

GENERAL NOTES:

1. WE CERTIFY TO THE BEST OF OUR KNOWLEDGE AND BELIEF THAT THE DESIGN OF THIS PROJECT COMPLIES WITH THE APPLICABLE PROVISIONS OF THE REQUIREMENTS SECTIONS 34-401 TO 34-411 INCLUSIVELY, TO THE STATUES OF THE STATE OF ARIZONA (ARCHITECTURAL BARRIERS TO THE HANDICAPPED).
2. THE INTENT OF THESE DOCUMENTS IS TO PROVIDE INFORMATION FOR THE CONSTRUCTION OF THIS PROJECT, COMPLETE AND FUNCTIONAL IN ALL RESPECTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THIS RESULT. THE OMISSION OF EXPRESS REFERENCE TO WORK NECESSARY, REASONABLE AND OR INCIDENTAL FOR THE COMPLETE CONSTRUCTION OF THE PROJECT SHALL NOT BE CONSTRUED AS RELEASING THE CONTRACTOR FROM THEIR RESPONSIBILITIES.
3. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, CLEARANCES AND CONDITIONS TO THE ARCHITECT PRIOR TO COMMENCEMENT OF WORK. FAILURE TO DO SO, CONSTITUTES ACCEPTANCE AND RESPONSIBILITY FOR ALL EXISTING CONDITIONS. THE CONTRACTOR WILL NOT BE ALLOWED ADJUSTMENTS IN TIME OR MONEY REQUIRED TO RECTIFY THE SITUATION.
4. DO NOT SCALE DRAWINGS. GIVEN DIMENSIONS SHALL GOVERN. LARGE SCALE DRAWINGS SHALL GOVERN OVER SMALL SCALE DRAWINGS.
5. ALL EQUIPMENT, MATERIALS AND ARTICLES INCORPORATED INTO THE PROJECT SHALL BE NEW AND UNDAMAGED. ALL WORKMANSHIP SHALL BE WITHIN INDUSTRY STANDARDS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND REPLACEMENT OF DAMAGE TO AREAS CAUSED BY THEIR WORK AT NO ADDITIONAL COSTS TO THE OWNER.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY CONDITIONS RELATING TO JOB CONDITIONS RELATING TO JOB CONSTRUCTION INCLUDING A SAFE ENVIRONMENT FOR OCCUPANTS OF AREAS ADJACENT TO THE WORK AREA.
8. THE CONTRACTOR SHALL COORDINATE ALL FEES AND PAYMENTS WITH THE OWNER AS NECESSARY FOR PROPER COMPLETION OF WORK, UNLESS OTHERWISE NOTED.
9. SHOULD THE CONTRACTOR OBSERVE ERRORS, DISCREPANCIES OR OMISSIONS IN THE CONTRACT DOCUMENTS, HE SHALL PROMPTLY NOTIFY THE ARCHITECT REQUESTING CLARIFICATION. THE CONTRACTOR SHALL NOT PROCEED WITH WORK AFFECTED BY SUCH ERRORS, DISCREPANCIES OR OMISSIONS WITHOUT RECEIVING CLARIFICATION. ADJUSTMENTS INVOLVING SUCH CONDITIONS MADE BY THE CONTRACTOR WITHOUT PRIOR CLARIFICATION BY THE ARCHITECT, SHALL BE AT THE CONTRACTOR'S OWN RISK. COMPLICATIONS ARISING FROM PROCEEDING WITHOUT CLARIFICATION SHALL BE RESOLVED AT THE CONTRACTOR'S EXPENSE.
10. ALL WORK PERFORMED ON THIS PROJECT SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES, LAWS AND ORDINANCES.

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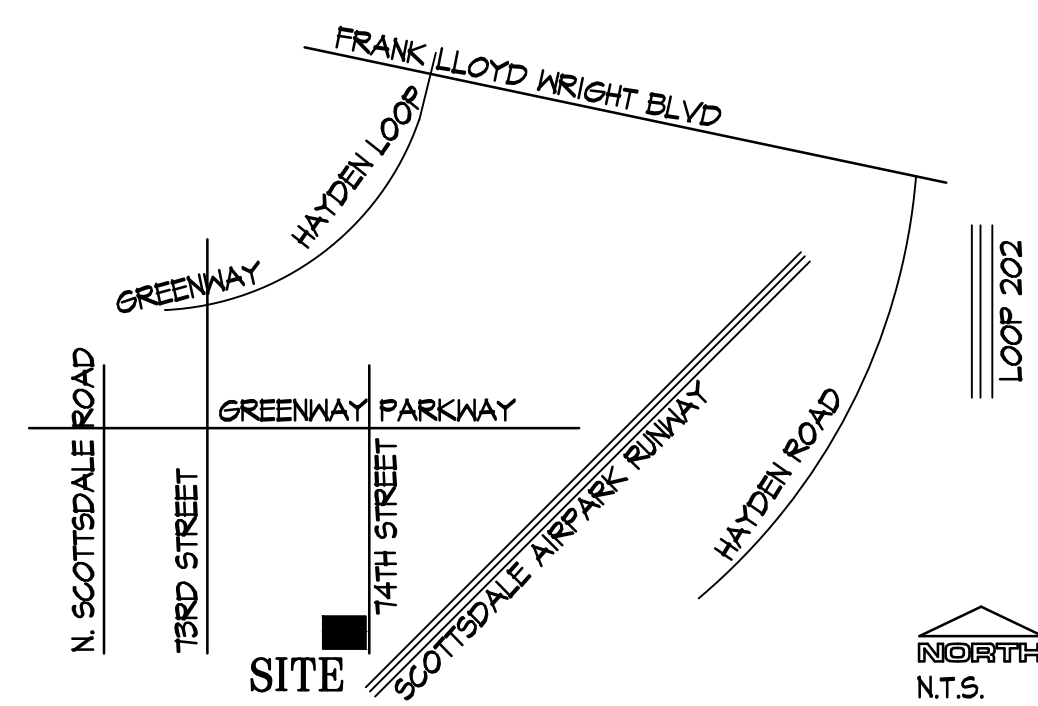
PROJECT TEAM

OWNER/REP:	BRO BROTHERS, LLC MR. KENT BRO 14644 N. 74TH STREET, SUITE 101 SCOTTSDALE, ARIZONA 85260 PHONE: 480-448-8586 FAX: 480-448-8586
ARCHITECT:	ESENCIA, L.L.C. JEFFREY WINTER, R.A. 1743 E. McNAIR DRIVE, #200 TEMPE, ARIZONA 85283 PHONE: (480) 755-0454
STRUCTURAL:	STARLINGS, MADISON, LOFQUIST, INC. TRES J. WARNER, PE 5224 SOUTH 34TH STREET PHOENIX, ARIZONA 85283 TEL: (602) 438-2500
ELECTRICAL:	SYSTEMS DESIGN ENGINEERING, INC. HAMID FARHADI, PE 325 E. SOUTHERN AVE., SUITE 118 TEMPE, AZ 85282 PHONE: (480) 966-1111 FAX: (480) 966-1212
GENERAL CONTRACTOR:	COCHISE CONTRACTORS, INC DAVE DEGROFF 333 N. BLACK CANYON ROAD PHOENIX, ARIZONA 85004 PHONE: (602) 212-0911 FAX: (602) 240-1580
BUILDING DEPARTMENT:	CITY OF SCOTTSDALE 1441 E. INDIAN SCHOOL ROAD SCOTTSDALE, ARIZONA 85281 PHONE: (480) 312-5000

PROJECT ANALYSIS

1. **PROJECT NAME:** BRO BROTHERS OFFICE BUILDING ELEVATOR
2. **PROJECT ADDRESS:** 14644 N. 74TH STREET
SCOTTSDALE, ARIZONA 85260
3. **PROJECT DATA:**
a. ZONING: I - 1 (NO CHANGE)
b. OCCUPANCY: B / S-1
c. OCCUPANCY: GENERAL OFFICE
d. OCCUPANCY: ONE AIRPLANE HANGER
e. CONSTRUCTION TYPE: III-B
f. FIRE SPRINKLERS: E.S.F.R. PER NFPA 13
4. **SITE AREA:**
a. SITE AREA: 33,546 S.F. (.7 ACRES)
5. **BUILDING HEIGHT:**
a. BUILDING HEIGHT: ± 40'-0" (EXISTING UN-CHANGED)
6. **BUILDING AREA:**
a. FIRST FLR. OFFICE: ± 5,201 S.F. (EXISTING UN-CHANGED)
b. FIRST FLR. STORAGE: ± 3,210 S.F.
c. 2ND. FLR. OFFICE: ± 3,224 S.F. (EXISTING UN-CHANGED)
d. 2ND. FLR. STORAGE (N): ± 1,131 S.F. (EXISTING UN-CHANGED)
e. 2ND. FLR. STORAGE (S): ± 2,746 S.F.
f. TOTAL SQ. FT.: ± 15,562 S.F. (EXISTING UN-CHANGED)
- g. AREA OF TOTAL IMPROVEMENT: ± 80 S.F. (EXTERIOR)
7. **OCCUPANT LOAD: (GENERAL)**
a. OFFICE AREA-1ST FLR. SOUTH: 2,535 S.F. /100 = 25 OCCUPANTS
b. OFFICE AREA-1ST FLR. NORTH: 2,408 S.F. /100 = 24 OCCUPANTS
c. OFFICE AREA-2ND FLR. SOUTH: 3,232 S.F. /100 = 32 OCCUPANTS
d. STORAGE - 2ND FLR. NORTH: 1,131 S.F. /500 = 3 OCCUPANTS
e. HANGER - 1ST FLR. WEST: 3,200 S.F. /500 = 6.4 OCCUPANTS
f. STORAGE - 2ND FLR. WEST: 2,712 S.F. /500 = 5.4 OCCUPANTS
g. TOTAL OCCUPANTS: 95.8 OCCUPANTS
8. **EXITING REQUIREMENTS:**
a. EXITS REQ'D: 2
b. EXITS PROVIDED: 11
c. EXIT WIDTH REQ'D: (46 OCC. X .15) = 14.4"
d. EXIT WIDTH PROVIDED: 346" (11) SEPARATE EXITS
9. **PARKING CALCULATIONS:**
EXISTING PARKING CALCULATIONS:
- | BUILDING | BUILDING S.F. | PARKING REQ'D |
|------------------|-----------------|---------------|
| OFFICE | 8,425 S.F. /300 | 28 SP |
| EXISTING STORAGE | 1,131 S.F. /800 | 2 SP |
| NEW ADD. STORAGE | 6,006 S.F. /800 | 8 SP |
| TOTAL REQUIRED: | | 38 SP |
- | | PARKING PROVIDED | ACCESSIBLE |
|-----------|------------------|------------|
| EXISTING: | 37 SP. | (2 SP.) |
| ADDITION: | 1 SP. | |
| TOTAL: | 38 SP. | |

VICINITY MAP



FIRE DEPT. NOTES

1. SUBMIT SHOP DRAWINGS FOR ANY MODIFICATION OF EXISTING FIRE SPRINKLER SYSTEM AND COMPLY W/ NFPA 13 & LOCAL AMENDMENTS. IN LIGHT HAZARD OCCUPANCIES, EXISTING STANDARD RESPONSE SPRINKLER HEADS WITHIN TENANT SPACE SHALL BE CHANGED OUT TO QUICK RESPONSE WHEN SCOPE OF WORK WILL ADD AND/OR RELOCATE 50% OR MORE OF THE SPRINKLER HEADS.
2. ALL FIRE PROTECTION SYSTEMS SHALL REMAIN OPERATIONAL AND MODIFIED AS NECESSARY FOR CODE COMPLIANCE.
3. INSTALL FIRE EXTINGUISHERS PER IFC. FIRE EXTINGUISHER QUANTITY AND LOCATION(S) SHALL BE APPROVED BY FIRE INSPECTOR.
4. EXIT AND EMERGENCY LIGHTING SHALL COMPLY WITH CITY ORDINANCE AND I.F.C.
5. NUMERICAL PREMISES ID MUST BE LEGIBLE FROM STREET OR DRIVE. MINIMUM 12" NUMBERS FOR BUILDING AND 4" NUMBERS FOR SUITE.
6. SUBMIT SHOP DRAWINGS FOR ANY MODIFICATION OF FIRE ALARM SYSTEM (IF EXISTING) TO COMPLY WITH NFPA 72 & LOCAL CODES.
7. NEW TYPE I HOOD SYSTEMS REQUIRE SUBMITTAL OF PLAN FOR AUTOMATIC HOOD EXTINGUISHING SYSTEMS IN COMPLIANCE WITH CURRENT U.L. 300 STDS. EXISTING TYPE I HOOD SYSTEMS SHALL BE UPGRADED TO COMPLY WITH CURRENT U.L. 300 STANDARDS.
8. WAREHOUSE RACKS FOR STORAGE OVER 12'-0" IN HEIGHT REQUIRE A SEPARATE SUBMITTAL FOR APPROVAL PRIOR TO INSTALLATION.
9. SEPARATE SUBMITTAL AND APPROVAL IS REQUIRED FOR MAG LOCKS.
10. COMPRESSED GAS STORAGE (CO-2) REQUIRES SEPARATE FIRE DEPARTMENT PERMIT.

LEGAL DESCRIPTION

LOT 43, OF THUNDERBIRD INDUSTRIAL AIRPARK #3
ASSESSORS PARCEL NO. 215-56-043B

GOVERNING CODES

BUILDING:	2015 EDITION I.B.C.
MECHANICAL:	2015 EDITION I.M.C.
PLUMBING:	2018 EDITION I.P.C.
ENERGY:	2015 EDITION I.E.C.C.
ELECTRICAL:	2014 N.E.C.
FUEL / GAS:	2015 EDITION I.F.G.
FIRE:	2015 EDITION I.F.C.
ACCESSIBILITY:	IBC CHAPTER 11 AMENDMENT - ADAAG 2010. ICC/ANSI A117.1-2003

SPECIAL INSPECTIONS

- A. STRUCTURAL STEEL
B. CONCRETE CONSTRUCTION
C. ANCHOR BOLTS

PROJECT SCOPE

TENANT IMPROVEMENT
INSTALL NEW EXTERIOR ELEVATOR AT EXISTING 2 STORY BUILDING.
REMOVE ONE EXTERIOR STAIRWAY. INSTALL NEW MEZZANINE INSIDE EXISTING HANGER WITH ADDITION OF NEW STAIRWAY LIFT STATION.
INSTALL NEW BATHROOM ON SECOND FLOOR OF EXISTING OFFICE SPACE.

DEFERRED SUBMITTALS

FIRE SPRINKLER APPROVALS ARE NOT INCLUDED IN THIS PERMIT.
BEFORE COMMENCING ANY WORK ON THE SPRINKLER SYSTEM, PLANS MUST BE SUBMITTED AND APPROVED BY THE BUILDING SAFETY DIVISION. THE SYSTEM MUST BE INSPECTED AND APPROVED BY BUILDING SAFETY INSPECTION PRIOR TO A CERTIFICATE OF OCCUPANCY.

KEYNOTES

1. EXISTING DRIVEWAY TO REMAIN
2. EXISTING PARKING TO REMAIN
3. EXISTING CARPORT STRUCTURE TO REMAIN
4. AREA OF NEW PARKING SPACE. BLACK OUT EXISTING STRIPING AND STRIPE ONE ADDITIONAL PARKING SPACE TO MATCH EXISTING.
5. EXISTING AIRPORT TAXI WAY TO REMAIN.



1 SITE PLAN
SCALE: N.T.S.

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Project Manager JW	
Drawn By JM	
Checked By ES	
Project Number 21045	

BRO OFFICE BUILDING

14644 N. 74TH STREET
SUITE 101
SCOTTSDALE, AZ 85260

TENANT
IMPROVEMENT

Revisions	Date	Issued for
	12-17-21	SUBMITTAL

COVER SHEET - SITE PLAN

A-01

F:\Proj21

DOOR SCHEDULE

NUMBER	TYPE	MATL	SIZE	THICK	HARDWARE	FRAME TYPE	REMARKS
D 1	A	H.M.	3'-0" x 7'-0"	1-3/4"		H.M.	20 MIN. DOOR AND FRAME. PROVIDE DR. CLOSURE AT 15 LBS., SEALS AND BOTTOM SEAL/SWEEP.
D 2	B	ALUM.	3'-0" x 7'-0"	1-3/4"		ALUM.	TEMP. GLASS, 6" FRAME W/ 10" BASE
D 3	C	WD	3'-0" x 7'-0"	1-3/4"		H.M.	
E							EXISTING DOOR AND FRAME TO REMAIN.

ALL DOOR, LOCKS, AND LATCHES SHALL COMPLY WITH IBC SECTION 1008.1.8.3 AND ICC/ANSI A117.1-2003 SEC. 404.2.6

NOTE: EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, SPECIAL KNOWLEDGE OR EFFORT.

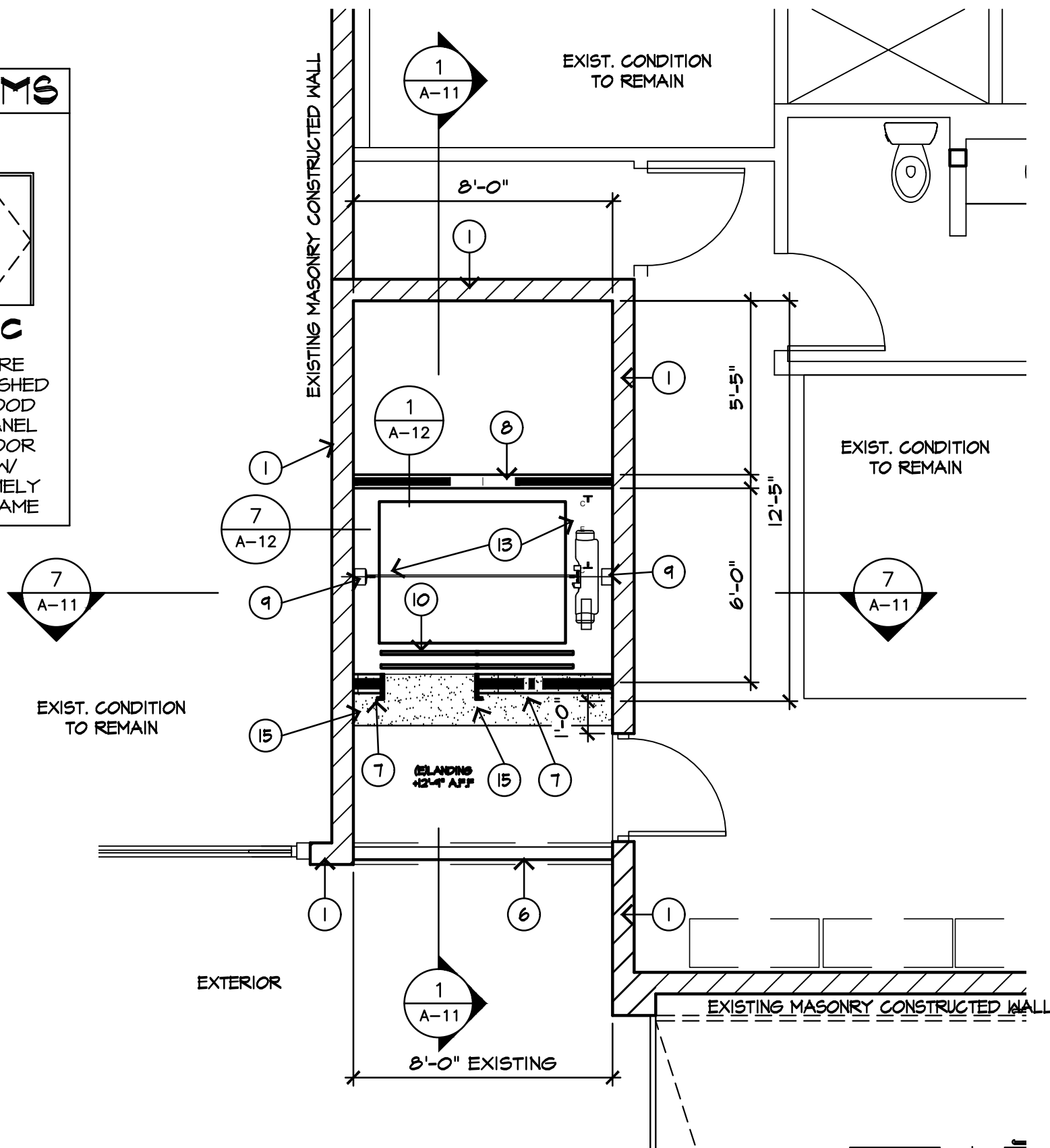
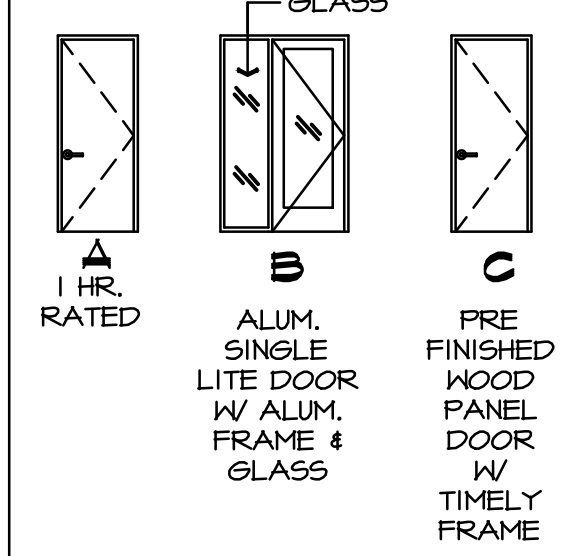
HARDWARE SCHEDULE

NOTE: HARDWARE TO BE PASSAGE LATCH SET OR LOCKSET WITH "SCHLAGE" LEVER HANDLE. INCLUDE 4 SETS OF HINGES AND WALL STOP PER DOOR.

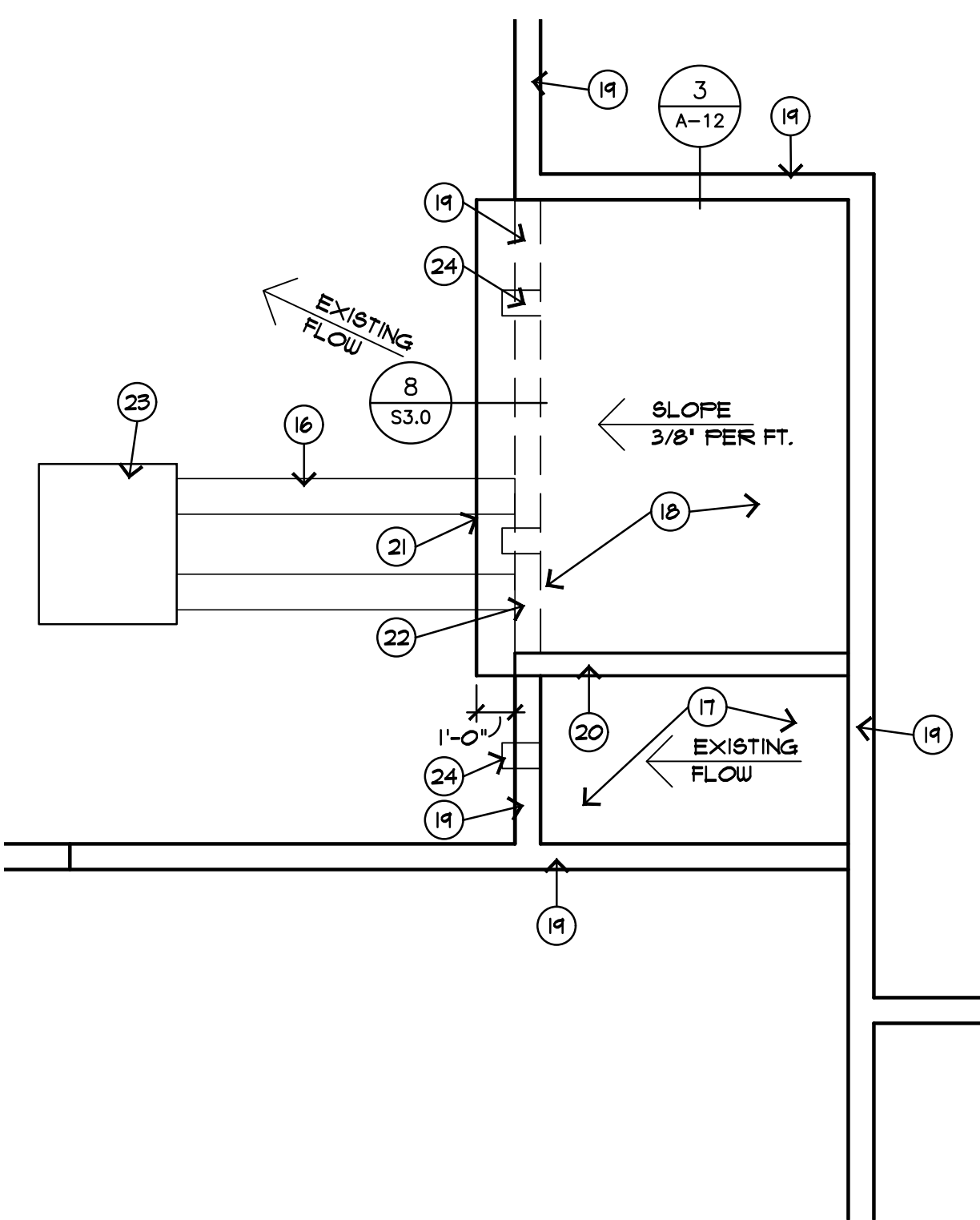
ALL LOCKSETS KEYED TO BUILDING SYSTEM. CYLINDERS SHALL BE SCHLAGE EVEREST C123. CONTRACTOR TO COORDINATE WITH PROPERTY MANAGER.

DOOR DIAGRAMS

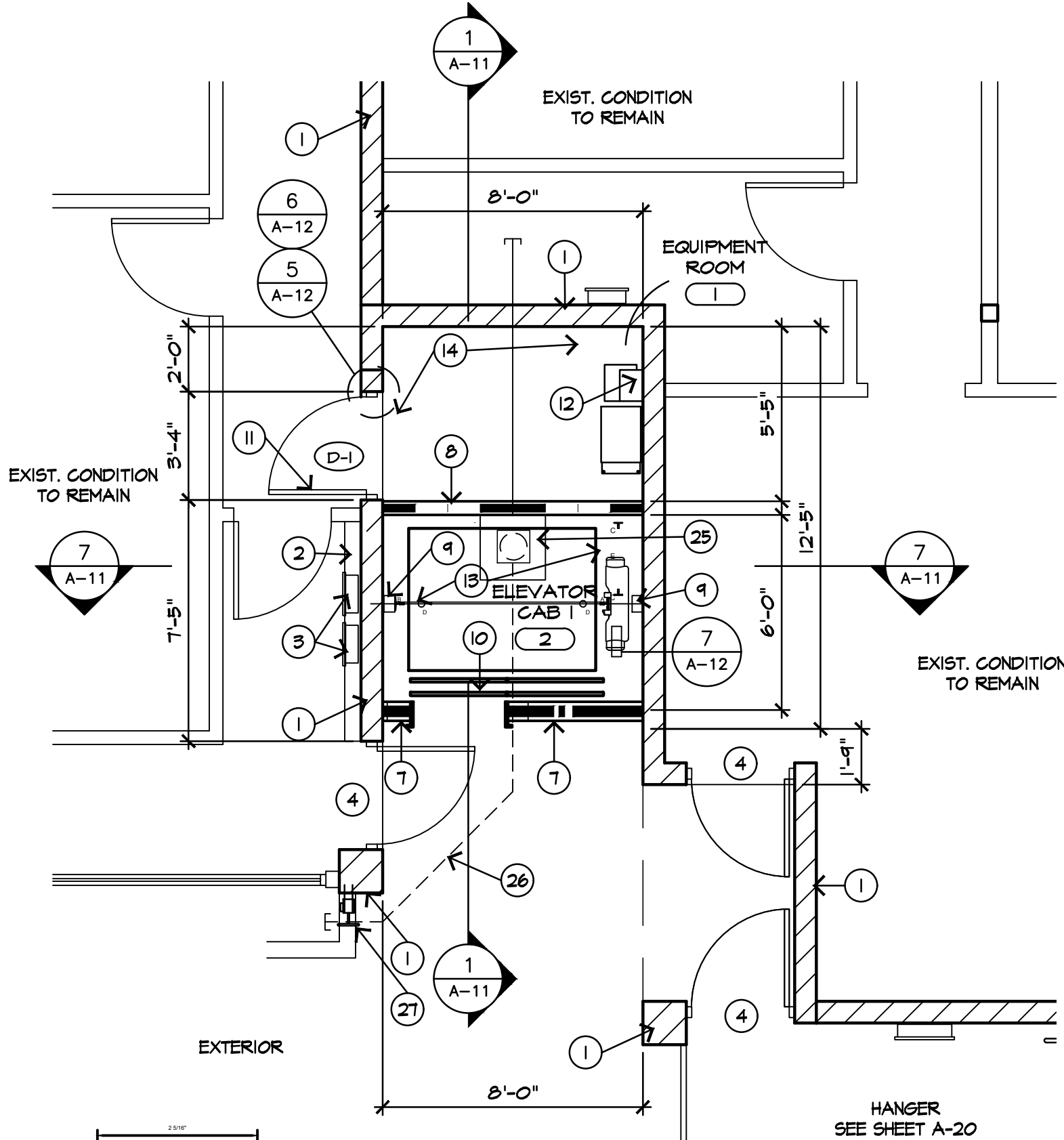
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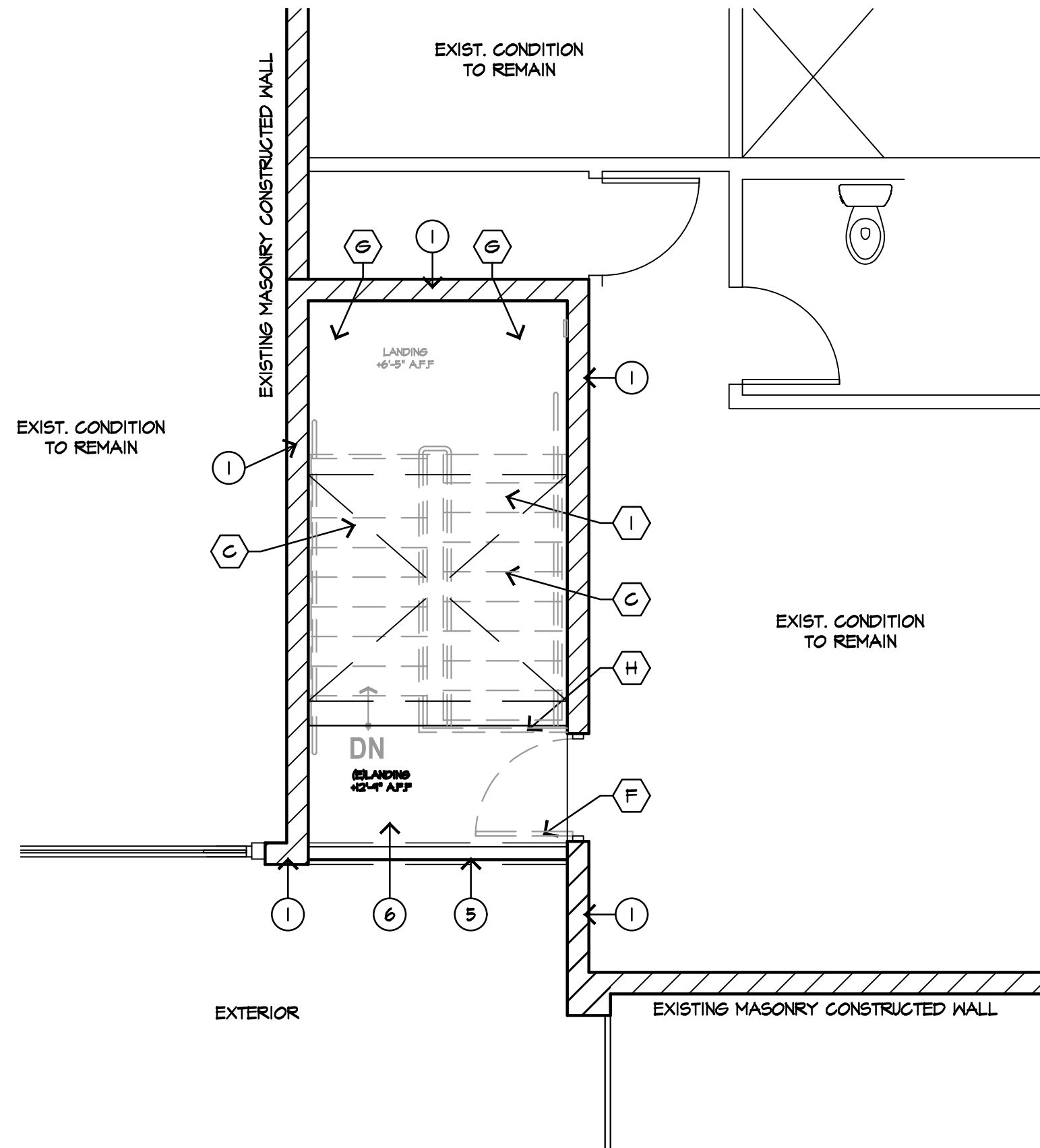
4 PARTIAL FLOOR PLAN - SECOND FLOOR
SCALE: 1/4" = 1'-0"



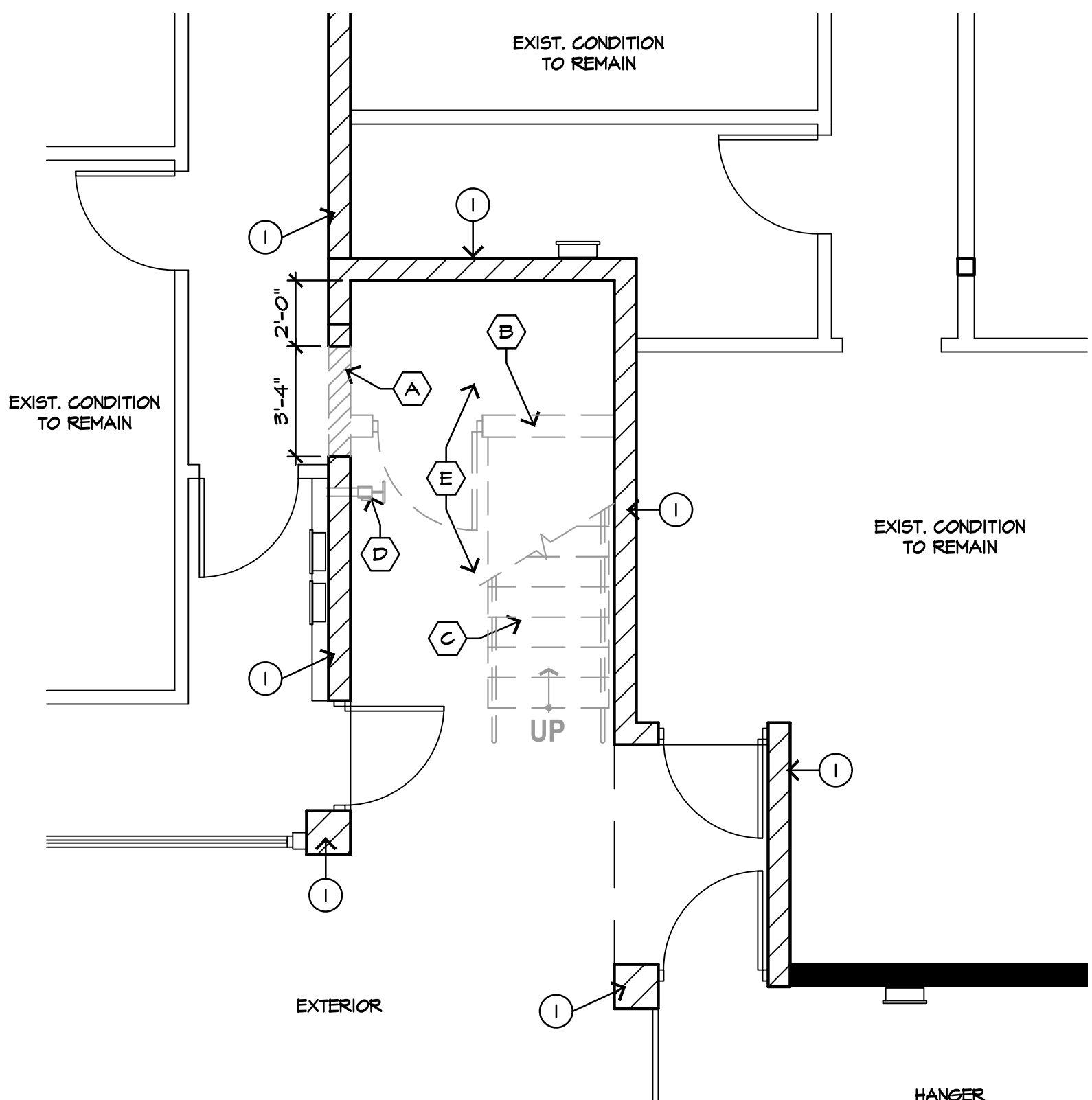
3 PARTIAL ROOF PLAN
SCALE: 1/4" = 1'-0"



3 PARTIAL FLOOR PLAN - FIRST FLOOR
SCALE: 1/4" = 1'-0"



2 PARTIAL DEMOLITION PLAN - 2ND FLOOR
SCALE: 1/4" = 1'-0"



1 PARTIAL DEMOLITION PLAN - 1ST FLOOR
SCALE: 1/4" = 1'-0"

KEYNOTES

- EXISTING 2 HOUR EXTERIOR MASONRY WALL TO REMAIN.
- EXISTING INTERIOR FURRING TO REMAIN
- EXISTING INTERIOR ELECTRICAL PANELS TO REMAIN
- EXISTING DOOR AND FRAME TO REMAIN
- EXISTING STEEL FRAMED CONCRETE FILLED LANDING TO REMAIN.
- EXISTING STEEL GUARD RAILING TO REMAIN.
- NEW 2X8 AT 16" O.C. EXTERIOR FRAMED ONE HOUR WALL WITH STUCCO EXTERIOR FINISH SET ON NEW CONCRETE STEM. SEE STRUCTURAL DRAWINGS. PAINTED TO MATCH EXISTING.
- NEW 2X4 AT 16" O.C. METAL FRAMED 2 HOUR SEPARATION WALL SET ON NEW CONCRETE STEM. SEE STRUCTURAL DRAWINGS.
- NEW STRUCTURAL TUBE STEEL COLUMN SECURED TO EXISTING MASONRY WALL FOR MOUNTING OF TRACK. SEE STRUCTURAL.
- NEW ELEVATOR ENTRY DOORWAY SYSTEM. SEE ELEVATOR DRAWINGS.
- NEW 20 MIN. RATED STEEL DOOR AND FRAME SET IN NEW MASONRY OPENING.
- NEW ELEVATOR CONTROL EQUIPMENT. SEE ELEVATOR DRAWINGS.
- NEW ELEVATOR CAB. SEE ELEVATOR DRAWINGS.
- NEW 5" MIN. CONCRETE SLAB SET 4" MIN. BELOW FINISH FLOOR.
- NEW STEEL FRAMED LANDING EXTENSION TO EXISTING LANDING. PROVIDE EXTERIOR CONCRETE FILLED FLOOR TO MATCH EXISTING.
- ROOF MOUNTED SUPPLY AND RETURN DUCT WORK. SEE MECHANICAL PLANS.
- EXISTING SPRAY FOAM ROOF / MEMBRANE TO REMAIN. RE-SHAPE FOR NEW DRAIN SCUPPER AS REQUIRED.
- NEW ROOFING MEMBRANE OVER NEW ROOF FRAMING. SEE SECTIONS.
- EXISTING MASONRY PARAPET WALLS TO REMAIN
- NEW FRAMED PARAPET WALL WITH METAL FLASHING.
- PROVIDE CONT. DRIP EDGE AT OVERHANG
- LINE OF MASONRY PARAPET WALL BELOW TO REMAIN.
- PROVIDE AND INSTALL NEW MECHANICAL UNIT ON ROOF. PROVIDE SLEEPERS AS REQUIRED AND MAINTAIN WATER FLOW TO OUTLET. INSTALL PER MANUFACTURERS RECOMMENDATIONS. SEE MECHANICAL DRAWINGS.
- PROVIDE NEW 8" X 8" ROOF DRAIN OUTLET WITH GALV. SCUPPER WITH DRIP EDGE THROUGH EXISTING MASONRY WALL AT EXISTING ROOF LEVEL. MAINTAIN POSITIVE DRAINAGE AND DRIP EDGE AT SCUPPER.
- 18" X 18" SUMP PIT AND PUMP (SEE ELEC. FOR PUMP INFO) DRAIN TO DISCHARGE TO EXISTING SANITARY SEWER LINE. SUMP PUMP IS CONTROLLED BY OIL DETECTION DEVICE. UPON DETECTION OF OILS IN PIT SYSTEM TO NOTIFY OWNER OF DETECTION OF OIL AND OWNER IS TO MANUALLY INSPECT PIT FOR PRESENCE OF HAZARDOUS MATERIAL AND DISPOSE OF PROPERLY. PROV. AUDIO AND VISUAL ALARMS PER ELEC. AS REQUIRED BY CODE.
- ALTERNATE DRAIN DISCHARGE LOCATION TO EXISTING L/S PLANTER AS SHOWN W/ 6" A.F.S. AND TURN DOWNWARD.
- RELOCATED FIRE RISER TEST PORT LOCATION.

DEMOLITION KEYNOTES

- EXISTING MASONRY WALL TO BE REMOVED FOR NEW DOORWAY OPENING. SEE STRUCTURAL.
- EXISTING MTL. FRAMED WALL AND HALF HEIGHT DOORWAY/FRAME TO BE REMOVED.
- EXISTING EXTERIOR STEEL STAIRWELL, RAILING AND TREADS TO BE REMOVED.
- EXISTING FIRE RISER TEST PORT TO BE RELOCATED. EXTEND PIPING AS REQUIRED FOR NEW LOCATION.
- EXISTING CONCRETE SLAB TO BE REMOVED AS REQUIRED FOR NEW ELEV. PIT AND MECHANICAL ROOM.
- EXISTING ALUM. STOREFRONT DOOR TO BE REMOVED AND REUSED WITH DIFFERENT SWING.
- EXISTING STEEL FRAMED CONCRETE FILLED LANDINGS TO BE REMOVED.
- EXISTING STEEL GUARD RAIL TO BE REMOVED.
- AREA OF EXISTING ROOF AND FRAMING TO BE REMOVED FOR ELEVATOR SHAFT.

GENERAL NOTES

STUCCO: (3) COAT APPLICATION 7/8" CEMENT PLASTER- WITH MIX 1:4 FOR SCRATCH COAT AND 1:5 FOR BROWN COAT BY VOLUME CEMENT TO SAND MIXTURE. - SAND FINISH. PAINTED.

LEGEND

- NEW 2 HOUR FRAMED WALL
- EXISTING INTERIOR WALL
- EXISTING EXTERIOR MASONRY WALL.
- DOOR SCHEDULE SHT. A-10
- WALL TYPE. SEE WALL SECTION

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



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Project Manager

JW

Drawn By

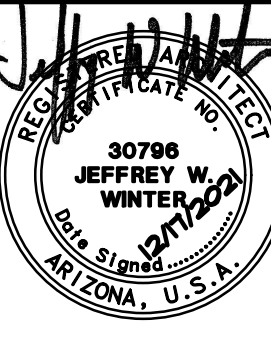
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Project Number

21045



BRO OFFICE BUILDING

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TENANT
IMPROVEMENT

Revisions

Date

12-17-21

Issued for

SUBMITTAL

ENLARGED PLANS

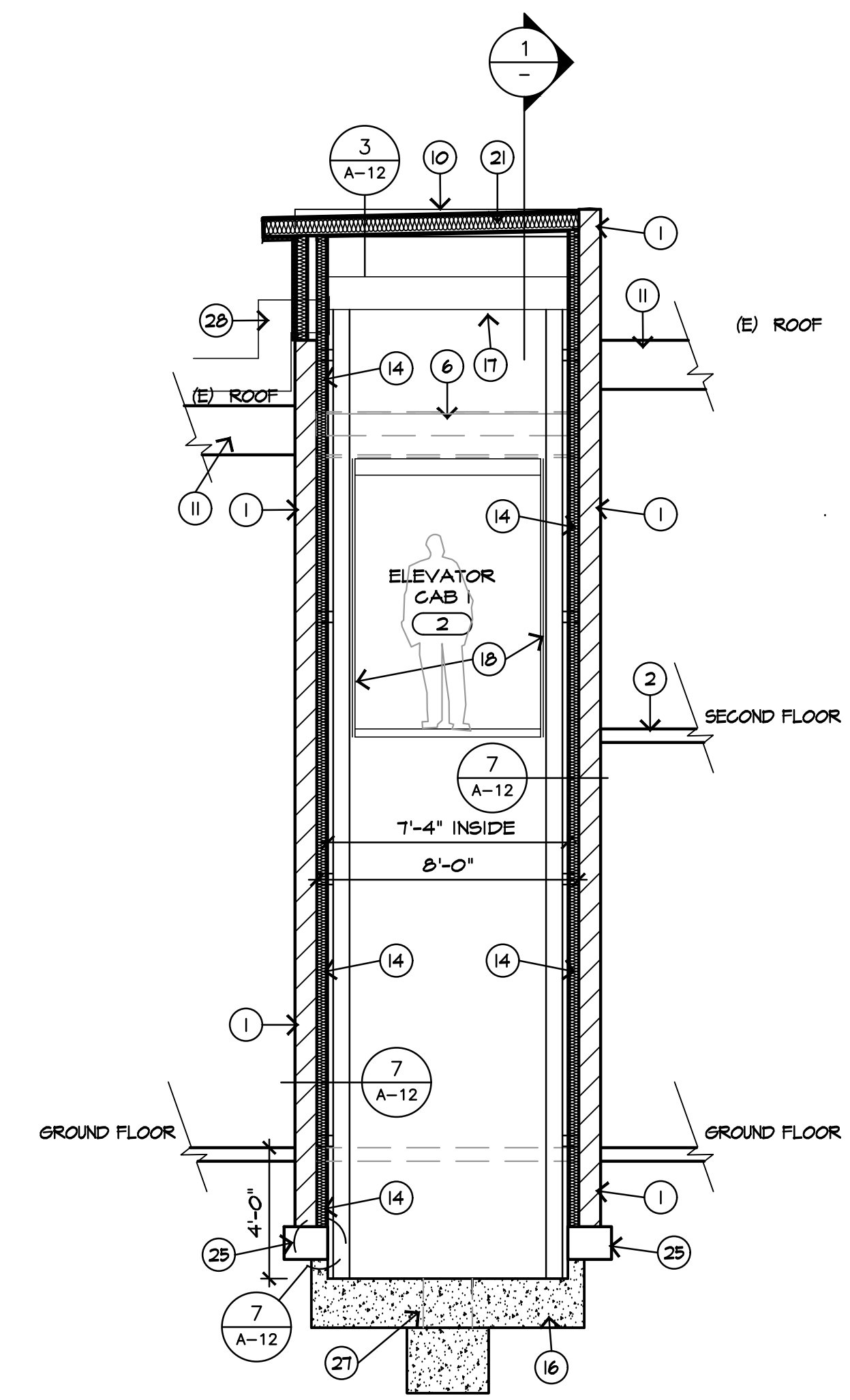
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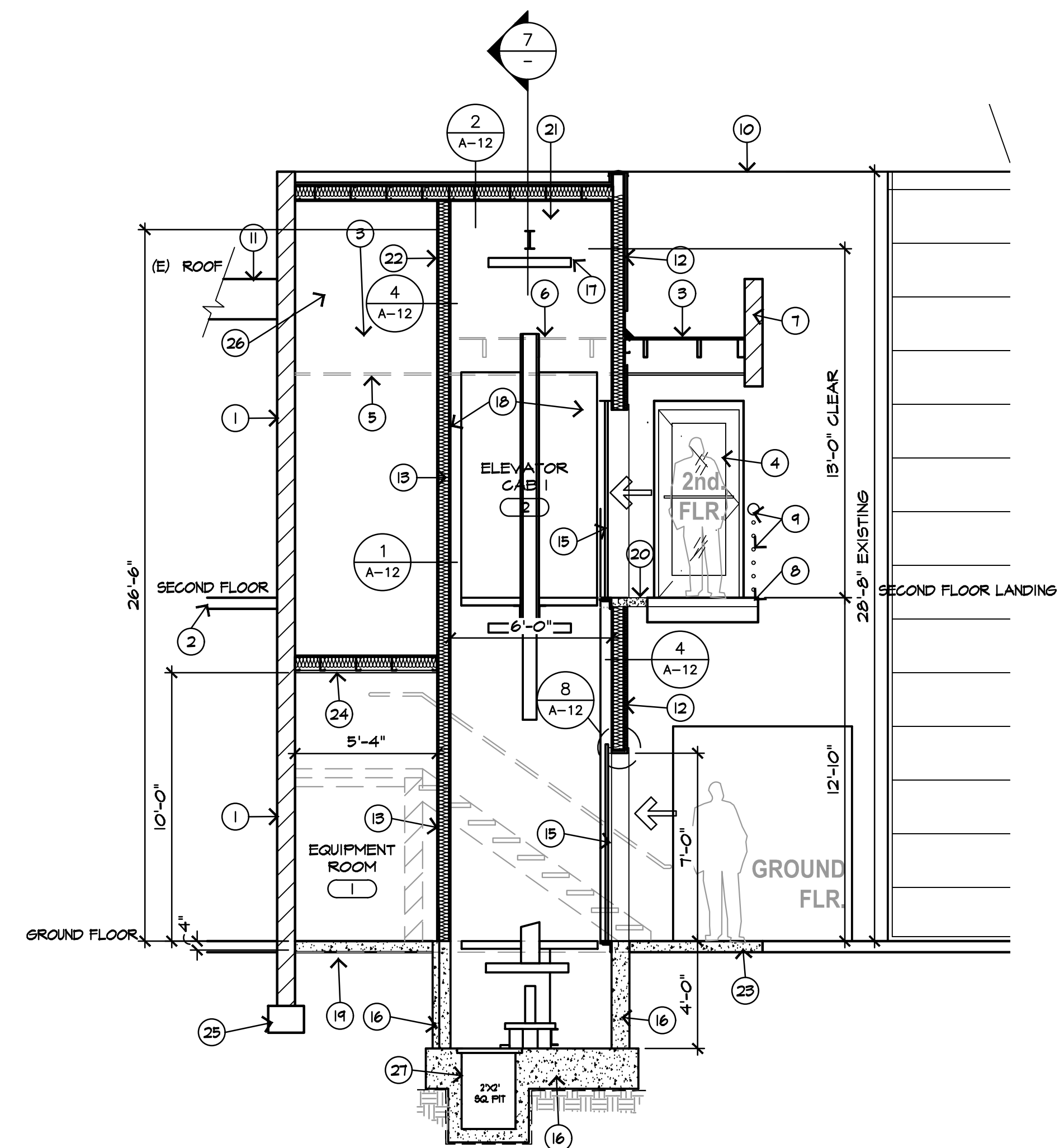
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6

3



7 SECTION AT SHAFT
SCALE: 1/4" = 1'-0"

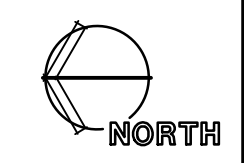


1 SECTION AT SHAFT
SCALE: 1/4" = 1'-0"

KEYNOTES

- EXISTING 1 HOUR EXTERIOR MASONRY WALL TO REMAIN.
- EXISTING FLOOR FRAMING TO REMAIN
- EXISTING ROOF FRAMING TO REMAIN. MODIFY AS REQUIRED FOR NEW ELEVATOR SHAFT. REPAIR ROOF MEMBRANE AS REQUIRED FOR WATER TIGHT CONDITION AND MAINTAIN POSITIVE SLOPE TO DRAIN OUTLET.
- EXISTING DOOR AND FRAME TO REMAIN WITH REVERSE DOOR SWING. SEE FLOOR PLAN.
- EXISTING CEILING FRAMING TO BE REMOVED AS REQUIRED FOR NEW ELEVATOR SHAFT.
- EXISTING ROOF FRAMING TO BE REMOVED AS REQUIRED FOR NEW ELEVATOR SHAFT.
- EXISTING MASONRY FASCIA TO REMAIN.
- EXISTING STEEL FRAMED CONCRETE FILLED LANDING TO REMAIN.
- EXISTING STEEL GUARD RAILING TO REMAIN.
- EXISTING PARAPET BEYOND
- EXISTING ROOF FRAMING TO REMAIN
- NEW 2X8 AT 16" O.C. EXTERIOR FRAMED ONE HOUR WALL WITH STUCCO EXTERIOR FINISH SET ON NEW CONCRETE STEM. SEE STRUCTURAL DRAWINGS. PAINTED TO MATCH EXISTING.
- NEW 2X4 AT 16" O.C. METAL FRAMED 2 HOUR SEPARATION WALL SET ON NEW CONCRETE SLAB. SEE STRUCTURAL DRAWINGS.
- NEW 2X4 METAL FURRING AT EXISTING MASONRY WALL. WALL TO BE ALIGNED WITH EXISTING FOOTING BELOW.
- NEW ELEVATOR ENTRY DOORWAY SYSTEM. SEE ELEVATOR DRAWINGS.
- NEW CONCRETE STEM AND PIT FLOOR. SEE STRUCTURAL
- NEW HOIST BEAM. SEE ELEVATOR AND STRUCTURAL DRAWINGS.
- NEW ELEVATOR CAB, GUIDE RAILS, ETC.. SEE ELEVATOR DRAWINGS.
- NEW 5" MIN. CONCRETE SLAB SET 4" BELOW FINISH FLOOR.
- NEW STEEL FRAMED LANDING EXTENSION TO EXISTING LANDING. PROVIDE EXTERIOR CONCRETE FILLED FLOOR TO MATCH EXISTING.
- NEW 2X6 METAL ROOF FRAMING AT 16" O.C. WITH PLYWOOD SHEATHING. SEE STRUCTURAL. PROVIDE NEW TPO ROOFING MEMBRANE AT ELEVATOR SHAFT.
- NEW STUCCO VENEER OVER VAPOR BARRIER AT EXTERIOR WALL CONDITION.
- PROVIDE NEW OR REPLACE EXISTING CONCRETE PAVING TO MATCH EXISTING.
- NEW 2X6 MTL. STUDS AT 16" O.C. AT NEW CEILING. PROVIDE 5/8" TYPE X" GYP BOARD ON EACH SIDE.
- EXISTING MASONRY WALL FOOTING TO REMAIN. FIELD VERIFY EXACT DEPTH AND SIZE.
- NEW ROOF MOUNTED CONDENSING UNIT. SEE FLOOR PLAN
- 18"X18" SUMP PIT LOCATION, SEE FLOOR PLAN
- MECHANICAL SUPPLY AND RETURN DUCT LINES. SEE MECHANICAL DRAWINGS

