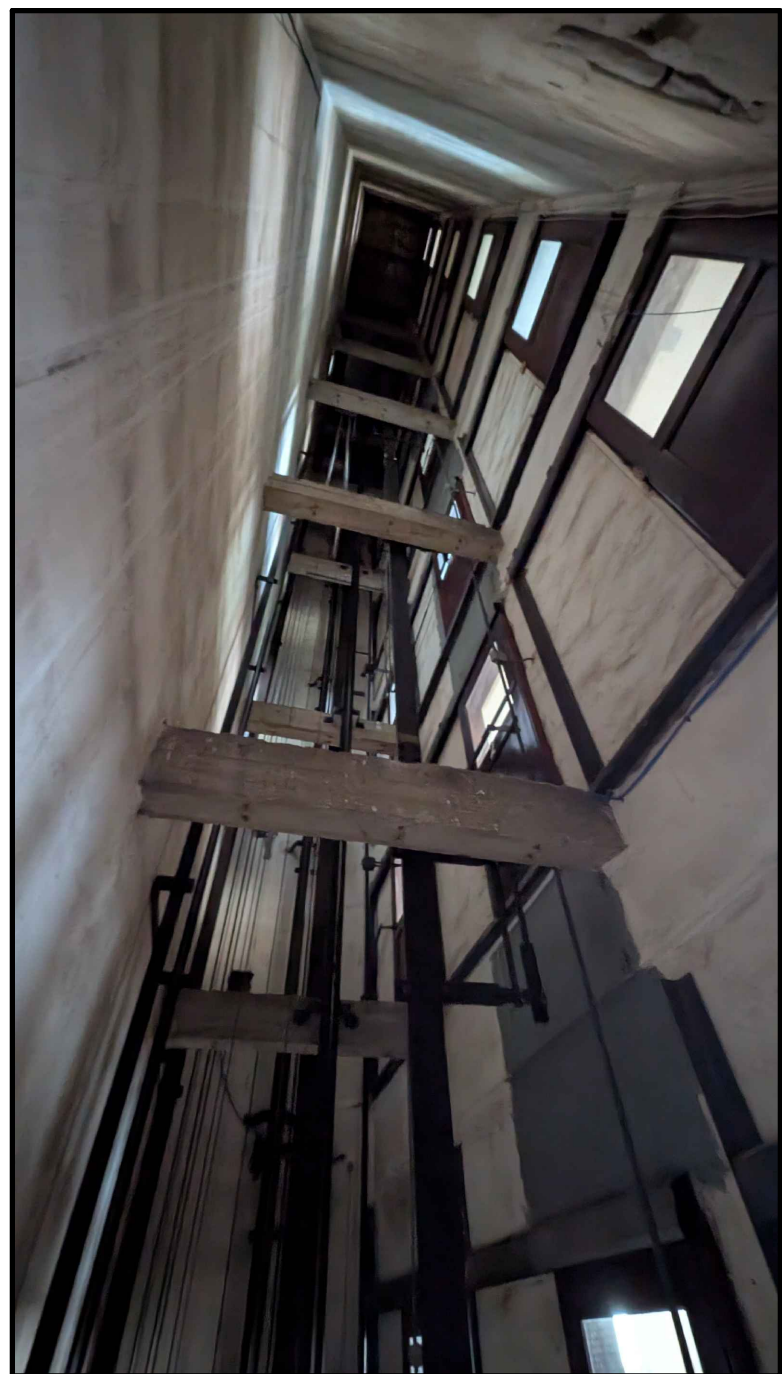
REVISION:	
	8-14-2025
DATE:	8-5-2025
JOB:	25-3499
SHEET NO.:	



