

Don E. Ellis Building (133) Renovations

1320 Varsity Drive, Raleigh, NC 27606

SCO ID# 19-21547-02A NCSU ID 201920037



Skinner | Farlow | Kirwan
architecture

consultants

11/20/2023

Construction Documents for Bid

ABBREVIATIONS

Table with 4 columns of abbreviations for materials (e.g., FOUNDS, FINISH), construction (e.g., BLOCKING, MARK), and structural/finish (e.g., CEILING, CONCRETE, COURSES).

SYMBOLS

Table of symbols for materials: EARTH, CRUSHED STONE, CONCRETE, BRICK, STEEL-LARGE SCALE, FINISHED WOOD, WOOD BLOCKING, PLYWOOD, RIGID FOAM INSULATION, BATT INSULATION, STONE.

Table of drawing notations: ROOM INFORMATION, SECTION INDICATOR, INTERIOR ELEVATION INDICATOR, COLUMN LINE INDICATOR, ENLARGED PLAN / DETAIL INDICATOR, CASEWORK ELEVATION INDICATOR.

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Table listing drawing categories and sheet numbers: GENERAL (G-001 to G-006), ABATEMENT (AB-001 to AB-002), LANDSCAPE (L-100 to L-401), ARCHITECTURE (A-100 to A-700), STRUCTURAL (S-000 to S-131), MECHANICAL (M-001 to M-602), ELECTRICAL (E-001 to E-603).

GENERAL NOTES

- 1. CONTRACTOR IS TO PROTECT ALL EXISTING BUILDING ELEMENTS...
2. CONTRACTOR IS TO COORDINATE ACCESS TO THE BUILDING SITE WITH THE OWNER...
3. CONTRACTOR IS TO EXPECT LIMITED ACCESS FOR A CONSTRUCTION VEHICLE TO REMOVE ANY DEBRIS OR DEMOLITION MATERIALS...
4. CONTRACTOR PARKING, STAGING AND WORK SHALL NOT INTERFERE WITH ACCESS TO ADJACENT BUILDING OR FIRE DEPARTMENT ACCESS...
5. CONTRACTOR IS TO MAINTAIN ACCESS TO ALL BUILDING EXITS AT ALL TIMES...
6. CONTRACTOR IS TO PROTECT WORKING AREAS AT ALL TIMES FROM THE PUBLIC...
7. CONTRACTOR IS TO PROVIDE SIGNAGE TO PREVENT ENTRY OF NON-CONSTRUCTION PERSONNEL INTO AREAS OF WORK...
8. CONTRACTOR TO COORDINATE WITH OWNER ALL ACCESS TO PLUMBING OR ELECTRICAL SERVICE CONNECTION TO UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR...
9. ANY INTERRUPTION OF ELECTRICAL OR PLUMBING SPRINKLER SERVICE TO THE BUILDING OR THIS AREA OF CAMPUS AS A RESULT OF ANY PART OF THE WORK SHALL BE COORDINATED WITH THE OWNER...
10. THE CONTRACTOR IS RESPONSIBLE FOR REINSTALLATION OF ANY COMPONENTS REMOVED TO COMPLETE THE WORK...
11. IN PREPARATION FOR THE WORK THE CONTRACTOR IS TO VISIT THE BUILDING AND NOTE THE EXISTING CONDITIONS OF THE WORK AREAS THROUGH PHOTOGRAPHIC OR VIDEOGRAPHIC MEANS AND PROVIDE THAT RECORD TO THE OWNER PRIOR TO COMMENCING ANY WORK...
12. CONTRACTOR IS TO MAINTAIN ACCESS TO ALL BUILDING EXITS AT ALL TIMES...
13. DO NOT STORE MATERIALS OR EQUIPMENT ON LANDSCAPED AREAS...

ALTERNATE #1 - FULL BUILD-OUT OF 2ND FLOOR CEILINGS, LIGHTING & HVAC
ALTERNATE #2 - CARPET @ 2ND FLOOR
ALTERNATE #3 - ADDITIONAL WALLS AND DOORS ON 2ND FLOOR
ALTERNATE #4 - NEW ENTRY VESTIBULE
ALTERNATE #5 - LOADING DOCK CANOPY
ALTERNATE #6 - FREE-STANDING ALUMINUM PRE-FABRICATED CANOPY
ALTERNATE #7 - 2ND BOILER
ALTERNATE #8 - DOOR HARDWARE BY LCN, BEST (PREFERRED BRAND)
ALTERNATE #9 - FIRE ALARM DIALERS
ALTERNATE #10 - ELEVATOR CONTROLS

North Carolina State University

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EMAIL: MRDIAMOND@NCSU.EDU
2701 SULLIVAN DRIVE, SUITE 331
RALEIGH, NC 27695
919-513-0373

ARCHITECT: SKINNER FARLOW KIRWAN ARCHITECTURE, PA
301 GLENWOOD AVE., SUITE 270
RALEIGH, NC 27603
984-222-0572
CONTACT: ALICIA LYNN KIRWAN
EMAIL: AKIRWAN@SKFARCHITECTURE.COM
LICENSE # 10025

ELECTRICAL ENGINEER: ENGINEERED DESIGNS, INC.
1151 SE CARY PARKWAY, SUITE 200
CARY, NC 27518
919-851-8481
CONTACT: JASON LUND, PE
EMAIL: JLUND@ENGINEEREDDESIGNS.COM
LICENSE # 037667

MECHANICAL ENGINEER: ENGINEERED DESIGNS, INC.
1151 SE CARY PARKWAY, SUITE 200
CARY, NC 27518
919-851-8481
CONTACT: JOHN QUIJOCHO, PE
EMAIL: JQUIJOCHO@ENGINEEREDDESIGNS.COM
LICENSE # 29455

PLUMBING ENGINEER: ENGINEERED DESIGNS, INC.
1151 SE CARY PARKWAY, SUITE 200
CARY, NC 27518
919-851-8481
CONTACT: JOHN QUIJOCHO, PE
EMAIL: JQUIJOCHO@ENGINEEREDDESIGNS.COM
LICENSE # 29455

LANDSCAPE ARCHITECT: SITE COLLABORATIVE
821 WAKE FOREST ROAD
RALEIGH, NC 27604
919-805-3586
CONTACT: LYNN MITCHELL
EMAIL: LYNN@SITECOLLABORATIVE.COM
LICENSE # 2031

HAZARDOUS MATERIALS: MATRIX HEALTH AND SAFETY
2300 YONKERS ROAD
RALEIGH, NC 27604
919-833-2620
CONTACT: TODD DAUGHERTY
EMAIL: TODD@MATRIXHSC.COM

STRUCTURAL ENGINEER: LYNCH MYKINS STRUCTURAL ENGINEERS, PA
301 N WEST ST #105
RALEIGH, NC 27603
919-782-1833
CONTACT: SUSAN W. RUSSELL
EMAIL: SRUSSELL@LYNCHMYKINS.COM
LICENSE # 040416



Construction Documents for Bid

owner id

SCO ID# 19-21547-02A

NCSU ID 201920037

seals



revisions

date note

Don E. Ellis Building (133) Renovations

1320 Varsity Drive, Raleigh, NC 27606
North Carolina State University

PROJECT 1368-20

DATE 11/20/2023

DRAWN ADQ

CHECKED ALK

sheet name

Title Sheet

sheet no

G-001

2018 Appendix B Building Code Summary for All Commercial Projects

Name of Project: Don E. Ellis Building (133) Renovations
Address: 1320 Varsity Drive, Raleigh, NC Zip 27606
Owner/ Authorized Agent: Melissa Diamond Phone: 919-513-0373 E-mail: mrdiamond@ncsu.edu

Table with 6 columns: FIRM, NAME, LICENSE #, TELEPHONE, E-MAIL. Lists design firms for various trades like Architectural, Civil, Electrical, etc.

2018 NC BUILDING CODE: New Building, Addition, Shell / Core, etc.
2018 NC EXISTING BUILDING CODE: Prescriptive, Repair, Alteration Level I, etc.
CONSTRUCTED: Date: 1951 Business
RENOVATED: Date: 1996 Business

BASIC BUILDING DATA: Construction Type (I-A, II-A, etc.), Sprinklers, Standpipes, Fire District, Special Inspections Required.

Gross Building Area Table: Table with 5 columns: FLOOR, EXISTING (SQ FT), NEW (SQ FT), RENO/ALTER (SQ FT), SUB-TOTAL. Rows for 3rd Floor, 2nd Floor, Mezzanine, 1st Floor, Basement, TOTAL.

ALLOWABLE AREA: Primary Occupancy Classification (A-1, A-2, etc.), Hazardous, Institutional, Mercantile, Residential, Storage, Utility and Miscellaneous.

Accessory Occupancy Classification(s): Storage S-2
Incidental Uses (Table 509): This separation is not exempt as a Non-Separated Use (see exceptions)

Special Uses (Chapter 4 - List Code Sections):
Special Provisions (Chapter 5 - List Code Sections):
Mixed Occupancy: No

Actual Area of Occupancy A + Actual Area of Occupancy B = 1
Allowable Area of Occupancy A + Allowable Area of Occupancy B = 1

Table with 5 columns: STORY NO., DESCRIPTION AND USE, (A) BUILDING AREA PER STORY (ACTUAL), (B) TABLE USE AREA (SEE NOTE 4), (C) AREA FOR FRONTAGE INCREASE (SEE NOTE 1.5), (D) ALLOWABLE AREA PER STORY OR UNLIMITED (SEE NOTE 2.1)

- 1 Frontage area increases from Section 508.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = (P)
b. Total Building Perimeter = (P)
c. Ratio (F/P) = (F/P)
d. W = Minimum width of public way = (W)
e. Area factor increase due to frontage H = (F/P - 0.25) x W/30 =
2 Unlimited area applicable under conditions of Section 507.
3 Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
4 The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.
5 Frontage increase is based on the unspinklered area value in Table 506.2

ALLOWABLE HEIGHT: Table with 4 columns: ALLOWABLE (TABLES 506.1, 506.2), SHOWN ON PLANS, CODE REFERENCED.

PERCENTAGE OF WALL OPENING CALCULATIONS: Table with 4 columns: FIRE SEPARATION DISTANCE (FEET), PROPERTY LINE, DEGREE OF OPENING PROTECTION (TABLE 705.8), ALLOWABLE AREA (A), ACTUAL SHOWN ON PLANS (A)

LIFE SAFETY SYSTEM REQUIREMENTS: Emergency Lighting, Exit Signs, Fire Alarm, Smoke Detection Systems, Carbon Monoxide Detection.

LIFE SAFETY PLAN REQUIREMENTS: Sheet G-003, Life Safety Plan. Fire and/or smoke rated wall locations, Assumed and real property line locations, Occupancy Use for each area, Exit access travel distances, etc.

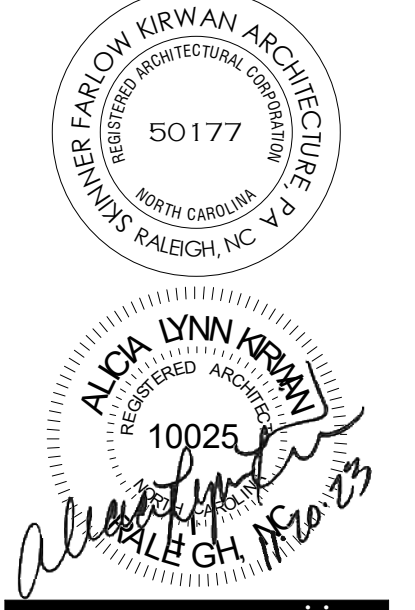
FIRE PROTECTION REQUIREMENTS: Table with 7 columns: BUILDING ELEMENT, FIRE SEPARATION DISTANCE (FEET), RATING (REQD., PROVIDED), DETAIL # AND SHEET #, DESIGN # FOR RATED ASSEMBLY, SHEET # FOR RATED PENETRATION, SHEET # FOR RATED JOINTS.

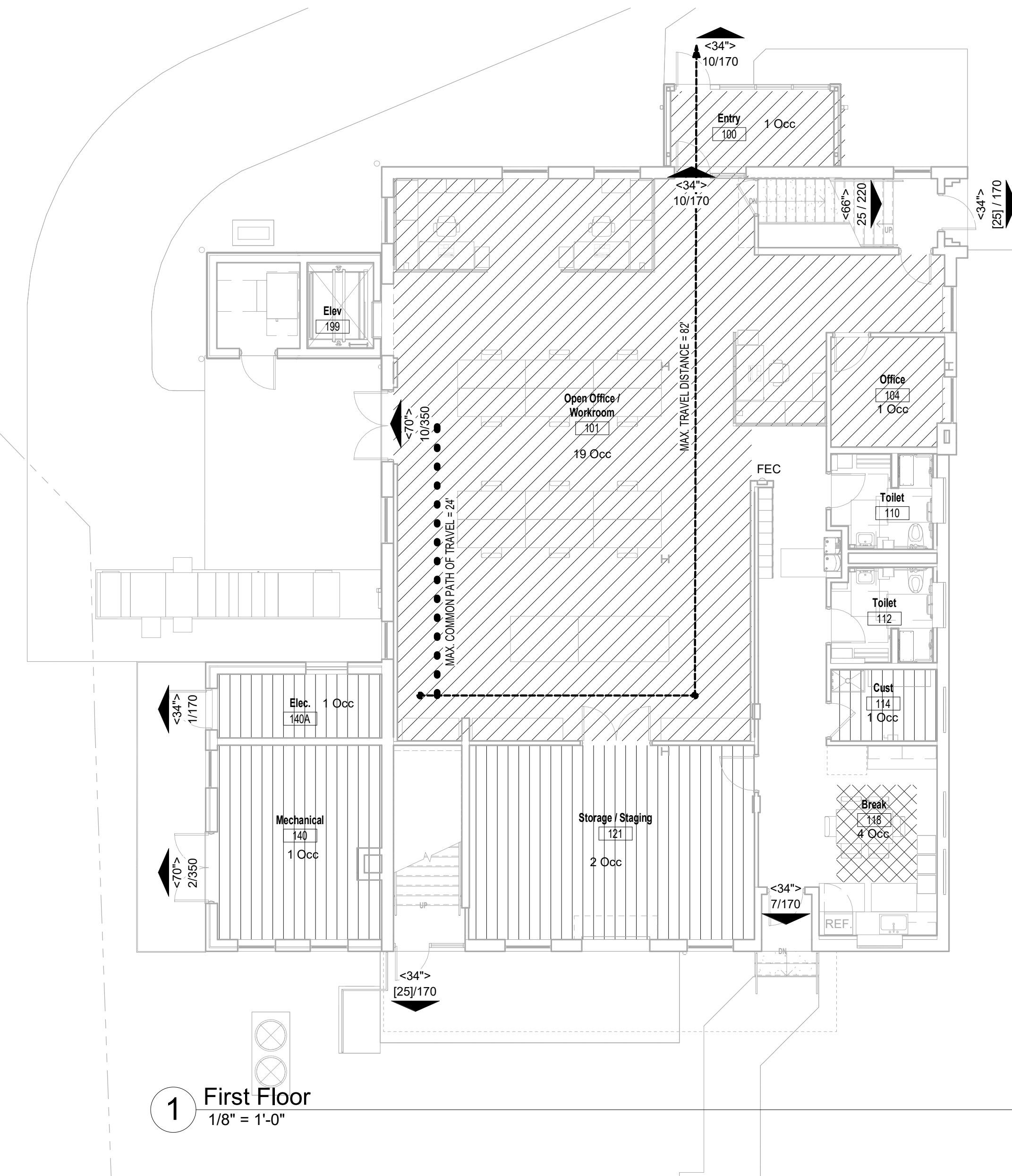
*Indicate section number permitting reduction

ACCESSIBLE DWELLING UNITS (SECTION 1107): Not Applicable - No Dwelling Units. Table with 7 columns: TOTAL UNITS, ACCESSIBLE UNITS REQUIRED, ACCESSIBLE UNITS PROVIDED, TYPE A UNITS REQUIRED, TYPE A UNITS PROVIDED, TYPE B UNITS REQUIRED, TYPE B UNITS PROVIDED, TOTAL ACCESSIBLE UNITS PROVIDED.

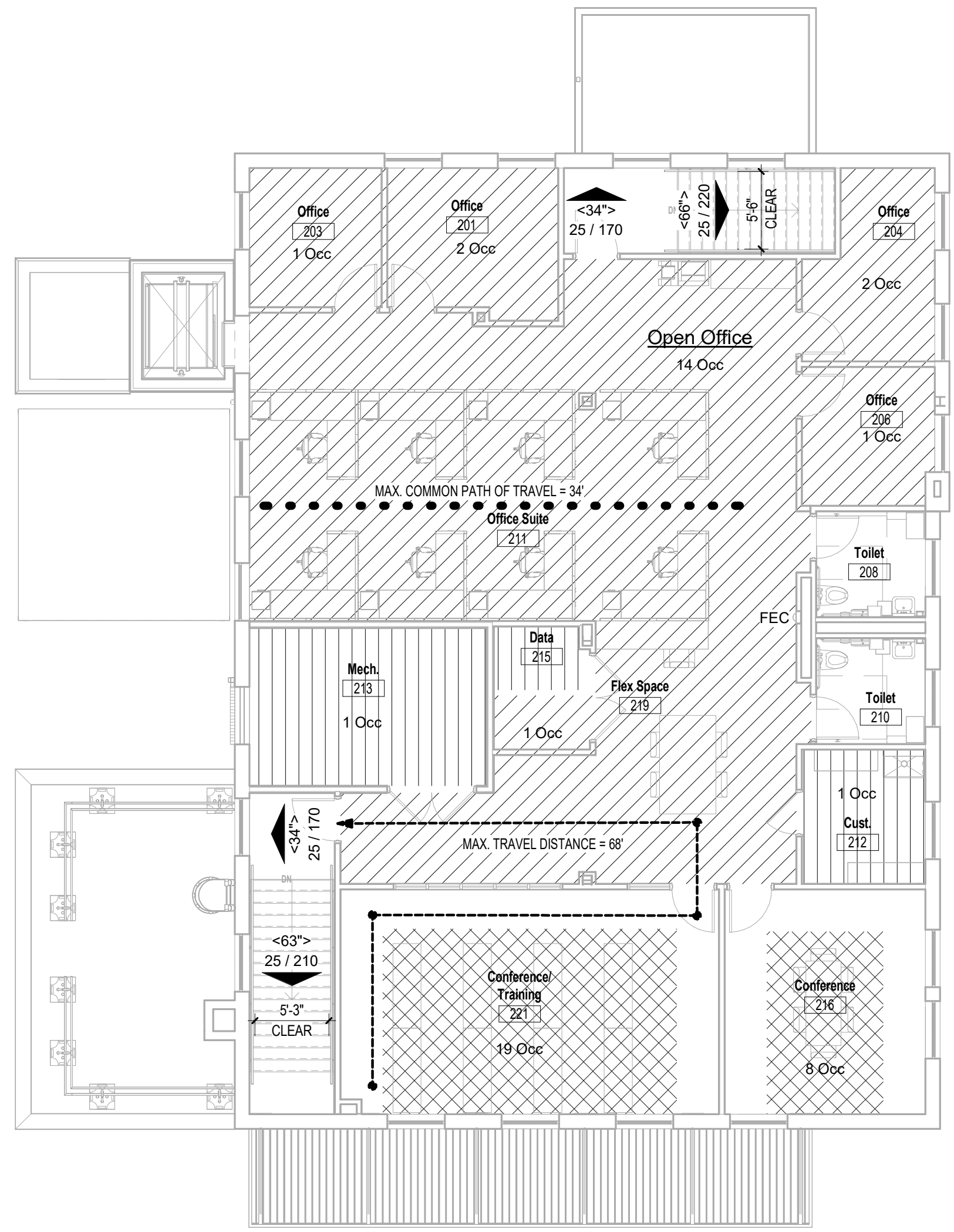
ACCESSIBLE PARKING (SECTION 1106): NO REDUCTION OF EXISTING SPACES - ACCESSIBLE SPACES ADDED. Table with 6 columns: LOT OR PARKING AREA, TOTAL # OF PARKING SPACES (REQUIRED, PROVIDED), # OF ACCESSIBLE SPACES PROVIDED (REGULAR WITH 5' ACCESS AISLE, VAN SPACES WITH 132" ACCESS AISLE, VAN SPACES WITH 8' ACCESS AISLE), TOTAL # OF ACCESSIBLE SPACES PROVIDED.

PLUMBING FIXTURE REQUIREMENTS: (Table 2902.1). Table with 2 columns: USE, WATERCLOSETS (MALE, FEMALE, UNISEX), URINALS, LAVATORIES (MALE, FEMALE, UNISEX), SHOWERS/TUBS, DRINKING FOUNTAINS (REGULAR, ACCESSIBLE).

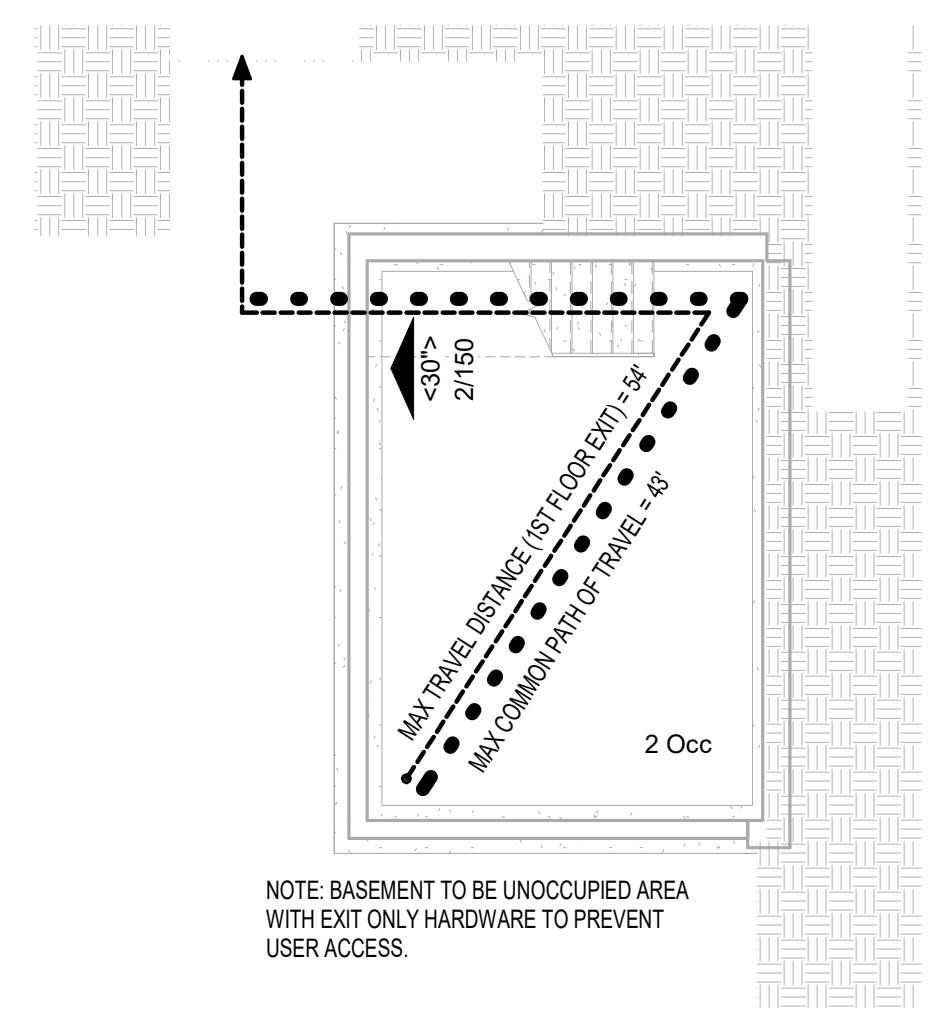




1 First Floor
 1/8" = 1'-0"



2 Second Floor (All Alternates Shown)
 1/8" = 1'-0"



3 Basement
 1/8" = 1'-0"

NOTE: BASEMENT TO BE UNOCCUPIED AREA WITH EXIT ONLY HARDWARE TO PREVENT USER ACCESS.

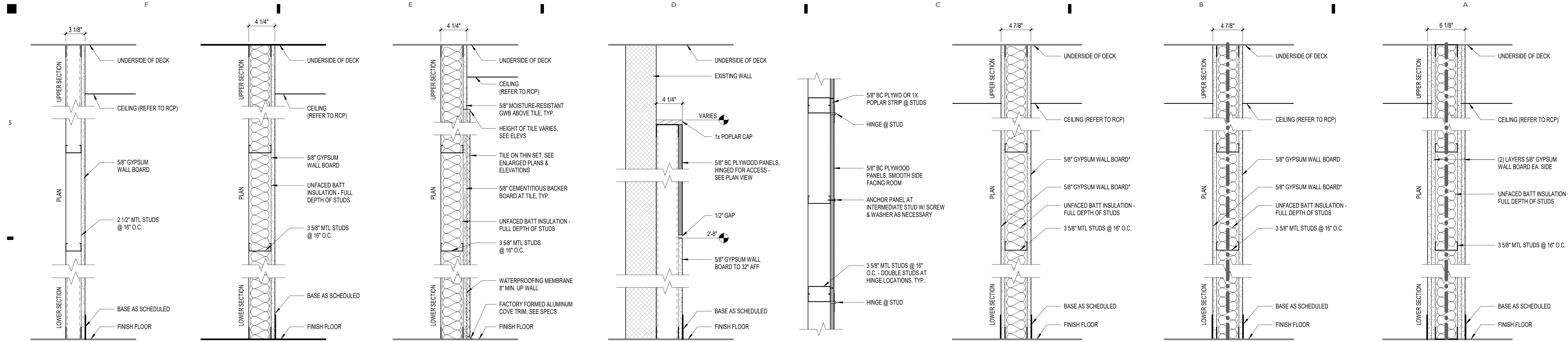
LIFE SAFETY LEGEND	
FE/ FEC	FIRE EXTINGUISHER / FIRE EXTINGUISHER CABINET
(P)	PANIC HARDWARE
▲	DIRECTION OF TRAVEL
XX/XXX	ACTUAL OCCUPANT LOAD / MAX. OCCUPANT LOAD OF OPENING
[XX]	OCCUPANT LOAD FROM STORY ABOVE
<XX">	EGRESS WIDTH IN INCHES
●—●	DEAD END LIMIT (20' MAX)
●—●—●	TRAVEL DISTANCE (200' MAX)
●—●—●—●	COMMON PATH OF TRAVEL (75' MAX)
▨	BUSINESS (1/100 GROSS)
▩	STORAGE / MECHANICAL (1/300 GROSS)
▧	ASSEMBLY UNCONCENTRATED (1/15 NET)
□	ADA CLEARANCES

NOTE: EGRESS WIDTH BASED ON 3" PER OCCUPANT FOR STAIRS & 2" PER OCCUPANT FOR ALL OTHER MEANS OF EGRESS COMPONENTS.

PROJECT AREA OCCUPANCY

NOTE: ALL ASSEMBLY OCCUPANCIES ARE ACCESSORY TO A GROUP B OCCUPANCY AND ARE CALCULATED WITHIN THE BUSINESS AREAS FOR TOTAL OCCUPANT LOAD OF EACH FLOOR.

SPACE/OCCUPANCY	AREA (sf)	TOTAL PERSONS
BASEMENT		
STORAGE	463	2
FIRST FLOOR		
BUSINESS	3206	33
STORAGE / MECHANICAL	755	3
SECOND FLOOR		
BUSINESS	3331	34
STORAGE / MECHANICAL	221	1
TOTAL		73