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



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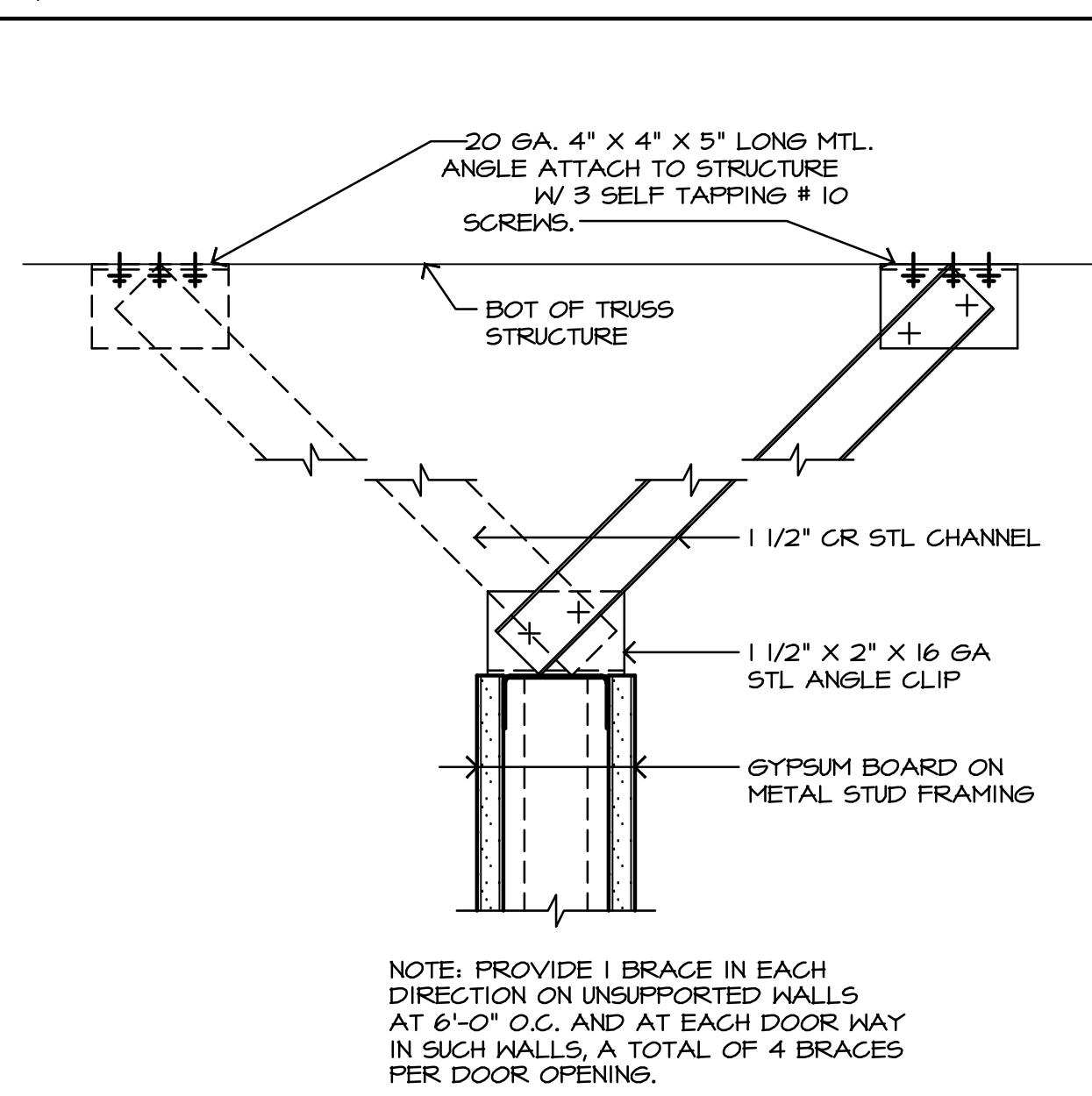
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TENANT
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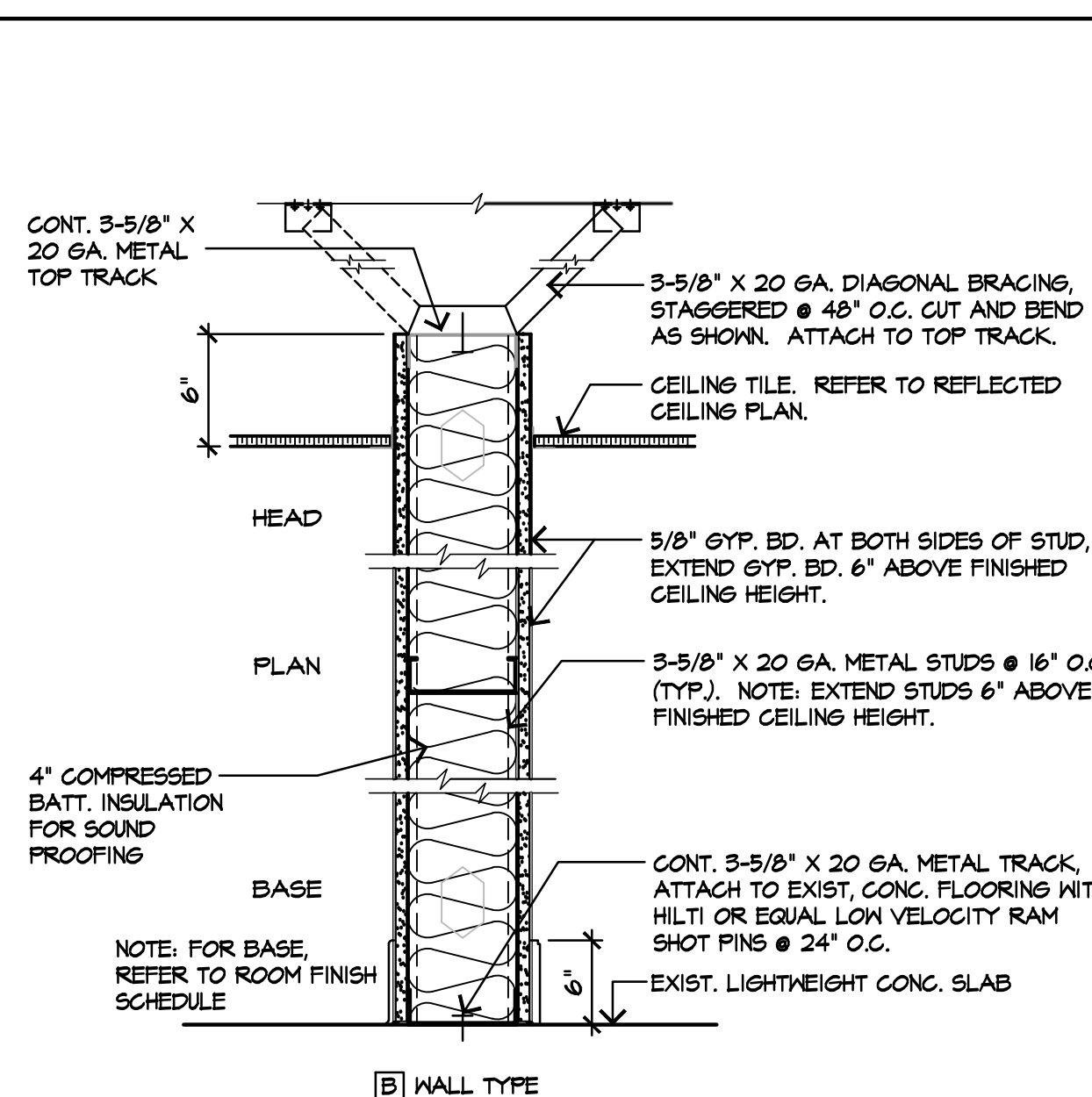
Revisions	
Date	Issued for
12-17-21	SUBMITTAL

BUILDING SECTIONS

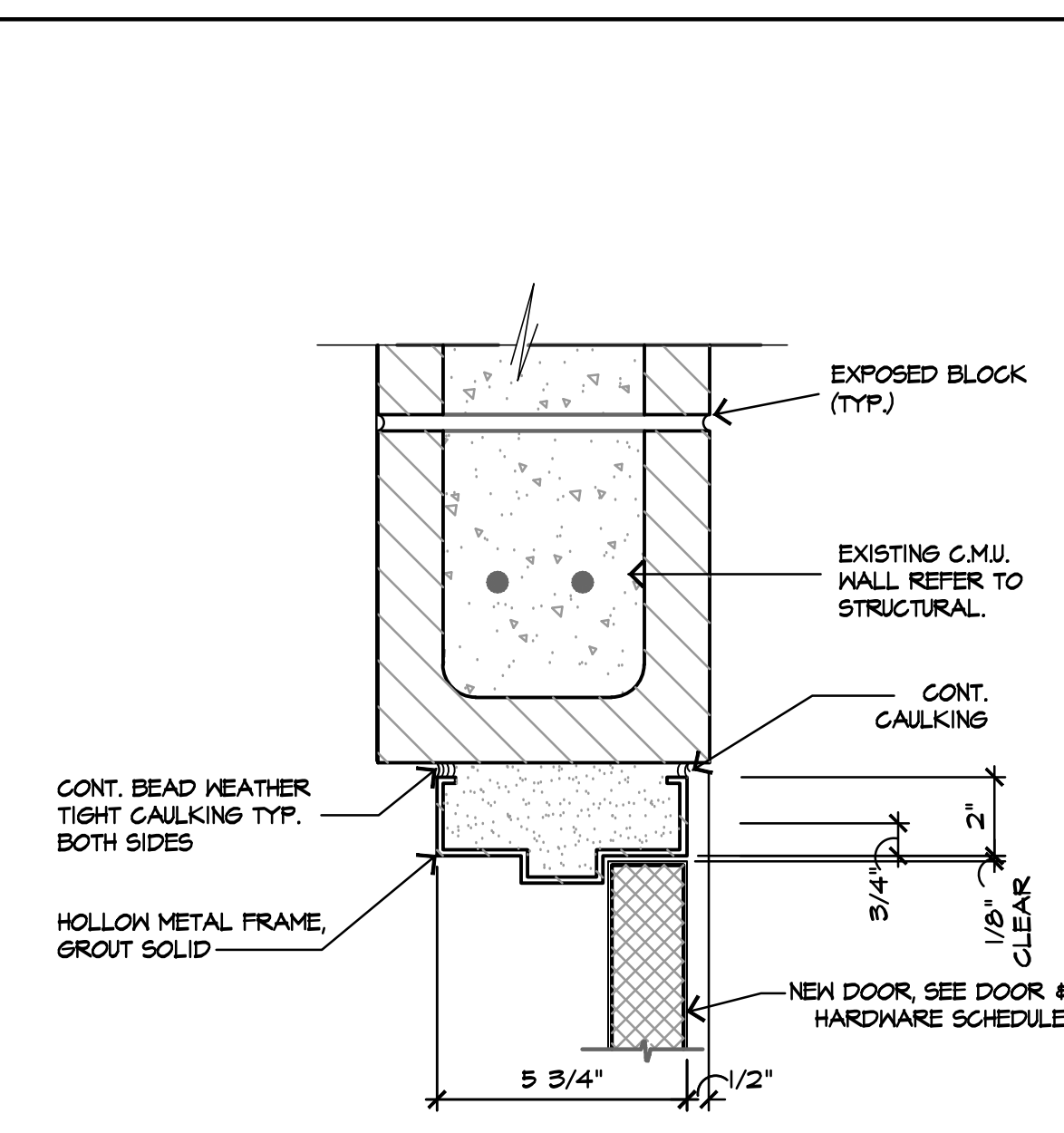
A-11



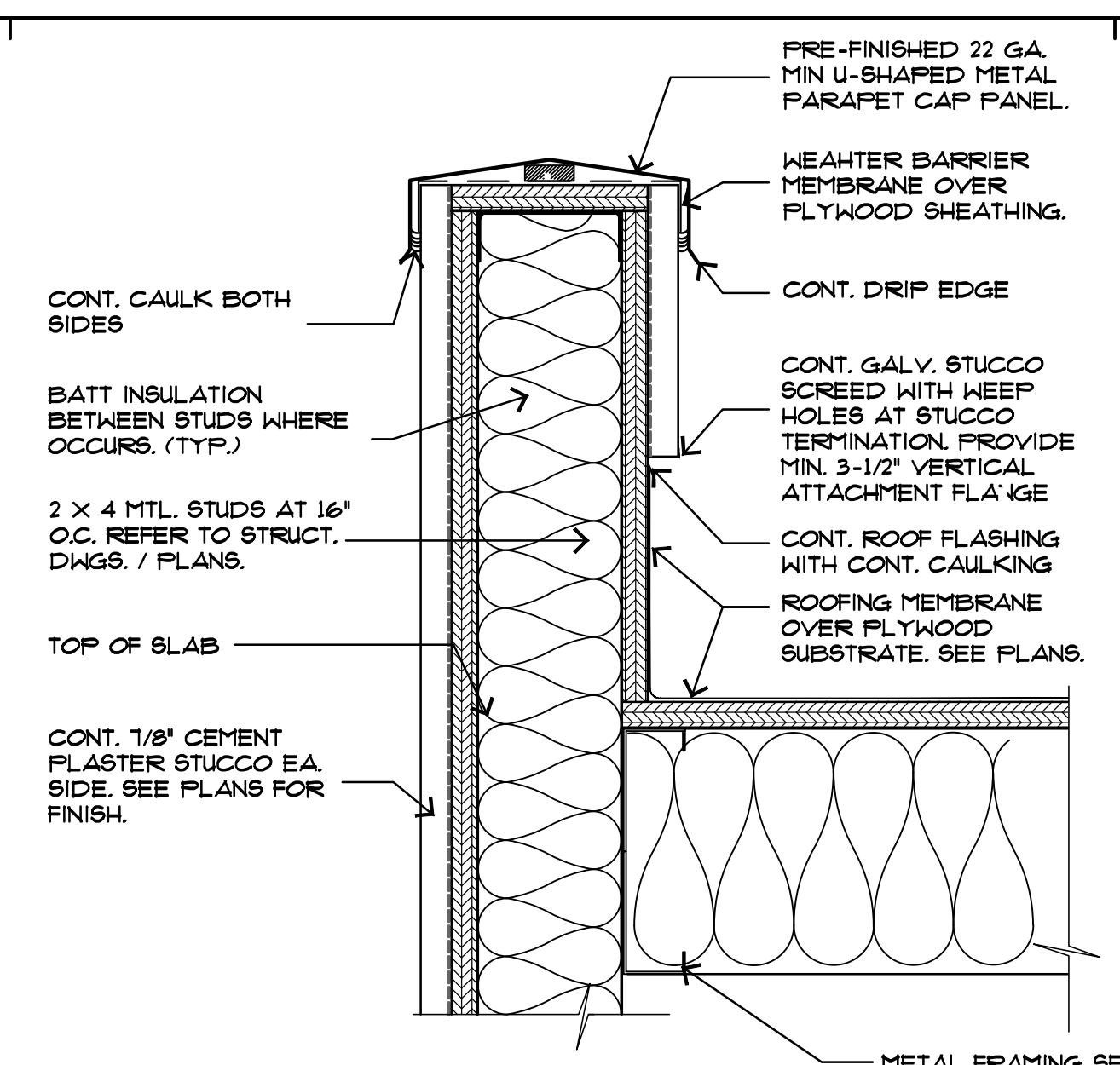
12 WALL BRACE/TOP
SCALE: 3" = 1'-0" SP-01



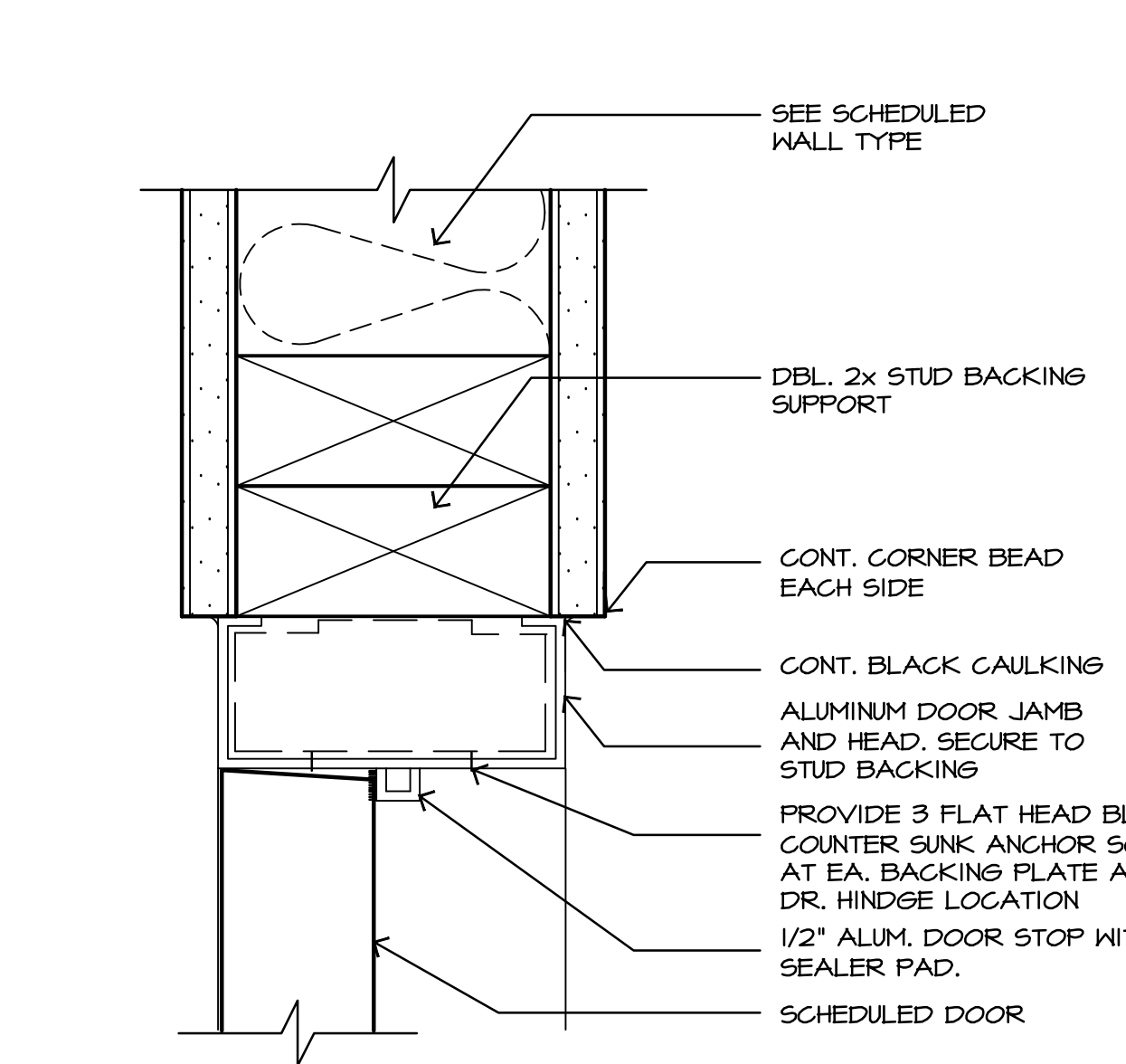
9 NEW TYP. NON-BEARING WALL PARTITION
SCALE: 1" = 1'-0" Typ. Non-bearing Wall Part.- B



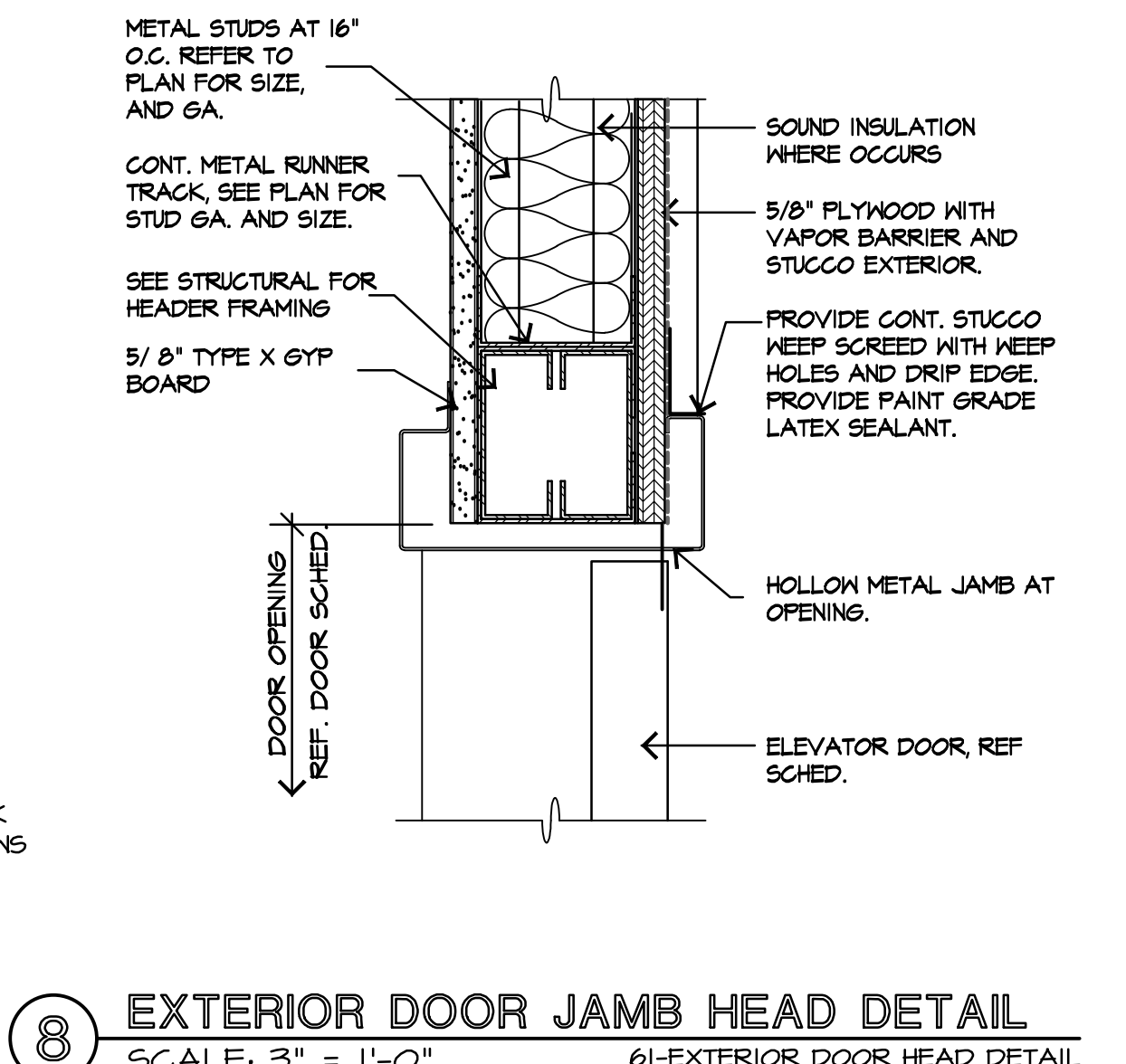
6 DOOR HEAD AT C.M.U. WALL
SCALE: 3" = 1'-0" 12-DOOR HEAD DETAIL AT C.M.U.



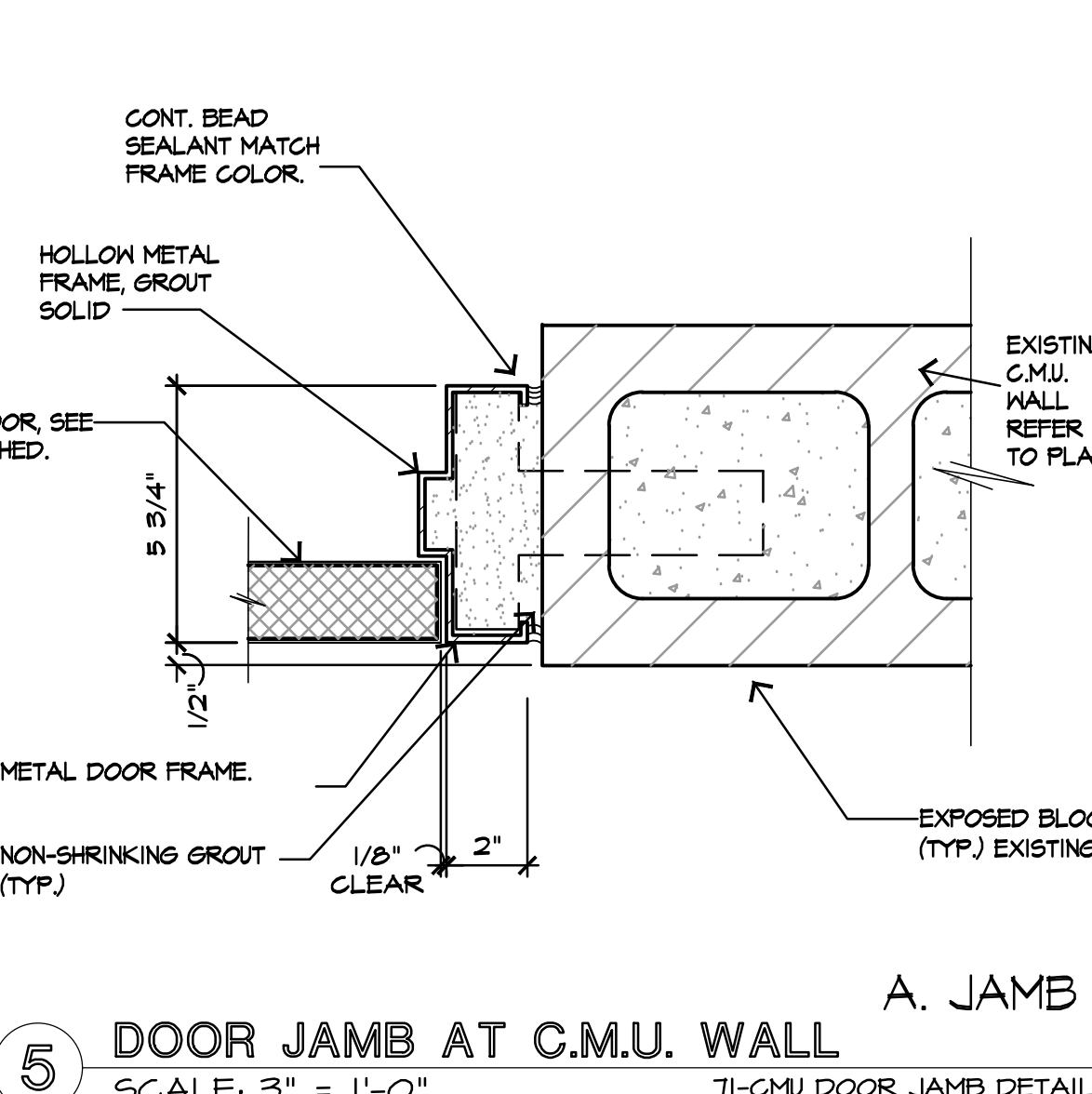
3 PARAPET WALL WITH CAP
SCALE: 3" = 1'-0" 15 PARAPET CAP



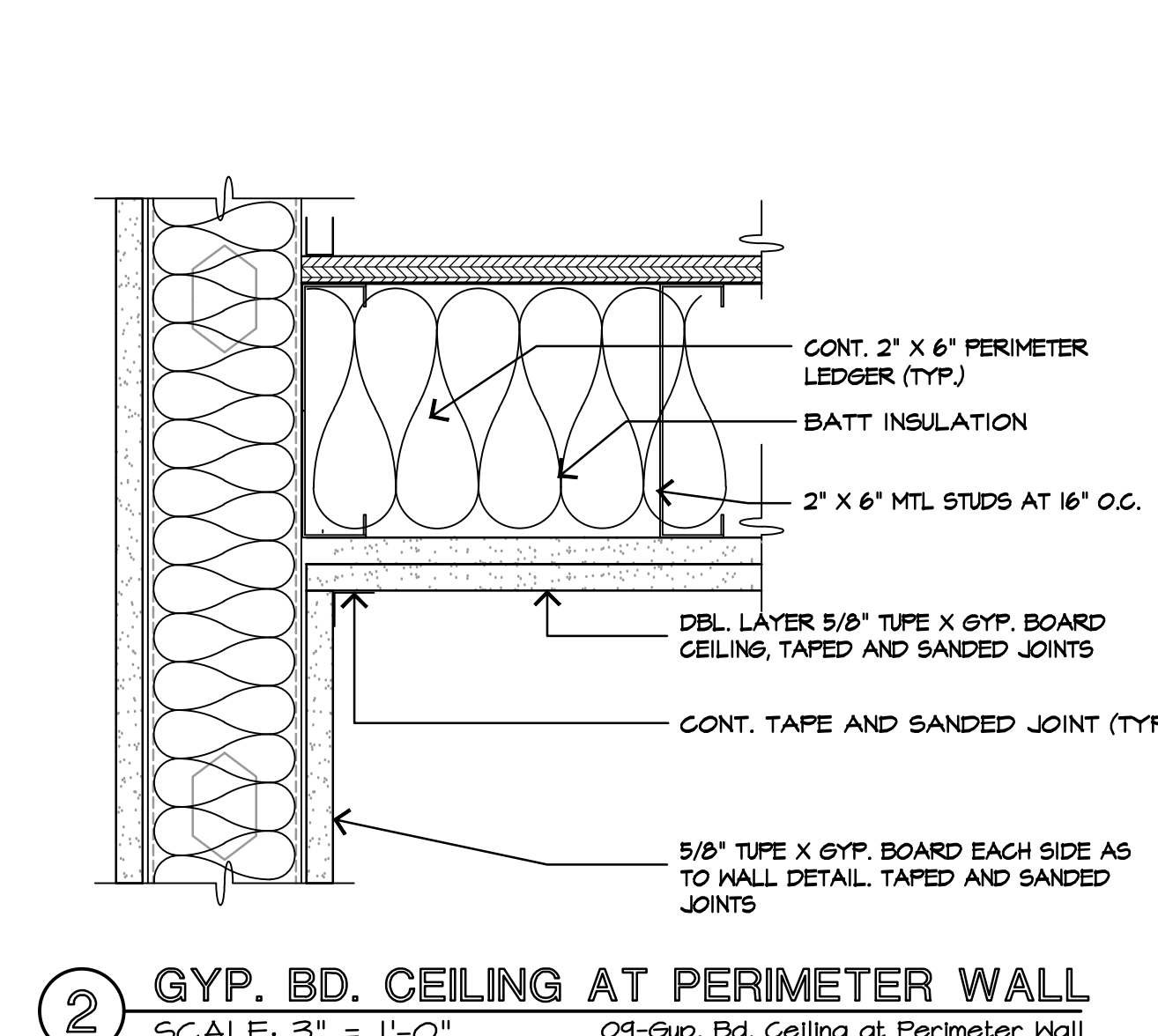
11 TYPICAL JAMB DETAIL (HEAD SIM)
SCALE: Half Size ALUM DR. JAMB



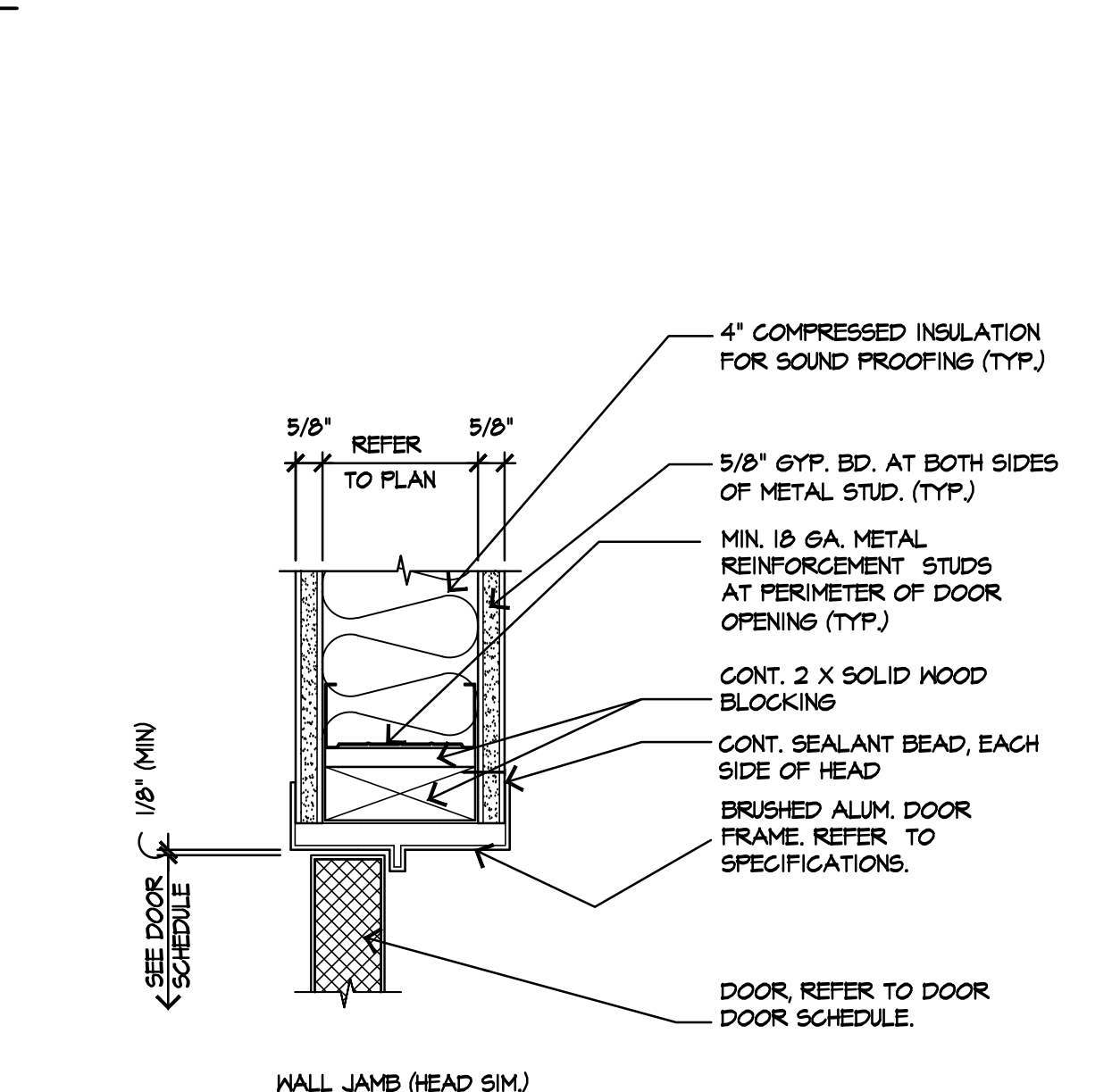
8 EXTERIOR DOOR JAMB HEAD DETAIL
SCALE: 3" = 1'-0" 61-EXTERIOR DOOR HEAD DETAIL



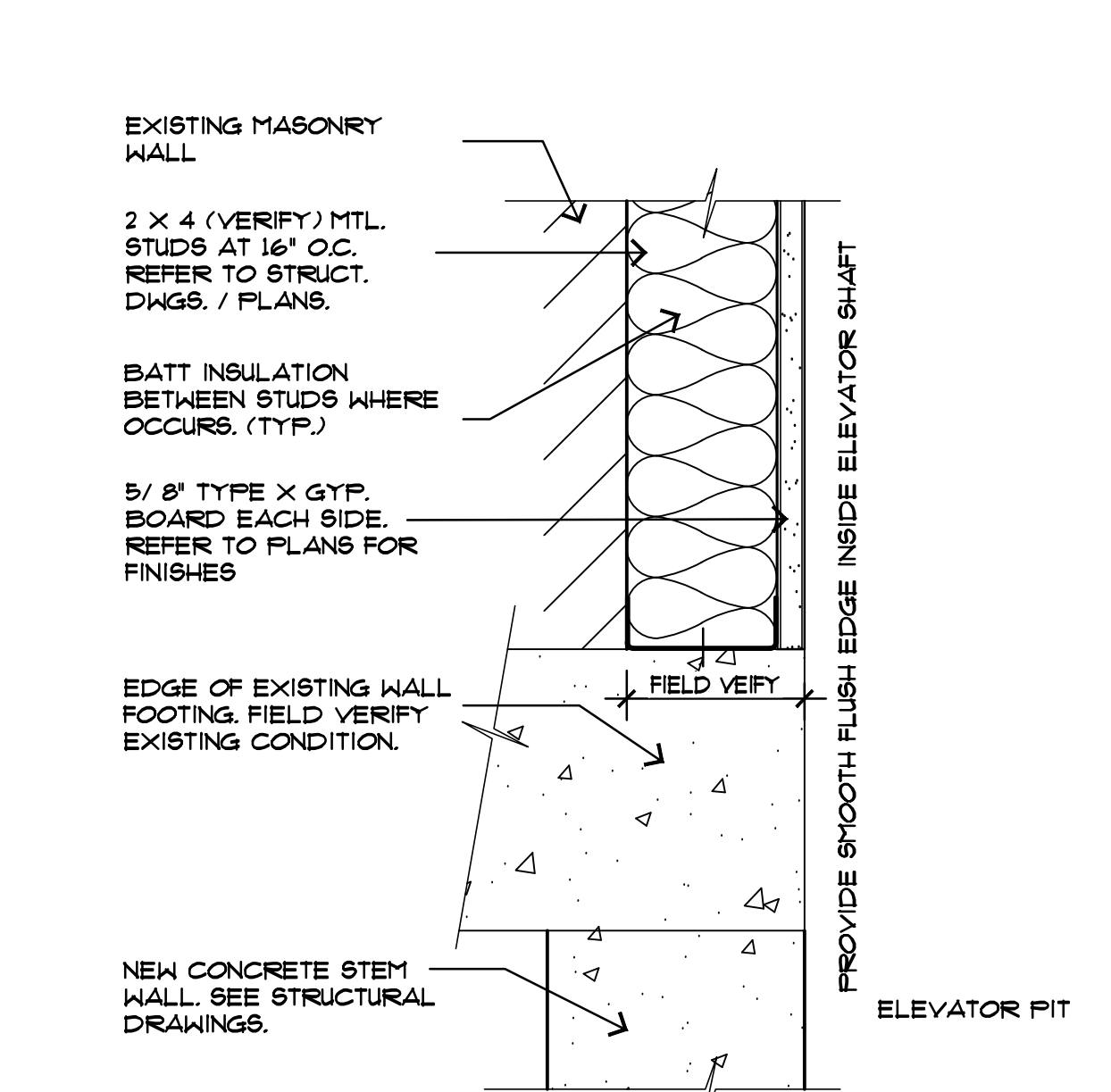
5 DOOR JAMB AT C.M.U. WALL
SCALE: 3" = 1'-0" 71-CMU DOOR JAMB DETAIL



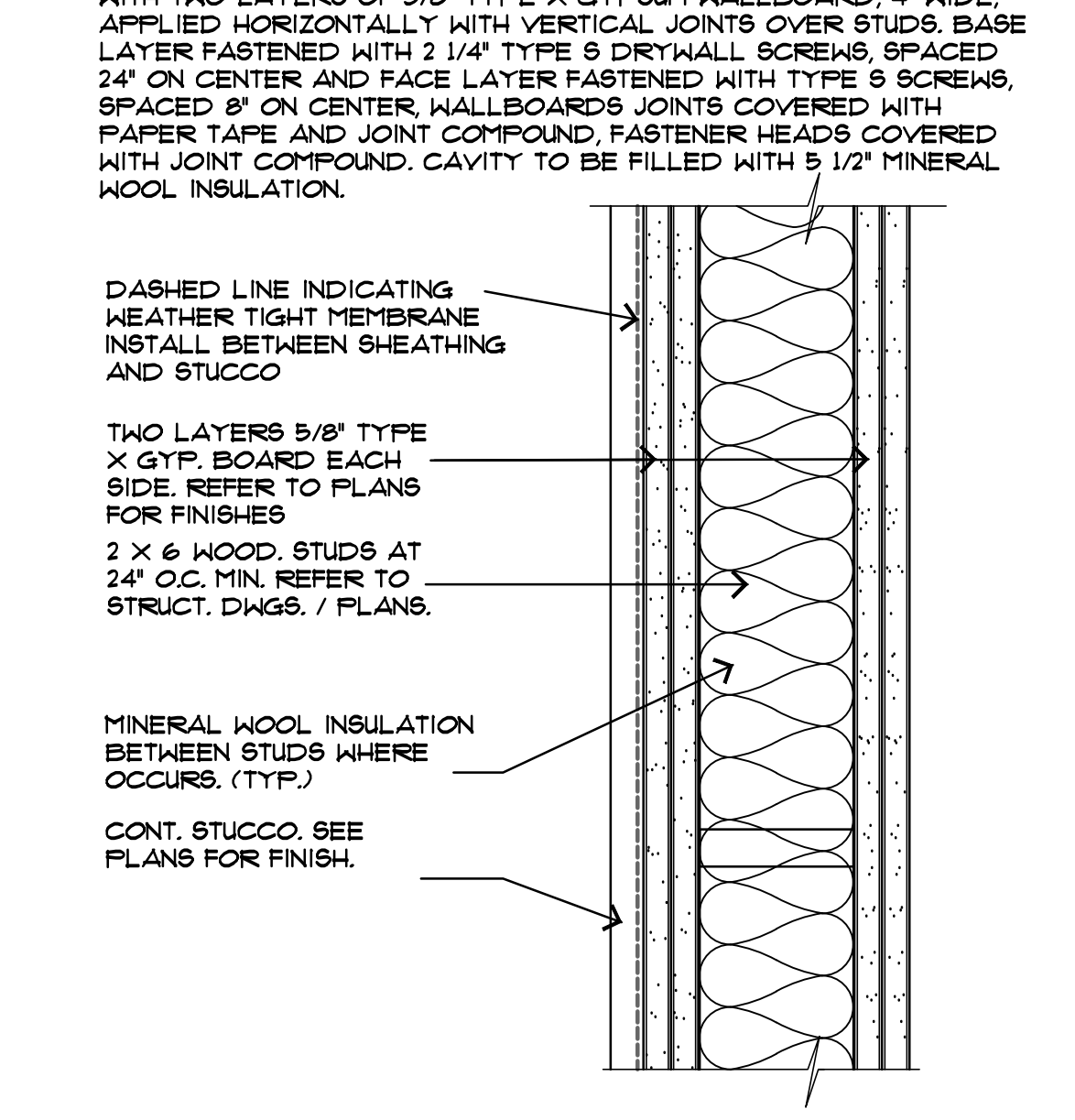
2 GYP. BD. CEILING AT PERIMETER WALL
SCALE: 3" = 1'-0" 09-Gyp. Bd. Ceiling at Perimeter Wall



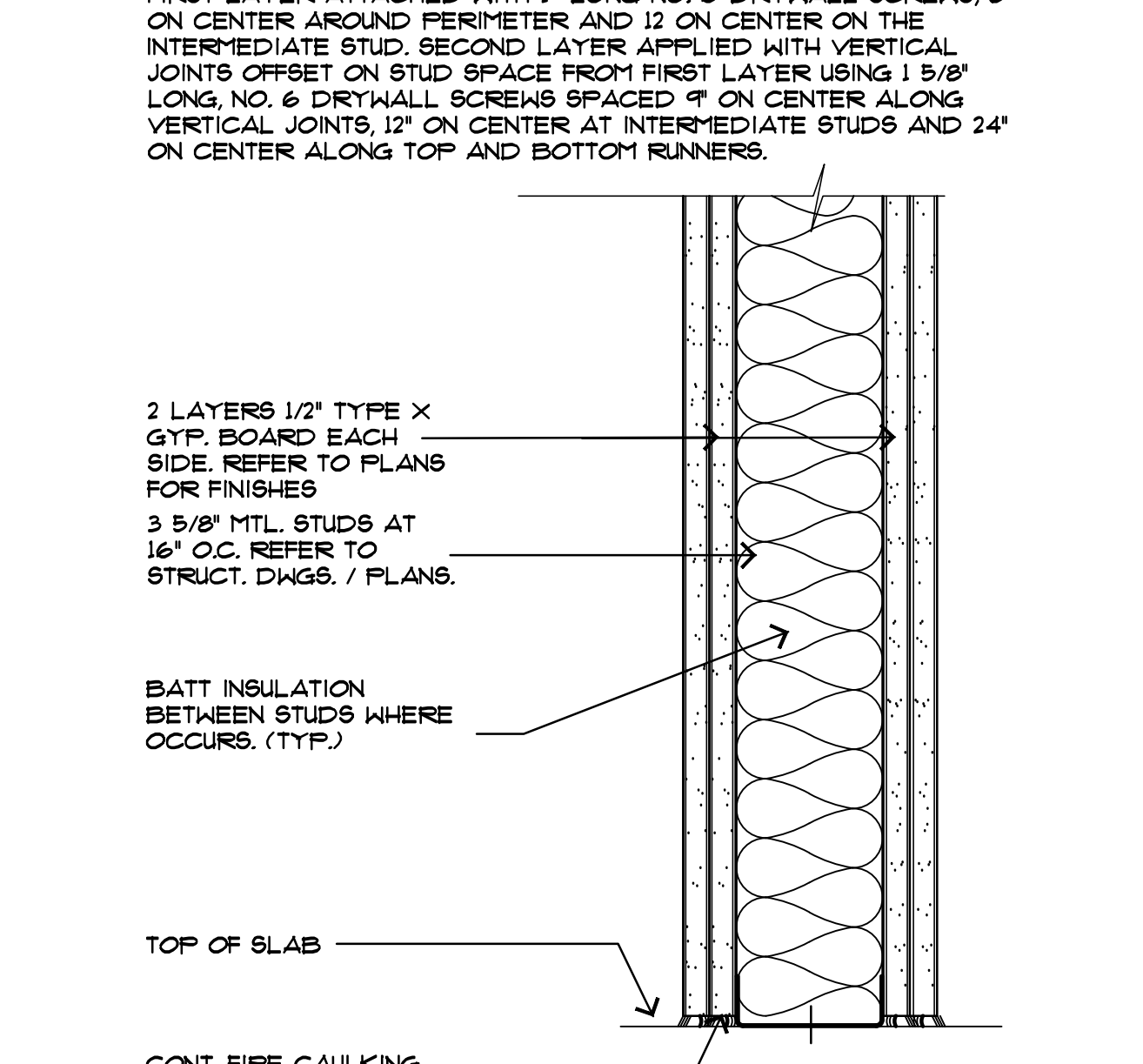
10 DOOR JAMB @ GYP. BD. WALL
SCALE: 3" = 1'-0" INT. JAMB-DETAIL



7 FURRING AT INT WALL DETAIL
SCALE: 3" = 1'-0" 66 INT. FURRING WALL



4 FRAMED WALL DETAIL - 2 HOUR EXT
SCALE: 3" = 1'-0" 64 EXT. FRAMED WALL 2 HR



1 FRAMED WALL DETAIL - 2 HR INTERIOR
SCALE: 3" = 1'-0" 65 INT. FRAMED WALL 2 HR

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Drawn By	JM
Checked By	ES
Project Number	21045



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BRO OFFICE BUILDING

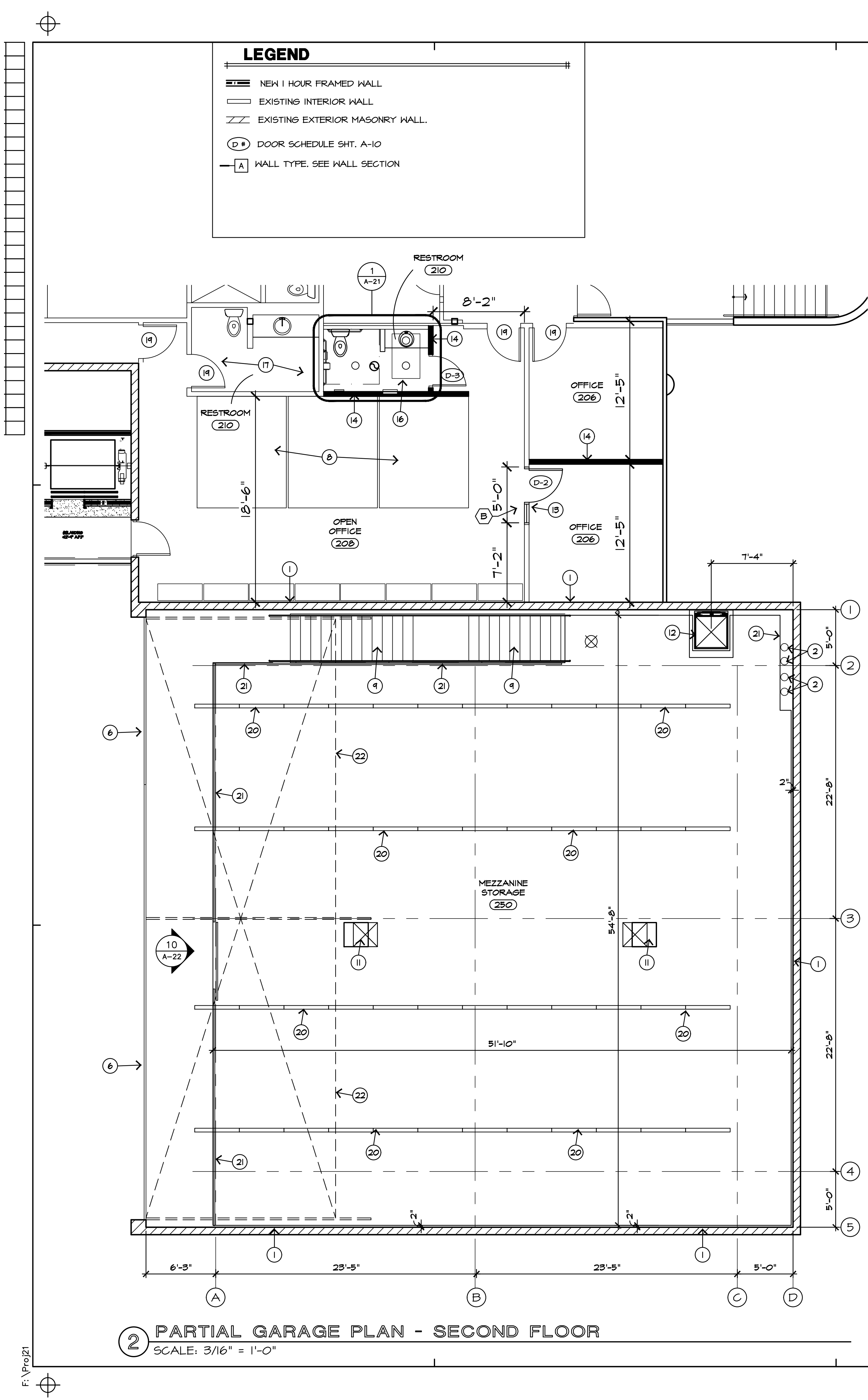
14644 N. 74TH STREET
SUITE 101
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IMPROVEMENT

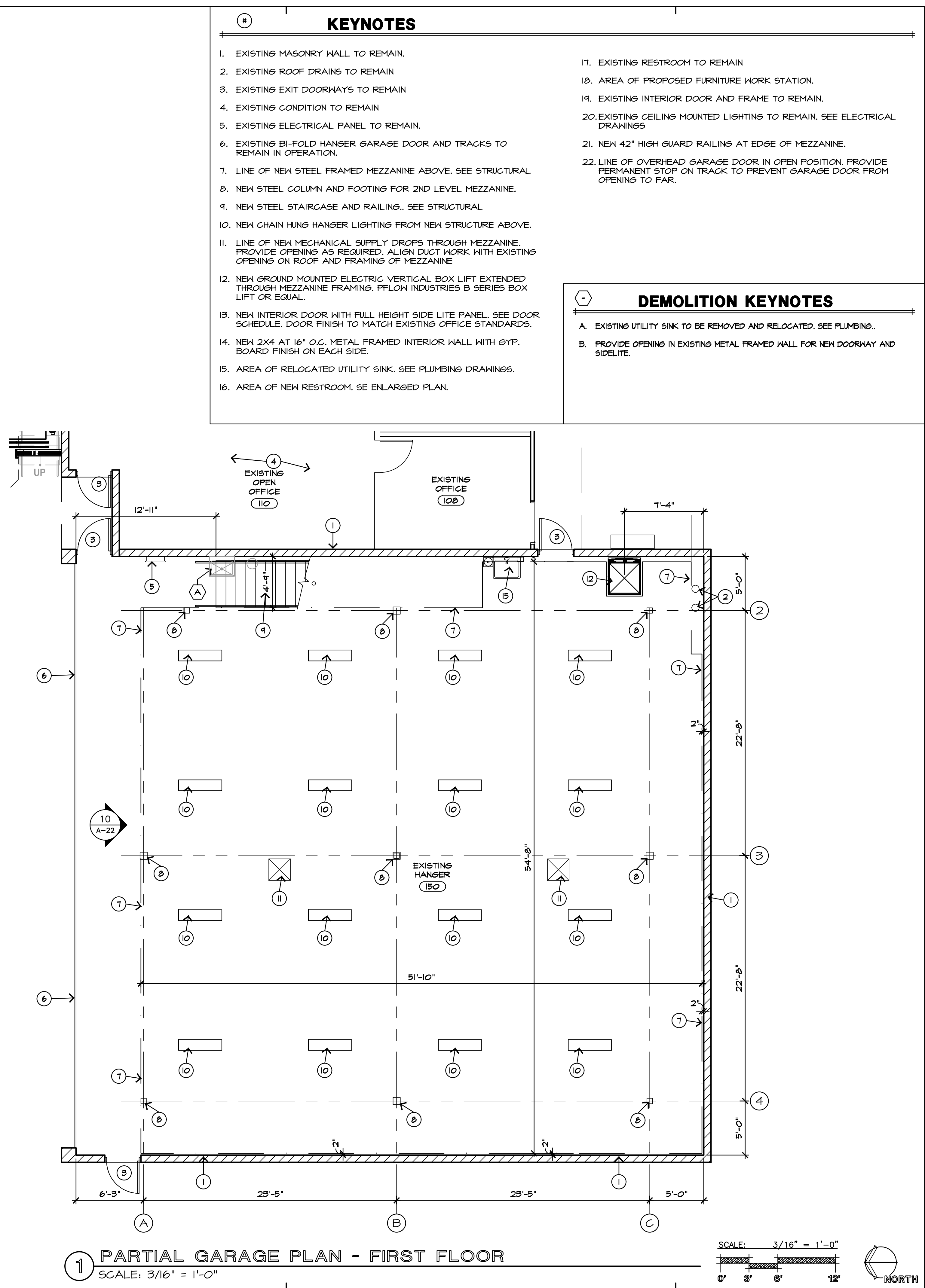
Revisions	
Date	Issued for
12-17-21	SUBMITTAL

DETAILS

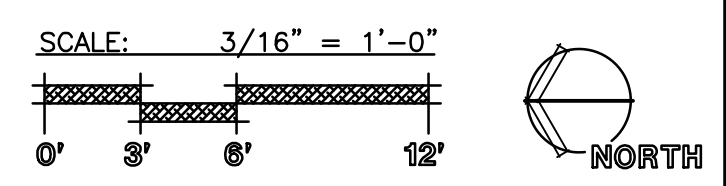
A-12



2 PARTIAL GARAGE PLAN - SECOND FLOOR
SCALE: 3/16" = 1'-0"



1 PARTIAL GARAGE PLAN - FIRST FLOOR
SCALE: 3/16" = 1'-0"



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LEGEND

- NEW 1 HOUR FRAMED WALL
- EXISTING INTERIOR WALL
- EXISTING EXTERIOR MASONRY WALL
- DOOR SCHEDULE SHT. A-10
- WALL TYPE. SEE WALL SECTION

KEYNOTES

- EXISTING MASONRY WALL TO REMAIN.
- EXISTING ROOF DRAINS TO REMAIN
- EXISTING EXIT DOORWAYS TO REMAIN
- EXISTING CONDITION TO REMAIN
- EXISTING ELECTRICAL PANEL TO REMAIN.
- EXISTING BI-FOLD HANGER GARAGE DOOR AND TRACKS TO REMAIN IN OPERATION.
- LINE OF NEW STEEL FRAMED MEZZANINE ABOVE. SEE STRUCTURAL
- NEW STEEL COLUMN AND FOOTING FOR 2ND LEVEL MEZZANINE.
- NEW STEEL STAIRCASE AND RAILING.. SEE STRUCTURAL
- NEW CHAIN HUNG HANGER LIGHTING FROM NEW STRUCTURE ABOVE.
- LINE OF NEW MECHANICAL SUPPLY DROPS THROUGH MEZZANINE. PROVIDE OPENING AS REQUIRED. ALIGN DUCT WORK WITH EXISTING OPENING ON ROOF AND FRAMING OF MEZZANINE
- NEW GROUND MOUNTED ELECTRIC VERTICAL BOX LIFT EXTENDED THROUGH MEZZANINE FRAMING. PFLOW INDUSTRIES B SERIES BOX LIFT OR EQUAL..
- NEW INTERIOR DOOR WITH FULL HEIGHT SIDE LITE PANEL. SEE DOOR SCHEDULE. DOOR FINISH TO MATCH EXISTING OFFICE STANDARDS.
- NEW 2X4 AT 16" O.C. METAL FRAMED INTERIOR WALL WITH GYP. BOARD FINISH ON EACH SIDE.
- AREA OF RELOCATED UTILITY SINK. SEE PLUMBING DRAWINGS.
- AREA OF NEW RESTROOM. SE ENLARGED PLAN.
- EXISTING RESTROOM TO REMAIN
- AREA OF PROPOSED FURNITURE WORK STATION.
- EXISTING INTERIOR DOOR AND FRAME TO REMAIN.
- EXISTING CEILING MOUNTED LIGHTING TO REMAIN. SEE ELECTRICAL DRAWINGS
- NEW 42" HIGH GUARD RAILING AT EDGE OF MEZZANINE.
- LINE OF OVERHEAD GARAGE DOOR IN OPEN POSITION. PROVIDE PERMANENT STOP ON TRACK TO PREVENT GARAGE DOOR FROM OPENING TO FAR.

DEMOLITION KEYNOTES

- EXISTING UTILITY SINK TO BE REMOVED AND RELOCATED. SEE PLUMBING..
- PROVIDE OPENING IN EXISTING METAL FRAMED WALL FOR NEW DOORWAY AND SIDELITE.

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30798
JEFFREY W. WINTER
REGISTERED ARCHITECT
ARIZONA, U.S.A.