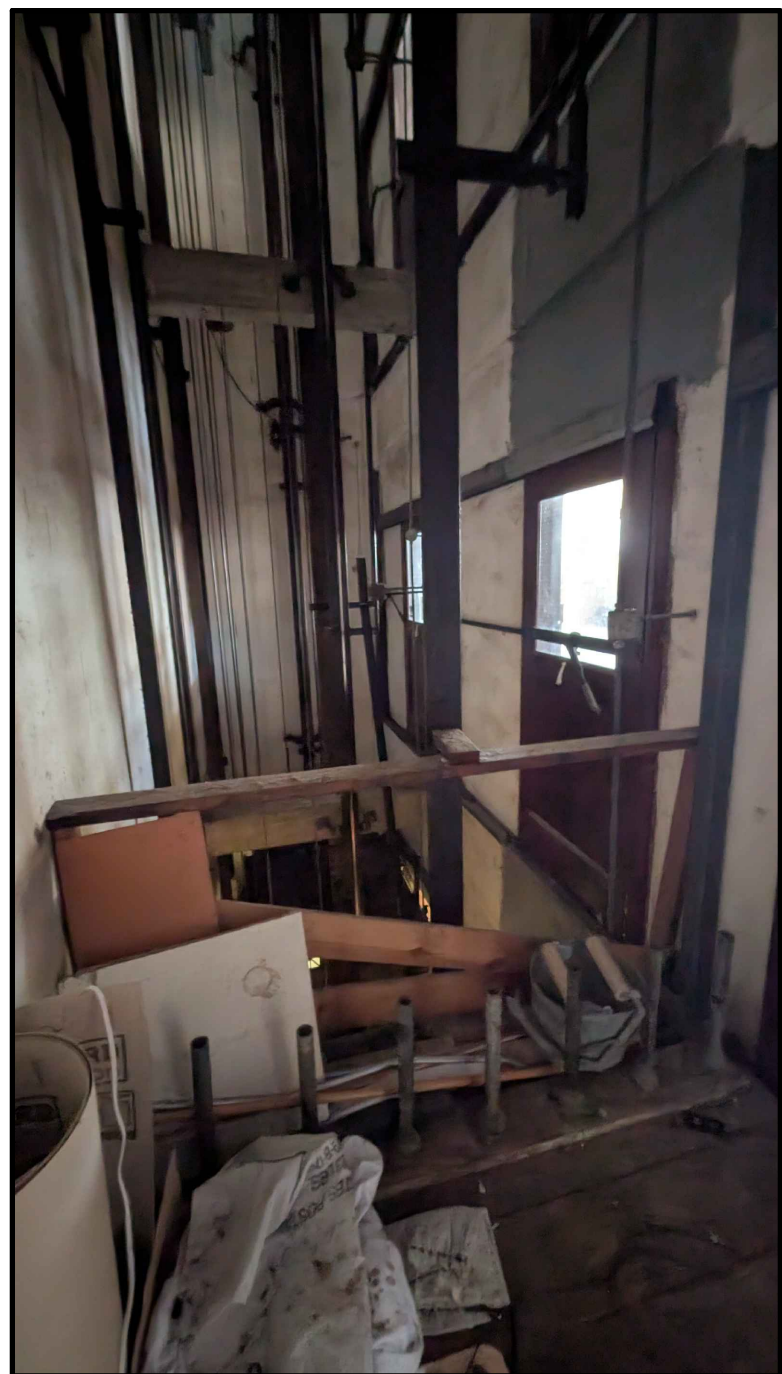
E PHOTOGRAPH



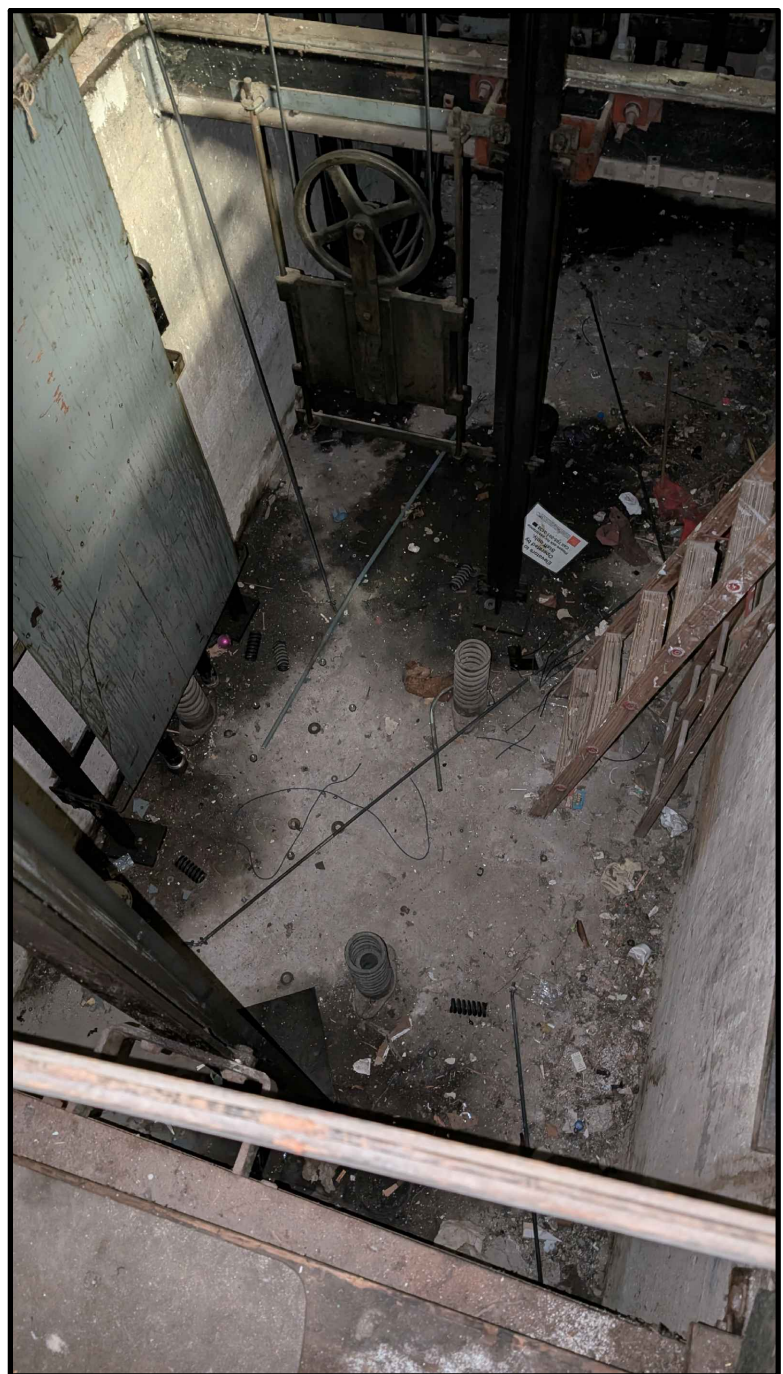
D PHOTOGRAPH



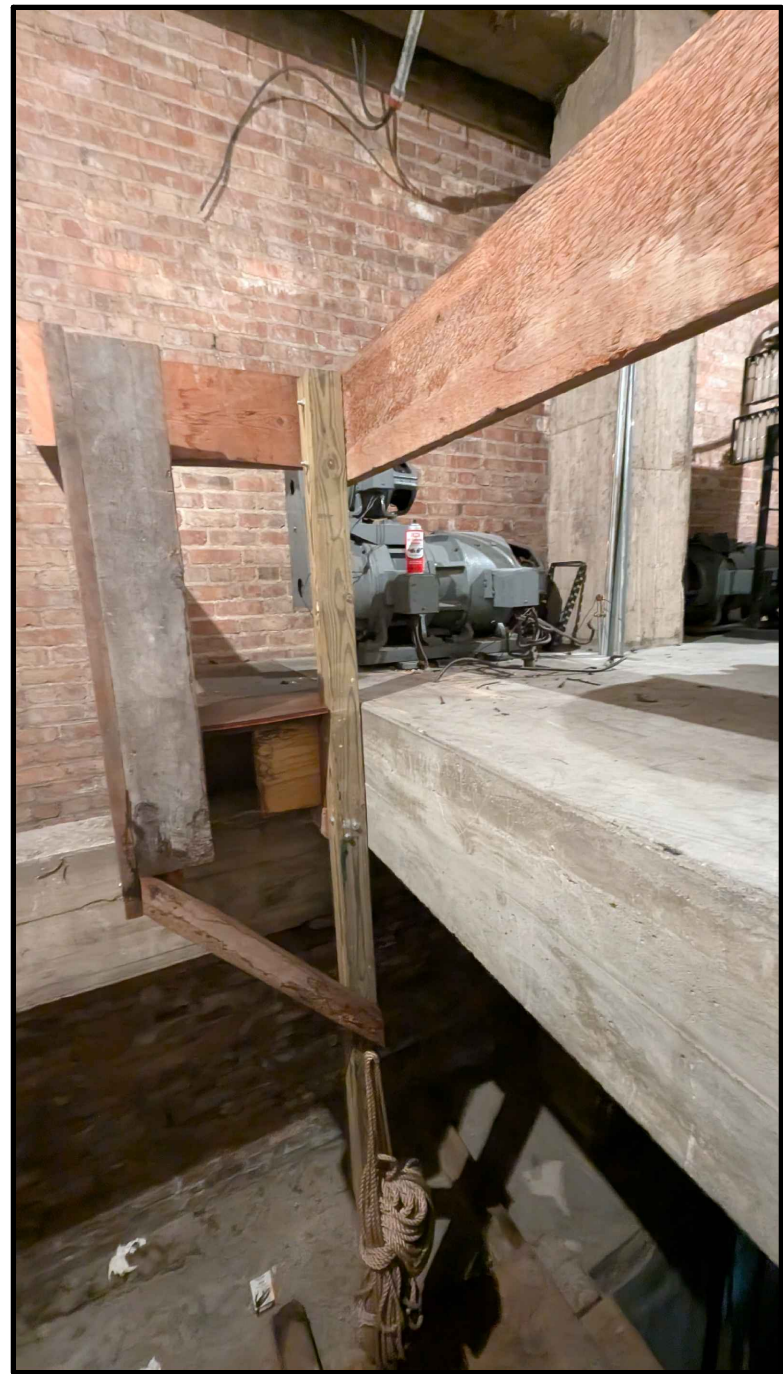
C PHOTOGRAPH



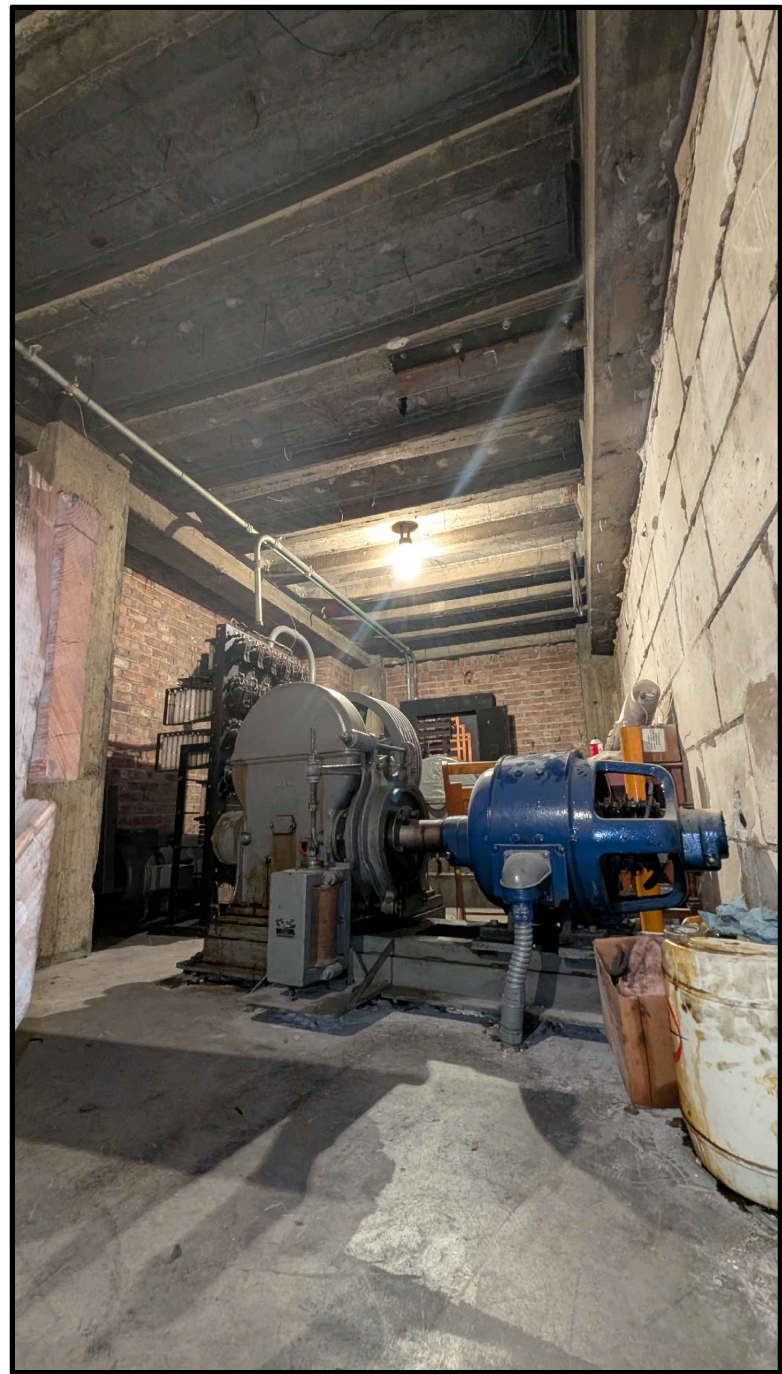
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A PHOTOGRAPH



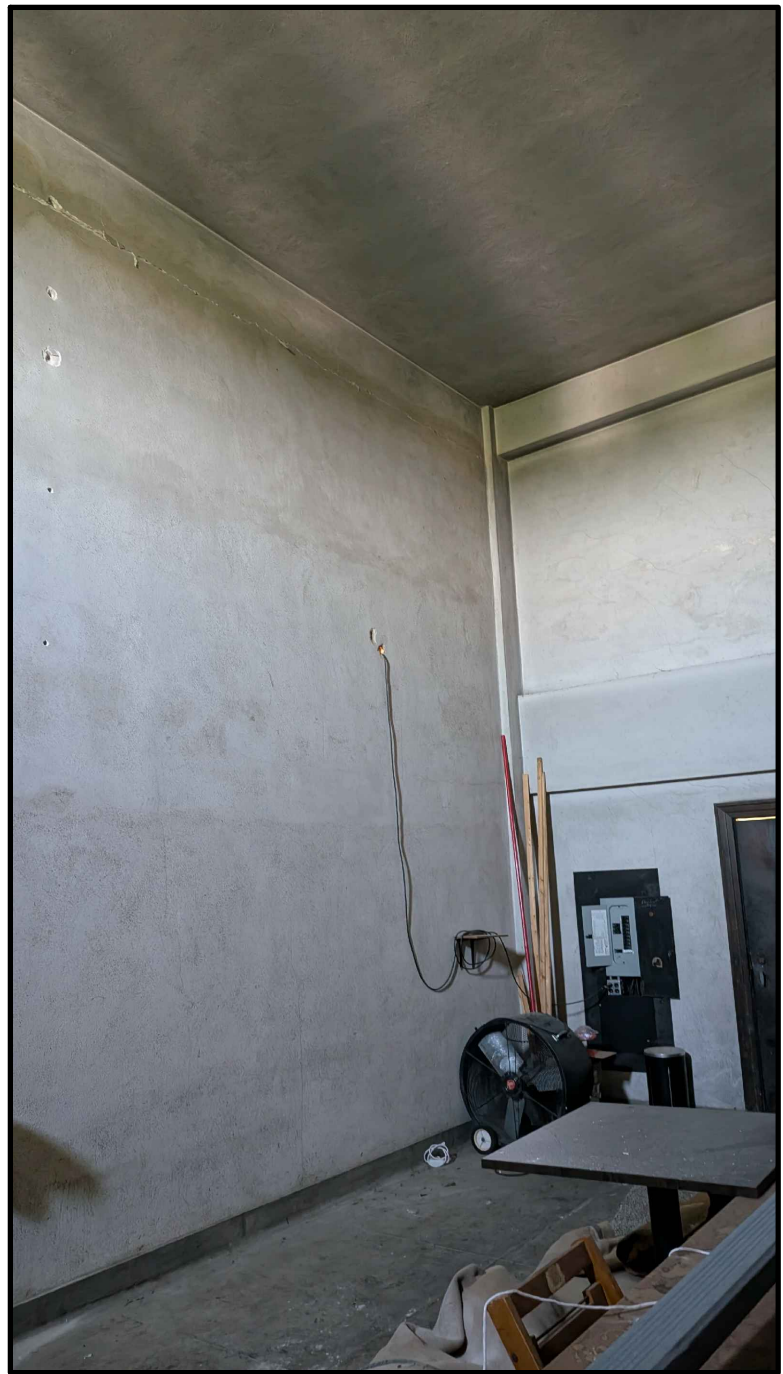
J PHOTOGRAPH



H PHOTOGRAPH



G PHOTOGRAPH



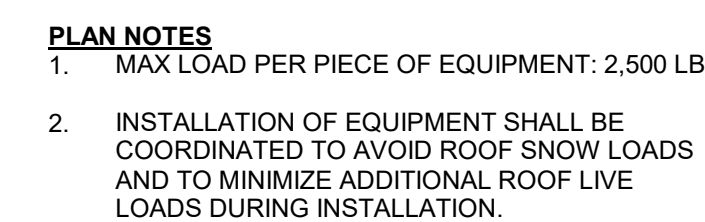
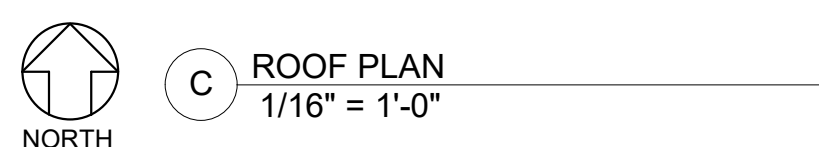
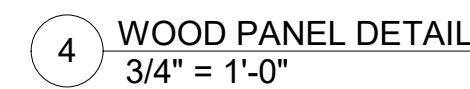
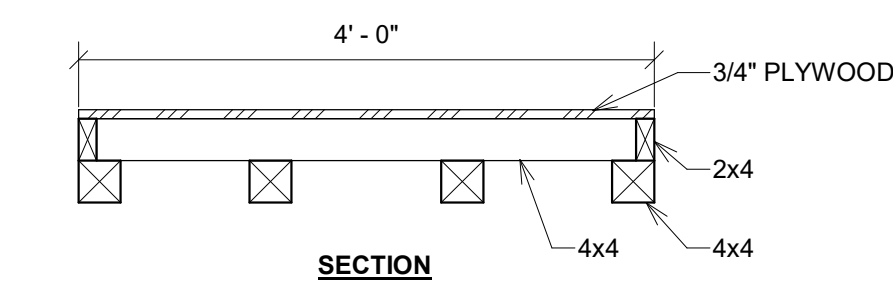
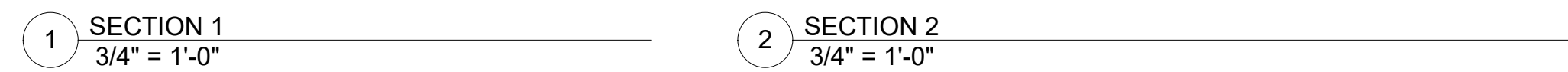
F PHOTOGRAPH

PHOTOGRAPHS

THE TEMPLE
SALINA INNOVATION FOUNDATION
ELEVATOR REHABILITATION PROJECT
SALINA, KANSAS



REVISION:	
	8-14-2025
DATE:	8-5-2025
JOB:	25-3499
SHEET NO.:	



GENERAL NOTES:

1. FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO STARTING WORK.
2. DIMENSIONS SHOWN HERE APPLY TO STRUCTURAL ELEMENTS ONLY. SEE ARCHITECTURAL FOR ANY DIMENSIONS NOT NOTED HERE.
3. MATERIALS:

WIDE FLANGE:	A992 Fy=50 KSI
COLD-FORMED STEEL:	ASTM C955 GR. 33 KSI
PLYWOOD:	DOC PS 1 OR 2
4. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR OR ANY SUB-CONTRACTORS, OR ANY OF THE CONTRACTOR'S OR SUB-CONTRACTORS AGENTS, EMPLOYEES, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK.