C2A.U
FIRE RATING: -
UL NO.: -

C3A.U
FIRE RATING: -
UL NO.: -

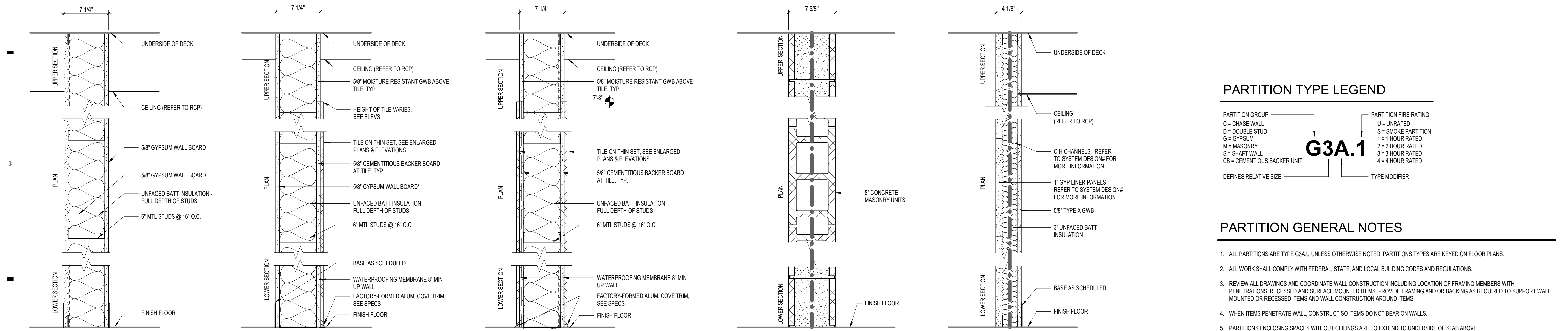
C3B.U
FIRE RATING: -
UL NO.: -

C3C.U
FIRE RATING: -
UL NO.: -

G3A.U
FIRE RATING: -
UL NO.: -

G3A.1
FIRE RATING: 1 HOUR
UL NO.: U465

G3B.1
FIRE RATING: 1 HOUR
UL NO.: U465



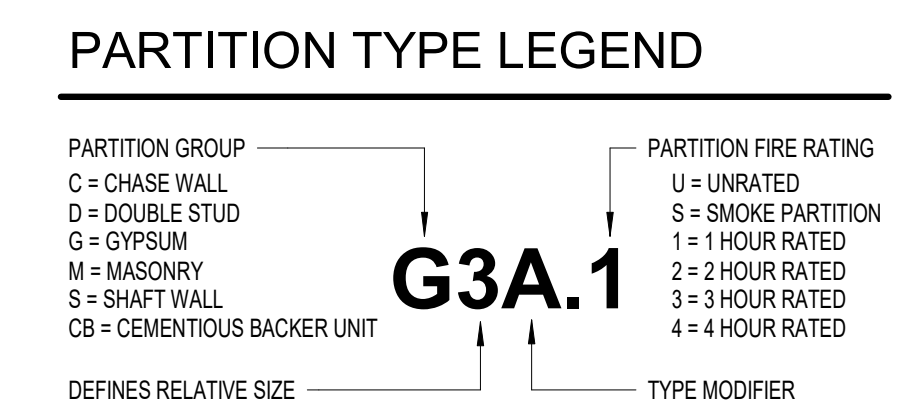
G6A.U
FIRE RATING: -
UL NO.: -

G6B.U
FIRE RATING: -
UL NO.: -

G6C.U
FIRE RATING: -
UL NO.: -

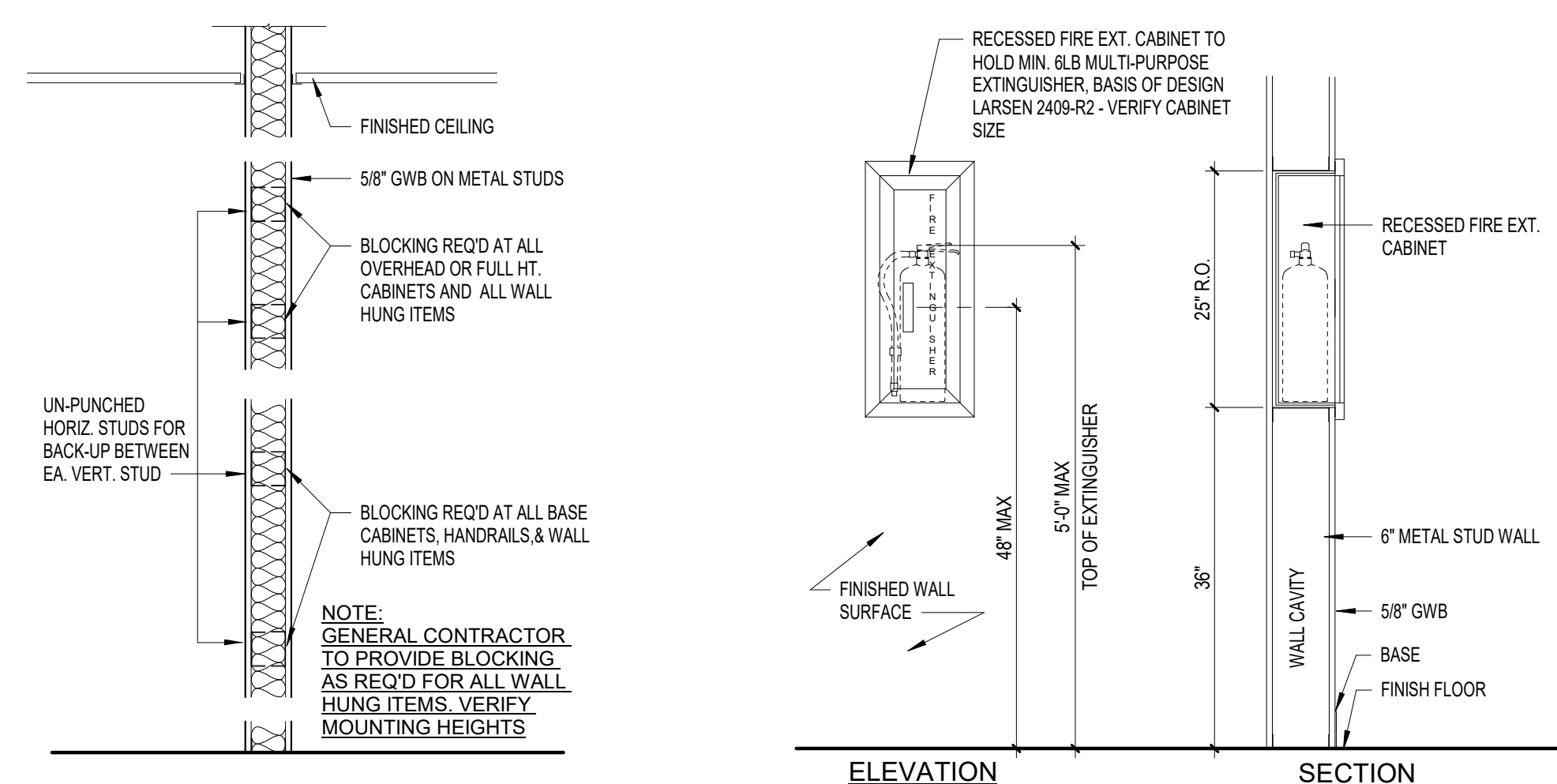
M8A.1
FIRE RATING: 1 HOUR
UL NO.: U805

S2B.1
FIRE RATING: 60 MIN
UL NO.: U415



PARTITION GENERAL NOTES

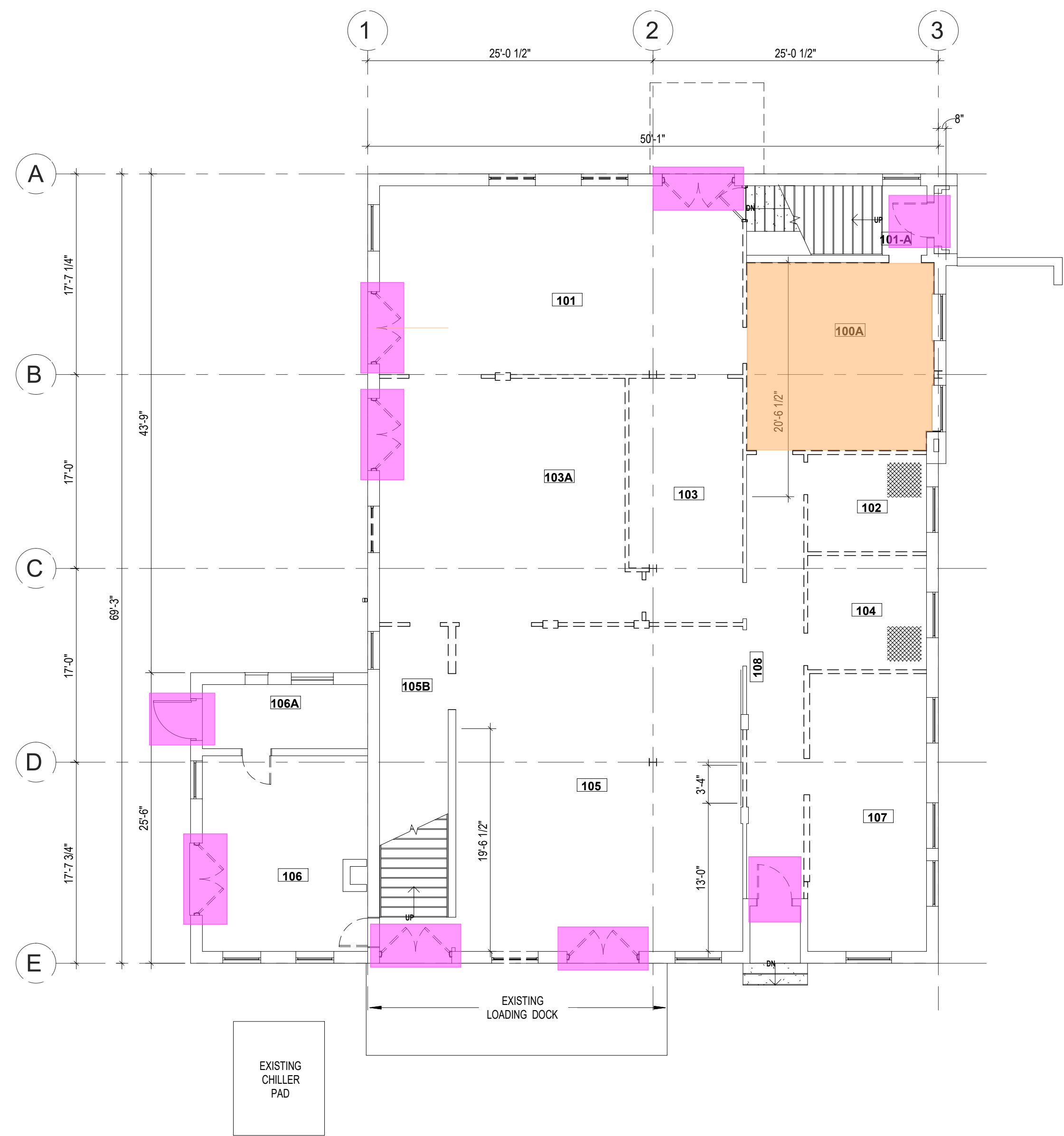
- ALL PARTITIONS ARE TYPE G3A.U UNLESS OTHERWISE NOTED. PARTITIONS TYPES ARE KEYED ON FLOOR PLANS.
- ALL WORK SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL BUILDING CODES AND REGULATIONS.
- REVIEW ALL DRAWINGS AND COORDINATE WALL CONSTRUCTION INCLUDING LOCATION OF FRAMING MEMBERS WITH PENETRATIONS, RECESSED AND SURFACE MOUNTED ITEMS. PROVIDE FRAMING AND OR BACKING AS REQUIRED TO SUPPORT WALL MOUNTED OR RECESSED ITEMS AND WALL CONSTRUCTION AROUND ITEMS.
- WHEN ITEMS PENETRATE WALL, CONSTRUCT SO ITEMS DO NOT BEAR ON WALLS.
- PARTITIONS ENCLOSING SPACES WITHOUT CEILINGS ARE TO EXTEND TO UNDERSIDE OF SLAB ABOVE.
- ALL FIRE RATED PARTITION ASSEMBLIES ARE TO CONTINUE FROM FLOOR TO DECK ABOVE.
- ALL FIRE AND SMOKE RATED PARTITIONS ARE TO HAVE ANY AND ALL GAPS FILLED WITH A MATERIAL THAT WILL MEET OR EXCEED THE RATING AND/OR CONSTRUCTION REQUIREMENTS OF THE WALL.
- THE ENVELOPE CREATED BY FIRE RATED PARTITIONS AND SHAFTS IS REQUIRED TO BE CONTINUOUS AND UNINTERRUPTED EXCEPT BY TESTED THROUGH-PENETRATION FIRE STOP ASSEMBLIES AS SPECIFIED. REFER TO THE CODE PLAN FOR DIAGRAMS.
- PROJECT IS BASED ON QUOTED UL DESIGNS. OTHER DESIGNS ACCEPTABLE TO ALL AGENCIES WITH JURISDICTION MAY BE SUBMITTED FOR APPROVAL.
- WALL TYPES DESCRIBED ON THIS SHEET DO NOT ACCOUNT FOR REQUIRED BACKING AND/OR SUPPORT FOR WALL MOUNT FIXTURES, EQUIPMENT, CASEWORK AND/OR SYSTEMS FURNITURE. COORDINATE WITH ENLARGED FLOOR PLANS, INTERIOR ELEVATIONS, AND EQUIPMENT PLANS PRIOR TO THE COVERING OF STUD FRAMING. REFER TO MANUFACTURER'S RECOMMENDATIONS.
- ALL PARTITION DIMENSIONS PROVIDED ARE TO FINISHED FACE UNLESS OTHERWISE NOTED.
- LOCATE HINGE SIDE OF DOOR AT 4" FROM FINISHED FACE OF ADJACENT WALL UNLESS OTHERWISE NOTED OR DIMENSIONED.
- WALL TYPES AND RATINGS INDICATED ON PLAN CONTINUE ABOVE/BELOW ADJACENT WINDOW OR DOOR OPENINGS.
- MAINTAIN FIRE RATINGS AROUND RECESSED FIXTURES.
- DO NOT LOCATE OUTLET BOXES (INCLUDING TELECOM DATA AND ELECTRICAL) OPPOSITE ONE ANOTHER IN ACOUSTICALLY RATED PARTITIONS. LOCATE OUTLETS AT LEAST ONE STUD BAY APART. SEAL THE OUTLET BOXES WITH PUTTY PADS AND CAULK THE PERIMETER USING ACOUSTIC SEALANT. AT RATED PARTITIONS, LOCATE OUTLET BOXES 24" APART, MIN. UNLESS AT SHAFT WALLS.
- AT ALL ACOUSTICALLY RATED PARTITIONS USE ACOUSTICAL SEALANT APPLIED PER MANUFACTURER'S INSTRUCTIONS.
- ON CONTINUOUS WALL SURFACE WHERE CONSTRUCTION INVOLVES MORE THAN ONE MATERIAL, FINISH, OR MATERIAL THICKNESS ALIGN FACE OF FINISH UNLESS OTHERWISE NOTED.
- REFER TO REFLECTED CEILING PLAN FOR CEILING MATERIALS AND HEIGHTS. REFER TO ROOM FINISH SCHEDULE FOR FINISHES AND SPECIAL INSTRUCTIONS.



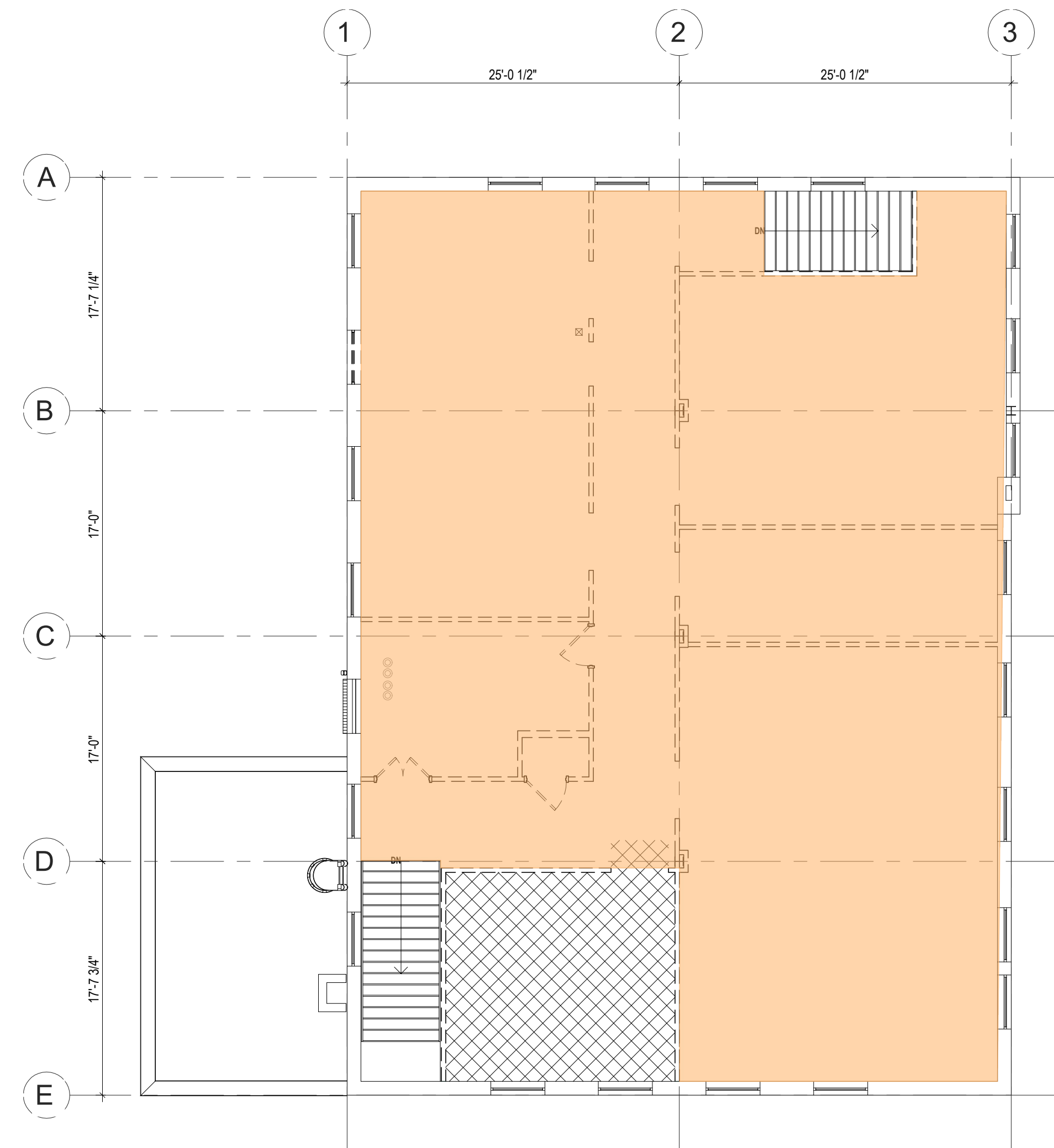
1 Typical Wall Blocking
3/4" = 1'-0"

2 Recessed Fire Extinguisher Cabinet
3/4" = 1'-0"





① First Floor Asbestos Abatement
1/8" = 1'-0"



② Second Floor Asbestos Abatement
1/8" = 1'-0"

DEMOLITION SYMBOLS LEGEND

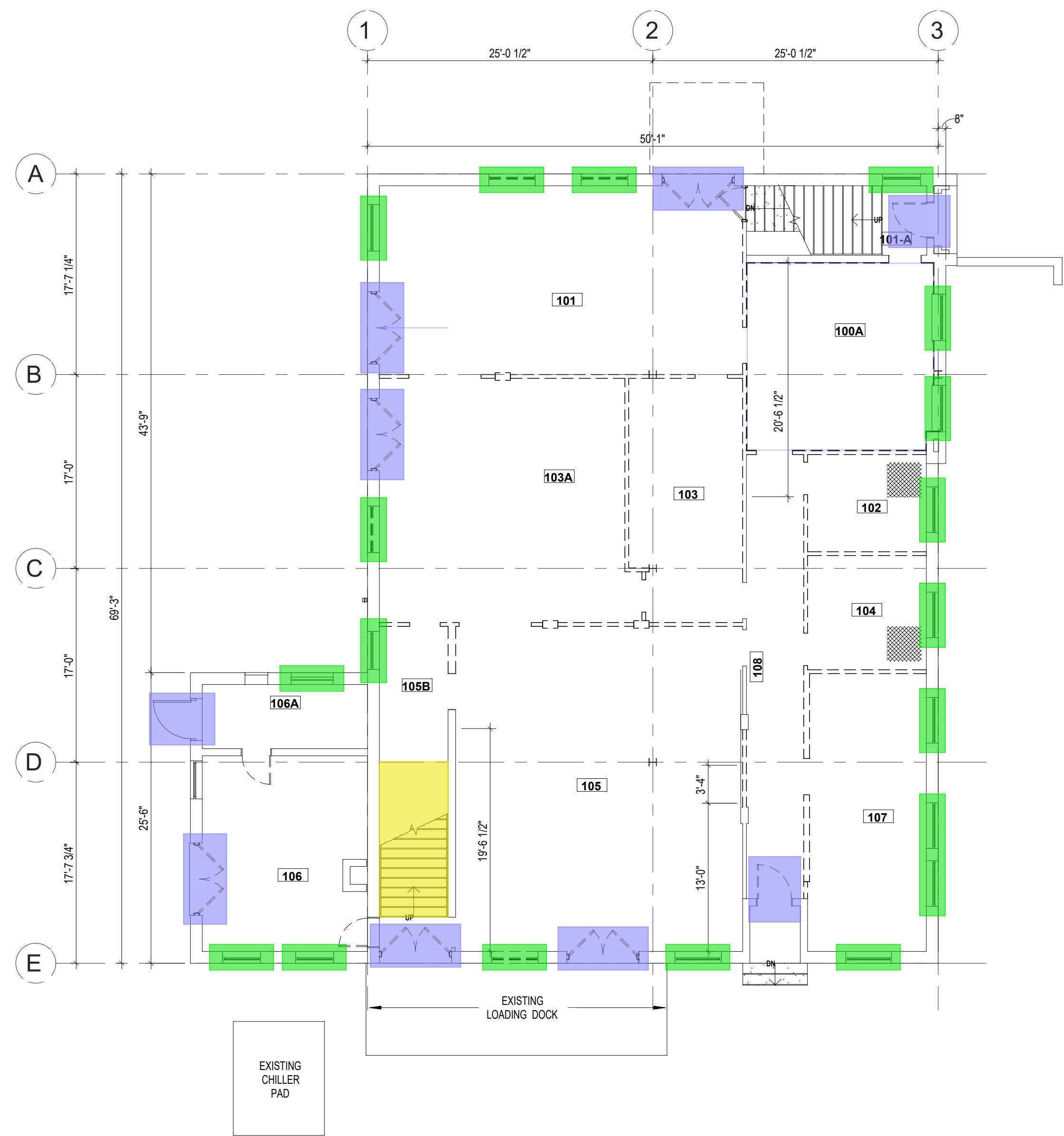
- REMOVE ALL CONSTRUCTION SHOWN DASHED COMPLETE, U.O.N.
- EXISTING WALL OR PARTITION TO REMAIN, TYP U.O.N.

NOTES

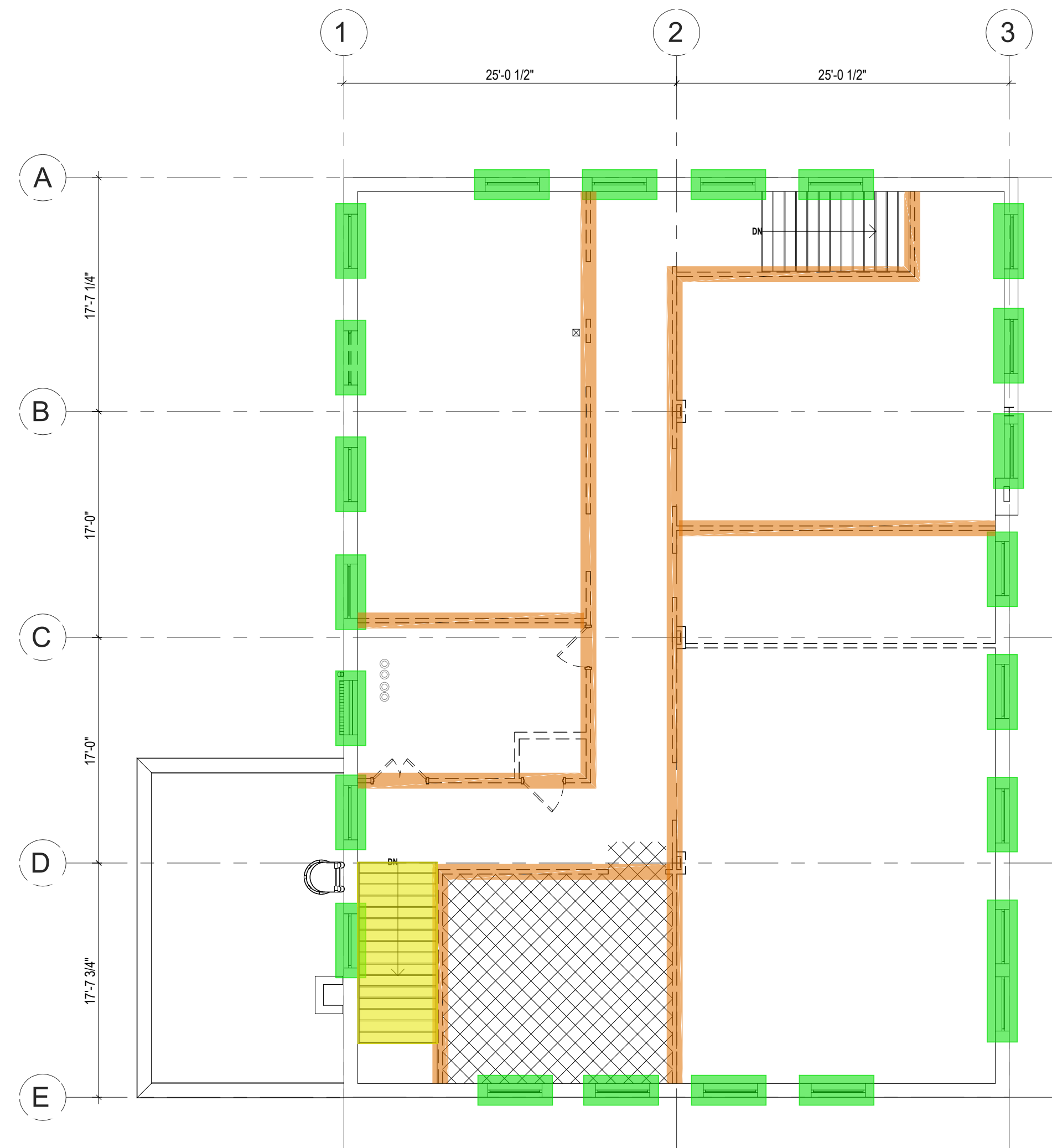
- THIS DRAWING ACCOMPANIES ASBESTOS ABATEMENT TECHNICAL SPECIFICATIONS AND LEAD HAZARD REDUCTION TECHNICAL SPECIFICATIONS.
- BOUNDARIES AND LOCATIONS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING ALL QUANTITIES.
- LOCATIONS ON DRAWINGS ARE IDENTIFIED AS APPROXIMATE. ASBESTOS ABATEMENT CONTRACTOR SHALL COORDINATE REMOVAL WITH OWNER, ARCHITECT, GENERAL CONTRACTOR, AND DESIGNER PRIOR TO REMOVAL OPERATIONS.
- CONTRACTOR SHALL COORDINATE THE SCHEDULING OF ALL WORK WITH OWNER AND DESIGNER. CONTRACTOR SHALL PERFORM ASBESTOS ABATEMENT IN A MANNER WHICH MINIMIZES THE INTERRUPTION OF DAILY OPERATIONS AT THE FACILITY.
- THE XRF LIMITED LEAD-BASED PAINT INSPECTION ATTACHED AS AN APPENDIX IN THE TECHNICAL SPECIFICATIONS WAS NOT PERFORMED TO MEET EPA OR HUD REQUIREMENTS FOR INSPECTIONS PERFORMED IN TARGET HOUSING OR CHILD OCCUPIED FACILITIES. THE SURVEY WAS PERFORMED IN ORDER FOR CONTRACTORS WORKING IN THE FACILITY TO COMPLY WITH OSHA REQUIREMENTS FOR PROTECTING CONTRACTORS FROM LEAD EXPOSURE.
- THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) LEAD IN CONSTRUCTION STANDARD STATES THAT "NEGATIVE" READINGS (I.E. THOSE BELOW THE HUD/EPA DEFINITION OF WHAT CONSTITUTES LBP (1.0 MG/CM²) DOES NOT RELIEVE CONTRACTORS FROM PERFORMING EXPOSURE ASSESSMENTS (PERSONAL AIR MONITORING) ON THEIR EMPLOYEES PER THE OSHA LEAD STANDARD, AND SHOULD NOT BE INTERPRETED AS LEAD FREE. ALTHOUGH A READING MAY INDICATE "NEGATIVE", AIRBORNE LEAD CONCENTRATIONS STILL MAY EXCEED THE OSHA ACTION LEVEL OR THE OSHA PERMISSIBLE EXPOSURE LIMIT (PEL) DEPENDING ON THE WORK ACTIVITY. FOR ADDITIONAL INFORMATION INCLUDING REMOVAL REQUIREMENTS AND WORKER PROTECTION REFER TO OSHA STANDARD 29 CFR 1926.62.
- REFERENCE THE XRF LIMITED LEAD-BASED PAINT INSPECTION ATTACHED WITH THE TECHNICAL SPECIFICATIONS FOR SPECIFIC COMPONENTS AND LOCATIONS. ADDITIONALLY, REFERENCE THE DEMOLITION PLANS INCLUDED IN THE TECHNICAL SPECIFICATIONS TO DETERMINE THE APPROPRIATE CONTROL MEASURES. CONTROL MEASURES SHALL BE APPROVED BY THE OWNER, ARCHITECT, DESIGNER AND GENERAL CONTRACTOR.

ASBESTOS ABATEMENT LEGEND

- ASBESTOS ABATEMENT CONTRACTOR SHALL REMOVE ASBESTOS-CONTAINING FLOOR TILE WITH ASSOCIATED MASTIC UTILIZING A FULL NEGATIVE PRESSURE ENCLOSURE. ASBESTOS-CONTAINING MATERIALS ARE LOCATED AS VISIBLE LAYER AND LOCATED UNDER CARPET.
- ASBESTOS ABATEMENT CONTRACTOR SHALL REMOVE ASBESTOS-CONTAINING EXTERIOR DOOR CAULK UTILIZING NONFRIABLE, NONREGULATED REMOVAL TECHNIQUES.



① First Floor Lead-Hazard Reduction
1/8" = 1'-0"



② Second Floor Lead-Hazard Reduction
1/8" = 1'-0"

DEMOLITION SYMBOLS LEGEND

- REMOVE ALL CONSTRUCTION SHOWN DASHED COMPLETE, U.O.N.
- EXISTING WALL OR PARTITION TO REMAIN, TYP U.O.N.

NOTES

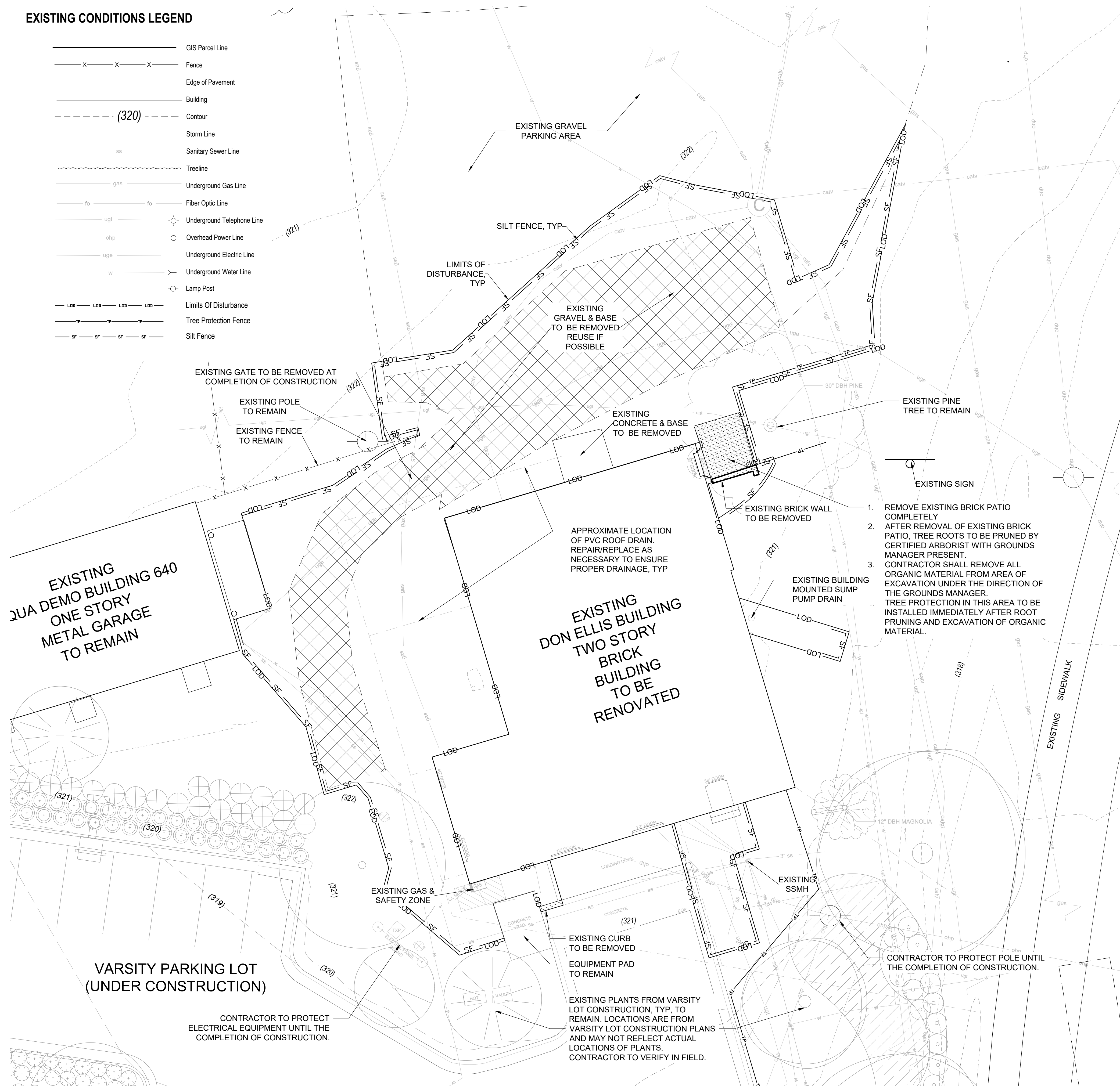
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- CONTRACTOR SHALL COORDINATE THE SCHEDULING OF ALL WORK WITH OWNER AND DESIGNER. CONTRACTOR SHALL PERFORM ASBESTOS ABATEMENT IN A MANNER WHICH MINIMIZES THE INTERRUPTION OF DAILY OPERATIONS AT THE FACILITY.
- THE XRF LIMITED LEAD-BASED PAINT INSPECTION ATTACHED AS AN APPENDIX IN THE TECHNICAL SPECIFICATIONS WAS NOT PERFORMED TO MEET EPA OR HUD REQUIREMENTS FOR INSPECTIONS PERFORMED IN TARGET HOUSING OR CHILD OCCUPIED FACILITIES. THE SURVEY WAS PERFORMED IN ORDER FOR CONTRACTORS WORKING IN THE FACILITY TO COMPLY WITH OSHA REQUIREMENTS FOR PROTECTING CONTRACTORS FROM LEAD EXPOSURE.
- THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) LEAD IN CONSTRUCTION STANDARD STATES THAT "NEGATIVE" READINGS (I.E. THOSE BELOW THE HUD/EPA DEFINITION OF WHAT CONSTITUTES LBP (1.0 MG/CM²)) DOES NOT RELIEVE CONTRACTORS FROM PERFORMING EXPOSURE ASSESSMENTS (PERSONAL AIR MONITORING) ON THEIR EMPLOYEES PER THE OSHA LEAD STANDARD, AND SHOULD NOT BE INTERPRETED AS LEAD FREE. ALTHOUGH A READING MAY INDICATE "NEGATIVE", AIRBORNE LEAD CONCENTRATIONS STILL MAY EXCEED THE OSHA ACTION LEVEL OR THE OSHA PERMISSIBLE EXPOSURE LIMIT (PEL) DEPENDING ON THE WORK ACTIVITY. FOR ADDITIONAL INFORMATION INCLUDING REMOVAL REQUIREMENTS AND WORKER PROTECTION REFER TO OSHA STANDARD 29 CFR 1926.62.
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LEAD-HAZARD REDUCTION LEGEND

- APPROXIMATE LOCATION FOR DOORS, DOOR CASINGS, AND LINTELS CONTAINING LEAD-BASED PAINT. CONTRACTOR SHALL PERFORM COMPONENT REMOVAL ON DOORS AND DOOR CASINGS AND DISPOSE OF APPROPRIATELY. HAZARDOUS MATERIAL CONTRACTOR SHALL PERFORM INTERIM CONTROLS ON DOOR LINTELS IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE PROJECT.
- APPROXIMATE LOCATION OF WINDOW LINTELS CONTAINING LEAD-BASED PAINT. HAZARDOUS MATERIAL CONTRACTOR SHALL PERFORM INTERIM CONTROLS ON WINDOW LINTELS IN ACCORDANCE WITH SPECIFICATIONS FOR THE PROJECT.
- APPROXIMATE LOCATION OF STAIR COMPONENTS (RISERS, RAILINGS, STRINGERS, AND TREADS) CONTAINING LEAD-BASED PAINT. IF COMPONENTS ARE TO BE DEMOLISHED, HAZARDOUS MATERIALS CONTRACTOR SHALL PERFORM COMPONENT REMOVAL OPERATIONS AND DISPOSE OF APPROPRIATELY. IF COMPONENTS ARE TO BE RENOVATED, CONTRACTOR SHALL PERFORM INTERIM CONTROLS IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE PROJECT.
- APPROXIMATE LOCATION OF CERAMIC TILE WALL CONTAINING LEAD-BASED PAINT. HAZARDOUS MATERIAL CONTRACTOR SHALL DEMOLISH LEAD-CONTAINING CERAMIC TILE WALLS UTILIZING A FULL NEGATIVE PRESSURE ENCLOSURE.

EXISTING CONDITIONS LEGEND

- GIS Parcel Line
- Fence
- Edge of Pavement
- Building
- Contour (320)
- Storm Line
- Sanitary Sewer Line
- Treenline
- Underground Gas Line
- Fiber Optic Line
- Underground Telephone Line
- Overhead Power Line
- Underground Electric Line
- Underground Water Line
- Lamp Post
- Limits Of Disturbance
- Tree Protection Fence
- Silt Fence



PROPERTY DATA

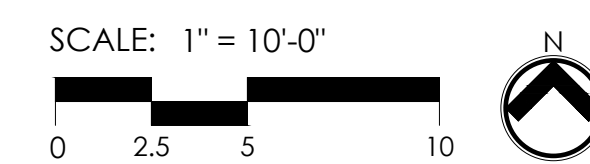
1. CURRENT OWNER: NORTH CAROLINA STATE UNIVERSITY
2. SITE ADDRESS: 1350 VARSITY DRIVE, RALEIGH, NC 27606
3. PIN: 794507874
4. DEED REFERENCE: DB 125 PG145
5. TOTAL SITE AREA: APPROXIMATELY 12.73 AC (SURVEYED)
6. AREA OF DISTURBANCE: 7,165 SF

EXISTING CONDITIONS NOTES

1. PROPERTY LINES ARE FROM WAKE COUNTY GIS.
2. UTILITY SURVEY (SUE) INFORMATION PROVIDED BY NCSU DATED 09/06/23.
3. EXISTING CONDITIONS & TOPOGRAPHIC INFORMATION PROVIDED BY NCSU ON 03/16/22. ADDITIONAL TOPOGRAPHIC INFORMATION PROVIDED BY NCSU ON 10/2/23. VERTICAL DATUM AND COORDINATE SYSTEM NAD83 (2011).
4. FINISHED FLOOR ELEVATIONS PROVIDED BY SURVEY BY DRAPER ADEN ON 10/05/22.
5. PROPOSED BUILDING PLANS PROVIDED BY SKINNER FARLOW KIRWAN ON 10/05/23.
6. PROJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS REFERENCED BY FEMA FLOOD INSURANCE RATE MAP NO. 3720079300K, EFFECTIVE DATE 7/19/2022.

DEMOLITION NOTES

1. THE CONTRACTOR SHALL NOTIFY THE N.C. ONE CALL CENTER AT 811 OR 1-800-632-4949 PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL NOTIFY THE LOCAL GOVERNING PUBLIC UTILITIES DEPARTMENT PRIOR TO STARTING WORK.
3. ALL DEMOLITION AND ANY SUBSEQUENT CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS SET FORTH AND APPROVED BY THE LOCAL GOVERNING MUNICIPALITY OR THE STATE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS.
4. THE CONTRACTOR SHALL NOT MAKE ANY LANE CLOSURES OR CHANGES TO THE EXISTING TRAVEL PATTERNS ON ANY PUBLIC STREET WITHOUT PRIOR APPROVAL FROM THE LOCAL GOVERNING MUNICIPALITY TRANSPORTATION DEPARTMENT AND/OR STATE TRANSPORTATION DEPARTMENT.
5. LANE CLOSURE, TRAFFIC CONTROL PLAN, OR PEDESTRIAN CONTROL PLAN TO BE COORDINATED WITH APPROPRIATE STAFF OF THE LOCAL GOVERNING MUNICIPALITY AND/OR STATE DEPARTMENT OF TRANSPORTATION PRIOR TO ANY CONSTRUCTION IN PUBLIC RIGHT-OF-WAY.
6. THE CONTRACTOR IS RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL REQUIREMENTS REGARDING REMOVAL AND DISPOSAL OF MATERIALS AND DEBRIS.
7. CONTRACTOR SHALL REFER TO CIVIL SHEETS FOR SANITARY SEWER AND WATER REMOVALS AND RELOCATIONS.
8. RELOCATION OF EXISTING UTILITIES TO BE COORDINATED WITH THE LOCAL UTILITY PROVIDER(S).
9. WHERE UTILITIES (TO BE REMOVED) IMPACT THE FOOTPRINT OF THE NEW BUILDING, CONTRACTOR SHALL EXCAVATE AND REMOVE AN ADDITIONAL 2 FEET OF SOILS TO EITHER SIDE OF PIPE, AND 1 FOOT BELOW TO REMOVE UNSUITABLE SOILS, IF UNSUITABLE SOILS EXIST.
10. CLEANOUTS LOCATED IN AREAS OF DEMOLITION OR SUBSEQUENT CONSTRUCTION THAT ARE TO REMAIN, SHALL BE PROTECTED FROM DAMAGE AND RAISED TO FLUSH WITH NEW GRADE.
11. ELECTRICAL OR GAS UTILITY SERVICES TO BE REMOVED SHALL BE REMOVED AND RELOCATED (AS INDICATED) BY THE UTILITY PROVIDER. CONTRACTOR SHALL SCHEDULE AND COORDINATE THIS WORK WITH THE APPROPRIATE SERVICE PROVIDER. ALL SERVICES SHOULD BE RE-INSTALLED PRIOR TO THE INSTALLATION OF PAVEMENT, SIDEWALKS, CURB AND GUTTER, OR OTHER PERMANENT FEATURES.
12. REMOVE EXISTING CONCRETE (WHERE REQUESTED) TO FIRST COLD JOINT OR SAWCUT JOINT TO OBTAIN A CLEAN EDGE FOR NEW CONSTRUCTION. SAWCUT EXISTING ASPHALT DRIVE AT LIMITS OF NEW CURBING TO OBTAIN A CLEAN EDGE.
13. CONTRACTOR SHALL RETAIN AND STOCKPILE CONCRETE WHEELSTOPS WHICH ARE IN USEABLE CONDITION FOR RE-INSTALLATION AT THE END OF THE PROJECT.
14. CONTRACTOR SHALL RESTORE THE LAYDOWN AND STAGING AREA TO ORIGINAL CONDITIONS AND TO THE SATISFACTION OF THE OWNER, PRIOR TO DEMOBILIZATION AT THE CONCLUSION OF THE PROJECT.
15. CLEAN SOILS SHALL BE UTILIZED FOR BACKFILL. COMPACTION OF THESE SOILS PERFORMED IN ACCORDANCE WITH SPECIFICATIONS, GEOTECHNICAL REPORT, AND SITE PLAN.
16. ALL FENCING TO BE REMOVED SHALL BE REMOVED AT NEXT NEAREST POLE.
17. ALL GRAVEL TO BE REMOVED (SURFACE OR SUBSURFACE) SHALL BE STOCKPILED AND REUSED ON SITE WHERE POSSIBLE.
18. ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE REMOVED COMPLETELY, INCLUDING ALL SUBGRADE MATERIALS DIRECTLY ASSOCIATED WITH ITEMS TO BE REMOVED.
19. ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE DISPOSED OF LEGALLY OFFSITE UNLESS OTHERWISE NOTED ON THIS PLAN.
20. ALL TREES TO BE REMOVED SHALL BE GROUND DOWN TO A MINIMUM DEPTH OF 12" BELOW PROPOSED FINISH GRADE.
21. ALL TREE PROTECTION FENCING SHALL REMAIN IN PLACE DURING DEMOLITION AND CONSTRUCTION.
22. CONTRACTOR SHALL NOT STOCKPILE SOILS OR CONSTRUCTION EQUIPMENT WITHIN ROOT ZONES OF EXISTING TREES TO REMAIN. ANY DAMAGED TREES SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.