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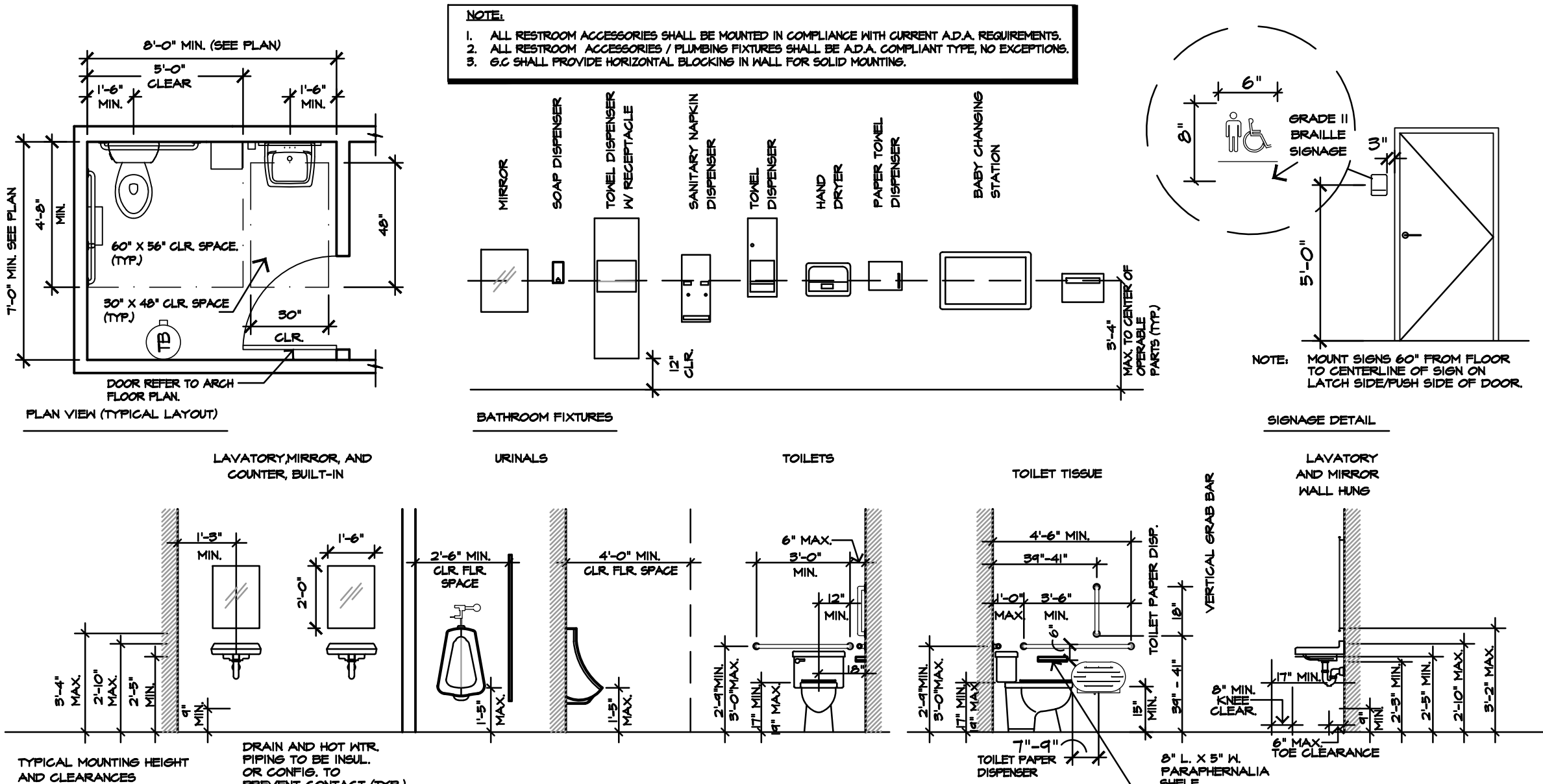
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Date	Issued for
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ENLARGED GARAGE PLANS

A-20

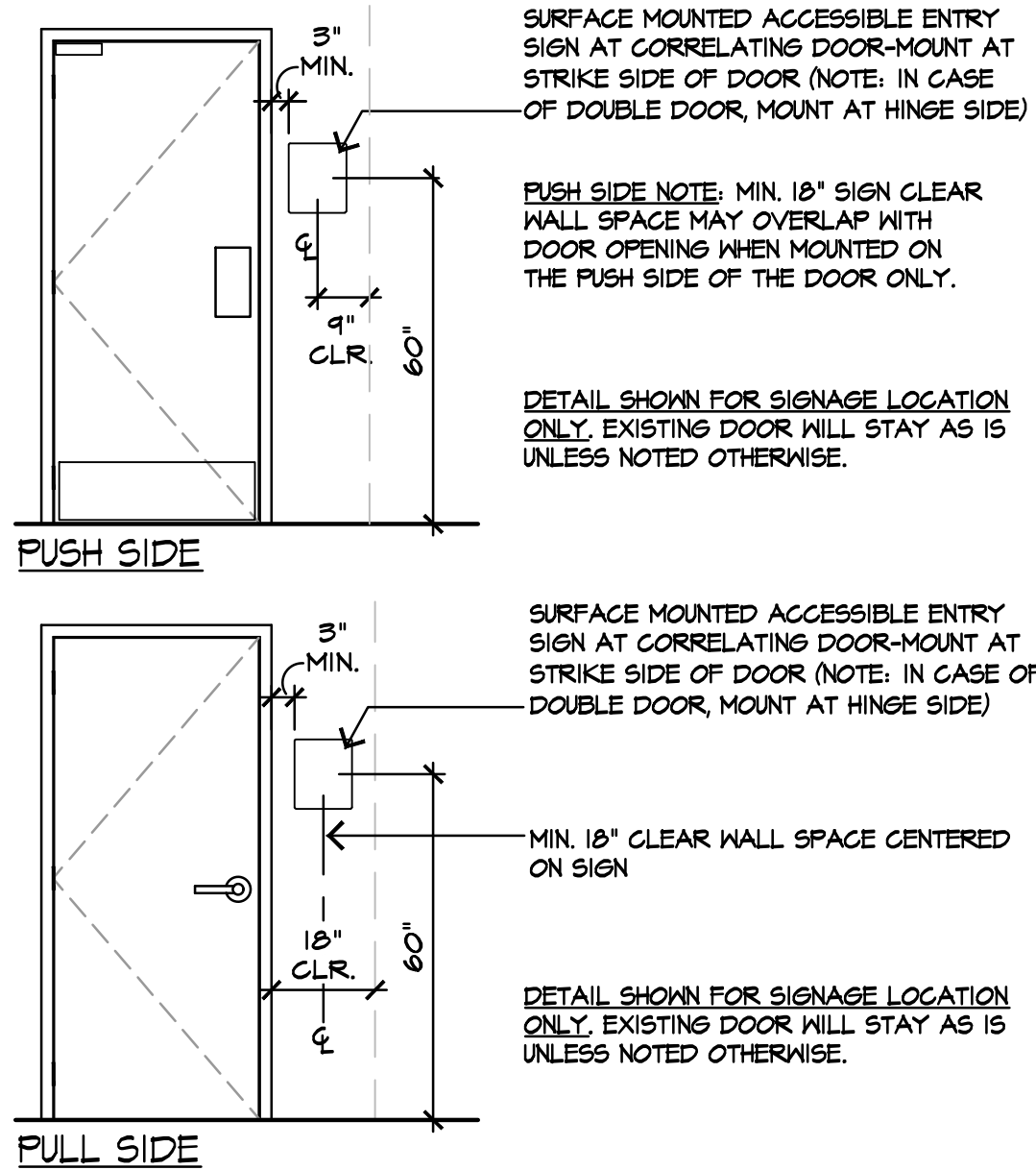
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12 TYPICAL ADA RESTROOM DETAILS

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

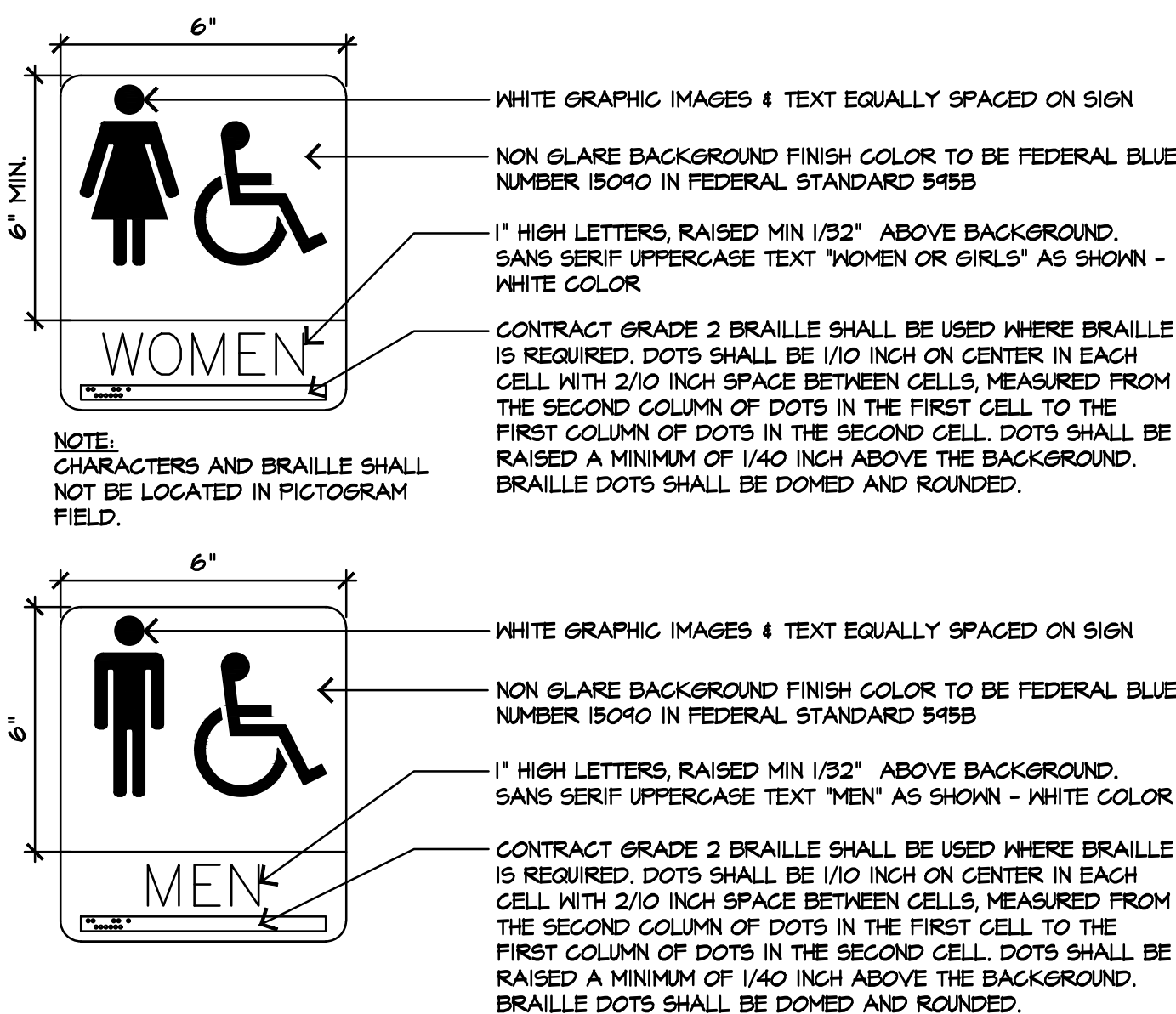
06-Typical ADA Restroom Details-PHX



11 TYP. DOOR SIGNAGE PLACEMENT

SCALE: 3/8" = 1'-0"

12-Door Signage Placement



10 RESTROOM SIGNAGE

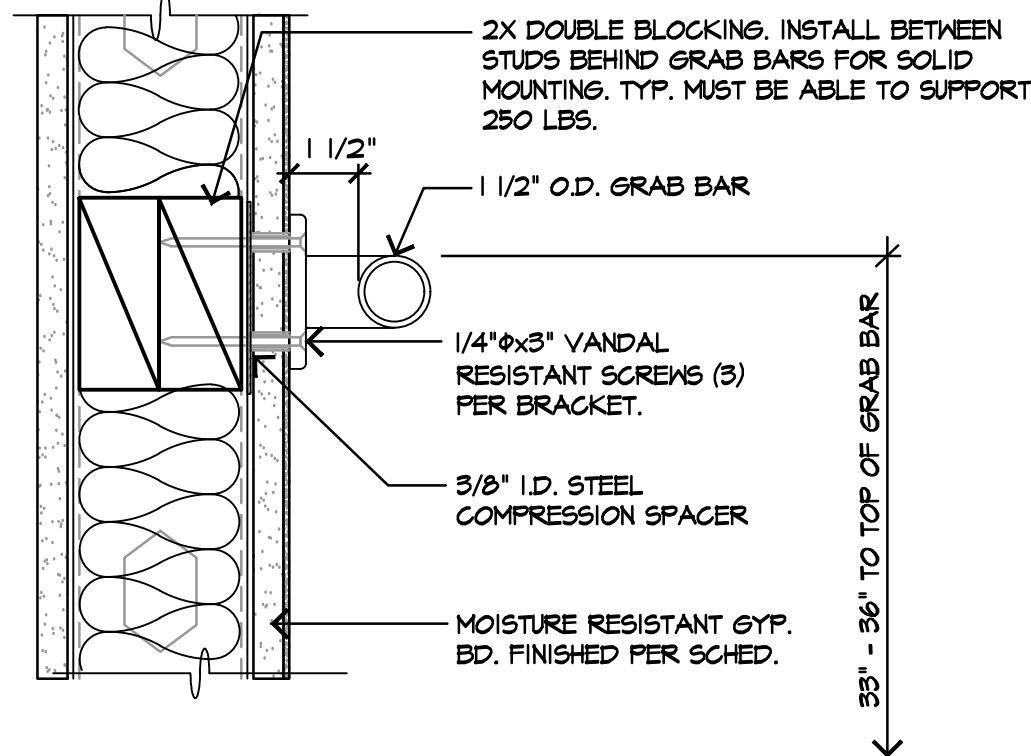
SCALE: 3" = 1'-0"

11-Men and Women RR Signage

7 GRAB BAR MOUNTING

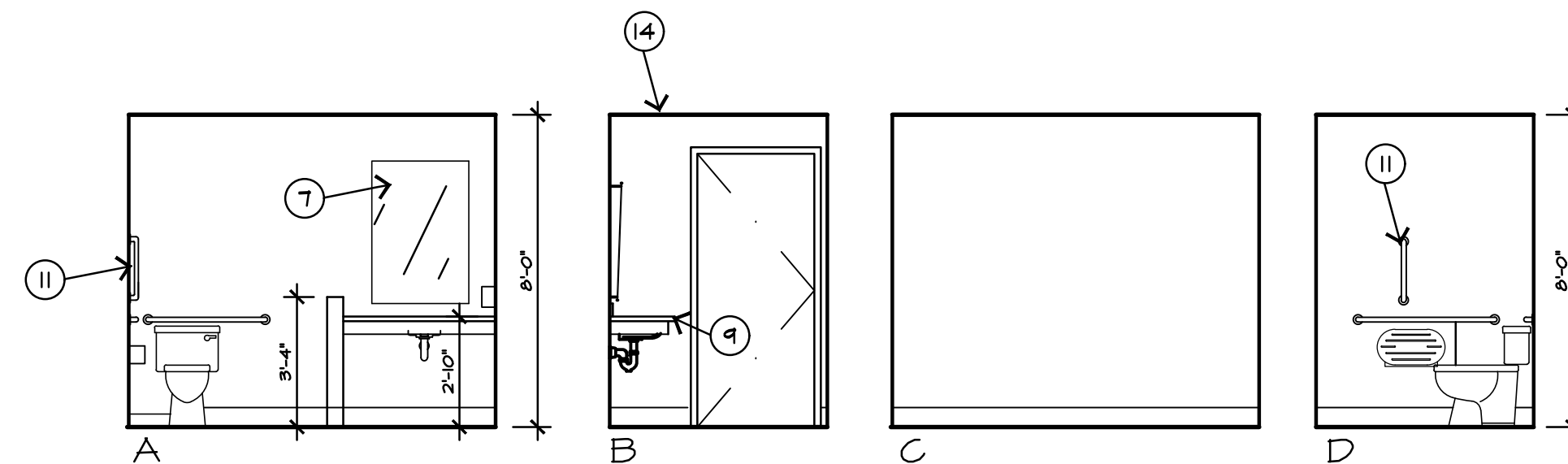
SCALE: 3" = 1'-0"

01-Grab Bar Mounting



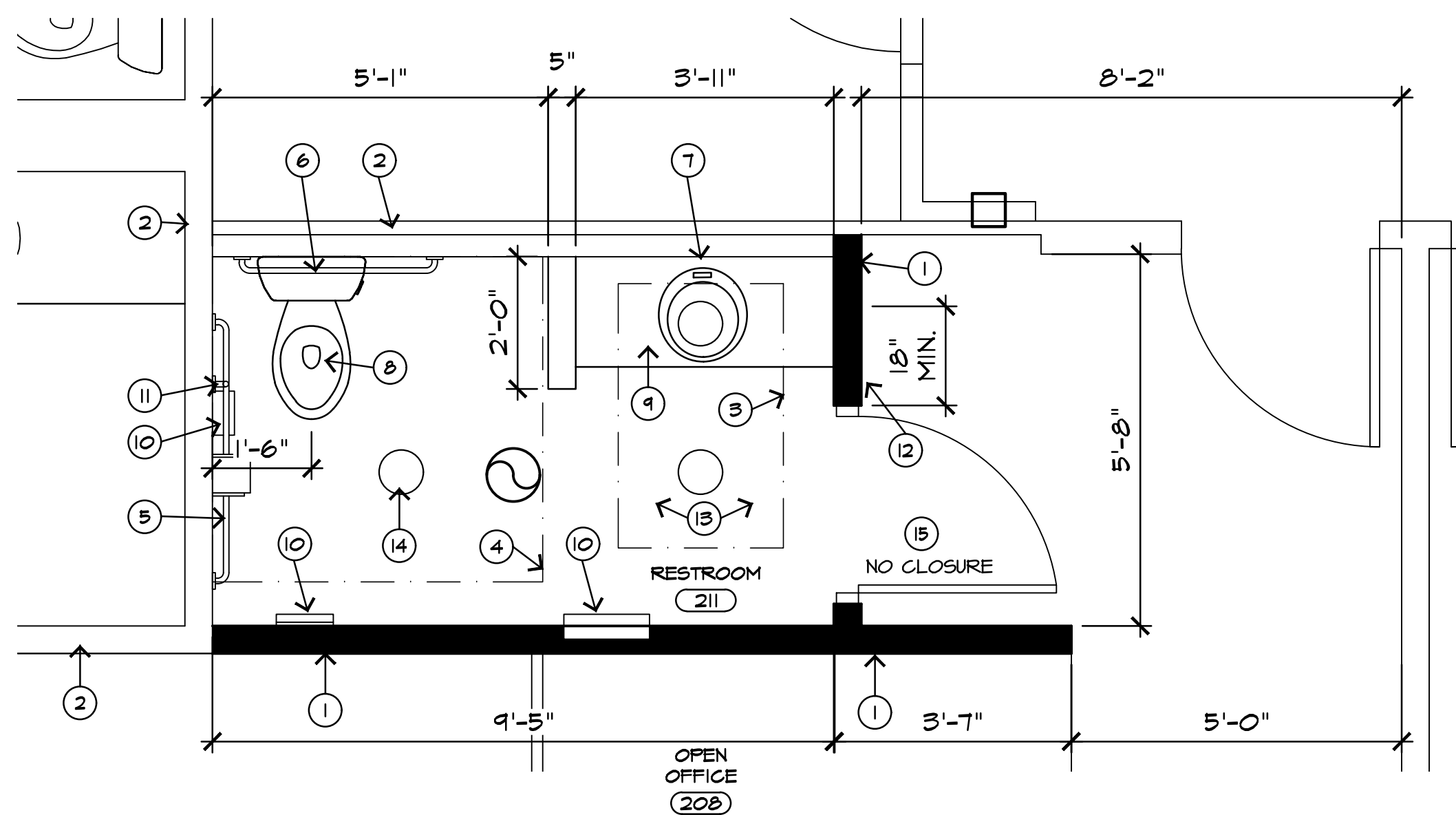
8 RESTROOM ELEVATIONS

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



1 ENLARGED RESTROOM PLAN

SCALE: 3/8" = 1'-0"



KEYNOTES

1. NEW MTL STUD FRAMED INTERIOR WALL.
2. EXISTING METAL STUD FRAMED WALL TO REMAIN.
3. DASHED LINE INDICATING 30" X 48" ADA CLEAR SPACE.
4. DASHED LINE INDICATING 60" W. X 54" D. ADA CLEAR SPACE.
5. 1-1/2" DIA. X 42" MIN ACCESSIBLE SIDE GRAB BAR MOUNTED TO WALL AND VERTICAL GRAB BAR, INSTALL BLOCKING INSIDE WALL AS NEEDED.
6. 1-1/2" DIA. X 36" MIN ACCESSIBLE REAR GRAB BAR MOUNTED TO WALL, INSTALL BLOCKING INSIDE WALL AS NEEDED.
7. SURFACE MOUNTED MIRROR, INSTALL MAX. 40" A.F.F. TO BOTTOM OF REFLECTIVE SURFACE.
8. FLOOR MOUNTED TOILET, INSTALL 17"-19" O.C. FROM ADJACENT WALL, PROVIDE FLUSH CONTROLS ON OPEN SIDE OF STALL/ROOM.
9. WALL MOUNTED SOLID SURFACE COUNTER WITH SINK, INSTALL 27" MIN. FROM F.F.L. TO BOTTOM OF LAVATORY SINK BOWL. PROVIDE INSULATION AT ALL EXPOSED PLUMBING PIPES/VALVES UNDER LAVATORY.
10. WALL MOUNTED ACCESSORY EQUIPMENT, CONTRACTOR TO PROVIDE REQUIRED WALL BACKING.
11. 18" VERTICAL GRAB BAR, INSTALL BLOCKING INSIDE WALL AS NEEDED.
12. INSTALL NEW UNISEX / ACCESSIBLE RESTROOM SIGNAGE WITH BRAILLE STRIP AND ISA SYMBOL AT 60" A.F.F. TO CENTER OF SIGN ON LATCH SIDE OF DOOR.
13. PROVIDE NEW TILE FLOOR AND WALL BASE, MATCH EXISTING OR SEE OVER FOR SELECTION.
14. SEE ELECTRICAL AND MECHANICAL FOR CEILING MOUNTED EQUIPMENT.
15. NEW DOOR WITH NO CLOSURE SET IN NEW FRAME, FINISH AND STYLE TO MATCH EXISTING.

SCALE: 3/16" = 1'-0"
0' 3' 6' 12'



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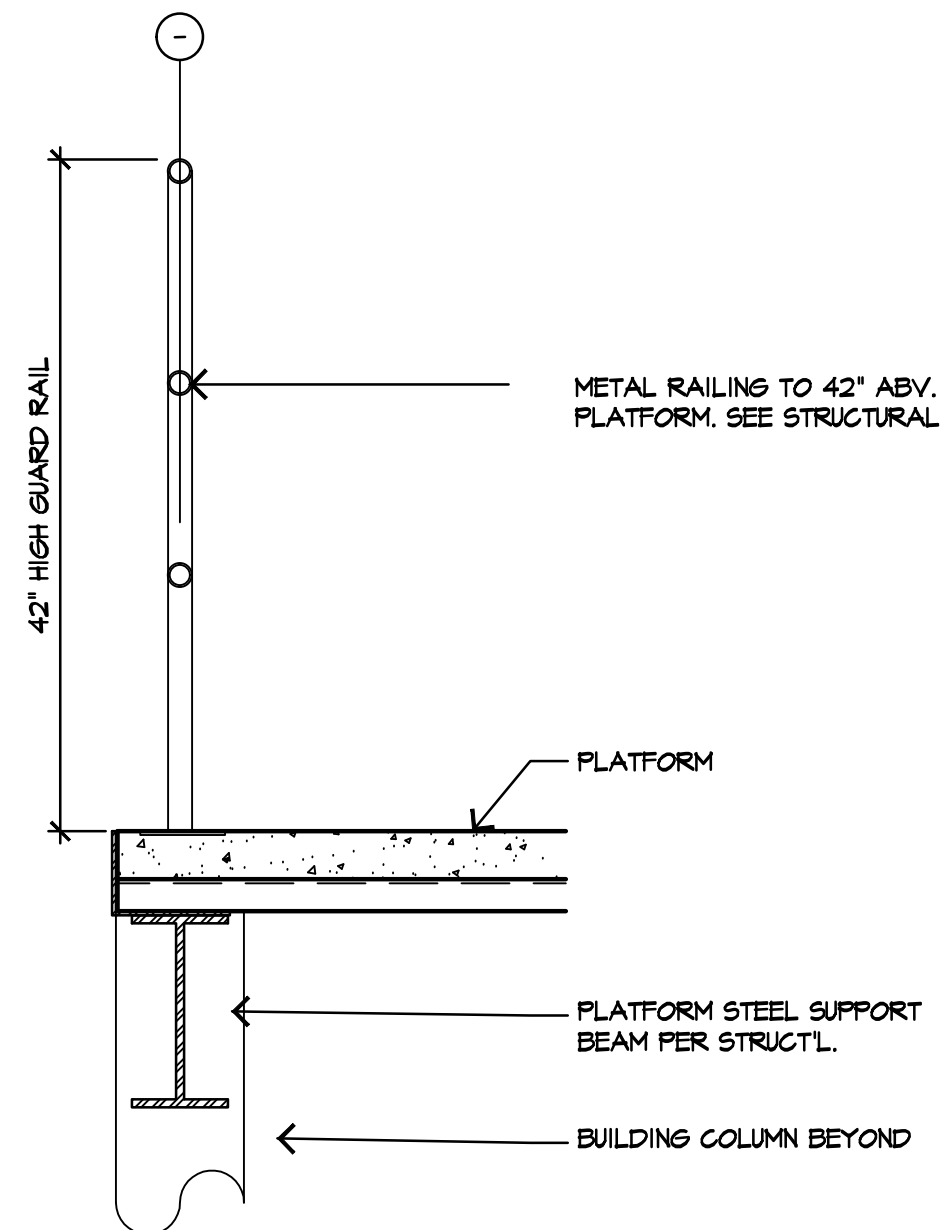
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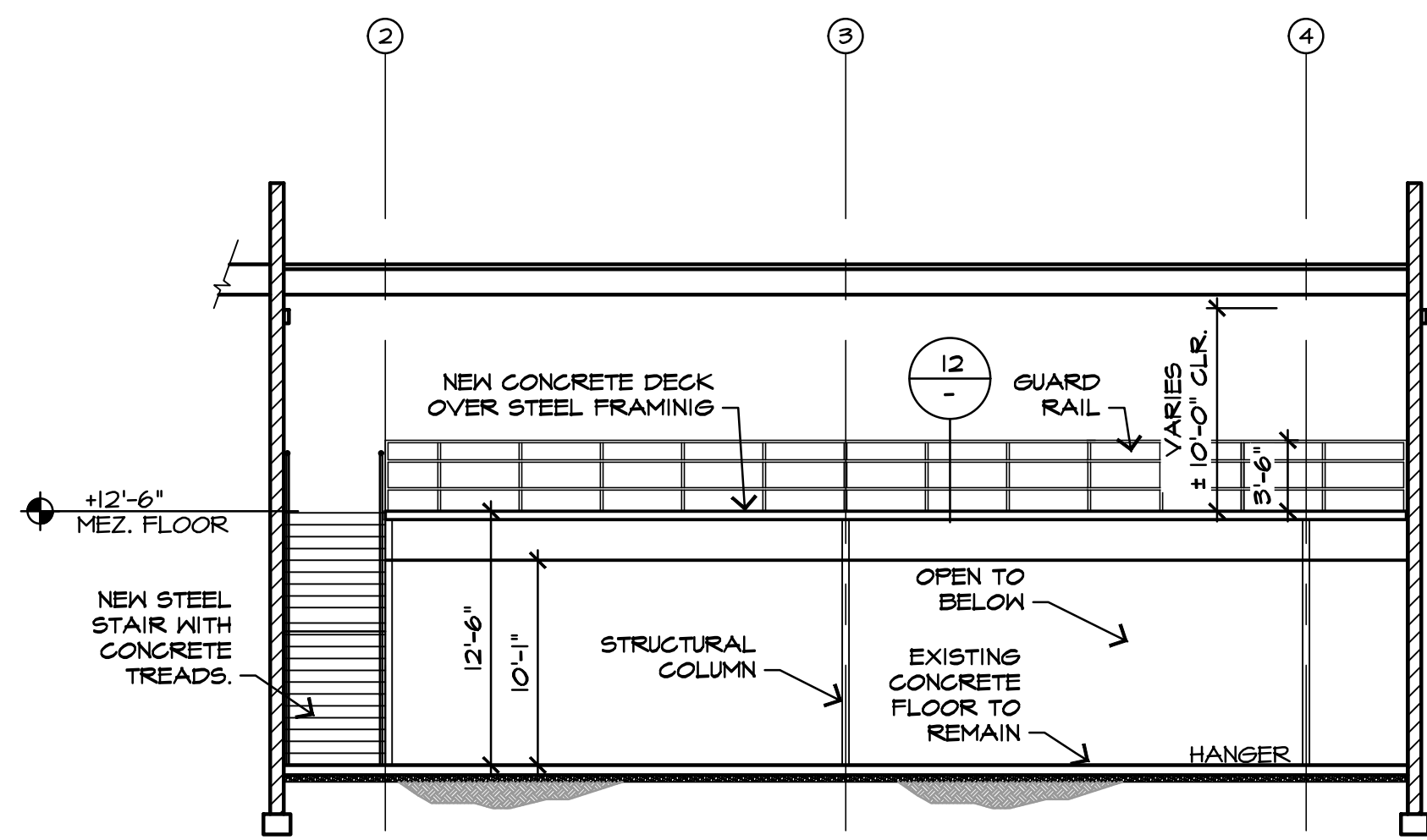
Revisions
Date 12-17-21 Issued for SUBMITTAL
ENLARGED OFFICE PLAN
2ND FLOOR

A-21

11



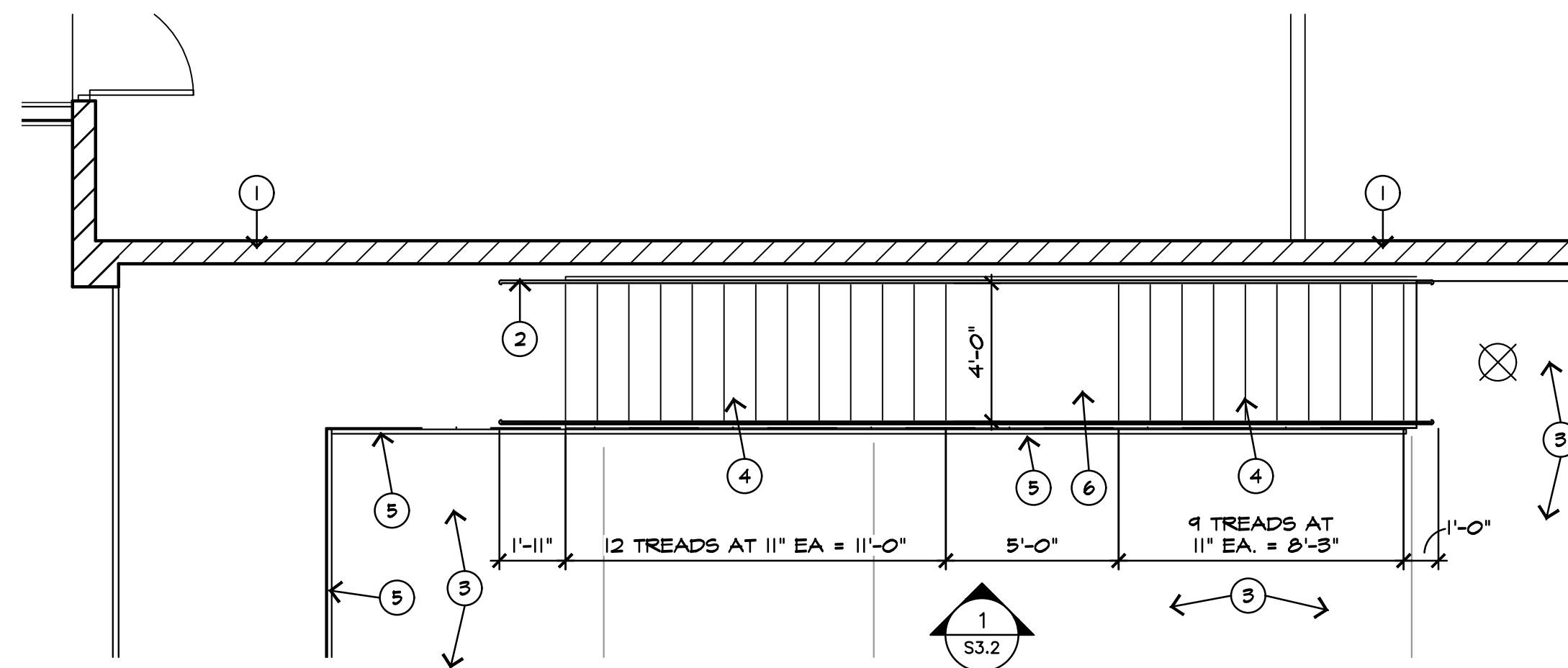
12 MEZZANINE RAILING
SCALE: 1" = 1'-0" MEZZ RAILING 02



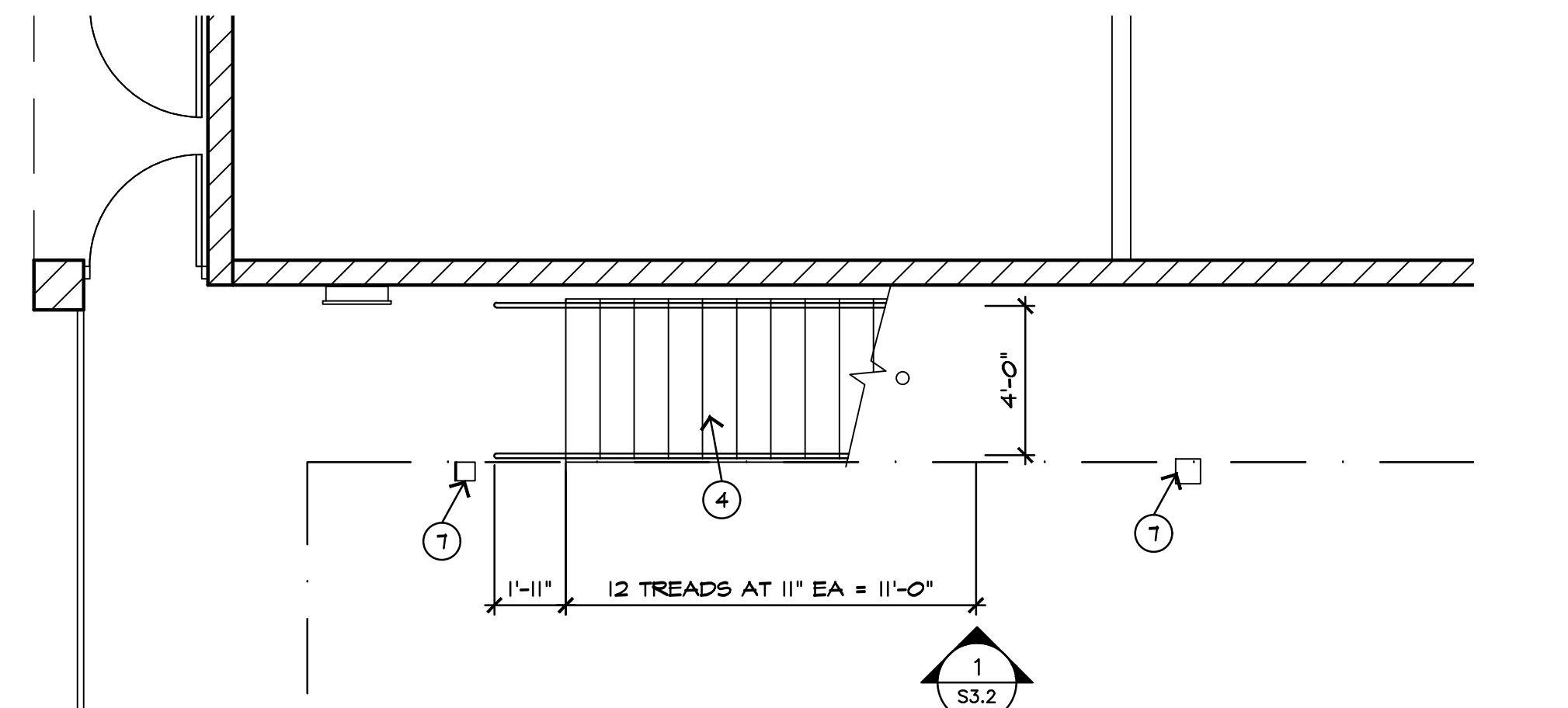
10 ELEVATION AT PLATFORM STRAIRS
SCALE: 1/8" = 1'-0" 12-MECH ELEV

6

3



2 ENLARGED PLAN - STAIR #1 - SECOND LEVEL
SCALE: 1/4" = 1'-0"



1 ENLARGED PLAN - STAIR #1 - GROUND FLOOR
SCALE: 1/4" = 1'-0"

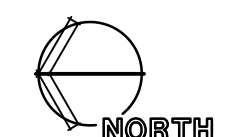
KEYNOTES

- EXISTING MASONRY WALL TO REMAIN.
- NEW CONTINUOUS HAND RAIL AT 34" HEIGHT.
- NEW MEZZANINE CONCRETE FLOOR. SEE STRUCTURAL DRAWINGS.
- PRE-FAB STEEL ACCESS STAIR AND RAILING FOR MEZZANINE ACCESS. 12" STAIR TREADS TO BE NON-SLIP CONCRETE FILLED PAN WITH RUBBER MAT FINISH. SEE STRUCTURAL DRAWINGS AND SHOP DRAWINGS AT TIME OF FABRICATION.
- CONT. 42" HIGH STEEL GUARD RAIL. PROVIDE SLIDING ACCESS GATE AT EDGE FOR EQUIPMENT/SUPPLY LOADING. SEE STRUCTURAL DRAWINGS FOR CONNECTION. G.C. TO PROVIDE SHOP DRAWINGS PRIOR TO FABRICATION.
- STAIR LANDING. SEE STRUCTURAL DRAWINGS.
- STRUCTURAL STEEL COLUMN, PAINTED

GENERAL NOTES

- A. SAW CUT AND REMOVAL: ANY TRENCHING OR CONCRETE REPLACEMENT SHALL BE RE-POURED WITH 4,000 PSI CONCRETE FLUSH WITH SURROUNDING SURFACES. PROVIDE #4 DOWELS AT 24" O.C. WITH 4" MIN. EMBEDMENT INTO NEIGHBORING SLABS TO PREVENT SETTLING.

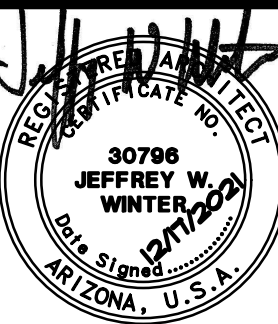
SCALE: 3/16" = 1'-0"
0' 3' 6' 12'



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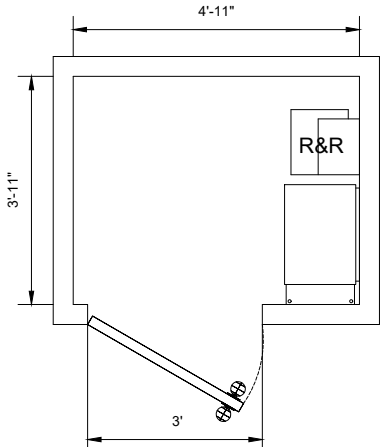
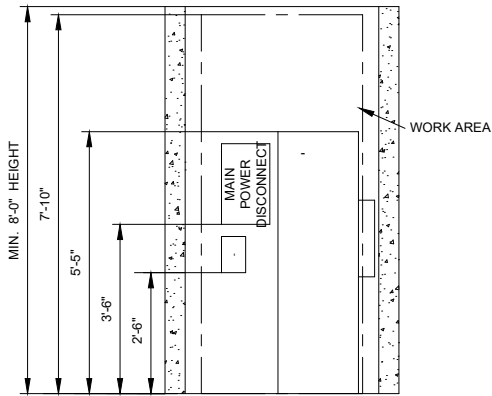
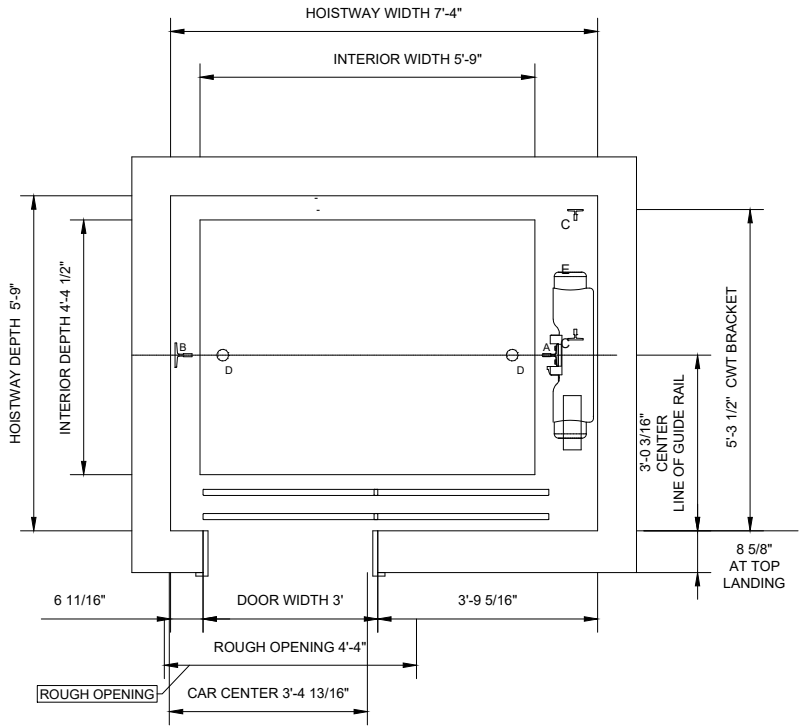
Revisions	
Date	Issued for
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ENLARGED PLAN - STAIR #1

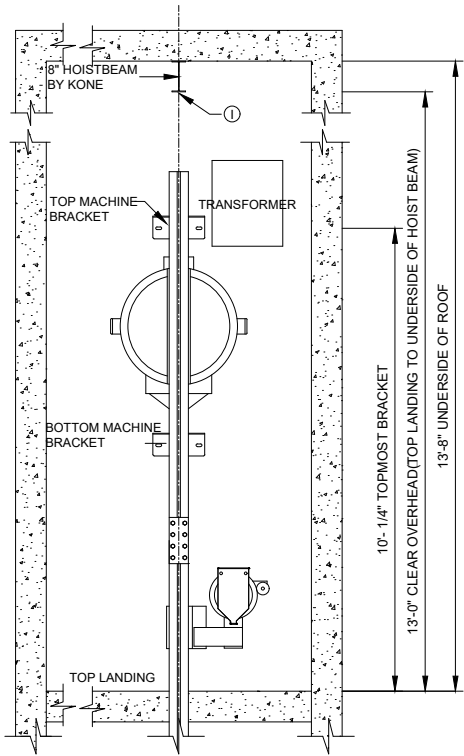
A-22

2018/KP26.5.2021/C/26.05.2021_A3_LSP

LAYOUT NOT TO SCALE. MODEL SPACE 1:1



If an EBD (Emergency Battery Device) or KONE 24/7 Emergency Communications is required, please contact your local KONE Representative.



BRKTS ABOVE TOPMOST LANDING - IMPACT LOADING REACTIONS			
REACTION LOCATION	A	B	C
X DIRECTION	840	160	50
Y DIRECTION	460	1330	100

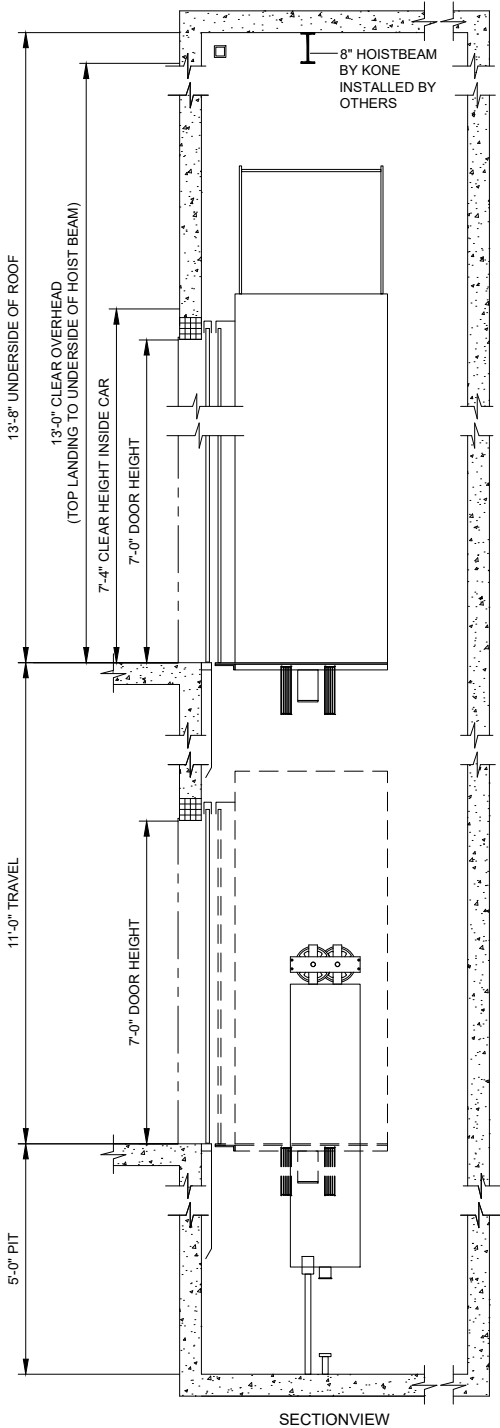
BRKTS BELOW TOPMOST LANDING - RUNNING REACTIONS			
REACTION LOCATION	A	B	C
X DIRECTION	210	160	50
Y DIRECTION	360	260	100
MAX DEFLECTION NOT TO EXCEED 0.25" (6mm) DUE TO APPLIED LOADS			

VERTICAL FORCES ONTO PIT FLOOR					
REACTION LOCATION	A	B	C	D	E
Z DIRECTION	12900	6100	3400	-	-

**VERTICAL REACTIONS A, B & C OCCUR SIMULTANEOUSLY. VERTICAL REACTIONS D & E OCCUR INDIVIDUALLY AND SEPARATELY FROM A, B & C.

HOISTBEAM & LIFELINE VERTICAL FORCES				
REACTION LOCATION	A	B	C	D
Z DIRECTION	5610	4840	5000	5000

FLOOR BY FLOOR HEIGHTS CHART					
Floor Number	Elevation	Front Opening	Back Opening	Inter Floor Distance (ft)	Inter Floor Distance (in)
2	11' 0"	X	--	11	0
1	0' 0"	X	--		



PREPARATORY WORK BY OTHERS: THE CUSTOMER OR CUSTOMER'S CONTRACTOR, SHALL BE RESPONSIBLE FOR THE FOLLOWING CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK AT NO COST TO KONE, INC LOCAL CODES SHALL PREVAIL WHEN APPLICABLE

1. PROVIDE A CLEAR, PLUMB HOISTWAY OF THE SIZE SHOWN ON THE FINAL KONE LAYOUT. VARIATIONS MUST NOT EXCEED 1". (TOLERANCE = -0" + 1")
2. PROVIDE ADEQUATE SUPPORT FOR GUIDE RAIL BRACKETS (INCLUDING DIVIDER BEAMS FOR MULTIPLE ELEVATORS IN A COMMON HOISTWAY) FROM PIT FLOOR TO THE TOP OF THE HOISTWAY AND NOT SPANNING FURTHER THAN ALLOWED BY THE GOVERNING CODE AUTHORITY. FIREPROOFING SHALL BE AFTER INSTALLATION OF ELEVATOR BRACKETS.
3. HOISTWAY VENTILATION SHALL BE PROVIDED PER CODE REQUIREMENTS.
4. PROJECTIONS REQUIRING BEVELING IN ACCORDANCE WITH CODE REQUIREMENTS SHALL BE BEVELED AT AN ANGLE NOT LESS THAN 75 DEGREES FROM THE HORIZONTAL.
5. PROVIDE REMOVABLE, OSHA COMPLIANT BARRICADES AROUND ALL HOISTWAY OPENINGS AND BETWEEN ELEVATORS INSIDE OF THE HOISTWAY AS REQUIRED. PROVIDE TWO LIFELINE ATTACHMENTS AT THE TOP, FRONT OF THE HOISTWAY.
6. ARRANGE FOR ALL BLOCK OUT / CUTOFF OF OPENINGS TO INSTALL HALL PUSHBUTTONS, SIGNAL FIXTURES, AND HATCH DUCT.
7. PROVIDE A DRY PIT REINFORCED TO SUSTAIN VERTICAL FORCE FROM RAILS AND BUFFERS. REFERENCE THE REACTION LOAD TABLES FOR VERTICAL FORCES. SUMPS AND / OR PUMPS (WHERE PERMITTED) LOCATED WITHIN THE PIT MAY NOT INTERFERE WITH THE ELEVATOR EQUIPMENT.
8. PROVIDE SUITABLE LIGHTING FOR THE MACHINE SPACE WITH A LIGHT SWITCH LOCATED IN THE HOISTWAY. PROVIDE A LIGHT FIXTURE AND A SEPARATE GFCI PROTECTED DUPLEX CONVENIENCE OUTLET IN THE ELEVATOR PIT.
9. ENTRANCE WALLS ARE TO BE LEFT OPEN UNTIL THE ELEVATOR EQUIPMENT IS INSTALLED. ADEQUATE SUPPORT FOR ENTRANCE ATTACHMENT POINTS IS REQUIRED AT ALL LANDINGS. ALL FINISHED FLOORING AND GROUTING IS TO BE INSTALLED AFTER THE ENTRANCE FRAMES ARE INSTALLED.

10. A PIT LADDER IS SUPPLIED BY KONE UNLESS OTHERWISE NOTED ON THE LAYOUT DRAWING. LOCATE AND INSTALL PER KONE FINAL LAYOUT DRAWINGS.
11. AN I-BEAM AND SAFETY LINE BEAM, PROVIDED BY KONE, MUST BE INSTALLED IN THE ELEVATOR HOISTWAY OVERHEAD PER THE KONE FINAL LAYOUT DRAWINGS. WHERE AN ELEVATOR HAS BOTH A FRONT AND REAR OPENING, TWO SAFETY LINE BEAMS ARE REQUIRED.
12. FOR PROPER EQUIPMENT OPERATION, THE MACHINE SPACE AT THE TOP OF THE HOISTWAY MUST BE PROPERLY VENTED PER CODE REQUIREMENTS. MAX ALLOWED HUMIDITY IS 95% NON-CONDENSING. HOISTWAY MUST MAINTAIN A TEMPERATURE BETWEEN 41 F AND 104 F.
13. THE ACCESS DOOR TO THE CONTROL SPACE OR THE CONTROL ROOM MUST BE SECURED AGAINST UNAUTHORIZED ACCESS. IT SHALL BE SELF-LOCKING AND SELF-CLOSING.
14. PROVIDE A 15-AMP 120V AC FUSED SERVICE WITH GROUND (VIA EMERGENCY LIGHT SUPPLY IF AVAILABLE) CONNECTED TO EACH CONTROL CABINET FOR LIGHTING AND FAN. PROVIDE DEDICATED ANALOG PHONE LINE TERMINATING AT THE ELEVATOR CONTROL CABINET.
15. FOR CONTROL SPACES LOCATED REMOTELY FROM THE ELEVATOR HOISTWAY, PROVIDE A GOVERNOR ACCESS DOOR OF SIZE AND LOCATION PER KONE FINAL LAYOUT DRAWINGS. THE ACCESS DOOR SHALL BE SECURED AGAINST UNAUTHORIZED ACCESS.
16. FOR INTEGRATED CONTROL SPACE LOCATED IN SEISMIC AREA, PROVIDE A SEISMIC SWITCH ACCESS DOOR OF SIZE AND LOCATION PER KONE FINAL LAYOUT DRAWINGS. THE ACCESS DOOR SHALL BE SECURED AGAINST UNAUTHORIZED ACCESS.
17. PROVIDE A SUITABLE WORKING ENVIRONMENT INCLUDING ADEQUATE ACCESS TO THE BUILDING, PROPER LIGHTING IN ALL AREAS, CLEAN AND SAFE STORAGE ADJACENT TO THE HOISTWAY, PROPERLY INSTALLED TEMPORARY SINGLE AND THREE-PHASE POWER, AND SUFFICIENT ON-SITE REFUSE CONTAINERS FOR THE DISPOSAL OF ELEVATOR PACKING MATERIALS.
18. THIS DRAWING MUST BE REVIEWED AND APPROVED BY A LICENSED PROFESSIONAL TO ENSURE COMPLIANCE WITH LOCAL BUILDING CODES.
19. THESE DRAWINGS ARE FOR INFORMATION PURPOSES ONLY AND MUST NOT BE USED FOR CONSTRUCTION PURPOSES. FULLY DETAILED CONSTRUCTION DRAWINGS ARE AVAILABLE FROM THE PRODUCT MANUFACTURER.

SPECIFICATIONS

PRODUCT NAME	: MONOSPACE 300
SEISMIC ZONE	: NON-SEISMIC
CAPACITY	: 2000 lb
SPEED	: 150 FPM
DOOR	: LEFT OPENING
TRAVEL	: 11'-0"
CONTROL LOCATION	: REMOTE
POWER SUPPLY	: 208 V
REQUIRED FUSE AMPS	: 35 AMPS
CONTROLLER HEAT	: 1.6 KBTU/HR
OUTPUT	
MACHINE HEAT OUTPUT	: 0.8 KBTU/HR



ONE KONE COURT
MOLINE, IL
P: 1-800-956-KONE (5663)
F: 309-743-5469
www.kone.us

PROJECT NAME

Bro Office

BUILDING LOCATION

-

-

Nolan Kvam
nolan.kvam@kone.com

1 OF 1

GENERAL STRUCTURAL NOTES

DESIGN CRITERIA:

BUILDING CODE: INTERNATIONAL BUILDING CODE 2015, (IBC) WITH CITY OF SCOTTSDALE AMENDMENTS

ROOF D.L.= 16 PSF
ROOF L.L.= 20 PSF

FLOOR D.L.= 60 PSF
FLOOR L.L.= 125 PSF (LIGHT STORAGE)

WIND:
V (3-SECOND GUST SPEED) = 115 MPH
RISK CATEGORY II
EXPOSURE = C
ENVELOPE PROCEDURE WIND LOAD METHOD
BASE PRESSURE = 16.6 PSF (ASD)

SEISMIC:
IMPORTANCE FACTOR, IE = II
MAPPED SPECTRAL RESPONSE ACCELERATIONS: S_s = 0.202, S₁ = 0.064
SITE CLASS = D
SPECTRAL RESPONSE COEFFICIENTS: SDS = 0.216, SDI = 0.102
SEISMIC DESIGN CATEGORY = B
R=2.0 - BUILDING FRAME SYSTEMS - ORDINARY REINFORCED MASONRY SHEAR WALLS
C_s = 0.108 (ULTIMATE)

NOTES TO CONTRACTOR:

PROJECT SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR OR PERSONS IN CHARGE OF THE DAY-TO-DAY CONSTRUCTION. COMPLY WITH ALL OSHA REQUIREMENTS. UNSECURED ROOF OR FLOOR JOISTS ARE SUBJECT TO ROLL OVER AND SHOULD NOT BE USED AS A WALKING SURFACE UNTIL THEY ARE SECURED AT BOTH SUPPORTS AND LATERALLY BRACED. PROVIDE TEMPORARY BRACING, SHORING, GUYING OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING ERECTION.

VERIFY EXISTING CONDITIONS SHOWN IN DRAWINGS. PROMPTLY NOTIFY THE ENGINEER OR ARCHITECT IF DETAILS AND INFORMATION CONTAINED ON THESE PLANS DO NOT CONFORM TO THE CONSTRUCTION SITE CONDITIONS.

VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS AND WITH ACTUAL FIELD CONDITIONS. DIMENSIONAL CONTROL IS THE RESPONSIBILITY OF THE ARCHITECT AND THE GENERAL CONTRACTOR. GENERAL CONTRACTOR SHALL VERIFY ALL DOOR AND WINDOW OPENINGS WITH THE ARCHITECTURAL DRAWINGS. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

IF THERE ARE CONFLICTS IN THE DRAWINGS, THE COSTLIER ITEMS SHOWN SHALL GOVERN FOR BIDDING PURPOSES, OR SUBMIT A PRE-BID "REQUEST FOR CLARIFICATION".

ENGINEERING DESIGN PROVIDED BY OTHERS SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF ARIZONA.

SPECIAL STRUCTURAL INSPECTION:

PROVIDE SPECIAL INSPECTION ADDITION TO THE INSPECTIONS CONDUCTED BY THE DEPARTMENT OF BUILDING SAFETY. SPECIAL INSPECTIONS DO NOT RELIEVE THE OWNER FROM REQUESTING THE INSPECTIONS REQUIRED BY IBC SECTION 104

PROVIDE SAFE ACCESS TO THE WORK FACILITIES BY THE SPECIAL STRUCTURAL INSPECTOR. NOTIFY ENGINEER OF CONSTRUCTION START DATE AND COORDINATE INSPECTIONS. PROVIDE THE ENGINEER 24 HOURS NOTICE OF SPECIAL INSPECTIONS. SPECIAL INSPECTIONS MAY BE CONDUCTED AS NOTED IN PARENTHESSES BELOW. SEE IBC CHAPTER 17 FOR MORE SPECIFIC INFORMATION

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION PER IBC CHAPTER 17:

- MASONRY REINFORCING AND GROUT PLACEMENT (PRIOR TO GROUT PLACEMENT)
- STRUCTURAL STEEL FRAMING
 - STRUCTURAL FIELD WELDING (AFTER COMPLETE AND SLAG REMOVED)
 - HIGH STRENGTH BOLTING (DURING FINAL TIGHTENING OF BOLTS USING TURN-OF-NUT METHOD)
- EXPANSION AND ADHESIVE/EPOXY ANCHOR BOLTS AND EPOXY REBAR (PRIOR TO PLACEMENT OF ANCHORS)
- CONCRETE REINFORCING AND PLACEMENT (PRIOR TO CONCRETE PLACEMENT)

FOUNDATION:

BEAR FOOTINGS ON UNDISTURBED SOIL OR APPROVED ENGINEERED FILL AT 1'-6" BELOW LOWEST ADJACENT NATURAL GRADE. SOIL PRESSURE 1,500 PSF PER IBC 1804.2, CLASS 5 MATERIAL.

SUB-GRADE TO BE TREATED FOR TERMITES PRIOR TO PLACING CONCRETE.

A SITE SPECIFIC GEOTECHNICAL EVALUATION HAS NOT BEEN COMPLETED FOR THIS PROJECT. SML ENGINEERS ASSUMES NO LIABILITY WITH REGARD TO DIFFERENTIAL SETTLEMENT THAT COULD RESULT DUE TO THE POSSIBLE PRESENCE OF EXPANSIVE OR COLLAPSIBLE SOILS.

CONCRETE:

A.C.I. MANUAL OF CONCRETE PRACTICE. TYPE II-V CEMENT.
NO ADMIXTURES WITHOUT APPROVAL. NO ADMIXTURES CONTAINING CHLORIDES
SUBMIT CONCRETE MIX DESIGNS FOR APPROVAL
FLY ASH: ASTM C-618 CLASS F, NOT TO EXCEED 15 % OF THE CEMENTITIOUS MATERIALS BY WEIGHT.

MIN 28 DAY STRENGTH: 3,000 PSI (DESIGN VALUE=2,500 PSI) EXCEPT AS FOLLOWS:

MEZZANINE (CONCRETE OVER METAL DECK) ----- 4,000 PSI.
ELEVATOR PIT (WALLS & FOOTING) ----- 4,000 PSI.

MECHANICALLY VIBRATE WHEN PLACED, EXCEPT SLABS ON GRADE. MAXIMUM SLUMP 3-1/2" FOR SUSPENDED SLABS AND 5" ALL OTHER

DRYPACK: NON-SHRINK NON-METALLIC GROUT.
MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 2 DAYS.
PLACE UNDER BEARING PLATES BEFORE INSTALLING FRAMING MEMBERS.