DIVISION 16 - ELECTRICAL
SECTION 16010 - GENERAL ELECTRICAL REQUIREMENTS

- 16010.01 The drawings and general provisions of the Contract, including General Conditions, Supplementary General Conditions, and General Requirements apply to the work specified in Division 16 - ELECTRICAL.
- 16010.02 The Electrical Contract includes all labor, material and equipment required for the complete electrical systems as shown and specified.
- 16010.03 This contractor is responsible for reviewing ALL drawings to determine extent of coordination required with other trades. Additional offsets, bends, and materials will not be accepted as a result of un-coordinated work.
- 16010.04 This contractor is required to perform work in a professional and quality workman like manner. This includes, but is not limited to:
- a. Make vertical elements plumb and horizontal elements level unless noted otherwise.
 - b. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless noted otherwise.
 - c. Protect work from damage and water during construction. Replace all equipment/material damaged or exposed to water during construction.
 - d. Clean equipment, interior and exterior, at completion of construction and remove all temporary labels, stains and foreign substances.
- 16010.05 Each major component of equipment shall have the manufacturer's name, address, model number, and U.L. label securely affixed in a conspicuous place.
- 16010.06 All equipment of one type (such as panelboards, switches, wiring devices, etc.) shall be the product of one manufacturer, unless specified otherwise.
- 16010.07 Where the quality of required material is not specified, the Contractor shall furnish a first class standard item as approved by the Architect/Engineer.
- 16010.08 The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate for the context of requirements. Refer uncertainties to Architect for a decision before proceeding. Where the quality of required material is not specified, the Contractor shall furnish a first class standard item as approved by the Architect/Engineer.
- 16010.09 Manufacturer's names are intended to establish type and quality of items to be provided via the contract. The materials, products, and equipment described in the specifications or on the drawings establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution. Listing of these manufacturers shall in no way be construed as a device intended to limit the bidders to those specifically listed.
- 16010.10 Install all equipment in strict accordance with the manufacturer's recommendations and the shop drawings approved by the Engineer.
- 16010.11 All work under this contract shall conform to the requirements of the 2011 National Electrical Code (NFPA 70) and all applicable local, state, and federal code requirements. If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- 16010.12 Periodically during construction and prior to Owner acceptance of the building, Contractor shall remove from the premises and dispose of all packing material and debris associated with the Work specified under this Division.
- 16010.13 Electrical Contractor shall coordinate requirements for electrical service with utility company, and facilitate installation of such equipment by providing additional electrical installation where required.
- 16010.14 Procure and pay for all permits and service charges required as related to this Work.
- 16010.15 Notify the Engineer of errors, discrepancies, or omissions in the drawings and specifications before construction or fabrication of affected work, or failing such notice, be responsible for correction of such work without cost to the Owner, Architect, or Engineer.
- 16010.16 Where fire rated construction is penetrated by this Work, fire seal at penetrations with UL listed fire sealing system. Refer to Architectural drawings and specifications.

SECTION 16030 - ELECTRICAL CONNECTIONS

- 16030.01 The Electrical Contractor shall provide all conduit and wiring and shall connect complete and ready for operation all electrical motors and equipment in the other contracts. The other contractors shall furnish to the Electrical Contractor all switches, electrical controls, capacitors and other accessories required. Installation of all motors, equipment, etc., shall be made by the Contractor furnishing the equipment, except where otherwise indicated.

- 16030.02 The Electrical Contractor shall provide disconnect switches as shown and where otherwise required to comply with applicable electrical codes.

SECTION 16060 - GROUNDING

- 16060.01 The entire electrical system, including all special power systems, shall be grounded in accordance with the National Electrical Code.
- 16060.02 Equipment grounding conductors shall be installed in all conduits. The conduit system shall not be used as the sole means of grounding.

SECTION 16073 - POWER SYSTEM STUDIES

- 16073.01 Coordinate the work to provide equipment and associated protective devices complying with criteria for selection and adjustment, as determined by studies to be performed.
- 16073.02 Submit study reports prior to or concurrent with product submittals.
- 16073.03 Do not order equipment until matching study reports and product submittals have both been evaluated by Architect.
- 16073.04 Provide study report, stamped and signed by a professional engineer in the State of Kansas with a minimum 5 years experience in preparing similar types of studies. Include time-current trip curves for protective devices and impedance data.
- 16073.05 Study preparer may be employed by the manufacturer of the distribution equipment. The latest edition of SKM System Analysis software shall be used in the study.
- 16073.06 Clearly indicate whether proposed short circuit ratings are fully rated or where acceptable series rated.
- 16073.07 Comply with NFPA 70, IEEE 141, IEEE 242 and IEEE 399. For each bus location calculate the maximum available three-phase bolted symmetrical and asymmetrical fault currents. For grounded systems include maximum available line-to-ground bolted fault current.
- 16073.08 Provide Arc Flash and Shock Risk Assessment. Comply with NFPA 70E and IEEE 1584.
- 16073.09 For purposes of producing arc flash hazard warning labels, summarize the maximum incident energy and associated data reflecting the worst case condition of all scenarios at each bus location.
- 16073.10 Provide Arc Flash warning labels complying with ANSI Z535.4 to identify arc flash hazards for each work location analyzed by the assessment. Labels shall identify level of Shock Hazard and Level of personnel protective equipment (PPE) required.

SECTION 16110 - RACEWAYS

- 16110.01 Provide the conduits and raceways as specified and indicated on the plans.
- 16110.02 All exterior above grade raceways shall be Galvanized Rigid Metal Conduit (RMC) or Intermediate Metal Conduit (IMC) with threaded couplings and fittings.
- 16110.03 All exterior below grade conduits and conduits installed below floor slab-on-grade shall be Schedule 40 PVC or Galvanized Rigid Metal Conduit (RMC). When utilizing PVC, transition to Galvanized RMC before turning up and penetrating finished grade.
- 16110.04 All interior dry location raceways shall be thinwall Electrical Metallic Tubing (EMT) with compression or setscrew couplings and fittings.
- 16110.05 Flexible Metal Conduit (FMC) may be used for final connections to light fixtures and vibrating equipment in lengths not to exceed 6'-0" and where fished through existing wall construction. Utilize Liquid Tight Flexible Metal Conduit (LFMC) where exposed to moisture.
- 16110.06 Single conduits shall be used for all circuits, but more than one circuit may be carried in each conduit, provided the number of conductors and size of conductors are proportioned in accordance with the rules of the NEC, and conduits are of ample size to allow for removal and replacement of conductors when necessary. Do not exceed 40% fill.
- 16110.07 Where conduit is carried in walls, it shall be thoroughly bedded and not visible. In placing conduits, they shall be so located as to not weaken or injure the construction of the building in any way, and the installation of these shall be approved by the Architect.
- 16110.08 Joints must be made so the ends of the pipes come together in the center of the coupling.
- 16110.09 All conduit shall be run parallel or perpendicular to the building surfaces.
- 16110.10 All empty conduit systems shall be provided with suitable pull strings.
- 16110.11 Conduit sleeves will be required in all penetrations through exterior walls. Sleeves shall be Schedule 5 steel pipe, EMT conduit, or field fabricated from minimum 16 gauge steel with 2" overlap at the seam. Space between sleeves and conduit in outside walls shall be filled or tightly caulked with oakum, butyl rubber, link seals or other approved equally effective material to resist the penetration of water. Sleeves shall be of sufficient diameter to provide approximately 1/2" clearance around pipe. Sleeves shall be set no closer than two pipe diameters center to center and shall be set 3/4" past all wall surfaces, and be securely anchored to the wall.

SECTION 16120 - BUILDING WIRE AND CABLES

- 16120.01 Provide the wire and cable as specified and as shown on the drawings. Wire and cable shall be manufactured by AFC Cable Systems, Alan Wire, Cerrowire, Encore Wire, General Cable or Southwire.
- 16120.02 Building wire shall be annealed (soft) copper. The use of Aluminum conductors is **NOT** permitted. Conductors #10 AWG and smaller shall be solid, #8 AWG and larger shall be stranded. Unless noted otherwise, minimum wire size shall be #12 AWG for power supply circuits.
- 16120.03 Building wire for power supply circuits shall have NEC type THHN/THWN-2 insulation rated for 90°C, 600V, and suitable for use in wet or dry locations.
- 16120.04 Install all building wire for power supply circuits in conduit, unless noted otherwise.
- 16120.05 Wire shall be lubricated with "Polywater," or equally effective cable lubricating material as recommended by wire manufacturer.
- 16120.06 Machine or power pulling of cables into raceways shall be accomplished such that pulling stresses shall not exceed those recommended by the manufacturer.
- 16120.07 MC Cable shall be manufactured to UL 1569 standard and have steel or aluminum interlocked armor, THHN/THWN single insulated solid copper conductors and a full size green insulated solid copper equipment grounding/bonding conductor.
- 16120.08 MC cable may be used **ONLY** for final connections (whips) to light fixtures in lengths not to exceed 6'-0", and where fished through existing walls.
- 16120.10 Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project. Use integrally colored insulation for conductors #6 AWG and smaller. Conductors size #4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape. Color coding shall be as follows:
- a. 480Y/277 V, 3 Phase, 4 Wire System:
 - Phase A: Brown | Phase B: Orange | Phase C: Yellow
 - Neutral/Grounded: Gray | Equipment Ground: Green
 - b. 208Y/120 V, 3 Phase, 4 Wire System:
 - Phase A: Black | Phase B: Red | Phase C: Blue
 - Neutral/Grounded: White | Equipment Ground: Green

SECTION 16130 - ELECTRICAL BOXES AND FITTINGS

- 16130.01 Provide all electrical pull, junction and outlet boxes as specified and shown on the drawings, as well as those required for a complete and code acceptable installation.
- 16130.02 Junction and pull boxes shall be galvanized metal of the knockout type, and shall be provided throughout in accessible locations.
- 16130.03 All outlet boxes for light fixtures, receptacles, and wall switches in dry locations shall be of the Steel City or equal, galvanized knockout type. Lighting fixture outlet boxes in ceiling shall be not less than 4" square of the knockout type. Gangable type boxes shall be used in all gyppboard surfaces. Plug unused openings in all boxes.
- 16130.04 Install boxes for switch and receptacle outlets at the locations shown on the drawings, allowing for relocation of up to 4 feet in any direction if so directed prior to rough-in, without additional cost to the Owner. Boxes shall be flush mounted on all walls for concealed work in occupied/finished areas.
- 16130.05 Electrical boxes located in 1-hour fire rated walls shall be installed as follows:
- a. Boxes shall be U.L. listed for use in fire rated assemblies.
 - b. Annular space around listed boxes shall not exceed 1/8".
 - c. Boxes on opposite sides of the fire rated wall shall comply with one of the following:
 1. Be separated by the horizontal distance specified in the listing of the electrical box.
 2. Be separated by fire blocking material in accordance with IBC section 717.2.1.
 3. Protect both boxes with listed fire rated putty pads.