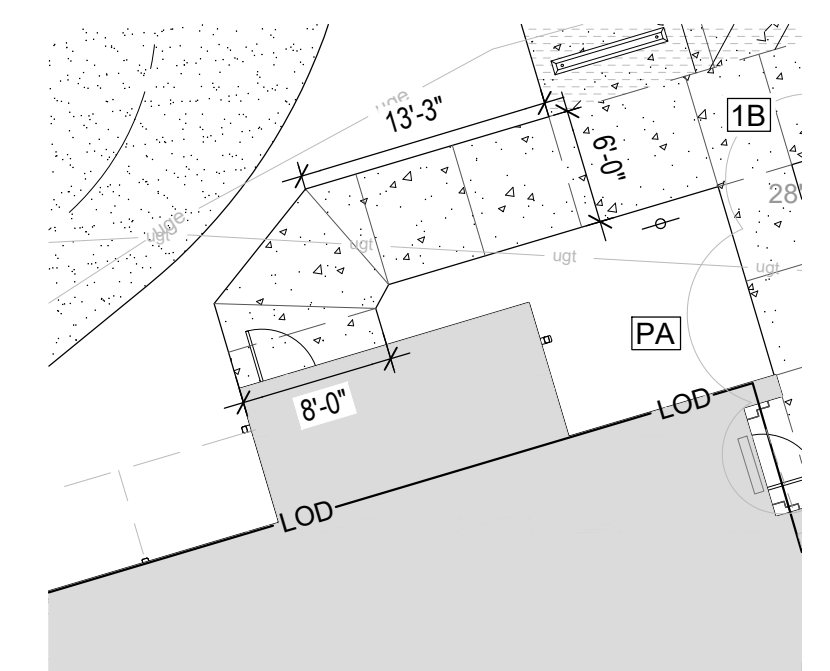
SITE PLAN LEGEND

SYMBOL	PROPOSED SITE ITEM	DETAIL	FINISH
	1A C.I.P. CONCRETE PAVING, HEAVY DUTY	2/L202	MEDIUM BROOM
	1B C.I.P. CONCRETE PAVING, LIGHT DUTY	2/L202	MEDIUM BROOM
	1C C.I.P. CONCRETE PAVING, THICKENED EDGE	3/L202	MEDIUM BROOM
	1D GRAVEL	1/L202	
	2A 4" THERMOPLASTIC PAINTED WHITE LINES		
	2B CONCRETE WHEELSTOP	4/L202	
	2C ADA ACCESSIBLE PARKING SPACE (VAN ACCESSIBLE)	6/L202	
	2D ADA ACCESSIBLE PARKING SPACE	6/L202	
	2E ADA ACCESSIBILITY SIGN	5/L202	
	2F STEEL PIPE BOLLARD	7/L202	
	2G SCORE JOINTS	8/L202	
	2H EXPANSION JOINTS		
	2I CONCRETE FOOTINGS		

SYMBOL	BY OTHER CONSULTANTS	
K1	CANOPY COLUMN	PER ARCH
K2	RESERVED OPEN SPACE FOR EMERGENCY CHILLER	PER ARCH
K3	OVERHEAD CANOPY	PER ARCH
K4	HANDRAIL	PER ARCH

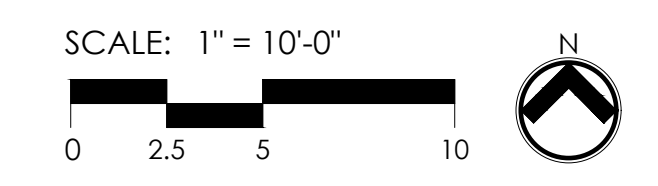
SYMBOL	EXISTING SITE ITEM TO REMAIN	
E1	EXISTING LIGHT POLE	
E2	EXISTING CONCRETE PAVING	
E3	EXISTING BRICK PATIO	
E4	EXISTING FENCE	

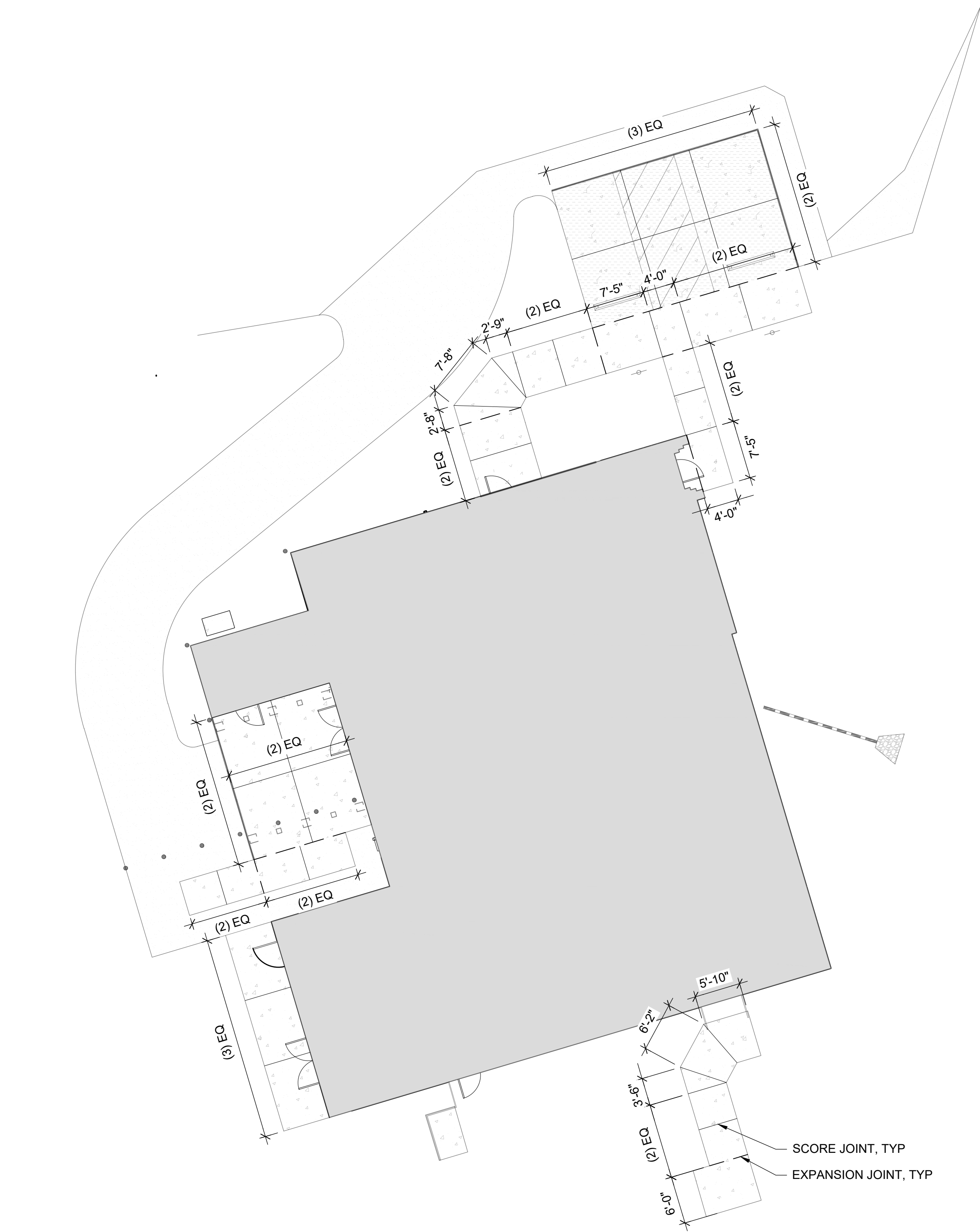
SYMBOL	OTHER	
PA	PLANTING AREA	
— LDB —	LIMITS OF DISTURBANCE	2/L203
— TP —	TREE PROTECTION FENCE	1/L203
— SF —	SILT FENCE	
— ALT 4 —	BID ALTERNATE 4	
— ALT 6 —	BID ALTERNATE 6	



1 BID ALTERNATE 4-VESTIBULE
SCALE: 1" = 10'-0"

REFER TO L-201 FOR CONCRETE JOINT SCORING PATTERNS AND GENERAL SITE NOTES





1 SITE SCORING PLAN
SCALE: 1" = 10'-0"

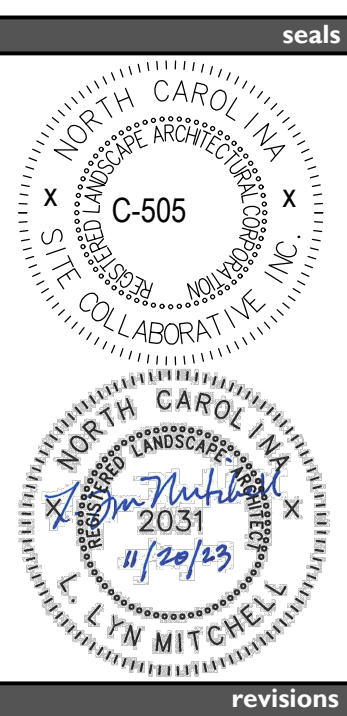
GENERAL SITE NOTES

- ALL CONSTRUCTION IN RIGHT-OF-WAY PER CITY OF RALEIGH STANDARDS.
- SIDEWALKS ALONG RIGHT-OF-WAY ARE PUBLIC AND MUST BE ACCESSIBLE TO PERSONS WHO ARE BLIND, HAVE LOW VISION AND PEOPLE WITH MOBILITY DISABILITIES. EXISTING PEDESTRIAN ROUTES AND ALTERNATE PEDESTRIAN ROUTES DURING CONSTRUCTION ARE REQUIRED TO BE COMPLIANT WITH THE PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG), LATEST EDITION OF ADA STANDARDS FOR ACCESSIBLE DESIGN AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL PAVEMENTS TO SLOPE POSITIVELY AWAY FROM ALL BUILDINGS. PONDING OF WATER IS PROHIBITED.
- ALL DIMENSIONS ARE TO BOTTOM OF CURB OR EDGE OF SIDEWALK UNLESS OTHERWISE NOTED.
- ALL CURB RADII ARE 3'-0" AT BOTTOM/FACE OF CURB UNLESS OTHERWISE NOTED.
- PROVIDE CONSTRUCTION JOINTS IN CONCRETE WALKWAYS AS SHOWN IN PLANS. IF NOT SHOWN ON PLANS - MAX SPACING @ 10'
- THROUGHOUT PROJECT SITE, ALL DIMENSIONS TO BE FIELD VERIFIED. NOTIFY THE LANDSCAPE ARCHITECT OF ANY DISCREPANCY. ALL DIMENSIONS ARE TO OUTSIDE FACE OF BUILDING, TO CENTERLINE, CENTER TO CENTER ON STRIPES, AND/OR FACE OF CURB, UNLESS OTHERWISE NOTED.
- BUILDING AND PUBLIC ROADWAY STAKE OUT SHALL BE PERFORMED BY A REGISTERED LAND SURVEYOR.
- GUARDRAILS MUST BE INSTALLED ON THE OPEN SIDES OF ELEVATED WALKING SURFACES THAT EXCEED 30 INCHES IN HEIGHT. ALL GUARDRAILS MUST BE A MINIMUM HEIGHT OF 42 INCHES ABOVE THE LEADING EDGE OF THE TREAD OR WALKING SURFACE. GUARDRAILS SHALL HAVE BALUSTERS SUCH THAT A 4 INCH DIAMETER SPHERE CANNOT PASS THROUGH ANY OPENING UP TO A HEIGHT OF 34 INCHES. FROM 34 INCHES TO 42 INCHES ABOVE THE WALKING SURFACE, A 8 INCH DIAMETER SPHERE SHALL NOT PASS.
- THE CONTRACTOR, AT ALL TIMES, MUST KEEP THE PREMISES FREE FROM ACCUMULATIONS OF WASTE, MATERIALS OR RUBBISH CAUSED BY THE CONTRACTOR, THE CONTRACTOR'S EMPLOYEES OR THE CONTRACTOR'S SUBCONTRACTOR. ALL DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE ON A DAILY BASIS.
- IF DEPARTURES FROM THE DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITH THE EXPRESS WRITTEN PERMISSION OF THE OWNER.
- LANDSCAPE ARCHITECT AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND/OR METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
- EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE, ARE BASED ON A FIELD DATA PROVIDED TO LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES, UNDERGROUND LINES, AND STRUCTURES AS NECESSARY TO AVOID DAMAGING OR DESTROYING EXISTING SERVICES.
- THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE ACTUAL AND EXACT LOCATION, SIZE, AND MATERIAL COMPOSITION OF ANY EXISTING WATER OR SEWER SERVICE PROPOSED FOR CONNECTION OR USE ON THIS PROJECT. THE RELOCATION OF ANY UTILITY SERVICES REQUIRED TO COMPLETE ANY PORTION OF THESE CONSTRUCTION PLANS.
- CONTRACTOR SHALL MAINTAIN AN "AS BUILT" SET OF DRAWINGS TO RECORD ANY FIELD CHANGES, ALONG WITH ANY PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER AT THE END OF THE PROJECT.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PERMITS AS ISSUED, AND ANY AND ALL APPLICABLE STATE, COUNTY AND LOCAL CODES.
- EXISTING IMPROVEMENTS DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE REPLACED OR RESTORED TO THEIR ORIGINAL CONDITION, AND TO THE SATISFACTION OF THE OWNER OF THE IMPROVEMENTS.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, AND/OR ANY OTHER REQUIREMENTS WHICH MUST BE MET UNDER CONTRACT.
- CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR DETAILS OF BUILDINGS AND BUILDING DIMENSIONS.
- CONTRACTOR SHALL COORDINATE CONSTRUCTION OF ALL UNDERGROUND UTILITIES FOR THIS PROJECT WITH THE OWNER'S REPRESENTATIVE PER ALL APPLICABLE REGULATIONS.
- CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTOR'S ON SITE AND UTILITY PROVIDERS DURING CONSTRUCTION TO ENSURE SMOOTH TRANSITION BETWEEN DISCIPLINES.
- ALL DEMOLITION, AND ANY SUBSEQUENT CONSTRUCTION, SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS SET FORTH AND APPROVED BY THE CITY OF RALEIGH. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS. ALL TREE PROTECTION FENCING SHALL REMAIN IN PLACE DURING CONSTRUCTION.
- TRAFFIC CONTROLS FOR ANY UTILITY WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL BE PERFORMED IN COMPLIANCE WITH STANDARDS OF THE NORTH CAROLINA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL CROSSWALK MARKINGS WITHIN RIGHT-OF-WAY SHALL BE CONSTRUCTED OF THERMOPLASTIC MATERIALS AND CONSTRUCTED IN ACCORDANCE WITH NCDOT SPECIFICATIONS. CONTRACTOR TO INSTALL CROSSWALKS IN SUCH A MANNER THAT CROSSWALKS ARE ALIGNED BETWEEN HANDICAP/WALKWAY ACCESS POINTS OR PERPENDICULAR TO THE ROADWAY / DRIVE LANE.
- ALL SIGNS AND PAVEMENT MARKINGS ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) AND NCDOT STANDARDS.
- ALL SIGNS SHALL USE PRISMATIC SHEETING THAT MEETS MINIMUM RETROREFLECTIVITY STANDARDS FOUND IN THE LATEST EDITION OF THE MUTCD.
- THIS SITE SHALL BE FULLY COMPLIANT WITH THE CURRENT EDITION OF THE NORTH CAROLINA ACCESSIBILITY CODES (ANSI 117.1 AND CHAPTER 11 OF THE NCBQ) UNLESS AND EXCEPT IN AREAS WHERE AN APPROVED STATEMENT FROM A SITE ENGINEER, SURVEYOR OR LANDSCAPE ARCHITECT VERIFIES THAT SITE CONDITIONS EXIST WHERE THE TOPOGRAPHY OF THE SITE IS EXTREME AND ONLY ALTERNATE METHODS OF COMPLIANCE ARE POSSIBLE.
- ALL HARDSCAPES MUST BE PROTECTED BY 3/4" THICK 4' X 8' PLYWOOD. THE CONTRACTOR MUST PROVIDE ADEQUATE PROTECTION OF EXISTING CONCRETE, ASPHALT, AND BRICK. ALL DAMAGE MUST BE REPAIRED BY THE CONTRACTOR TO ENSURE EQUAL MATERIAL SUBSTITUTION. LCS WILL PROVIDE TREE PROTECTION AS NEEDED IN ALL AREAS THAT MAY HAVE POTENTIAL IMPACT. NO STORING OF MATERIAL OR EQUIPMENT ON LANDSCAPED AREAS, INCLUDING MULCH BEDS AND LAWN. ALL EXCESS MATERIALS SHALL BE REMOVED FROM THE SITE INCLUDING ASPHALT, ROCKS, ET CETERA UPON COMPLETION. PLEASE NOTE, ALL VEHICULAR TRAFFIC ON HARDSCAPES IS BY PERMIT ONLY AND NOT ALLOWED ON SOFTSCAPES. ALL DAMAGES MADE TO HARDSCAPES/SOFTSCAPES MUST BE REPAIRED BY THE CONTRACTOR.

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consultants
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project status
Construction Documents for BID
owner id
SCO ID# 19-21547-02A
NCSU # 201920037



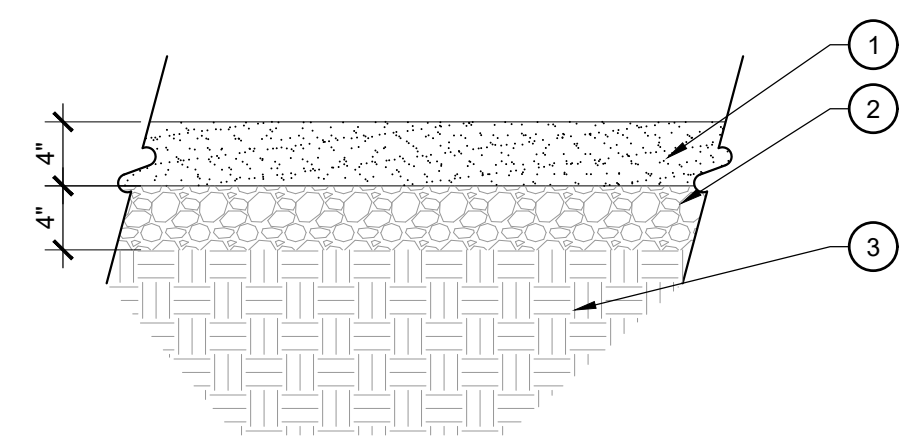
revisions

Don E. Ellis Building (133)
Renovations
1320 Varsity Drive, Raleigh, NC 27606
North Carolina State University

PROJECT 1368-20
DATE 10/16/2023
DRAWN DB
CHECKED LM

sheet name
SITE NOTES & SCORING PLAN

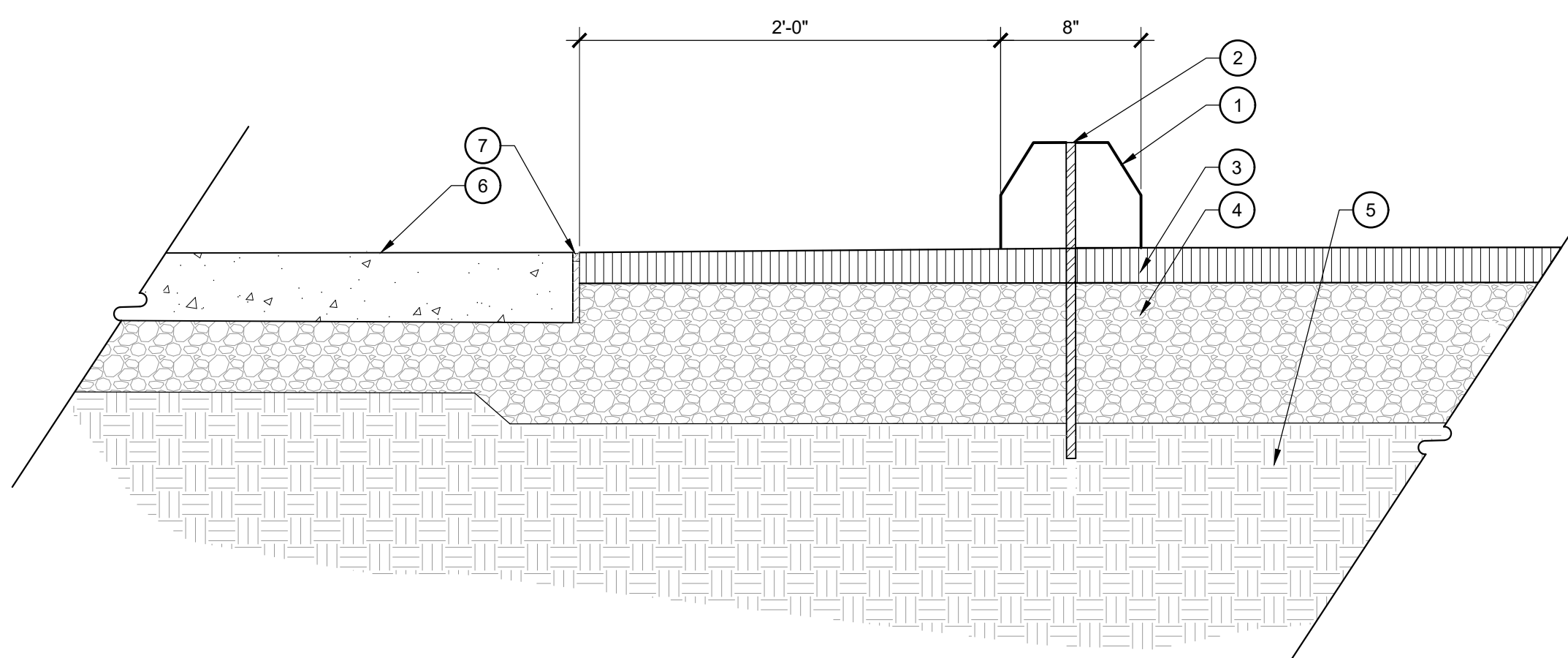
sheet no
L-201



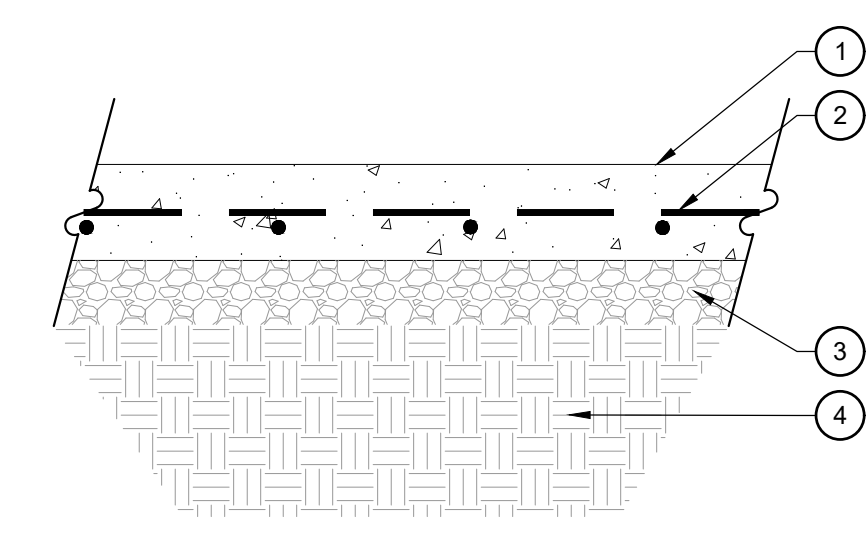
- LEGEND**
- #57 AGGREGATE
 - AGGREGATE BASE COURSE
 - COMPACTED SUB-GRADE PER GEOTECHNICAL REPORT
- NOTES**
- GRAVEL COLOR PER HARDSCAPE LEGEND
 - IF NO GEOTECHNICAL REPORT AVAILABLE, PROVIDE 4" AGGREGATE BASE COURSE AND COMPACT SUBGRADE TO 95% S.P.D.

1 GRAVEL DRIVE PARKING LOT
SCALE: 1/4" = 1'-0"

- LEGEND**
- PRECAST CONCRETE WHEELSTOP, TYP.
 - 5/8" DIA. REIN. BAR 18" LONG 2 PER WHEEL STOP - TYP.
 - PAVING, TYP. - PER SITE PLAN
 - ABC BASE TYP.
 - EXISTING SUBGRADE
 - CONCRETE WALK AS SHOWN ON PLAN
 - EXPANSION JOINT



4 CONCRETE WHEELSTOP
SCALE: 1-1/2" = 1'-0"

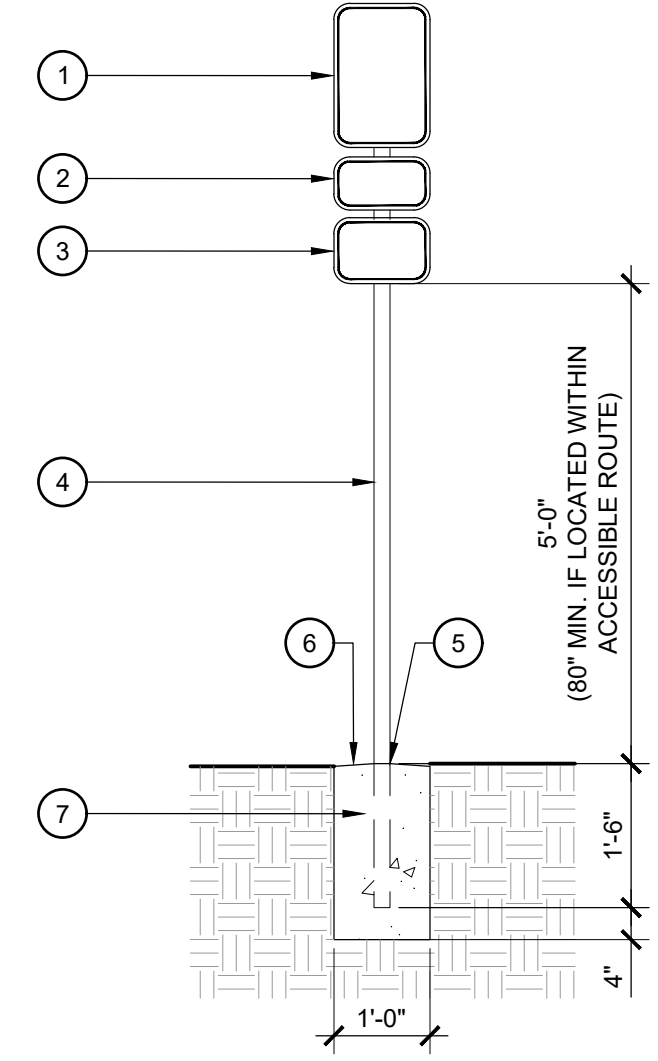


- LEGEND**
- CAST-IN-PLACE CONCRETE, COLOR AND FINISH PER HARDSCAPE LEGEND
 - #4 REBAR, REINFORCEMENT PER TABLE BELOW
 - AGGREGATE BASE COURSE, THICKNESS PER TABLE BELOW
 - SUBGRADE COMPACTED TO 95% STANDARD MAXIMUM DRY DENSITY +/- 3% OPTIMUM MOISTURE PER ASTM D-698, OR PER GEOTECHNICAL REPORT
- NOTES**
- CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT TO REVIEW FORMS PRIOR TO POURING

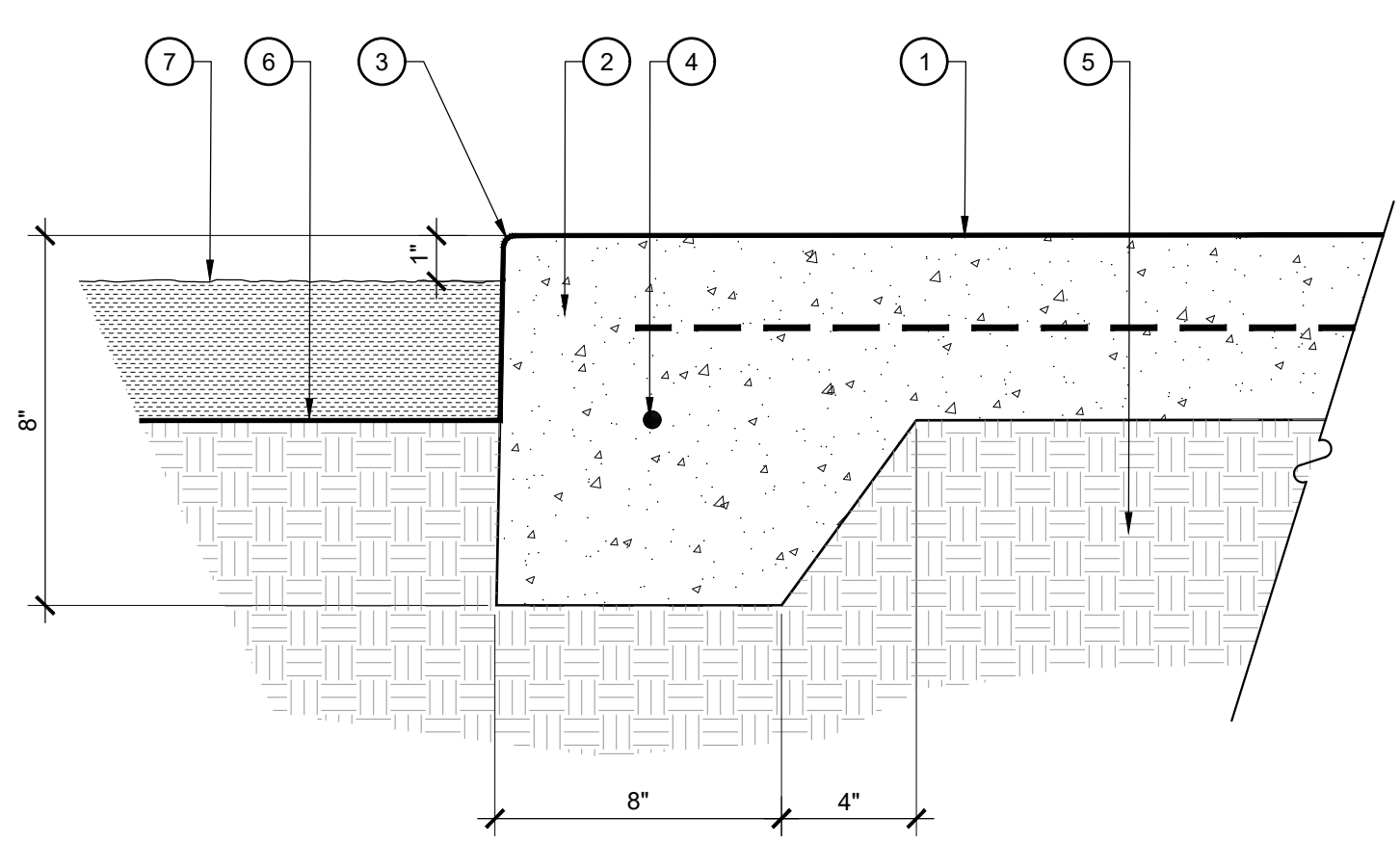
PAVEMENT TYPE	ABC	REINFORCEMENT	CONCRETE
Accessible Parking Spaces	4"	#4 @ 12" o.c. b.w.	6"
Pedestrian Sidewalks	4"	None	4"
Slab at exit on northeast side of building	None	None	4"

2 CONCRETE PAVING
SCALE: 1/4" = 1'-0"

- LEGEND**
- OWNER (TRANSPORTATION) TO PROVIDE STANDARD NCSU ADA SIGN.
 - SIGN WITH INTERNATIONAL SIGN OF ACCESSIBILITY (MUTCD R7-8C)
 - UTILIZE VAN ACCESSIBLE SIGN WHEN APPLICABLE
 - PENALTY SIGN, WHEN VAN ACCESSIBLE SIGN NOT REQUIRED PLACE DIRECTLY BELOW INTERNATIONAL SIGN OF ACCESSIBILITY
 - 2" DIA. OR U-CHANNEL GALVANIZED STEEL POST CENTERED ON POST
 - NON-SHRINK GROUT POST TO FOOTER
 - SLOPE TOP OF FOOTER AWAY FROM POST WHEN FOOTER IS IN A PLANTING AREA
 - CAST-IN-PLACE CONCRETE FOOTER
- NOTES**
- HEIGHT OF R7-8C RESERVED PARKING SIGN AS PRESCRIBED BY N.C. DEPT. OF TRANSPORTATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, SECTION 2A-23, PART II



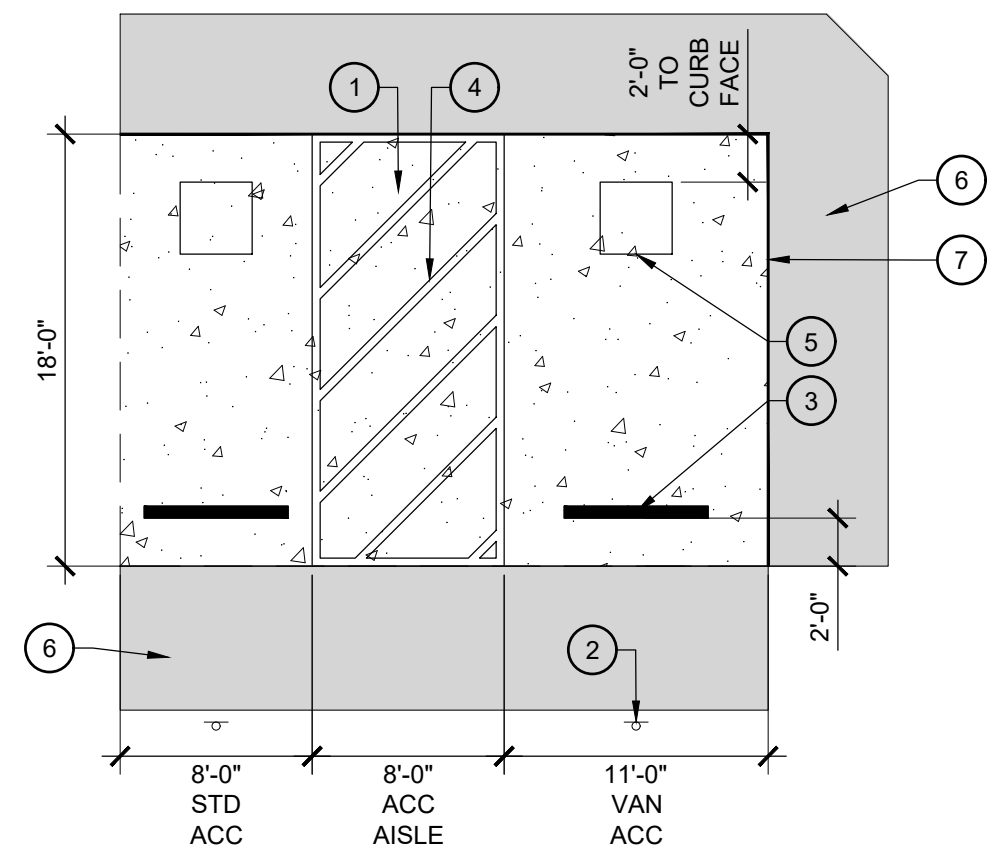
5 ADA ACCESSIBLE SIGN
SCALE: 1-1/2" = 1'-0"



- LEGEND**
- CONCRETE PAVING PER DETAIL
 - THICKENED EDGE
 - 1/8" RADIUS TOOLED EDGE
 - #3 BAR CONTINUOUS, 48" LAPPED AND WIRED
 - SUBGRADE COMPACTED TO 95% STANDARD MAXIMUM DRY DENSITY +/- 3% OPTIMUM MOISTURE PER ASTM D-698, OR PER GEOTECHNICAL REPORT
 - FINISH GRADE AT PLANTING
 - FINISH SURFACE FOR MULCH, PER PLANS AND SPECIFICATIONS
- NOTES**
- THICKENED EDGE REQUIRED WHEREVER CONCRETE PAVING IS ADJACENT TO AREAS OF AT-GRADE PLANTING, LAWN, OR GRAVEL

3 CONCRETE PAVING THICKENED EDGE
SCALE: 1/4" = 1'-0"

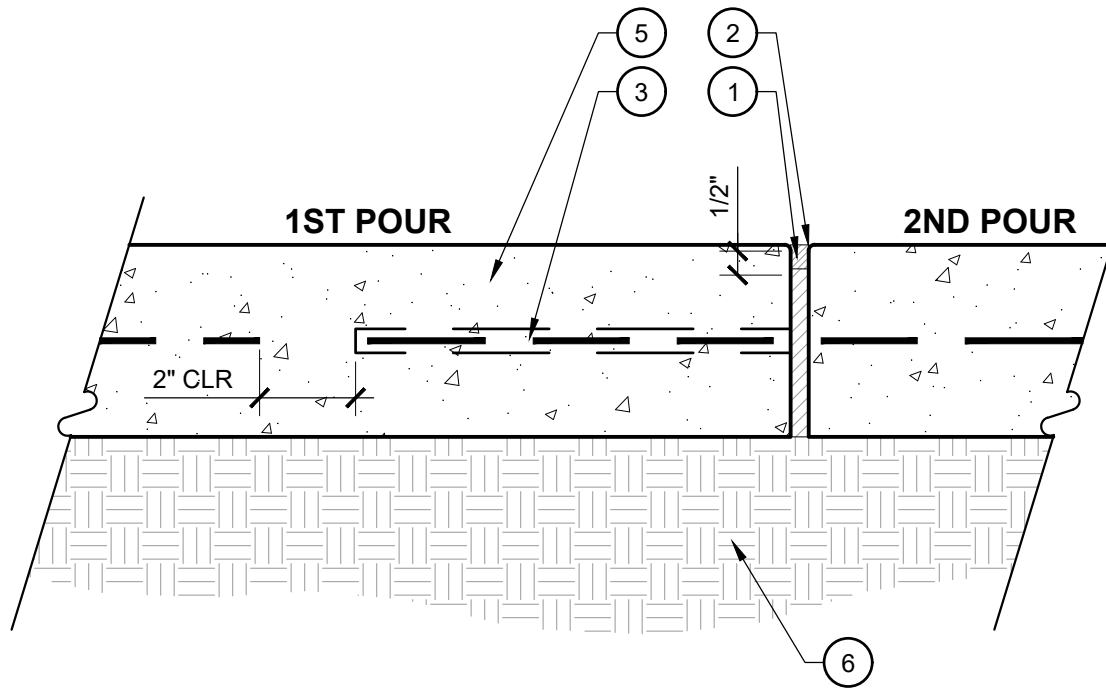
- LEGEND**
- ACCESSIBLE AISLE TO BE CLEAR OF ALL OBSTRUCTIONS
 - ACCESSIBLE SIGN PER DETAIL, SEE HARDSCAPE PLAN FOR LOCATION
 - CONCRETE WHEELSTOP
 - 4" WIDE THERMOPLASTIC WHITE STRIPE
 - 36" X 36" INTERNATIONAL SIGN OF ACCESSIBILITY EMBLEM
 - ADJACENT PAVING PER PLAN
 - CONCRETE THICKENED EDGE
- NOTES**
- CONTRACTOR SHALL VERIFY A MAX. SLOPE OF 2% IN ALL DIRECTIONS. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES PRIOR TO INSTALLATION



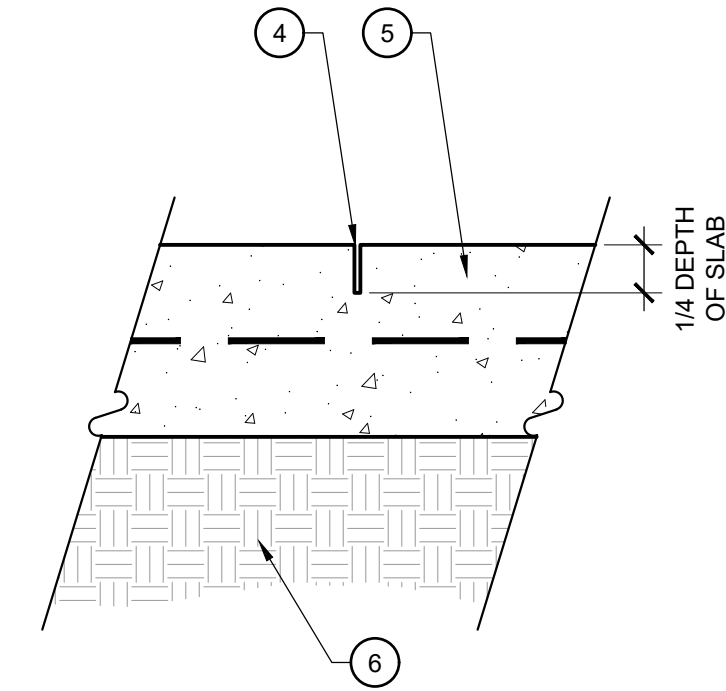
6 ADA PARKING SPACE
SCALE: 1-1/2" = 1'-0"

- LEGEND**
- 3/8" ASPHALTIC FIBERBOARD EXPANSION JOINT
 - 1/8" RADIUS TOOLED EDGE
 - #4 18" STEEL DOWEL @ 18" O.C., CENTERED IN SLAB, SLEEVE ONE SIDE
 - 1/8" WIDE SAWCUT JOINT
 - C.I.P. CONCRETE PAVING PER DETAIL
 - SUBGRADE COMPACTED TO 95% STANDARD MAXIMUM DRY DENSITY +/- 3% OPTIMUM MOISTURE PER ASTM D-698, OR PER GEOTECHNICAL REPORT
 - DECORATIVE SAWCUT JOINT, 1/8" WIDE

- NOTES**
- PROVIDE EXPANSION JOINTS WHERE INDICATED ON THE DRAWINGS, AND WHERE PAVING ABUTS WALLS, CURBS, STEPS, RAMPS AND OTHER VERTICAL APPURTENANCES. OMIT DOWELS WHERE ABUTTING WALLS, BUILDINGS, AND CURBS.
 - MAXIMUM DISTANCE BETWEEN JOINTS 10'.
 - ALL TOOLED EDGES OF EXPANSION JOINTS SHALL BE 1/4" RADIUS MAX.
 - PROVIDE COLD JOINTS BETWEEN DIFFERENT CONCRETE PAVING TYPES.