REINFORCING:

ASTM A615, GRADE 60 DEFORMED BARS. DETAIL PER LATEST A.C.I. CODE AND DETAILING MANUAL. PLACE REBAR PER C.R.S.I. STANDARDS.

WIRE MESH----- ASTM A185

WELDABLE REBAR----- ASTM A706

CONCRETE COVER TO REINFORCING:

- CONCRETE AGAINST EARTH----- 3"
- SLABS----- 3/4"

DOWEL VERTICAL BARS TO FOUNDATION. WELD REINFORCING BARS WITH LOW HYDROGEN RODS. PROVIDE PLACING DRAWINGS PER A.C.I. DETAILING MANUAL.

SPLICE BOTTOM BARS OVER SUPPORTS AND TOP BARS AT MID-SPAN ONLY, U.N.O.

SPLICES:

CONCRETE: PER SCHEDULE OR PER A.C.I. 318 SECTION 12.14 AND 12.15 CLASS B SPLICE.

CONCRETE: 48 BAR DIAMETERS, UNLESS NOTED OTHERWISE.

THE FOLLOWING TABLE MAY BE USED FOR LAP SPLICES FOR #6 ASTM A615 GRADE 60 AND SMALLER BARS WITH F'_c <= 4000 PSI:

BAR SIZE MINIMUM SPLICE

#3----- 28"
#4----- 31"
#5----- 41"
#6----- 56"

MASONRY:

F_m = 1,500 PSI
CONCRETE MASONRY UNITS: ASTM C90-00, MEDIUM-WEIGHT UNITS
MORTAR: TYPE S 1,800 PSI. GROUT: 2,000 PSI.

LAY UP IN RUNNING BOND, GROUT ALL CELLS CONTAINING STEEL REINFORCING.

MECHANICALLY VIBRATE VERTICAL GROUT SPACES IMMEDIATELY AFTER POURING.

PROVIDE CLEANOUTS IF GROUT LIFT EXCEEDS 4'-8".

OBTAIN APPROVAL OF THE STRUCTURAL ENGINEER FOR GROUT LIFTS OVER 4'-8".

CONTROL JOINTS: NO STRAIGHT RUN OF WALL TO EXCEED 24'-0" U.N.O.

LOCATE NO CLOSER THAN 2'-0" TO A BEARING PLATE OR JAMB OPENING. SOLID GROUT MASONRY BELOW GRADE.

VERTICAL REINFORCING (U.N.O.):

- 2-#6 AT ALL CORNERS, INTERSECTIONS, WALL ENDS, JAMBS, AND EACH SIDE OF CONTROL JOINTS.
- AS NOTED ON PLAN. PROVIDE FOUNDATION DOWELS TO MATCH SIZE AND SPACING WITH 48 INCH LAP.

HORIZONTAL REINFORCING:

- 2-#4 IN 8" MIN. DEEP GROUTED BOND BEAM COURSE AT ROOF & FLOOR LEVELS U.N.O.
- 1-#5 IN 8" MIN. DEEP GROUTED BOND BEAM COURSE AT TOP OF PARAPET.
- 1 GA LADDER TYPE JOINT REINFORCING AT 16" O.C.

BARs AT ROOF AND FLOOR LEVEL BOND BEAMS SHALL BE CONT. THROUGH EXPANSION JOINTS. USE WIRE LATH GROUT BARRIER BELOW THE BOND BEAMS.

PROVIDE 1-#4 IN LINTEL/BOND BEAM COURSE IMMEDIATELY ABOVE/BELOW OPENINGS IN BEARING WALLS, EXTENDING 24" BEYOND EACH JAMB FOR OPENINGS OVER 2'-0" IN WIDTH.

MASONRY LAP SPLICES: 52 BAR DIAMETERS. 62 BAR DIAMETERS. WHEN 2 BARs OCCUR IN ONE CELL

BOLTS: 3/4" DIA., U.N.O.

STRUCTURAL STEEL:

ROLLED W SECTIONS: ASTM A992 OR ASTM A572, GRADE 50
OTHER ROLLED SECTIONS, ANGLES, PLATES AND BARS: ASTM A36
TUBE STEEL: ASTM A500 GRADE B (F_y = 46 KSI)
STEEL PIPE: ASTM A53, GRADE B (F_y = 35 KSI)
BOLTS AND PLAIN ANCHOR: ASTM F1554, GRADE 36

MINIMUM EMBEDMENT OF BOLTS IN GROUT, OR CONCRETE: 8" INCLUDING HEAVY HEX BOLT HEAD.

WELDERS SHALL HOLD VALID CERTIFICATES AND HAVE CURRENT EXPERIENCE IN THE TYPES OF WELDS REQUIRED. USE E-70 SERIES LOW HYDROGEN RODS. CONFORM TO AMERICAN WELDING SOCIETY STANDARDS. COMPLETE PENETRATION WELDS SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY.

PAINT STRUCTURAL STEEL WITH RUST INHIBITING PRIMER OVER CLEAN METAL EXCEPT WHERE STRUCTURAL STEEL IS TO BE PERMANENTLY IN CONTACT WITH CONCRETE OR IS TO RECEIVE SPRAYED-ON FIRE PROOFING.

SCREW ANCHORS (MASONRY): COMPLY WITH ICC AC 106, AND SHALL BE ONE OF THE FOLLOWING:

1) SIMPSON TITEN HD (ICC-ES ESR-1056) OR APPROVED EQUAL

EXPANSION ANCHORS (MASONRY): COMPLY WITH ICC AC 01, AND SHALL BE ONE OF THE FOLLOWING:

- SIMPSON WEDGE-ALL WEDGE ANCHOR (ICC-ES ESR-1396)
- HILTI Kwik BOLT 3 (ICC-ES ESR-1385) OR APPROVED EQUAL

COLD FORMED STEEL:

GALVANIZED: 27, 33 & 43 MIL. THICK (22, 20 & 18 GA), ASTM A653, F_y = 33 KSI. 54 & 60 MIL. THICK (16 & 14 GA), ASTM A653, F_y = 50 KSI. GALVANIZE TO ASTM A924.

STUD DESIGNATIONS AND MINIMUM SECTION PROPERTIES PER STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA) GUIDELINES, ICC-ES ESR-3064P.

STUD BRIDGING: COLD ROLLED CHANNEL, MINIMUM 1 1/2" DEEP WITH 9/16" FLANGE WIDTH. SPACE AT 4'-0" MAXIMUM.

PROVIDE DOUBLE STUDS AT JAMBS, U.N.O.

JOIST BRIDGING: PROVIDE AT QUARTER POINTS OF JOIST SPAN. USE 16 GA. SOLID IN FIRST TWO AND LAST TWO JOIST SPACES. STARTING AT THIRD JOIST SPACE, INSTALL 2" x 16 GA. STRAP BRIDGING TOP AND BOTTOM FOR 10'-0". FOLLOW WITH SOLID BRIDGING IN ONE SPACE. REPEAT PATTERN TO COMPLETION.

WOOD:

ROOF SHEATHING: 1/2" THICK STRUCTURAL WOOD PANELS, 5-PLY CDX PLYWOOD WITH EXTERIOR GRADE GLUE, APA PANEL SPAN RATING 24/16. NAIL WITH 8d NAILS AT 6" O.C. AT PANEL EDGES AND 12" O.C. INTERIOR. LAY UP WITH FACE GRAIN PERPENDICULAR TO SUPPORTS MINIMUM 2 SPAN CONTINUOUS. BLOCK PANEL EDGES IN AREAS INDICATED ON PLAN, PROVIDE FLY CLIP AT MIDSPAN OF UNBLOCKED EDGES.

WALL SHEATHING SHALL OCCUR AT ALL EXTERIOR WALLS; 15/32" THICK STRUCTURAL WOOD PANELS, 5-PLY CDX PLYWOOD WITH EXTERIOR GRADE GLUE, APA PANEL SPAN RATING 24/0. BLOCK ALL EDGES. NAIL WITH 8d NAILS AT 6" O.C. AT PANEL EDGES AND 12" O.C. INTERIOR, U.N.O.

APA RATED ORIENTED STRAND BOARD (OSB) MAY BE SUBSTITUTED FOR CDX PLYWOOD SHEATHING WHEN ALLOWED FOR BY OWNER.

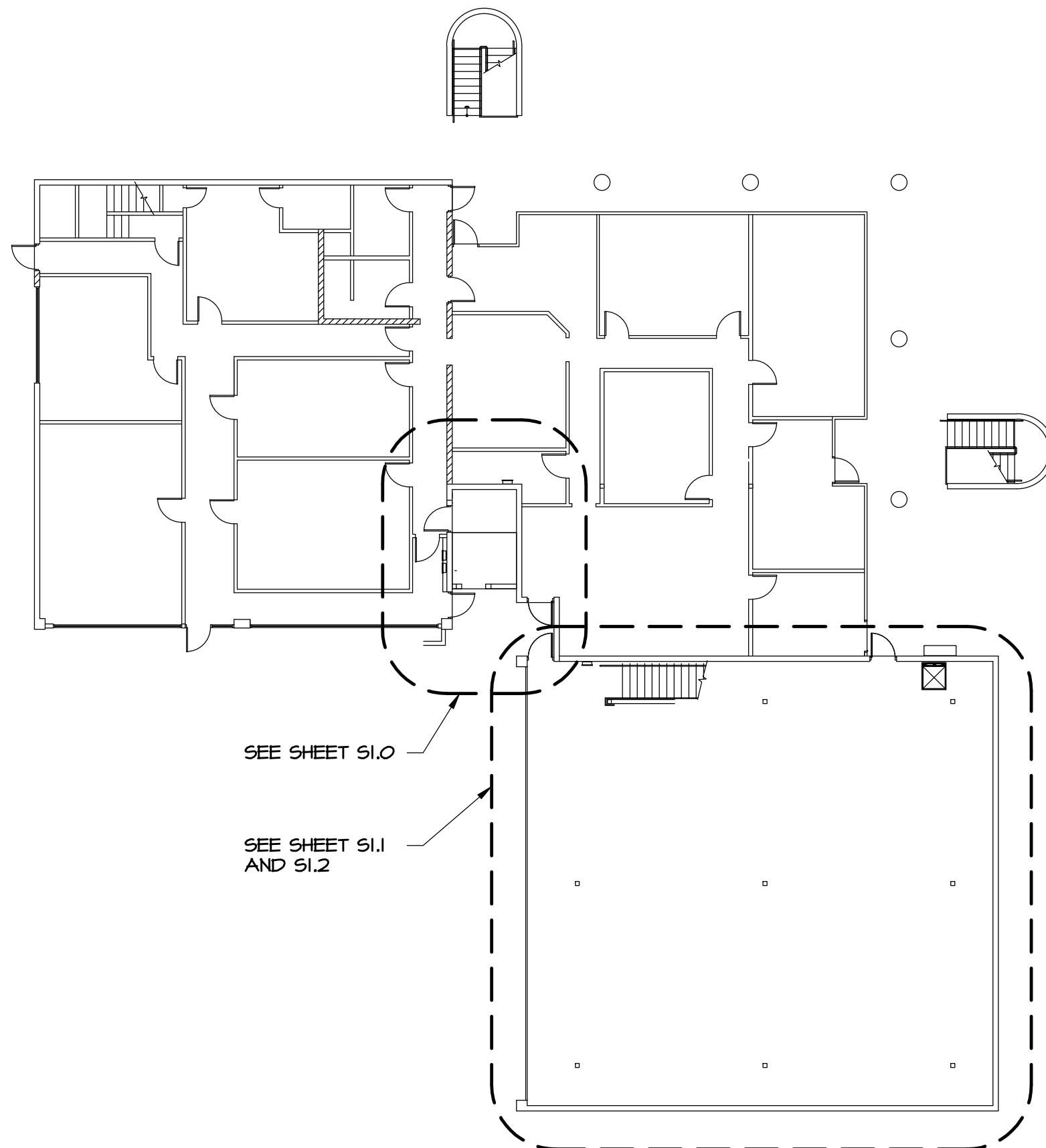
ANCHOR BOLTS, THROUGH BOLTS, LAG BOLTS & BOLTS IN CONTACT WITH WOOD SHALL BE ASTM A307.

METAL DECKING:

COMPLY WITH STEEL DECK INSTITUTE SPECIFICATIONS AND RECOMMENDATIONS

FLOOR DECK: VERCO TYPE "W2" FORMLOCK (ICC-ES ESR-1735) 20 GA. WITH 1 = 0422 IN*4 AND S = 0.333 IN*3 GALVANIZED OR PAINTED. WELD DECK TO EACH SUPPORT W/ 4-1/2" DIAMETER PUDDLE WELDS PER 36" WIDE DECK SECTION. BUTT PUNCH SIDE LAPS AT 12" O.C. WELD MARGINS PARALLEL TO CORRUGATIONS W/ 1/2" DIAMETER PUDDLE WELDS AT 18" O.C. SPAN DECK TWO SPANS MINIMUM. USE NEXT HEAVIER GAGE FOR SIMPLE SPANS. PROVIDE 6X6-W4.4XW4.4 MESH AT MID-DEPTH OF CONCRETE TOPPING PER PLAN.

PAINTED STEEL DECK TO HAVE RUST INHIBITING PRIMER PAINT.



KEY PLAN

SCALE: _____ N.T.S.



SHEET INDEX		PERMIT IDENTIAL			
SHEET NUMBER					
S0.1	GENERAL STRUCTURAL NOTES	*			
S1.0	ELEVATOR ADDITION FOUNDATION PLAN LANDING FRAMING PLAN AND ROOF FRAMING PLAN	*			
S1.1	MEZZANINE ADDITION FOUNDATION PLAN	*			
S1.2	MEZZANINE ADDITION 2nd FLOOR FRAMING PLAN	*			
S2.0	ELEVATOR ADDITION BUILDING SECTIONS	*			
S3.0	FOUNDATION AND FRAMING DETAILS	*			
S3.1	FRAMING DETAILS	*			
S3.2	FRAMING DETAILS	*			
S3.3	FRAMING DETAILS	*			



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Drawn By JS	
Checked By TW	
Project Number 21054	

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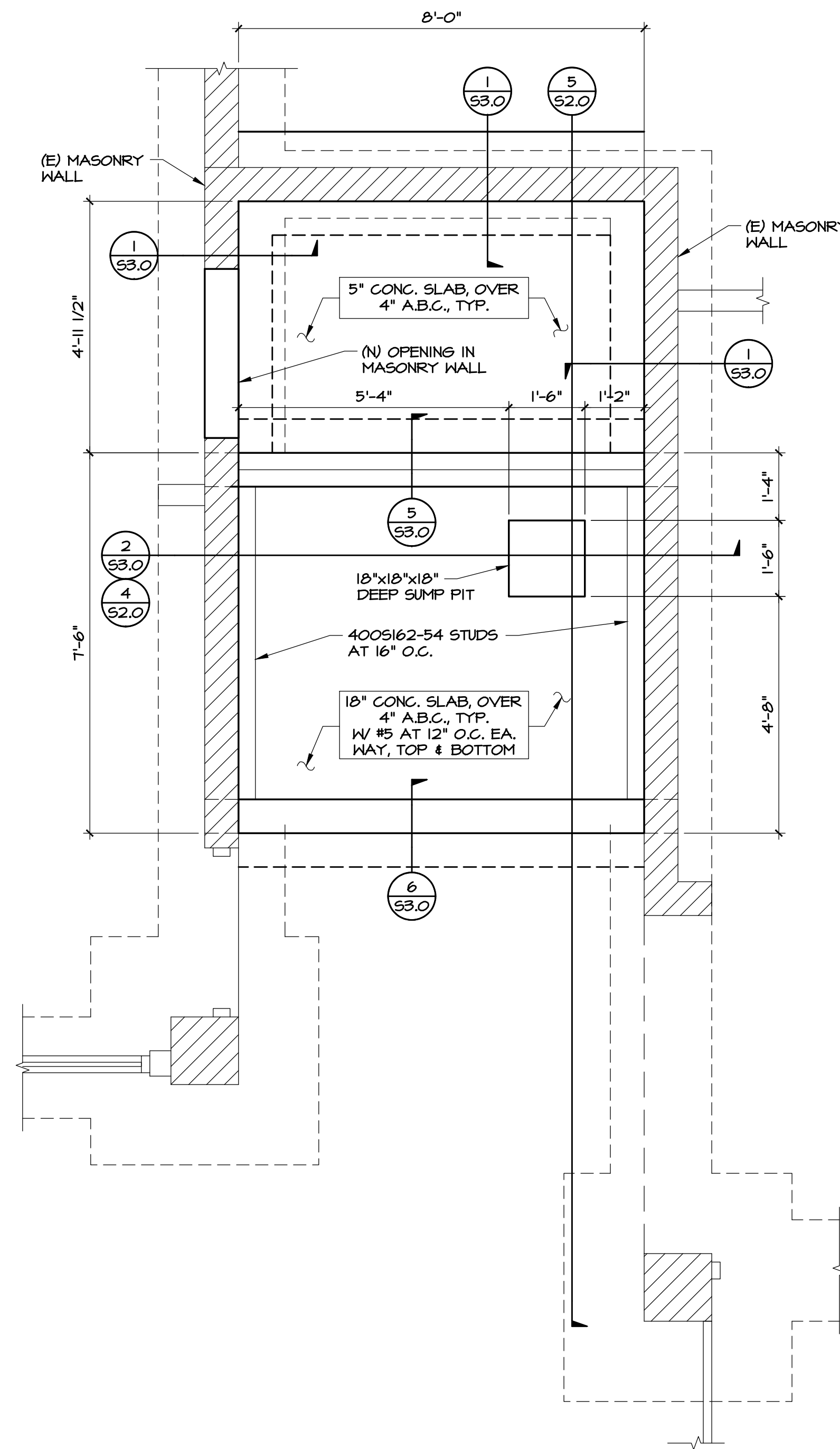
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IMPROVEMENT

Revisions	
Date 11/10/21	Issued for SUBMITTAL

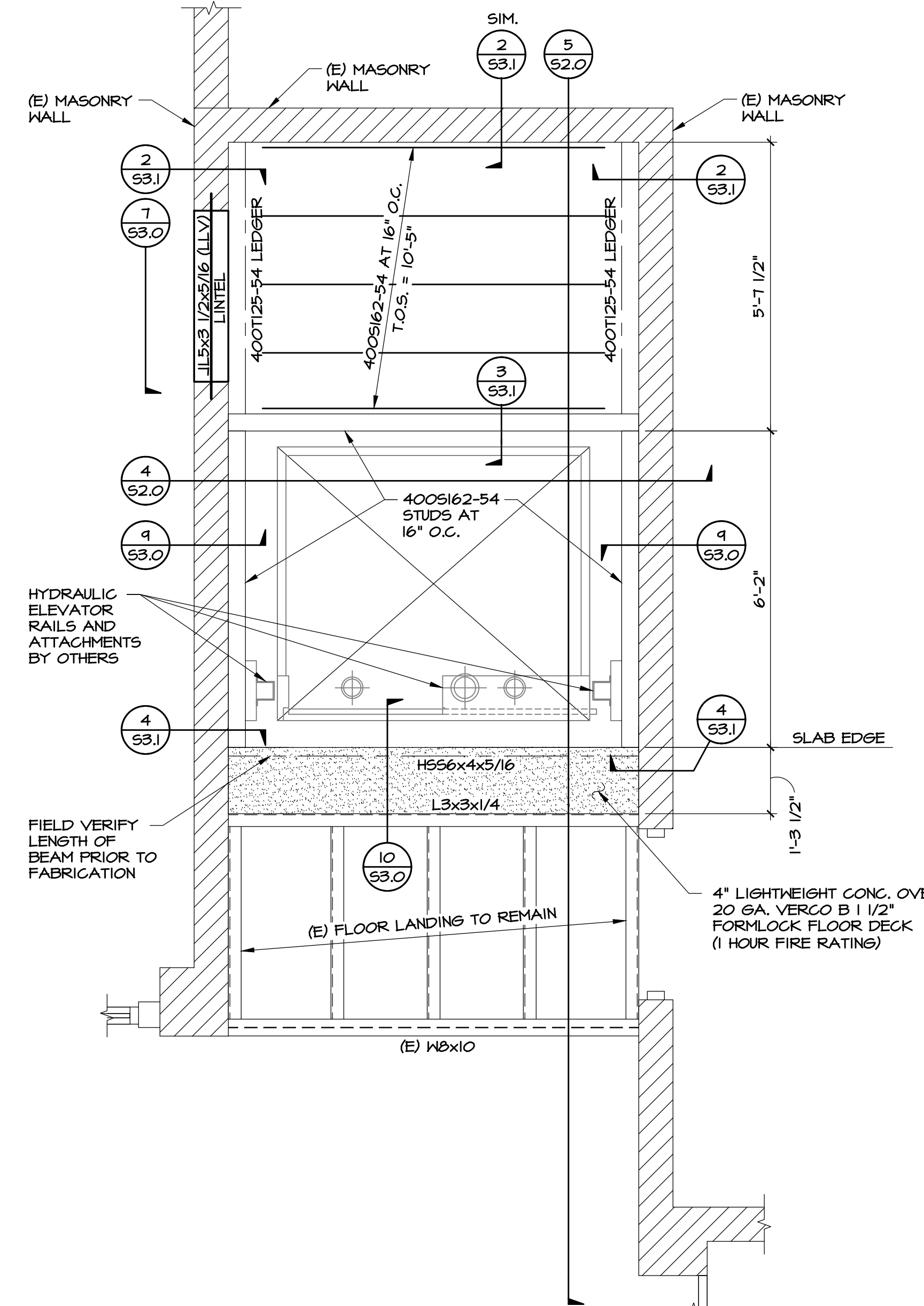
GENERAL STRUCTURAL NOTES
AND KEY PLAN

S0.1

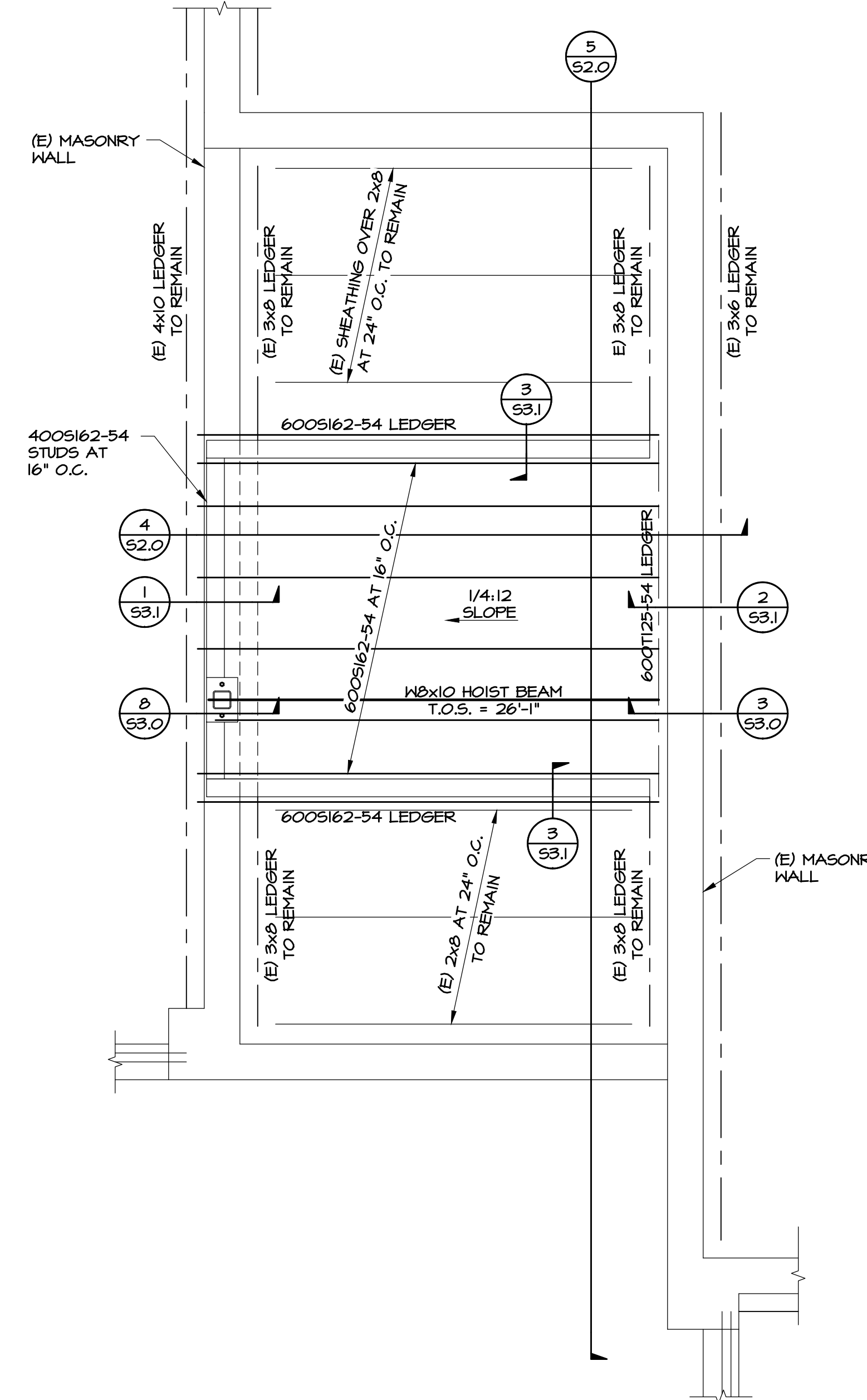
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Expires: 03/31/2024	



1 FOUNDATION PLAN
T.O. FOOTING ELEV. = -4'-0"
SCALE: 1/2"=1'-0"
NORTH



2 LANDING FRAMING PLAN
T.O. DECK ELEV. = +12'-6"
SCALE: 1/2"=1'-0"
NORTH



3 ROOF FRAMING PLAN
B.O. DECK ELEV. = ±27'-1" VARIES
SCALE: 1/2"=1'-0"
NORTH

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FOUNDATION, LANDING
FRAMING AND ROOF
FRAMING PLANS

S1.0



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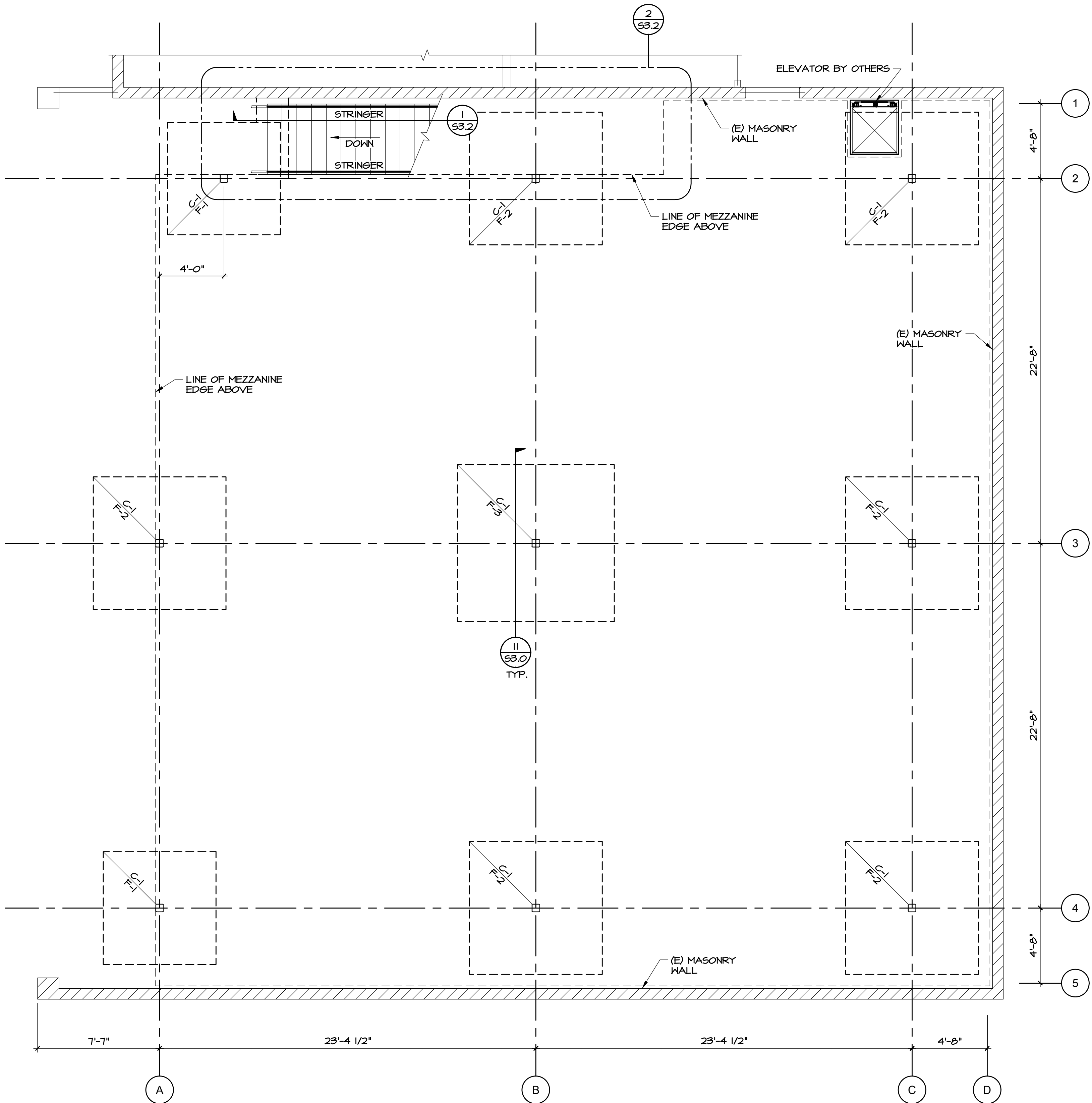
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- FOUNDATION NOTES:
1. ALL DIMENSIONS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS PRIOR TO PERFORMING NEW WORK.
 2. REFER TO SHEET SO.1 FOR GENERAL STRUCTURAL NOTES & SPECIFICATIONS.
 3. GENERAL CONTRACTOR SHALL VERIFY SCOPE & EXTENT OF EXISTING FOUNDATIONS PRIOR TO PERFORMING NEW WORK.
 4. TOP OF EXISTING SLAB ELEVATION = 0'-0".



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



FOOTING SCHEDULE			
MARK	SIZE	REINFORCING	REF. DETAILS
F-1	6'-6"x6'-6"x10" THK.	(9) #5 EA. WAY TOP AND BOTTOM	II/S3.0
F-2	7'-6"x7'-6"x10" THK.	(10) #5 EA. WAY TOP AND BOTTOM	II/S3.0
F-3	9'-0"x9'-0"x10" THK.	(12) #5 EA. WAY TOP AND BOTTOM	II/S3.0

COLUMN SCHEDULE			
MARK	SIZE	BASE R. DEMENSION	REF. DETAIL
C-1	H556x6x3/8	14" SQ. x3/4" THK.	II/S3.0

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FOUNDATION PLAN

S1.1



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FLOOR FRAMING NOTES:

1. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO PERFORMING NEW WORK.
2. REFERENCE THE PLAN AND G.S.N. FOR ADDITIONAL INFORMATION NOT NOTED HERE.
3. FOR CLARITY, DETAILS MAY BE SHOWN ONLY ON ONE SIDE OF FRAMING CONDITION.
4. FOR CLARITY, ALL FLOOR OPENINGS MAY NOT BE SHOWN ON FLOOR FRAMING PLAN. FOR EXACT SIZE, NUMBER AND LOCATION FOR OPENINGS, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.
5. ALL FLOOR FRAMING MEMBERS ARE TO BE NEW CONSTRUCTION UNLESS NOTED OTHERWISE ON PLAN.
6. ▲ AS SHOWN ON PLAN INDICATES MOMENT CONNECTION
7. ☒ OPENING IN FRAMING, SEE NOTE 4
8. THE NUMBER OF STUDS REQUIRED IS SHOWN (xx) ON FRAMING PLAN ADJACENT TO THE BEAM SIZE. SEE DETAIL 11/53.1

3" CONCRETE W/ 6x6 W4xW4 W.U.F. CHAIRED & CENTERED IN SLAB OVER COMPOSITE STEEL FLOOR DECK PER G.S.N. (TOTAL DECK DEPTH = 5")

T.O.C. = 12'-6" AFF, TYP.

T.O.S. = 12'-1" AFF, TYP.

2nd FLOOR FRAMING PLAN

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





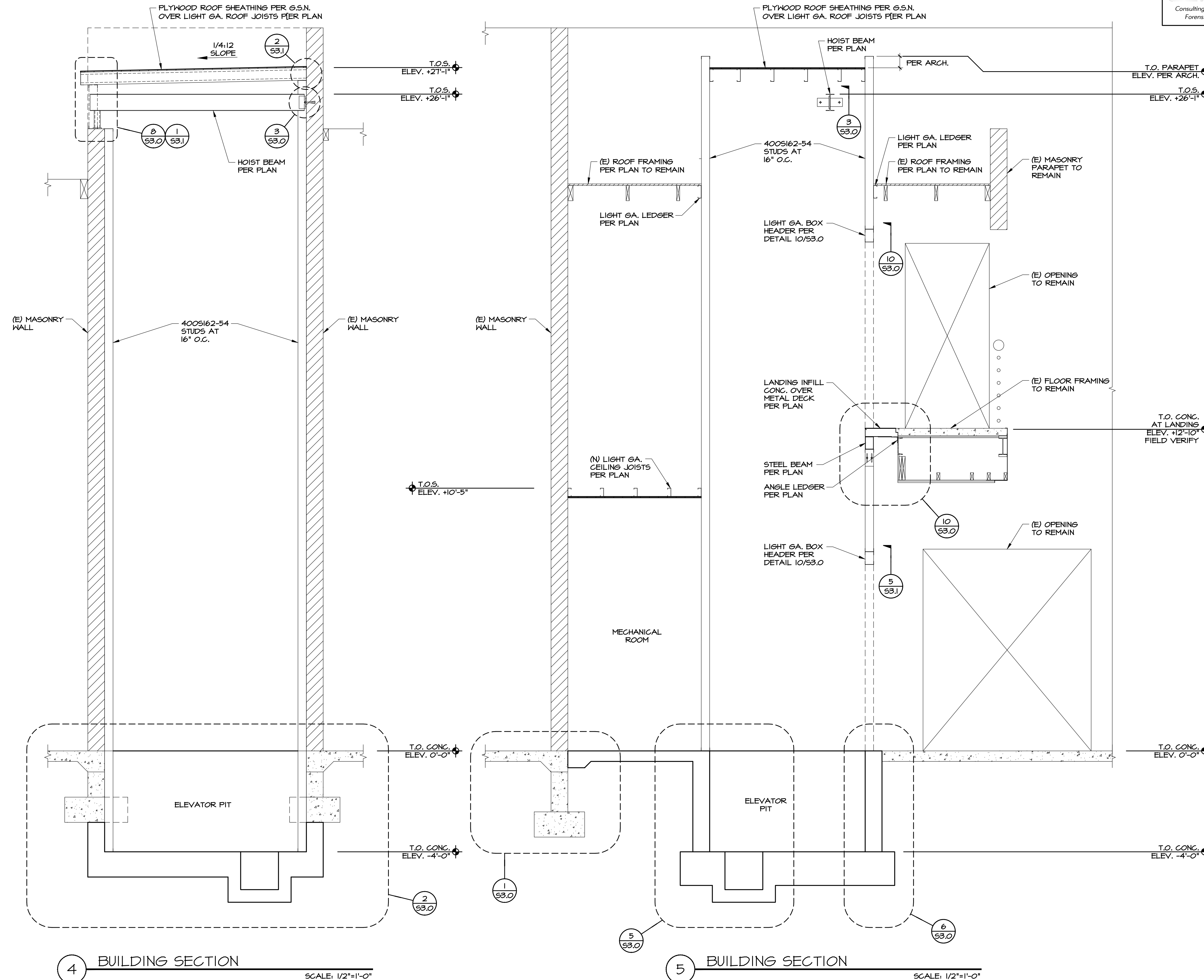
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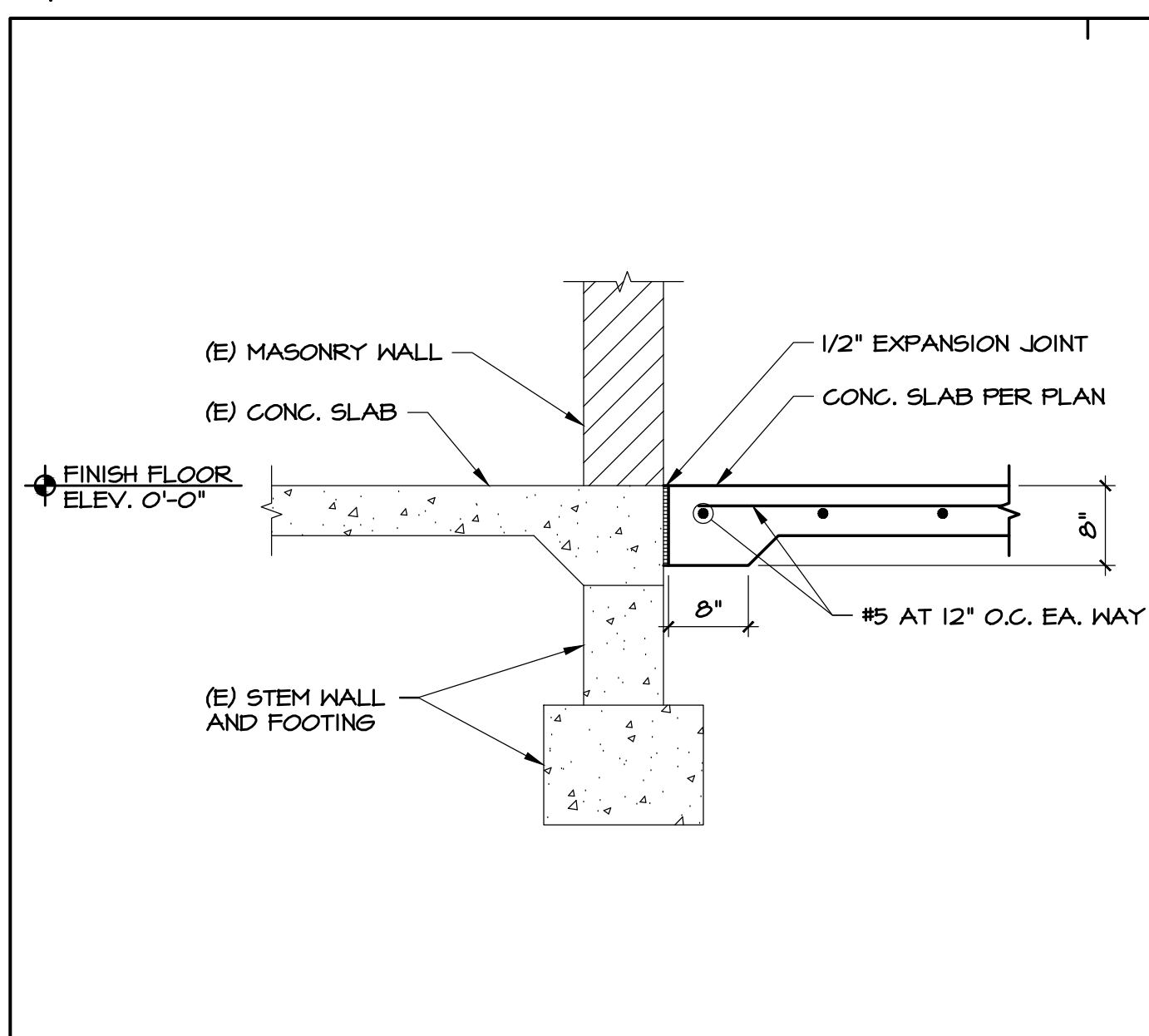
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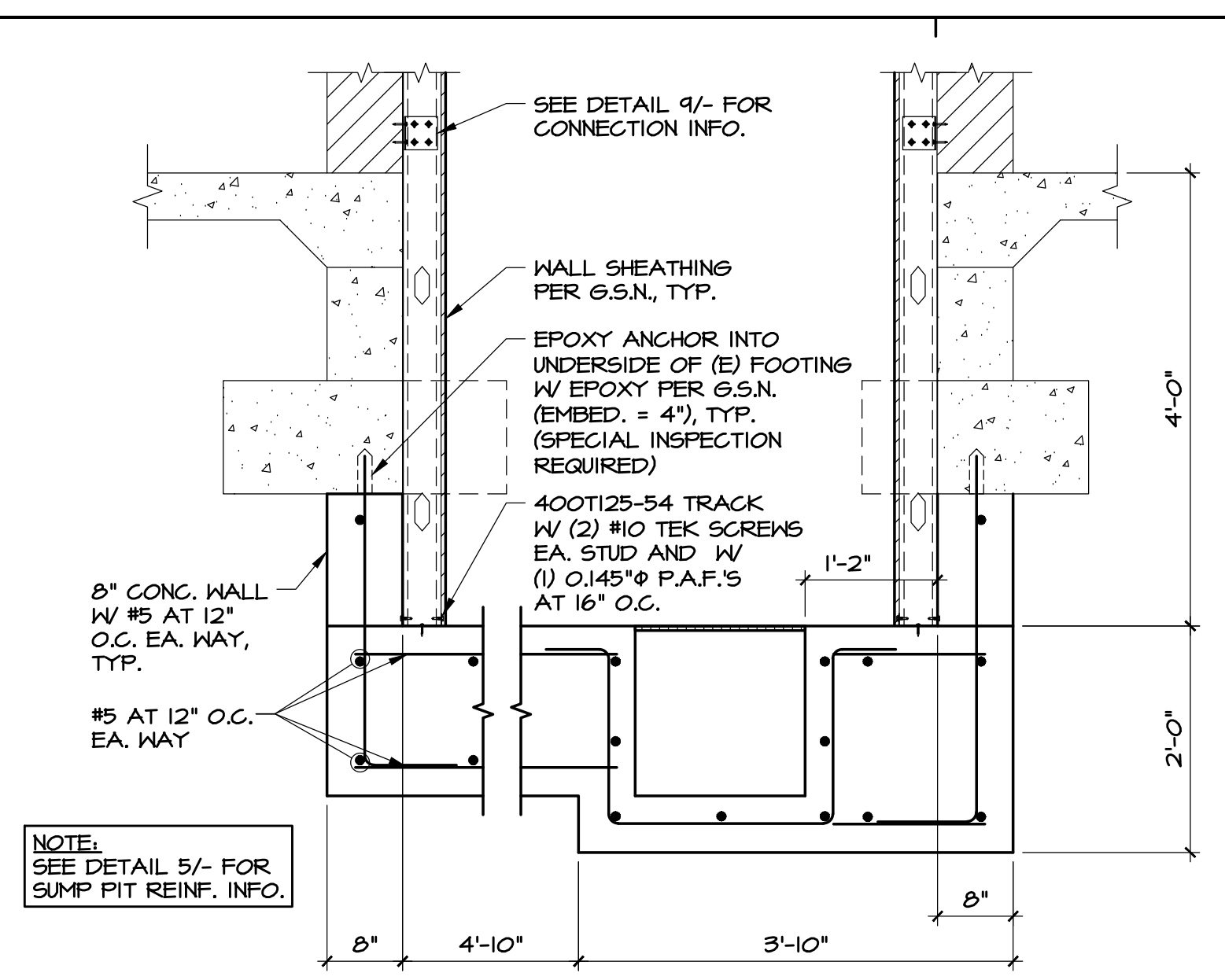
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BUILDING SECTIONS