SECTION 16140 - WIRING DEVICES

- 16143.01 Provide the wiring devices and cover plates as specified.
- 16143.02 Wiring Devices shall be as manufactured by Pass & Seymour, Leviton, Hubbell, Eaton, or approved equal. Devices shall be commercial specification grade, rated at 20 amps, 120 volts, unless specified otherwise. Coordinate device color with Architect. Devices shall be as follows:
- a. Switches:
 1. 1-Pole (SPST) Switch P&S #SP20AC1_
 - b. Wall Receptacles:
 1. Single Receptacle P&S #5361_
 2. Duplex Receptacle P&S #PS5362_
 3. CFCl Duplex Receptacle P&S #2095_
- 16143.03 Cover plates for wiring devices in surface-mounted boxes and unfinished areas shall be galvanized utility box covers, raised 1/4".
- 16143.04 Where more than one device is in a single location, utilize a one-piece multigang cover plate.
- 16143.05 Devices shall be set at the following elevations from the finished floor to the center of the box, unless otherwise indicated on the plans:
- a. Light switches 48"
 - b. Receptacles 18"

SECTION 16285 - SURGE PROTECTION DEVICES

- 16285.01 Provide surge protection devices as specified and indicated on the plans, and listed to U.L. 1449 3rd edition for type 1 and 2 surge protection devices. Devices shall be manufactured by APT, Current Technology, Square D, Siemens, ABB, or Eaton Cutler-Hammer.
- 16285.02 Surge protection devices shall provide for all modes of protection (L-N, L-G, N-G, L-L) with 200kAIC fault rating. Devices shall have a response time of less than 0.5 nanoseconds, nominal surge current (L-N) of 20kA, repetitive surge current capacity not less than 5,000 impulses, and a maximum continuous operating voltage (MCOV) not less than 115% of nominal system voltage.
- 16285.03 Voltage Protection Ratings (VPR's) shall be as follows:
- a. 480Y/277 V System: ≤1,200 V for L-N, L-G and N-G modes, and 2,000 V for L-L mode
 - b. 208Y/120 V System: ≤700 V for L-N, L-G and N-G modes, and 1,200 V for L-L mode
- 16285.04 Devices shall have status indicator lights (one per phase), service indicator light, form 'C' contacts (NO/NC), audible alarm with silence button, and surge counter.
- 16285.05 Devices shall be factory installed, internally mounted in panelboards and shall utilize field replaceable modular or non-modular protection circuits. Provide with surge rated integral disconnect switch where not connected to a circuit breaker or fused switch or not direct bus connected.
- 16285.06 All surge protection devices shall come with a 10 year standard manufacturer's warranty.
- 16285.07 Main switchboard shall be provided with surge protection device having a 120kA surge rating per mode, 240kA per phase.
- 16285.08 Branch circuit panelboards shall be provided with surge protection devices having a 60kA surge rating per mode, 120kA per phase.

SECTION 16412 - SAFETY SWITCHES

- 16412.01 Provide safety switches as specified and indicated on the plans. Safety switches shall be manufactured by Square D, Siemens, ABB, or Eaton Cutler-Hammer.
- 16412.02 Safety switches shall be NEMA Type HD (heavy duty) and Underwriters Laboratories listed.
- 16412.03 All switches shall have switchblades, fully visible in the "OFF" position when the switch door is open. All current carrying parts shall be plated to resist corrosion and promote cool operation. Switches shall have removable arc suppressors where necessary to permit easy access to line side lugs. Lugs shall be front removable and U.L. listed for 75°C aluminum or copper wires. Switches shall be quick-make, quick-break, such that during normal operation of the switch, the operation of the contacts shall not be capable of being restrained by the operating handle after the closing or opening action of the contacts has started. The operating handle shall be an integral part of the box, not the cover. Provisions for padlocking the switch in the "OFF" position shall be provided. Switches shall have a dual cover interlock to prevent unauthorized opening of the switch door when the handle is in the "ON" position, and to prevent closing of the switch mechanism with the door open. The handle position shall indicate whether the switch is "ON" or "OFF."
- 16412.04 Switches shall be furnished with enclosures as indicated on the Drawings. If NEMA designation is not given, indoor enclosures shall be NEMA 1, outdoor enclosures shall be NEMA 3R.

SECTION 16441 - SWITCHBOARDS

- 16441.01 Provide Square D, Siemens, or Eaton, 3-phase, 4-wire switchboards with circuit breakers as scheduled. Switchboards shall meet Underwriters Laboratories (U.L.) requirements and be furnished with a U.L. service entrance label.
- 16441.02 Switchboards shall be enclosed, dead front, free standing, front and rear aligned with front and rear accessibility, NEMA Type 1. The framework shall be of UL gauge steel secured together to support all cover plates, bussing, and component devices during shipment and installation. Formed removable closure plates shall be used on the front, rear, and sides. All closure plates are to be single tool, screw removable. Ventilation shall be provided when required. Each section shall include a single-piece removable top plate.
- 16441.03 The entire switchboard shall be suitable for operation at the specified available fault current. The switchboard shall be labeled to indicate the maximum available fault current rating, taking into account the structure, bussing, switchboard main disconnect, and switchboard branch circuit devices. The short circuit current rating of the switchboard shall not be less than the value indicated on the drawings. The switchboard branch circuit devices short circuit current rating shall be fully rated or determined by UL labeled series connected ratings.
- 16441.04 The switchboard through bus shall be silver plated copper. Switchboard bussing shall be of sufficient cross-sectional area to meet UL Standard 891 for temperature rise. The through bus shall be 100% rated with an ampacity as listed on the drawings and shall extend the full length of the switchboard. The neutral bus shall be 100% rated.
- 16441.05 The switchboard distribution section bus shall be of the same material as the through bus. The distribution section neutral plate shall be copper provided with Cu/Al lugs. The ground bus shall be sized per UL Standard 891 and be of the same material as the through bus.
- 16441.06 The main disconnect device shall be a solid-state trip, molded case circuit breaker. With the main device, ground fault protection, undervoltage trip, phase failure protection, long time, short time, and instantaneous trip shall be provided.
- 16441.07 Group-mounted circuit breaker branch devices are to be front accessible and front connectable. The circuit breaker connections to the panel bussing shall be of a "blow-on" design such that the connections grip the bus bars firmly under high fault conditions.
- 16441.08 Individually mounted branch circuit breakers shall be of the molded case type and be positioned vertically with the operating handles extending through the hinged front cover plates of the section. Each circuit breaker shall be individually fed by connectors from the main bus of the switchboard.
- 16441.09 Provide main section with "PowerLogic" Power Meter with data logging and Modbus/BACnet communications capability.
- 16441.10 Provide engraved, plastic laminate plates identifying the main and each distribution breaker in the switchboard.
- 16441.11 Provide 3-1/2" high concrete housekeeping pad for all floor mounted switchboards.

SECTION 16442 - PANELBOARDS

- 16442.01 Provide Square D, Siemens, or Eaton 3-phase, 4-wire panelboards with circuit breakers as scheduled.
- 16442.02 Provide panels with equipment ground bars, surface mounted or recessed cabinets as scheduled, and U.L. label.
- 16442.03 Circuit breakers shall be bolt-on, thermal-magnetic molded case type. Breakers shall be 1, 2 or 3-pole with an integral crossbar to assure simultaneous opening of all poles in multi-pole circuit breakers. Breakers shall have an over-center, trip-free, toggle-type operating mechanism with quick-make, quick-break action and positive handle indication. Handles shall have "ON," "OFF" and "TRIPPED" positions. Circuit breakers shall be UL listed in accordance with UL Standard 489 and shall have continuous current ratings as noted on the plans. Interrupting ratings shall be 10,000 rms symmetrical amps maximum at 240 volts ac and 14,000 rms symmetrical amps maximum at 480 volts ac.
- 16442.04 Panelboard bus structure and main lugs or main circuit breaker shall have current ratings as scheduled. Such ratings shall be established by heat rise tests, conducted in accordance with UL Standard 67. Bus structure shall be insulated. Bus bar connections to the branch circuit breakers shall be the "distributed phase" type. All current carrying parts of the bus structure shall be plated.

SECTION 16442 - PANELBOARDS (CONTINUED)

- 16442.05 The panelboard bus assembly shall be enclosed in a steel cabinet. The rigidity and gauge of steel to be as specified in UL Standard 50 for cabinets. Wiring gutter space shall be in accordance with UL Standard 67 for panelboards. The box shall be fabricated from galvanized steel or equivalent rust resistant steel. Each front shall include a door and have a flush, cylinder tumbler-type lock with catch and spring-loaded stainless steel door pull. All flushboard locks shall be keyed alike. Fronts shall have adjustable indicating trim clamps which shall be completely concealed when the doors are closed. Doors shall be mounted with completely concealed steel hinges. Fronts shall not be removable with door in the locked position. A circuit directory frame and card with a clear plastic covering shall be provided on the inside of the door.
- 16442.06 Inside each panel door, provide an approved typewritten schedule card showing what each circuit feeds. Provide each panelboard with an engraved plastic laminate nameplate with black background and 1/4" white letters to designate panel name.

SECTION 16461 - DRY-TYPE TRANSFORMERS

- 16461.01 Provide Square D, Siemens or Eaton dry-type distribution transformers as specified and shown on plans.
- 16461.02 Dry-type transformers shall be ventilated type in NEMA 2 enclosure standard. Provide with KVA and voltage ratings as called for on the drawings, Aluminum windings, 220°C insulation system having 150°C temperature rise standard, 1 K-Factor, and minimum of six (6) 2-1/2" taps. Sound level shall be meet NEMA ST-20 levels, and equipment shall have integral sound isolation pads between the transformer mounting bracket and enclosure.
- 16461.03 Transformers shall meet or exceed the minimum federal energy efficiency standards for low voltage dry-type distribution transformers set forth in U.S. DOE Document 10 CFR Part 431 (DOE 2016).
- 16461.04 Provide flexible metallic conduit for primary and secondary connections to minimize sound and vibration transmission.
- 16461.05 Provide 3-1/2" high concrete housekeeping pad for all floor mounted transformers.

SECTION 16510 - LIGHT FIXTURES

- 16510.01 Provide the light fixtures as specified and scheduled on plans. Material, equipment or services necessary to complete the installation of these fixtures, but not specifically mentioned shall be furnished as though specified.
- 16510.02 UL or CSA US Listing: Light fixtures shall be manufactured in strict accordance with the appropriate and current requirements of the "Standards for Safety" to UL 8750 or others as they may be applicable. A listing shall be provided for each fixture type, and the appropriate label or labels shall be affixed to each fixture in a position concealing it from normal view.
- 16510.03 Approved Manufacturers: Provide products of firms regularly engaged in the manufacture of light fixtures of types and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years. The manufacturer of the lighting fixtures shall comply with the provisions of the appropriate code and standards.
- 16510.04 LED FIXTURES - Comply with UL 1598. Test according to IESNA LM 80-08, where life expectancy is specified. Provide luminaires with the following characteristics unless otherwise noted:
- a. Life: 50,000 hours minimum interior/100,000 hours minimum exterior
 - b. Efficacy: 90 lumens/watt
 - c. CRI: 80 minimum interior/70 minimum exterior
 - d. MacAdam ellipse: 4-step minimum per ANSI recommendations
- 16510.05 LED's shall be manufactured by, Nichia, Samsung, LG, Osram, Philips or Cree.
- a. Individual LEDs shall be connected such that a catastrophic loss or the failure of one LED will not result in the loss of the entire luminaire
 - b. LED Boards shall be suitable for field maintenance or service from below the ceiling with plug-in connectors.
- 16510.06 LED drivers shall be manufactured by eldoLED, Osram, Philips or Cree. Drivers shall have <10% total harmonic distortion, minimum 95% power factor, and universal 120/277 volt operation.
- 16510.07 Light fixture manufacturers shall provide a warranty against loss of performance and defects in materials and workmanship for the fixtures for a period of 5 years after acceptance of the products. Warranty shall cover all components comprising the fixture.