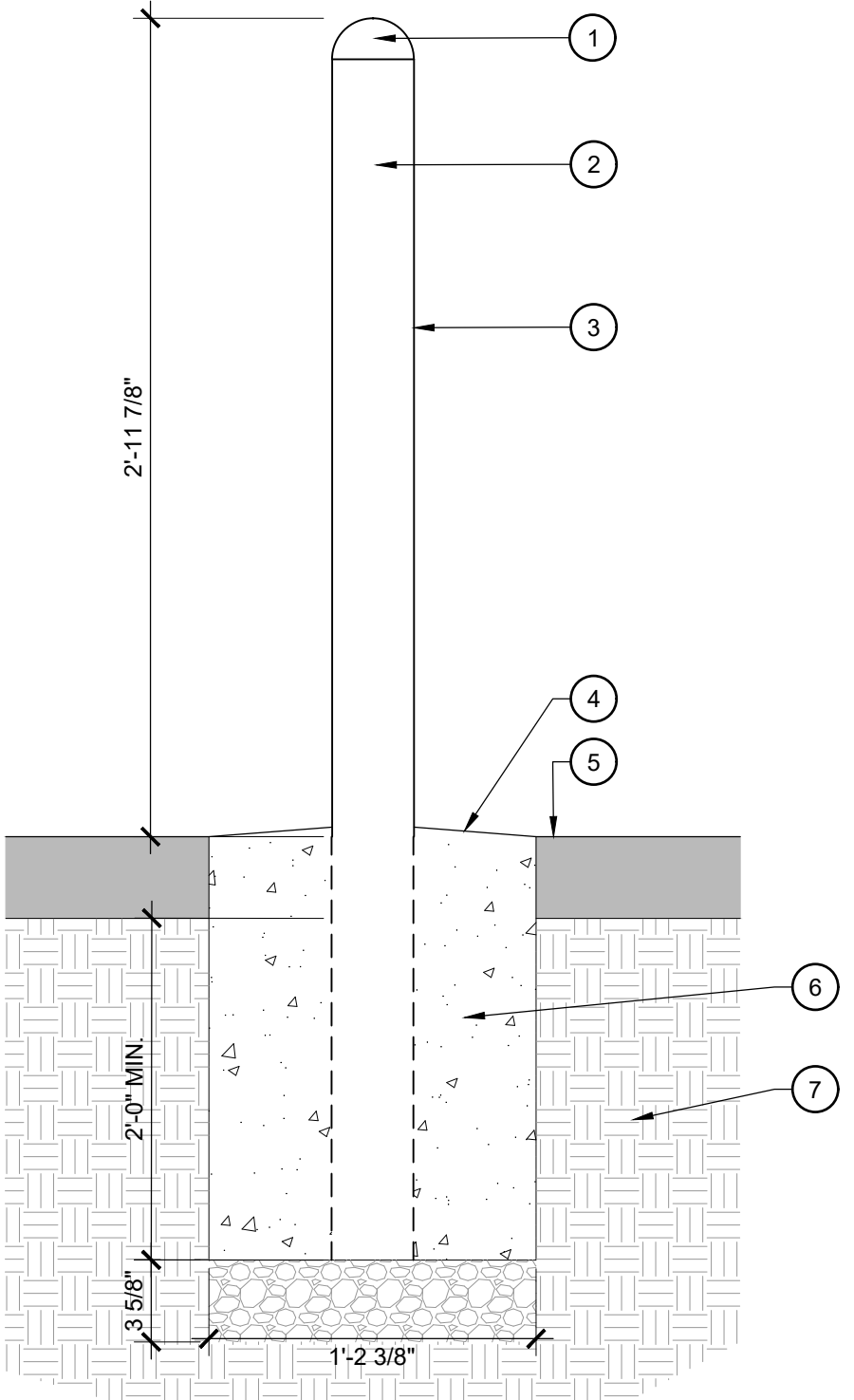


EXPANSION JOINT



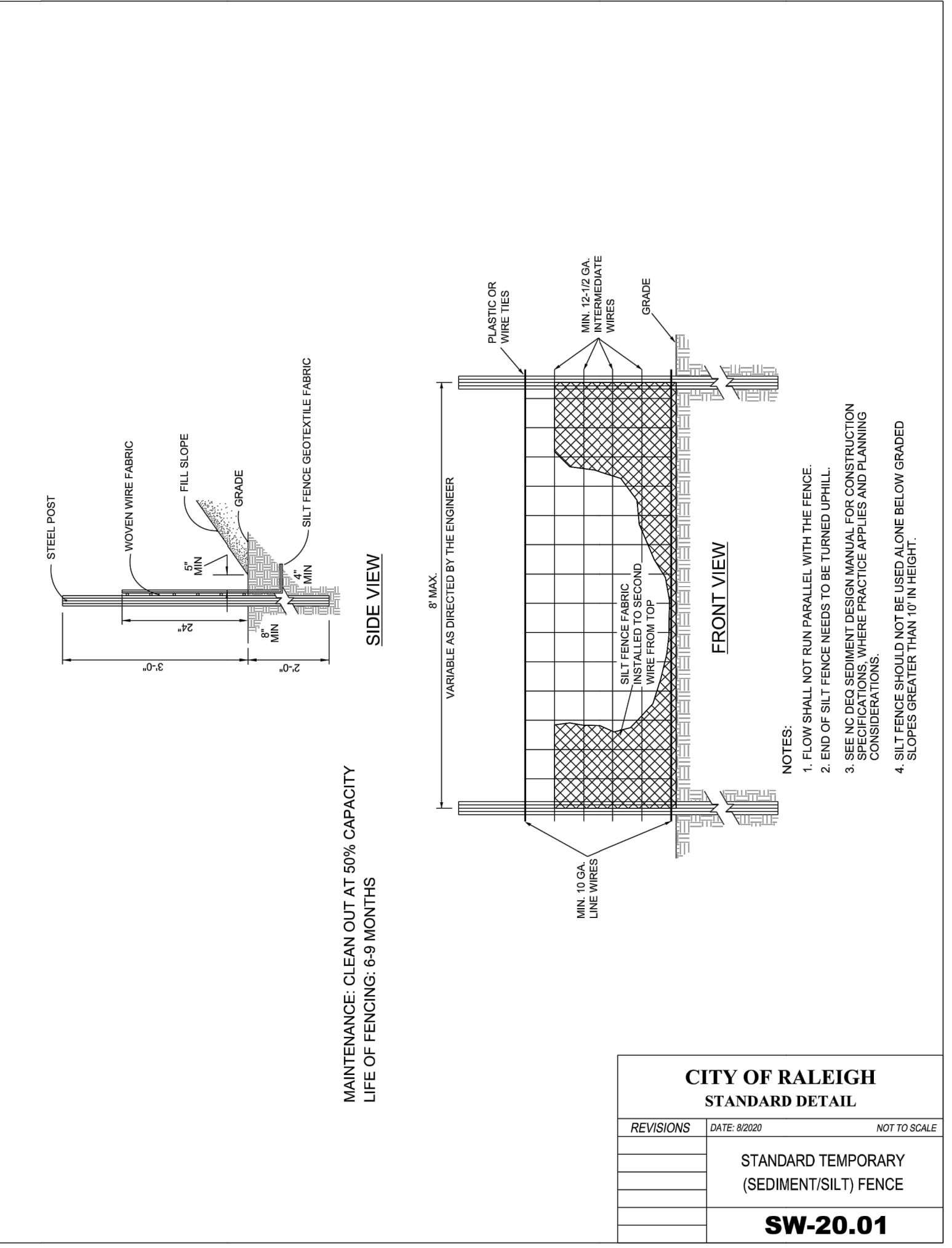
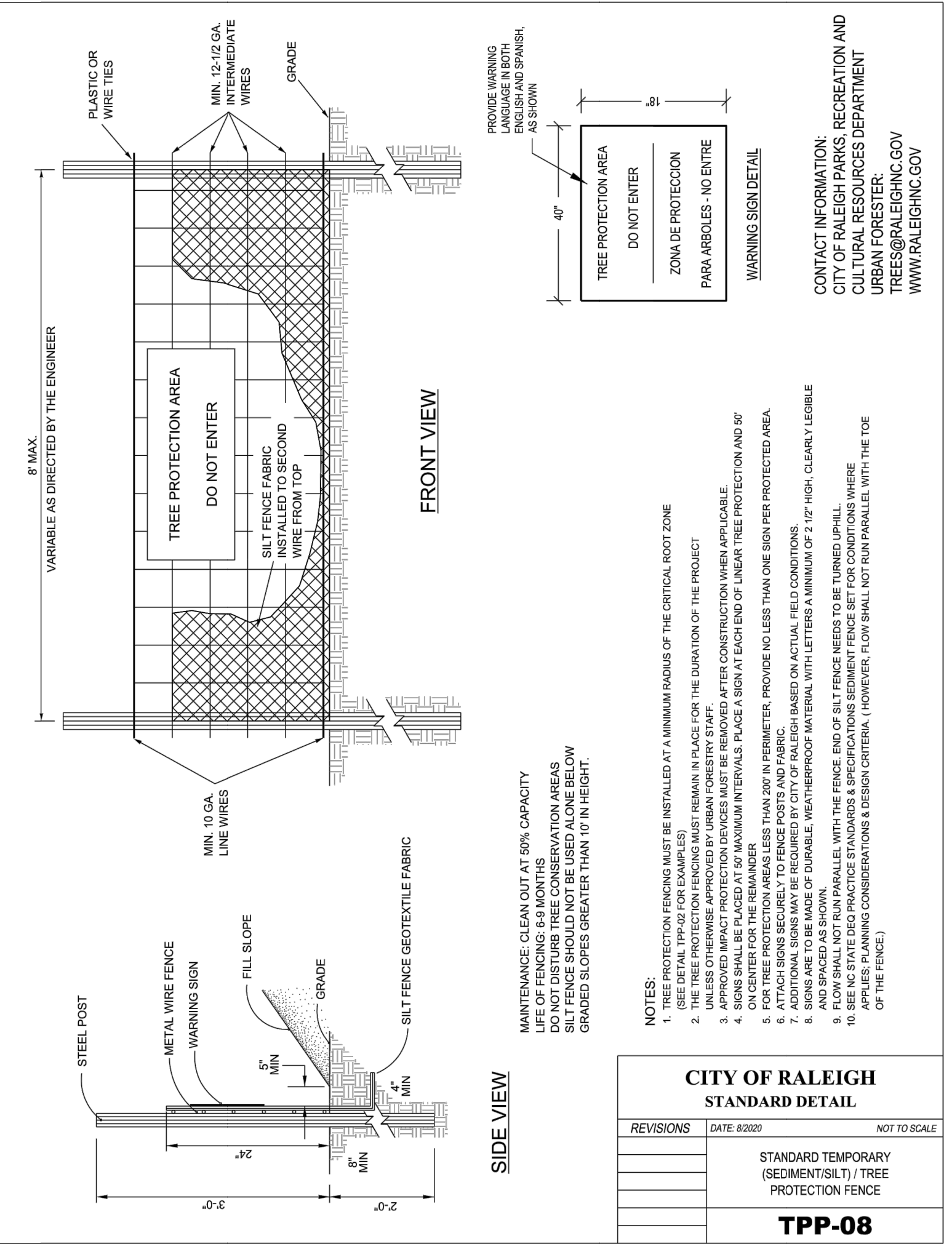
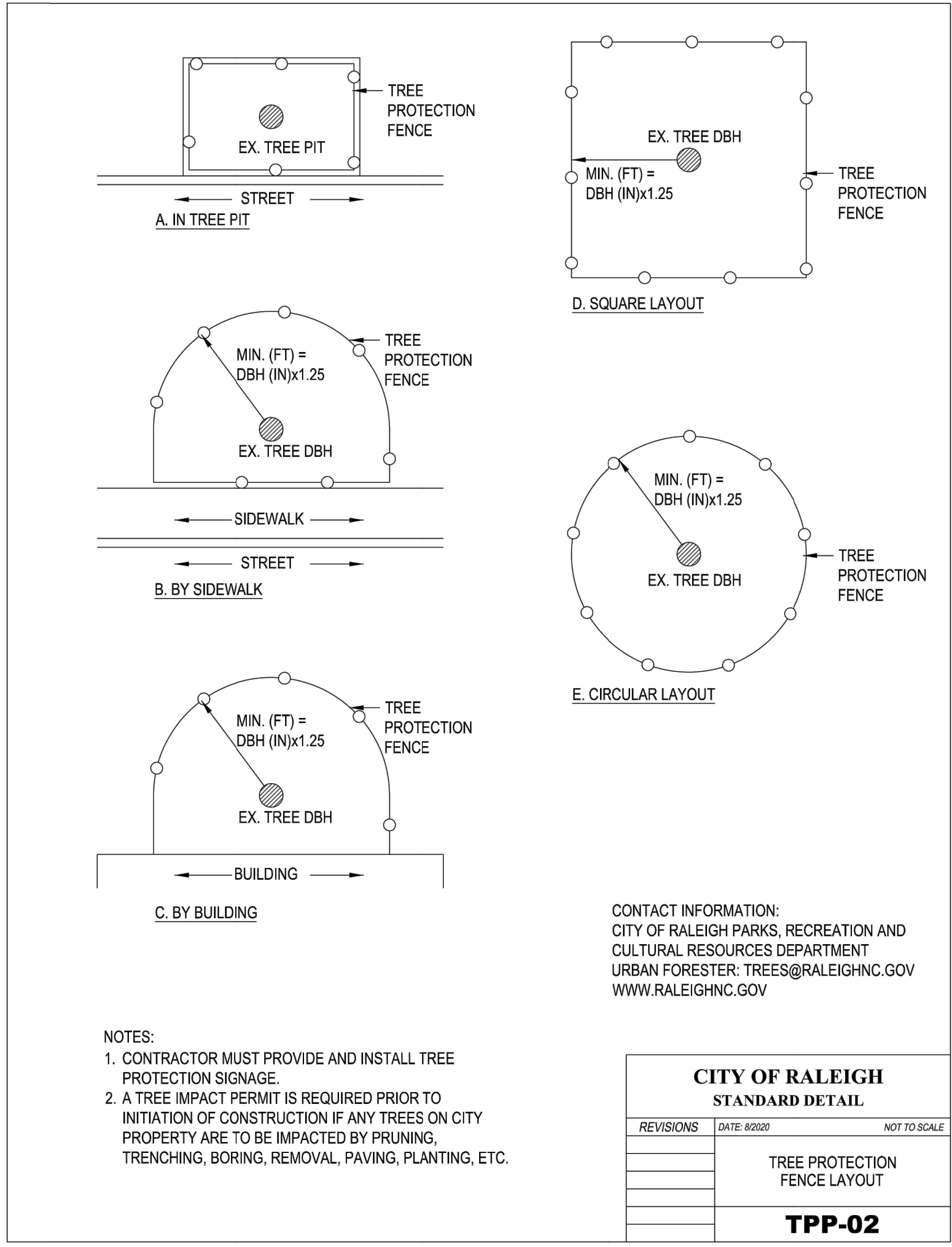
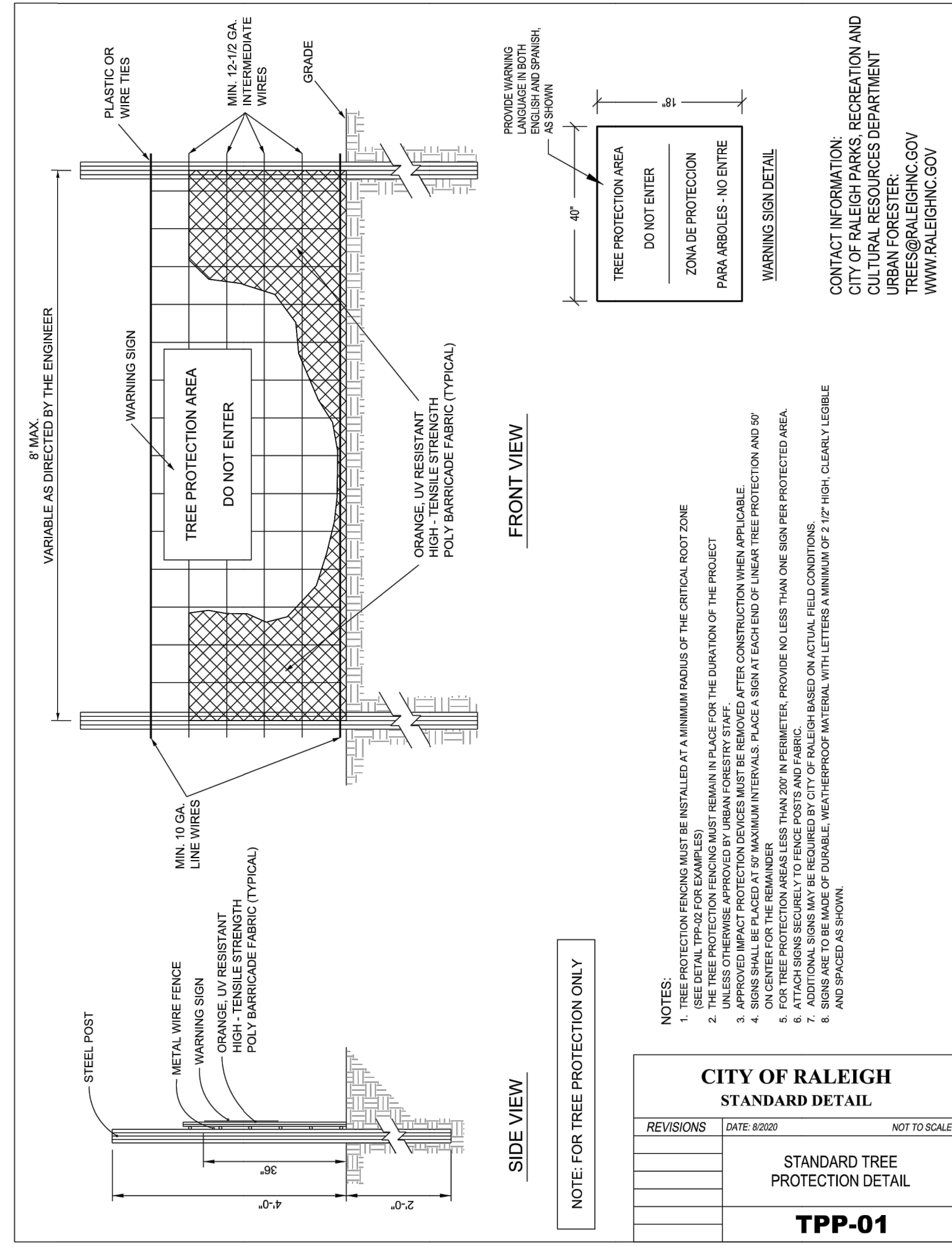
SAWCUT JOINT

8 CONCRETE PAVING JOINTS
SCALE: 1-1/2" = 1'-0"



- LEGEND**
- POST CAP
 - 6" 9 TEEL PIPE, FILL WITH CONCRETE, SET PLUMB
 - POST TO BE PAINTED OSHA YELLOW
 - SLOPE TO DRAIN
 - ADJACENT PAVING PER PLAN
 - 3,500 PSI CONCRETE FOOTER
 - EXISTING UNDISTURBED SUBGRADE OR SUBGRADE COMPACTED TO 95% STANDARD MAXIMUM DRY DENSITY +/- 3% OPTIMUM MOISTURE PER ASTM D-698 OR PER GEOTECHNICAL REPORT
 - COMPACTED AGGREGATE BASE COURSE

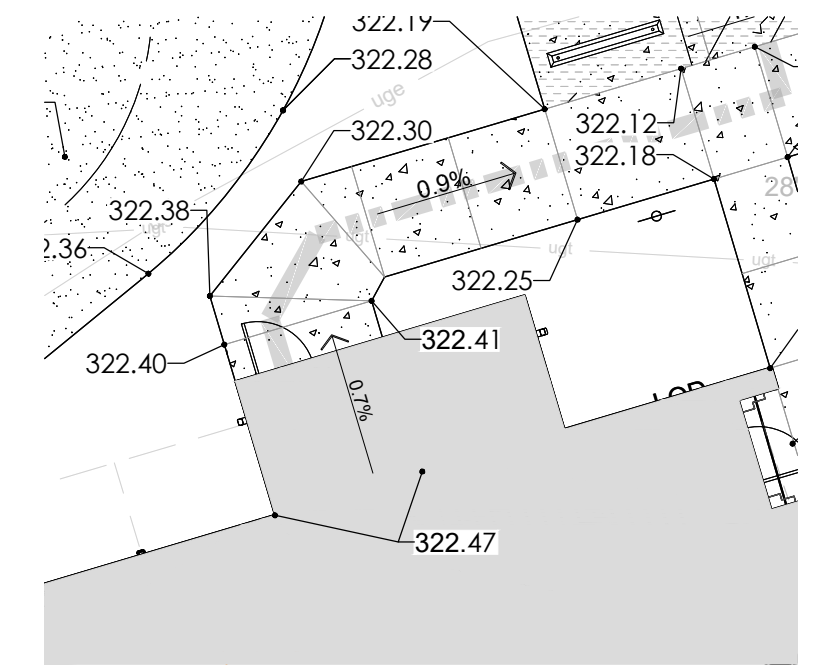
7 STEEL PIPE BOLLARD
SCALE: 1-1/2" = 1'-0"





GRADING NOTES

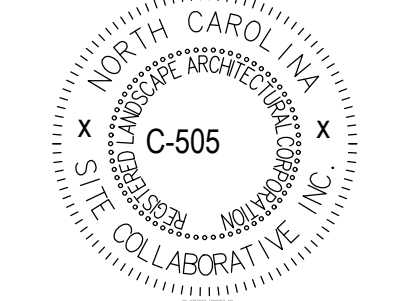
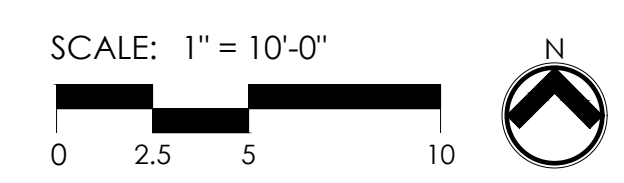
1. ORIGINAL EXISTING CONDITIONS SHOWN AS 'EXISTING' IN THIS PLAN SET HAS BEEN COMPILED FROM SURVEY DATA PROVIDED BY WAKE IMAPS. CONTRACTOR TO FIELD VERIFY ALL INFORMATION AND REPORT ANY DISCREPANCIES.
2. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
3. ALL PAVEMENTS TO SLOPE POSITIVELY AWAY FROM ALL BUILDINGS. PONDING OF WATER IS PROHIBITED.
4. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF EROSION CONTROL METHODS DURING CONSTRUCTION, AND THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL PERMANENT EROSION CONTROL METHODS AFTER CONSTRUCTION IS COMPLETE, IF ANY PERMANENT METHODS ARE REQUIRED.
5. CONSTRUCTION AND MAINTENANCE OF ALL EROSION CONTROL DEVICES SHALL CONFORM TO THE STANDARDS SET FORTH IN THE CITY OF RALEIGH EROSION AND SEDIMENT CONTROL MANUAL.
6. INSPECTOR REFERS TO AUTHORIZED REGULATORY AGENCY SEDIMENTATION AND EROSION CONTROL INSPECTOR OR HIS/HER REPRESENTATIVE. FIELD INSPECTIONS MAY REQUIRE ADDITIONAL SEDIMENTATION AND EROSION CONTROL MEASURES AS DEEMED NECESSARY BY THE INSPECTOR, CLIENT, AND/OR CLIENT'S REPRESENTATIVES.
7. WHEN HAND PLANTING, MULCH (HAY OR STRAW) SHOULD BE UNIFORMLY SPREAD OVER SEEDED AREA WITHIN 24 HOURS OF SEEDING.
8. DURING UNSUITABLE GROWING SEASONS, MULCH WILL BE USED AS A TEMPORARY COVER ON SLOPES THAT ARE 4:1 OR STEEPER, MULCH WILL BE ANCHORED.
9. EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY GRADING ON SITE. PLEASE CALL THE REGULATORY AUTHORITY FOR AN INSPECTION.
10. INSPECT AND MAINTAIN ALL EROSION CONTROL MEASURES EVERY 7 DAYS AND AFTER EACH SIGNIFICANT RAINFALL (0.5 INCHES OR GREATER) AND DOCUMENT WITH INSPECTION REPORTS.
11. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE.
12. LOCATE STOCKPILES UPSLOPE FROM EROSION CONTROL MEASURES. ALL SOIL STOCK PILES SHALL HAVE APPROPRIATE EROSION CONTROL PER THE LATEST VERSION OF THE CITY OF RALEIGH EROSION AND SEDIMENT CONTROL MANUAL INCLUDING SEEDING AND SILT FENCE AROUND THE BASE OF THE STOCK PILE.

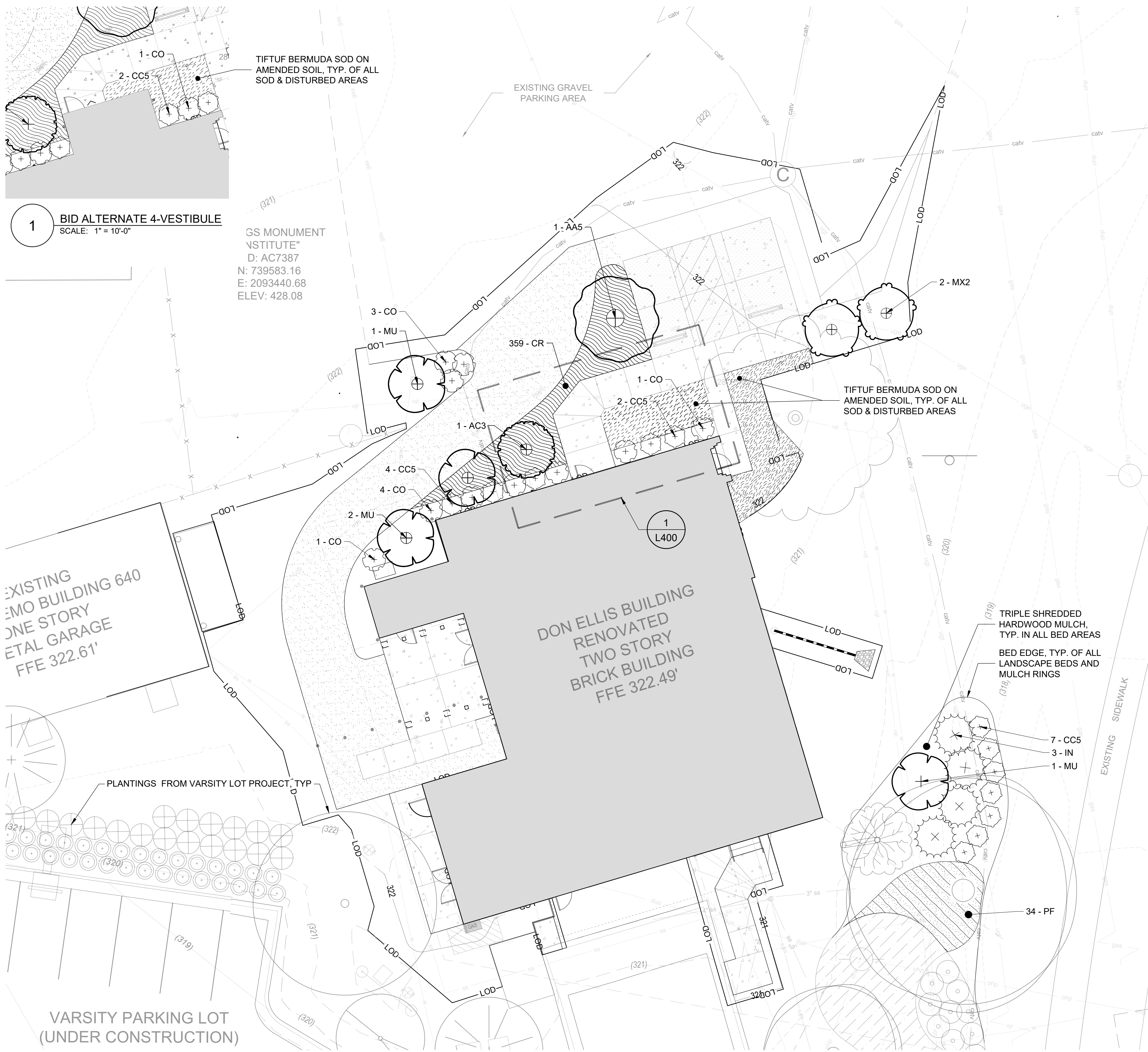


1 BID ALTERNATE 4-VESTIBULE
SCALE: 1" = 10'-0"

GRADING LEGEND

KEY	DESCRIPTION
EX	EXISTING GRADE
HP	HIGH POINT
LP	LOW POINT
FG	FIELD GRADE
TP	TOP OF PIPE
BP	BOTTOM OF PIPE
X%	SLOPE DIRECTION - POINTS DOWNWARD
(Dashed line)	ACCESSIBLE ROUTE
(Solid line)	LIMITS OF DISTURBANCE
(Arrow)	TREE PROTECTION FENCE
(Dashed line)	SILT FENCE





1 BID ALTERNATE 4-VESTIBULE
SCALE: 1" = 10'-0"

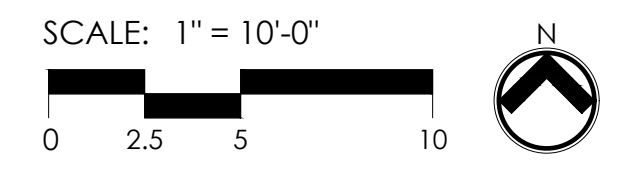
GS MONUMENT
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N: 739583.16
E: 2093440.68
ELEV: 428.08

EXISTING
ONE STORY
METAL GARAGE
FFE 322.61'

DON ELLIS BUILDING
RENOVATED
TWO STORY
BRICK BUILDING
FFE 322.49'

VARSITY PARKING LOT
(UNDER CONSTRUCTION)

TREES	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	CALIPER	B&B OR CONT.	REMARKS	
AC3	4	Acer palmatum dissectum 'Crimson Queen'	Crimson Queen Japanese Maple	4'-5'	2" MIN.	CONTAINER	Full, Dense	
AA5	3	Acer x freemanii 'Armstrong'	Armstrong Freeman Maple	10'-12'	2" MIN.	B&B	Full, Dense, Upright / Strong, Central Leader	
MU	10	Magnolia grandiflora 'TMGH' TM	Alta Southern Magnolia	8' MIN.	2" MIN.	B&B	Full, Dense, Upright / Strong, Central Leader	
MX2	5	Magnolia x 'Jane'	Jane Magnolia	6'-8'	2" MIN.	B&B	Full, Dense	
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	WIDTH	CONT.	REMARKS	
CC5	28	Camellia sasanqua 'Autumn Moon'	Autumn Moon Camellia	36" MIN.			Full, Dense, Upright	
CO	32	Camellia sasanqua 'Green 02-003'	October Magic® Ruby™ Camellia	24" MIN.			Full, Dense	
HN	5	Hydrangea macrophylla 'Nikko Blue'	Nikko Blue Hydrangea	18" MIN.			Full, Dense	
IN	4	Ilex x 'Nellie R. Stevens'	Nellie R. Stevens Holly	24" MIN.	5 GAL MIN.		Full, Dense	
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD	CONT. SIZE	SPACING	REMARKS
CR	1,438	Carex pensylvanica	Pennsylvania Sedge	12" MIN.		FLAT	12" o.c.	Plant when not dormant
PF	34	Pennisetum alopecuroides 'Foxtrot'	Foxtrot Fountain Grass	12"	12"	1 GAL.	30" o.c.	