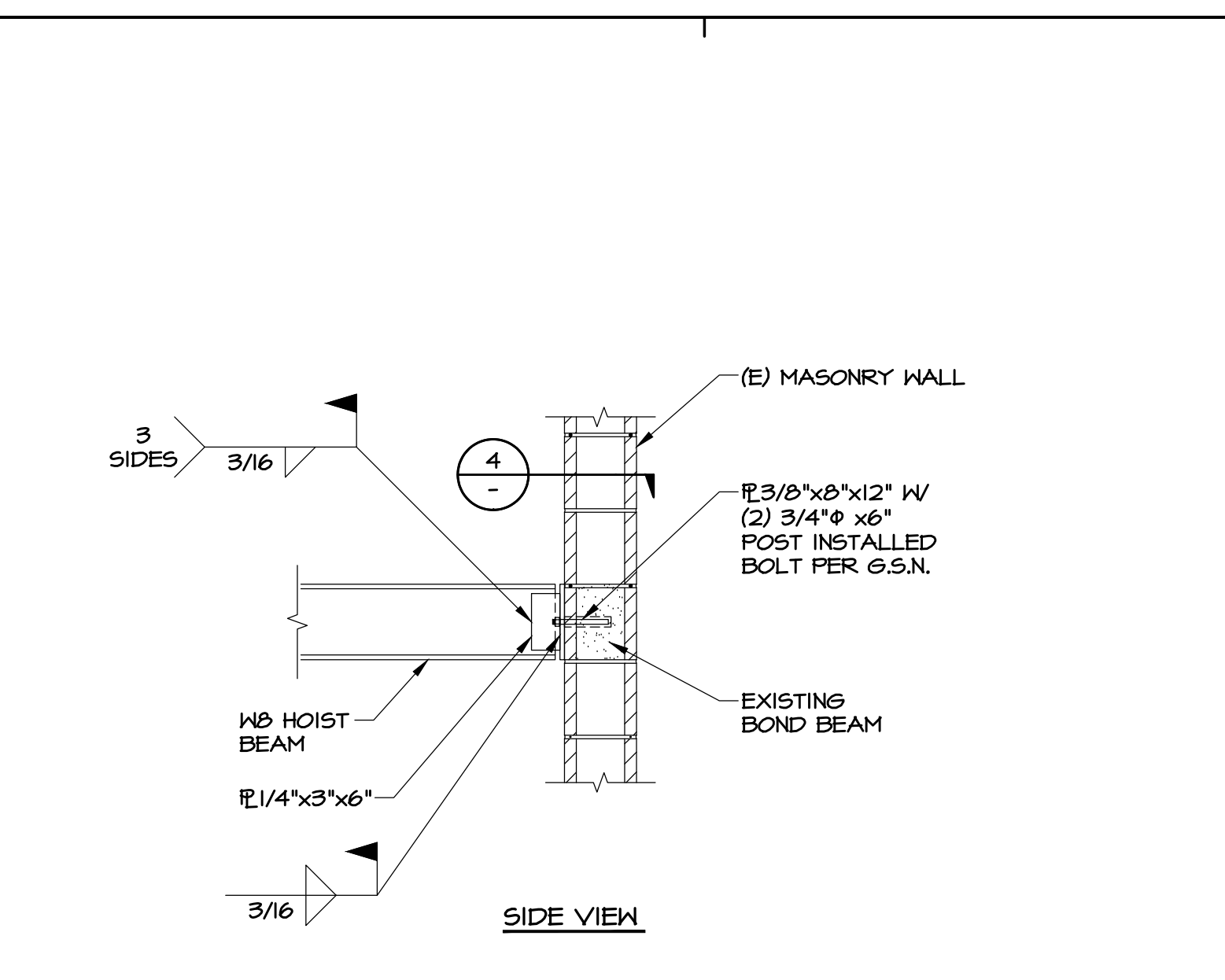
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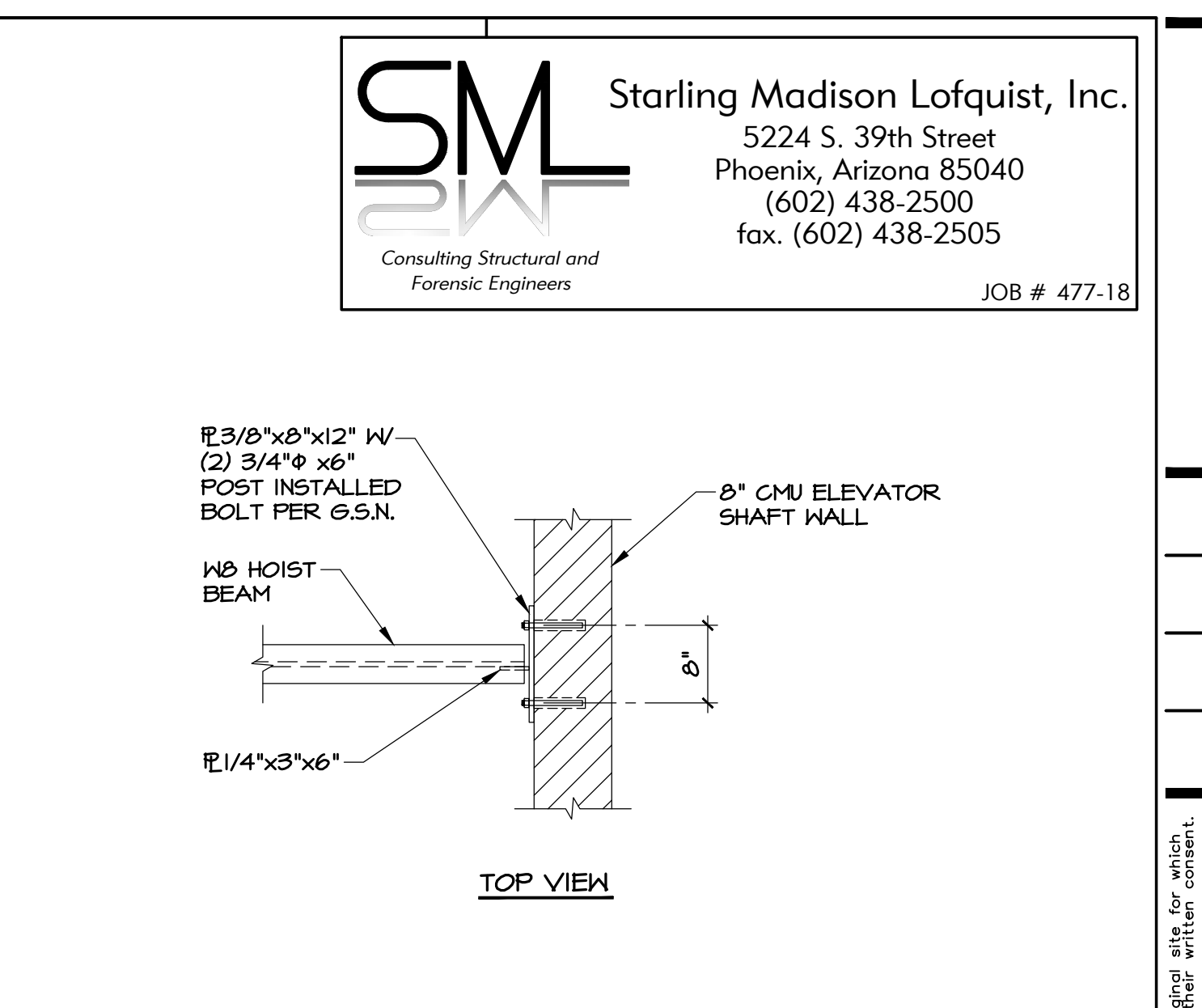
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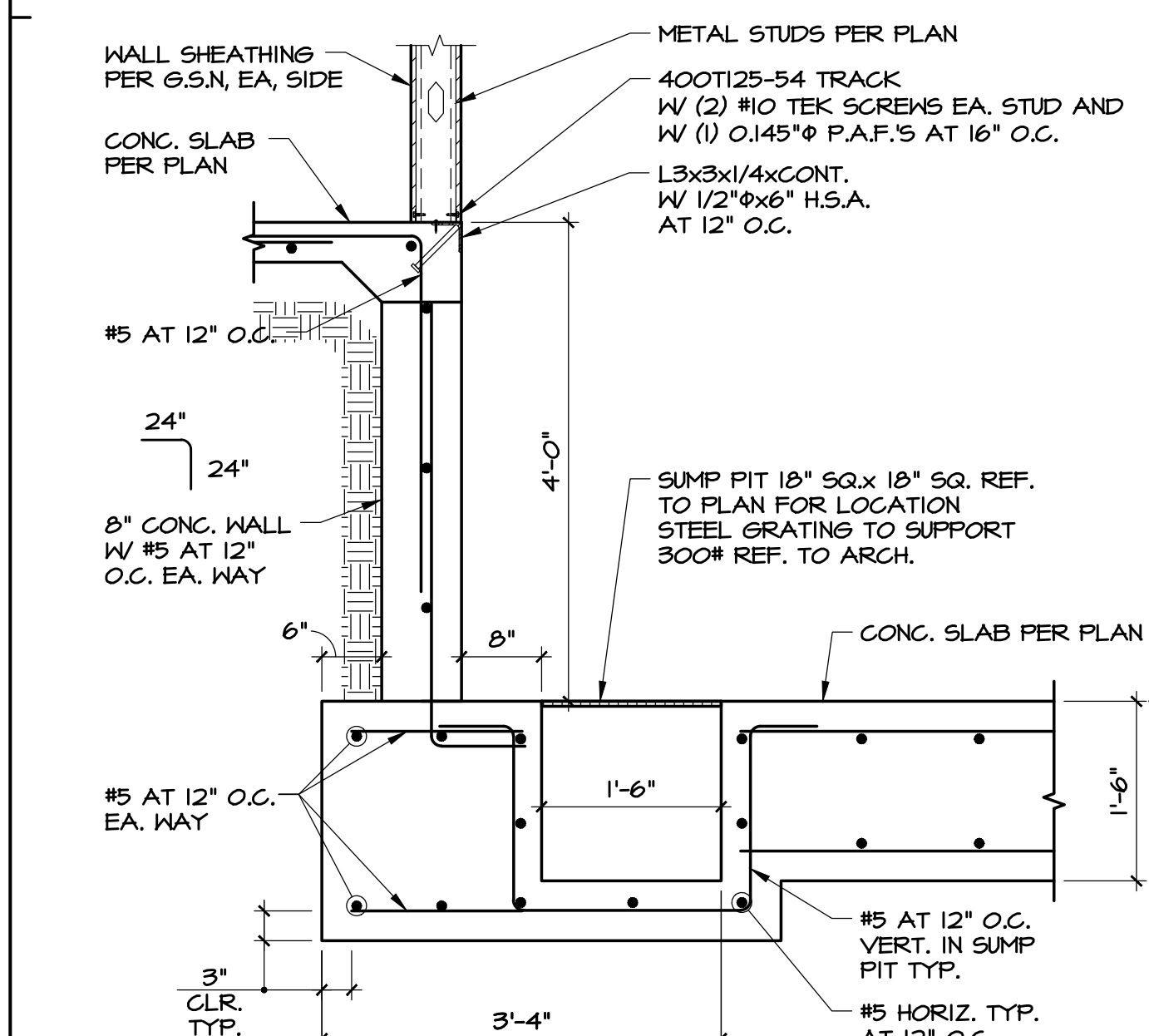
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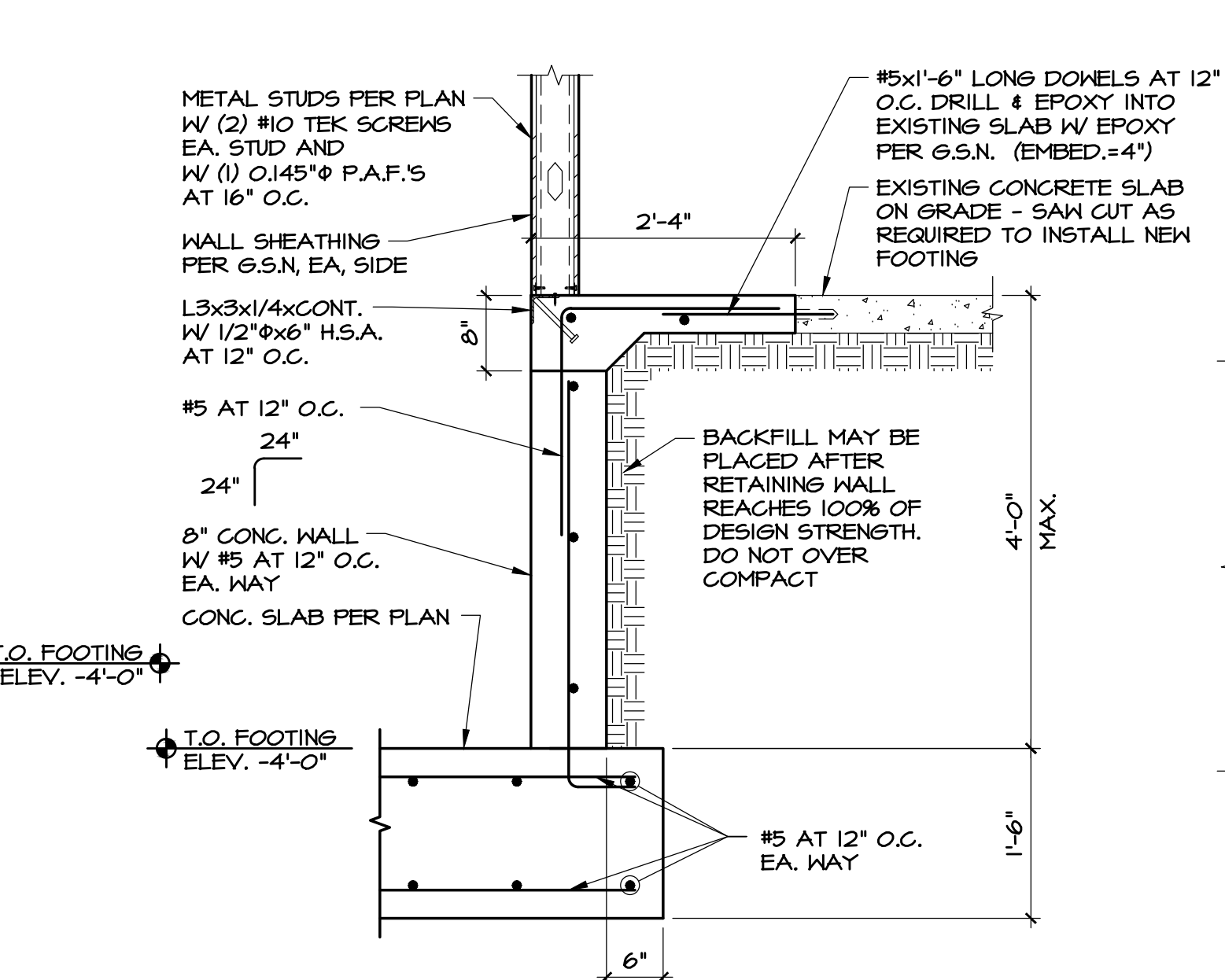
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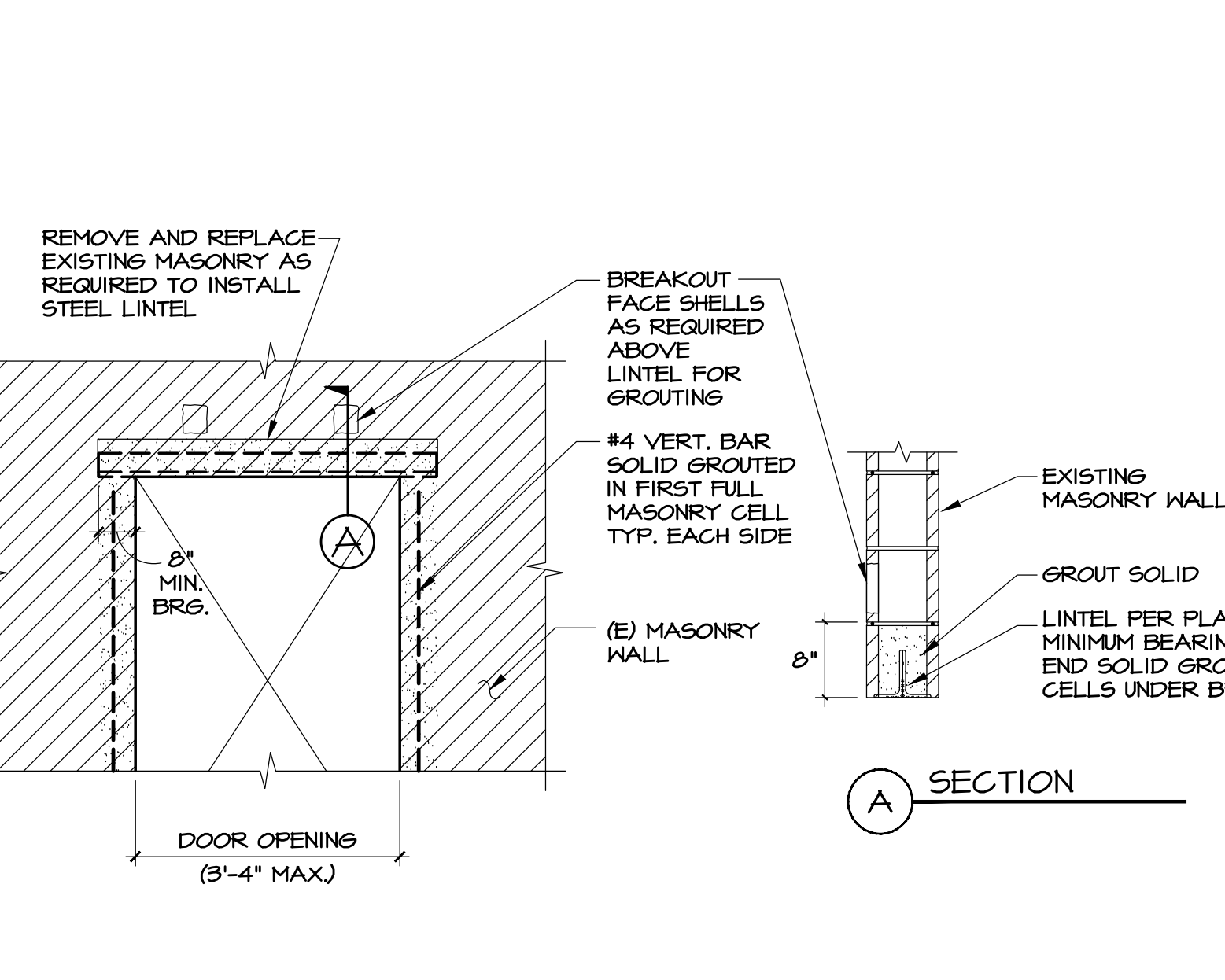
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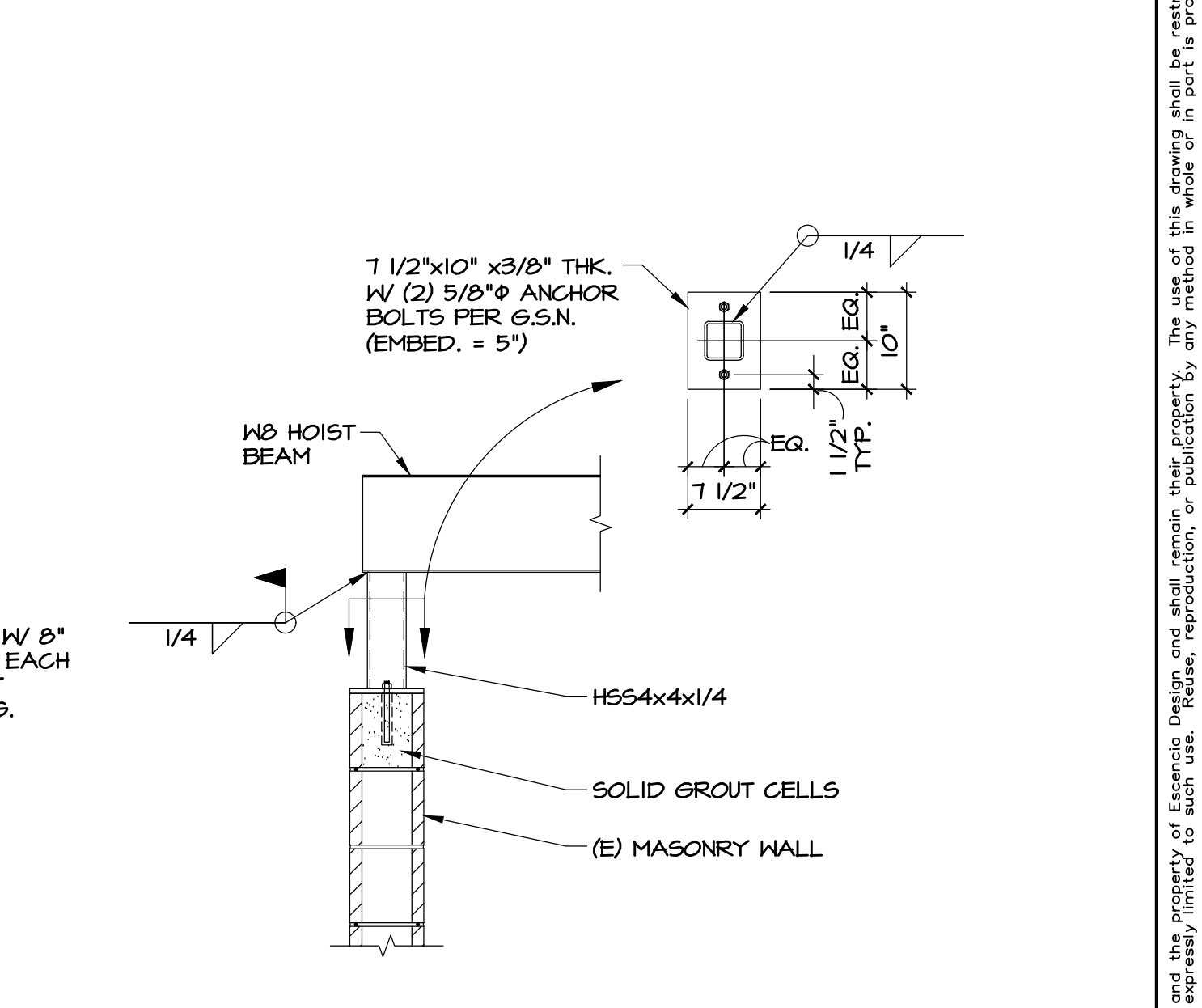
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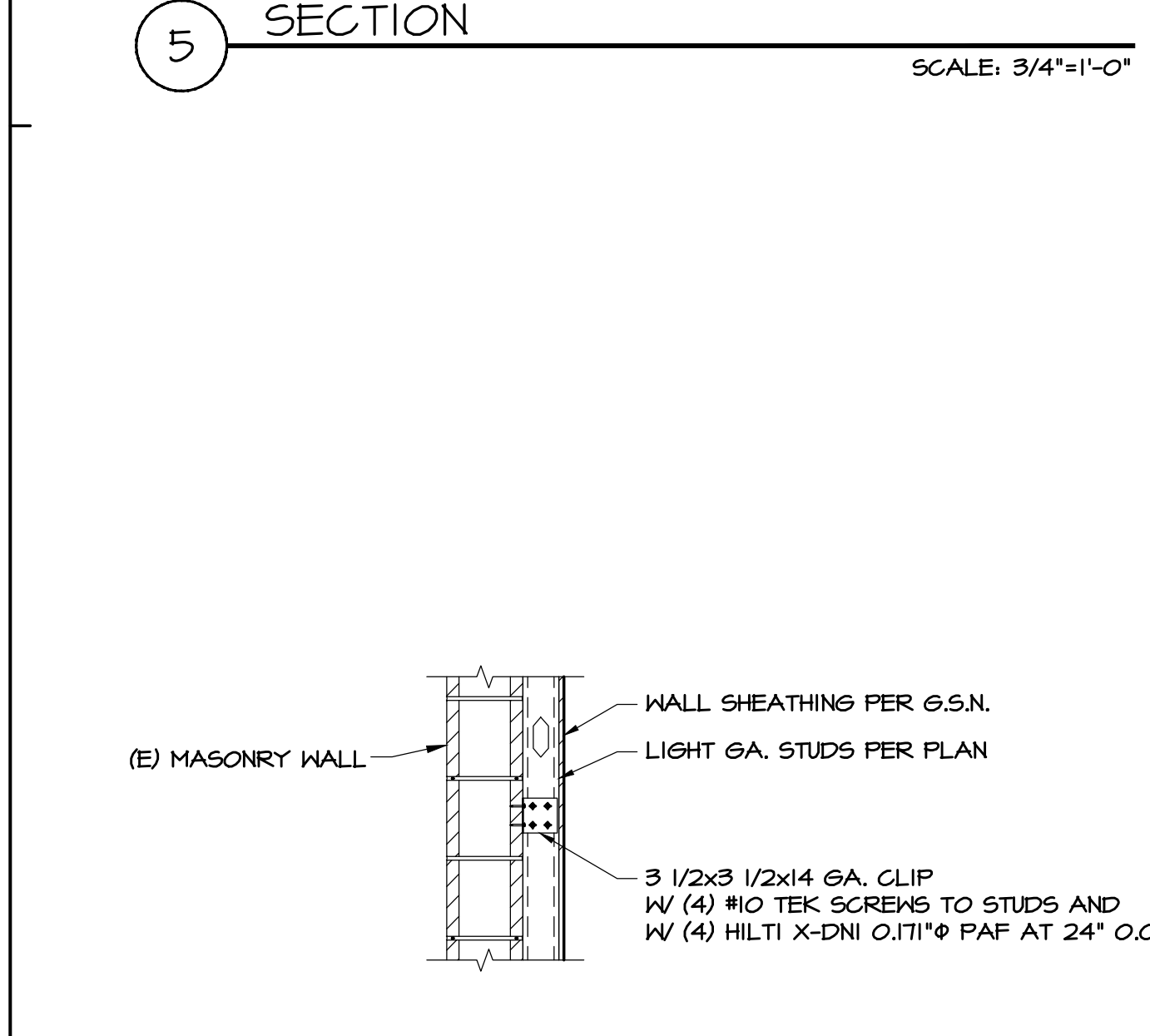
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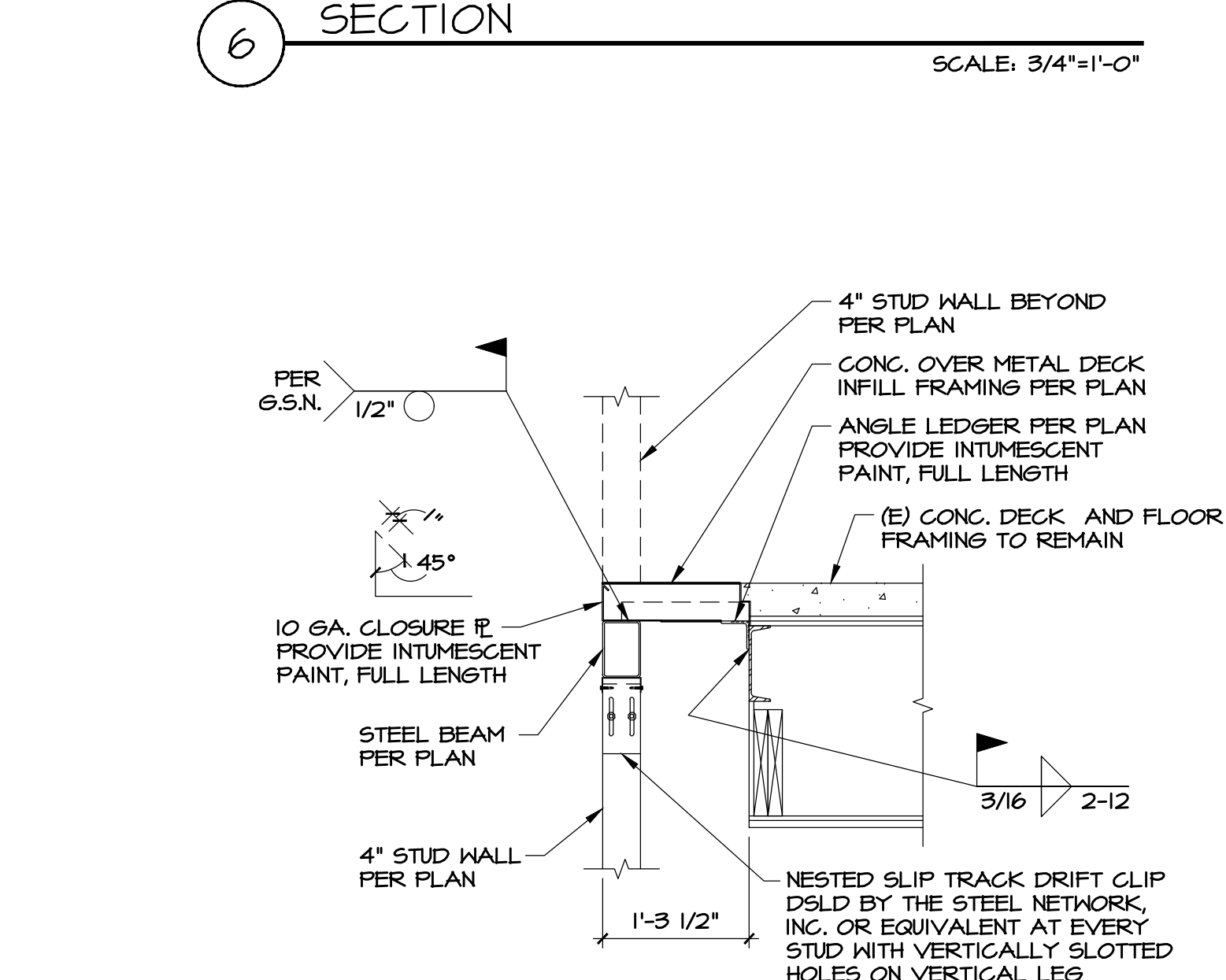
7 NEW LINTEL AT MASONRY WALL
SCALE: 3/4"=1'-0"



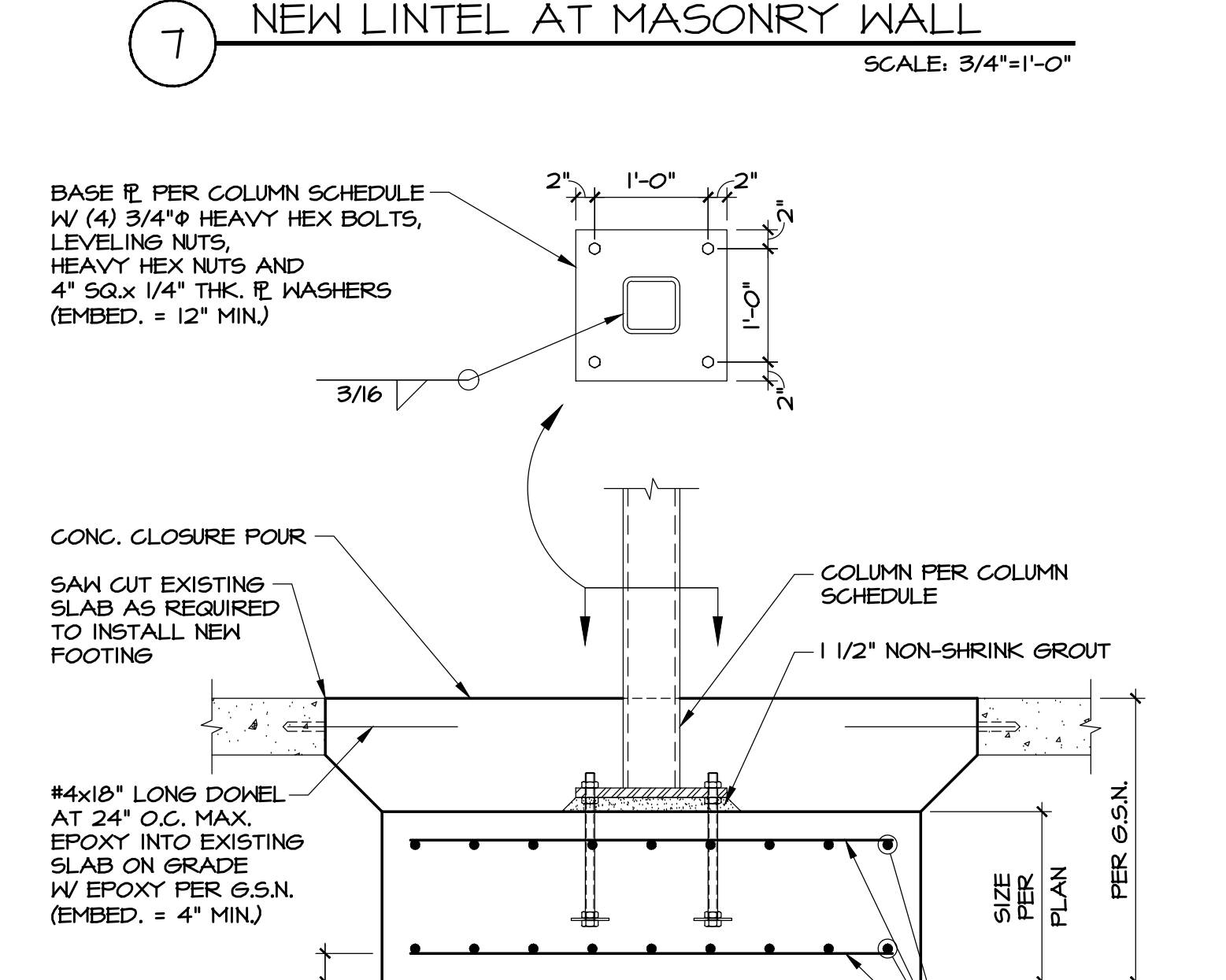
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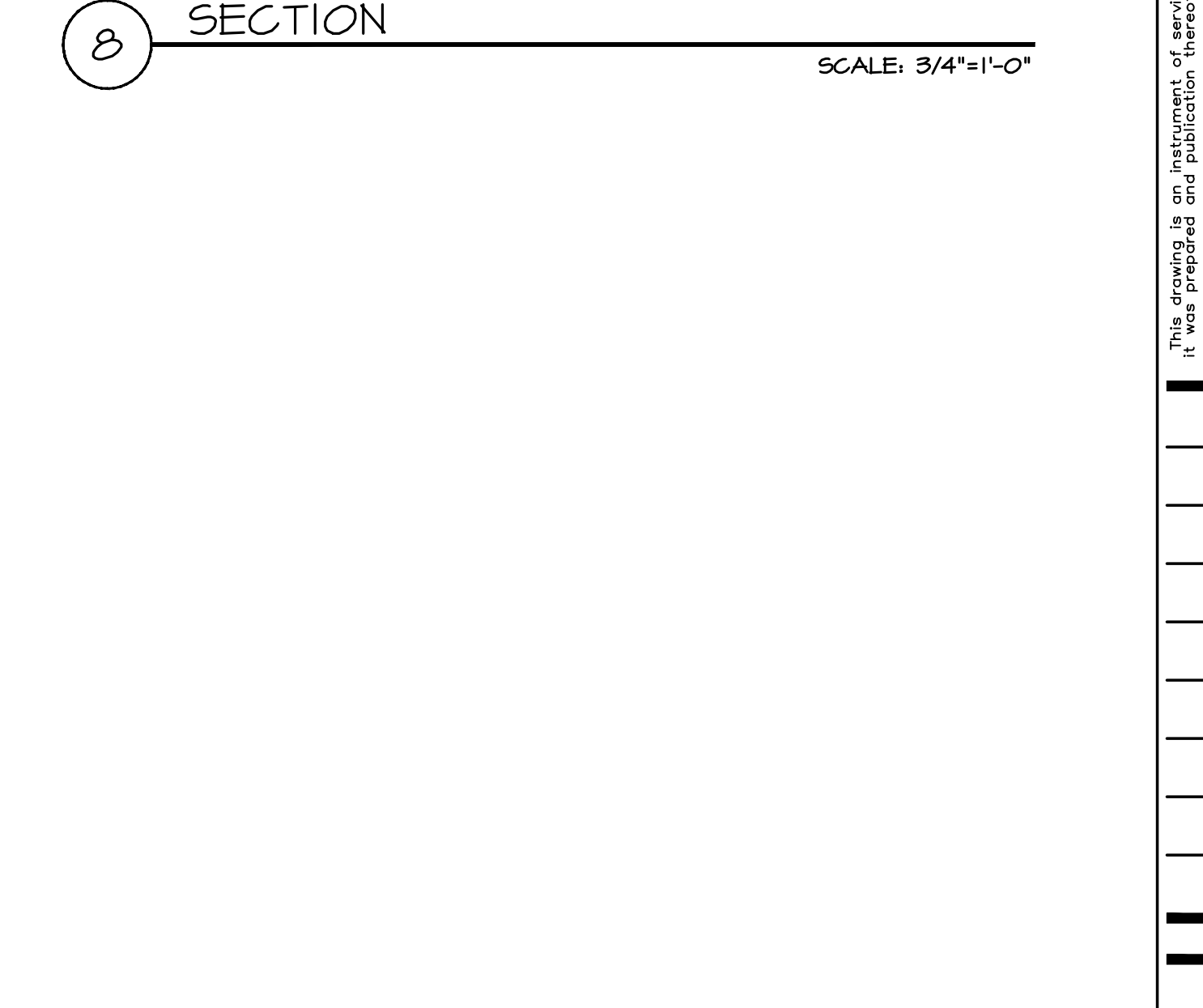
9 SECTION
SCALE: 3/4"=1'-0"



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



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



12 NOT USED
SCALE: 3/4"=1'-0"

SM
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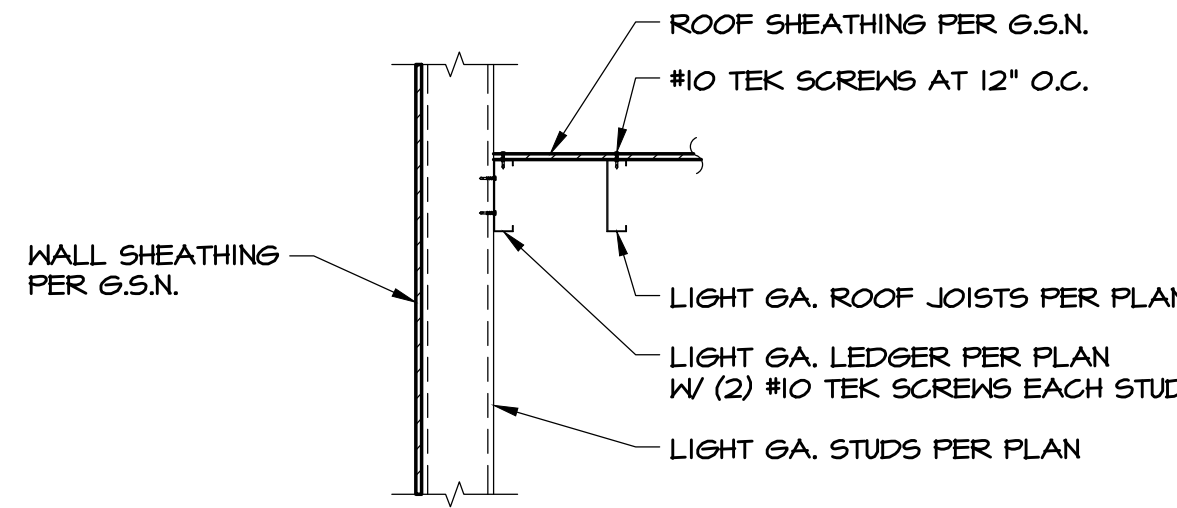
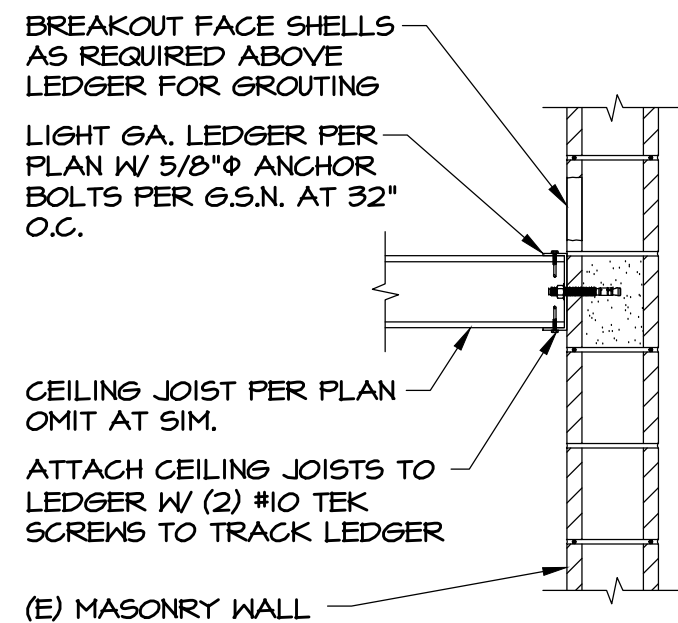
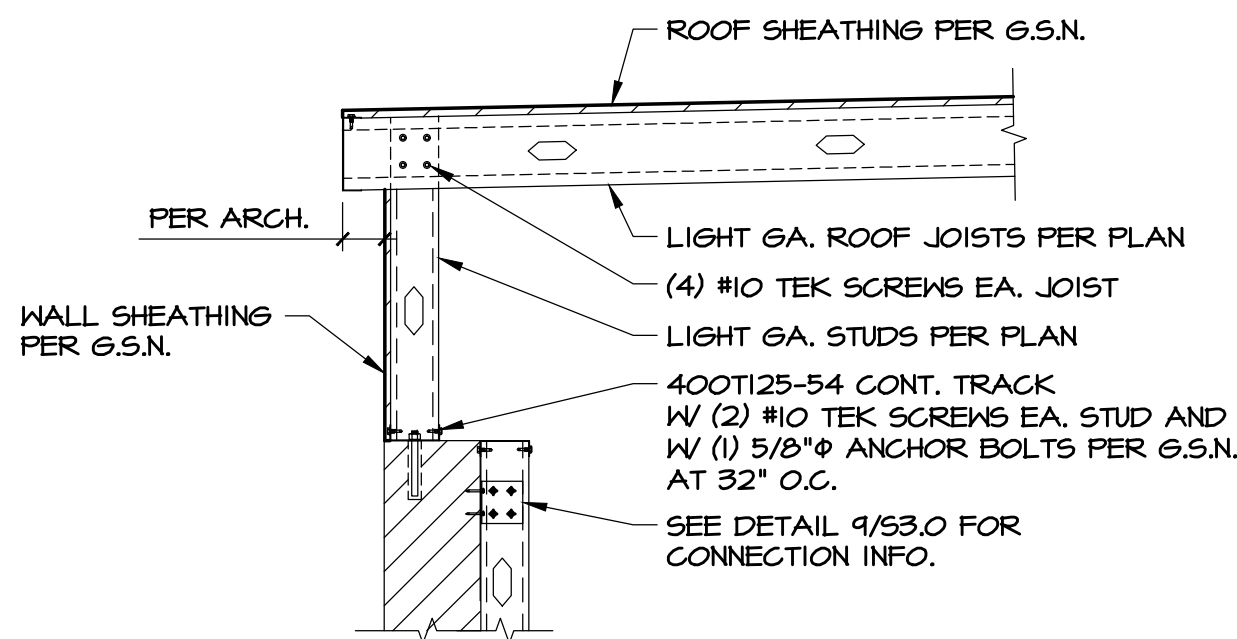
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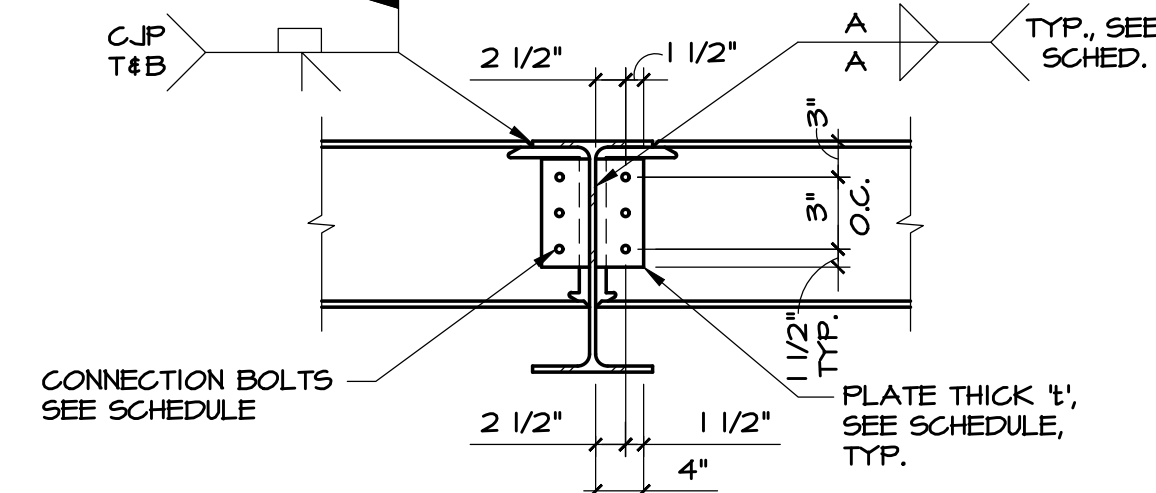
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FOUNDATION AND FRAMING DETAILS	
S3.0	



BEAM CONNECTION SCHEDULE			
BEAM DEPTH	No. OF BOLTS	PLATE THK. "t"	WELD SIZE "A"
W16	4	3/8"	5/16
W18	5	3/8"	5/16

NOTE:
USE 3/4" A325-N BOLTS, TYP., EXCEPT FOR W21 & W24 USE 1" A 325-N BOLTS

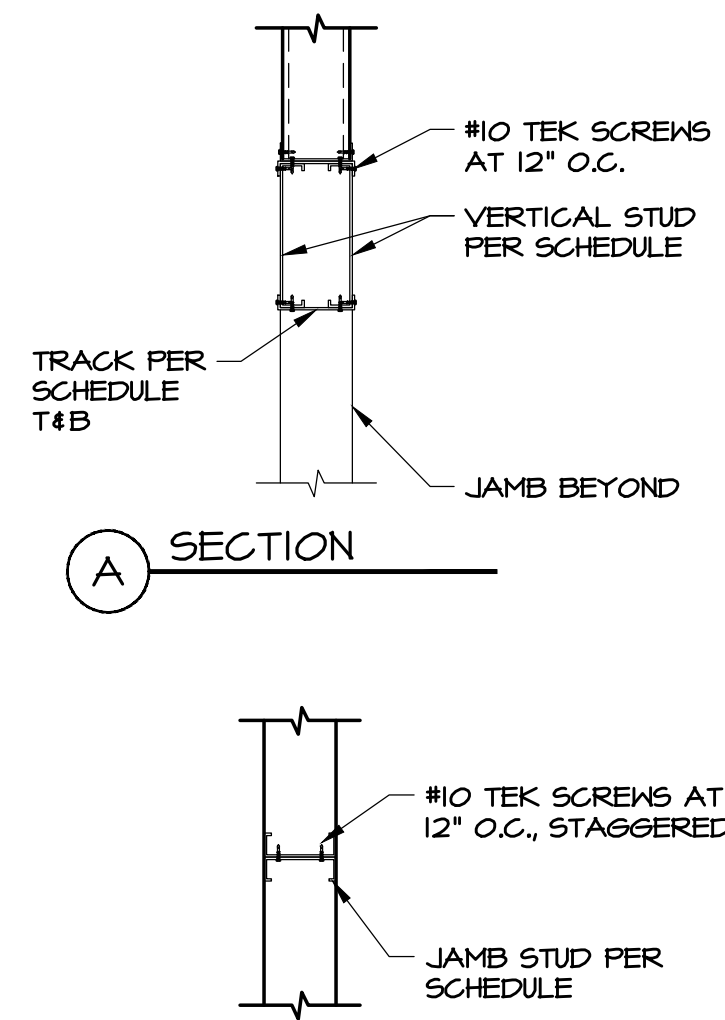
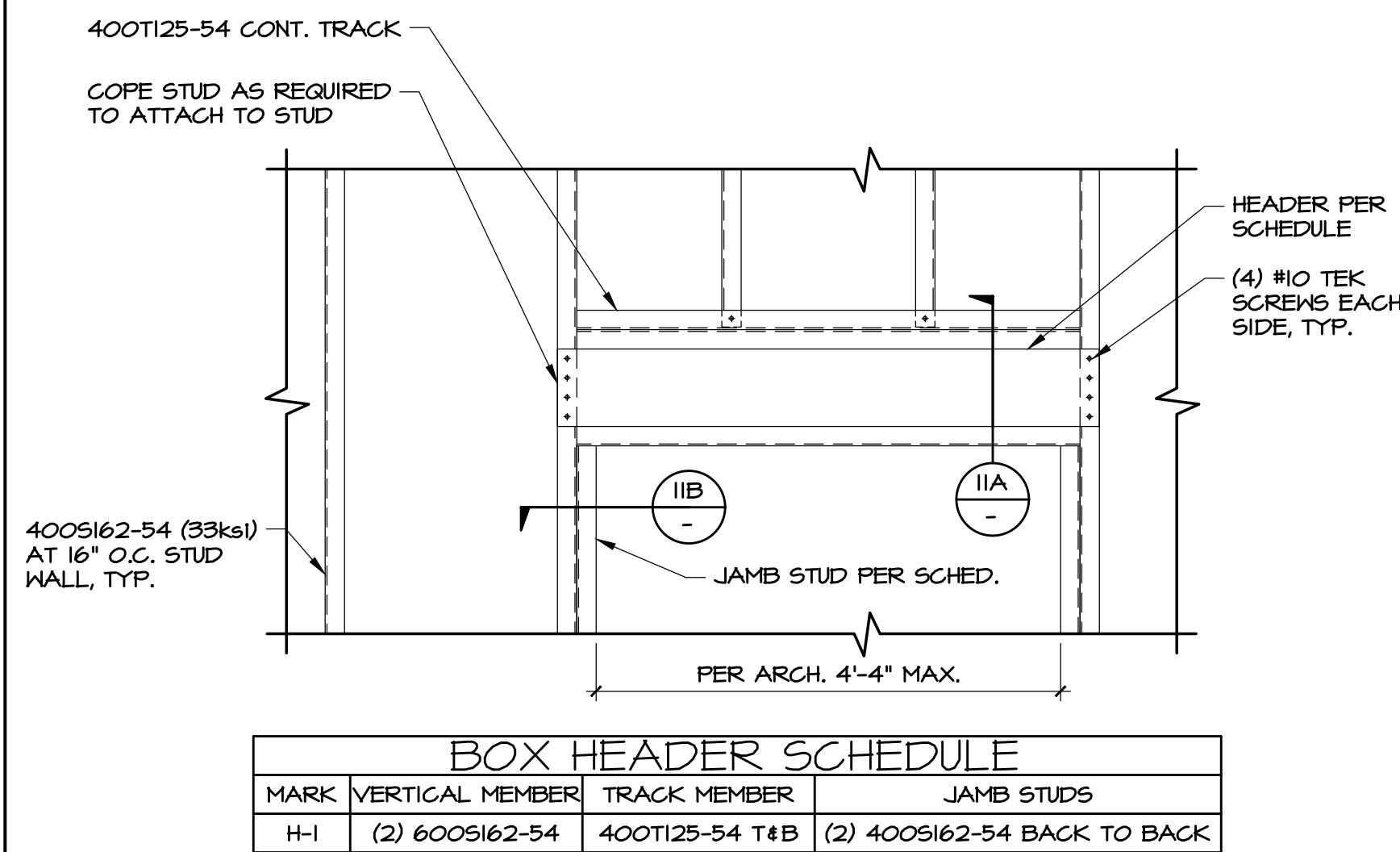


1 SECTION
SCALE: 3/4"=1'-0"

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

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

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

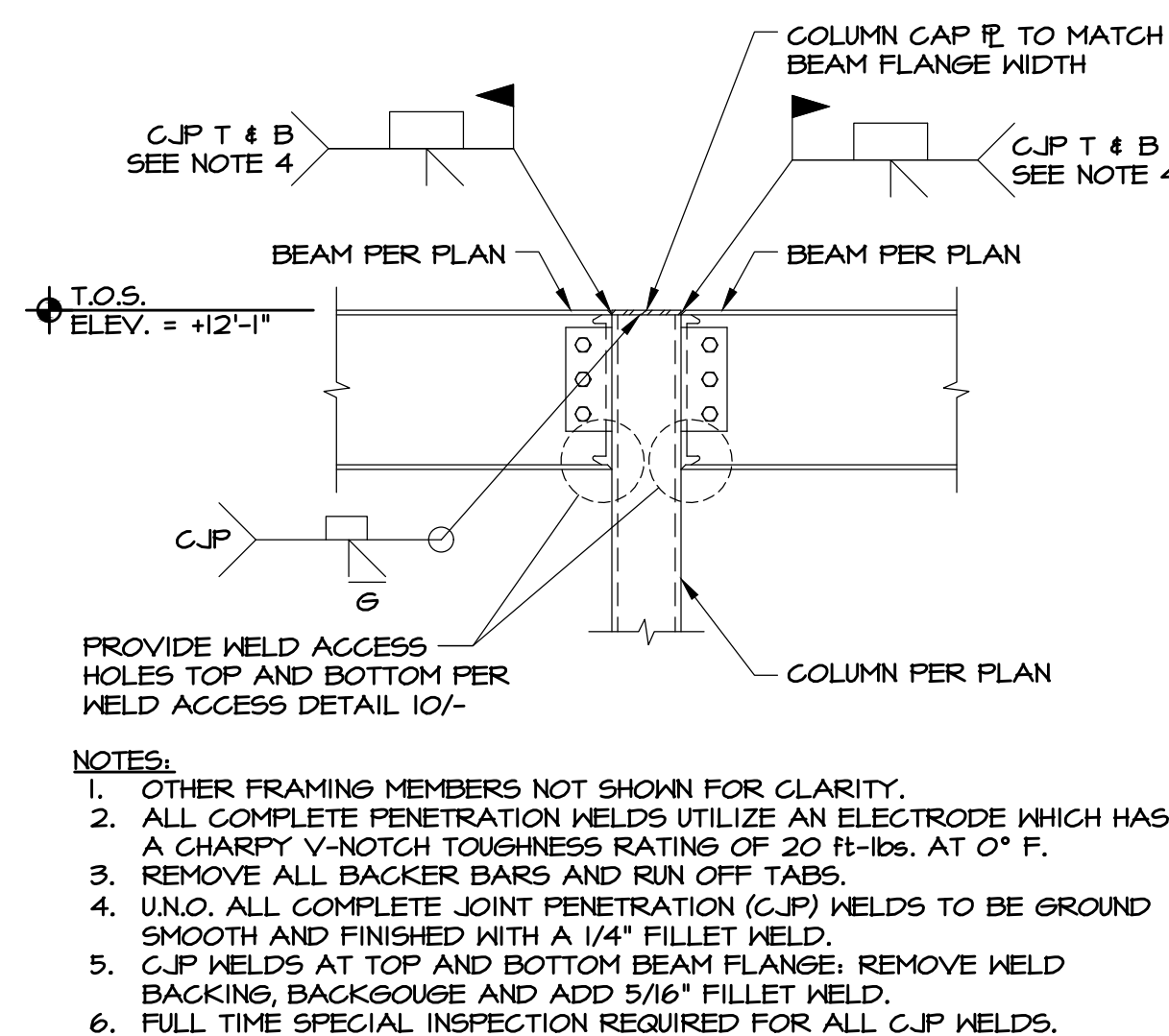


5 METAL STUD HEADER SCHEDULE
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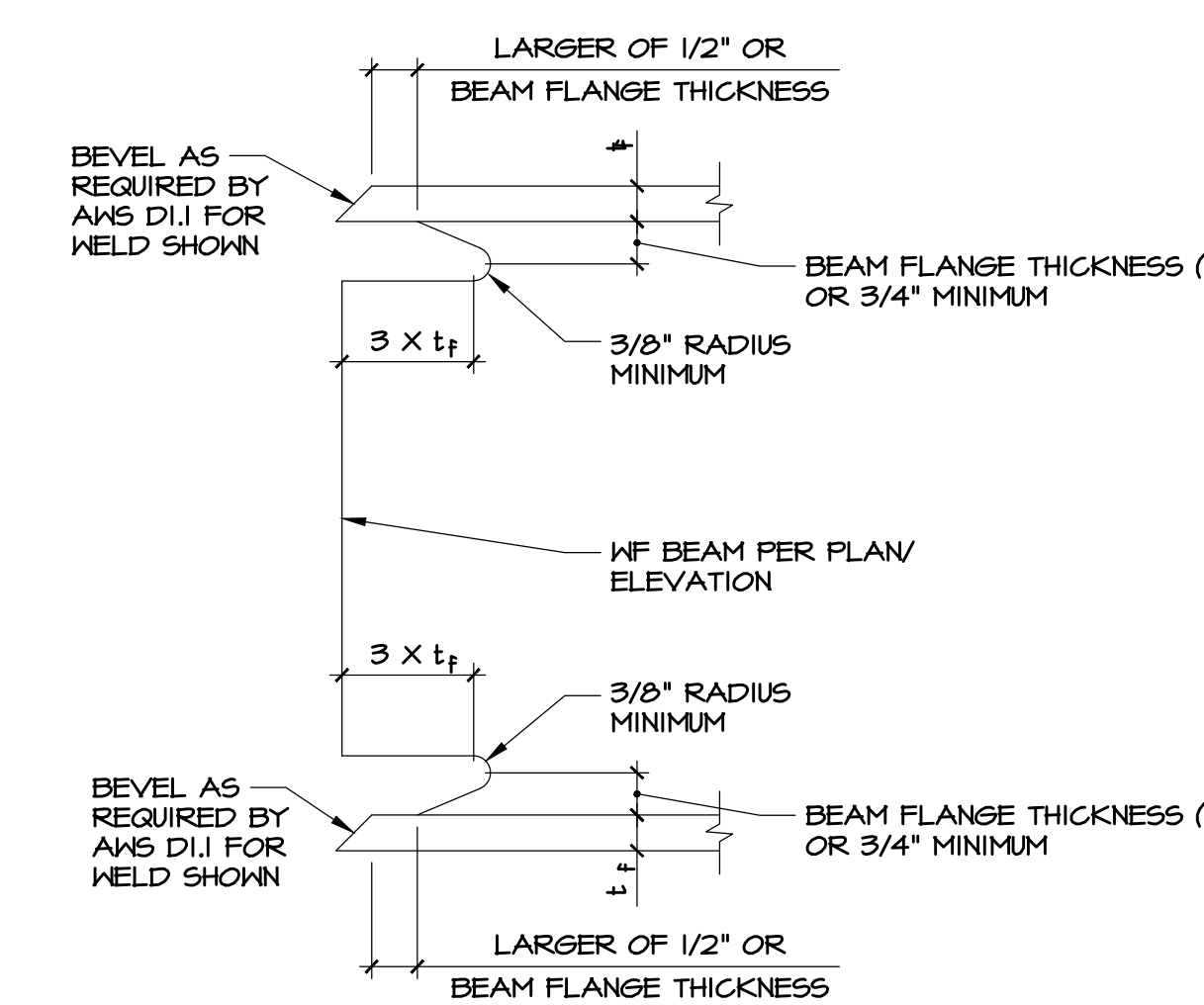
6 SECTION
SCALE: 3/4"=1'-0"

7 BEAM TO BEAM W/
BEAM CONNECTION SCHEDULE
SCALE: 3/4"=1'-0"

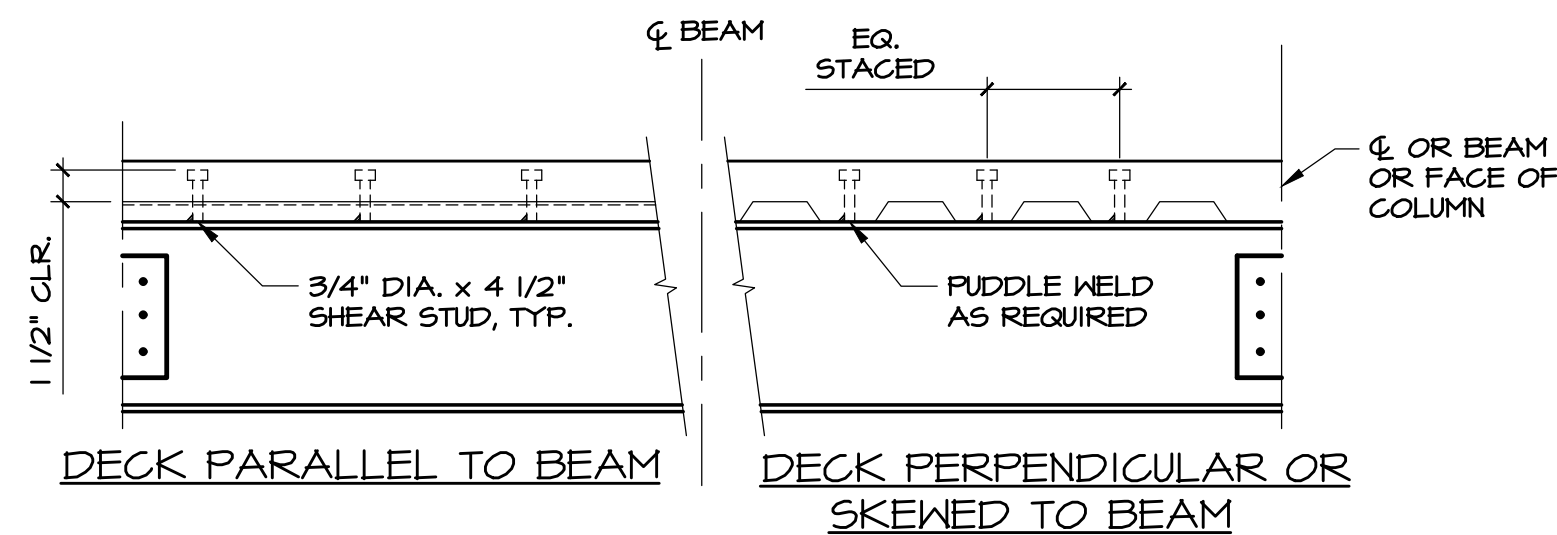
8 STL. BM. CONNECTION SCHEDULE
SCALE: 3/4"=1'-0"



9 MOMENT CONNECTION
DETAIL AT HSS COLUMN
SCALE: 3/4"=1'-0"

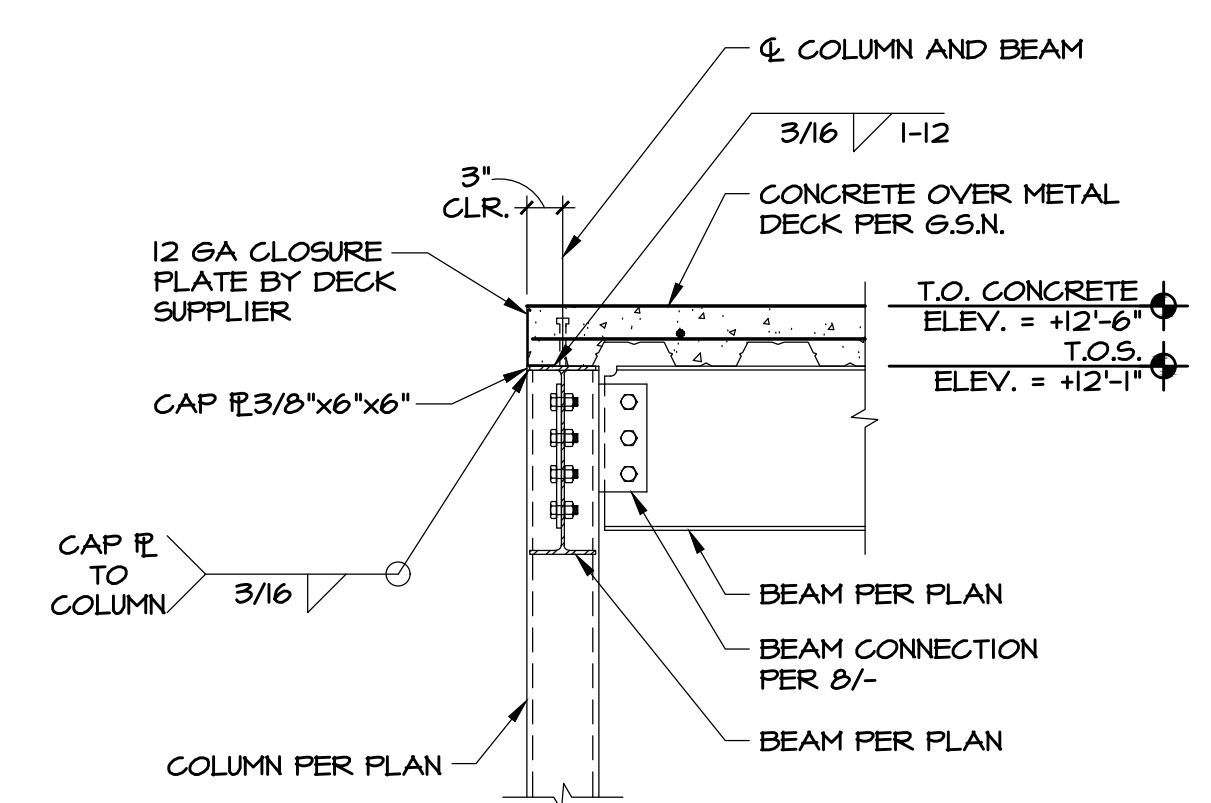


10 WELD ACCESS DETAIL
SCALE: 3/4"=1'-0"

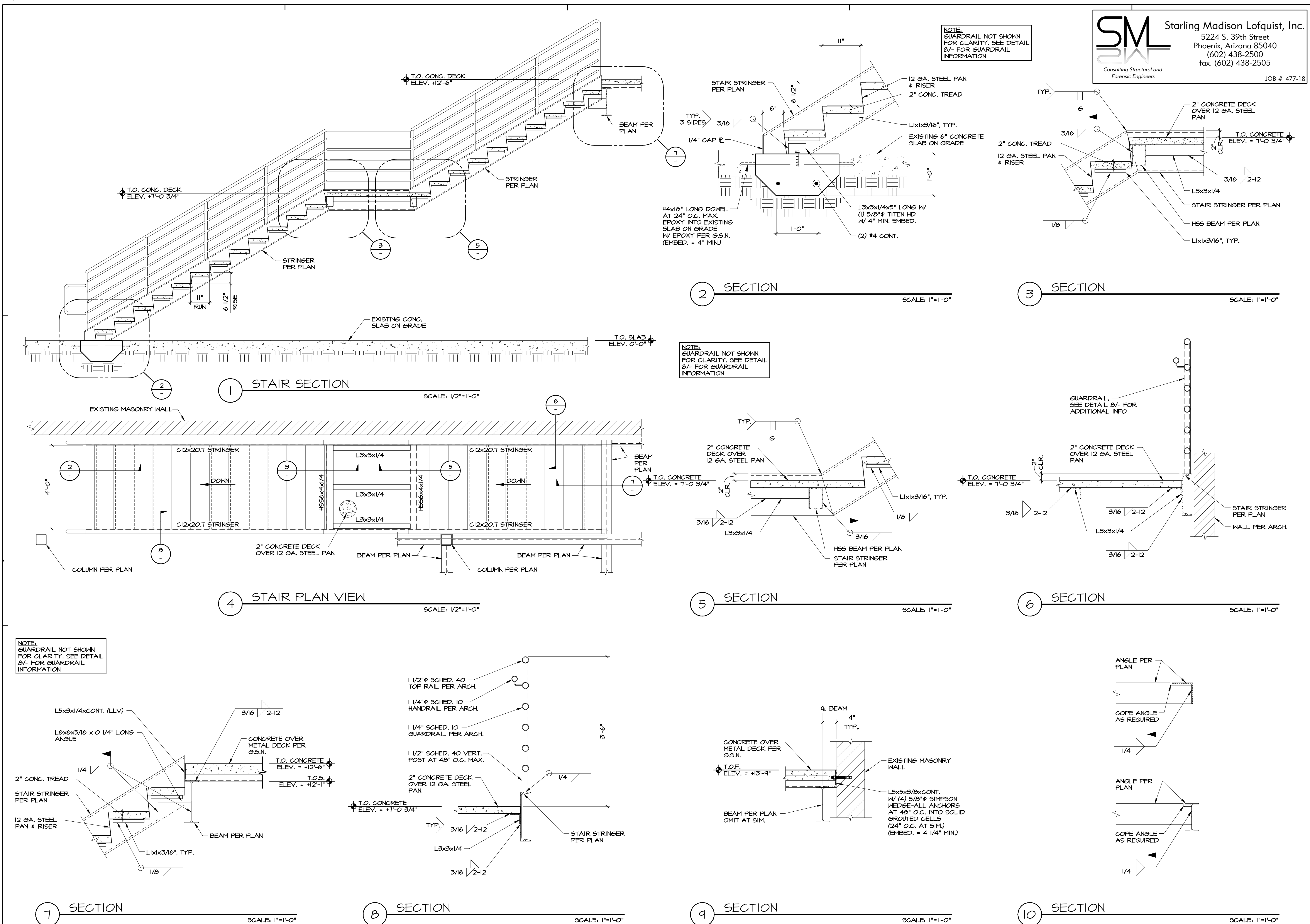


NOTES:
1. THE NUMBER OF STUDS REQUIRED IS SHOWN THUS (X) ON FRAMING PLANS ADJACENT TO THE BEAM SIZE.
2. PLACE STUDS IN CENTER OF FLUTE WHERE APPLICABLE.
3. PLACE STUDS IN THE FOLLOWING SEQUENCE FOR BEAMS & GIRDERS: EQUALLY SPACED THROUGHOUT THE BEAM & GIRDER LENGTH.