SECTION 16851 - FIRE ALARM SYSTEM

- 16851.01 Provide new analog addressable fire alarm system as specified and shown on drawings, dedicated for elevator recall and shut-down signaling. System shall be listed to U.L. Standard 864, 9th edition and shall be manufactured by Notifier, Siemens or Simplex. System installation shall comply with NFPA 72.
- 16851.02 Fire alarm control panel shall be analog addressable type of power limited design operating at 24Vdc. Panel shall have built-in programmer, signaling line circuit capable of handling up to 50 addressable devices in any combination, two programmable notification appliance circuits (Class A or Class B), integral 80-character LCD display with backlighting, on-board DACT (digital alarm communicating transmitter) for remote dial capability, two programmable relays and one fixed trouble relay, selectable strobe synchronization, and automatic detector sensitivity testing (NFPA 72 compliant).
- a. Notifier "Firewarden" #NFW-50 or equal.
- 16851.03 Primary power supply for control panel shall be by 120Vac dedicated circuit. Secondary power supply shall be by battery backup. Batteries shall be integral to the control panel and shall have adequate capacity to operate the fire alarm system under quiescent load for a minimum of 24 hours.
- 16851.06 Smoke detectors shall be analog addressable, 2-wire, photoelectric type, U.L. 268 listed, operating at 24-Vdc nominal, with integral communications and built-in type identification.
- 16851.11 Addressable Relay Modules shall operate at 24 VDC from the signaling line circuit, and shall have two SPDT Form-C dry contacts rated for 3A at 24 VDC and 0.9A at 120 VAC. Relays shall have red activation LED and shall be installed in NEMA 1 Enclosure with RED cover.
- 16851.12 Conventional relays shall operate at 24 VDC, with one SPDT form-C contact rated for 7A at 24 VDC and 10A at 120 VAC. Relays shall have red activation LED and shall be installed in NEMA 1 Enclosure with RED cover. Provide appropriate addressable modules for relays as required for connection to signaling line circuit.
- 16851.13 All power limited fire alarm cabling shall consist of individual insulated solid copper conductors in a overall flexible red PVC jacket, rated for 300V, and shall be plenum rated (NEC type FPLP) or installed in conduit (NEC type FPLR). Signaling line circuits (SLC's) shall be NFPA 72 Class B, Style 4, and shall utilize twisted-pair wire to minimize the effects of electrical interference.
- 16851.14 Fire alarm signal shall be activated by a smoke or heat detector.
- 16851.15 Fire alarm trouble signal shall be activated by open circuits, low battery, loss of power, and battery charging failure.
- 16851.16 Contractor shall include one year of remote monitoring service of fire alarm system.
- 16851.17 Contractor shall submit fire alarm shop drawings to the Authority Having Jurisdiction, AHJ, prior to installation. Shop drawings shall be prepared in accordance with the AHJ requirements. Do not start fire alarm work until shop drawings have been reviewed by the AHJ and Engineer.

END DIVISION 16 - ELECTRICAL



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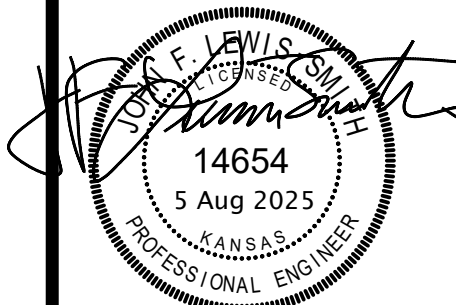
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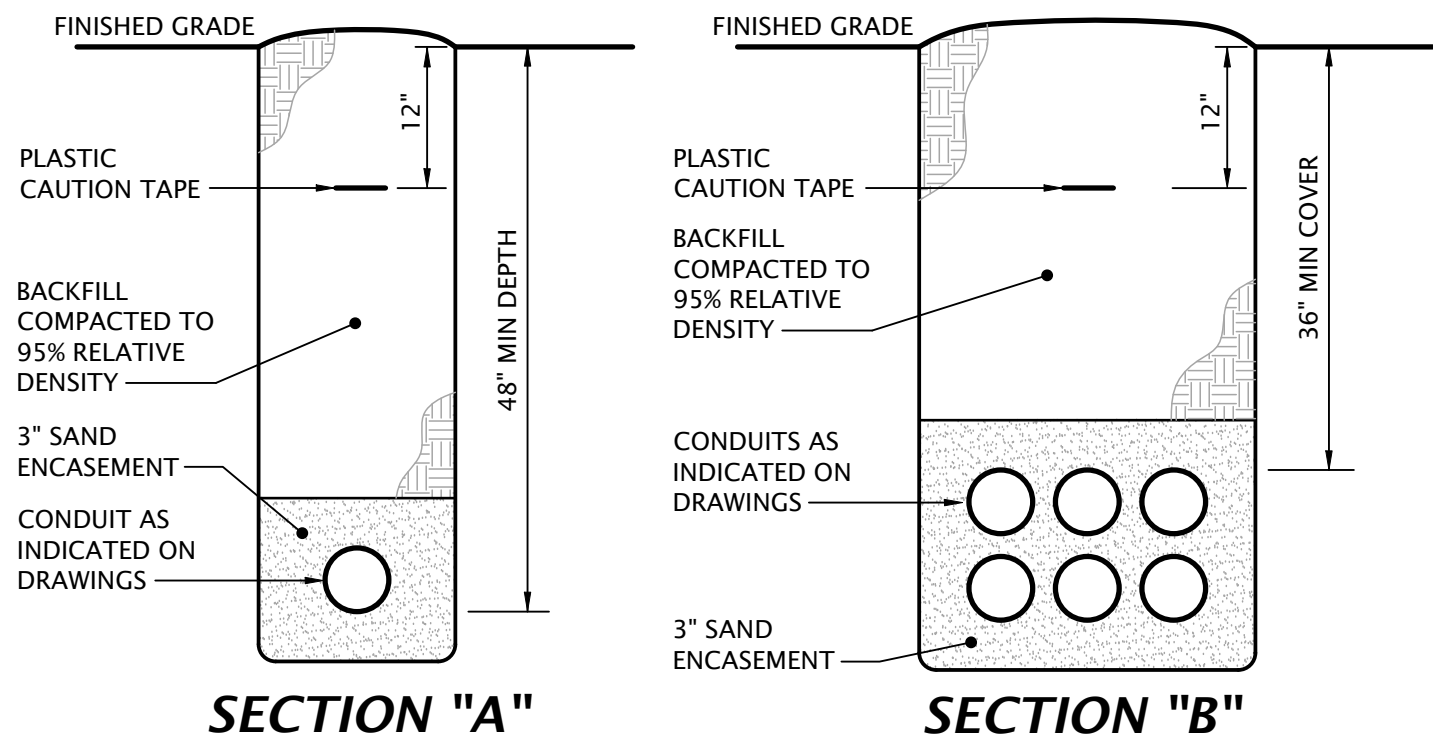
THE E M P L E
SALINA INNOVATION FOUNDATION
ELEVATOR REHABILITATION PROJECT
SALINA, KANSAS