PLANTING NOTES

- NCSU SHALL PURCHASE AND INSTALL ALL PLANT MATERIAL.
- TYPICAL DUMPSTER SCREENING TO BE LOCATED AND COORDINATED WITH LANDSCAPE ARCHITECT.
- ALL DISTURBED AREAS NOT WITHIN TRAFFIC AREAS SHALL RECEIVE SEED OR SOD.
- ROUGH GRADING TO BE COMPLETED PRIOR TO THE START OF PLANT INSTALLATION. SUBSTANTIAL COMPLETION SIGN-OFF BY LANDSCAPE ARCHITECT CONTRACTOR TO ENSURE NO CHANNELIZED FLOWS AROUND THE SITE.
- ALL DISTURBED AREAS SHALL BE SEEDED/SODDED WITH "TIFTUF" BERMUDA GRASS PER THE SEEDING/SODDING NOTES BELOW.
- CONTRACTOR RESPONSIBLE FOR LOCATING ALL UTILITIES AND UNDERGROUND IMPEDIMENTS PRIOR TO BEGINNING PLANTING.
- ALL WEEDS, NON-NATIVE INVASIVE SPECIES, AND EXOTIC SPECIES LOCATED WITHIN THE PROJECT CONTRACTOR LIMITS SHALL BE ELIMINATED PRIOR TO PLANTING BED CREATION, PLANTING, AND SEEDING/SODDING OPERATIONS.
- PLANTING SHOULD OCCUR IMMEDIATELY AFTER CONSTRUCTION TO STABILIZE AREAS OF BARE SOIL.
- IT SHALL BE NOTED THAT ALL SECTIONS OF THE SITE THAT ARE SLOPED 3:1 OR HIGHER WILL BE COVERED WITH EROSION CONTROL STABILIZATION COIR FABRIC (WITH 1" SQUARE OPENINGS) PRIOR TO PLANTING TO ENSURE IMMEDIATE STABILIZATION. LANDSCAPE CONTRACTOR SHALL CUT FABRIC AT EACH PLANT LOCATION AND PLACE PLANTS ACCORDING TO PLAN. ALL FABRIC SHALL BE RE-STAKED PER ENGINEERS ORIGINAL DRAWINGS IMMEDIATELY AFTER PLANTING.
- PLANTS ARE TO BE PURCHASED BY BOTANICAL NAMES. THEY SHALL BE REPRESENTATIVE OF THEIR SPECIES, MEET ALL NOTED CONDITIONS OF SPECIFICATIONS, AND SHALL BE IN VIGOROUS GROWING CONDITION MEETING ANSI STANDARD Z60.
- LANDSCAPE ARCHITECT OR OWNER MAINTAINS RIGHT TO REJECT ANY PLANT DUE TO AESTHETICS OR STRUCTURAL DEFICIENCY AT ANY TIME.
- CONTRACTOR RESPONSIBLE FOR FURNISHING AND INSTALLING ALL PLANTS SHOWN ON PLANS IN LOCATIONS SHOWN. QUANTITIES GIVEN ON THE PLANT LEGEND ARE FOR CONTRACTOR'S CONVENIENCE ONLY. IF DISCREPANCIES OCCUR, THE PLANS SHALL OVERRULE THE PLANT LEGEND. CONTRACTOR SHALL LOCATE ALL PLANTS AWAY FROM KNOWN PERMANENT FIXTURES. IF CONFLICT ARISES WITH PLAN, CONTRACTOR SHALL NOTIFY PROJECT MANAGER OR DESIGNEE PRIOR TO PROCEEDING.
- ALL PLANT MATERIAL SHALL CONFORM TO OR EXCEED THE AMERICAN STANDARD FOR NURSERY STOCK (LATEST EDITION) AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
- ALL PLANT MATERIAL SHALL BE FREE OF ALL PESTS, DISEASES, AND CANKERS, IN HEALTHY CONDITION, AND FREE OF MECHANICAL DAMAGE AT THE TIME OF PLANTING.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE A HEALTHY AND VIABLE PLANT AND THE PLANT SHALL BE REJECTED IF DEEMED UNHEALTHY OR UNFIT AT ANY TIME DURING THE CONTRACT OR WARRANTY DURATION.
- IF ANY PLANT/MATERIAL SUBSTITUTIONS ARE REQUESTED BY CONTRACTOR, THEN NOTICE SHALL BE GIVEN TO PROJECT MANAGER OR DESIGNEE AT MINIMUM SEVENTY-TWO (72) HOURS (NOT INCLUDING WEEKENDS) PRIOR TO DESIRED ORDERING DATE/TIME. WHEN SUBSTITUTIONS ARE REQUESTED BY CONTRACTOR, SUGGESTED ACCEPTABLE REPLACEMENTS SHALL ALSO BE PRESENTED AT TIME FOR FULL AND COMPLETE REVIEW BY LANDSCAPE ARCHITECT OR OWNER.
- BALLED AND BURLAPPED PLANTS/TREES TO BE PLANTED PRIOR TO CONTAINER OR BEDDING PLANTS.
- BALLED AND BURLAPPED MATERIAL SHALL COMPLY WITH THE FOLLOWING GUIDELINES:
 - TREES DESIGNATED B&B SHALL BE PROPERLY DUG WITH FIRM, NATURAL BALLS OF SOIL RETAINING AS MANY FIBROUS ROOTS AS POSSIBLE, IN SIZES AND SHAPES AS SPECIFIED IN THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1.
 - ROOT BALLS SHALL BE FIRMLY WRAPPED WITH NONSYNTHETIC, ROTTABLE BURLAP AND SECURED WITH NAILS AND HEAVY, NONSYNTHETIC TWINE.
 - ROOT COLLAR SHALL BE APPARENT AT SURFACE OF BALL, OR THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING EXCESS SOIL FROM THE TOP OF THE ROOTBALL.
 - REMOVE ALL BURLAP, LACING, AND WIRE BASKET FROM AT LEAST THE TOP 1/2 OF THE ROOTBALL AND DISCARD FROM PLANTING HOLE.
 - DO NOT MANEUVER BY TRUNK. HANDLE BY ROOT BALL ONLY.
- CONTAINERIZED PLANTS SHALL COMPLY WITH THE FOLLOWING GUIDELINES:
 - MATERIAL SHALL HAVE FIRM, NATURAL BALLS OF SOIL RETAINING AS MANY FIBROUS ROOTS AS POSSIBLE, IN SIZES AND SHAPES AS SPECIFIED IN THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1.
 - ROOT COLLAR SHALL BE APPARENT AT SURFACE OF BALL, OR THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING EXCESS SOIL FROM THE TOP OF THE ROOTBALL.
 - REMOVE CONTAINER PRIOR TO PLANTING.
- TREES TO BE STAKED WILL BE DESIGNATED BY THE LANDSCAPE ARCHITECT. TREE STAKING FOR CANOPY AND LARGE EVERGREEN TREES SHALL NOT EXCEED 90 DAYS.
- PLANT BED PREPARATION:
 - ALL PLANT BEDS ARE TO RECEIVE A MINIMUM OF 4" OF APPROVED TOPSOIL TILLED IN TO A DEPTH OF 8" TO ENSURE INTEGRATION WITH EXISTING SOIL.
 - APPROVED TOPSOIL IS TO BE PREFERABLY FROM ON-SITE STOCKPILE FROM STRIPPING OPERATIONS - SEE EROSION AND SEDIMENT CONTROL PLANS.
 - IF ON-SITE TOPSOIL IS NOT AVAILABLE, CONTRACTOR SHALL PROVIDE TO SITE ACCORDINGLY.
- ALL MULCH TO BE CERTIFIED TO BE FREE OF WEEDS, NON-NATIVE INVASIVE SPECIES AND THEIR LARVAE. MULCH SAMPLE SUBMITTAL SHALL BE PROVIDED TO LANDSCAPE ARCHITECT BEFORE SITE DELIVERY.

SEEDING/SODDING NOTES

- ROUGH GRADING TO BE COMPLETED PRIOR TO THE START OF PLANT INSTALLATION. SUBSTANTIAL COMPLETION SIGN-OFF BY LANDSCAPE ARCHITECT CONTRACTOR TO ENSURE NO CHANNELIZED FLOWS AROUND THE SITE.
- ALL SEEDED/SODDED AREAS SHALL BE FINISHED GRADE AT THE THICKNESS OF THE SOD.
- NO SEEDED/SODDED AREAS SHALL BE SODDED UNTIL ALL OTHER CONSTRUCTION ACTIVITIES, INCLUDING PLANTING AND MULCHING HAVE OCCURRED AND LANDSCAPE ARCHITECT HAVE REVIEWED THE FINAL GRADING.
- SOD AREAS WILL BE ACCEPTED WHEN IN COMPLIANCE WITH ALL THE FOLLOWING CONDITIONS:
 - ROOTS ARE THOROUGHLY KNIT TO THE SOIL
 - ABSENCE OF VISIBLE JOINTS
 - ALL AREAS SHOW A UNIFORM STAND OF SPECIFIED GRASS IN HEALTHY CONDITION
 - AT LEAST 30 DAYS HAVE ELAPSED SINCE THE COMPLETION OF WORK UNDER THIS SECTION.
- QUALITY GUARANTEE:
 - SOD SHALL BE UNIFORM IN COLOR, LEAF TEXTURE, LEAF AND ROOT DENSITY, AND FREE FROM WEED, DISEASES, AND OTHER VISIBLE IMPERFECTIONS AT TIME OF FINAL ACCEPTANCE. GUARANTEE DOES NOT COVER DAMAGE AS A RESULT OF FERTILIZERS, PESTICIDES, OR OTHER APPLICATIONS NOT SUPERVISED BY THE CONTRACTOR OR AS A RESULT OF ACTS OF GOD OR VANDALISM.
 - EACH PIECE OF SOD: SANDY-LOAM SOIL BASE THAT WILL NOT BREAK, CRUMBLE OR TEAR DURING SOD INSTALLATION.
 - THICKNESS: MINIMUM 3/4" THICK, EXCLUDING THE TOP GROWTH THATCH.
 - THATCH: NOT TO EXCEED 1/2" UNCOMPRESSED.
 - SIZE: CUT IN STRIPS 18" WIDE NO MORE THAN 24 HOURS PRIOR TO DELIVERY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE SEED/SOD IS PROPERLY IRRIGATED DURING THE GROW-IN PERIOD AND SHALL BE RESPONSIBLE IF THE SOD SUFFERS IRREPARABLE HARM.
- SEED/SOD IS SUBJECT TO INSPECTION AND ACCEPTANCE. LANDSCAPE ARCHITECT AND/OR CLIENT RESERVES THE RIGHT TO REJECT AT ANY TIME OR PLACE PRIOR TO ACCEPTANCE, ANY WORK AND SOD WHICH IN THE LANDSCAPE ARCHITECTS OPINION FAILS TO MEET THESE SPECIFICATIONS REQUIREMENTS.
- SOD STANDARDS:
 - GENERAL: HEALTHY, THICK TURF HAVING UNDERGONE A PROGRAM OF REGULAR FERTILIZATION, MOWING AND WEED CONTROL; FREE OF OBJECTABLE WEEDS; UNIFORM IN GREEN COLOR, LEAF TEXTURE AND DENSITY; HEALTHY, VIGOROUS ROOT SYSTEM; INSPECTED AND FOUND FREE OF DISEASE, NEMATODES, PEST AND PEST LARVAE BY THE ENTOMOLOGIST OF THE STATE DEPARTMENT OF AGRICULTURE.
 - EACH PIECE OF SOD: SANDY-LOAM SOIL BASE THAT WILL NOT BREAK, CRUMBLE OR TEAR DURING SOD INSTALLATION.
 - THICKNESS: MINIMUM 3/4" THICK, EXCLUDING THE TOP GROWTH THATCH.
 - THATCH: NOT TO EXCEED 1/2" UNCOMPRESSED.
 - SIZE: CUT IN STRIPS 18" WIDE NO MORE THAN 24 HOURS PRIOR TO DELIVERY.
- SOD DELIVERY, STORAGE AND HANDLING GUIDELINES ARE AS FOLLOWS:
 - SOD SHALL BE DELIVERED ON PALLETS PROPERLY LOADED ON VEHICLES AND WITH ROOT SYSTEM PROTECTED FROM EXPOSURE TO SUN, WIND, AND HEAT IN ACCORDANCE WITH STANDARD PRACTICE AND LABELED WITH BOTANICAL AND COMMON NAME OF EACH GRASS SPECIES IN ACCORDANCE WITH FEDERAL SEED ACT. SOD THAT HAS BEEN DAMAGED BY POOR HANDLING OR IMPROPER STORAGE IS SUBJECT TO REJECTION BY THE LANDSCAPE ARCHITECT OR OWNER.
 - PROTECT FROM DEHYDRATION, CONTAMINATION, FREEZING AND HEATING AT ALL TIMES. KEEP STORED SOD MOIST AND UNDER SHADE OR COVERED WITH MOISTENED BURLAP.
 - DO NOT DROP SOD ROLLS FROM CARTS, TRUCKS OR PALLETS.
 - DO NOT DELIVER MORE SOD THAN CAN BE INSTALLED WITHIN 36 HOURS.
 - DO NOT STACK SOD MORE THAN 2 FEET DEEP.
- SEED/SODDED BED PREPARATION:
 - ALL DEBRIS, ROCKS, ETC. LARGER THAN 5" ARE TO BE REMOVED PRIOR TO SEEDING/SODDING OR PLANTING.
 - ALL AREAS TO BE SEEDED/SODDED ARE TO RECEIVE A MINIMUM OF 2" OF APPROVED TOPSOIL TILLED INTO A DEPTH OF 4" TO ENSURE INTEGRATION WITH EXISTING SOIL.
 - APPROVED TOPSOIL IS TO BE PREFERABLY FROM ON-SITE STOCKPILE FROM STRIPPING OPERATIONS - SEE EROSION AND SEDIMENT CONTROL PLANS.
 - IF ON-SITE TOPSOIL IS NOT AVAILABLE, CONTRACTOR SHALL PROVIDE TO SITE ACCORDINGLY.

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project status

Construction Documents for BID
owner id

SCO ID# 19-21547-02A
NCSU # 201920037

seals

NORTH CAROLINA
SITE ARCHITECTURE
C-505
SiTE COLLABORATIVE, INC.

NORTH CAROLINA
L. Y. MITCHELL
11/20/13

revisions

Don E. Ellis Building (133) Renovations
1320 Varsity Drive, Raleigh, NC 27606
North Carolina State University

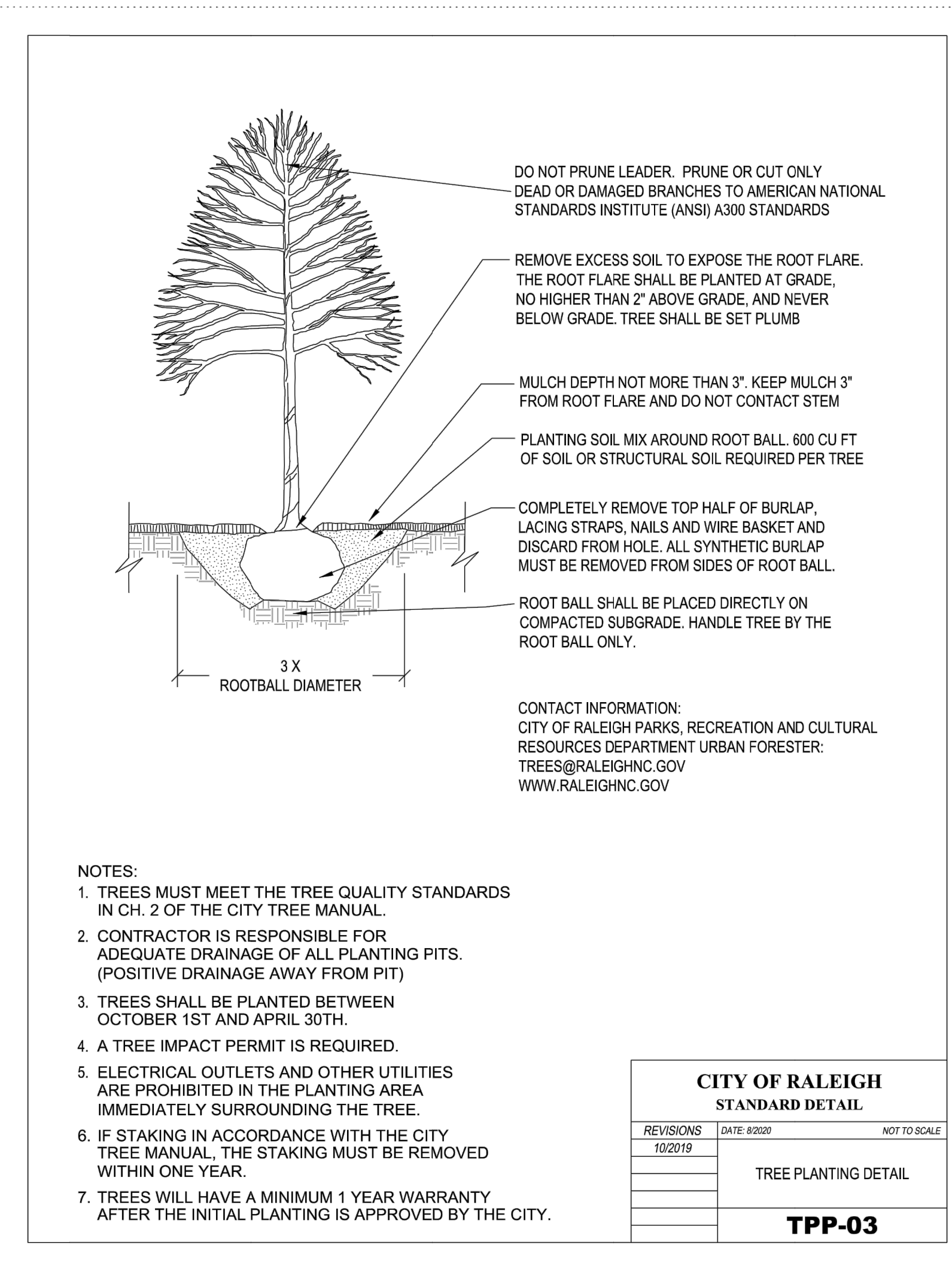
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DATE 10/16/2023
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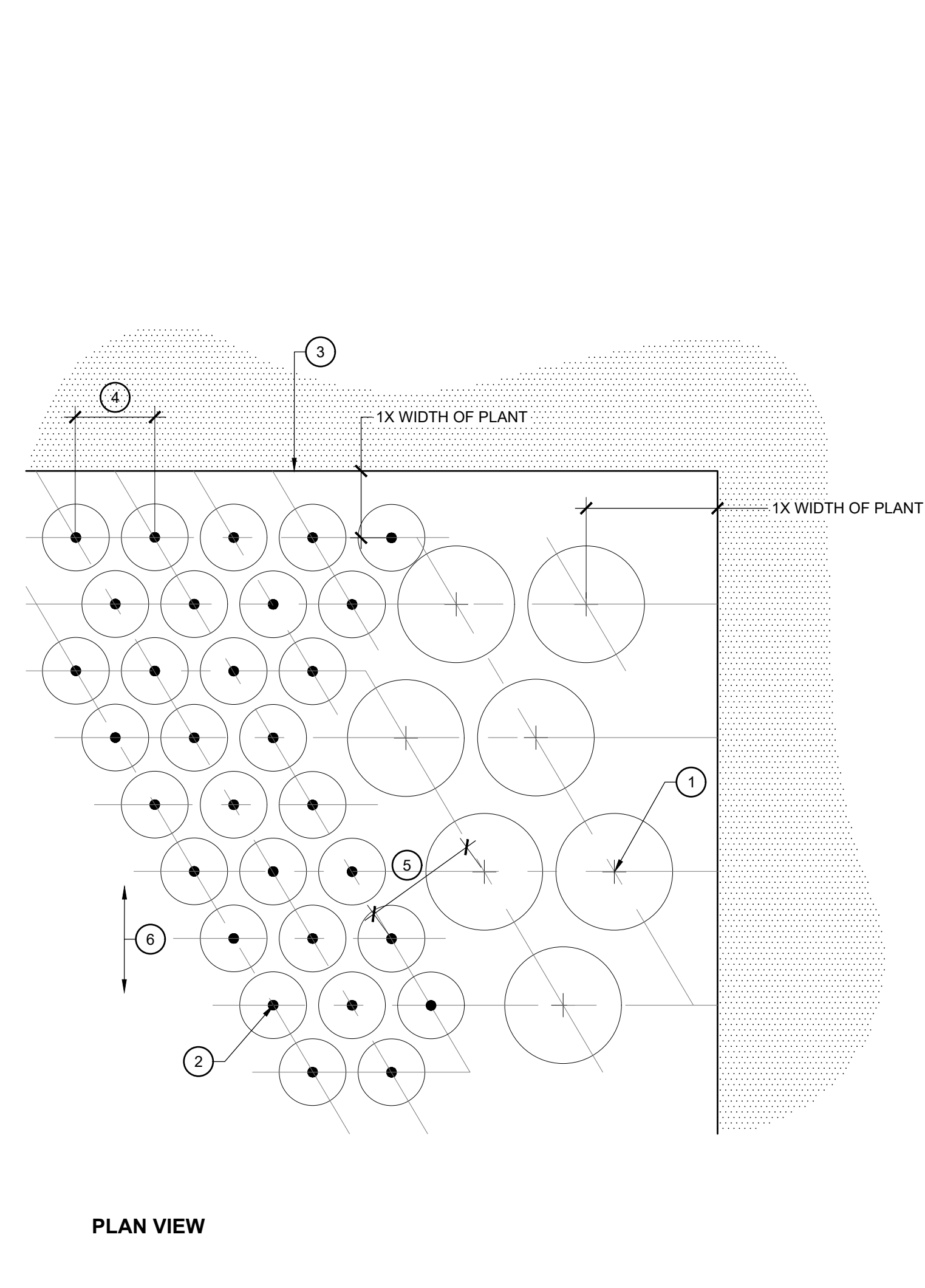
PLANTING PLAN

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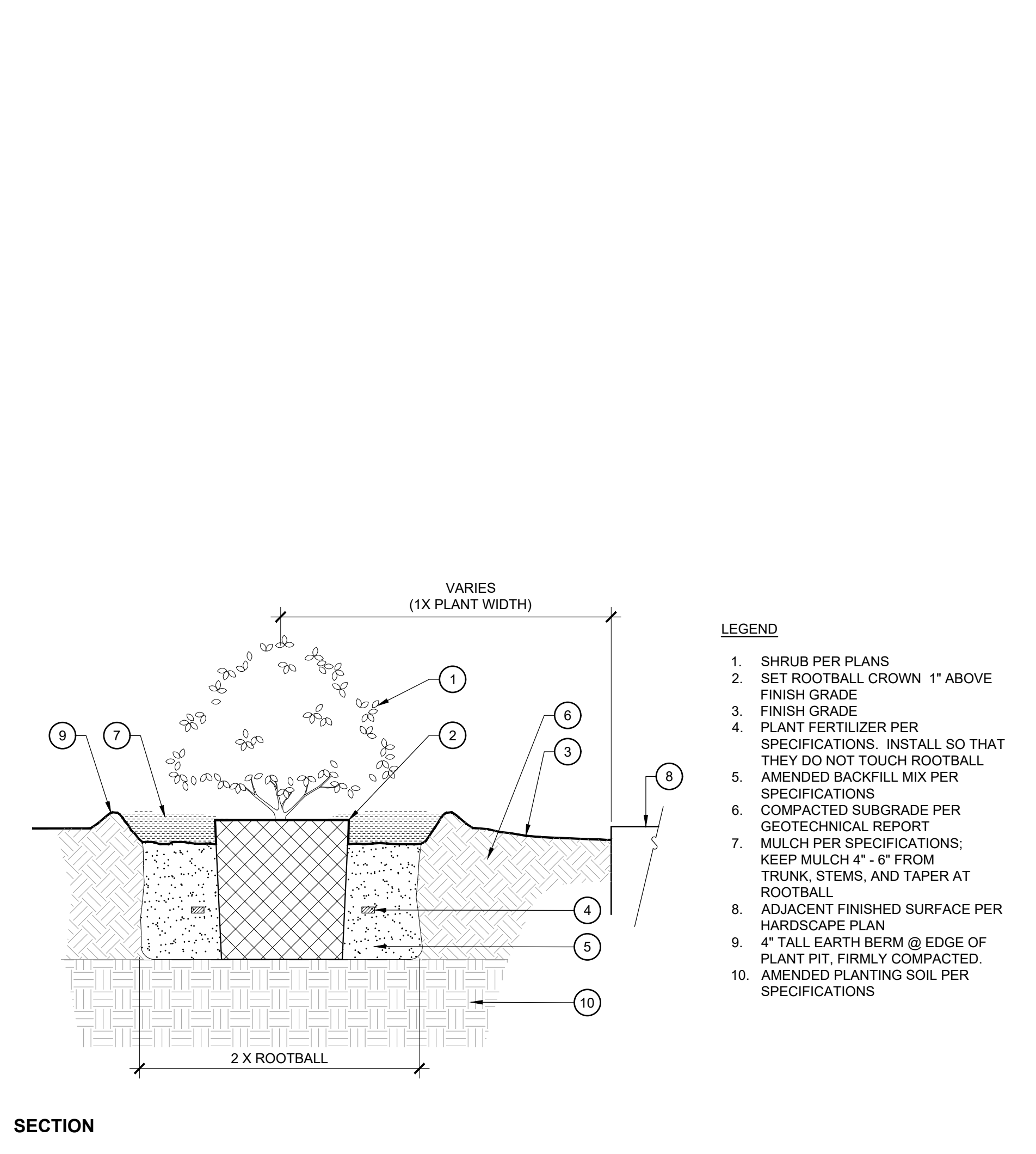
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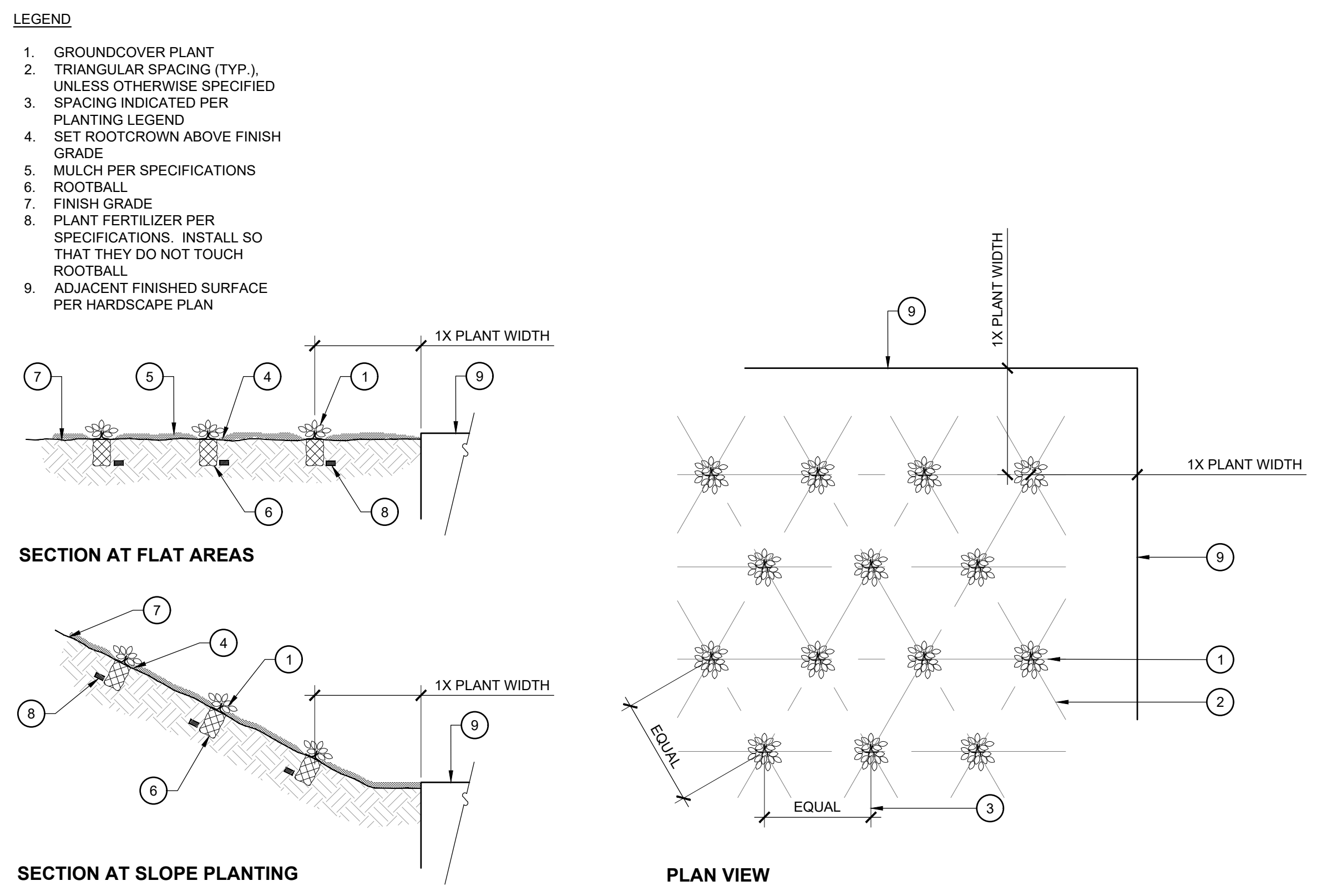
1 TREE PLANTING
SCALE: NTS



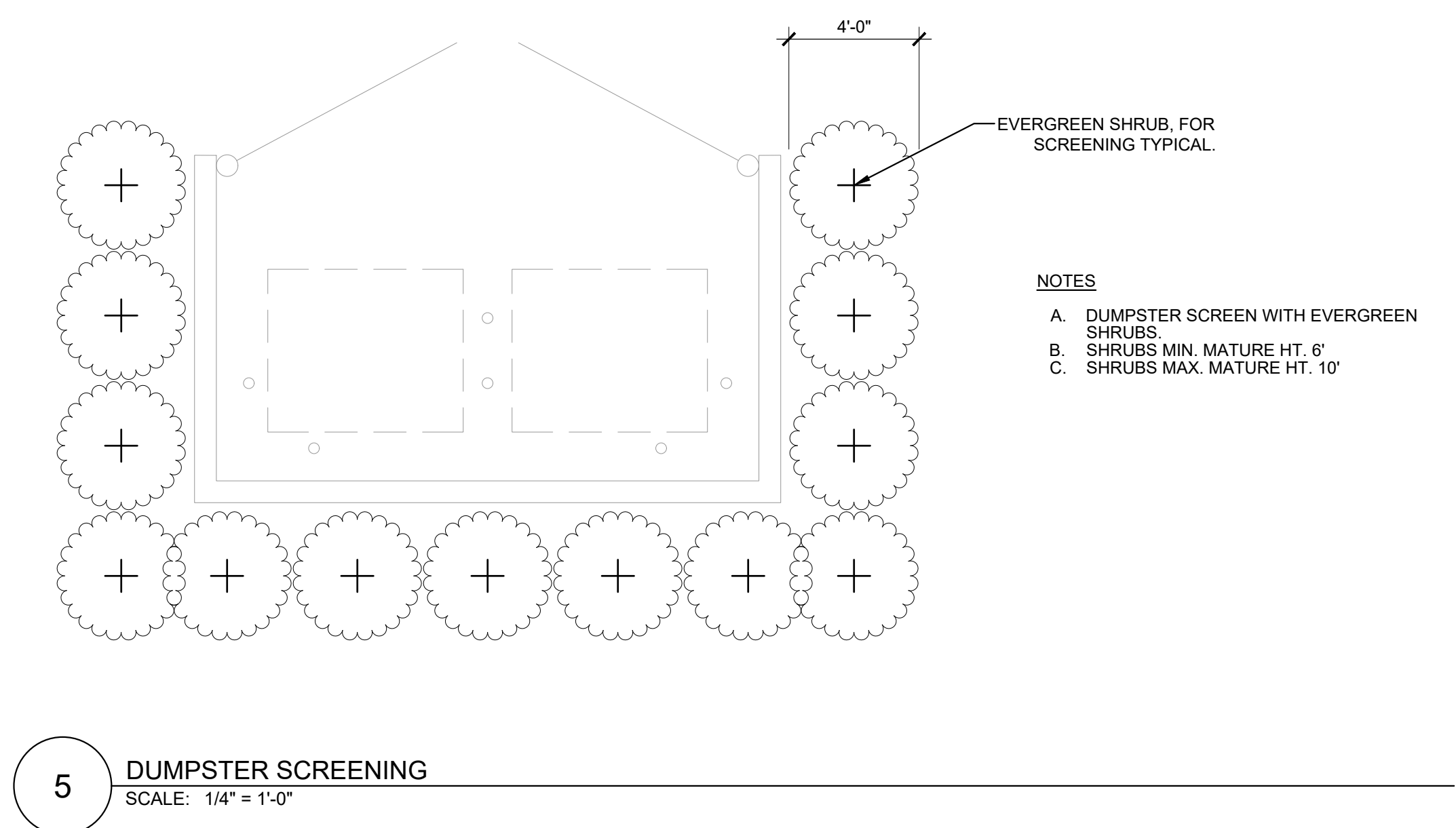
2 TRIANGULAR PLANTING SPACING
SCALE: 1" = 1'-0"



3 TRIANGULAR PLANTING SPACING
SCALE: 1" = 1'-0"



4 GROUNDCOVER PLANTING
SCALE: 1" = 1'-0"





DEMOLITION SYMBOLS LEGEND

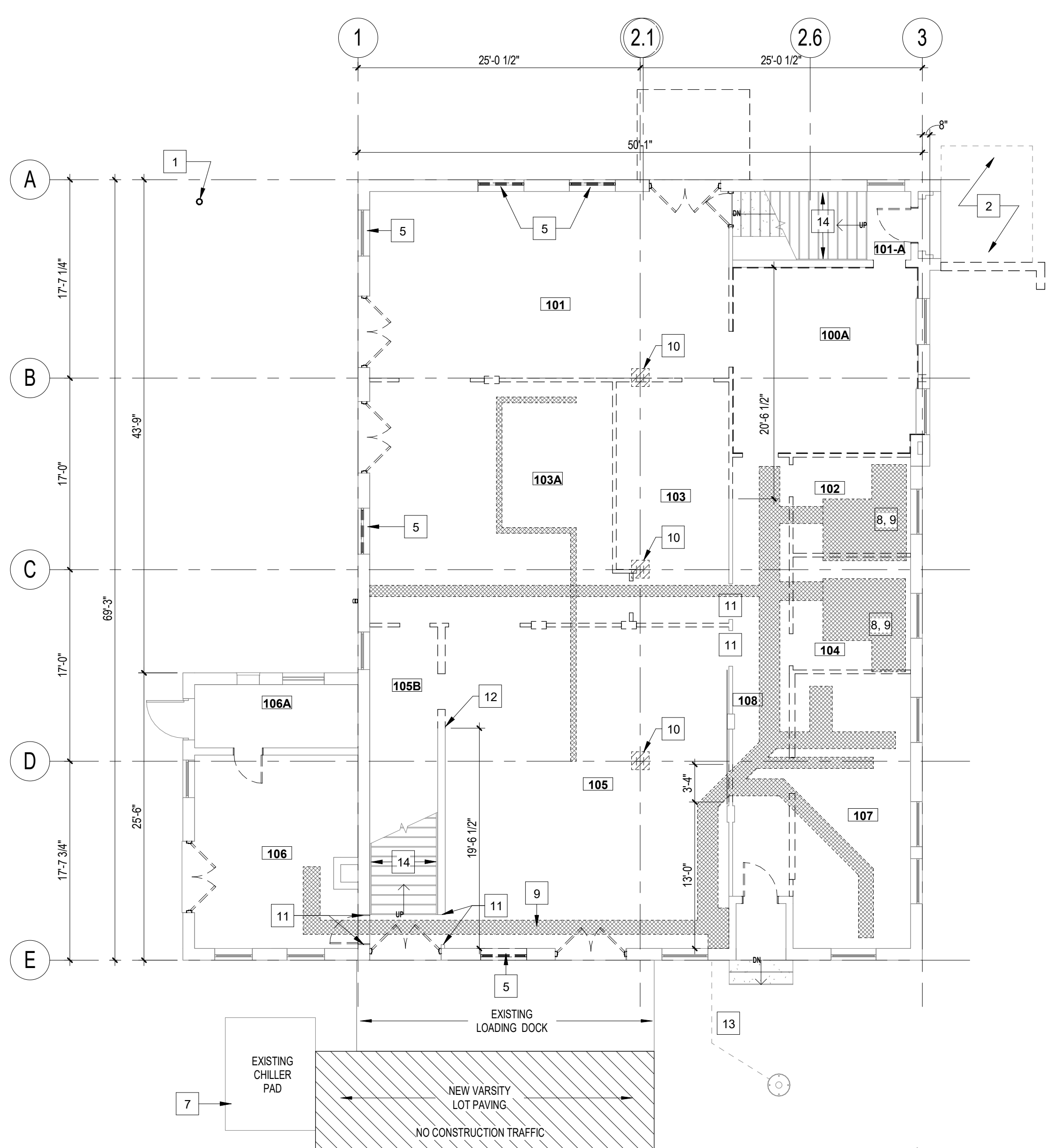
- REMOVE ALL CONSTRUCTION SHOWN DASHED COMPLETE, U.O.N.
- EXISTING WALL OR PARTITION TO REMAIN, TYP U.O.N.
- APPROX. AREA FOR FLOOR TRENCHING, SEE PME SHEETS
- APPROX. AREA FOR FLOOR REPAIR OF COLUMNS