11 COMPOSITE STUD SPACING
SCALE: 3/4"=1'-0"



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





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JS

Checked By
TW

Project Number
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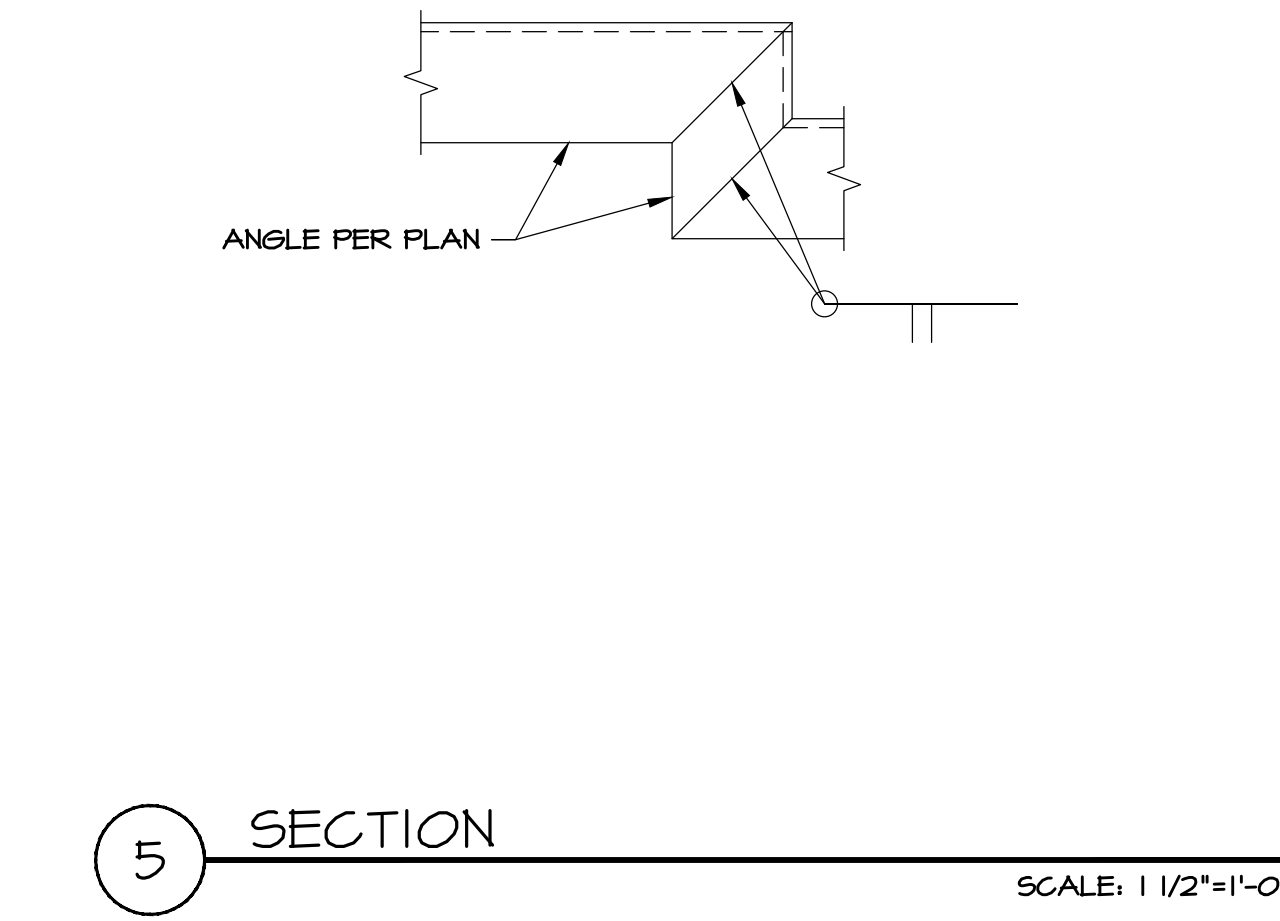
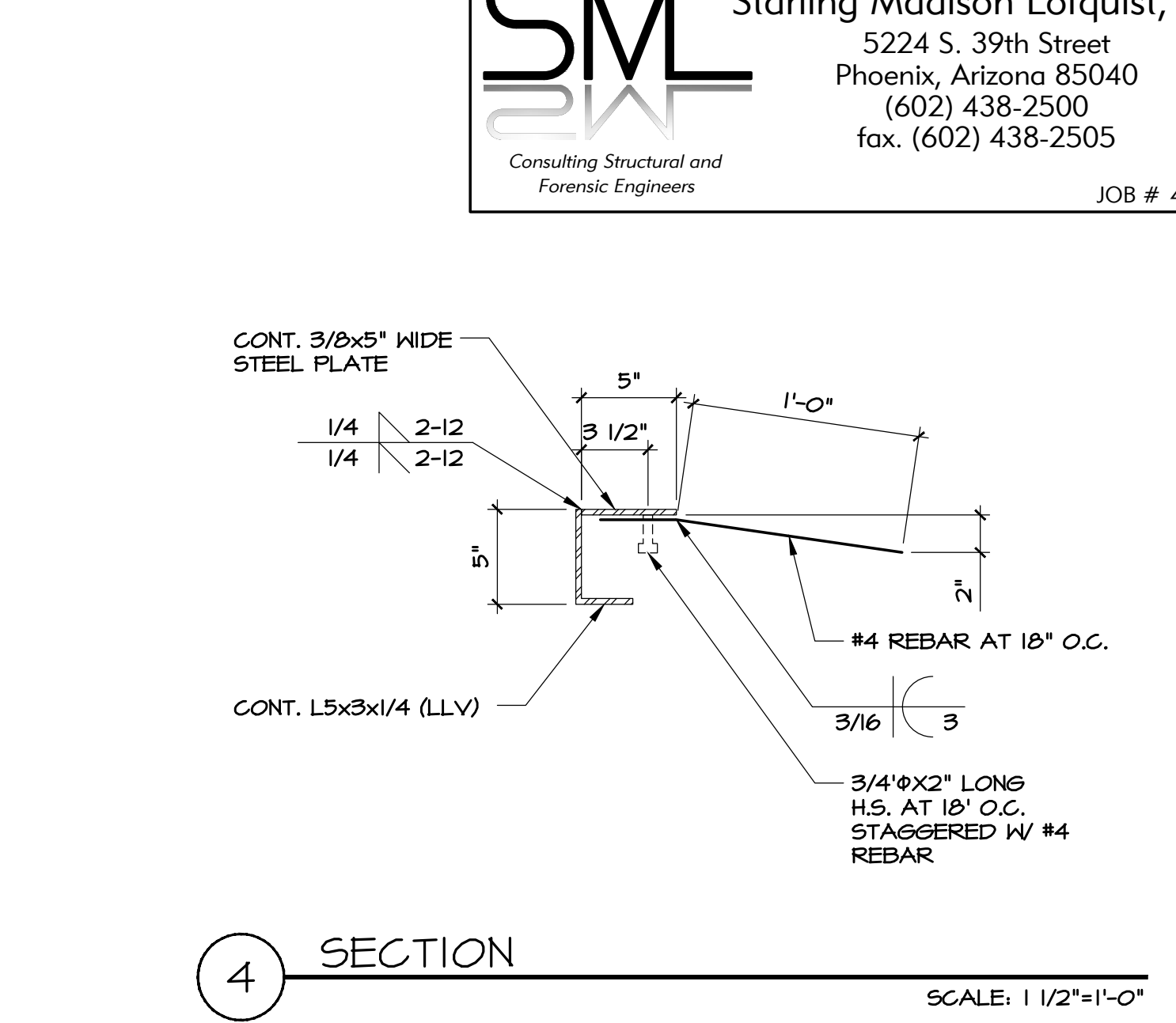
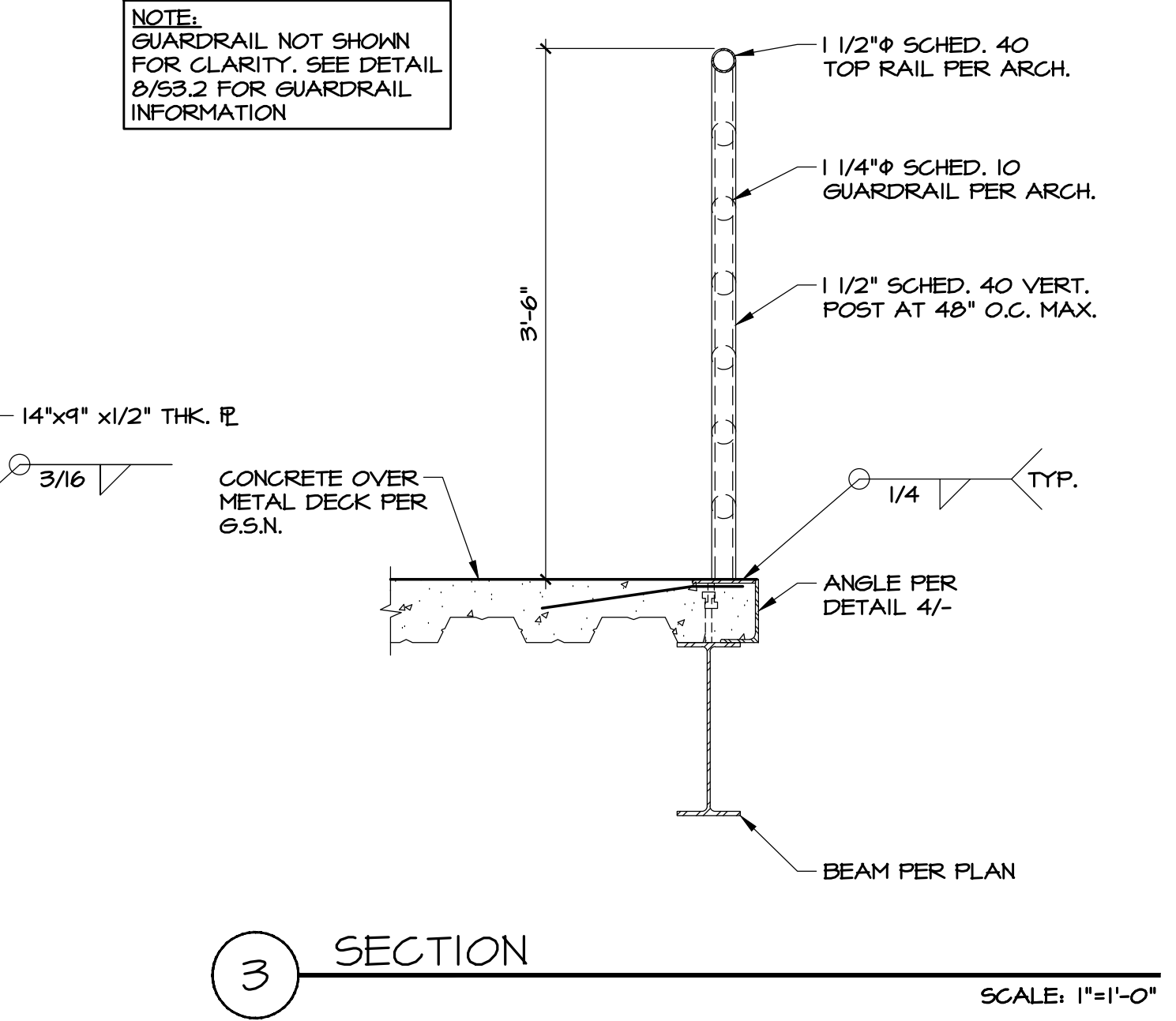
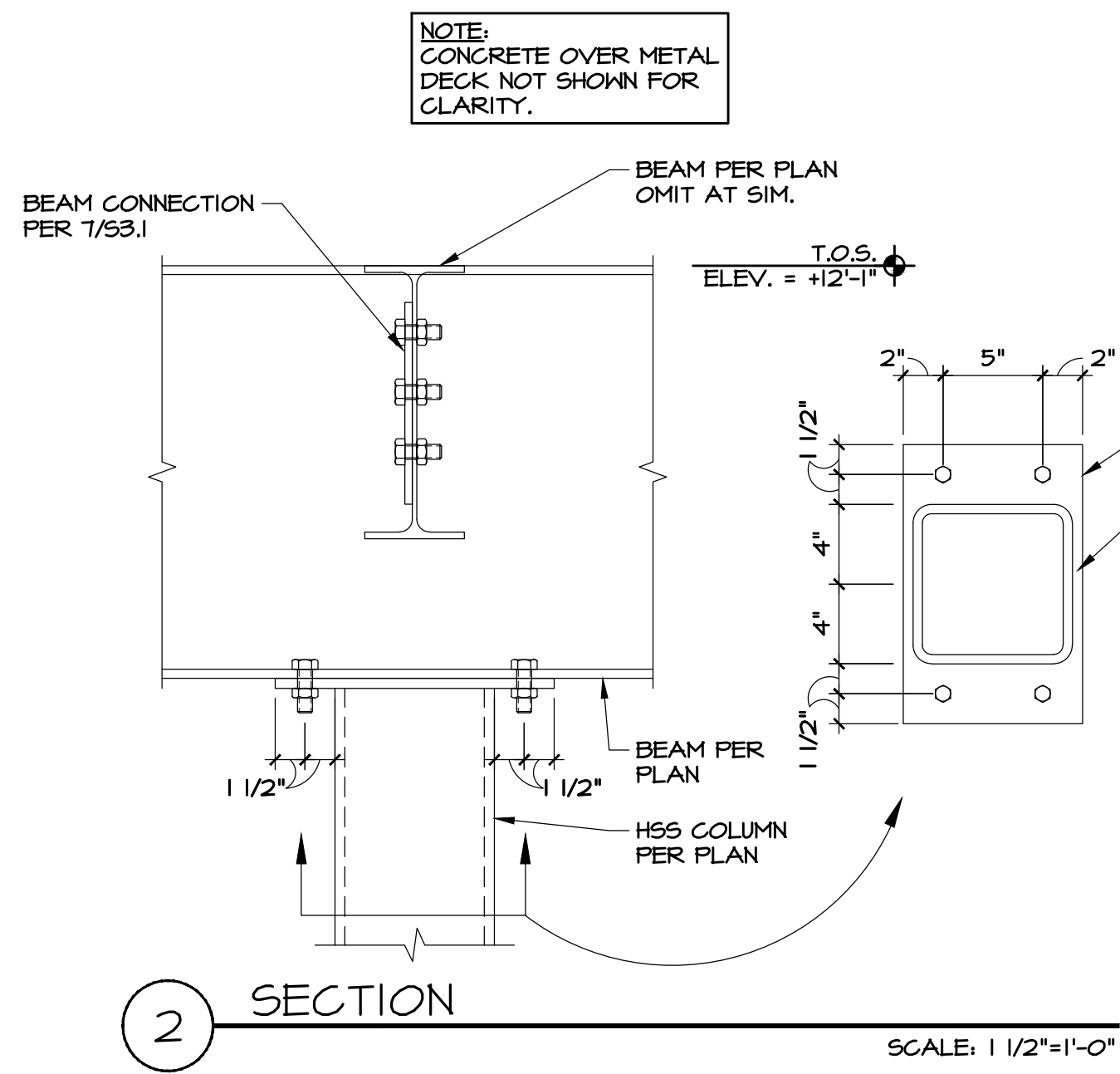
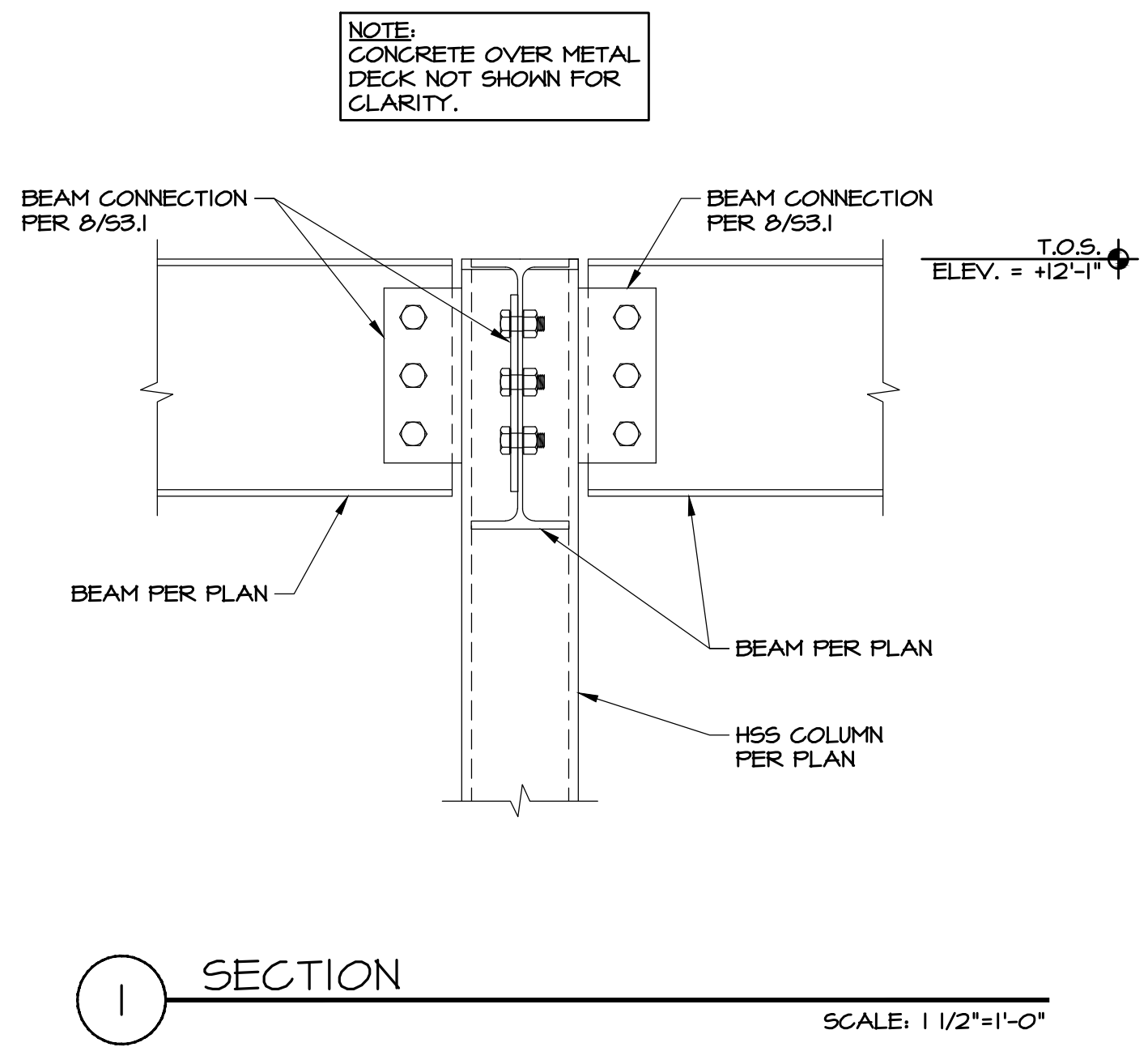
Professional Engineer
43901
TRES J. WARNER
11-10-21
Arizona, U.S.A.
Expires: 03/31/2024

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S3.2	



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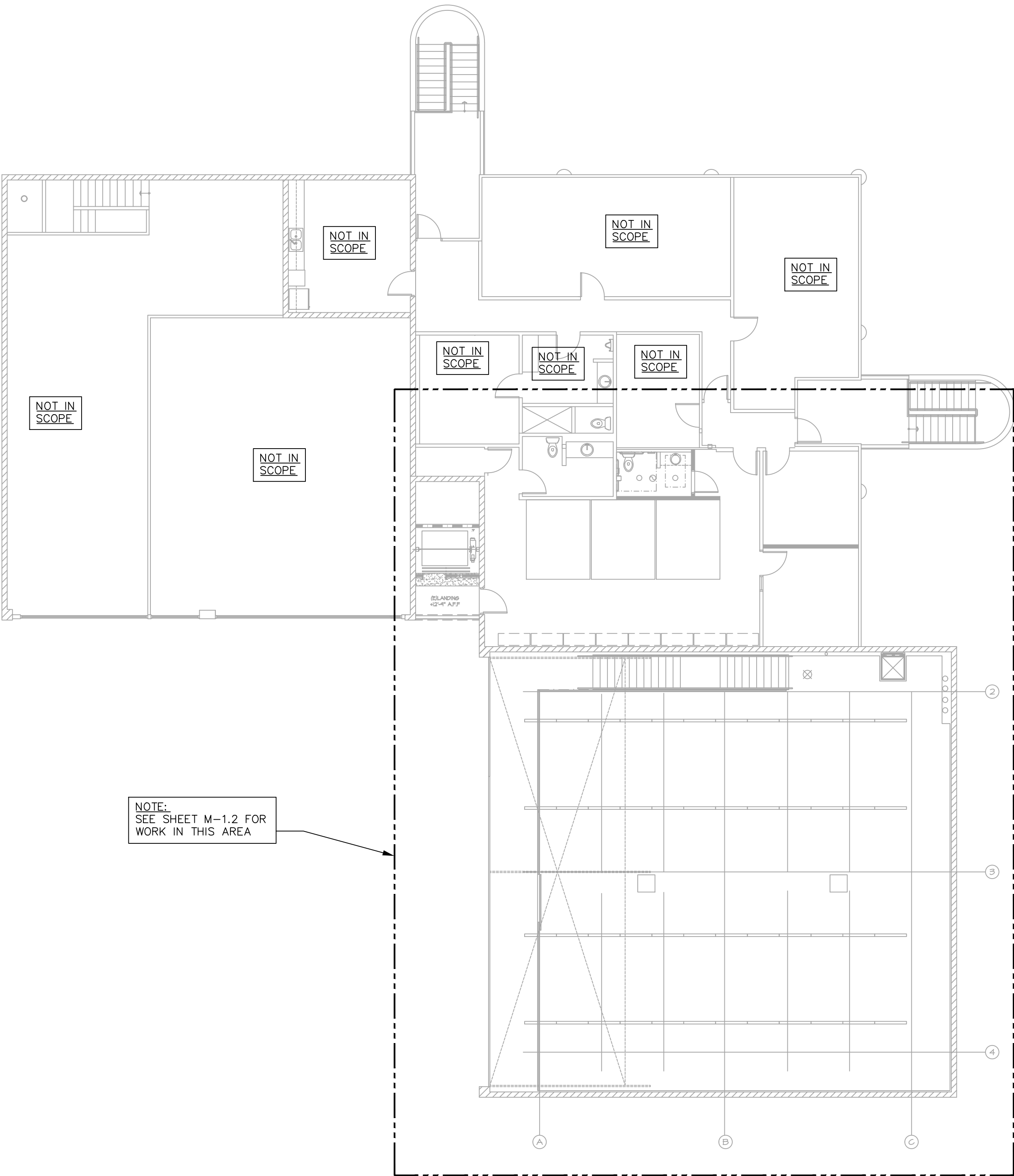
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MECHANICAL FLOOR PLANS

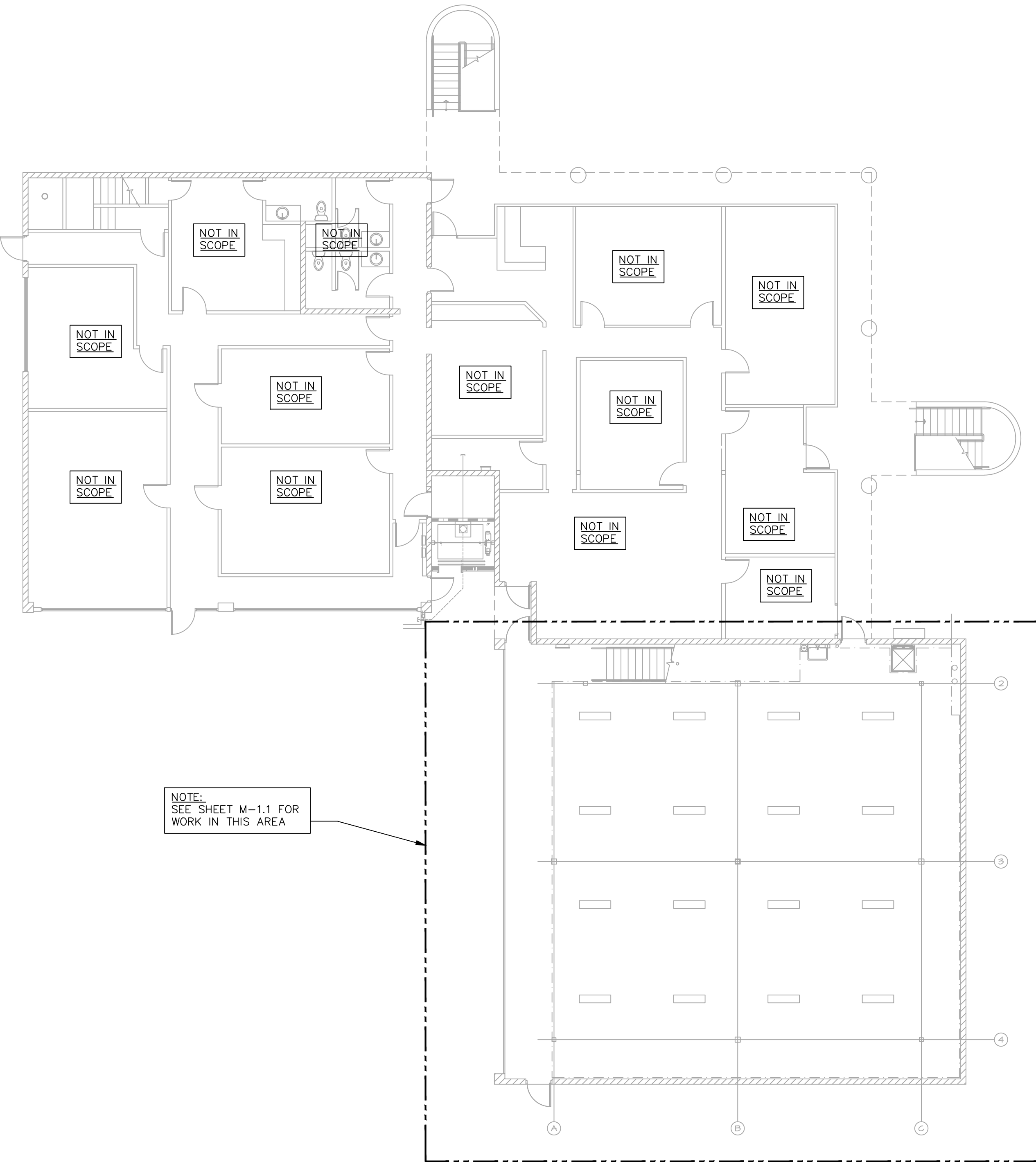
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2ND FLOOR MECHANICAL PLAN

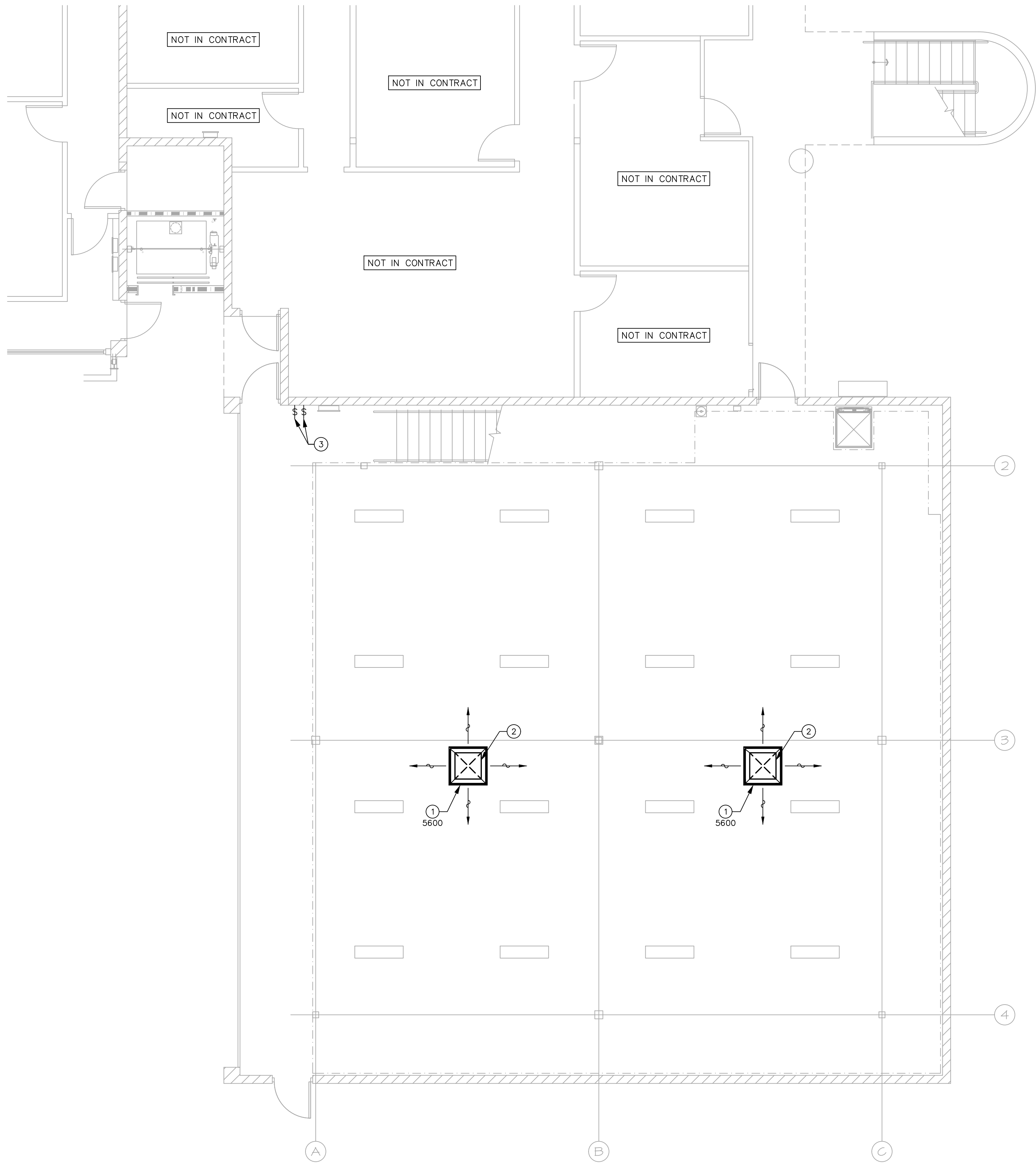
SCALE: 1" = 10'-0"



1ST FLOOR MECHANICAL PLAN

SCALE: 1" = 10'-0"





- # KEYED NOTES
- 38"x38", 36"x36" NECK CD-1. BALANCE TO CFM NOTED.
 - 26"x26" SUPPLY AIR DUCT DOWN FROM SECOND LEVEL. TRANSITION THE 26"x26" SUPPLY DUCT TO THE 36"x36" DIFFUSER NECK SIZE. SEE SHEET M1.2 FOR CONTINUATION.
 - 6-POSITION (ON/OFF/PUMP ON/PUMP OFF/HI/LOW) SWITCH TO BE MOUNTED @ 48" A.F.F. COORDINATE EXACT LOCATION WITH THE OWNER'S FIELD REPRESENTATIVE, PRIOR TO INSTALLATION.

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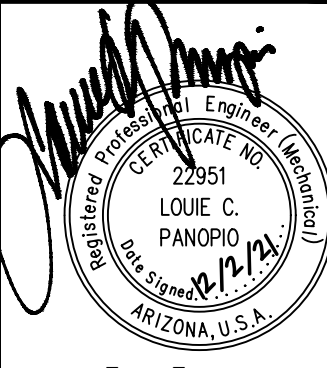
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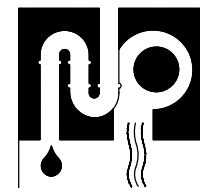
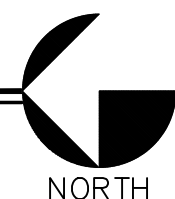
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ENLARGED MECHANICAL FLOOR PLAN
1ST FLOOR

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



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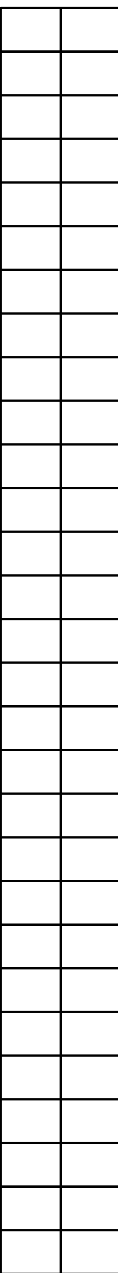
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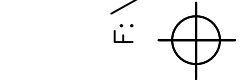
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ENLARGED MECHANICAL FLOOR
PLAN

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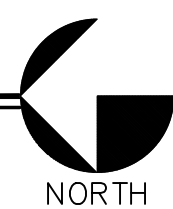


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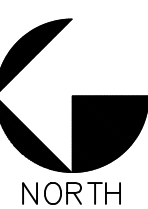
PARTIAL MECHANICAL ROOF PLAN

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



ENLARGED MECHANICAL FLOOR PLAN 2ND FLOOR

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



#

KEYED NOTES

- NEW 6"Ø EXHAUST AIR DUCT UP THROUGH ROOF TO CAP. LOCATE CAP 10'-0" AWAY FROM ANY FRESH AIR INTAKES.
- NEW CEILING MOUNTED EXHAUST FAN.
- NEW 1-1/4" DRAIN LINE DOWN IN WALL AND OUT TO LANDSCAPE. PIPE SHALL TERMINATE IN A DOWNWARD POSITION @ 6" A.F.G.
- NEW 1/2" CW LINE TO CONNECT TO EXISTING 1/2" CW LINE ON ROOF. FIELD VERIFY EXACT POINT OF CONNECTION.
- NEW FULL SIZE SUPPLY AIR DUCT DOWN THROUGH ROOF, 4'-0" BELOW ROOF DECK, TRANSITION TO 26"x26", OFFSET AS SHOWN AND EXTEND THROUGH MEZZANINE FLOOR. SEE SHEET M1.2 FOR CONTINUATION.
- EXISTING 1/2" CW LINE ABOVE ROOF. FIELD VERIFY.
- EXISTING 6'-0"x4'-0", ROOF MOUNTED BAROMETRIC RELIEF HOOD TO REMAIN AS IS. FIELD VERIFY.
- EXISTING RETURN GRILLE TO REMAIN AS IS. FIELD VERIFY.
- EXISTING SUPPLY AIR DIFFUSER TO REMAIN AS IS. BALANCE TO CFM NOTED. FIELD VERIFY.
- EXISTING SUPPLY AIR DIFFUSER TO BE REUSED AND RELOCATED AS SHOWN. BALANCE TO CFM NOTED. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE WITH NEW RAPID MOUNT FRAME, EQUAL TO "TITUS" MODEL #TRM FOR LAY-IN INSTALLATION. FIELD VERIFY.
- EXISTING CEILING MOUNTED EXHAUST FAN TO REMAIN AS IS. REBALANCE THE EXHAUST AIR TO 70 CFM. FIELD VERIFY.
- EXISTING 5-TON FAN COIL UNIT TO REMAIN AS IS. REBALANCE SUPPLY AIR TO 2000 CFM. FIELD VERIFY.
- EXISTING ROOF MOUNTED 5-TON CONDENSING UNIT TO REMAIN AS IS. FIELD VERIFY.
- EXISTING OUTSIDE AIR DUCT AND MANUAL BALANCING DAMPER TO BE REUSED. BALANCE TO CFM NOTED. FIELD VERIFY.
- EXISTING FULL SIZE RETURN AIR DUCT OPEN TO CEILING SPACE TO REMAIN AS IS. FIELD VERIFY.
- NEW ROOF MOUNTED EVAPORATIVE COOLER.
- 20"x14", 18"x12" NECK SR-1. BALANCE TO CFM NOTED. MOUNT AS HIGH AS POSSIBLE.
- 20"x20", 18"x18" NECK RG-1. MOUNT AS HIGH AS POSSIBLE.
- 3/4" CONDENSATE DRAIN LINE TO CONNECT TO EXISTING 3/4" CONDENSATE DRAIN LINE ABOVE ROOF. FIELD VERIFY EXACT POINT OF CONNECTION.
- NEW THERMOSTAT WITH COMPATIBLE REMOTE TEMPERATURE SENSOR, MOUNT @ 48" A.F.F. COORDINATE EXACT MOUNTING LOCATION WITH THE OWNER'S FIELD REPRESENTATIVE, PRIOR TO INSTALLATION.
- NEW REMOTE TEMPERATURE SENSOR. MOUNT AS HIGH AS POSSIBLE.
- NEW WEATHER RESISTANT EQUIPMENT TO DUCTWORK FLEXIBLE CONNECTION.
- NEW 2-TON ROOFTOP PACKAGED HEAT PUMP UNIT.
- SEE PARTIAL ROOF PLAN FOR CONTINUATION, THIS SHEET.
- SEE ENLARGED MECHANICAL FLOOR PLAN - 2ND FLOOR FOR CONTINUATION, THIS SHEET.
- EXISTING ROOFTOP PACKAGED HEAT PUMP UNIT TO REMAIN AS IS. SHOWN FOR REFERENCE ONLY.

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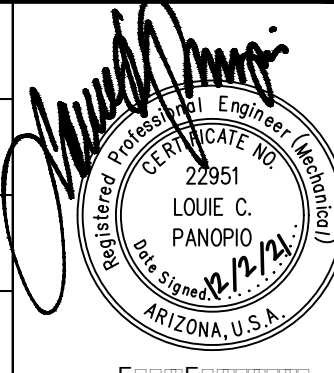
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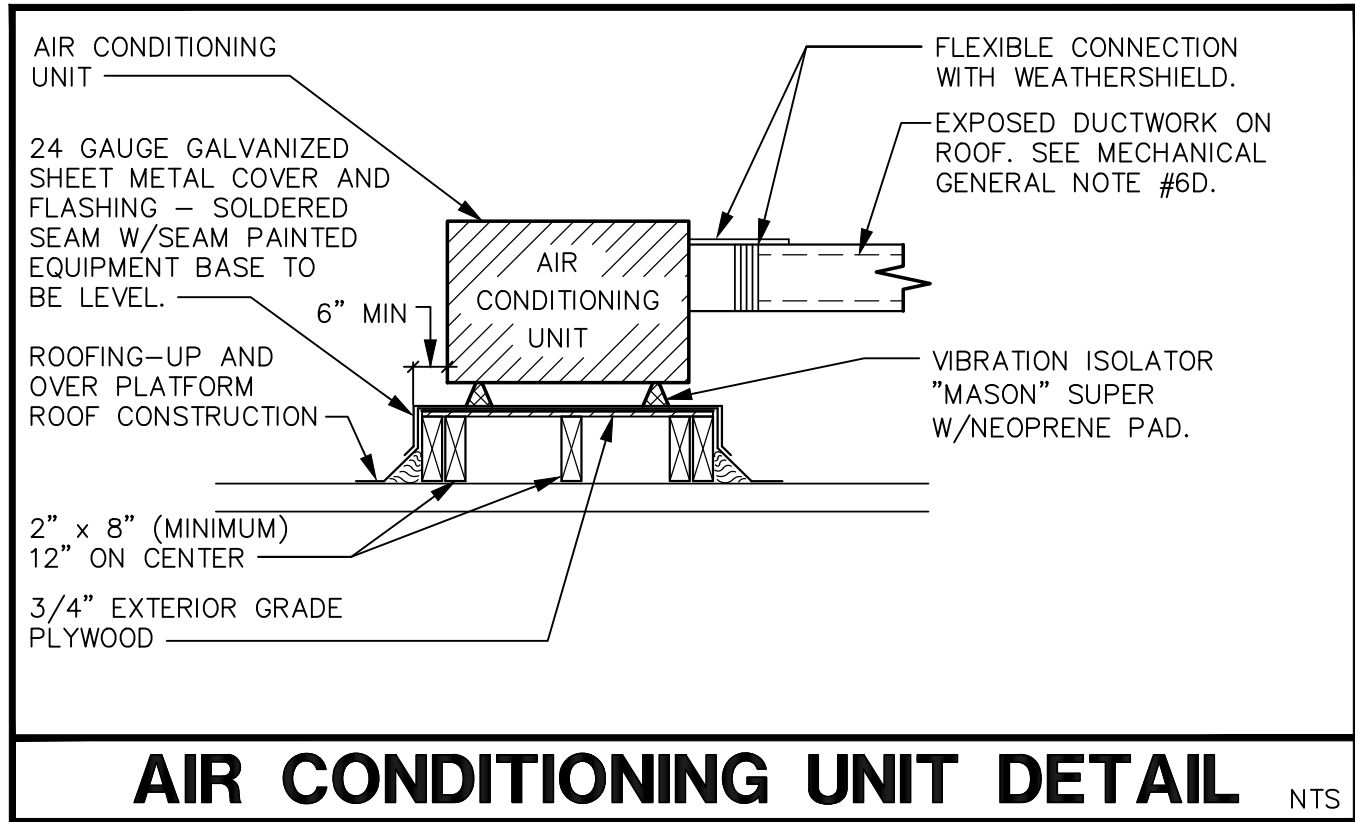
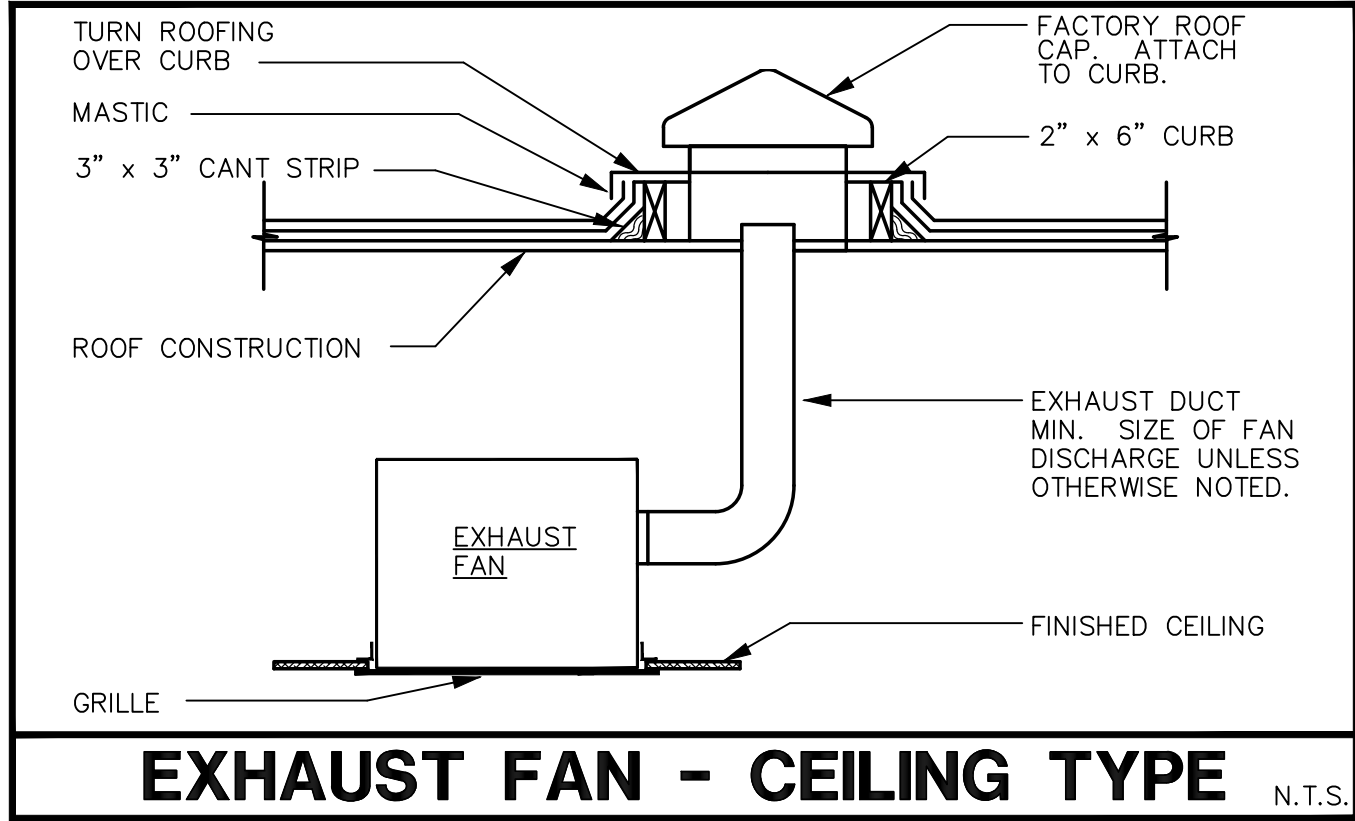
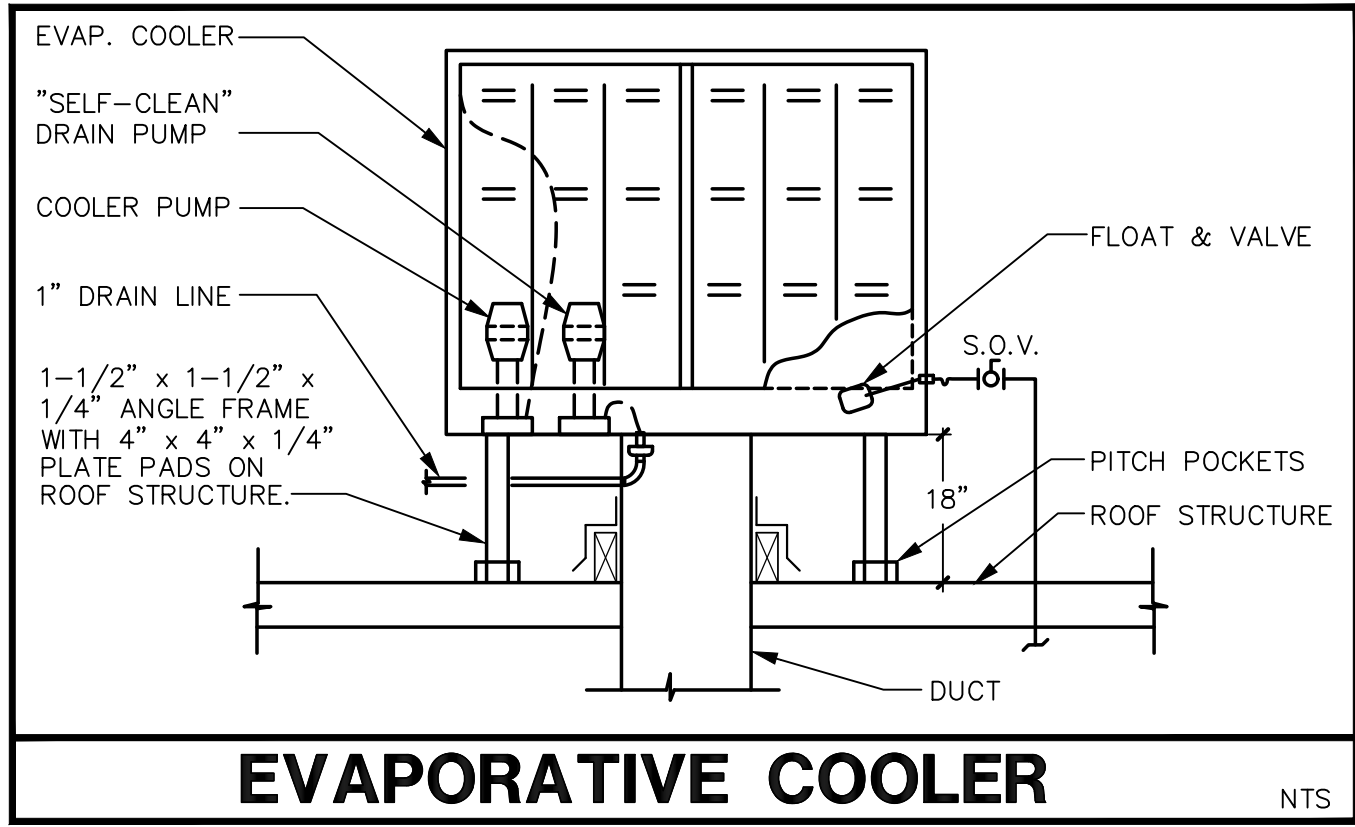
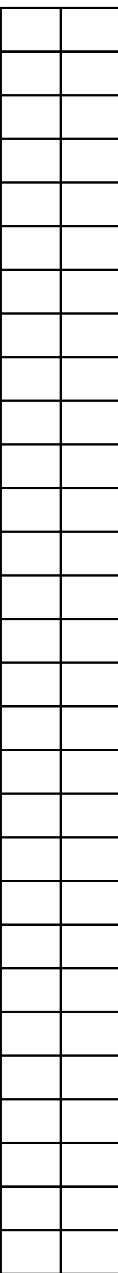
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ENLARGED MECHANICAL FLOOR
PLAN

M-1.2



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PROJECT NO. 21190
DATE: 9/28/21



GRILLE, REGISTER, AND DIFFUSER SCHEDULE								
MARK	DESCRIPTION	MANUFACTURER	MODEL	MATERIAL	MODULE	FRAME	FRONT BLADES	DAMPER
CD-1	CEILING DIFFUSER	TITUS	TDC-AA	ALUMINUM	38"x38"	FLANGE	4-WAY	OPPOSED BLADE
SR-1	SUPPLY REGISTER	TITUS	300RS	STEEL	20"x14"	FLANGE	SHORT	OPPOSED BLADE
RG-1	RETURN GRILLE	TITUS	350RL	STEEL	20"x20"	FLANGE	-	-

- NOTES:
- FIELD PAINT ALL DIFFUSERS AND GRILLES. COLOR BY ARCHITECT.

EXHAUST FAN SCHEDULE								
MARK	AREA SERVED	MANUFACTURER	MODEL	CFM	E.S.P. ("W.C.)	MOTOR HP	V/PH	BAROMETRIC DAMPER
EF-1	RESTROOM	BROAN	671	70	0.1	FRAC.	120/1	BACKDRAFT

- NOTES:
- VERIFY VOLTAGE/PHASE WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING.
 - INTERLOCK EF-1 WITH ROOM LIGHT SWITCH.

EVAPORATIVE COOLER SCHEDULE								
MARK	MANUFACTURER	MODEL	CFM	E.S.P. ("W.C.)	MOTOR (HP)	WEIGHT (LBS)	V/Ø	REMARKS
EC-1	CHAMPION COOLER	AD-10012W	5500	0.8"	1.5	852	208/3	SEE NOTES BELOW

- NOTES:
- UNIT SHALL BE U.L. LISTED, PROVIDE WITH 12" MEDIA. RATED TO UL900. CLASS 2.
 - PROVIDE EVAP COOLERS WITH CONTROL SWITCH WITH THE FOLLOWING FUNCTIONS: UNIT OFF, PUMP OFF/FAN ON, PUMP OFF/FAN ON.
 - PROVIDE WITH (2) PUMP #110467 (115V, 4.6 GPM @ 5'HEAD AND AUTOMATIC TIMED DISTRIBUTION FLUSH SYSTEM (SELF CLEAN PUMP SYSTEM).
 - PROVIDE MOTOR #110463-9 AND PULLEY BELT KIT NO. 3DI-II - 1-5/8" BORE.

ROOFTOP PACKAGED HEAT PUMP UNIT																	
MARK	MANUFACTURER	MODEL	INDOOR BLOWER			GROSS COOLING CAP				HEAT (MBH)	O.S.A CFM	WT. (LB)	ELECTRICAL DATA				
			CFM	"ESP	HP	SEN MBH	TOT MBH	ENT. DBF	AIR WBF				VOLT/ PHASE	COMP. RLA	COND. FAN FLA	EVAP. FAN FLA	MOCP
HP-1	CARRIER	50VT-A24	800	0.4	1/2	16.1	20.1	80	67	20.6	—	400	208/1	13.5	0.7	4.1	30

- NOTES:
- SIZE ALL UNITS ON SUMMER AMBIENT TEMPERATURE: 115°F. WINTER: 32°F.
 - VERIFY VOLTAGE/PHASE WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING.
 - COOLING CAPACITY, MINIMUM HEAT CAPACITY AND CFM ARE MINIMUM OUTPUT REQUIRED. ALL UNITS SHALL HAVE NO LESS THAN 98% OF THESE CAPACITIES. COOLING CAPACITY IS GROSS COIL CAPACITY REQUIRED (FAN HEAT NOT DEDUCTED).
 - PROVIDE ROOF MOUNTING CURB, FILTERS AND FILTER RACK SIZED AT 500 FPM VELOCITY.
 - PROVIDE WITH PROGRAMMABLE THERMOSTAT WITH COMPATIBLE REMOTE TEMPERATURE SENSOR.

DUCTWORK SYMBOLS			
SINGLE	DOUBLE	ABBR.	DESCRIPTION
		•	RECTANGULAR DUCT
		•	ROUND DUCT
		•	45 DEG. TAP: USE AT BRANCH DUCTS ONLY
		•	DUCT SPLIT W/DAMPER: USE AT ELBOWS AND TEES: PROPORTION DUCT AREAS BY CFM'S
		•	CURVED ELBOW-MIN. RADIUS R: 1.5 WIDTH
		•	90 DEG. ELBOW WITH SINGLE RADIUS TURNING VANES
		•	FLEXIBLE DUCT CONNECTION
		FD	FIRE DAMPER
		BD	BALANCING DAMPER (USE O.B.D. UNLESS NOTED OTHERWISE)
		-	NEW TO EXISTING CONNECTION
		•	SPIN-IN FLEX DUCT TAKE-OFF W/DAMPER
•		SA	SUPPLY AIR
•		EXH	EXHAUST AIR
•		RA	RETURN AIR
•		REL	RELIEF AIR
•		OSA	OUTSIDE AIR
•		T	THERMOSTAT X: UNIT OR ZONE NUMBER
•		T	THERMOSTAT W/SHERWOOD GUARD

MECHANICAL GENERAL NOTES

- ALL WORK SHALL COMPLY WITH THE 2018 IMC AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, LAWS, ACTS AND ALL AUTHORITIES HAVING JURISDICTION, AND LANDLORD'S CRITERIA.
- THE COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY, AND THE MANUFACTURER'S STRICTEST RECOMMENDATIONS FOR EQUIPMENT AND PRODUCT APPLICATION AND INSTALLATION.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES, DOCUMENTS AND SERVICES RELATED TO INSTALLATION OF THE WORK.
- PRIOR TO SUBMITTING A PROPOSAL, THE CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY INSPECT ALL EXISTING CONDITIONS TO INSURE THAT THE WORK REPRESENTED ON THE DRAWINGS AND IN THESE SPECIFICATIONS CAN BE INSTALLED AS INDICATED.
- DUCTWORK SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH ASHRAE AND LATEST SMACNA STANDARDS. PROVIDE TURNING VANES IN ALL ELBOWS; AND MANUAL VOLUME DAMPERS WITH DAMPER CONTROL DEVICES, IN ALL BRANCHES, SPLITTER DAMPERS, AIR EQUALIZERS, EXTRACTORS, AND SIMILAR DEVICES WHEREVER NECESSARY TO PROPERLY BALANCE THE SYSTEM AND PRODUCE A QUIET AND DRAFTLESS OPERATION.
- DUCTWORK SHALL BE GALVANIZED SHEET METAL OF LOCK FORMING QUALITY WITH FIBERGLASS INSULATION WITH FOIL VAPOR BARRIER, ALL JOINTS AND SEAMS SHALL BE SEALED IN A MANNER TO PROVIDE A COMPLETE VAPORTIGHT ENCLOSURE. 24 GAUGE UP TO 30", 22 GAUGE - 30" AND OVER.
 - AIR DUCTS MUST BE INSULATED TO THE FOLLOWING LEVELS: SUPPLY AND RETURN AIR DUCTS FOR CONDITIONED AIR LOCATED IN UNCONDITIONED SPACES (SPACES NEITHER HEATED NOR COOLED) MUST BE INSULATED WITH A MINIMUM OF R-6. UNCONDITIONED SPACES INCLUDE ATTICS, CRAWL SPACES, UNHEATED BASEMENTS, AND UNHEATED GARAGES
 - SUPPLY AND RETURN AIR DUCTS AND PLENUMS MUST BE INSULATED TO A MINIMUM OF R-8 WHEN LOCATED OUTSIDE THE BUILDING
 - WHEN DUCTS ARE LOCATED WITHIN EXTERIOR COMPONENTS (e.g. FLOORS OR ROOFS), MINIMUM R-8 INSULATION IS REQUIRED ONLY BETWEEN THE DUCT AND THE BUILDING EXTERIOR.

EXCEPTION: DUCT INSULATION IS NOT REQUIRED ON DUCTS LOCATED WITHIN EQUIPMENT.

EXCEPTION: DUCT INSULATION IS NOT REQUIRED WHEN THE DESIGN TEMPERATURE DIFFERENCE BETWEEN THE INTERIOR AND EXTERIOR OF THE DUCT OR PLENUM DOES NOT EXCEED 15 DEGREES F.
 - ALL DUCTWORK LOCATED ON ROOF SHALL BE PROVIDED WITH A MINIMUM OF R-8 RIGID INSULATION WRAPPED WITH "POLYGUARD" ALUMA GUARD LT ALL WEATHER ON ALL SIDES. INSTALL PER MANUFACTURER'S INSTALLATION RECOMMENDATIONS
- ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS, AND CONNECTIONS IN DUCTWORK MUST BE SECURELY SEALED USING WELDMENTS; MECHANICAL FASTENERS WITH SEALS; GASKETS; OR MASTICS; MESH AND MASTIC SEALING SYSTEMS; OR TAPES. TAPES AND MASTICS MUST BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A OR UL 181B.

EXCEPTION: CONTINUOUSLY WELDED AND LOCKING-TYPE LONGITUDINAL JOINTS AND SEAMS ON DUCTS OPERATING AT STATIC PRESSURES LESS THAN 2 INCHES W.G. PRESSURE CLASSIFICATION.
- FLEXIBLE DUCTWORK SHALL BE THERMAFLEX "M-KE" WITH ONE INCH EXTERNAL INSULATION FINISHED WITH A VAPOR BARRIER, U.L. AND 90A LISTED, SHALL BE EQUIPPED WITH DAMPER-EXTRACTOR AT THE SHEETMETAL DUCT AND CIRCULAR COLLAR AT THE DIFFUSER, MECHANICALLY SECURED.
- FLEXIBLE DUCTWORK SHALL NOT EXCEED 5 FEET IN LENGTH; BENDS SHALL NOT RESTRICT THE INSIDE CROSS-SECTIONAL AREA OF THE DUCT; AND CONNECTION SHALL BE MADE AS DIRECT AS POSSIBLE TO THE MAIN SUPPLY.
- ALL WORK SHALL BE LOCATED TO AVOID CONFLICTS WITH OTHER TRADES. PROVIDE ADEQUATE CLEARANCE FOR ARCHITECTURAL DESIGN, PROPER OPERATION AND SERVICE OF EQUIPMENT.
- PROVIDE A READY-TO-USE SYSTEM WITH ALL WORK GUARANTEED IN WRITING AGAINST DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR FROM TURN OVER TO OWNER.
- CONDENSATE AND COOLER DRAINS: TYPE "M" HARD DRAWN COPPER FOR LINES 1" AND SMALLER, "DWV" HARD DRAWN COPPER FOR 1-1/4" AND LARGER, CONFORMING TO ASTM B88-72. WROUGHT COPPER FITTINGS, DRAINAGE TYPE FOR LINES 1-1/4" AND LARGER. SOLDER WITH 50/50 SOLDER.
- DUCTWORK SHALL BE "FACTORY MADE" CLASS 1 OR GALVANIZED SHEET METAL WITH IRON SUPPORTS SECURED TO OVERHEAD MEMBERS AT 5'-0" DUCTWORK MATERIALS SHALL BE PER INTERNATIONAL MECHANICAL CODE, 2018.
- PROVIDE AS PART OF THE MECHANICAL CONTRACT SERVICES OF AN INDEPENDENT AIR /WATER BALANCING CONTRACTOR CERTIFIED BY THE ASSOCIATED AIR BALANCE COUNCIL. SUBMIT 3 COPIES OF THE BALANCE REPORT TO ARCHITECT/OWNER.