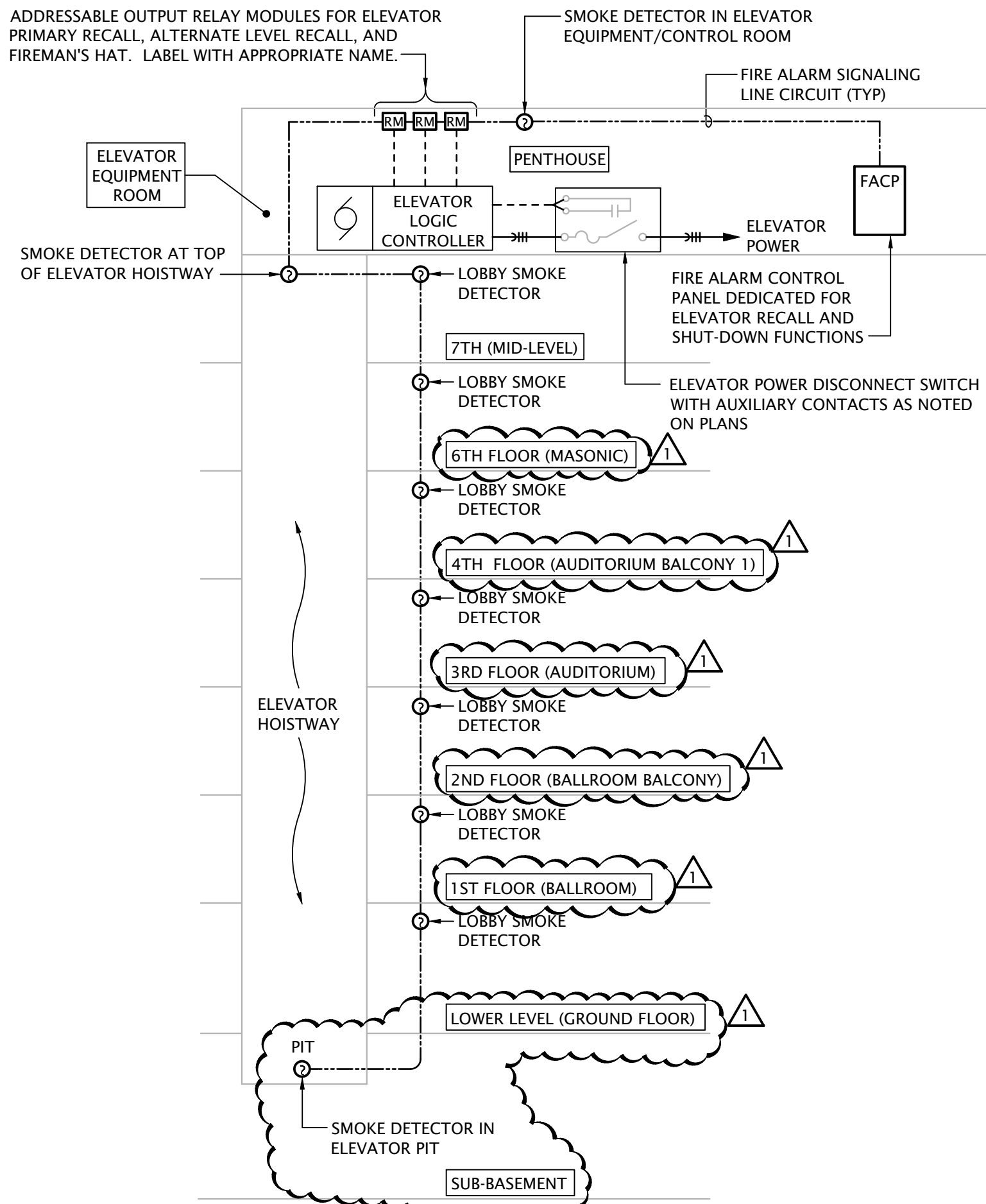
REVISION:
8-14-2025

DATE: 8-5-2025
JOB: 25-3499
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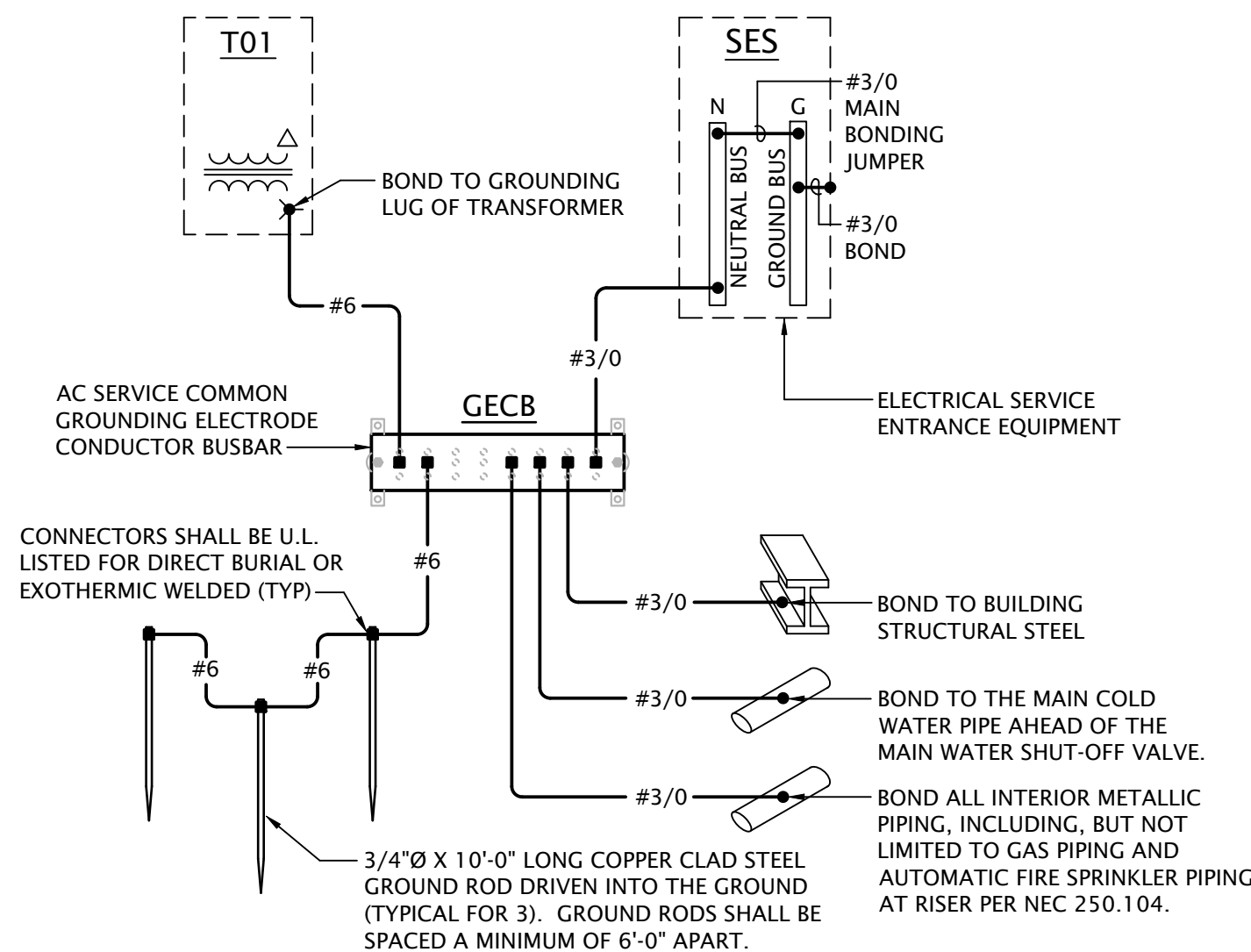
4 CONDUIT TRENCH DETAILS
No Scale



ELEVATOR SEQUENCE OF OPERATION: (DURING SMOKE/HEAT ALARM)

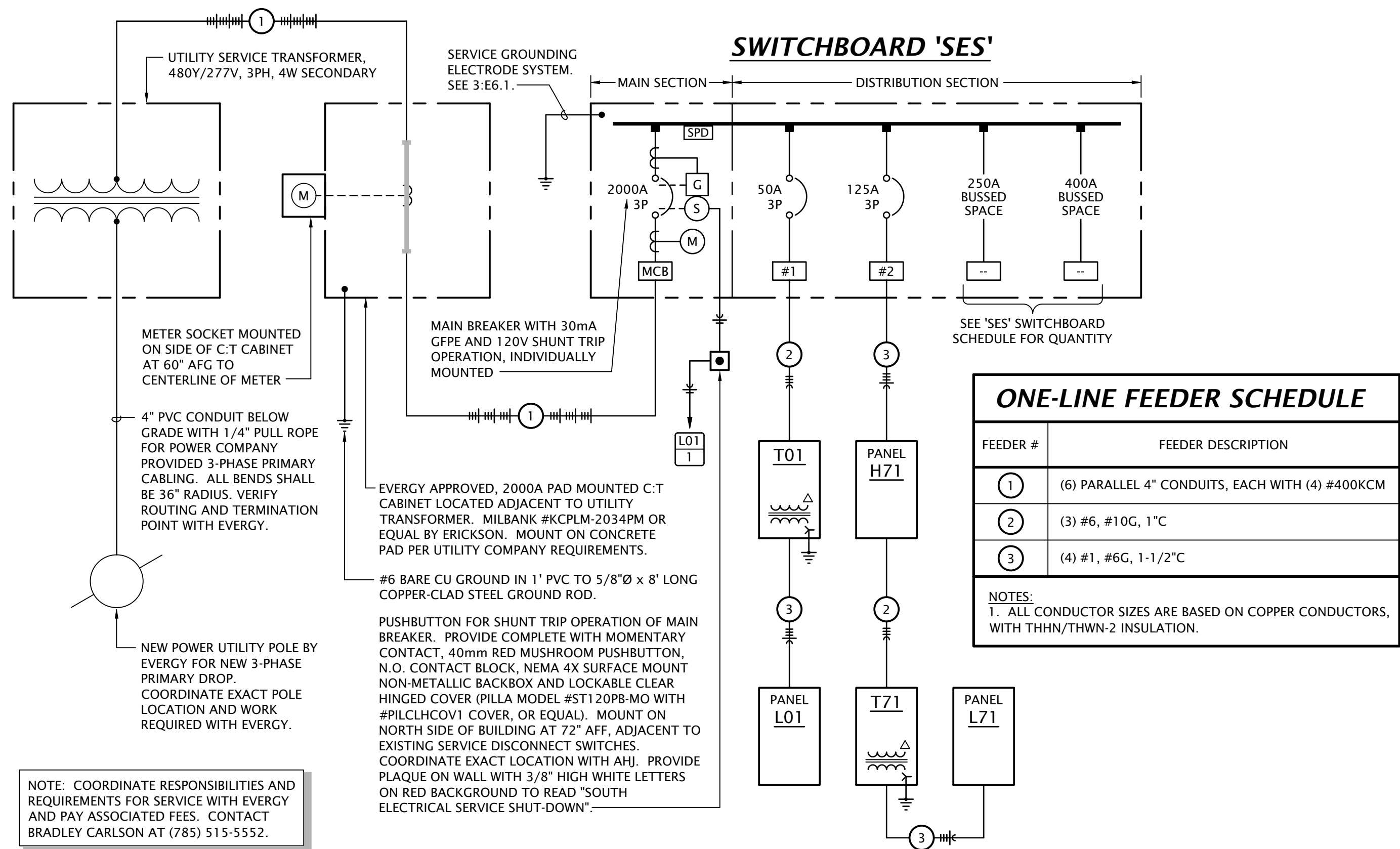
- UPON SENSING SMOKE FROM ONE OR MORE LOBBY, ELEVATOR HOISTWAY OR ELEVATOR EQUIPMENT ROOM, THE SMOKE DETECTOR SHALL SIGNAL THE FACP, WHICH WILL FORWARD THE SIGNAL TO THE ELEVATOR LOGIC CONTROLLER TO RECALL ELEVATOR CAB TO THE DESIGNATED MAIN FLOOR. IF DESIGNATED FLOOR'S LOBBY SMOKE DETECTOR SENSES SMOKE AT THAT FLOOR, THE ELEVATOR CONTROLLER WILL SEND THE ELEVATOR CAB TO THE NEXT FLOOR CLEAR OF SMOKE. ONCE THE ELEVATOR CAB HAS REACHED THE DESIGNATED FLOOR, THE ELEVATOR CAB DOORS WILL OPEN AND THE CONTROLLER WILL LOCK THE ELEVATOR CAB AT THAT FLOOR, DISABLING THE ELEVATOR CAB CONTROLS, UNLESS A FIREMAN'S KEY IS USED TO OVERRIDE AUTOMATIC CONTROLS.
- ALL SMOKE DETECTORS (LOBBIES, HOISTWAY, MACHINE ROOM) SHALL TRANSMIT A SEPARATE AND DISTINCT VISIBLE ANNUNCIATION AT THE FACP.

2 ELEVATOR INTERLOCK WITH FIRE ALARM
No Scale



- NOTES:
- COMMON GROUNDING ELECTRODE CONDUCTOR BUSBAR SHALL BE 1/4" THICK X 4" WIDE X 18" LONG, TIN PLATED COPPER BUSBAR. PROVIDE COMPLETE WITH INSULATING STAND OFFS, STAINLESS STEEL BRACKETS AND MOUNTING BOLTS. MOUNT ON WALL AT 18" AFF. ERICO #EGBA14418CCT OR EQUAL.
 - ALL CONNECTIONS TO GROUNDING BUSBAR SHALL BE MADE USING COMPRESSION TYPE LUGS (BURNIDY 'YAZ' SERIES OR EQUAL). MECHANICAL LUGS ARE NOT ACCEPTABLE.
 - INSTALL ALL GROUNDING ELECTRODE CONDUCTORS IN 3/4" CONDUIT WHERE EXPOSED AND WHERE SUBJECT TO PHYSICAL DAMAGE.
 - CONTRACTOR SHALL MEASURE RESISTANCE TO GROUND AND PROVIDE ADDITIONAL GROUND ROD OR PLATE ELECTRODES AS REQUIRED UNTIL A RESISTANCE TO GROUND OF 25 OHMS OR LESS IS ACHIEVED.

3 AC SERVICE GROUNDING ELECTRODE SYSTEM DETAIL
No Scale



NOTE: COORDINATE RESPONSIBILITIES AND REQUIREMENTS FOR SERVICE WITH EVERGY AND PAY ASSOCIATED FEES. CONTACT BRADLEY CARLSON AT (785) 515-5552.

1 ELECTRICAL POWER DISTRIBUTION ONE-LINE DIAGRAM
NO SCALE

GENERAL ELECTRICAL NOTES

- ELECTRICAL EQUIPMENT AND DEVICES SHALL BE "LISTED" AND "IDENTIFIED" AS RATED FOR A MINIMUM OF 75 °C CONDUCTOR TERMINATION.
- BRANCH CIRCUIT SIZES SHOWN ON PANEL SCHEDULES ARE MINIMUM, AND ALLOWANCES SHALL BE MADE TO LIMIT VOLTAGE DROP. ALL 15 AMP AND 20 AMP, 120V CIRCUITS OVER 75' LONG SHALL BE INCREASED BY ONE WIRE SIZE, AND OVER 150' LONG SHALL BE INCREASED BY TWO WIRE SIZES.
- COORDINATE INSTALLATION OF ELECTRICAL WORK ABOVE THE CEILING TO PROVIDE THE GREATEST POSSIBLE CLEARANCE FOR INSTALLATION OF PLUMBING AND MECHANICAL INSTALLATION. CONDUITS SHALL BE ROUTED THROUGH JOIST WEBS WHERE POSSIBLE.
- VERIFY EXACT PLACEMENT OF ALL LUMINAIRES, DEVICES, AND EQUIPMENT SHOWN ON THE ELECTRICAL CONSTRUCTION DOCUMENTS WITH ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS PRIOR TO FINAL PLACEMENT.
- DEFINITION OF TERMS
* SHALL - ACTION THAT IS REQUIRED WITHOUT OPTION OR QUALIFICATION.
* FURNISH - CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING.
* INSTALL - CONTRACTOR SHALL BE RESPONSIBLE FOR LABOR AND CONSTRUCTION EQUIPMENT NECESSARY TO SET IN PLACE, CONNECT, CALIBRATE AND TEST EQUIPMENT FURNISHED BY HIM OR OTHERS.
* PROVIDE - CONTRACTOR SHALL FURNISH AND INSTALL

GENERAL POWER NOTES

- THE CIRCUITING OF ALL DEVICES HAS BEEN SHOWN ON THE PLANS, AND THE CONTRACTOR SHALL FOLLOW THIS CIRCUITING LAYOUT.
- VERIFY EXACT LOCATIONS OF HVAC AND PLUMBING EQUIPMENT WITH THE GENERAL CONTRACTOR AND ASSOCIATED SUB CONTRACTORS. COORDINATE CONDUIT STUB-UP AND POWER CONNECTIONS PRIOR TO COMMENCING ROUGH-IN WORK. ELECTRICAL DEVICES (DISCONNECTS, RECEPTACLES, ETC.) INSTALLED ON EQUIPMENT SHALL BE MOUNTED ON A NON-REMOVABLE PANEL OF THE EQUIPMENT. FIELD COORDINATE EXACT DEVICE MOUNTING LOCATIONS PRIOR TO INSTALLATION.
- WALL MOUNTED HVAC CONTROL DEVICES (THERMOSTATS, TEMPERATURE SENSORS, HUMIDISTATS, CO₂ SENSORS, ETC.) SHALL BE PROVIDED BY MECHANICAL CONTRACTOR. UNLESS NOTED OTHERWISE, ELECTRICAL CONTRACTOR SHALL PROVIDE SINGLE GANG WALL BOX AT 46" AFF AND 1/2" CONDUIT STUBBED OUT TO ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS AND PULLSTRING IN RACEWAY. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS OF DEVICES.