DEMOLITION PLAN GENERAL NOTES

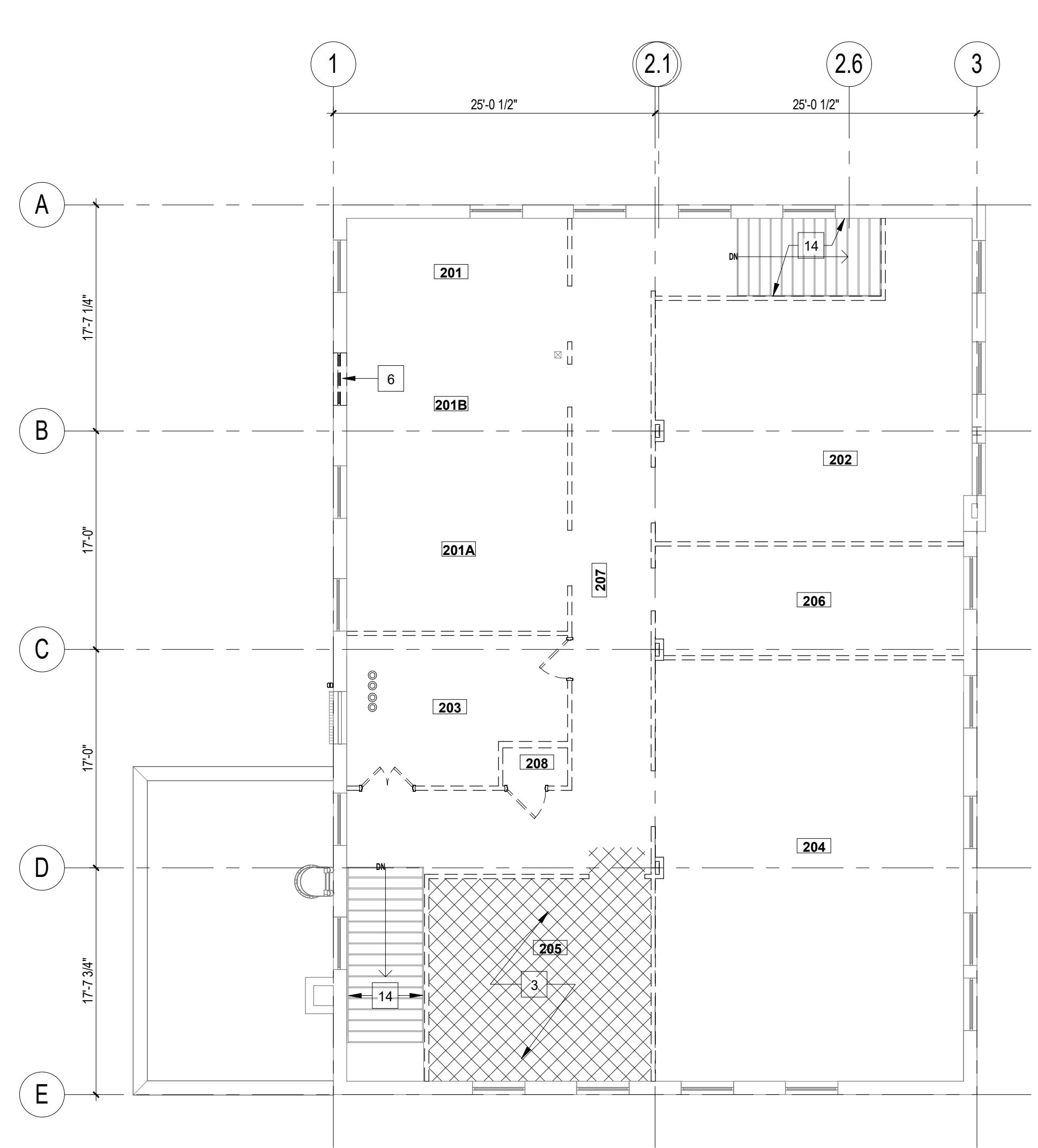
1. THE CONTRACTOR SCOPE INCLUDES THE FOLLOWING:
 - a. REMOVAL OF ALL ITEMS OF ANY NATURE SHOWN WITHIN SCOPE OF WORK.
 - b. BEFORE COMMENCING THE WORK, VERIFICATION AT THE SITE OF EXISTING CONSTRUCTION TO BE PRESERVED AND REPORTING TO THE ARCHITECT OF ANY DISCREPANCIES OR QUESTIONABLE ITEMS.
2. COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL CODES AND REGULATIONS PERTAINING TO SAFETY OF PERSONS, PROPERTY AND ENVIRONMENTAL PROTECTION.
3. PRIOR TO DEMOLITION, MEET WITH OWNER AND ARCHITECT TO IDENTIFY ITEMS WHICH ARE TO BE SALVAGED. ALL OTHER DEMOLISHED MATERIALS ARE TO BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY BY THE CONTRACTOR.
4. EXISTING SERVICES AND SYSTEMS: MAINTAIN SERVICES AND SYSTEMS INDICATED TO REMAIN AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS. WHERE MECHANICAL OR ELECTRICAL SYSTEMS ARE INDICATED TO BE SELECTIVELY DEMOLISHED, LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF INDICATED UTILITY SERVICES IN CONCEALED LOCATION.
5. REMOVE AND SALVAGE DEBRIS FROM THE SITE DAILY AS IT ACCUMULATES. REMOVE RENOVATION MATERIALS FROM THE SITE, LEAVING A CLEAN, VACUUMED SPACE.
6. PROTECT EXISTING CONSTRUCTION TO REMAIN. REPAIR ANY DAMAGE TO EXISTING CONSTRUCTION IN A MANNER ACCEPTABLE TO THE OWNER OR REPLACE SUCH DAMAGE WITH NEW ACCEPTABLE TO OWNER AND AT NO COST TO OWNER.
7. REFER TO ENGINEERING PLANS FOR FURTHER DEMOLITION OF MECHANICAL, ELECTRICAL, FIRE PROTECTION AND PLUMBING ITEMS.
8. DEMO EXISTING DISCONTINUED MEP/FP CONDUITS AND OTHER MISC. ITEMS THAT PENETRATE EXISTING FLOORS. FILL VOIDS IN SLAB WITH CONCRETE PER STRUCTURAL DRAWING DETAILS AND MAINTAIN ANY EXISTING FIRE RATING.
9. DEMO EXISTING DISCONTINUED MEP/FP CONDUITS, DUCTWORK AND MISC. ITEMS THAT PENETRATE PARTITIONS. FILL VOIDS SOLID WITH GROUT AND MAINTAIN ANY EXISTING FIRE RATING.
10. REMOVE UNUSED WIRING BACK TO MAIN PANEL.
11. THE CONTRACTOR SHALL REMOVE ALL ABANDONED PIPING, CONDUIT, DEVICES & WIRING BACK TO SOURCE. REMOVE UNUSED WIRING BACK TO MAIN PANEL OR NEAREST JUNCTION BOX.
12. UTILIZE BRACING AND SHORING WHERE NECESSARY TO PREVENT COLLAPSE OF STRUCTURE OR PARTS THEREOF. GENERAL CONTRACTOR IS RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF ALL BRACING AND SHORING.
13. REMOVE AND DISPOSE OF ALL EXISTING SWITCHES, TEL/DATA/VOICE WIRING, AND J-BOXES IN DEMOLITION AREA UNLESS SPECIFIED TO BE REUSED. PATCH AND REPAIR FLOOR AND WALLS TO AN "AS NEW" CONDITION.
14. WHERE DOORS ARE SHOWN TO BE DEMOLISHED, DEMOLISH DOOR AND FRAME.
15. AT SECOND FLOOR STAIR WALLS, DEMO TO SECOND FLOOR SLAB, WALL AT FIRST FLOOR TO REMAIN.
16. SEE HAZARDOUS MATERIALS PLAN FOR REMOVAL OF WALLS AT SECOND FLOOR.

DEMOLITION SHEET NOTES

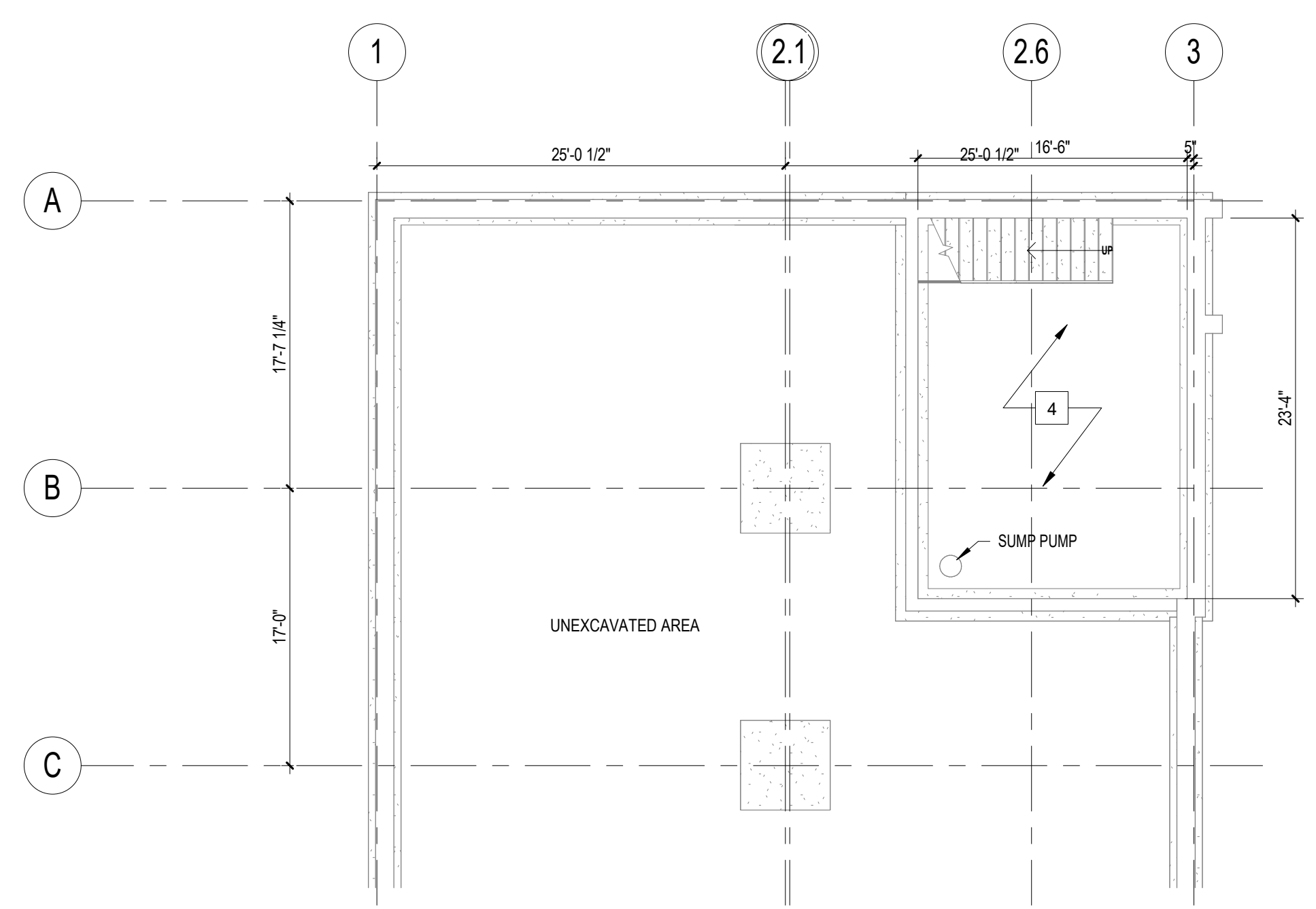
- 1 EXISTING BOLLARD & ASSOCIATED FOOTING TO BE REMOVED
- 2 DEMO LOW BRICK WALL & PATIO, SEE LANDSCAPE PLANS FOR SCOPE OF WORK THIS AREA
- 3 RAISED THRESHOLD AND MUD BED TERRACOTTA FLOOR TO BE DEMOLISHED, PROVIDE NEW CEMENTITIOUS SELF-LEVELLING FINISH FLOOR
- 4 NO NEW ARCHITECTURAL WORK THIS AREA - SEE PME SHEETS FOR SUMP PUMP REPLACEMENT
- 5 REMOVE EXISTING INFILL & REPLACE WINDOW GLASS ONLY - FRAME AND OPENING TO REMAIN, SEE ELEVATIONS & WINDOW SCHEDULES
- 6 DEMO EXISTING WINDOW, CAREFULLY REMOVE WHOLE BRICKS & CMU BENEATH OPENING TO LEVEL WITH SECOND FLOOR
- 7 EXISTING CHILLER PAD TO REMAIN
- 8 TRENCH FLOOR AS NECESSARY FOR NEW SHOWERS
- 9 TRENCH FLOOR AS NECESSARY FOR NEW DRAINS
- 10 EXISTING STEEL COLUMN TO REMAIN, SEE STRUCTURAL DRAWINGS FOR REPAIR OF STRUCTURAL COLUMNS AT BASE
- 11 DEMO EXISTING FULLY GROUTED HOLLOW METAL FRAMES
- 12 DEMO TO DIMENSION SHOWN - VERIFY IN FIELD THAT END OF WALL WILL BE A MINIMUM OF 12" BEYOND BEARING OF STAIR BEAM ON WALL.
- 13 DEMO EXISTING 4" PIPING - REPLACE WITH NEW SCHEDULE 40 PVC PIPING TO EXISTING MANHOLE, SEE PME SHEETS
- 14 REMOVE EXISTING HANDRAILS, CAREFULLY STORE FOR REUSE.



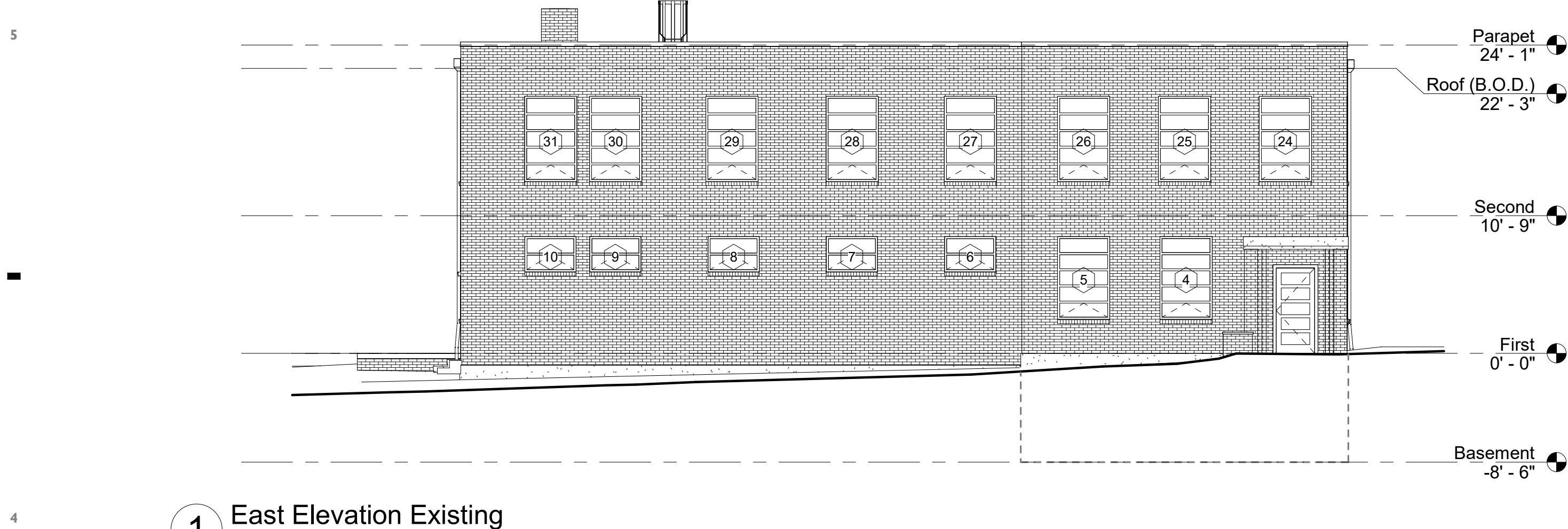
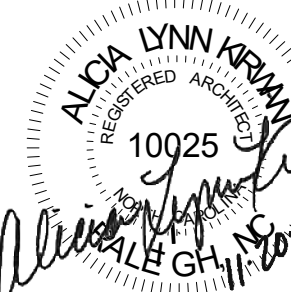
1 First Floor Demolition
1/8" = 1'-0"



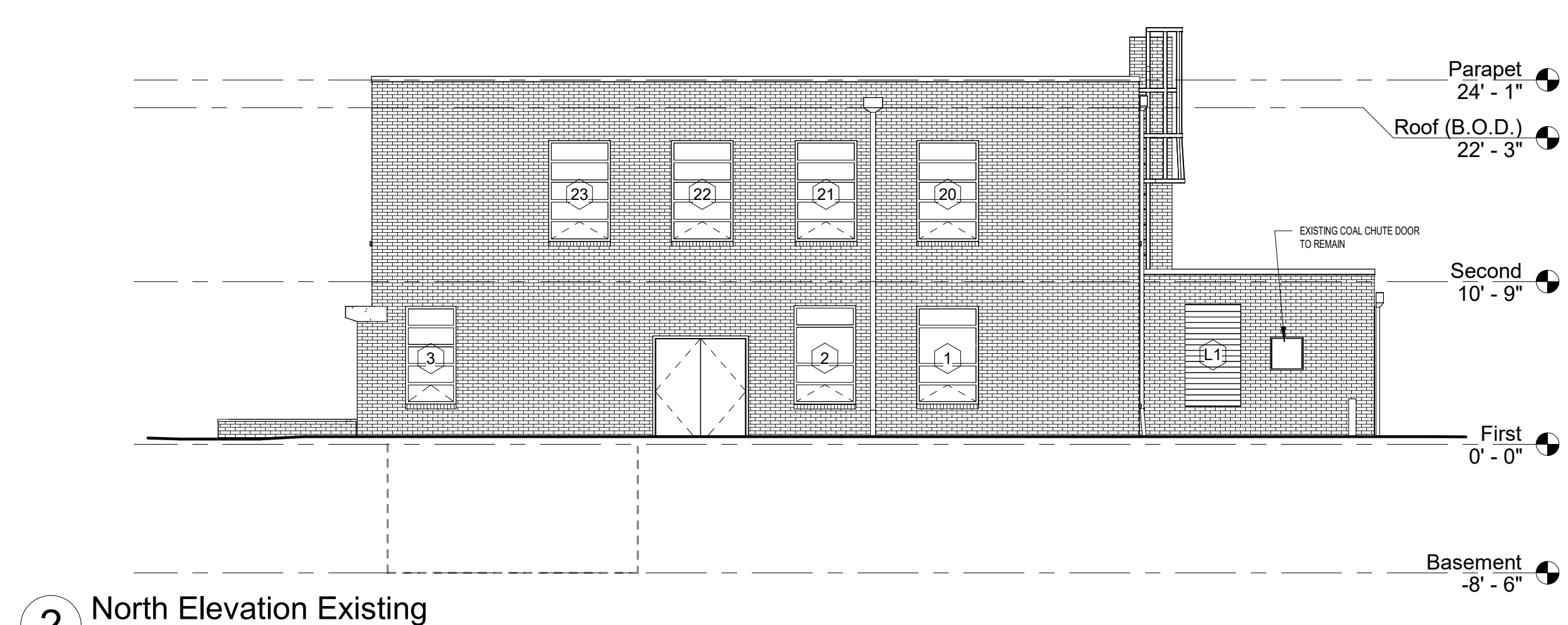
2 Second Floor Demolition
1/8" = 1'-0"



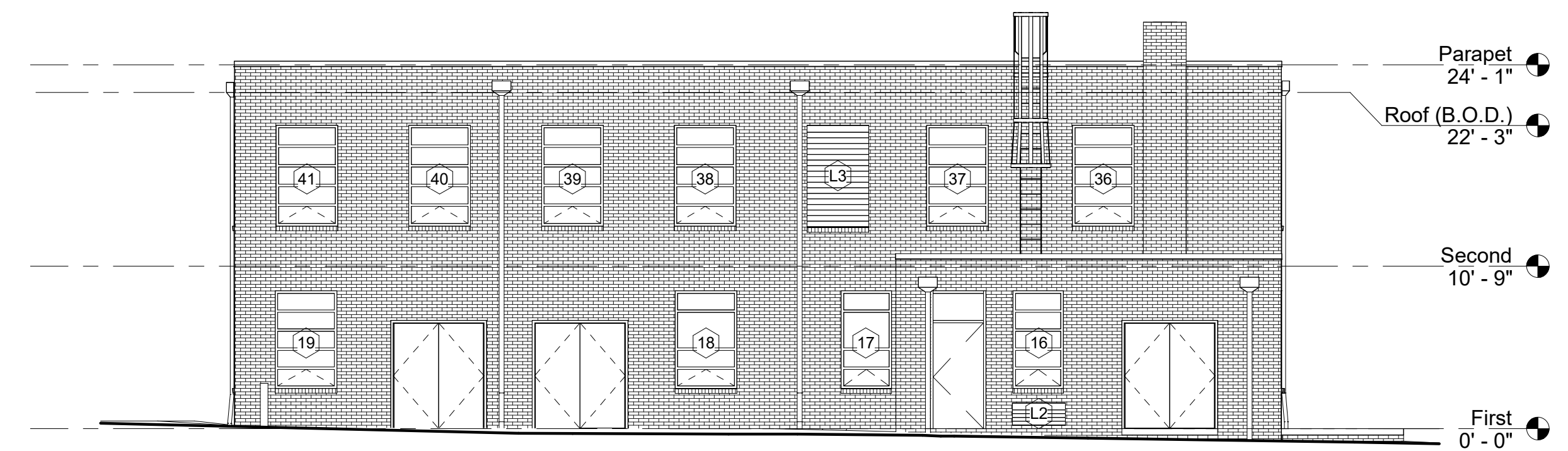
3 Partial Basement Demo
1/8" = 1'-0"



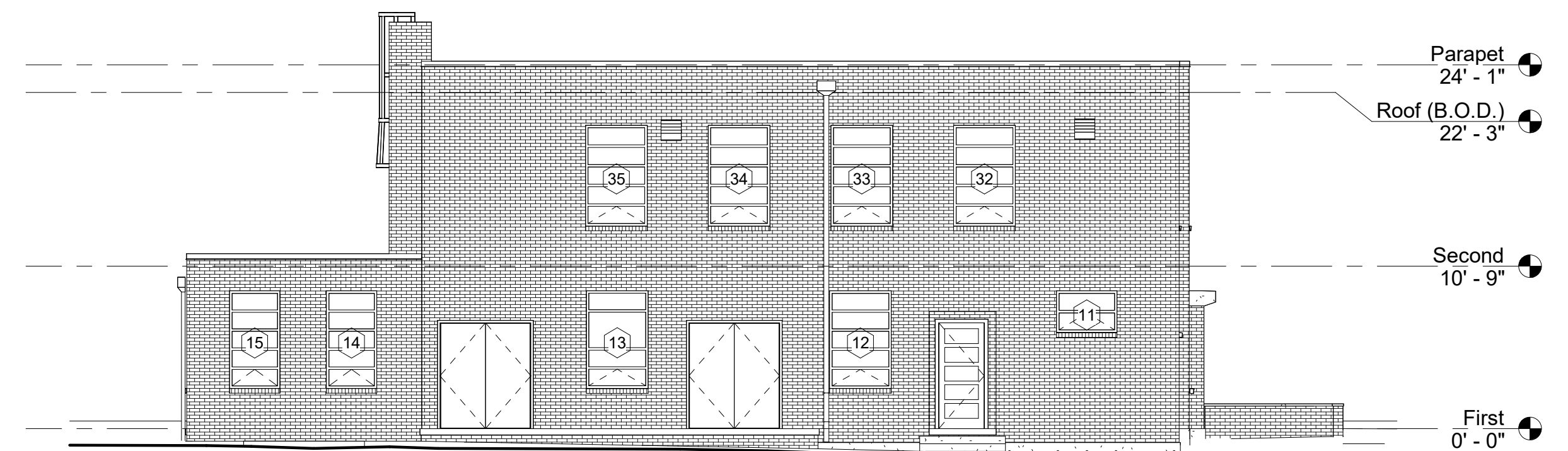
1 East Elevation Existing
1/8" = 1'-0"



2 North Elevation Existing
1/8" = 1'-0"



3 West Elevation Existing
1/8" = 1'-0"

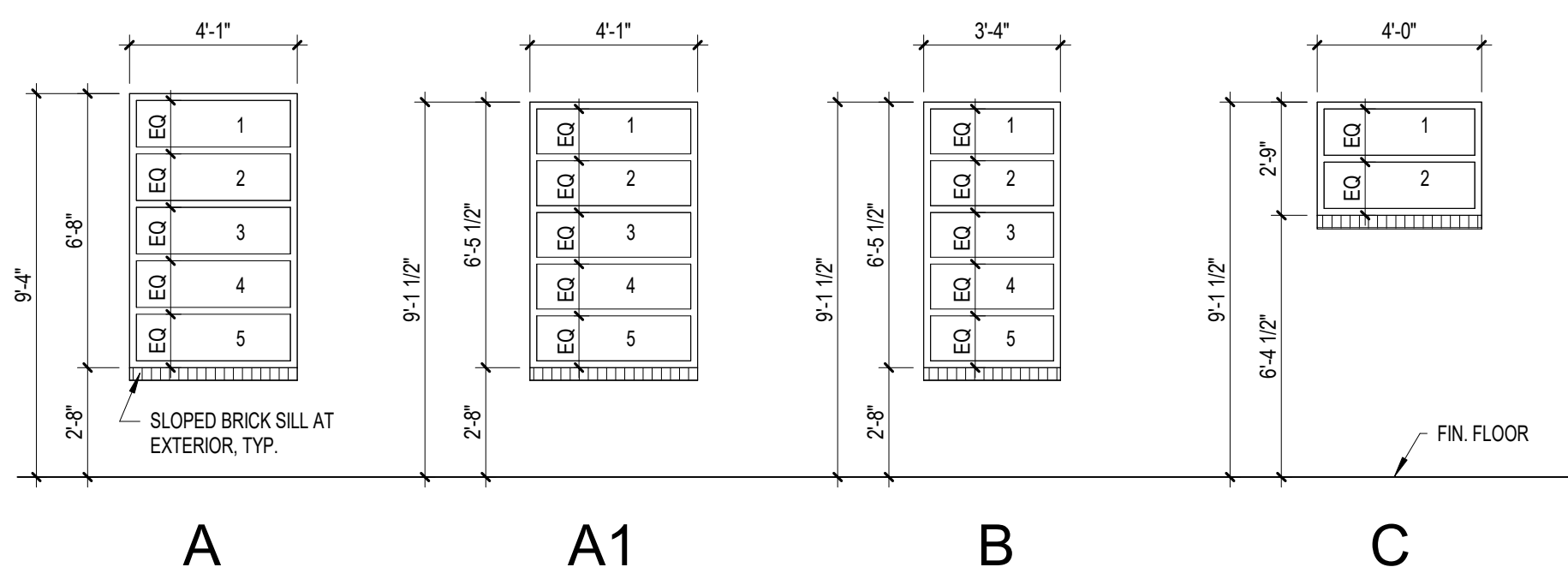


4 South Elevation Existing
1/8" = 1'-0"

Window Number	Window Elevation	Existing Condition	Remarks
1	A1	INSULATED METAL PANELS	1
2	A1	AC UNIT	1
3	B	CLEAR GLASS PANES	
4	A1	FLAT PHENOLIC SILL / CLEAR GLASS PANES	
5	A1	FLAT PHENOLIC SILL / CLEAR GLASS PANES	
6	C	CLEAR GLASS PANES	6
7	C	CLEAR GLASS PANES	6
8	C	CLEAR GLASS PANES	
9	C	CLEAR GLASS PANES	
10	C	CLEAR GLASS PANES	
11	C	CLEAR GLASS PANES	
12	A1	INSULATED METAL PANELS	1, 6
13	A1	AC UNIT, INSULATED PANELS	1, 6
14	B	CLEAR GLASS PANES	2
15	B	PANE 2 OPAQUE	1, 2, 3
16	B	CLEAR GLASS PANES	
17	B	OPAQUE PANES	4
18	A1	AC UNIT, INSULATED PANELS	1, 6
19	A1	INSULATED METAL PANELS	1
20	A	CLEAR GLASS PANES	

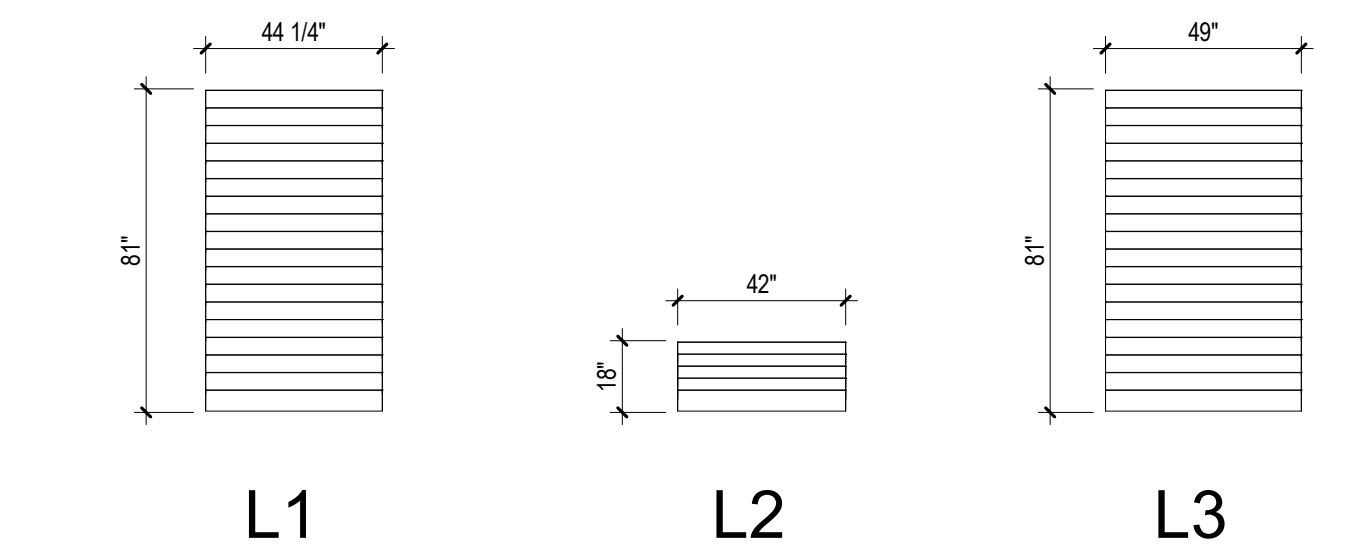
Window Number	Window Elevation	Existing Condition	Remarks
21	A	CLEAR GLASS PANES	
22	A	CLEAR GLASS PANES	
23	A	CLEAR GLASS PANES	
24	A	CLEAR GLASS PANES	
25	A	CLEAR GLASS PANES	
26	A	CLEAR GLASS PANES	
27	A	CLEAR GLASS PANES	6
28	A	CLEAR GLASS PANES	6
29	A	CLEAR GLASS PANES	
30	A	CLEAR GLASS PANES	
31	A	CLEAR GLASS PANES	
32	A	CLEAR GLASS PANES	
33	A	CLEAR GLASS PANES	
34	A	CLEAR GLASS PANES	
35	A	CLEAR GLASS PANES	
36	A	CLEAR GLASS PANES	
37	A	CLEAR GLASS PANES	
38	A	CLEAR GLASS PANES	
39	A	CLEAR GLASS PANES	
40	A	CLEAR GLASS PANES	5
41	A	CLEAR GLASS PANES	

EXISTING WINDOW ELEVATIONS



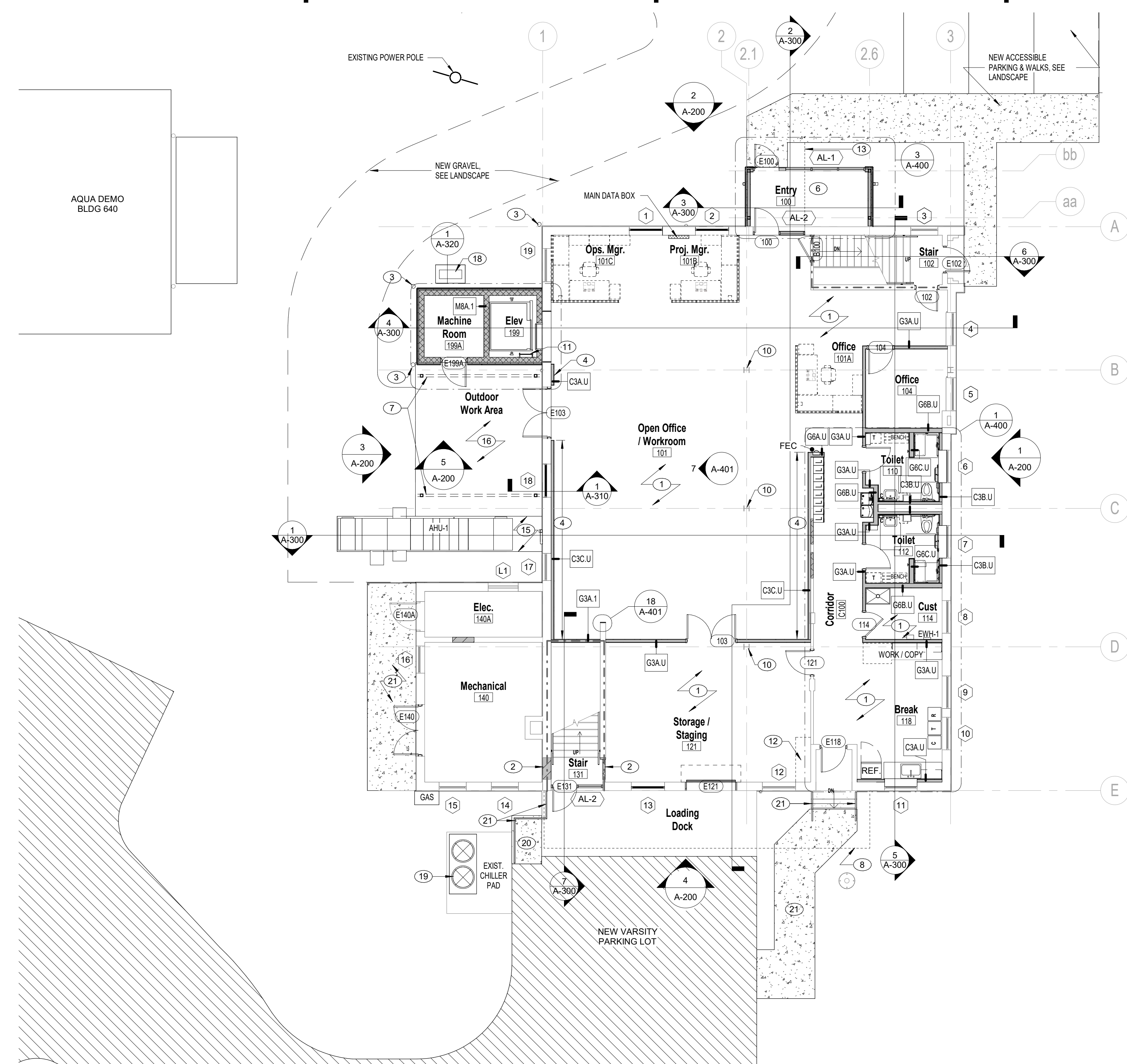
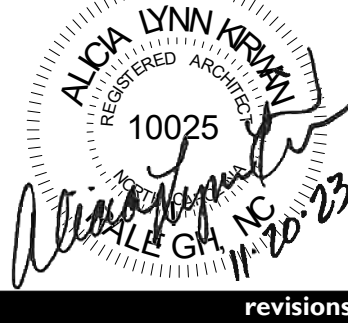
NOTE: EXISTING INTERIOR SILLS ARE SLOPED CONCRETE, TYP. - ONLY WINDOWS 4 & 5 HAVE FLAT PHENOLIC SILLS.