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Project Manager JW	
Drawn By JW	
Checked By ES	
Project Number 21054	

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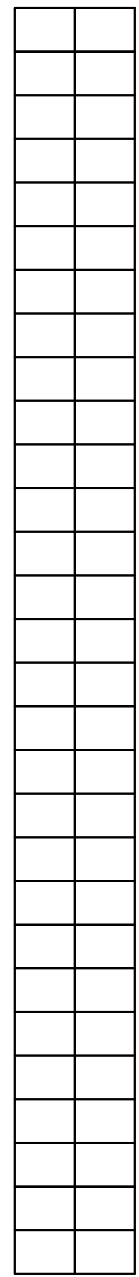
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IMPROVEMENT

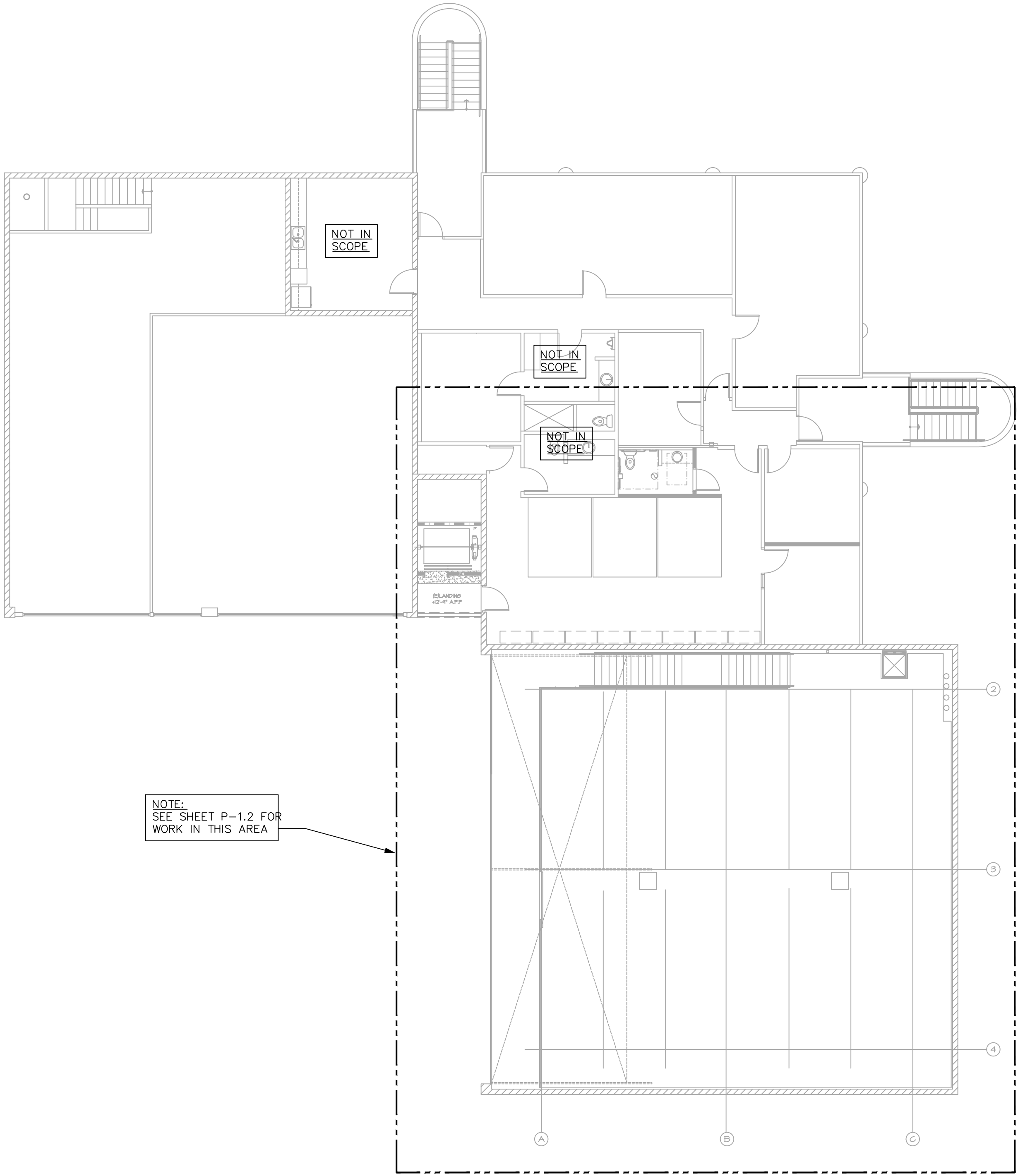
Revisions	
Date	Issued for
9/28/21	SUBMITTAL

MECHANICAL NOTES,
SCHEDULES & DETAILS

M-2.0

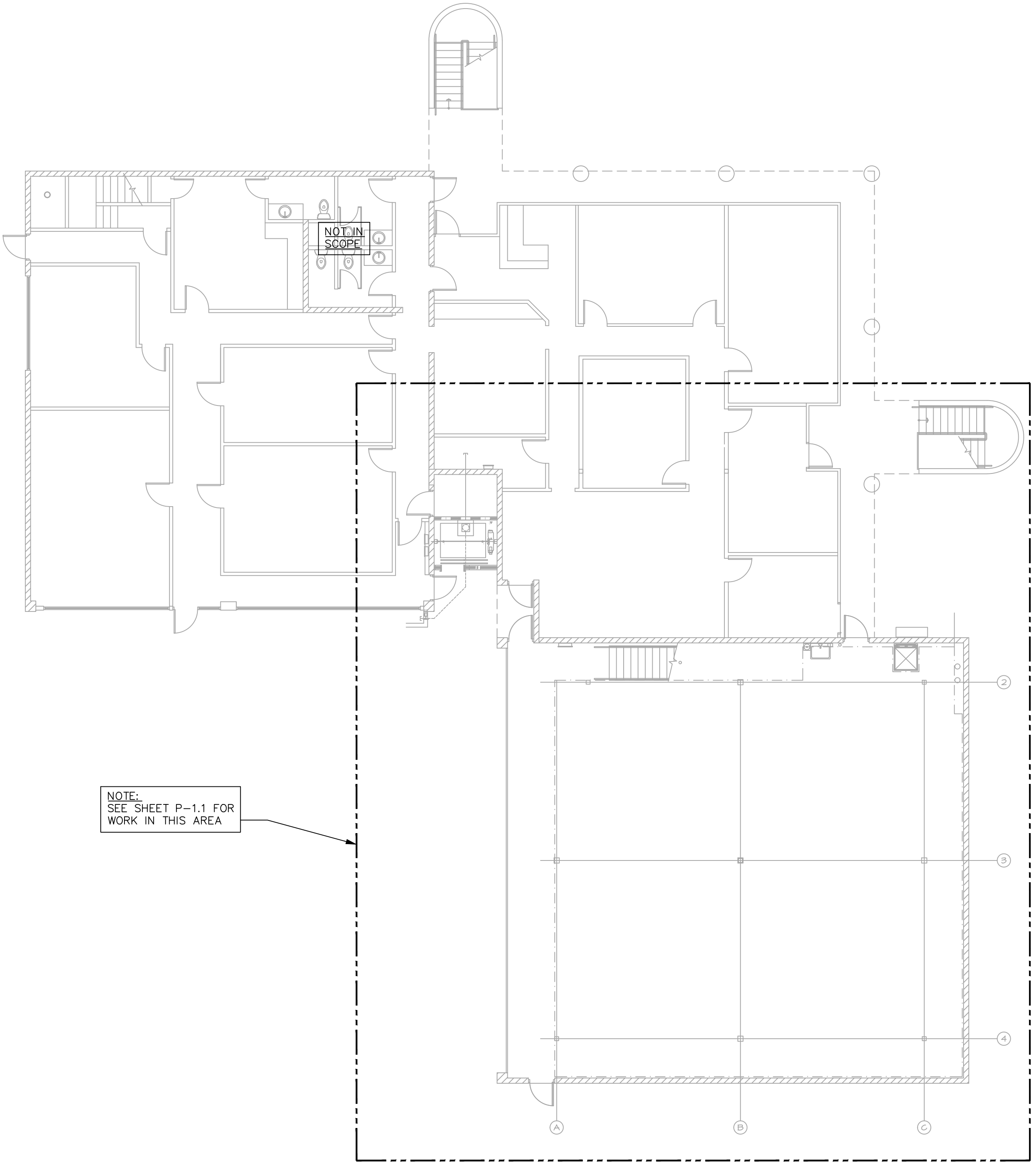


F:\P65\18



2ND FLOOR PLUMBING PLAN

SCALE: 1" = 10'-0"



1ST FLOOR PLUMBING PLAN

SCALE: 1" = 10'-0"



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PROJECT NO. 21190
DATE: 11/10/10

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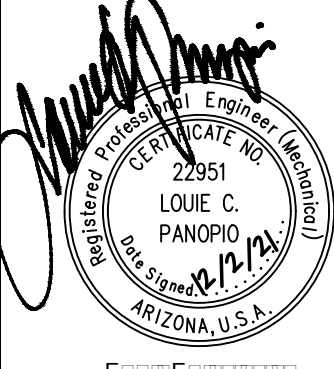
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Project Manager
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Drawn By
JW

Checked By
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BRO OFFICE BUILDING

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SUITE 101
SCOTTSDALE, AZ 85260**

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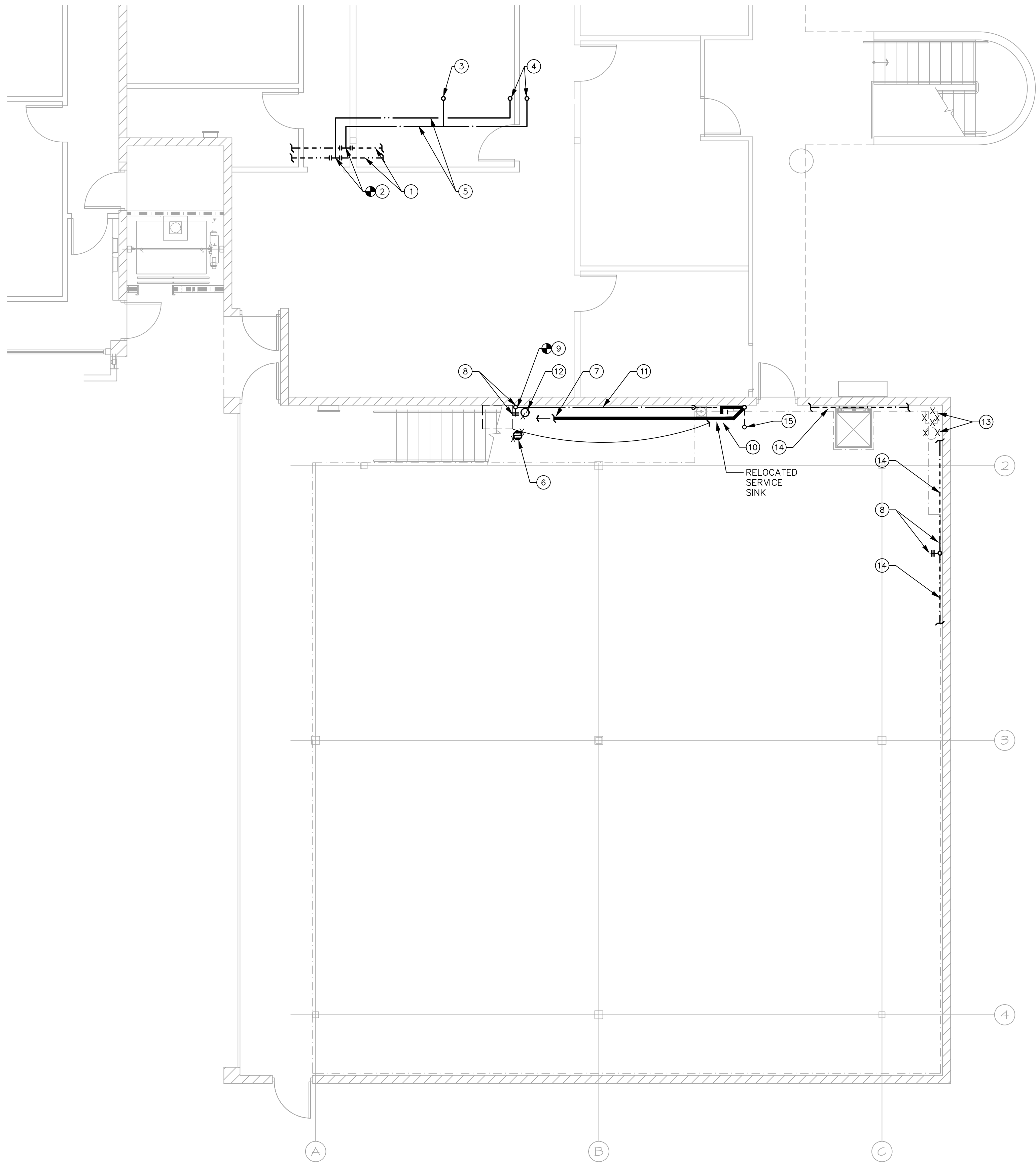
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PLUMBING FLOOR PLANS

P-1.0



ENLARGED PLUMBING FLOOR PLAN
1ST FLOOR

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



KEYED NOTES

- 1" CW AND HW LINES LOCATED IN CEILING SPACE, SERVING EXISTING 2ND FLOOR RESTROOMS, TO REMAIN AS IS. FIELD VERIFY.
- NEW 3/4" CW AND 1/2" HW LINES TO EXTEND AND CONNECT TO EXISTING 1" CW AND HW LINES ABOVE CEILING. FIELD VERIFY EXACT POINT OF CONNECTION.
- 1/2" CW LINE UP TO 2ND FLOOR. SEE SHEET P1.2 FOR CONTINUATION.
- 1/2" CW AND HW LINES UP TO 2ND FLOOR. SEE SHEET P1.2 FOR CONTINUATION.
- ROUTE NEW CW AND HW LINES ABOVE CEILING.
- EXISTING FLOOR DRAIN TO BE COMPLETELY REMOVED. CAP WASTE LINE BELOW SLAB. FIELD VERIFY.
- NEW 2" WASTE LINE BELOW SLAB TO EXTEND AND CONNECT TO EXISTING 2" (MIN) WASTE LINE BELOW SLAB, AT REMOVED FLOOR DRAIN LOCATION. FIELD VERIFY EXACT POINT OF CONNECTION AND DEPTH.
- EXISTING 3/4" CW LINE W/ EXISTING HOSE BIBB, SERVING RELOCATED SERVICE SINK, TO REMAIN AS IS. REUSE EXISTING 1/2" CW T-FITTING. FIELD VERIFY.
- NEW 1/2" CW LINE TO EXTEND AND CONNECT TO EXISTING 1/2" T-FITTING SERVING RELOCATED SERVICE SINK. FIELD VERIFY EXACT POINT OF CONNECTION.
- RELOCATE EXISTING SERVICE SINK AS SHOWN. PROVIDE NEW CW SUPPLY STOP AND SUPPLY LINE, TRAP ARM, P-TRAP AND TAILPIECE. FIELD VERIFY.
- NEW 1/2" CW LINE TO RUN ATTACHED ON WALL SURFACE FROM EXISTING 1/2" CW LINE LOCATION TO NEW SERVICE SINK LOCATION.
- REMOVE EXISTING EMERGENCY EYEWASH AND CAP AND REMOVE EXISTING UNUSED PLUMBING LINES. FIELD VERIFY.
- REMOVE EXISTING WATER SOFTENER AND CAP EXISTING CW LOOP. FIELD VERIFY.
- EXISTING WATER LINES INSTALLED ON THE FACE OF THE WALL TO REMAIN AS IS.
- 1-1/2" VENT LINE UP ALONG SIDE THE WALL UP TO BELOW THE ROOF DECK AND OVER TO NEW 2" VTR. LOCATE VTR 10'-0" AWAY FROM ANY FRESH AIR INTAKES. FIELD VERIFY.

NOTE:
PRIOR TO CONSTRUCTION/ BID THE CONTRACTOR SHALL VISIT THIS SITE AND FIELD VERIFY THE EXISTING LOCATIONS AND SIZES OF PLUMBING LINES AND FLOW DIRECTION.

THE CONTRACTOR SHALL FIELD VERIFY ANY/ CONDITIONS WHICH MAY CONFLICT WITH THE DESIGN SHOWN ON THESE PLANS. NOTIFY ARCHITECT.

THE CONTRACTOR IS RESPONSIBLE TO HIRE A LOCATING COMPANY TO LOCATE EXISTING MAIN SANITARY PIPING BELOW GROUND AS REQUIRED. THE CONTRACTOR SHALL CONTACT THE ARCHITECT IF THE LOCATION OF THE EXISTING MAIN SANITARY PIPING CONFLICTS WITH THE DESIGN SHOWN ON PLANS.

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PROJECT NO. 21190
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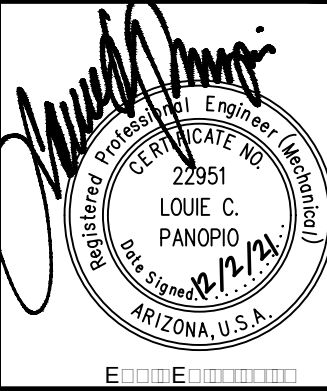
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JW

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Project Number
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BRO OFFICE BUILDING

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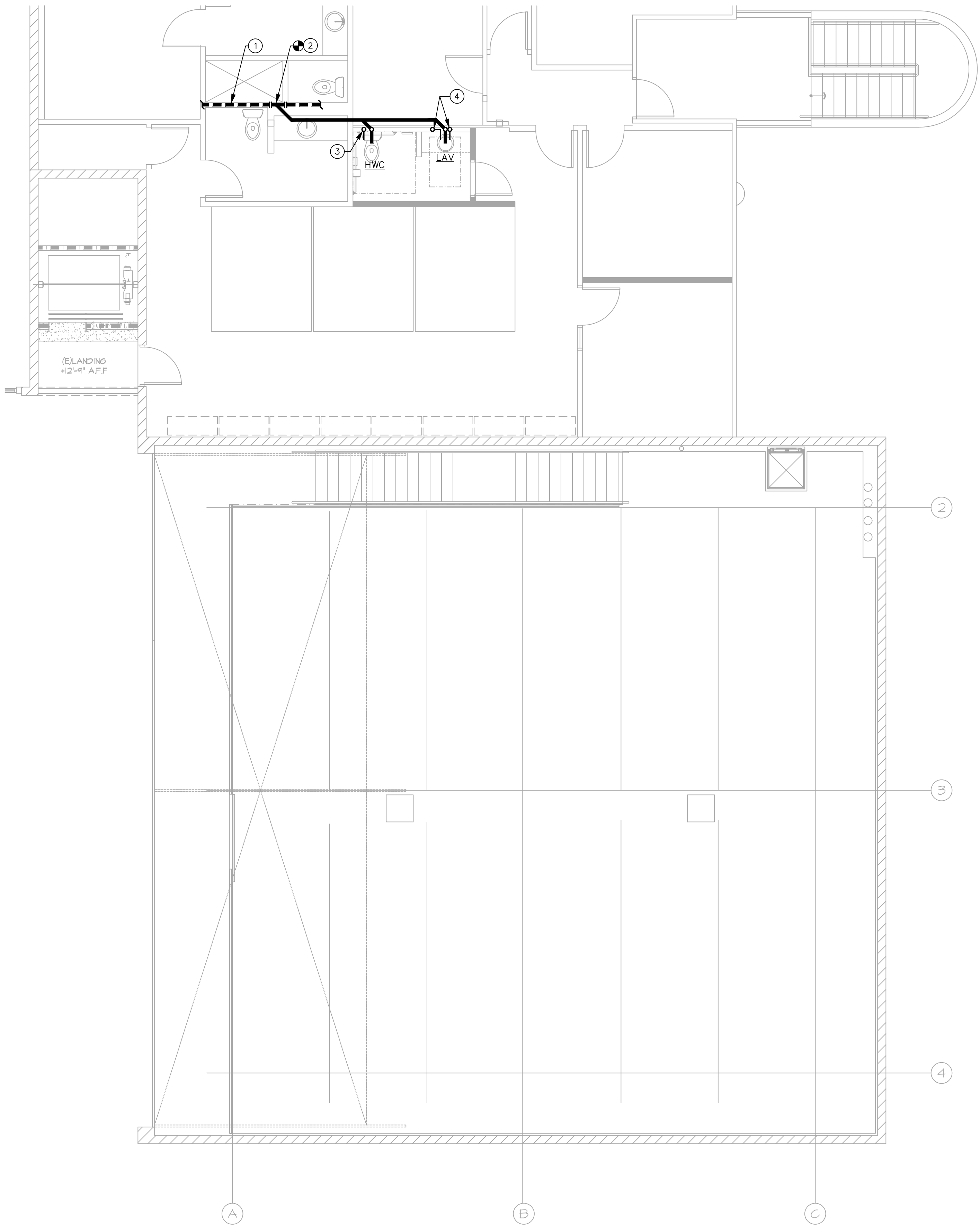
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ENLARGED PLUMBING FLOOR
PLAN

P-1.1



ENLARGED PLUMBING FLOOR PLAN
2ND FLOOR

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



KEYED NOTES

1. EXISTING 4" WASTE LINE BELOW FLOOR, SERVING EXISTING RESTROOMS, TO REMAIN AS IS. FIELD VERIFY.
2. NEW 3" WASTE LINE TO CONNECT TO EXISTING 4" WASTE LINE BELOW FLOOR. FIELD VERIFY EXACT PONT OF CONNECTION.
3. 1/2" CW LINE UP IN WALL FROM BELOW FLOOR. SEE SHEET P1.1 FOR CONTINUATION. AND FOR THE WATER PIPING SHOWN BELOW THE FLOOR.
4. 1/2" CW & HW LINES UP IN WALL FROM BELOW FLOOR. SEE SHEET P1.1 FOR CONTINUATION AND FOR WATER PIPING SHOWN BELOW THE FLOOR.

NOTE:
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THE CONTRACTOR SHALL FIELD VERIFY ANY/ CONDITIONS WHICH MAY CONFLICT WITH THE DESIGN SHOWN ON THESE PLANS. NOTIFY ARCHITECT.

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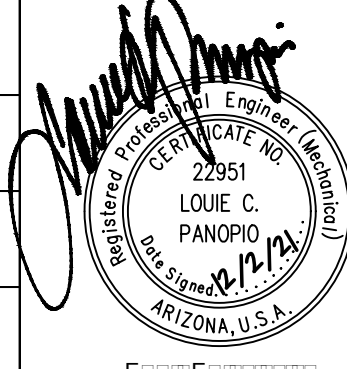
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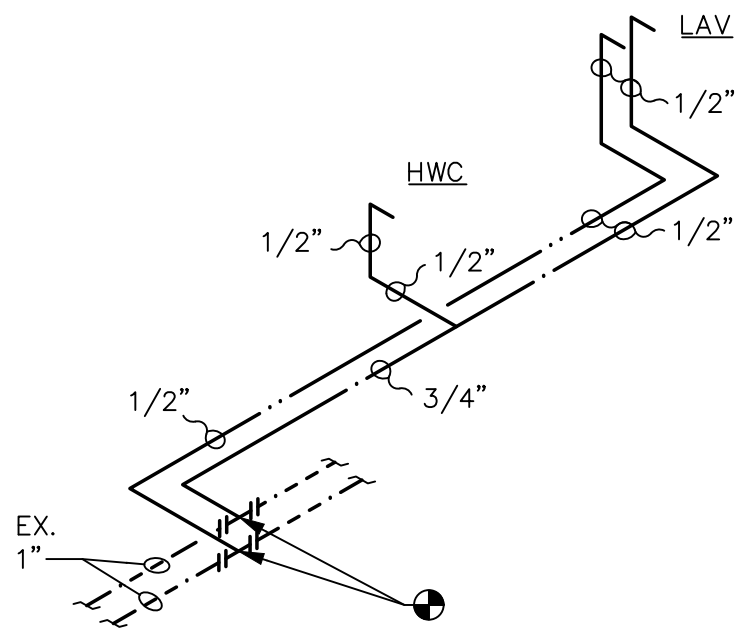
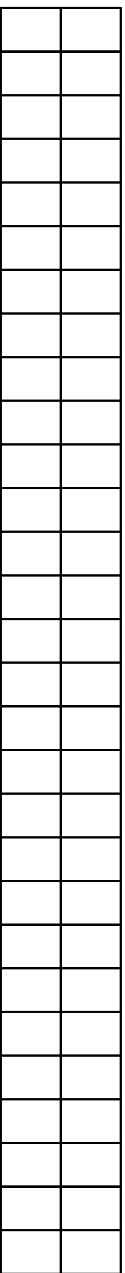
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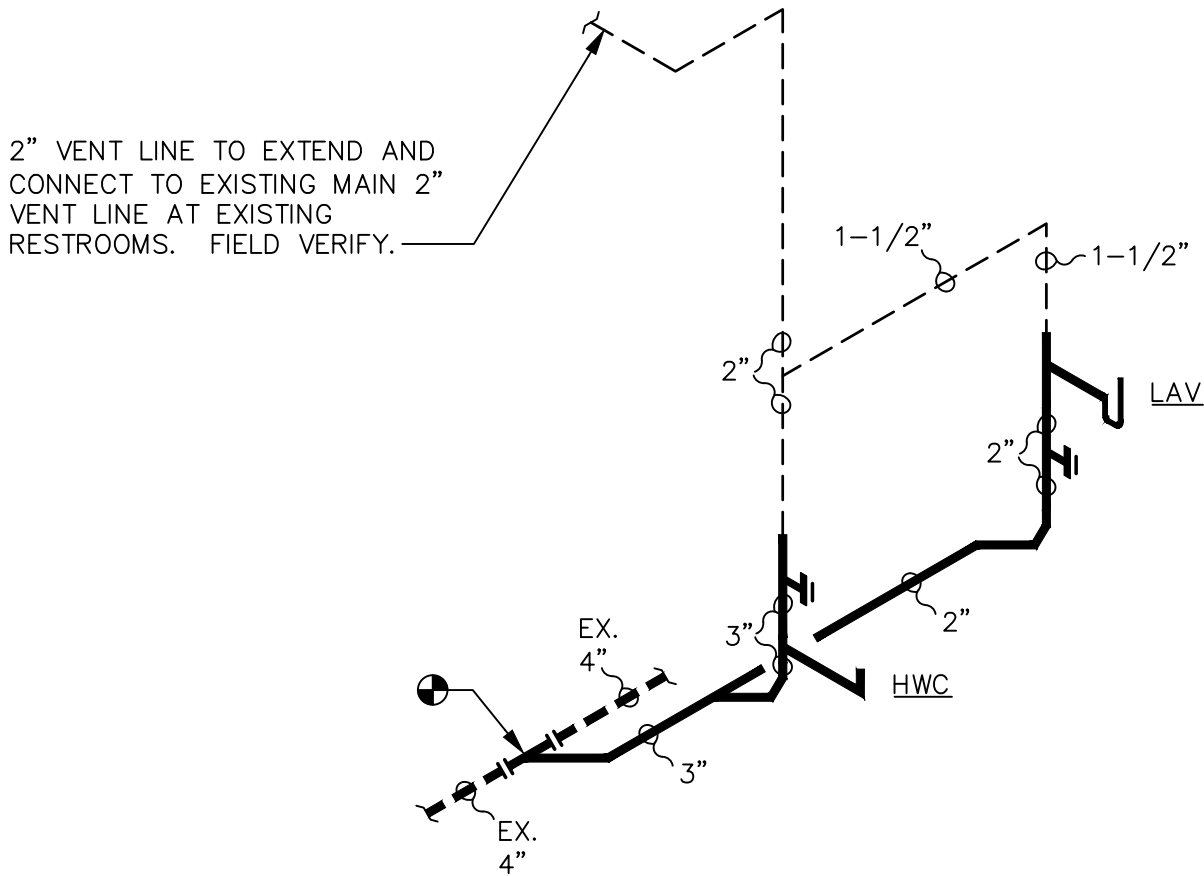
ENLARGED PLUMBING FLOOR PLAN

P-1.2



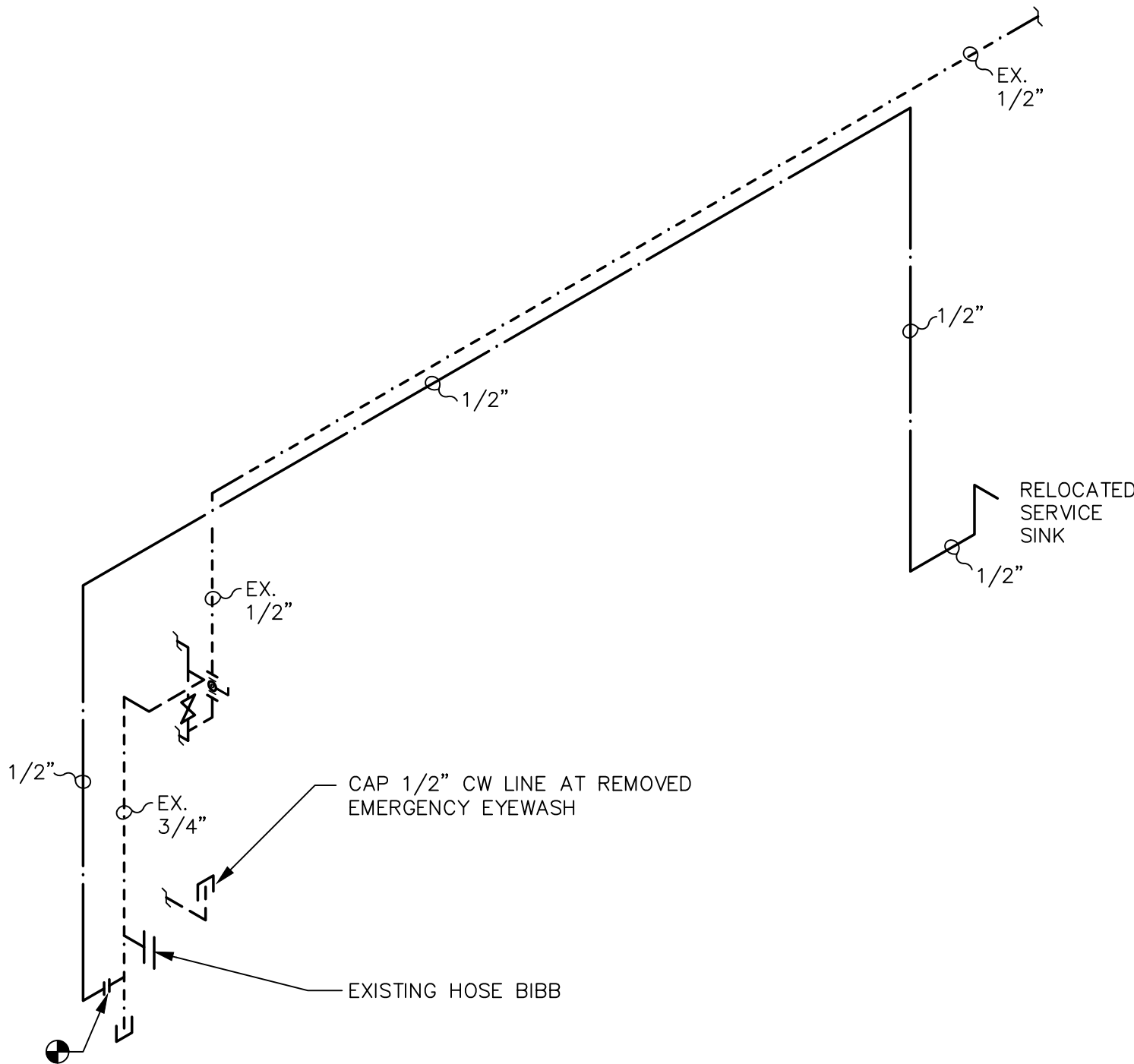
HOT & COLD WATER SCHEMATIC
@ NEW 2ND LEVEL RESTROOM

N.T.S.



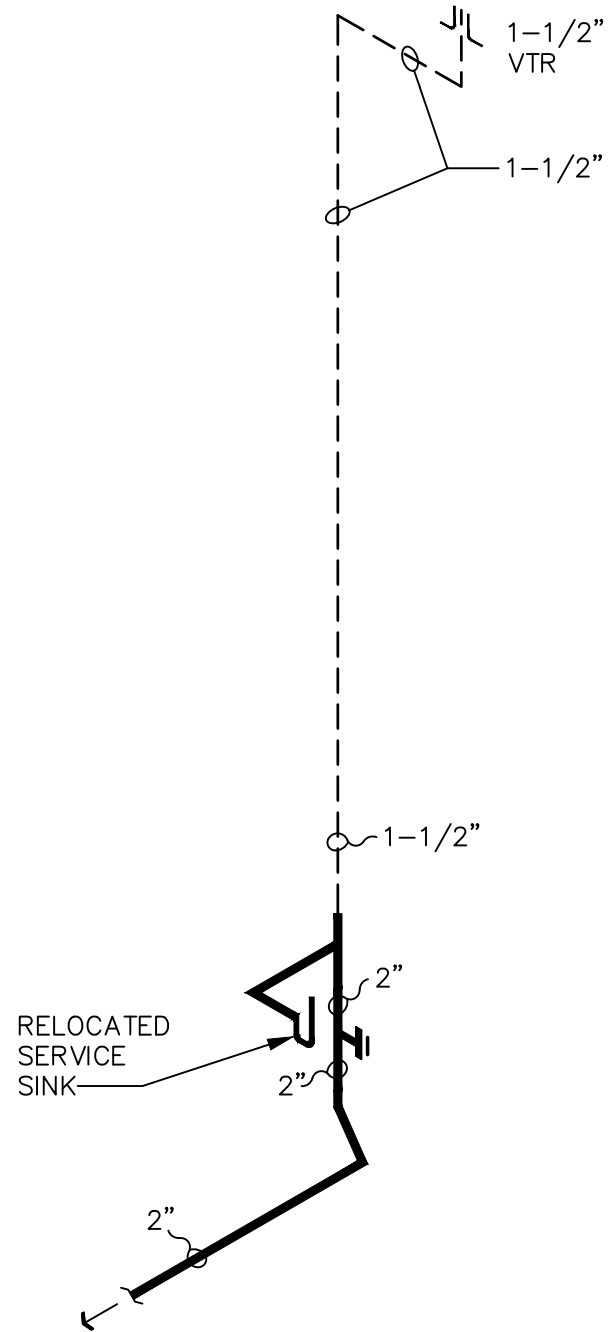
WASTE & VENT SCHEMATIC
@ NEW 2ND LEVEL RESTROOM

N.T.S.



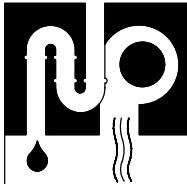
HOT & COLD WATER SCHEMATIC
@ HANGAR

N.T.S.



WASTE & VENT SCHEMATIC
@ HANGAR

N.T.S.



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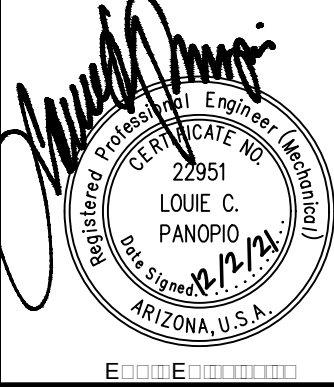
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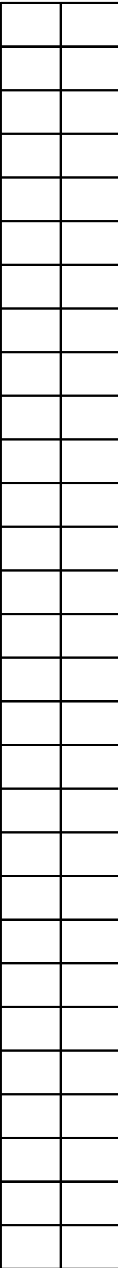
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PLUMBING SCHEMATICS

P-2.0



PLUMBING FIXTURE SCHEDULE													
FIXTURE SPECIFICATIONS					FIXTURE CONNECTIONS				FIXTURE UNITS				
MARK	DESCRIPTION	MANUFACTURER AND MODEL NUMBER	FITTING	ACCESSORIES/REMARKS	COLD WATER	HOT WATER	WASTE	VENT	QUANTITY OF FIXTURES	WATER F.U.		WASTE F.U.	
										EACH	TOTAL	EACH	TOTAL
WC-1	HANDICAPPED WATER CLOSET (FLUSH TANK)	"AMERICAN STANDARD" #2467.016 CADET RIGHT HEIGHT	FLUSH TANK 1.6 GPF	17" HIGH ELONGATED BOWL, SPLIT OPEN FRONT SEAT	1/2"	-	3"	2"	1	5	5	4	4
LAV-1	LAVATORY WALL HUNG 0.5 GPM FLOW	"AMERICAN STANDARD" #0355.012 LUCERN	"SYMMONS" #S-60-G-H SELF-METER FAUCET	"TRUEBRO" HANDI LAV-GUARD #102 P-TRAP AND WATER LINES INSULATION PER HANDICAP. REQMTS.	1/2"	1/2"	2"	1-1/2"	1	2	2	1	1
	RELOCATED SERVICE SINK	-	-	-	-	-	-	-	1	3	3	3	3
	EXISTING FIXTURES	-	-	-	-	-	-	-	-	-	61.5	-	38
NOTE: 1. PLUMBING CONTRACTOR SHALL VERIFY QUANTITY OF PLUMBING FIXTURES REQUIRED FROM THE PLUMBING PLANS. 2. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL PLUMBING FIXTURES SHOWN ON THE PLUMBING PLANS WHETHER LISTED OR UNLISTED ON THE FIXTURE SCHEDULE.										TOTALS			

P3-1

WATER SUPPLY CALCULATION	
STATIC PRESSURE:	75 - FIELD VERIFY.
TOTAL F.U.:	71.5
GPM:	36
WATER METER:	EX. 1"
<div>75 P.S.I. PRESSURE IN MAIN -4 P.S.I. LOSS THROUGH EX. 1" METER -2 P.S.I. LOSS THROUGH TAP -25 P.S.I. FIXTURE LOSS AT END -9 P.S.I. DROP FOR ELEVATION (24 FT.) -10 P.S.I. BACKFLOW PREVENTER 25 P.S.I. AVAILABLE PRESSURE</div>	
<div>PIPE LENGTH (TAP TO METER) 30 FT. PIPE LENGTH (METER TO LAST FIXTURE) 294 FT. VERTICAL LENGTH 24 FT. EQUIVALENT LENGTH OF FITTINGS 55 FT. TOTAL DEVELOPED LENGTH 403 FT.</div>	
<div>MAX. ALLOWABLE LOSS = $\frac{\text{PRESSURE AVAILABLE: 25 P.S.I.}}{\text{TOTAL LENGTH: 403 FT.}} \times 100 = 6.2 \text{ P.S.I./100 FT.}$ (PER 100 FT OF PIPE)</div>	
SIZE PIPES PER 6 P.S.I./100 FT.	

WTRC-1

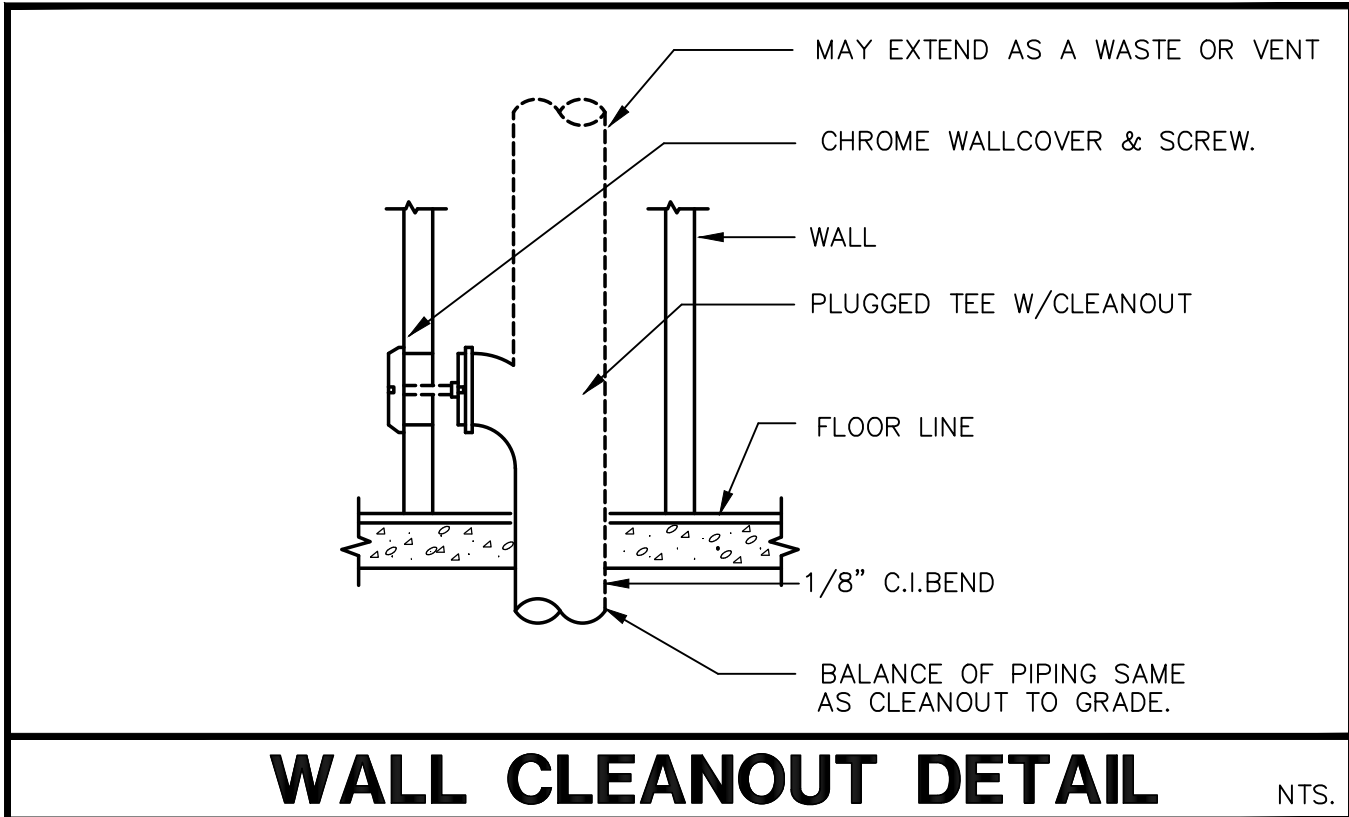
PLUMBING GENERAL NOTES	
1. ALL WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, LAWS, ACTS AND ALL AUTHORITIES HAVING JURISDICTION.	
2. THE COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH ALL LANDLORD'S REQUIREMENTS; APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY; AND THE MANUFACTURER'S STRICTEST RECOMMENDATIONS FOR EQUIPMENT AND PRODUCT APPLICATION AND INSTALLATION.	
3. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES, DOCUMENTS AND SERVICES RELATED TO INSTALLATION OF THE WORK.	
4. PRIOR TO SUBMITTING A PROPOSAL, THE CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY INSPECT ALL EXISTING CONDITIONS TO INSURE THAT THE WORK REPRESENTED ON THE DRAWINGS AND IN THESE SPECIFICATIONS CAN BE INSTALLED AS INDICATED.	
5. ALL WORK SHALL BE LOCATED TO AVOID CONFLICTS WITH OTHER TRADES AND PROVIDE ADEQUATE CLEARANCE FOR ARCHITECTURAL DESIGN, PROPER OPERATION AND SERVICE OF EQUIPMENT.	
6. SOIL AND VENT PIPE SHALL BE CAST IRON NO-HUB PIPE. SUBSTITUTING "ABS-DWV" or "PVC-DWV" SCHEDULE 40 PIPE IS ACCEPTABLE PROVIDED IT IS CODE APPROVED FOR USE IN THE BUILDING AND APPROVED BY THE OWNER PRIOR TO INSTALLATION. VERIFY WITH THE ADMINISTRATIVE AUTHORITY BEFORE ANY PLUMBING WORK.	
7. COPPER PIPE SHALL BE USED FOR ALL WATER PIPING EXCEPT SERVICE FROM METER TO BUILDING. TYPE "L" HARD DRAWN COPPER SHALL BE USED FOR PIPE NOT SET UNDER CONCRETE. TYPE "K" SOFT COPPER SHALL BE USED FOR PIPING UNDER CONCRETE. FITTINGS SHALL BE WROUGHT COPPER THROUGHOUT.	
8. INSULATE HOT WATER LINES WITH 1/2" THICK "ARMAFLEX" INSULATION.	
9. SLOPE ALL SEWER LINES AT 1/4" PER FOOT, UNLESS OTHERWISE NOTED.	

PLUMBING SYMBOL LIST			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SOIL WASTE LINE (W)		SHUT OFF VALVE (GATE)
	GREASE WASTE LINE (GW)		CHECK VALVE
	VENT LINE (V)		UNION
	COLD WATER (C.W.)		LUBRICATED PLUG VALVE
	HOT WATER (H.W.)		HOSE BIBB (H.B.)
	HOT WATER RETURN		BRANCH RISE OFF MAIN
	GAS LINE		SURFACE CLEANOUT
	TEMPERED WATER		FLOOR CLEANOUT
	FILTERED WATER		GLOBE VALVE
	CONDENSATE DRAIN LINE		BALL VALVE
	PRIMARY DRAIN LINE		ROOF DRAIN LEADER
	SECONDARY DRAIN LINE		OVERFLOW DRAIN LEADER
	BUILDING SEWER		INDUSTRIAL COLD WATER
	FLOOR DRAIN (F.D.)		EXISTING SOIL WASTE LINE (W)
	FLOOR SINK (F.S.)		EXISTING VENT LINE (V)
	ROOF DRAIN (R.D.)		EXISTING COLD WATER (C.W.)
	OVER FLOW DRAIN		EXISTING HOT WATER (H.W.)
	WALL CLEANOUT		POINT OF CONNECTION

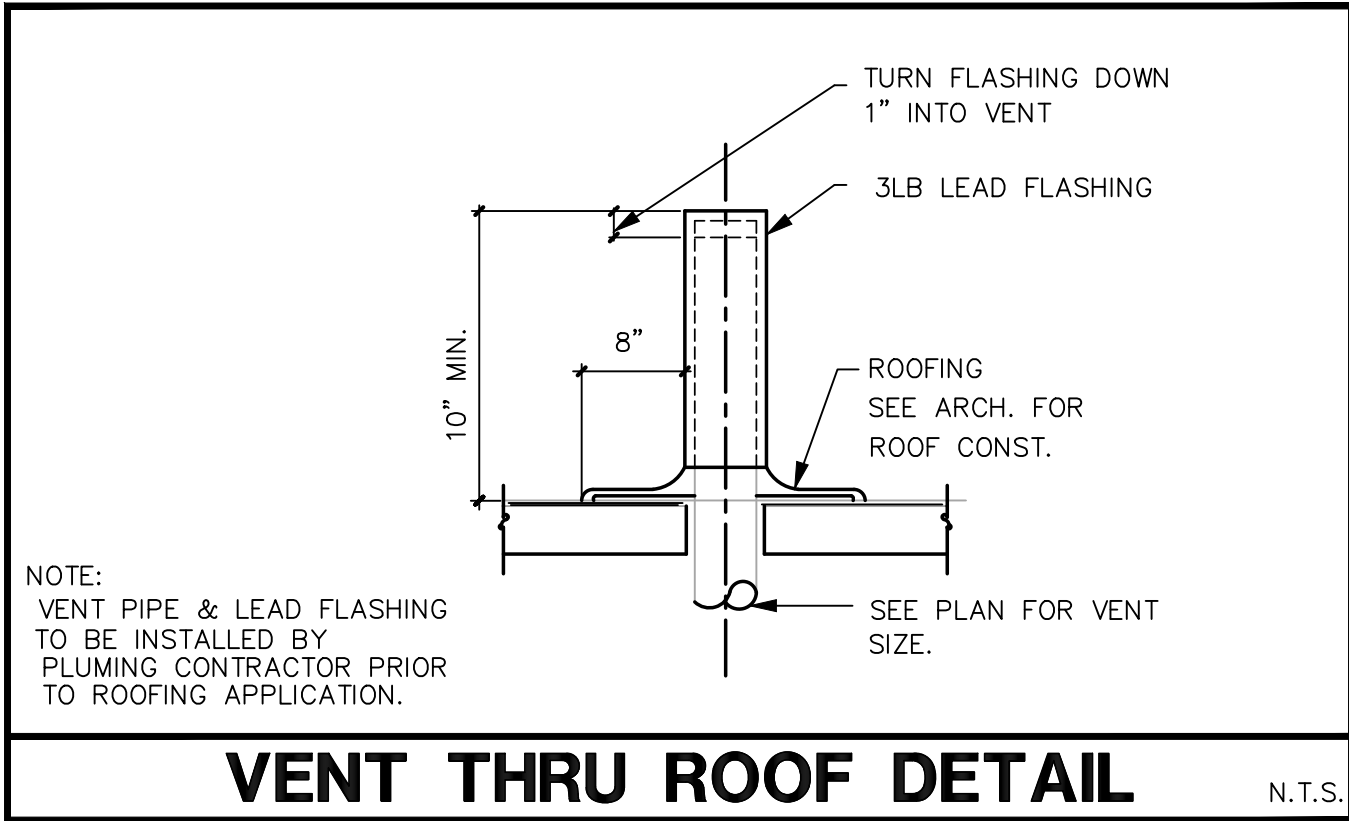
PS18-1

NOTE: ONLY THOSE SYMBOLS SHOWN ON THE DRAWING APPLY


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THE CONTRACTOR SHALL FIELD VERIFY ANY/ CONDITIONS WHICH MAY CONFLICT WITH THE DESIGN SHOWN ON THESE PLANS. NOTIFY ARCHITECT.	
THE CONTRACTOR IS RESPONSIBLE TO HIRE A LOCATING COMPANY TO LOCATE EXISTING MAIN SANITARY PIPING BELOW GROUND AS REQUIRED. THE CONTRACTOR SHALL CONTACT THE ARCHITECT IF THE LOCATION OF THE EXISTING MAIN SANITARY PIPING CONFLICTS WITH THE DESIGN SHOWN ON PLANS.	



NTS.



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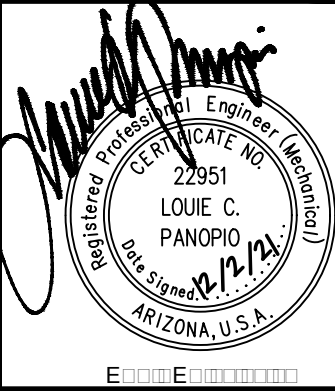
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Project Manager
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Project Number
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BRO OFFICE BUILDING

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Revisions	
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PLUMBING NOTES,
SCHEDULES & DETAILS

P-3.0



ELECTRICAL SYMBOLS (NOTE: ALL SYMBOLS MAY NOT APPLY TO THIS PROJECT)

	CEILING MOUNTED LIGHT FIXTURE
	WALL MOUNTED LIGHT FIXTURE
	FLUORESCENT FIXTURE
	EXIT SIGN – SEE LIGHT FIXTURE SCHEDULE
	JUNCTION BOX IN ACCESSIBLE LOCATION ABOVE REMOVABLE CEILING W/ FLEXIBLE CONDUIT CONNECTION TO LIGHT FIXTURE
	FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT
	SURFACE--MOUNT EMERGENCY LIGHTING BATTERY PACK--SINGLE OR DOUBLE HEAD--SEE LIGHT FIXTURE SCHEDULE
	RECESSED EMERGENCY LIGHTING BATTERY PACK--SINGLE OR DOUBLE HEAD--SEE LIGHT FIXTURE SCHEDULE
	JUNCTION BOX IN ACCESSIBLE LOCATION
	DUPLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED
	FOUR--PLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED
	ISOLATED GROUND RECEPTACLE AT + 15" A.F.F. TO BOTTOM OR AS NOTED
	RECEPTACLE (TYPE AS SHOWN) AT + 42" A.F.F.
	SPECIAL USE RECEPTACLE. VERIFY NEMA NUMBER AND MOUNTING HEIGHT WITH EQUIPMENT
	TOGGLE SWITCH – SINGLE POLE, 3--WAY, 4--WAY AT +42" OR AS NOTED ON PLANS.
	SINGLE--POLE, ILLUMINATED HANDEL OR PILOT LIGHT TOGGLE SWITCH AT +42" OR AS NOTED ON PLANS
	MOTOR RATED SWITCH WITH THERMAL PROTECTION
	DUAL TECHNOLOGY OCCUPANCY SWITCH WALL MOUNTED AS MANUF. BY "LUTRON" 0--10V LED/DIMMER TYPE
	DUAL TECHNOLOGY OCCUPANCY SWITCH WALL MOUNTED AS MANUF. BY "LUTRON" 0--10V LED TYPE
	INTELLIGENT POWER PACK FOR 0--10V DIMMING AND OCCUPANCY SENSOR INTERFACE AND MANUAL 'ON' FUNCTION AS MANUFACTURED BY LUTRON
	PHOTOCELL – TORK #2100 – MOUNT ON ROOF AND AIM NORTH
	TIMESWITCH: TORK 'W' SERIES OR EQUAL
	CIRCUIT IN CONDUIT CONCEALED IN FLOOR
	CIRCUIT IN CONDUIT CONCEALED IN WALLS OR ABOVE CEILING
	HOMERUN TO PANELBOARD OR AS NOTED
	PANELBOARD, MOUNT TOP OF PANEL AT + 6"--8". STUB (2) 3/4" E.C. INTO ACCESSIBLE CEILING SPACE ON FLUSH MOUNTED PANELS.
	MOTOR: SIZE AND RATING AS SHOWN. EF INDICATES 55--WATT, 120V. EXHAUST FAN
	A.C. MAGNETIC STARTER BY ELECTRICAL CONTRACTOR. HORSEPOWER, VOLTAGE AND PHASE RATED, NUMBER OF POLES REQUIRED. FURNISH WITH (1) N.O. AUXILLIARY CONTACT (120 V. CONTROL) SINGLE SPEED NON--REVERSING UNLESS OTHERWISE SHOWN ON PLAN
	DISCONNECT SWITCH – HORSEPOWER RATED, FUSED, NEMA 3R WHERE OUTSIDE. N.F. INDICATES NON--FUSED. (FUSE PER EQUIPMENT MANUFACTURERS' SPECIFICATIONS.)
	STRIP HEATER AND CONTROL
	MOTOR CONTROLLER – FURNISHED WITH EQUIPMENT
	TELEPHONE OUTLET AT +15" TO BOTTOM OR AS NOTED WITH 3/4"C. UP INTO ACCESSIBLE CEILING SPACE UNLESS SHOWN OTHERWISE
	PAY PHONE OUTLET AT + 42" A.F.F. OR AS NOTED WITH 3/4"C. TO T.M.B.
	DATA OUTLET AT + 15" A.F.F. TO BOTTOM OR AS NOTED. STUB 3/4"C. INTO ACCESSIBLE CEILING SPACE
	DATA/TELEPHONE OUTLET AT + 15" A.F.F. TO BOTTOM OR AS NOTED. STUB 3/4"C. INTO ACCESSIBLE CEILING SPACE
	APPROVED TEMPERATURE SEAL--OFF AND EXPANSION JOINTS AS REQ'D BY N.E.C. ART. #300--7
	FLUSH FLOOR DUPLEX OUTLET AND DATA/TELEPHONE OUTLET COMBO WITH BRASS DEVICE PLATE
	FLUSH FLOOR DATA RECEPTACLE WITH BRASS COVER PLATE AND 3/4"C. STUBBED TO ABOVE ACCESSIBLE CEILING LOCATION
	FLUSH FLOOR TELEPHONE RECEPTACLE WITH BRASS COVER PLATE AND 3/4"C. STUBBED TO ABOVE ACCESSIBLE CEILING LOCATION
	FLUSH FLOOR DUPLEX OUTLET WITH BRASS DEVICE PLATE
	FLUSH FLOOR FOURPLEX OUTLET WITH BRASS DEVICE PLATE
	ISOLATED GROUND RECEPTACLE "HUBBELL" # IC5263 20A, 125V, FLUSH FLOOR WITH BRASS DEVICE PLATE
	TELEVISION OUTLET AT + 15" TO BOTTOM OR AS NOTED. STUB 3/4"C INTO ACCESSIBLE CEILING SPACE
	DIMMER SWITCH AT + 42" A.F.F. "LUTRON" NP SERIES. SIZE DIMMER FOR LOAD. TRACK LIGHTING SHALL HAVE "LUTRON" NP2000 DIMMER
	A.D.A.--APPROVED FIRE ALARM STROBE
	A.D.A.--APPROVED FIRE ALARM HORN/STROBE
	A.D.A.--APPROVED FIRE ALARM PULL STATION
	A.D.A.--APPROVED SMOKE DETECTOR MOUNTED IN CEILING OR AS INDICATED
	OCCUPANCY SENSOR 360 DEGREE (DUAL TECHNOLOGY) 0--10V CEILING MOUNTED AS MANUFACTURED BY LUTRON (NO SUBSTITUTIONS)
	OCCUPANCY SENSOR 360 DEGREE (DUAL TECHNOLOGY) 1000W CEILING MOUNTED AS MANUFACTURED BY LUTRON (NO SUBSTITUTIONS)
	WEATHER PROOF
	ELECTRIC DRINKING FOUNTAIN
	SERVICE ENTRANCE SECTION
	TELEPHONE MOUNTING BOARD: 4' X 8' X 3/4" PLYWOOD WITH #6 CU. BOND WIRE TO GROUNDING ELECTRODE SYSTEM

GENERAL NOTES:

ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH 2017 (OR LATEST ADOPTED) NATIONAL ELECTRICAL CODES AND 2018 INTERNATIONAL ENERGY CONSERVATION CODE AND ALL APPLICABLE LOCAL CODES, ORDINANCES AND MAG AMENDMENTS TO N.E.C.

ALL WIRING SHALL BE COPPER UNLESS OTHERWISE NOTED. INSULATION SHALL BE TYPE XHHW OR THHN/THWN.

ALL PENETRATIONS OF FIRE RESISTIVE FLOORS OR SHAFT WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DETAILS THAT CONFORM TO UNDERWRITERS LABORATORY LISTINGS FOR THROUGH PENETRATIONS FIRESTOP SYSTEMS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING DETAILS WHICH SHOW COMPLETE CONFORMANCE TO THE U.L. LISTING TO THE INSPECTOR. THE DRAWINGS SHALL BE SPECIFIC FOR EACH PENETRATION WITH ALL VARIABLES DEFINED.

CONTRACTOR IS TO VERIFY CONDITION OF EXISTING INSTALLATIONS BY FIELD INSPECTION. CONTRACTOR IS TO PROVIDE NEW WIRE, CONDUIT, AND BOXES AS REQUIRED WITH NO ADDITIONAL COST.

COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATIONS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN WITH NO ADDITIONAL COST.

ALL GENERAL USE RECEPTACLES MOUNTED WITHIN 6' OF A BASIN OR SINK SHALL BE G.F.C.I. PROTECTED.

PROVIDE EQUIPMENT GROUND CONDUCTOR IN ALL RACEWAYS, SIZED IN ACCORDANCE WITH N.E.C. ARTICLE 250.122

CONTRACTOR IS TO VERIFY EXACT LOCATIONS, MOUNTING HEIGHTS AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PROVIDED BY OTHERS PRIOR TO ROUGH--IN.

CONTRACTOR IS TO PROVIDE DISCONNECT SWITCHES, TRANSFORMERS AS REQUIRED, AND FINAL CONNECTIONS TO EQUIPMENT PER OWNER.

PROVIDE AND INSTALL ADDITIONAL EXIT SIGNS, EMERGENCY LIGHTS AND NIGHT LIGHTS IF REQUIRED BY GOVERNING INSPECTOR.

WHEN ELECTRICAL CONTRACTOR REMOVES AN ITEM CAUSING CIRCUITRY TO OTHER ITEMS TO BE INTERRUPTED, ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CONDUIT, WIRE, BOXES, ETC. AND SHALL RECONNECT ALL ITEMS SO THEY WILL NOT BE INTERRUPTED.

WHEN AN ITEM IS SHOWN TO BE RELOCATED, ELECTRICAL CONTRACTOR SHALL EXTEND WIRING AND CONDUIT TO THE APPROPRIATE NEW LOCATION AND PROVIDE ALL NECESSARY JUNCTION BOXES, SPLICES, COVER PLATES, ETC.

CONTRACTOR SHALL RELOCATE ALL ELECTRICAL EQUIPMENT IN AREAS BEING REMOVED, REMODELED, REPLACED OR CONSTRUCTED IF EQUIPMENT INTERFERES WITH OPERATION OF CONSTRUCTION, OCCUPANCY OR INTENDED USE OF SPACE.

CONTRACTOR SHALL COORDINATE ALL EQUIPMENT RELOCATION WITH OWNER'S REPRESENTATIVE. ALL ELECTRICAL CONNECTIONS REQUIRING AN OUTAGE SHALL BE COORDINATED WITH THE OWNER. CONTRACTOR SHALL PROVIDE NECESSARY TEMPORARY FEEDERS AND ANY ADDITIONAL ELECTRICAL EQUIPMENT REQUIRED TO MAINTAIN CONTINUOUS OPERATION OF EMERGENCY AND/OR FIRE ALARM SYSTEMS.

ELECTRICAL CONTRACTOR SHALL PROPERLY SUPPORT ALL EXISTING AND NEW CONDUIT PER NEC ART. 300--11.

THE USE OF MC CABLE IS ACCEPTABLE IN ACCORDANCE WITH NEC ART. 330, BUT LIMITED TO USE FOR CONCEALED BRANCH CIRCUITS. MC CABLE MAY NOT BE USED FOR HOME RUNS OR OUTDOORS.

ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL PANELBOARDS AND DISCONNECT SWITCHES WITH PLASTIC MICARTA 'ENGRAVED' NAMEPLATES IN ACCORDANCE WITH NEC ART. 110.22 AND TYPED PANEL SCHEDULE DIRECTORIES PER NEC ART. 408.4

ALL JUNCTION BOXES USED IN THE PROJECT SHALL BE MARKED WITH PANEL DESIGNATION AND CIRCUIT NUMBERS VIA A PERMANENT BLACK MARKER.

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	MFR.	CATALOG #	VOLT.	LAMPS		MT'G. HT.	INPUT WATTS
					#	TYPE		
L1	LED INDUSTRIAL STRIP LIGHT WITH 0--10V DIMMING DRIVER	VISCOR LIGHTING	LCOMN48--LED--8--40K--040L--UNV--P95--P96--V08	120V.	1	36W LED/4K	SUSPENDED WITH J--CHAIN	36 WATTS
L1E	LED INDUSTRIAL STRIP LIGHT WITH 0--10V DIMMING DRIVER & EM BATTERY	VISCOR LIGHTING	LCOMN48--LED--8--40K--040L--UNV--P95--B39--P96--V08	120V.	1	36W LED/4K	SUSPENDED WITH J--CHAIN	36 WATTS
L2	LED LENSED STRIP LIGHT WITH 0--10V DIMMING DRIVER	VISCOR LIGHTING	LCOM48--LED--8--40K--044L--UNV--P77 V78	120V.	1	36W LED/4K	SURFACE	36 WATTS
L2E	LED LENSED STRIP LIGHT WITH 0--10V DIMMING DRIVER & EM BATTERY	VISCOR LIGHTING	LCOM48--LED--8--40K--044L--UNV--B39--P77 V78	120V.	1	36W LED/4K	SURFACE	36 WATTS
L3	6" ROUND LED DOWNLIGHT WITH 0--10V DIMMING DRIVER & EM BATTERY	CONTECH LIGHTING	RL38SA--3--40K--D--CTR3002	120V.	1	22W LED/4K	RECESSED	22 WATTS
L4E	DIE--CAST ALUMINUM HOUSING EMERGENCY EGRESS LIGHT EMERGENCY BATTERY PACK AND WET LABEL	KENALL	MS11FL--PP--MW--20L40K--120--LEL--SA	120V.	1	20W LED/4K	SURFACE	20 WATTS
	COMBO LED EXIT SIGN AND EMERGENCY EGRESS LIGHT WITH EMERGENCY BATTERY PACK THERMOPLASTIC HOUSING	DUAL--LITE	CCRG	120V.	1	4W LED	UNIV	4 WATTS

HVAC EQUIPMENT SCHEDULE

EQUIP. NO.	VOLT/ PHASE	MCA/ MOCP	HP/KW	CONNECTION	WIRE / CONDUIT SIZE	DISCONNECT	REMARKS
(NEW) HP 1	208/1	18.3A 30.0A	--	DIRECT	(2)#8'S CU.,(1)#10 CU.,E.G., 3/4"C	250V 30A/2P/2F DISC SW NEMA 3R	HEAT PUMP
(NEW) EC 1	208/3	6.9A 15A	1.5HP	DIRECT	(3)#10'S CU.,(1)#10 CU.,E.G., 3/4"C	250V 30A/3P/3F DISC SW NEMA 3R	EVAPORATIVE COOLER
(NEW) EF 1	120V/1	2.0A	FRAC	DIRECT	(2)#12'S CU.,(1)#12'S CU.,EG. 3/4"C	20A HP RATED SINGLE POLE TOGGLE SWITCH W/THERMAL OVERLOADS PROTECTION	EXHAUST FAN

* VERIFY ELECTRICAL CHARACTERISTICS (ie: KW, FLA, VOLTAGE, etc.) OF ACTUAL SUPPLIED EQUIPMENT PRIOR TO ORDERING ANY ELECTRICAL DEVICES, etc. SIZE OF FUSES, AND DISCONNECT SWITCHES PER SUPPLIED MECHANICAL EQUIPMENT MANUFACTURER'S SPECIFICATIONS.

WIRE SCHEDULE

AMP/VOLT DISTANCE	CONDUCTOR SIZE	AMP/VOLT DISTANCE	CONDUCTOR SIZE	AMP/VOLT DISTANCE	CONDUCTOR SIZE
20A 120V 0--80'	#12	30A 120V 0--75'	#10	20A 277V 0--150'	#12
20A 120V 80--130'	#10	30A 120V 75--110'	#8	20A 277V 150--200'	#10
20A 120V 130--180'	#8	30A 120V 110--180'	#6	20A 277V 200--350'	#8
20A 120V 180--275'	#6	30A 120V 180--250'	#4	20A 277V 350--400'	#6

NOTE:

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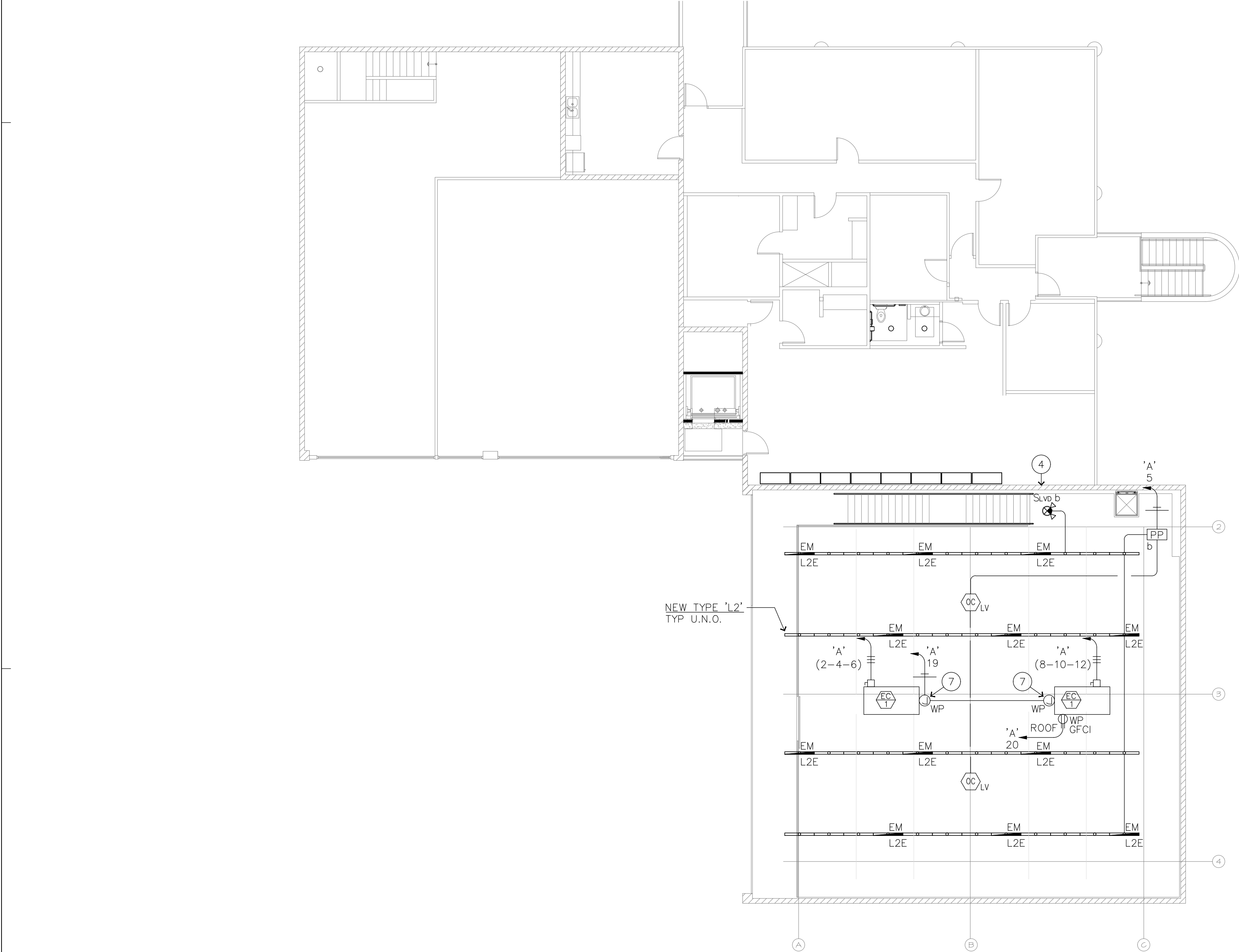
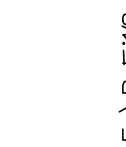
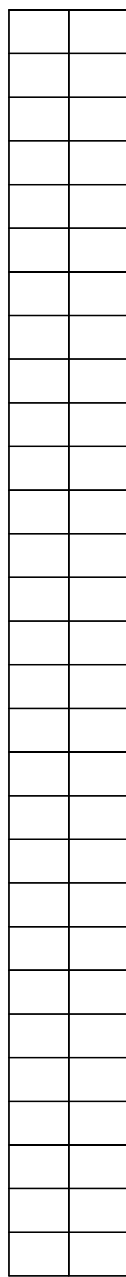
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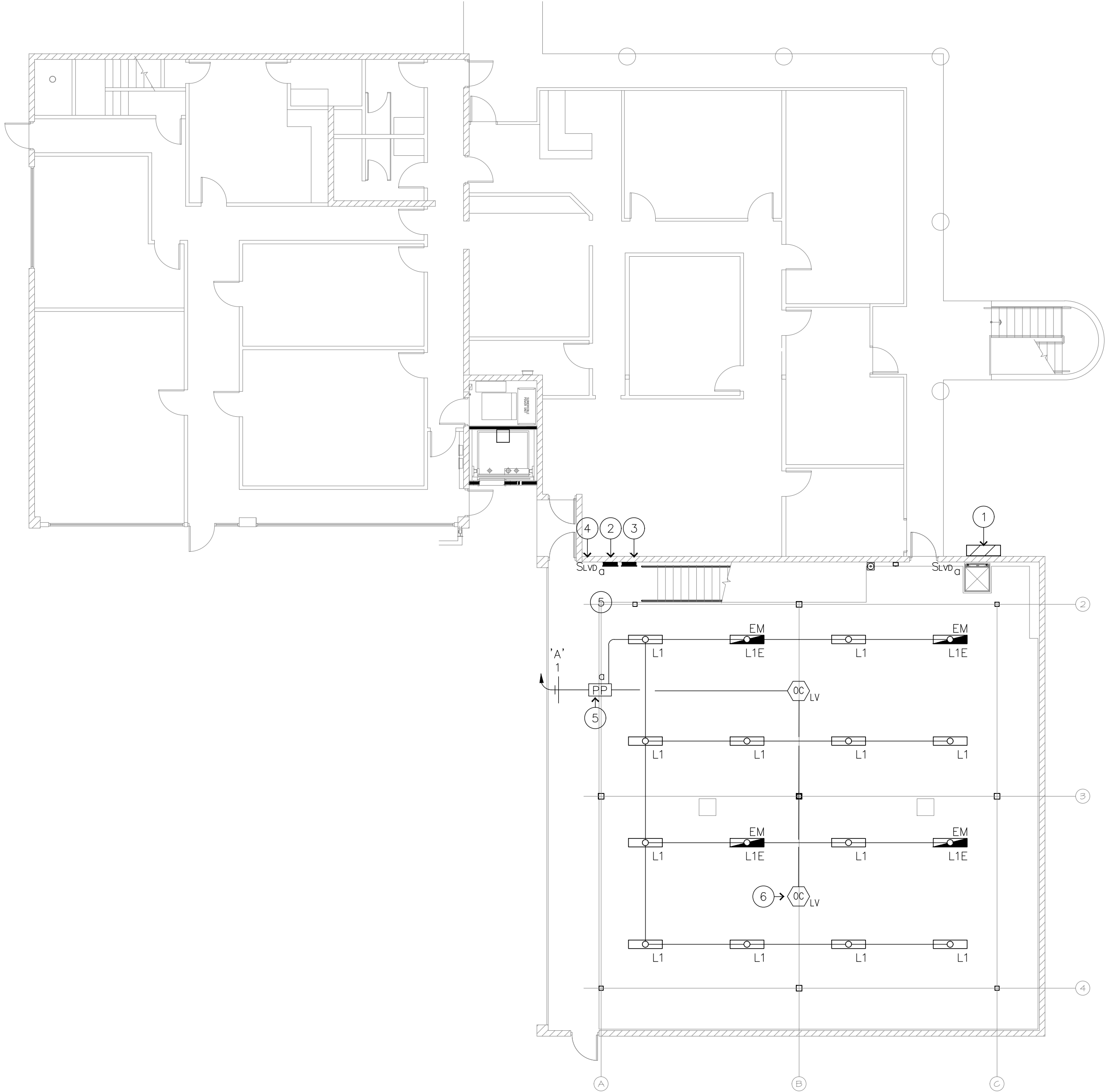
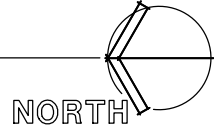
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Revisions	
Date 9/28/21	Issued for SUBMITTAL
ELECTRICAL SYMBOLS SCHEDULES & IECC CALC'S	

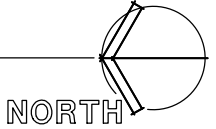
E-10



2 ELECTRICAL BUILDING PLAN - SECOND FLOOR
SCALE: 1" = 10'-0"



1 ELECTRICAL BUILDING PLAN - SECOND FLOOR
SCALE: 1" = 10'-0"



PLAN NOTE #1

THE ELECTRICAL CONTRACTOR SHALL PROVIDE AN UPDATED ELECTRICAL PANEL SCHEDULE DIRECTORY DESCRIPTION IN ACCORDANCE WITH NEC 408.4(A): "EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO IT'S CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE"

KEYED NOTES:

- EXISTING ELECTRICAL SERVICE EQUIPMENT (SES). REFER TO ONE-LINE DIAGRAM ON SHEET E-30 FOR ADDITIONAL INFORMATION.
- EXISTING PANEL 'A' SHOWN FOR REFERENCE PURPOSES ONLY. NO NEW LOAD ADDED TO THIS ELECTRICAL PANEL.
- NEW PANEL 'A1'
- NEW 0-10V LED DIMMER SWITCH - ROUTE THRU NEW POWER PACK AS MANUFACTURED BY LUTRON.
- NEW 0-10V POWER PACK AS MANUFACTURED BY LUTRON.
- NEW 0-10V DUAL TECHNOLOGY OCCUPANCY (CEILING) SENSOR AS MANUFACTURED BY LUTRON. SENSOR SHALL HAVE A TIME DELAY SETTING OF 20 MINUTES. COORDINATE EXACT REQUIREMENTS AND MOUNTING LOCATION AS DIRECTED BY MANUFACTURERS RECOMMENDATIONS.
- PROVIDE ROOF MOUNTED JUNCTION BOX FOR 120V SINGLE PHASE FRACTIONAL HP EVAPORATIVE COOLER PUMP. CONTRACTOR SHALL FIELD VERIFY EXACT MOUNTING LOCATION PRIOR TO ROUGH-IN.
- ALL EMERGENCY LIGHTS AND EXIT SIGNS SHALL BE CONNECTED AHEAD OF ROOM / AREA SWITCHES PER NATIONAL ELECTRICAL CODE.

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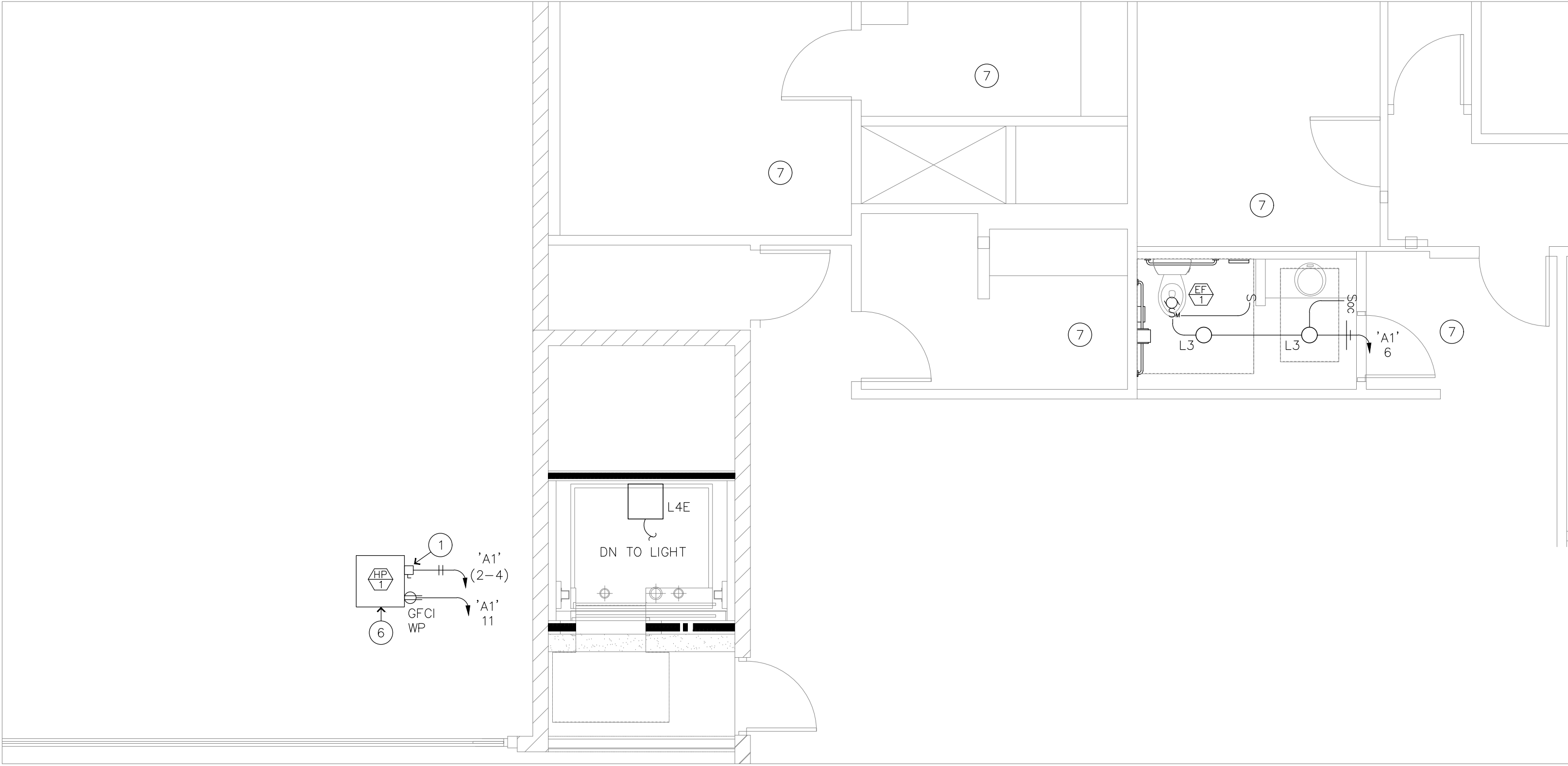
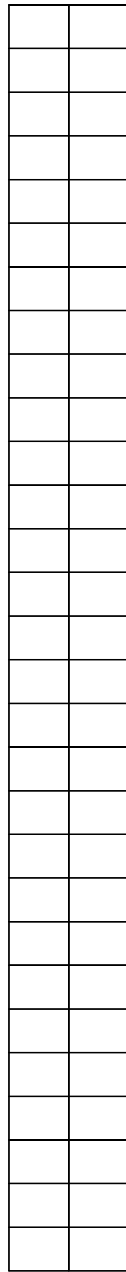
Revisions

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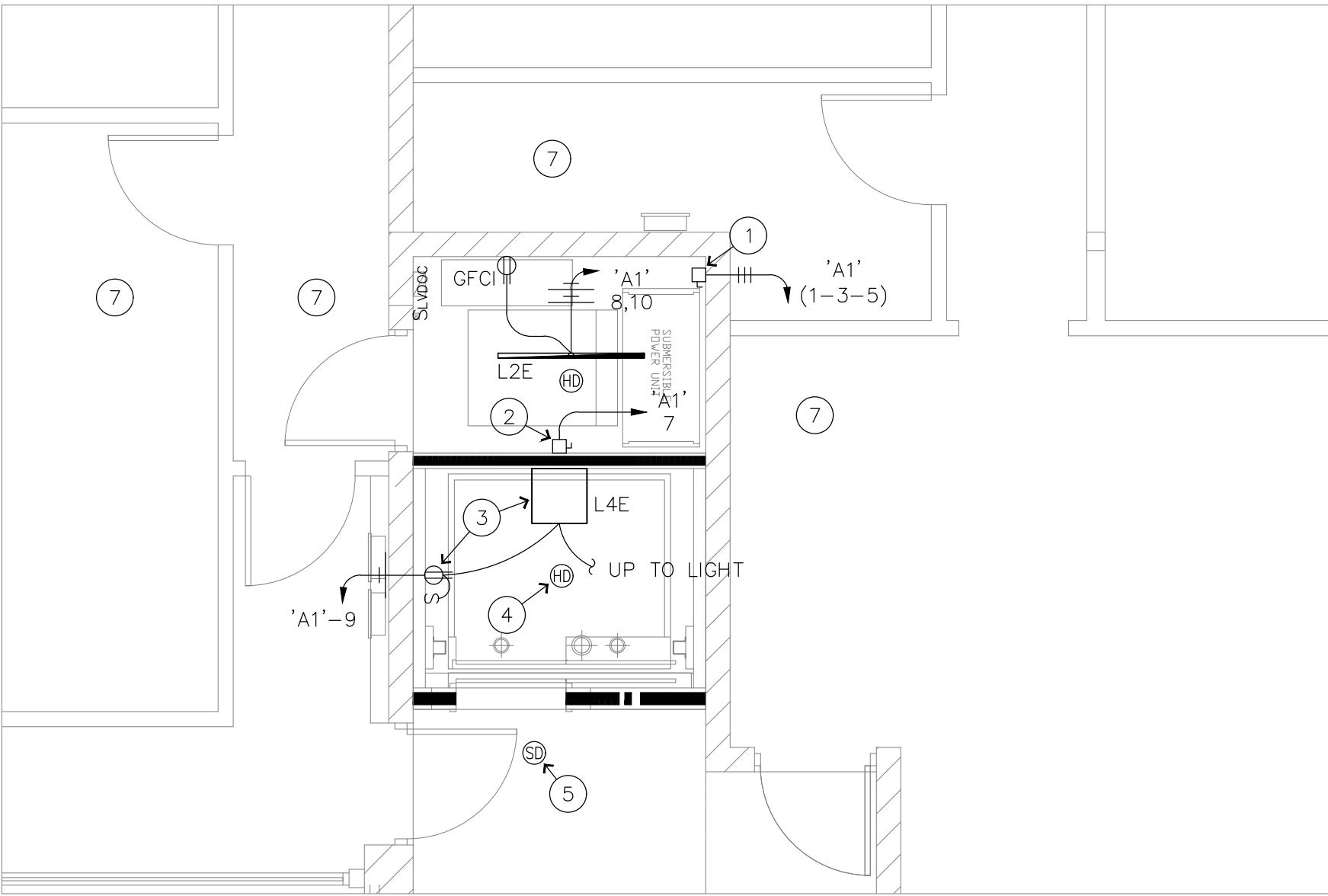
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ELECTRICAL OVERALL POWER PLAN

E-20



2 ENLARGED POWER PLAN - SECOND FLOOR
SCALE: 1/4" = 1'-0" NORTH



1 ENLARGED POWER PLAN - FIRST FLOOR
SCALE: 1/4" = 1'-0" NORTH

GENERAL NOTES:

- ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH 2017 ADOPTED NATIONAL ELECTRICAL CODES AND ALL APPLICABLE LOCAL CODES, ORDINANCES AND MAG AMENDMENTS TO N.E.C.
- THE ROUTING OF ALL SURFACE MOUNTED/EXPOSED CONDUIT IN UNFINISHED AREAS (OR WHERE NOTED ON THE DRAWINGS) SHALL BE COORDINATED WITH, AND SHALL BE APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION.
- ALL BRANCH CIRCUITS SHALL BE RUN ABOVE CEILING AND IN WALLS.
- SIZE INDIVIDUAL JUNCTION BOXES AS REQUIRED TO SAFELY ACCOMMODATE NUMBER OF CIRCUITS CONTAINED IN EACH BOX.
- ALL WIRING SHALL BE #12 THHN/THWN COPPER IN 1/2" CONDUIT, UNLESS OTHER NOTED. IF BRANCH CIRCUITS EXCEED 65 FEET IN LENGTH, UPSIZE CONDUIT AND WIRE PER N.E.C.
- ALL EQUIPMENT SHALL BE U.L. LISTED WHERE APPLICABLE.
- CONTRACTOR SHALL VERIFY THAT ALL NEW CIRCUIT BREAKERS AND OR FUSIBLE SWITCHES BEING ADDED TO NEW PANELS ARE A.I.C. RATED TO THE NEW PANEL RATING AS APPLICABLE.
- CONTRACTOR SHALL VERIFY WITH AUTHORITY HAVING JURISDICTION WHETHER LOW VOLTAGE WIRING AND CABLE IS REQUIRED TO BE INSTALLED IN CONDUIT. FURNISH AND INSTALL LOW VOLTAGE WIRING CONDUIT AS REQUIRED.
- COORDINATE WITH MECHANICAL, PLUMBING, AND OTHER DISCIPLINES FOR EXACT LOCATIONS AND REQUIREMENTS OF ALL EQUIPMENT PRIOR TO ROUGH-IN WITH NO ADDITIONAL COST.
- PROVIDE EQUIPMENT GROUND CONDUCTOR IN ALL RACEWAYS, SIZED PER N.E.C. ART. #250.122
- CONTRACTOR IS TO PROVIDE DISCONNECT SWITCHES, TRANSFORMERS AS REQUIRED, AND FINAL CONNECTIONS TO EQUIPMENT PER OWNER.
- ELECTRICAL CONTRACTOR SHALL PROPERLY SUPPORT ALL NEW CONDUIT PER NEC ART. 300.11.
- ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL PANELBOARDS AND DISCONNECT SWITCHES WITH PLASTIC MICARTA "ENGRAVED" NAMEPLATES IN ACCORDANCE WITH NEC ART. 110-22 AND TYPE PANEL SCHEDULE DIRECTORIES PER NEC ART. 408.4.
- ALL JUNCTION BOXES USED IN THIS PROJECT SHALL BE MARKED WITH PANEL DESIGNATION AND CIRCUIT NUMBERS VIA PERMANENT BLACK MARKER.
- CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY AND CALCULATE SHORT CIRCUIT FAULT CURRENT AND ARC FLASH, AND PROVIDE LABELS ON ELECTRICAL EQUIPMENT PER N.E.C. AND LOCAL JURISDICTIONS.
- ALL WIRING DEVICES ARE NEW UNLESS NOTED OTHERWISE.
- DEVICE AND COVER PLATE FINISH. COORDINATE EXACT REQUIREMENTS WITH ARCHITECT.

KEYED NOTES:

- NEW 60-AMP, 208-VOLT, 3-PHASE 'BUSSMAN' ALL-IN-ONE POWER MODULE WITH FUSED POWER SWITCH AND INTERNAL SHUNT-TRIP FOR COMPLETE CONNECTION TO ELEVATOR. PROVIDE WITH (1) SET OF AUXILIARY CONTACTS FOR AUTOMATIC RECALL AND INTER-LOCK WITH HEAT & SMOKE DETECTORS ASSOCIATED WITH EQUIPMENT ROOM & ELEVATOR SHAFT (REFER TO PLAN). FIELD-VERIFY EXACT LOCATION OF ELEVATOR EQUIPMENT. E.C SHALL PROVIDE WITH 35-AMP, CLASS LPJ FUSES (VERIFY WITH ELEVATOR MANUFACTURER'S SPECIFICATIONS PRIOR TO BID). 6.6HP MOTOR @208V 3ø.
- ELEVATOR CAB LIGHT DISCONNECT SWITCH PER N.E.C. 620-22, 620-53.
- 20A GFCI RECEPTACLE AND LIGHT FIXTURE MOUNTED IN PIT PER N.E.C. 620-24.
- HEAT DETECTORS IN ELEVATOR PIT/HOISTWAY AND EQUIPMENT ROOM MOUNTED WITH-IN 24" NEXT TO EACH FIRE SPRINKLER HEAD. HEAT DETECTORS SHALL BE TEMPERATURE-SET BELOW SPRINKLER HEAD AND SHALL SHUNT ELEVATOR POWER OFF.
- SMOKE DETECTOR IN ELEVATOR LOBBY FOR ELEVATOR RECALL
- MECHANICAL EQUIPMENT, REFER TO MECHANICAL AND PLUMBING INFORMATION AND WIRING OF UNIT AS SHOWN. VERIFY EXACT LOCATION AND WIRING REQUIREMENTS WITH MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO BID.
- EXISTING NOT INCLUDED IN SCOPE OF WORK.

PLAN NOTE #1

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Checked By DW	
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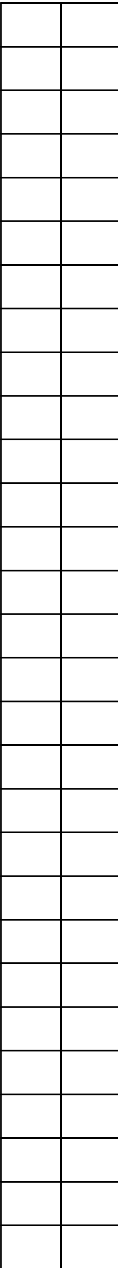
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ELECTRICAL ENLARGED PLANS

E-21



(EXIST) AS MANUFACTURED BY I.T.E.										(SERIES RATED 65/10K)									
PANEL	A	100 AMP	120/208V., 3ø, 4W	MAIN	LUG ONLY	NEMA 1	SURF	MTG											
LOCATION	WAREHOUSE			TYPE	SEE C.B. NOTE	BREAKER RATING	10,000 AIC												
USE/AREA SERVED	CB No	LOAD			No	CB	USE/AREA SERVED												
NEW LIGHTING WAREHOUSE	20	1	576		15		NEW EVAP COOLER WAREHOUSE												
EX LTG	20	3	828		4														
				828															
NEW LIGHTING WAREHOUSE	20	5			6		NEW EVAP COOLER WAREHOUSE												
EX LTG	20	7	828		8														
				828															
EX REC WAREHOUSE SOUTH	20	9			10		NEW PANEL 'A1'												
EX REC WAREHOUSE WEST	20	11			12														
					828														
SPARE	15	13			60		NEW PANEL 'A1'												
		15	6419		14														
		17		6485	16														
		3			4844	18	EX REC WAREHOUSE												
NEW EVAP COOLER PUMPS	20	19	500		20														
EX NOT IDENTIFIED	20	21			22														
EX REC WAREHOUSE EAST	20	23			24														
TOTAL LOAD (EXIST)		2135	2135	2135															
TOTAL LOAD ADDED (NEW)		9151	8141	8228															
25 % CONTINUOUS																			
TOTAL (CODE)		11286	10276	10183	11286 VA / 120V. =	94.0	A.												

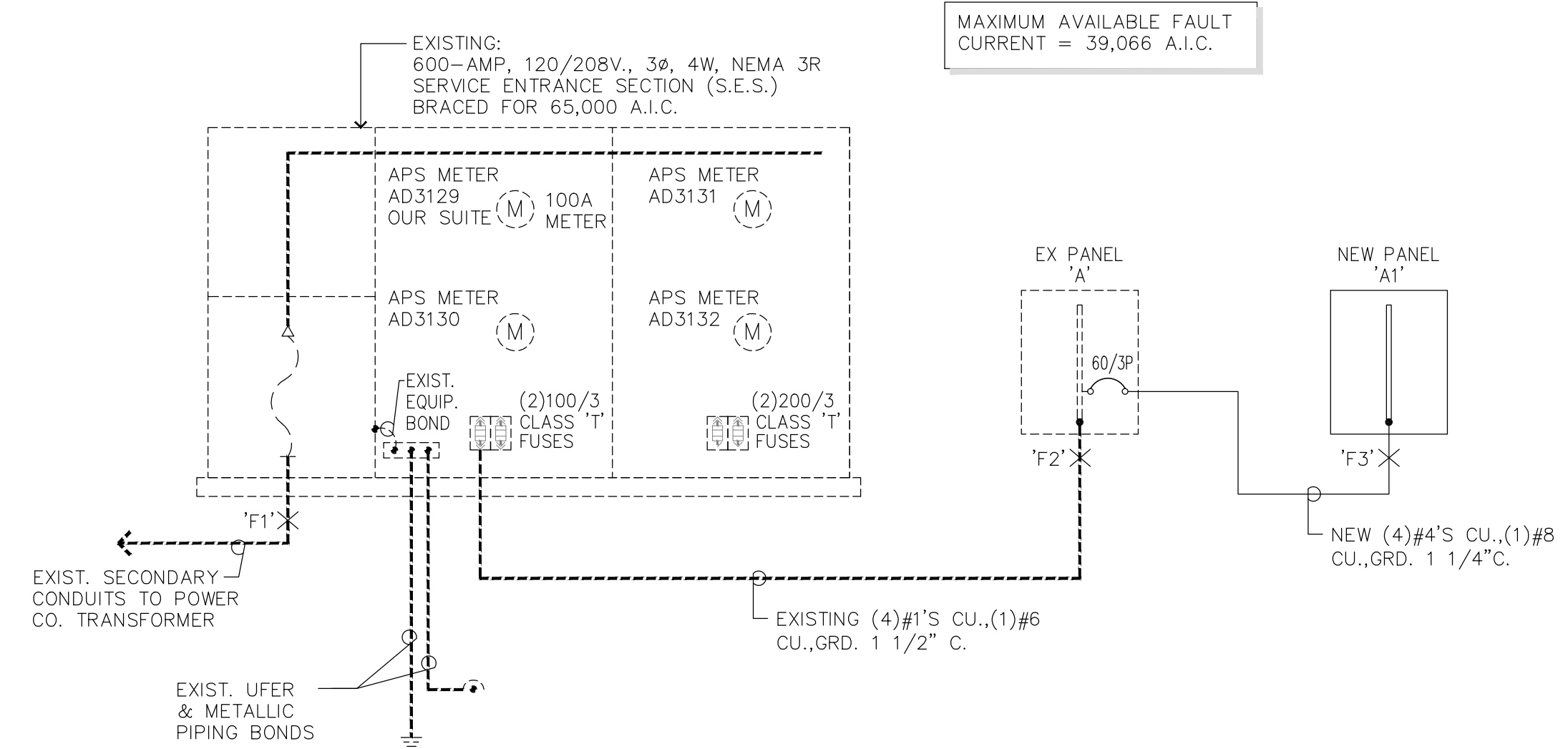
(NEW) MATCH EXISTING MANUFACTURE I.T.E.										(SERIES RATED 65/10K)										
PANEL	A1	100 AMP	120/208V., 3ø, 4W	MAIN	LUG ONLY	NEMA 1	SURF	MTG												
LOCATION	WAREHOUSE			TYPE	SEE C.B. NOTE	BREAKER RATING	10,000 AIC													
USE/AREA SERVED	CB	No	LOAD			No	CB	USE/AREA SERVED												
ELEVATOR MOTOR	35	1	3360			2	15	HP-1 (ELEVATOR)												
		2	1803			3	2													
		3		3360		4	2													
		5		1803		6	2													
ELEVATOR CAB LIGHT/REC	20	7	280			8	20	LTG/EF RESTROOM												
		9	36			10	20													
ELEVATOR SHAFT LTG/REC	20	9			202	8	20	LTG ELEVATOR EQUIP RM												
REC ROOF MAINTENANCE	20	11			180	10	20	REC ELEVATOR EQUIP RM												
					180	10	20	REC ROOF WAREHOUSE												
SPACE		13	--	--	--	12	17	SPACE												
SPACE		15	--	--	--	14	16	SPACE												
SPACE		17	--	--	--	15	18	SPACE												
SPACE		19	--	--	--	16	20	SPACE												
SPACE		21	--	--	--	17	22	SPACE												
SPACE		23	--	--	--	18	23	SPACE												
SPACE		25	--	--	--	19	24	SPACE												
SPACE		27	--	--	--	20	26	SPACE												
SPACE		29	--	--	--	21	28	SPACE												
SPACE		29	--	--	--	22	30	SPACE												
TOTAL (CONNECTED)			5579	5645	4004															
25 % CONTINUOUS			840	840	840															
TOTAL (CODE)			6419	6485	4844	6485	VA / 120V. = 54.0													
						A.														

NOTE:
CONTRACTOR SHALL PROVIDE AND INSTALL COMMOM TRIP HANDLES FOR ALL MULTI-CIRCUIT CONDUIT HOMERUNS IN ACCORDANCE WITH N.E.C. ARTICLE 210.4(B)

PANEL LEGEND:

- INDICATES EXISTING CIRCUIT BREAKER & LOAD.
- INDICATES NEW CIRCUIT BREAKER & LOAD. MATCH EXIST MANUFACTURER
- INDICATES CIRCUIT BREAKER WITH 'LOCK-OFF' DEVICE.
- INDICATES EXISTING CIRCUIT BREAKER W/CHANGED LOAD.
- △ REMOVE EXIST BREAKER AND REPLACE WITH NEW C/B AS SHOWN. MATCH EXIST MANUFACTURER.
- * INDICATES CONTINUOUS LOAD TAKEN @ 125% PER N.E.C.

PANEL SCHEDULE NOTE:
THE ELECTRICAL CONTRACTOR SHALL PROVIDE UPDATED PANEL DIRECTORIES IDENTIFYING AREA SERVED FOR ALL OF THE NEW AND EXISTING BRANCH CIRCUITS INCLUDING THOSE LOCATED IN EXISTING PANEL '115' PER N.E.C. ARTICLE 408.4(A): "EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO IT'S CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE".



EXISTING PARTIAL ONE LINE DIAGRAM

- 1. ALL EQUIPMENT & INSTALLATIONS ARE 'EXISTING' UNLESS NOTED AS 'NEW'.
- 2. ELECTRICAL CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING CONDITIONS PRIOR TO ANY WORK.
- 3. ALL CONDUCTOR SIZES BASED ON TYPE 'XHHW' & 'THHN/THWN' COPPER.

LOAD CALCULATIONS:

EXISTING LOAD SES:			
EXISTING HIGH DEMAND = 49.5KW			
$\frac{49.5 \times 1000}{.8pf} \times 125\% = 77343VA \div 208\sqrt{3}$			= 214.8 AMPS
EXISTING LOAD SES: METER #AD3129 (THIS PROJECT)			
EXISTING HIGH DEMAND = 5.1KW			
$\frac{4.1 \times 1000}{.8pf} \times 125\% = 6406VA \div 208\sqrt{3}$			= 17.7 AMPS
EXIST PANEL 'A' (INCLUDES NEW PANEL 'A1') - NEW LOAD ADDED			25340VA + 208√3
NEW REVISED TOTAL LOAD ON EXIST PANEL '115'			= 88.0 AMPS
NEW REVISED TOTAL LOAD ON S.E.S.			= 302.8 AMPS

FAULT CURRENT CALCULATIONS

THE FOLLOWING CALCULATIONS ARE BASED ON THE "POINT-BY-POINT" METHOD WHERE:

$I_{sc} = I_{sc} \times M$
 $M = 1/(1+f)$
 $f = \frac{1.73 \times L \times I}{C \times E}$

$XFMR: IP(sca) = \frac{IP(sca) \times V_p \times \%Z}{100,000 \times KVA}$
 $IS(sca) = \frac{V_p \times M \times I(sca)}{V_s}$

(ALL CALCULATIONS UTILIZE COPPER CONDUCTORS)

Fault Point	Panel / Transformer	Source (Fault Point)	Source I (amps)	Conduit Type	Wire/Bus Size	'C' value	E (volts)	L (length)	X'FMR KVA	X'FMR Z	f	M	Isc
1	EXISTING SES		39,066										39,066
2	EXISTING PANEL 'A'	1	39,066	NM	1 Set(s) of 1	7493	208	60			2.605	0.28	10,837
3	NEW PANEL 'A1'	2	10,837	M	1 Set(s) of 4	3806	208	2			0.047	0.95	10,347

- GENERAL NOTES:**
1. DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
 2. THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.
 3. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.
 4. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT OVER CURRENT PROTECTION / DISCONNECT REQUIREMENTS (N.E.C. ART 440) WITH EQUIPMENT MANUFACTURER NAMEPLATE DATA UPON RECEIPT AT JOB SITE AND COMPARE WITH ELECTRICAL CONNECTION SCHEDULE. CONTACT ENGINEER WITH ANY DISCREPANCIES.
 5. E.C SHALL PROVIDE AND MARK ALL APPROVED SERIES RATED EQUIPMENT PER N.E.C. 240.86(B)

SERIES-RATING NOTE:
THIS SERVICE IS A SERIES RATED SYSTEM: 2-TIER 65/10.
CONTRACTOR SHALL LABEL S.E.S. "CAUTION" - SERIES RATED SYSTEM (65/10). 39,066 AMPS AVAILABLE IDENTIFIED REPLACEMENT COMPONENT REQUIRED." IN ACCORDANCE WITH NEC 110.22.
CONTRACTOR SHALL LABEL PANEL 'A'. "CAUTION" SERIES-RATED SYSTEM (65/10). 10,837 AMPS AVAILABLE. IDENTIFIED REPLACEMENT COMPONENT REQUIRED." IN ACCORDANCE WITH NEC 110.22.
CONTRACTOR SHALL LABEL PANEL 'A1'. "CAUTION" SERIES-RATED SYSTEM (65/10). 10,347 AMPS AVAILABLE. IDENTIFIED REPLACEMENT COMPONENT REQUIRED." IN ACCORDANCE WITH NEC 110.22.
NO DESIGN CHANGES MAY BE MADE TO THE SYSTEM WITHOUT THE PRIOR APPROVAL OF THE DESIGN ELECTRICAL ENGINEER AND THE ELECTRICAL INSPECTOR.

NOTE:
ALL BIDDERS ARE CAUTIONED TO INVESTIGATE THE EXISTING BUILDING CONDITIONS PRIOR TO SUBMITTING THEIR BIDS. THESE DRAWINGS REFLECT INFORMATION ON EXISTING BUILDING SERVICES OR AS GATHERED BY SITE OBSERVATION AND PREVIOUS CONSTRUCTION DOCUMENTS AND HEREBY DOES NOT RELIEVE THE CONTRACTOR TO VERIFYING THE EXISTING CONDITION OF THE AREA OF CONSTRUCTION. NO EXTRAS WILL BE GIVEN DUE TO UNFAMILIARITY WITH ALL EXISTING CONDITIONS.

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Drawn By
EDC

Checked By
DW

Project Number
21054

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BRO OFFICE BUILDING

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TENANT IMPROVEMENT

Revisions

Date
9/28/21

Issued for
SUBMITTAL

ELECTRICAL ONE-LINE DIAGRAM & PANEL SCHEDULES

(SOME SECTIONS MAY NOT APPLY)

1.	GENERAL CONDITIONS	6.1	All materials furnished under this contract shall be new (except as noted), free from defects of any character, shall conform with the standards of the Underwriters Laboratories, Inc. (U.L.) (or other nationally recognized Laboratory), in every case where such a standard has been established and shall be so labeled. It is the intention of these specifications to indicate a standard of quality for all materials incorporated in this work, and where materials are not specified herein and are required to complete the electrical installation, these materials shall be of first quality for use intended. Manufacturers of similar quality products will be considered unless the specifications or drawings indicate otherwise.
2.	SCOPE OF WORK	6.2	Materials shall be suitable for intended use and location. Unless otherwise shown use NEMA-1 for interior areas and NEMA-3R for exterior areas.
	The work included under this section consists of furnishing all materials, equipment, and labor and the performing of all functions, except as otherwise specified herein or shown on the drawings to be performed by others, for the installation and placing into operation of a complete electrical system as specified and shown on the drawings.	6.3	The Architect/Engineer decision as to equal in grade and quality shall rule and be final for all electrical materials incorporated in this work. Where two or more similar type items are furnished, all shall be of the same manufacturer (e.g., all disconnect switches shall be of the same manufacturer) unless otherwise noted herein or shown on the drawings. All material and installation methods used shall be in accordance with the latest and approved electrical and mechanical engineering practices.
3.	GENERAL DESCRIPTION	7.	SERVICE ENTRANCE EQUIPMENT
3.1	The work in general shall consist of, but is not necessarily limited to the following.	7.1	Service entrance equipment shall be in accordance with the requirements of the municipal governing body and serving utility. Shop drawings shall be submitted to the serving utility for written approval before ordering equipment.
3.1.1	Furnishing and installing all fixtures with lamps as indicated on the drawings and as specified herein unless noted.	7.2	Label equipment and each individual overcurrent device per Section 16000.22.
3.1.2	Furnishing and installing all electrical work, panels, service, conduit, wiring, etc., for all outlets and equipment.	7.3	Approved manufacturers are: Sun Valley, Square D, Cutler-Hammer, Siemens/ITE, General Electric
3.1.3	Furnishing and installing all telephone outlets, conduits with pull strings and telephone mounting boards including conduit from telephone mounting board to the building entrance as indicated on the plan.	8.	PANELBOARDS
3.1.4	Furnishing and installing a complete Fire Alarm system as indicated on plans.	8.1	Each panel shall be provided with door lock and two keys, all keyed alike. Each panel shall be provided with typewritten sheet installed on door identifying the use of each branch circuit. Panels shall have copper bussing. Provide door in door cover.
3.1.5	Include \$ _____ hundred dollars) allowance for power and telephone company utility service charges. Difference between actual cost and allowance to be credited or billed to the Owner.	8.2	Label equipment per Section 16000.22
3.1.6	Furnishing and installing all motor starters and control components, not specifically specified to be furnished in accordance with other sections of the specifications.	8.3	Approved manufacturers are: Square D, Cutler-Hammer, Siemens/ITE, General Electric
3.1.7	Furnishing and installing all power and wiring except that which is pre-wired in factory assembled equipment.	9.	STARTERS
3.1.8	Installing all LINE VOLTAGE mechanical control wiring and associated controls which are furnished by the Mechanical Contractor (low voltage control wiring and controls shall be furnished and installed by the Mechanical Contractor).	9.1	All motor starters shall be furnished under this section of the specifications unless an integral part of equipment or noted as furnished with equipment specified under other sections of these specifications.
3.1.9	Painting work as described under other sections of these specifications. Clean and prepare all surfaces ready for painting.	9.2	Separately mounted motor starters shall be across-the-line combination magnetic with 120V coils, fused disconnect contactors, additional auxiliary contact for interlocking of controls. Provide pushbutton or selector switch in cover. Switchboard mounted starters shall be magnetic with 120V coils and additional auxiliary contacts as required for interlocking of controls. Starters shall have an integral control circuit transformer or separate 120V control with control circuit disconnect switch in cover.
3.1.10	Provide temporary construction power as outlined below. This service shall be maintained throughout the entire job as the work progresses. Provide outlets at convenient points and in sufficient numbers so that no extension cord over 50 feet in length is required to reach any work point. Maintain general lighting in corridors, stairs, basement and other areas not receiving sufficient daylight required for safety. Remove temporary work as rapidly as required for or allowed by installation of permanent work.	9.3	Manual starters shall be horsepower, voltage and phase rated with overload protection and green "on" pilot light. Surface mounted unless noted otherwise.
3.1.11	Certain items of work by other trades will be necessary for the completion of work under this division. Cooperate with other trades and arrange for these items to be performed in orderly course.	9.4	All starters shall have overload protection in all phase lines. Furnish and install the proper size overload heater elements determined from full load nameplate readings on motors and compensation for ambient temperature in all starters whether they be furnished under this Section or other Sections.
3.1.12	This Contractor shall review the mechanical control requirements as specified and shown on the drawings and shall furnish and install all necessary conduit, wiring, boxes, protective devices, switches, etc., for the completion and proper operation of the system.	9.5	Label per Section 16000.22
3.1.13	Review all drawings and all specifications for each section of work. Unless specifically noted otherwise, herein or elsewhere, furnish and install items of any electrical nature required for completion of work for other trades, whether or not same is shown or noted in this or other sections.	9.6	Approved manufacturers are: Square D
4.	REGULATIONS AND CODES	10.	TRANSFORMERS
	The Contractor must comply with all state, municipal and federal safety laws, construction codes, ordinances and regulations relating to building and public health and safety. In addition, comply with rules and regulations of the State Fire Protection Code. Fire protection material must bear the Fire Underwriters Laboratories label.	10.1	Transformers shall be dry type, with voltage ratings as indicated on plans. Transformers shall be rated for full load operation at a maximum 150 degree centigrade rise above a 40 degree centigrade ambient or as otherwise noted on drawings. Provide at least (4) 2 1/2 percent taps, two above normal and two below normal and have a sound rating not to exceed NEMA standards. Special "K" factor ratings as noted.
5.	GENERAL REQUIREMENTS	10.2	Submit complete transformer data with shop drawings for approval. The data shall include efficiencies, core and copper losses, impedance, regulation and sound level.
5.1	The Contractor shall examine the premises and satisfy himself of existing conditions under which he will be obligated to operate in performing his part of the work or that will in any manner affect the work under the contract. The Contractor shall cooperate with other trades so that the installations of all equipment may be properly coordinated.	10.3	Installation of transformers shall be on vibration isolators and all wiring connections with flexible conduit.
5.2	All equipment furnished shall fit the space available, with connection, etc., in the required locations and with adequate space for operating and servicing. The drawings are generally diagrammatic and indicate the manner and method of the installation, while the specifications and fixture list denote the type and quality of material and workmanship to be used. When a conflict exists between the drawings and the specifications, the Contractor shall promptly notify the Architect/Engineer whose decision shall be final. No allowance will be made subsequently in this connection in behalf of the Contractor after award of the contract.	10.4	Label per Section 16000.22
		10.5	Approved manufacturers are: ACME, Square D, Jefferson, Cutler-Hammer, Westinghouse, General Electric, or same manufacturer as distribution equipment.
		11.	CONDUIT
		11.1	Metallic conduits shall be hot dipped galvanized equal to LTV Steel.

3.1.3 Lighting fixtures: Equal to as shown on fixture schedule or described on drawings, complete with lamps in original cartons and all canopies, stems, hangers and accessories including all structural members required for proper mounting. All fluorescent fixture ballasts shall be energy saving type. Submit shop drawings to Architect/Engineer for approval by the same. Must be C.E.C. approved in Calif.

13.14 Lamps: G.E. or equal and shall be for the maximum rated wattage of fixture unless otherwise shown on drawings.

14. SLEEVES, INSERTS, OPENINGS

14.1 Contractor shall layout and install his work in advance of pouring concrete floors or walls. Provide all sleeves and/or openings through floors or walls required for electrical conduits or ducts.

14.2 Sleeves shall be of rigid conduit or galvanized sheet steel rigidly supported and suitably packed to prevent entrance of wet concrete.

15. EXCAVATION/CUTTING/FITTING/REPAIRING/FINISHING

15.1 The Contractor shall include in his bid all excavation, compaction, fill, backfill, cutting, fitting, repairing and finishing of all work necessary for the installation of all equipment under this specification but no cutting of the work of other Contractors shall be done without the consent of the General Contractor.

15.2 Earthwork shall be done in accordance with latest industry standards.

16. CLEANUP OF PREMISES

Contractor shall at all times keep the premises clear of waste materials and debris caused by his employees and operation. Equipment not required in the work shall be removed prior to the termination of the contract.

17. TESTS AND INSPECTIONS

17.1 Contractor shall test wiring and devices as sections are completed and shall correct all defects immediately at his own expense, including any damage to walls, ceilings, floor or other portions of the building which may result from replacing defective equipment.

17.2 Furnish all meters, cable, connections and apparatus necessary for making tests.

17.3 Test system for shorts and grounds. Faulty wiring shall be removed and replaced. Any device, apparatus or fixture installed showing substandard performance shall be removed and replaced as directed by the Architect/Engineer.

17.4 Megger all systems neutrals to insure the neutral is not grounded within the system.

17.5 All equipment rated at 1,000 amps or more , or 480 volts shall be tested for insulation breakdown prior to its being energized. Such equipment shall withstand for a period of one minute without breakdown, the application of a 60HZ alternating potential of 1,000V plus twice the rated voltage of the device.

17.6 After the electrical wiring system installation is completed and at such time as the Architect/Engineer or his authorized representative may direct, the Contractor shall conduct an operating test for approval. Equipment shall be demonstrated to operate in accordance with requirements of specifications. Test shall be performed in presence of Architect/Engineer or his representative.

18. SHOP DRAWINGS

18.1 All data shall be submitted at one time, bound and indexed in an orderly manner. Prior to starting the work, submit to the Architect/Engineer for approval, six (6) sets of shop drawings of service (S.E.S.), panels, distribution sections, light fixtures, motor control centers, fire alarm system, dimmers, sound system, emergency generator, devices, transformers, labels as required by 16000.22, and all other equipment to be fabricated.

18.2 Procure shop drawings, wiring diagrams, etc., from other trades involved where such drawings may facilitate and expedite the work. Air conditioning and mechanical equipment shall be wired complete as per manufacturer's wiring diagrams furnished by the air conditioning and mechanical contractors.

19. DRAWINGS OF RECORD (AS-BUILT)

As-built drawings shall be submitted in accordance with and if required by Division 1 – General Requirements.

20. GUARANTEE

The Contractor shall guarantee all material and equipment to be free from defect of material and workmanship and shall replace or repair without cost to the owner all defective material and workmanship for a period of one year after final acceptance.

21. INSTRUCTIONS

21.1 Contractor shall instruct the Owner in the proper operating and maintenance of the equipment.

21.2 Contractor shall provide two (2) sets of operating and maintenance manuals for each piece of equipment provided by this discipline, only when such manuals are available from the manufacturer.

21.2.1 All materials to be bound in a 3–ring binder and tabulated in an orderly manner.


22. LABELING

22.1 Labels shall be engraved, black on white melamine plastic laminate, 1/16" minimum thickness for signs up to 20 square inches or 8 inches long; 1/8" thick for larger sizes. Engraved legend shall be in white letters on black face with minimum 3/16" high letters. Labels shall be punched and fastened to equipment with aluminum rivets or self tapping stainless steel screws or number 10/32 stainless steel machine screws with nuts, flat and lock washers.

22.2 Label equipment with name, amperage, voltage, phase, and wires (i.e. Panel "A", 400A, 120/208V,30,4W). Submit list of all labels with wording for review as per 16000.18.

22.3 Equipment to be labeled shall include service (S.E.S.) and all overcurrent devices, distribution sections and all overcurrent devices, motor control centers (M.C.C.) and all overcurrent devices, fusible panelboards and all overcurrent devices, panels, starters and transformers. Label other equipment as noted on plans.

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Drawn By EDC	
Checked By DW	
Project Number 21054	

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BRO OFFICE BUILDING

TENANT
IMPROVEMENT

Revisions	
Date 9/28/21	Issued for SUBMITTAL

ELECTRICAL SPECIFICATIONS

E-40

Designer: Edward Camacho Job #: 21146

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