GENERAL LIGHTING NOTES

- THE CIRCUITING OF ALL LUMINAIRES HAS BEEN SHOWN ON THE PLANS, AND THE CONTRACTOR SHALL FOLLOW THIS CIRCUITING LAYOUT.
- CIRCUIT ALL EMERGENCY LIGHTS, NIGHT LIGHTS AND EXIT LIGHTS TO AN UNSWITCHED HOT CONDUCTOR, UPSTREAM OF ALL CONTROLS.

LIGHT FIXTURE SCHEDULE								
MARK	MANUFACTURER	MODEL NUMBER	LAMP DATA	DRIVER	MOUNTING	FINISH	DESCRIPTION	NOTES
A	DAY-BRITE	FSS455L840-UNV-DIM-PAF	42W LED 5500 LUMEN	0-10V DIMMING	SUSPENDED TO 8'-6" AFF	WHITE	4" STRIP LIGHT WITH FROSTED ACRYLIC DIFFUSING LENS, WIDE DISTRIBUTION, ALL PARTS PAINTED AFTER FABRICATION	1
B	DAY-BRITE	DWPE43L840-4-UNV	38W LED 4400 LUMEN	0-10V DIMMING	SURFACE	WHITE	4" INDUSTRIAL VAPORTIGHT, FIBERGLASS BODY, POLYCARBONATE LENS	2
<div>GENERAL:</div> <div><div><div>• All LED's shall be 4000 K correlated color temperature, minimum 80 CRI.</div><div>• All light fixtures shall be provided with universal drivers capable of operating at 120V or 277V UNO.</div></div></div> <div>NOTES:</div> <div><div>1. Suspend fixture with aircraft cable to height indicated.</div><div>2. U.L. listed for 'wet location'</div></div>								

<div>Designation: H71</div> <div>Location: Penthouse</div> <div>Voltage: 480Y/277V-3Ph-4W</div> <div>Enclosure: NEMA 1</div> <div>Mounting: Surface</div> <div>Manufacturer: Square D 'NF'</div> <div>Bus Amps: 125</div> <div>MCB Amps: MLO</div> <div>AIC Rating: 14 kAIC</div> <div>Other: Integral Surge Protection</div>							
Circuit #	Load Description	Conductors	C/B Size	C/B Size	Conductors	Load Description	Circuit #
1	ELEVATOR #1	3#6, #10G, 1°C	50 / 3	50 / 3	SEE ONE-LINE DIAGRAM	TRANSFORMER 'T71' (PANEL 'L71')	2
3							4
5							6
7	SPACE ONLY	---	---	20 / 1	2#12, #12G, 1/2°C	LTG. ELEC & STORAGE RMS	8
9	SPACE ONLY	---	---	---	---	SPACE ONLY	10
11	SPACE ONLY	---	---	---	---	SPACE ONLY	12
13	SPACE ONLY	---	---	---	---	SPACE ONLY	14
15	SPACE ONLY	---	---	---	---	SPACE ONLY	16
17	SPACE ONLY	---	---	---	---	SPACE ONLY	18
19	SPACE ONLY	---	---	---	---	SPACE ONLY	20
21	SPACE ONLY	---	---	---	---	SPACE ONLY	22
23	SPACE ONLY	---	---	---	---	SPACE ONLY	24
25	SPACE ONLY	---	---	---	---	SPACE ONLY	26
27	SPACE ONLY	---	---	---	---	SPACE ONLY	28
29	SPACE ONLY	---	---	---	---	SPACE ONLY	30

<div>Designation: L71</div> <div>Location: Penthouse</div> <div>Voltage: 208Y/120V-3Ph-4W</div> <div>Enclosure: NEMA 1</div> <div>Mounting: Surface</div> <div>Manufacturer: Square D 'NQ'</div> <div>Bus Amps: 100</div> <div>MCB Amps: 100/3</div> <div>AIC Rating: 10 kAIC</div> <div>Other: Integral Surge Protection</div>							
Circuit #	Load Description	Conductors	C/B Size	C/B Size	Conductors	Load Description	Circuit #
1	FACP (ELEV. RECALL)	2#12, #12G, 1/2°C	20 / 1	20 / 1	---	SPARE BREAKER	2
3	ELEVATOR CAB LTS/CONTROL	2#12, #12G, 1/2°C	20 / 1	20 / 1	---	SPARE BREAKER	4
5	RCPT: ELEVATOR EQPM RM	2#12, #12G, 1/2°C	20 / 1	20 / 1	---	SPARE BREAKER	6
7	LTG: ELEVATOR EQPM RM	2#12, #12G, 1/2°C	20 / 1	---	---	SPACE ONLY	8
9	SPACE ONLY	---	---	---	---	SPACE ONLY	10
11	SPACE ONLY	---	---	---	---	SPACE ONLY	12
13	SPACE ONLY	---	---	---	---	SPACE ONLY	14
15	SPACE ONLY	---	---	---	---	SPACE ONLY	16
17	SPACE ONLY	---	---	---	---	SPACE ONLY	18
19	SPACE ONLY	---	---	---	---	SPACE ONLY	20
21	SPACE ONLY	---	---	---	---	SPACE ONLY	22
23	SPACE ONLY	---	---	---	---	SPACE ONLY	24
25	SPACE ONLY	---	---	---	---	SPACE ONLY	26
27	SPACE ONLY	---	---	---	---	SPACE ONLY	28
29	SPACE ONLY	---	---	---	---	SPACE ONLY	30

DRY-TYPE TRANSFORMER SCHEDULE							
Tag	KVA Size	Equipment Served	Primary Voltage	Secondary Voltage	Secondary Feeder Size	Grounding Electrode Conductor Size	Remarks
T01	30	PANEL 'L01'	480V-3ø,3W	208Y/120V-3ø,4W	SEE ONE-LINE DIAGRAM	#6	1
T71	30	PANEL 'L71'	480V-3ø,3W	208Y/120V-3ø,4W	SEE ONE-LINE DIAGRAM	#6	1
<div>GENERAL NOTES:</div> <div><div>• All conductor sizes based on copper</div><div>• Maximum length of secondary conductors shall not exceed 25'-0" per NEC 240.21(C)(6).</div><div>• Bond grounding electrode conductor to nearest available grounding electrode per NEC 250.30(A)(7).</div></div> <div>REMARKS:</div> <div>(1) Mount transformer on 3'-1/2" high concrete housekeeping pad.</div>							

CIRCUIT BREAKER SWITCHBOARD SCHEDULE				
<div>Designation: SES</div> <div>Location: Basement</div> <div>Voltage: 480Y/277V-3Ph-4W</div> <div>Enclosure: NEMA 1</div> <div>Mounting: Floor</div> <div>Bus Amps: 2000</div> <div>MCB Amps: 2000/3 w/ GFPE</div> <div>AIC Rating: 65 kAIC</div> <div>Manufacturer: Square D 'QED'</div>				
Circuit #	Equipment Served	Feeder Size	C/B Size	Remarks
1	Transformer 'T01' (Panel 'L01')	SEE ONE-LINE DIAGRAM	50/3	
2	Panel 'H71'	SEE ONE-LINE DIAGRAM	125/3	
3	250A Provisional Space	---	250A	See Note 3.
4	400A Provisional Space	---	400A	See Note 4.
<div>Notes:</div> <div><div>1. Switchboard shall be U.L. listed for use as Service Equipment.</div><div>2. Provide switchboard with integral surge protection.</div><div>3. Provide bussted mounting space for 12 additional 250 amp frame size future breakers.</div><div>4. Provide bussted mounting space for 9 additional 400 amp frame size future breakers.</div><div>5. Provide main breaker with 30mA rated Ground Fault Protection for Equipment (GFPE) and 120 V-ac shunt-trip coil.</div></div>				

<div>Designation: L01</div> <div>Location: Basement</div> <div>Voltage: 208Y/120V-3Ph-4W</div> <div>Enclosure: NEMA 1</div> <div>Mounting: Surface</div> <div>Manufacturer: Square D 'NQ'</div> <div>Bus Amps: 100</div> <div>MCB Amps: 100/3</div> <div>AIC Rating: 10 kAIC</div> <div>Other: Integral Surge Protection</div>							
Circuit #	Load Description	Conductors	C/B Size	C/B Size	Conductors	Load Description	Circuit #
1	SERVICE SHUNT-TRIP	2#12, #12G, 1/2°C	20 / 1	20 / 1	---	SPARE BREAKER	2
3	ELEVATOR PIT RCPT	2#12, #12G, 1/2°C	20 / 1	20 / 1	---	SPARE BREAKER	4
5	ELEVATOR PIT LIGHT	2#12, #12G, 1/2°C	20 / 1	20 / 1	---	SPARE BREAKER	6
7	ELEVATOR SUMP PUMP PANEL	2#12, #12G, 1/2°C	20 / 1	---	---	SPACE ONLY	8
9	ELEVATOR SUMP PUMP	2#12, #12G, 1/2°C	20 / 1	---	---	SPACE ONLY	10
11	SPACE ONLY	---	---	---	---	SPACE ONLY	12
13	SPACE ONLY	---	---	---	---	SPACE ONLY	14
15	SPACE ONLY	---	---	---	---	SPACE ONLY	16
17	SPACE ONLY	---	---	---	---	SPACE ONLY	18
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25	SPACE ONLY	---	---	---	---	SPACE ONLY	26
27	SPACE ONLY	---	---	---	---	SPACE ONLY	28
29	SPACE ONLY	---	---	---	---	SPACE ONLY	30