EXISTING LOUVER ELEVATIONS

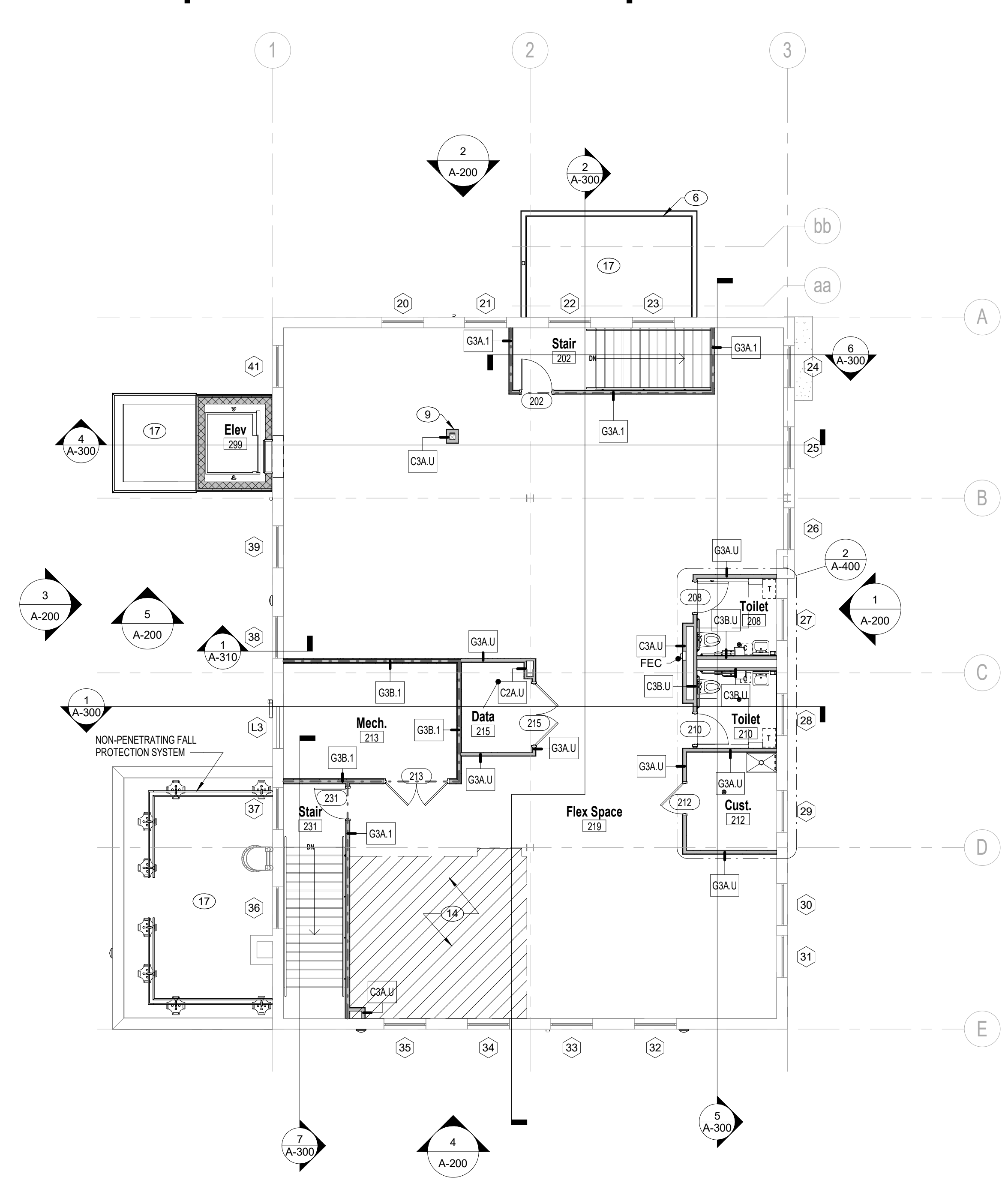


Number	Comments
L1	REPLACE WITH NEW LOUVER TO MATCH EXISTING OPENING
L2	REPLACE WITH NEW LOUVER TO MATCH EXISTING OPENING
L3	REPLACE WITH NEW LOUVER TO MATCH EXISTING OPENING

WINDOW REMARKS	
1.	REPLACE WITH CLEAR GLAZING AND RAILS AS NECESSARY TO MATCH EXISTING ELEVATION TYPE (A, A1, B OR C).
2.	PANE 5 TO BE FIXED / NON-OPERABLE.
3.	LOUVER IN PANE 1 TO BE REMOVED, NEW GLAZING AND RAIL TO MATCH EXISTING.
4.	NEW HVAC DIFFUSER TO REPLACE PANES 1 THROUGH 3, APPLY TRANSLUCENT FILM ON INTERIOR OF PANES 4 & 5.
5.	WINDOW TO BE DEMOLISHED FOR NEW ELEVATOR ACCESS AS DETAILED ELSEWHERE IN THE DRAWING SET.
6.	APPLY TRANSLUCENT WINDOW FILM ON INTERIOR SIDE OF NEW OR EXISTING PANES (ALL LIGHTS 1-5 AS APPLICABLE).



1 First Floor Plan - Base Bid & Alternates
1/8" = 1'-0"



2 Second Floor Plan - Base Bid
1/8" = 1'-0"

CONSTRUCTION PLAN GENERAL NOTES

- ANY CONFLICTS BETWEEN SITE CONDITIONS AND DRAWINGS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/DESIGNER.
- THE CONTRACT DOCUMENTS ARE COMPLEMENTARY TO EACH OTHER. WHAT IS REQUIRED FOR ONE DRAWING SHALL BE AS BINDING AS IF REQUIRED FOR ALL.
- REVIEW LAYOUTS FOR PARTITIONS IN FIELD WITH ARCHITECT/DESIGNER PRIOR TO START OF CONSTRUCTION.
- ALL EXISTING WALLS TO REMAIN ARE TO BE PATCHED AND REPAIRED TO MEET REQUIREMENTS OF NEW FINISHES. U.O.N. REFER TO SPECIFICATIONS FOR LEVEL OF FINISH. EXISTING FIRE BARRIER WALLS ARE TO BE PATCHED AND REPAIRED TO MAINTAIN THE EXISTING FIRE RATING AS WELL AS MEET REQUIREMENTS OF NEW FINISHES.
- PENETRATIONS IN GYPSUM BOARD CONSTRUCTION ABOVE FINISHED CEILING SHALL BE EFFECTIVELY SEALED TO PREVENT SOUND LEAKAGE AT ACOUSTICAL PARTITIONS AND AT DEMISING PARTITIONS. U.O.N.
- PROVIDE VERTICAL CONTROL JOINTS IN GWB EVERY 30'-0". VERIFY LOCATION WITH ARCHITECT U.O.N.
- PARTITIONS ARE DIMENSIONED FROM FACE OF STUD OR MASONRY UNLESS OTHERWISE NOTED. MAINTAIN DIMENSIONS MARKED "CLEAR" OR "HOLD". ALLOW FOR THICKNESS OF FINISHES.
- THE ARCHITECT RESERVES THE RIGHT TO MOVE ANY FIXTURE, RECEPTACLE OR BUILT-IN OBJECT UP UNTIL THE TIME HE/SHE SHALL APPROVE THE WALLS OR CEILINGS TO BE CLOSED. THIS APPROVAL SHALL TAKE PLACE PRIOR TO THE INSPECTORS APPROVAL SO AS NOT TO CONFLICT WITH ANY BUILDING OFFICIALS DECISIONS.
- PROVIDE FIRE EXTINGUISHERS (WITH RECESSED CABINETS) IN QUANTITIES AND LOCATIONS ON DWGS (MIN. 10000 SQ. FT. & 75' MAX TRAVEL DISTANCE). REVIEW FINAL LOCATIONS WITH THE ARCHITECT/DESIGNER PRIOR TO START OF CONSTRUCTION.
- MAINTAIN ALL FIRE ALARM DEVICES, HORNS AND STROBES DURING THE WORK.
- PROTECT AREA OF WORK AND ADJACENT AREAS FROM DAMAGE DURING CONSTRUCTION.
- MAINTAIN WORK AREAS SECURE AND LOCKABLE DURING CONSTRUCTION. COORDINATE WITH OWNER TO ENSURE SECURITY.
- DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. IN CASE OF CONFLICT, CONSULT THE ARCHITECT.
- ALL DOOR OPENINGS TO BE 4" FROM NEAREST PERPENDICULAR PARTITION. U.O.N.
- SEE EXISTING ELEVATION SHEET D-101 FOR WORK ASSOCIATED WITH EXISTING WINDOWS.

PLAN KEY NOTES

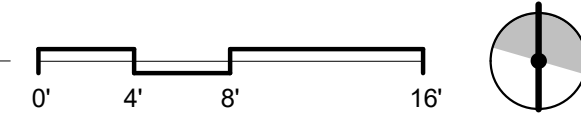
- PATCH AND REPAIR EXISTING CONCRETE FLOOR TO SMOOTH FINISH. SEAL AS SPECIFIED
- INFILL IN WALL TO MATCH EXISTING & ALIGN W/ WALL & WINDOW - MAINTAIN ONE HOUR FIRE RATING
- NEW BOLLARD. SEE LANDSCAPE FOR DETAILS
- WALL FOR EQUIPMENT TESTING. RUN IN FRONT OF EXISTING WINDOWS - 6'-6" TO TOP OF STUD. WRAP EXPOSED ENDS TO MATCH FACE
- WALL FOR EQUIPMENT TESTING - 7'-6" TO TOP OF STUD
- BASE BID: NO NEW ENTRY VESTIBULE. NEW DOOR AT DOOR 100 ONLY
ALTERNATE 4: PROVIDE NEW ENTRY VESTIBULE
- BASE BID: NO CANOPY AT OUTDOOR WORK AREA
ALTERNATE 6: PROVIDE PRE-MANUFACTURED FREESTANDING METAL CANOPY (14'X15'X11' HIGH) AT OUTDOOR WORK AREA
- BASE BID: NO CANOPY AT LOADING DOCK
ALTERNATE 5: PROVIDE NEW CANOPY AT LOADING DOCK
- WRAP EXISTING DATA CHASE TO 8'-6" A.F.F.
- REPAIR EXISTING COLUMN & PATCH FLOOR @ COLUMN AS REQUIRED FOR FLUSH, SMOOTH CONDITION - SEE STRUCTURAL PLANS FOR COLUMN REPAIRS
- PROVIDE STEEL PIT ACCESS LADDER. COORDINATE LOCATION WITH FINAL ELEVATOR INSTALLATION
- NEW BACKFLOW PREVENTER IN EXISTING LOCATION
- EXTENT OF NEW SIDEWALK FOR BASE BID
- HATCH INDICATES APPROX. EXTENT OF NEW CEMENTITIOUS SELF-LEVELLING FINISH - FEATHER FLUSH TO EXISTING FLOOR
- EQUIPMENT PAD. SEE PME SHEETS
- CANOPY PAD. SEE "L" SHEETS
- SEE ROOF PLAN A-105 FOR ALL ROOFS & ASSOCIATED DETAILS
- MINI-SPLIT SYSTEM OUTDOOR UNIT. SEE MECHANICAL PLANS
- NEW CHILLER ON EXISTING PAD. SEE MECHANICAL PLANS
- NEW CONCRETE PAD. SEE LANDSCAPE PLANS
- BASE BID: NO WORK THIS AREA
ALTERNATE 4: PROVIDE NEW CONCRETE AT THESE AREAS AS SHOWN. SEE "L" SHEETS FOR DETAILS.
- NEW HANDRAIL

LEGEND

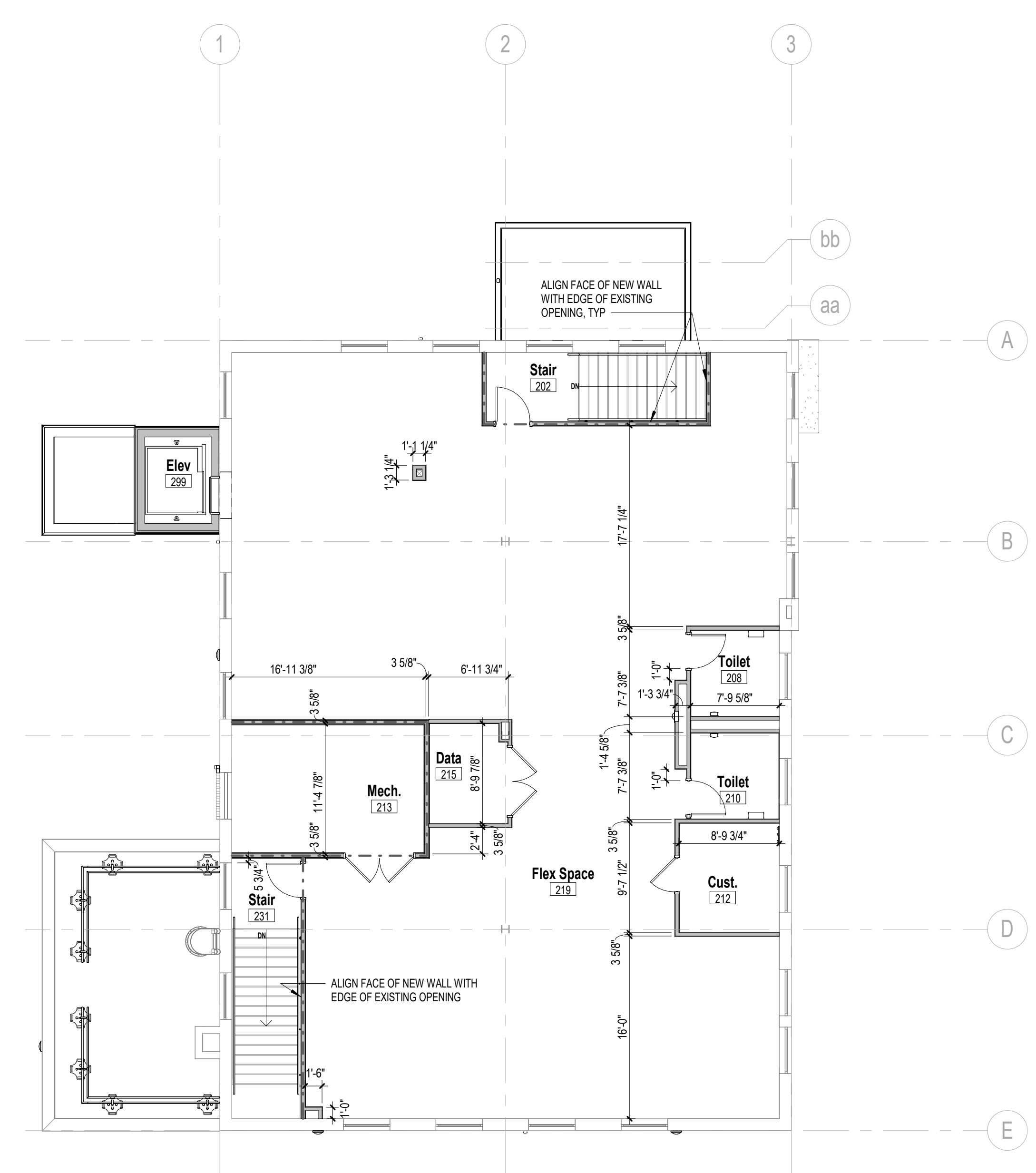
- | | | | |
|-----|--|-----|--|
| --- | ONE HOUR RATED ASSEMBLY | T | TRASH CAN - PROVIDED BY OWNER |
| --- | EXISTING WALL | c | COMPOST BIN - PROVIDED BY OWNER |
| G3A | PARTITION TYPE | R | RECYCLE BIN - PROVIDED BY OWNER |
| --- | NEW WALL | L | LOCKERS - PROVIDED BY OWNER |
| --- | NEW DOOR (SEE DOOR SCHEDULE) | | FURNITURE & CUBICLES PROVIDED AND INSTALLED BY OWNER. COORDINATE POWER AND DATA CONNECTIONS WITH OWNER |
| --- | DOOR NUMBER | --- | EXISTING WATER LINE |
| --- | CONSTRUCTION KEYNOTE TAG | --- | EXISTING SANITARY SEWER LINE |
| --- | WINDOW TAG | | |
| FEC | FIRE EXTINGUISHER RECESSED CABINET. SEE 2/G004 | | |



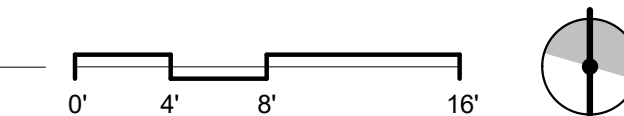
1 First Floor Plan Dimensional - Base Bid & Alternates
1/8" = 1'-0"



NOTE: ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF MASONRY UNLESS OTHERWISE NOTED.



2 Second Floor Plan Dimensional - Base Bid
1/8" = 1'-0"



NOTE: ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF MASONRY UNLESS OTHERWISE NOTED.

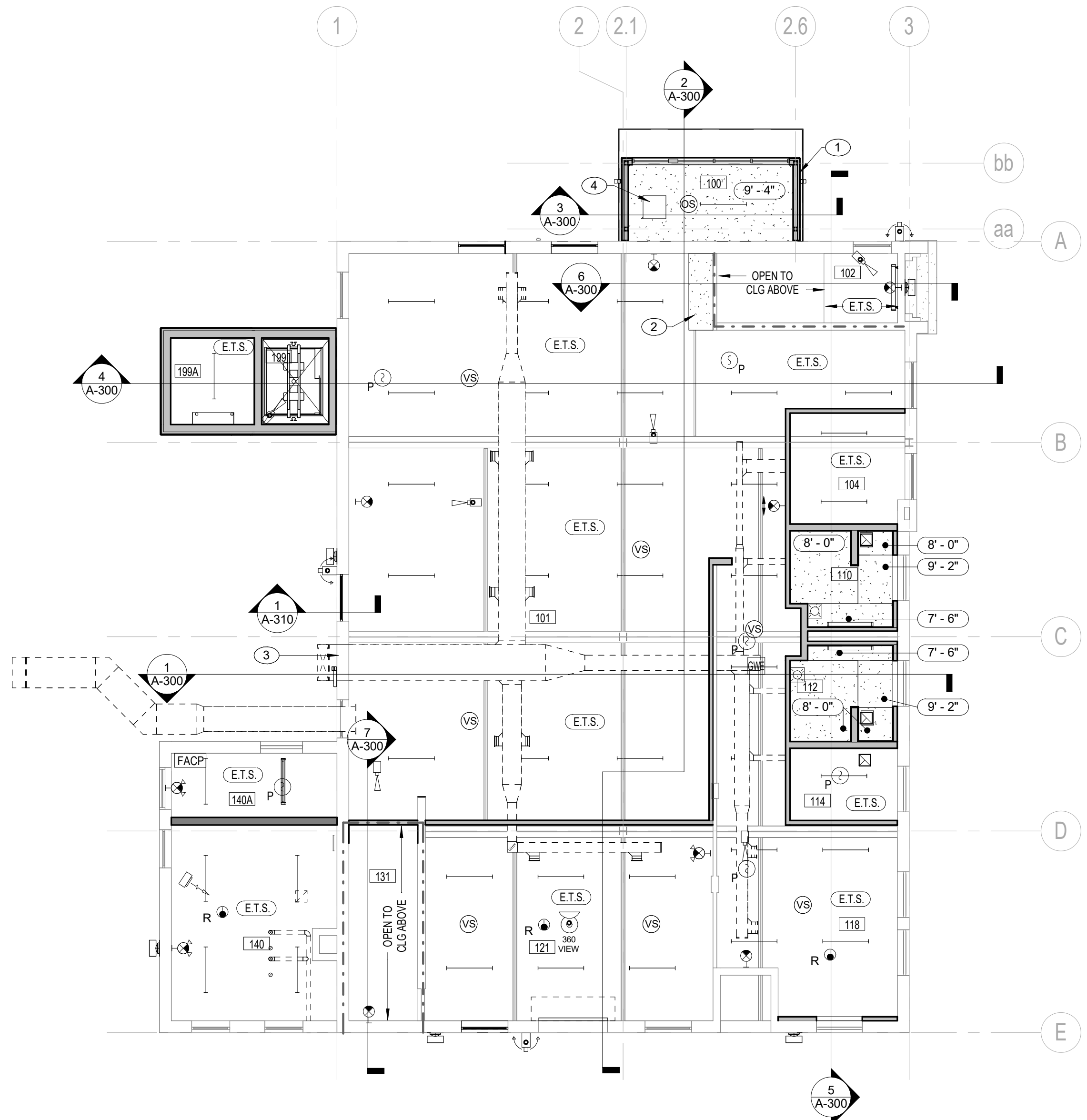
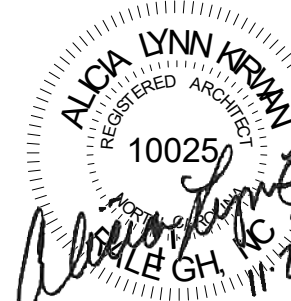
CONSTRUCTION PLAN GENERAL NOTES

1. ANY CONFLICTS BETWEEN SITE CONDITIONS AND DRAWINGS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/DISIGNER.
2. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY TO EACH OTHER. WHAT IS REQUIRED FOR ONE DRAWING SHALL BE AS BINDING AS IF REQUIRED FOR ALL.
3. REVIEW LAYOUTS FOR PARTITIONS IN FIELD WITH ARCHITECT/DISIGNER PRIOR TO START OF CONSTRUCTION.
4. ALL EXISTING WALLS TO REMAIN ARE TO BE PATCHED AND REPAIRED TO MEET REQUIREMENTS OF NEW FINISHES. U.O.N. REFER TO SPECIFICATIONS FOR LEVEL OF FINISH. EXISTING FIRE BARRIER WALLS ARE TO BE PATCHED AND REPAIRED TO MAINTAIN THE EXISTING FIRE RATING AS WELL AS MEET REQUIREMENTS OF NEW FINISHES.
5. PENETRATIONS IN GYPSUM BOARD CONSTRUCTION ABOVE FINISHED CEILING SHALL BE EFFECTIVELY SEALED TO PREVENT SOUND LEAKAGE AT ACOUSTICAL PARTITIONS AND AT DEMISING PARTITIONS, U.O.N.
6. PROVIDE VERTICAL CONTROL JOINTS IN GWB EVERY 30'-0". VERIFY LOCATION WITH ARCHITECT U.O.N.
7. PARTITIONS ARE DIMENSIONED FROM FACE OF STUD OR MASONRY UNLESS OTHERWISE NOTED. MAINTAIN DIMENSIONS MARKED "CLEAN" OR "HOLD" ALLOW FOR THICKNESS OF FINISHES.
8. THE ARCHITECT RESERVES THE RIGHT TO MOVE ANY FIXTURE, RECEPTACLE OR BUILT-IN OBJECT UP UNTIL THE TIME HE/SHE SHALL APPROVE THE WALLS OR CEILINGS TO BE CLOSED. THIS APPROVAL SHALL TAKE PLACE PRIOR TO THE INSPECTORS APPROVAL SO AS NOT TO CONFLICT WITH ANY BUILDING OFFICIALS DECISIONS.
9. PROVIDE FIRE EXTINGUISHERS (WITH RECESSED CABINETS) IN QUANTITIES AND LOCATIONS ON DWGS (MIN. 10000 SQ. FT. & 75' MAX TRAVEL DISTANCE). REVIEW FINAL LOCATIONS WITH THE ARCHITECT/DISIGNER PRIOR TO START OF CONSTRUCTION.
10. MAINTAIN ALL FIRE ALARM DEVICES, HORNS AND STROBES DURING THE WORK.
11. PROTECT AREA OF WORK AND ADJACENT AREAS FROM DAMAGE DURING CONSTRUCTION.
12. MAINTAIN WORK AREAS SECURE AND LOCKABLE DURING CONSTRUCTION. COORDINATE WITH OWNER TO ENSURE SECURITY.
13. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. IN CASE OF CONFLICT, CONSULT THE ARCHITECT.
14. ALL DOOR OPENINGS TO BE 4" FROM NEAREST PERPENDICULAR PARTITION, U.O.N.
15. SEE EXISTING ELEVATION SHEET D-101 FOR WORK ASSOCIATED WITH EXISTING WINDOWS.

LEGEND

---	ONE HOUR RATED ASSEMBLY	T	TRASH CAN - PROVIDED BY OWNER
---	EXISTING WALL	C	COMPOST BIN - PROVIDED BY OWNER
G3A	PARTITION TYPE	R	RECYCLE BIN - PROVIDED BY OWNER
---	NEW WALL	L	LOCKERS - PROVIDED BY OWNER
400	NEW DOOR (SEE DOOR SCHEDULE)		FURNITURE & CUBICLES PROVIDED AND INSTALLED BY OWNER, COORDINATE POWER AND DATA CONNECTIONS WITH OWNER
3	CONSTRUCTION KEYNOTE TAG	---	EXISTING WATER LINE
11	WINDOW TAG	SS-SS	EXISTING SANITARY SEWER LINE
FEC	FIRE EXTINGUISHER RECESSED CABINET, SEE 2IG04		





1 First Floor RCP - Base Bid & Alternates
1/8" = 1'-0"



2 Second Floor RCP - Base Bid
1/8" = 1'-0"

REFLECTED CEILING PLAN GENERAL NOTES

1. THIS PLAN IS FOR CEILING FIXTURE AND EQUIPMENT LOCATIONS ONLY. REFER TO MEPFP DRAWINGS FOR ADDITIONAL INFORMATION.
2. ALL SMOKE DETECTORS, SPRINKLER HEADS, EXIT SIGNS, ETC. TO BE CENTERED IN CEILING TILE, U.O.N.
3. DOWNLIGHTS TO BE CENTERED, IN BOTH DIRECTIONS, IN ALL ACOUSTICAL CEILING TILES, U.O.N.
4. ALL DIMENSIONS OF FIXTURES, DEVICES, SPRINKLER HEADS, ETC. ARE TO CENTERLINE OF FIXTURE, U.O.N. WHERE ITEMS ARE IN LINE, CENTERLINE OF ITEMS OR GROUP OF ITEMS ARE TO ALIGN, U.O.N.
5. ACT CEILING IS TO BE CENTERED IN ALL ROOMS, U.O.N. REFER TO CEILING LAYOUT FOR GRID LINE OR TILE TO BE CENTERED.
6. ALL MEPFP LOCATIONS IN CONFLICT WITH ARCHITECTURAL DRAWINGS SHOULD BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION. NOTIFY ARCHITECT OF ANY DISCREPANCY, OMISSION, OR UNANTICIPATED FIELD CONDITION THAT ALTERS THE INTENT OF THESE DRAWINGS.
7. ALL CEILING SYSTEMS SHALL BE SUPPORTED INDEPENDENT OF ALL NEW AND EXISTING PIPES, DUCTS, CONDUITS, ETC.
8. CEILING HEIGHT SHALL BE UNIFORM THROUGHOUT UNLESS OTHERWISE NOTED ON DRAWINGS.
9. ALL CEILING HEIGHTS ARE ABOVE FINISH FLOOR, WHERE THE FINISH FLOOR EQUALS 0'-0".
10. SHOP DRAWINGS ARE REQUIRED FOR ALL SPECIALTY CEILING SYSTEMS.
11. FINISH OF HVAC DIFFUSERS, DRAPERY POCKETS AND SPEAKER GRILLS TO MATCH ADJACENT FINISH, UNLESS OTHERWISE NOTED.
12. COORDINATE ALL CEILING ACCESS PANEL LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

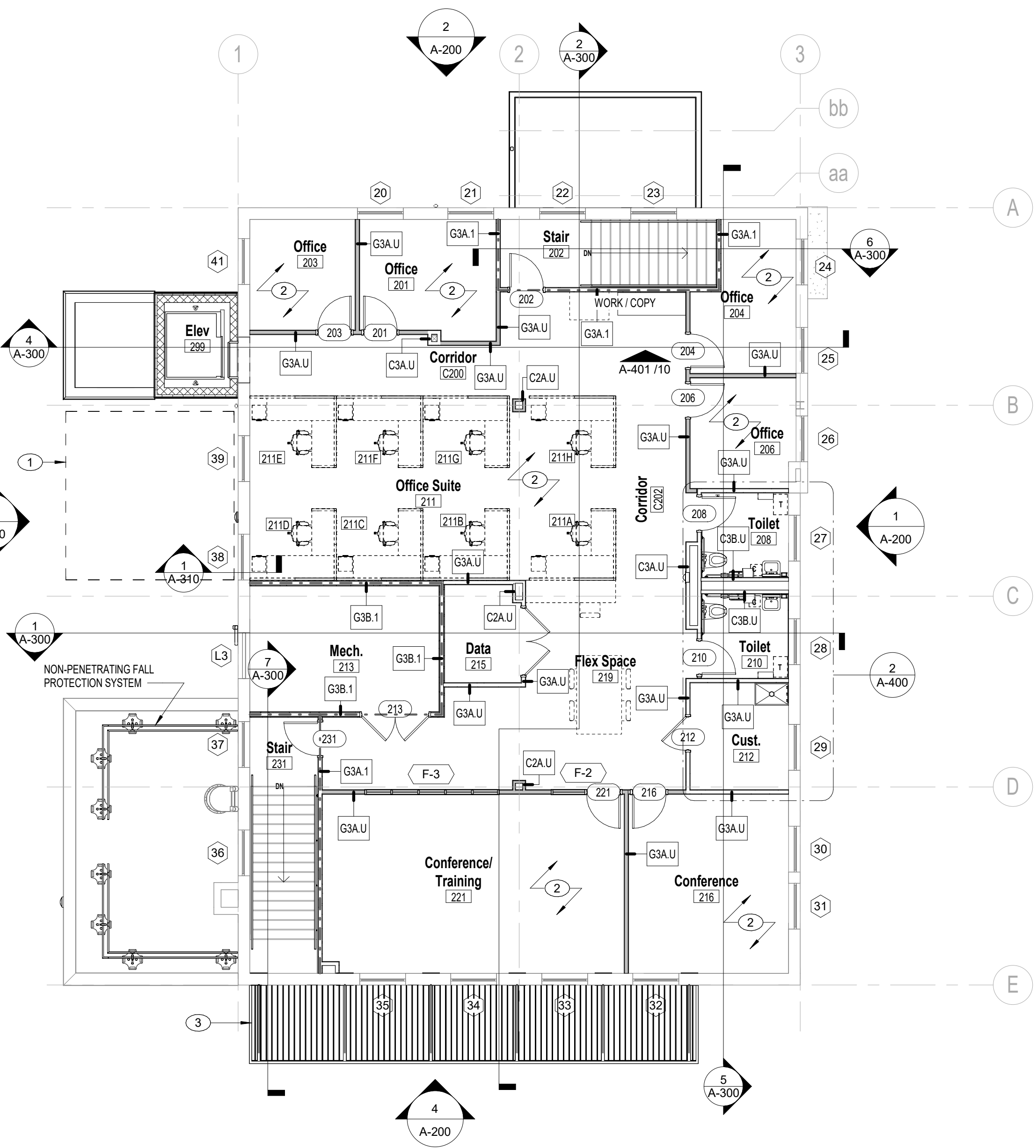
REFLECTED CEILING SHEET NOTES

- 1 BASE BID. NO NEW ENTRY VESTIBULE
ALTERNATE 4: NEW ENTRY VESTIBULE
- 2 SLOPED RATED BULKHEAD, SEE 6/A-300
- 3 NEW OPENING FOR HVAC IN EXISTING MASONRY WALL, REFERENCE STRUCTURAL DRAWINGS AND COORDINATE WITH MECHANICAL.
- 4 CEILING ACCESS PANEL, SEE SPECIFICATIONS - PART OF ALTERNATE 4

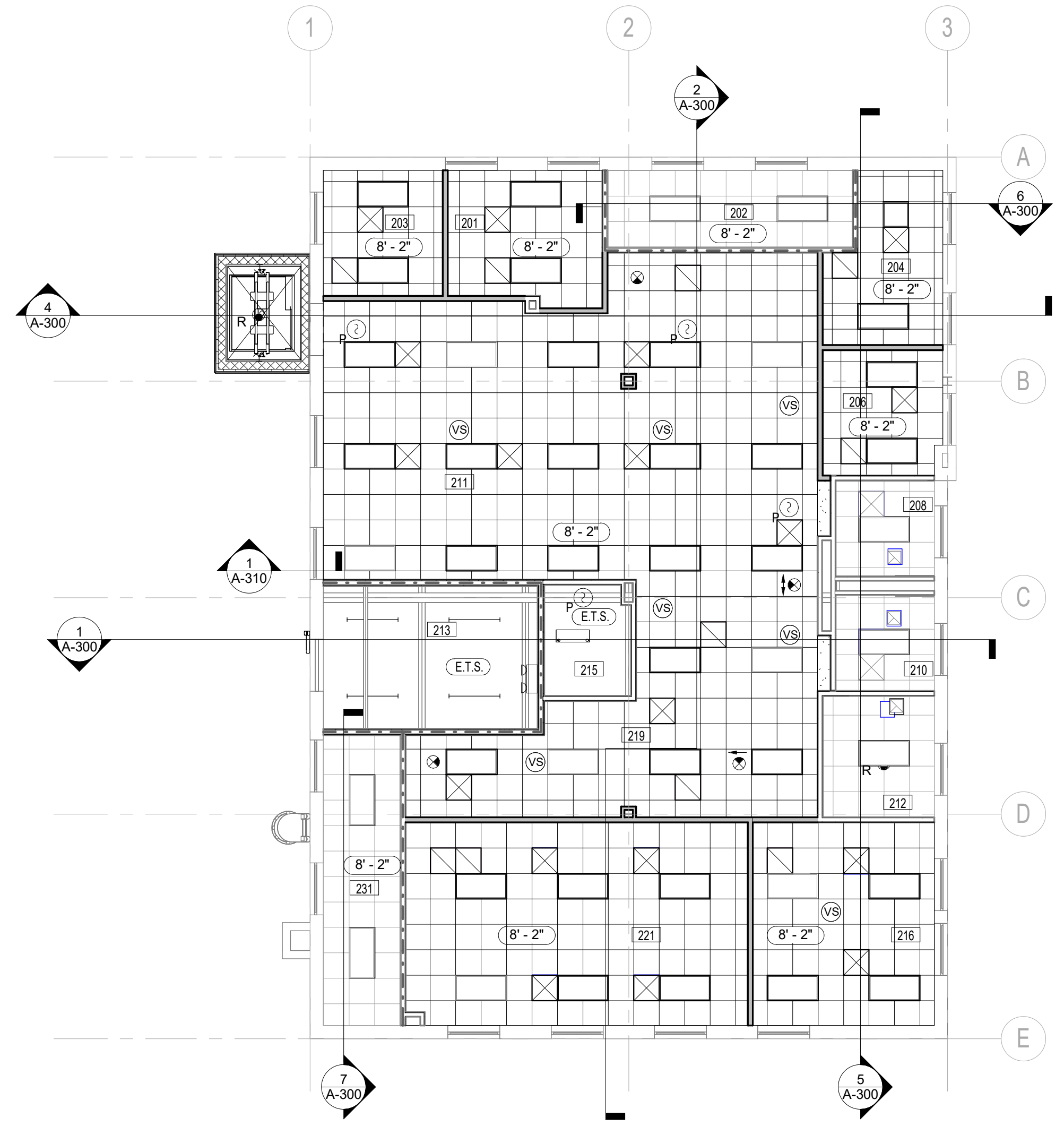
REFLECTED CEILING LEGEND

	NEW 2X2' ACOUSTICAL CEILING		FIRE ALARM HORN/STROBE
	NEW GWB CEILING		FIRE ALARM STROBE
	EXISTING EXPOSED BEAMS		PHOTOELECTRIC SMOKE DETECTOR
	NO CEILING - EXPOSED TO STRUCTURE (SEE FINISH SCHEDULE FOR EXPOSED ITEMS TO BE PAINTED)		HEAT DETECTOR
	CEILING HEIGHT (A.F.F.)		WIRELESS ACCESS POINT OUTLET
	RECESSED LIGHT FIXTURES		OCCUPANCY SENSOR
	4'-0" FLOURESCENT STRIP LIGHT FIXTURE		SUPPLY AIR DIFFUSER
	WALL MOUNTED LIGHT FIXTURE		RETURN AIR GRILLE
	DOWNLIGHT		EXHAUST GRILLE
	EXIT SIGN		SECURITY CAMERA
			UNIT HEATER

NOTE: GENERIC DEVICE SYMBOLS SHOWN BELOW - SEE SPECIFIC DISCIPLINES (MECH., ELEC., ETC.) FOR SPECIFIC DESCRIPTIONS AND ADDITIONAL ITEMS NOT SHOWN.