PANEL SCHEDULE NOTES BY SYMBOL

1. PROVIDE BREAKER WITH "LOCK ON" HASP/CLAMP DEVICE.

MANHATTAN

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785.587.8642

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Project 24088

August 2025

CIRCUIT AND RACEWAY SYMBOLS

#/#/

HOMERUN - WIRING TO PANEL OF CIRCUIT ORIGIN

→

PARTIAL HOMERUN - WIRING TO PANEL OF CIRCUIT ORIGIN

CONDUIT CONCEALED IN WALL OR ABOVE CEILING

CONDUIT BELOW GRADE OR EMBEDDED IN CONCRETE

CONDUIT FOR UNDERGROUND ELECTRICAL PRIMARY

|||

LINE VOLTAGE CIRCUIT CONDUCTORS

SHORT = HOT/TRACER/SWITCH LEG CONDUCTOR

LONG = NEUTRAL (GROUNDED) CONDUCTOR

CURVED = GROUNDING (BONDING) CONDUCTOR

CONDUIT STUB OUT WITH NYLON END BUSHING

CONDUIT TURNED UP

CONDUIT TURNED DOWN

GROUNDING CONNECTION

CIRCUIT DESIGNATION:
TOP INDICATES PANEL OF CIRCUIT ORIGIN
BOTTOM INDICATES CIRCUIT NUMBER

HOMERUN - WIRING TO PANEL OF CIRCUIT ORIGIN

PARTIAL HOMERUN - WIRING TO PANEL OF CIRCUIT ORIGIN

CONDUIT CONCEALED IN WALL OR ABOVE CEILING

CONDUIT BELOW GRADE OR EMBEDDED IN CONCRETE

CONDUIT FOR UNDERGROUND ELECTRICAL PRIMARY

LINE VOLTAGE CIRCUIT CONDUCTORS

SHORT = HOT/TRACER/SWITCH LEG CONDUCTOR

LONG = NEUTRAL (GROUNDED) CONDUCTOR

CURVED = GROUNDING (BONDING) CONDUCTOR

CONDUIT STUB OUT WITH NYLON END BUSHING

CONDUIT TURNED UP

CONDUIT TURNED DOWN

GROUNDING CONNECTION

LIGHTING SYMBOLS

PENDANT OR SURFACE MOUNTED LINEAR LUMINAIRE

STANDARD LENSED STRIP LIGHT

POWER SYMBOLS

⊖

SINGLE RECEPTACLE

⊖

DUPLEX RECEPTACLE

⊖

DOUBLE DUPLEX RECEPTACLE

⊖

SINGLE POLE TOGGLE SNAP SWITCH

⊖

PUSH BUTTON OPERATOR

⊖

JUNCTION BOX

⊖

MOTOR

⊖

GROUNDING BAR

⊖

DISCONNECT SWITCH

⊖

BRANCH CIRCUIT PANELBOARD, SURFACE MOUNTED

⊖

DISTRIBUTION SWITCHBOARD

⊖

DRY-TYPE TRANSFORMER

TELECOMMUNICATIONS SYMBOLS

◀

TELECOMMUNICATIONS OUTLET

FIRE ALARM SYMBOLS

FACP

FIRE ALARM CONTROL PANEL

⊖

HEAT DETECTOR

⊖

AREA SMOKE DETECTOR

MM

ADDRESSABLE MONITORING MODULE

RM

ADDRESSABLE RELAY MODULE

⊖

CONVENTIONAL FIRE ALARM RELAY

SYMBOL MODIFYING DESIGNATORS

CLG

CEILING MOUNTED

- FLUSH MOUNTED IN SUSPENDED CEILINGS
- SURFACE MOUNTED TO STRUCTURE ABOVE IN OPEN CEILINGS

e

DEVICE IS EXISTING TO REMAIN

GFI

GROUND FAULT CIRCUIT INTERRUPTING DEVICE

NL

NIGHTLIGHT WIRED TO UNSWITCHED HOT CONDUCTOR

WP

PROVIDE WEATHERPROOF ENCLOSURE FOR DEVICE

XX"

MOUNTING HEIGHT OF DEVICE ABOVE FINISHED FLOOR

THE TEMPLATE

SALINA INNOVATION FOUNDATION
ELEVATOR REHABILITATION PROJECT

KANSAS

SALINA,

JOSEPH F. LEVINS

14654

5 Aug 2025

KANSAS

PROFESSIONAL ENGINEER

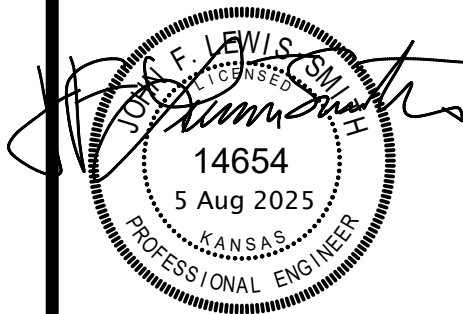
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8-14-2025

DATE: 8-5-2025

JOB: 25-3499

SHEET NO.:



REVISION:

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8-14-2025

DATE: 8-5-2025

JOB: 25-3499

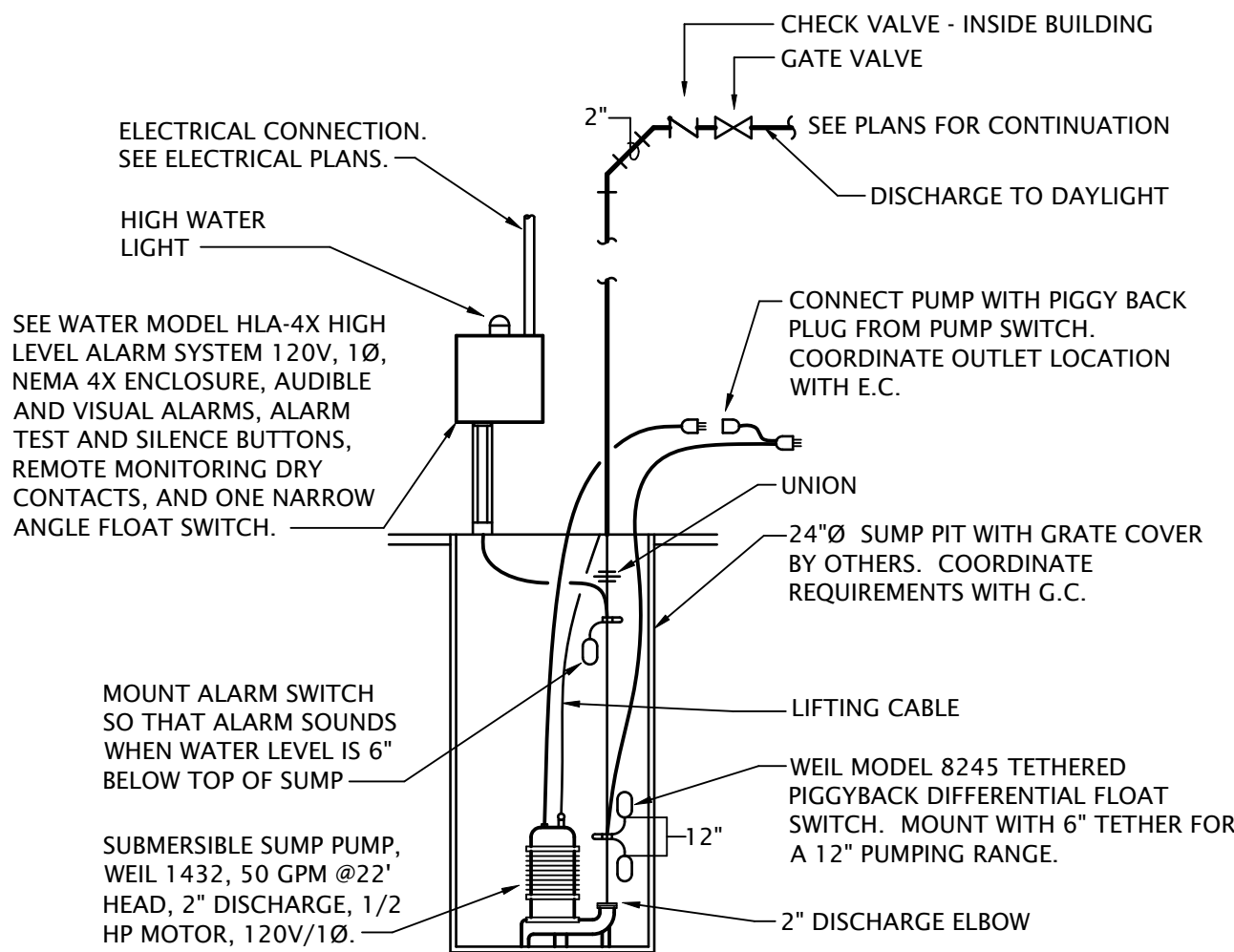
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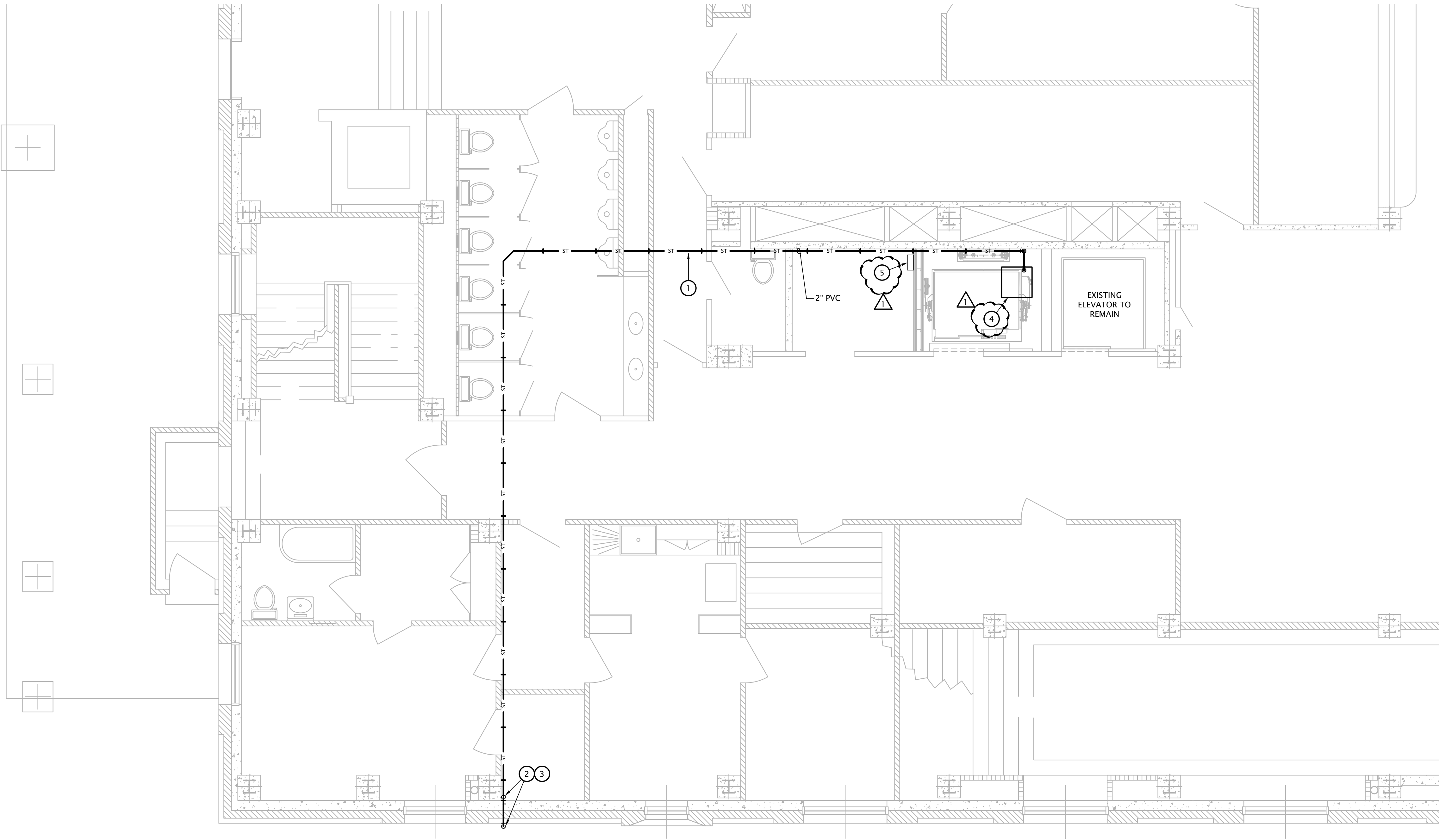
PLUMBING PLAN NOTES BY SYMBOL

1. ROUTE ELEVATOR SUMP PUMP DISCHARGE THROUGH BASEMENT AS HIGH AS POSSIBLE AND UP ALONG EXTERIOR WALL. FIELD COORDINATE EXACT ROUTING WITH EXISTING CONDITIONS AND ELEVATOR EQUIPMENT SUPPLIER.
2. ROUTE PIPING UP THROUGH FLOOR IN CORNER AND PENETRATE EXTERIOR WALL 18" A.F.G. AND TERMINATE WITH ELBOW DOWN ABOVE SPLASH BLOCK. COORDINATE EXACT ROUTING WITH OWNER PRIOR TO ROUGH-IN. SEAL PIPE PENETRATIONS WEATHER TIGHT.
3. ALL EXPOSED PIPING IN FINISHED SPACES SHALL BE COPPER. PROVIDE COPPER ESCUTCHEONS AT FLOOR AND WALL PENETRATIONS.
4. PROVIDE SUMP PUMP IN PIT BY OTHERS. SEE DETAIL 2-P1.1.
5. ELEVATOR SUMP PUMP CONTROL PANEL. FIELD COORDINATE LOCATION AND REQUIREMENTS WITH E.C.



ELEVATOR SUMP PUMP DETAIL

NO SCALE



1 PARTIAL LOWER LEVEL PLUMBING PLAN

1/4" = 1'-0"