1 Second Floor Plan Notational - Alternates
1/8" = 1'-0"



2 Second Floor RCP - Alternates
1/8" = 1'-0"

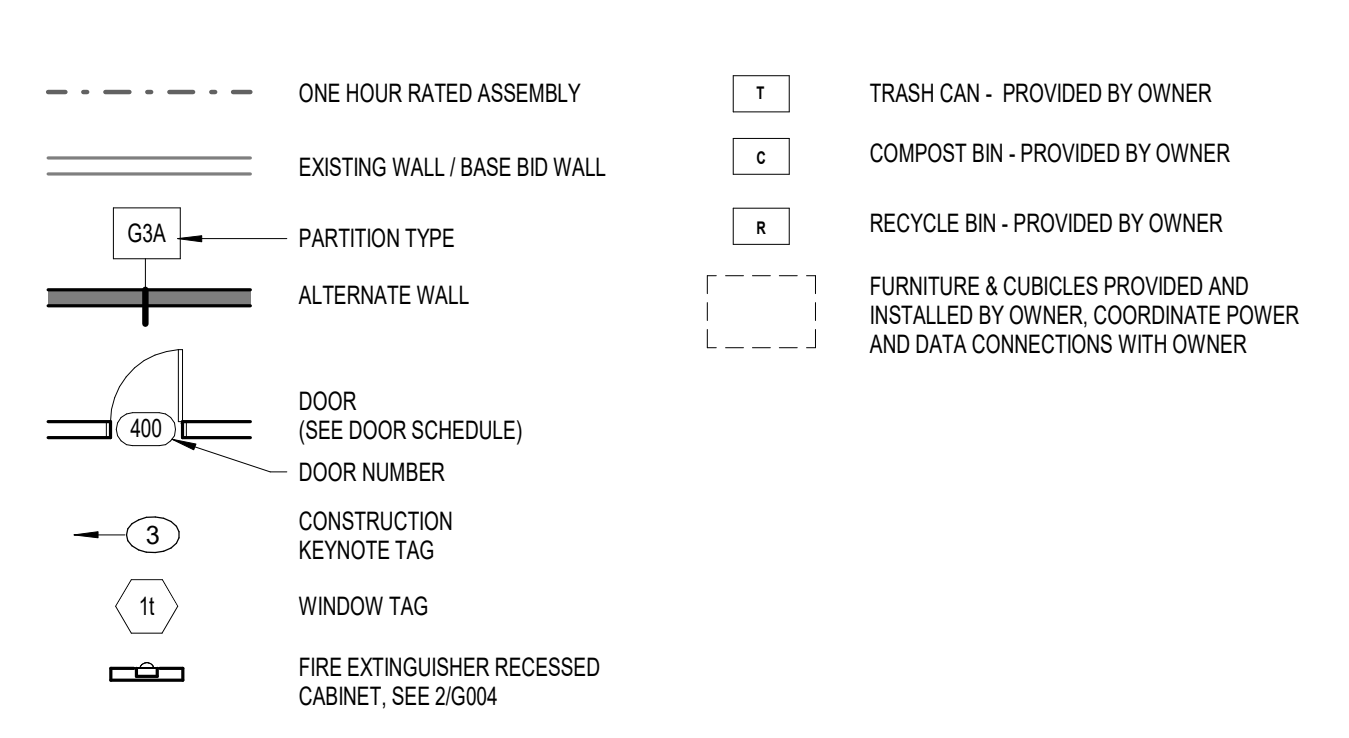
CONSTRUCTION PLAN GENERAL NOTES

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2. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY TO EACH OTHER. WHAT IS REQUIRED FOR ONE DRAWING SHALL BE AS BINDING AS IF REQUIRED FOR ALL.
3. REVIEW LAYOUTS FOR PARTITIONS IN FIELD WITH ARCHITECT/DRAWING DESIGNER PRIOR TO START OF CONSTRUCTION.
4. ALL EXISTING WALLS TO REMAIN ARE TO BE PATCHED AND REPAIRED TO MEET REQUIREMENTS OF NEW FINISHES. U.O.N. REFER TO SPECIFICATIONS FOR LEVEL OF FINISH. EXISTING FIRE BARRIER WALLS ARE TO BE PATCHED AND REPAIRED TO MAINTAIN THE EXISTING FIRE RATING AS WELL AS MEET REQUIREMENTS OF NEW FINISHES.
5. PENETRATIONS IN GYPSUM BOARD CONSTRUCTION ABOVE FINISHED CEILING SHALL BE EFFECTIVELY SEALED TO PREVENT SOUND LEAKAGE AT ACOUSTICAL PARTITIONS AND AT DEMISING PARTITIONS. U.O.N.
6. PROVIDE VERTICAL CONTROL JOINTS IN GWB EVERY 3'-0". VERIFY LOCATION WITH ARCHITECT U.O.N.
7. PARTITIONS ARE DIMENSIONED FROM FACE OF STUD OR MASONRY UNLESS OTHERWISE NOTED. MAINTAIN DIMENSIONS MARKED "CLEAR" OR "HOLD". ALLOW FOR THICKNESS OF FINISHES.
8. THE ARCHITECT RESERVES THE RIGHT TO MOVE ANY FIXTURE, RECEPTACLE OR BUILT-IN OBJECT UP UNTIL THE TIME THE SHE SHALL APPROVE THE WALLS OR CEILINGS TO BE CLOSED. THIS APPROVAL SHALL TAKE PLACE PRIOR TO THE INSPECTORS APPROVAL SO AS NOT TO CONFLICT WITH ANY BUILDING OFFICIALS DECISIONS.
9. PROVIDE FIRE EXTINGUISHERS (WITH RECESSED CABINETS) IN QUANTITIES AND LOCATIONS ON DWGS (MIN. 1/600 SQ. FT. & 75' MAX TRAVEL DISTANCE). REVIEW FINAL LOCATIONS WITH THE ARCHITECT/DRAWING DESIGNER PRIOR TO START OF CONSTRUCTION.
10. MAINTAIN ALL FIRE ALARM DEVICES, HORNS AND STROBES DURING THE WORK.
11. PROTECT AREA OF WORK AND ADJACENT AREAS FROM DAMAGE DURING CONSTRUCTION.
12. MAINTAIN WORK AREAS SECURE AND LOCKABLE DURING CONSTRUCTION. COORDINATE WITH OWNER TO ENSURE SECURITY.
13. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. IN CASE OF CONFLICT, CONSULT THE ARCHITECT.
14. ALL DOOR OPENINGS TO BE 4" FROM NEAREST PERPENDICULAR PARTITION. U.O.N.
15. SEE EXISTING ELEVATION SHEET D-101 FOR WORK ASSOCIATED WITH EXISTING WINDOWS.

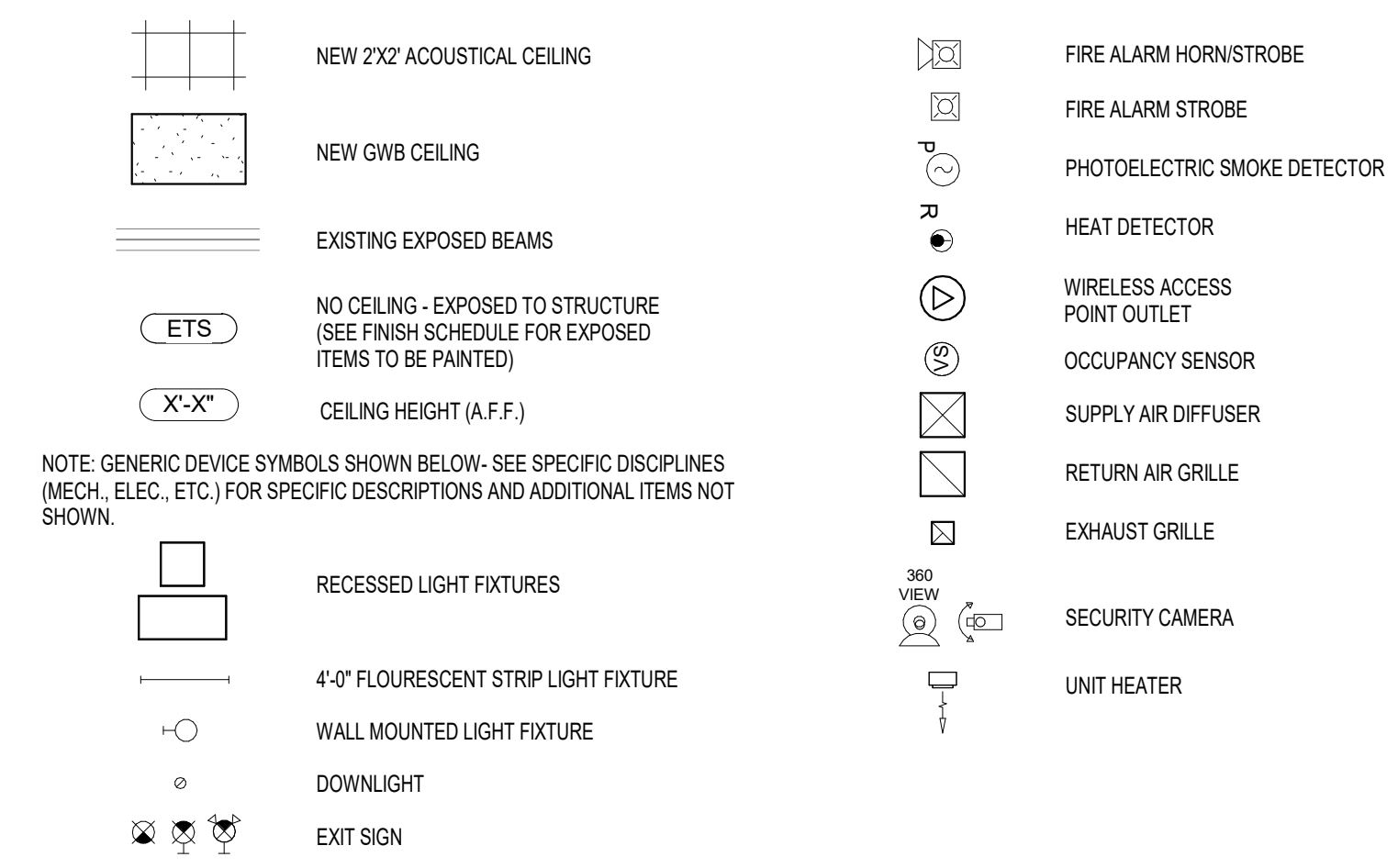
PLAN KEY NOTES FOR ALTERNATES

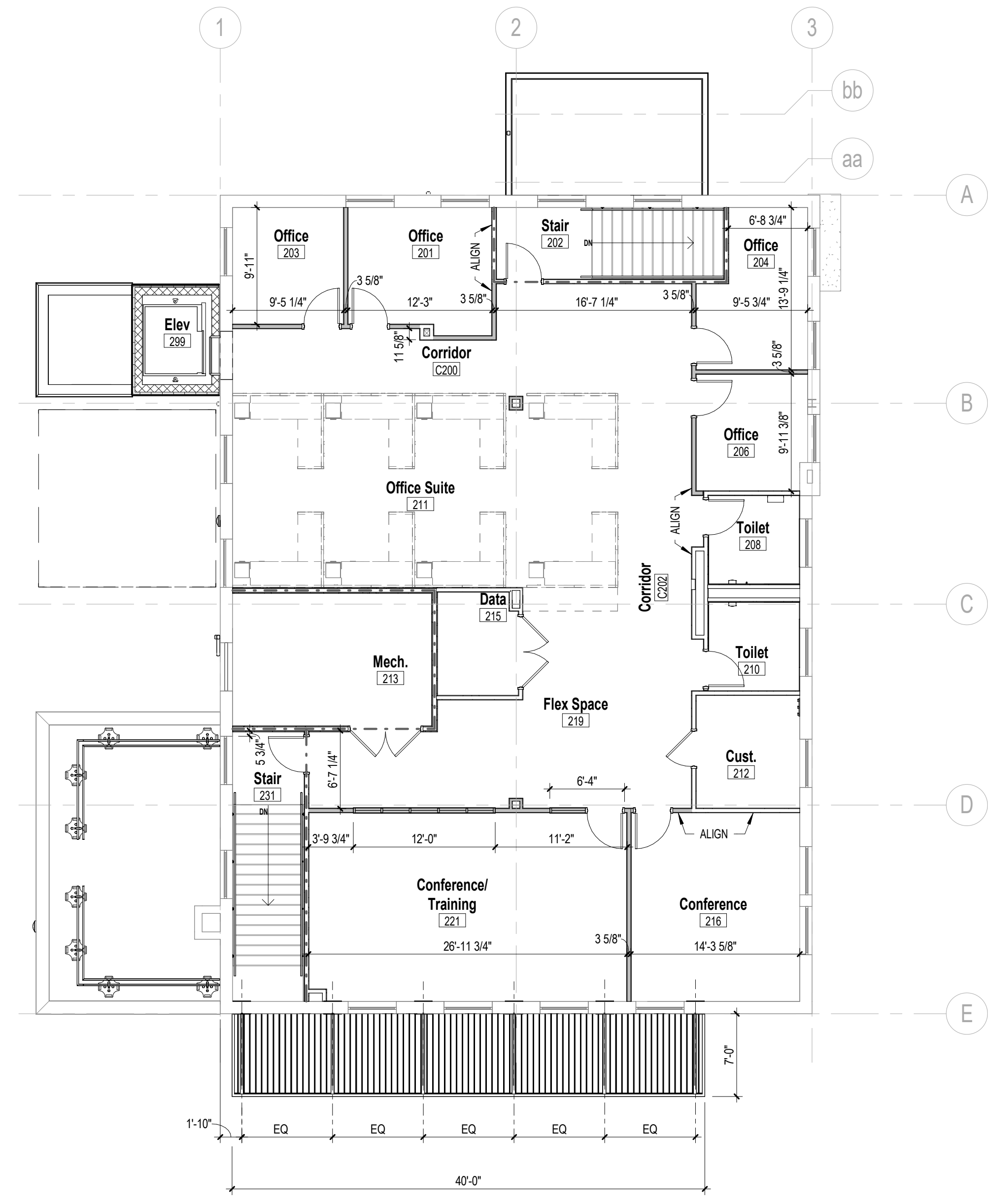
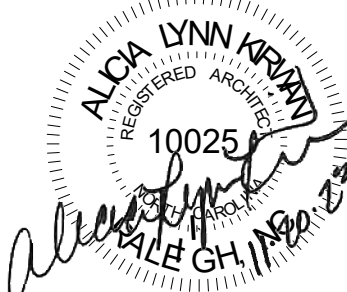
- 1 PROVIDE PRE-MANUFACTURED FREESTANDING METAL CANOPY AT OUTDOOR WORK AREA
- 2 NEW CARPET AND BASE
- 3 NEW PRE-ENGINEERED SUSPENDED METAL CANOPY, BASIS OF DESIGN MAPES SUPER LUMIDECK W/ HANGER ROD SUPPORTS

LEGEND

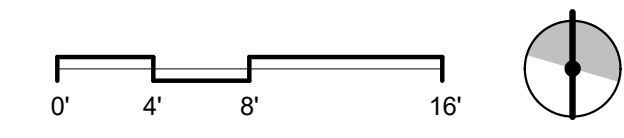


REFLECTED CEILING LEGEND





NOTE: ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF MASONRY UNLESS OTHERWISE NOTED.



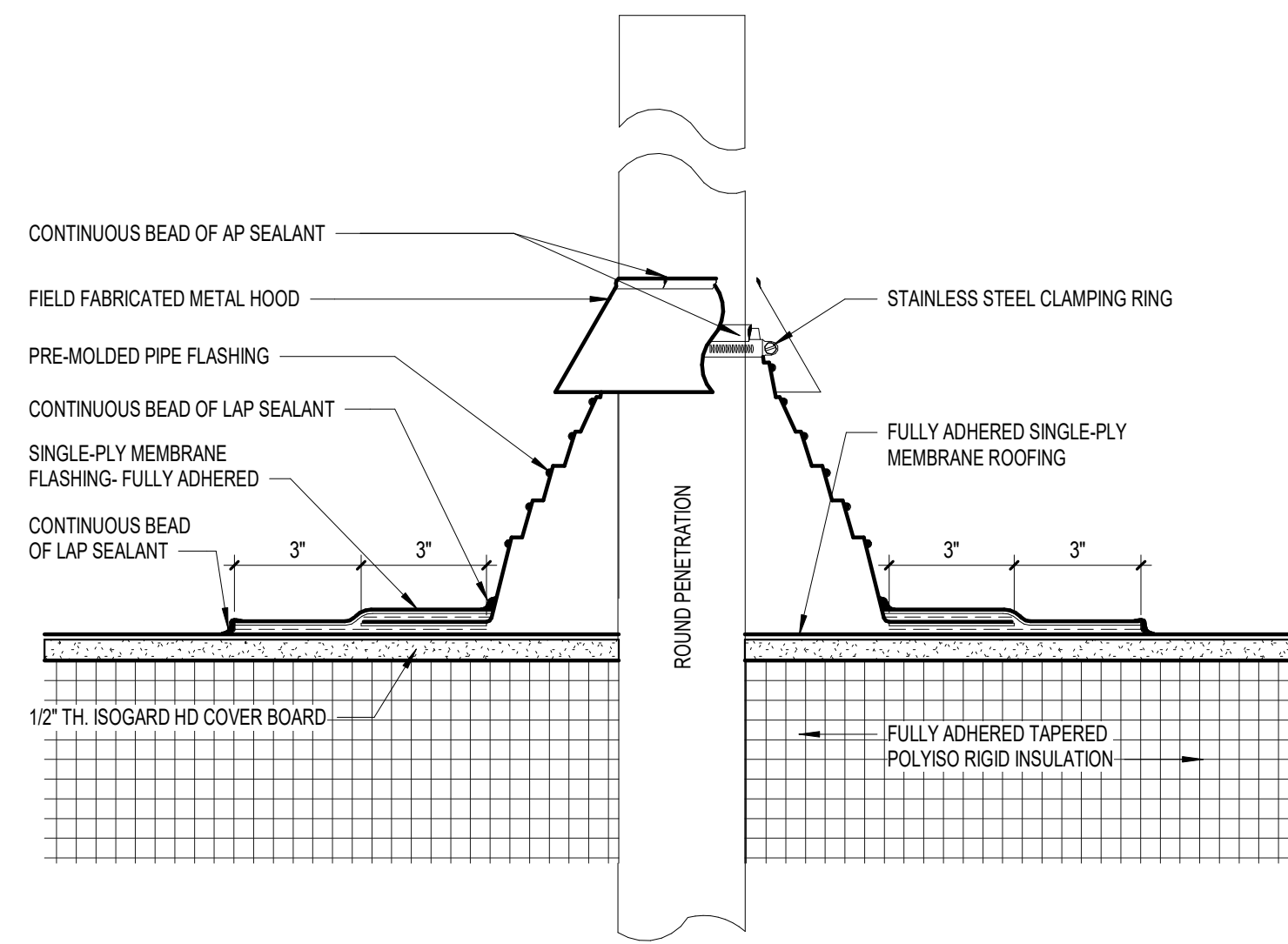
1 Second Floor Plan Dimensional - Alternates
 1/8" = 1'-0"

CONSTRUCTION PLAN GENERAL NOTES

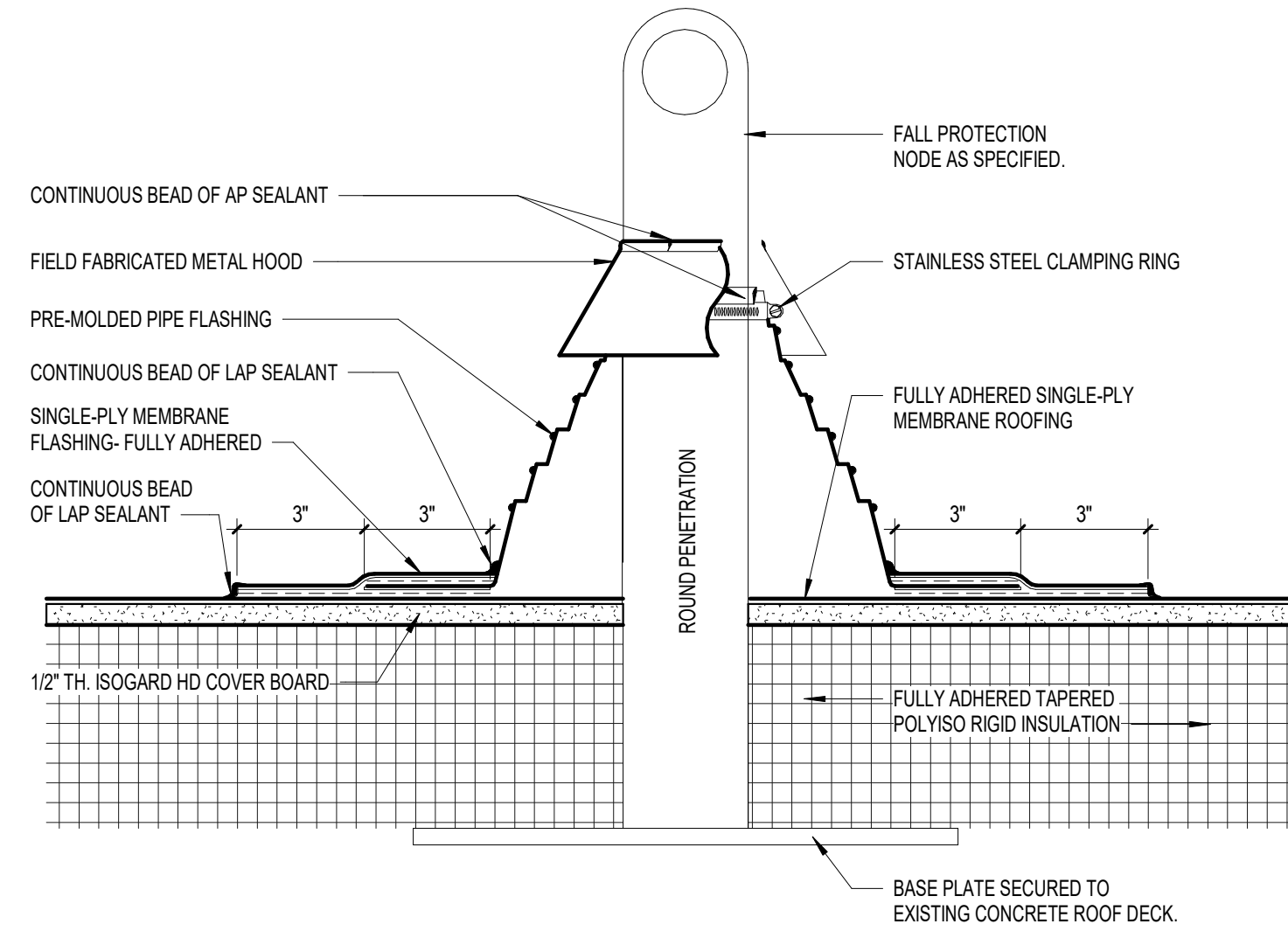
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2. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY TO EACH OTHER. WHAT IS REQUIRED FOR ONE DRAWING SHALL BE AS BINDING AS IF REQUIRED FOR ALL.
3. REVIEW LAYOUTS FOR PARTITIONS IN FIELD WITH ARCHITECT/DRAWER PRIOR TO START OF CONSTRUCTION.
4. ALL EXISTING WALLS TO REMAIN ARE TO BE PATCHED AND REPAIRED TO MEET REQUIREMENTS OF NEW FINISHES. U.O.N. REFER TO SPECIFICATIONS FOR LEVEL OF FINISH. EXISTING FIRE BARRIER WALLS ARE TO BE PATCHED AND REPAIRED TO MAINTAIN THE EXISTING FIRE RATING AS WELL AS MEET REQUIREMENTS OF NEW FINISHES.
5. PENETRATIONS IN GYPSUM BOARD CONSTRUCTION ABOVE FINISHED CEILING SHALL BE EFFECTIVELY SEALED TO PREVENT SOUND LEAKAGE AT ACOUSTICAL PARTITIONS AND AT DEMISING PARTITIONS, U.O.N.
6. PROVIDE VERTICAL CONTROL JOINTS IN GWB EVERY 30'-0". VERIFY LOCATION WITH ARCHITECT U.O.N.
7. PARTITIONS ARE DIMENSIONED FROM FACE OF STUD OR MASONRY UNLESS OTHERWISE NOTED. MAINTAIN DIMENSIONS MARKED "CLEAN" OR "HOLD" ALLOW FOR THICKNESS OF FINISHES.
8. THE ARCHITECT RESERVES THE RIGHT TO MOVE ANY FIXTURE, RECEPTACLE OR BUILT-IN OBJECT UP UNTIL THE TIME HE/SHE SHALL APPROVE THE WALLS OR CEILINGS TO BE CLOSED. THIS APPROVAL SHALL TAKE PLACE PRIOR TO THE INSPECTORS APPROVAL SO AS NOT TO CONFLICT WITH ANY BUILDING OFFICIALS DECISIONS.
9. PROVIDE FIRE EXTINGUISHERS (WITH RECESSED CABINETS) IN QUANTITIES AND LOCATIONS ON DWGS (MIN. 1/6000 SQ. FT. & 75' MAX TRAVEL DISTANCE). REVIEW FINAL LOCATIONS WITH THE ARCHITECT/DRAWER PRIOR TO START OF CONSTRUCTION.
10. MAINTAIN ALL FIRE ALARM DEVICES, HORNS AND STROBES DURING THE WORK.
11. PROTECT AREA OF WORK AND ADJACENT AREAS FROM DAMAGE DURING CONSTRUCTION.
12. MAINTAIN WORK AREAS SECURE AND LOCKABLE DURING CONSTRUCTION. COORDINATE WITH OWNER TO ENSURE SECURITY.
13. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. IN CASE OF CONFLICT, CONSULT THE ARCHITECT.
14. ALL DOOR OPENINGS TO BE 4" FROM NEAREST PERPENDICULAR PARTITION, U.O.N.
15. SEE EXISTING ELEVATION SHEET D-101 FOR WORK ASSOCIATED WITH EXISTING WINDOWS.

LEGEND

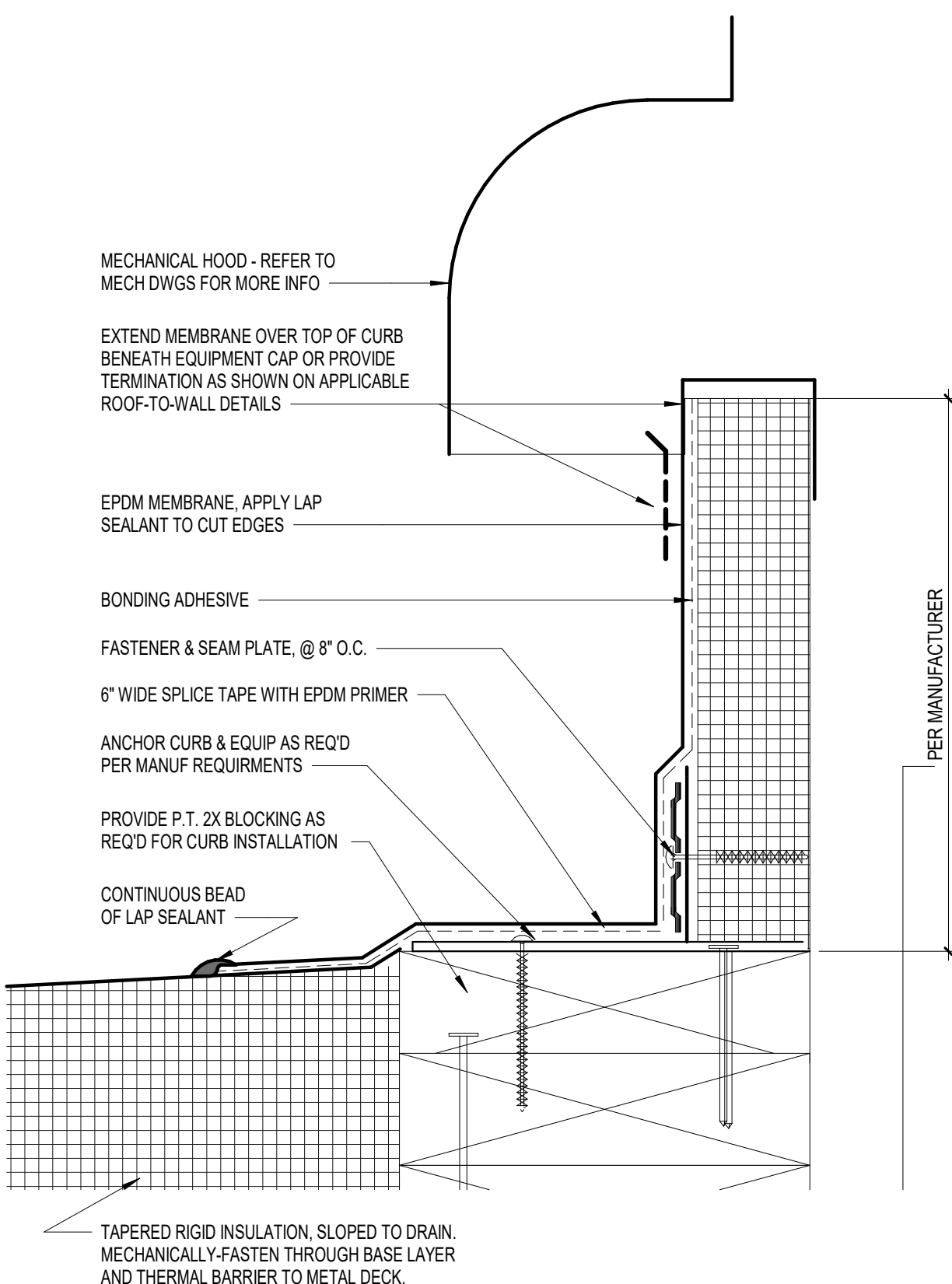
---	ONE HOUR RATED ASSEMBLY	T	TRASH CAN - PROVIDED BY OWNER
---	EXISTING WALL	c	COMPOST BIN - PROVIDED BY OWNER
G3A	PARTITION TYPE	R	RECYCLE BIN - PROVIDED BY OWNER
---	NEW WALL	L	LOCKERS - PROVIDED BY OWNER
400	NEW DOOR (SEE DOOR SCHEDULE)		FURNITURE & CUBICLES PROVIDED AND INSTALLED BY OWNER. COORDINATE POWER AND DATA CONNECTIONS WITH OWNER
3	DOOR NUMBER	---	EXISTING WATER LINE
3	CONSTRUCTION KEYNOTE TAG	SS-SS	EXISTING SANITARY SEWER LINE
It	WINDOW TAG		
FEC	FIRE EXTINGUISHER RECESSED CABINET, SEE 2/G004		



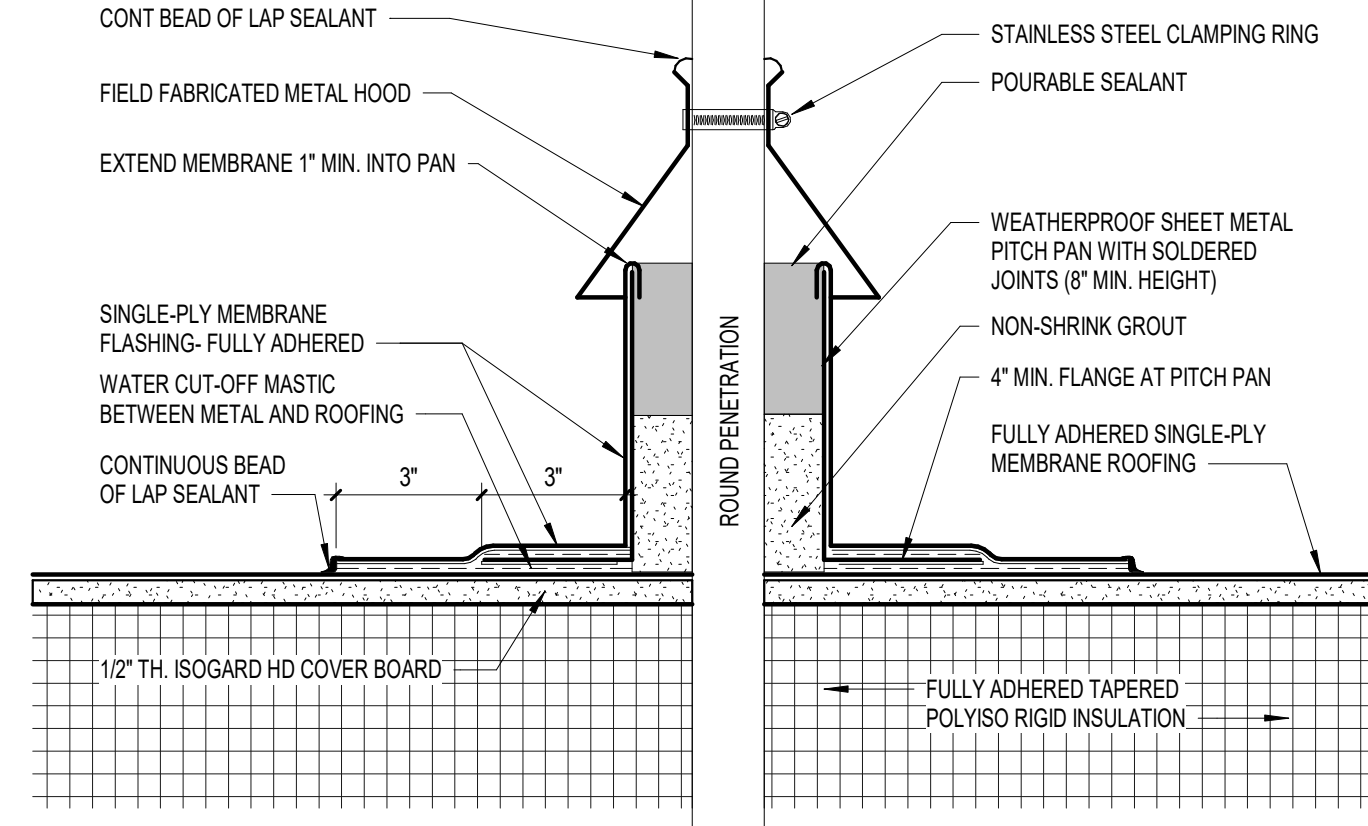
7 Plumbing Vent Thru Roof Detail (VTR)
3" = 1'-0"



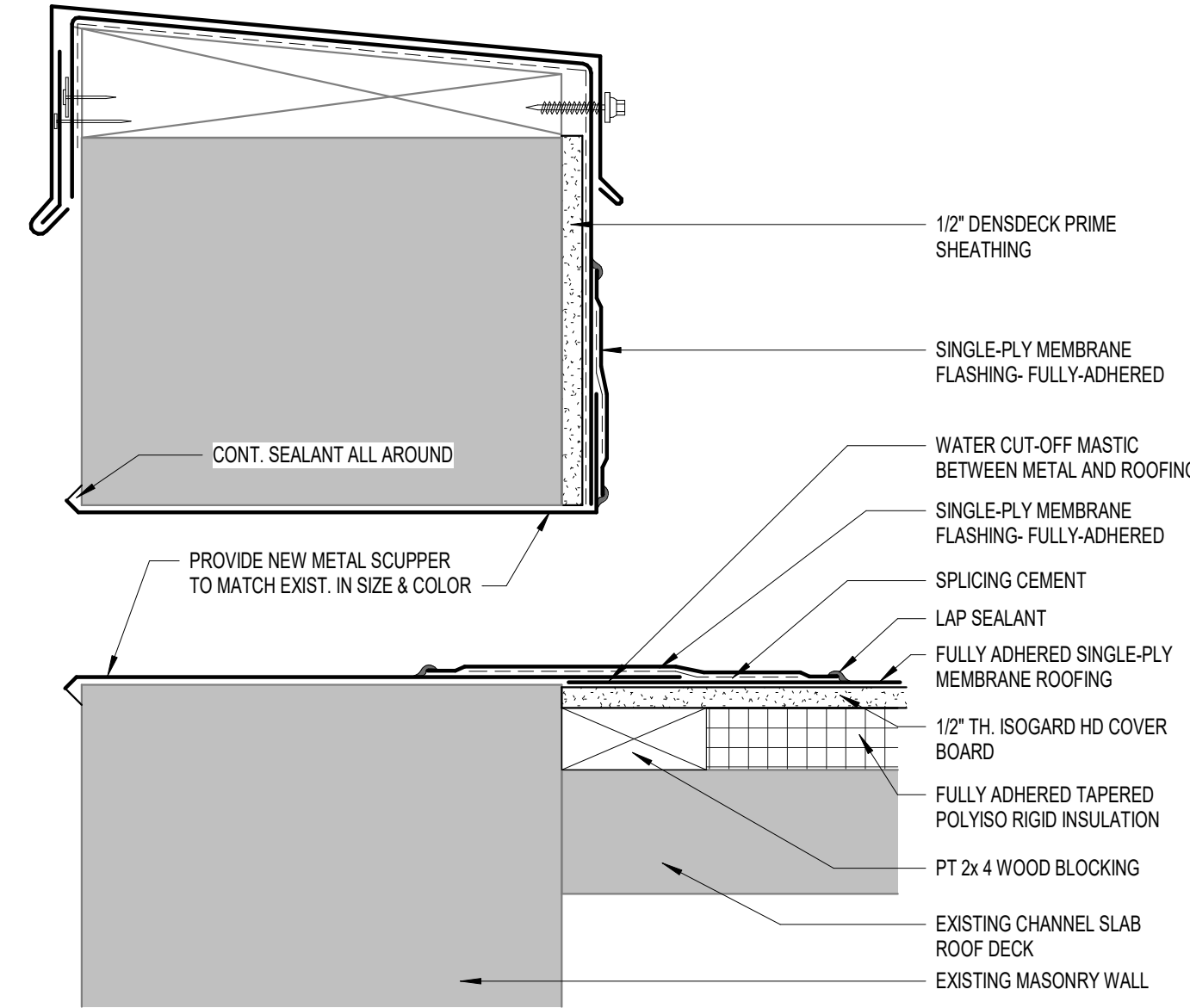
8 Fall Protect Node
3" = 1'-0"



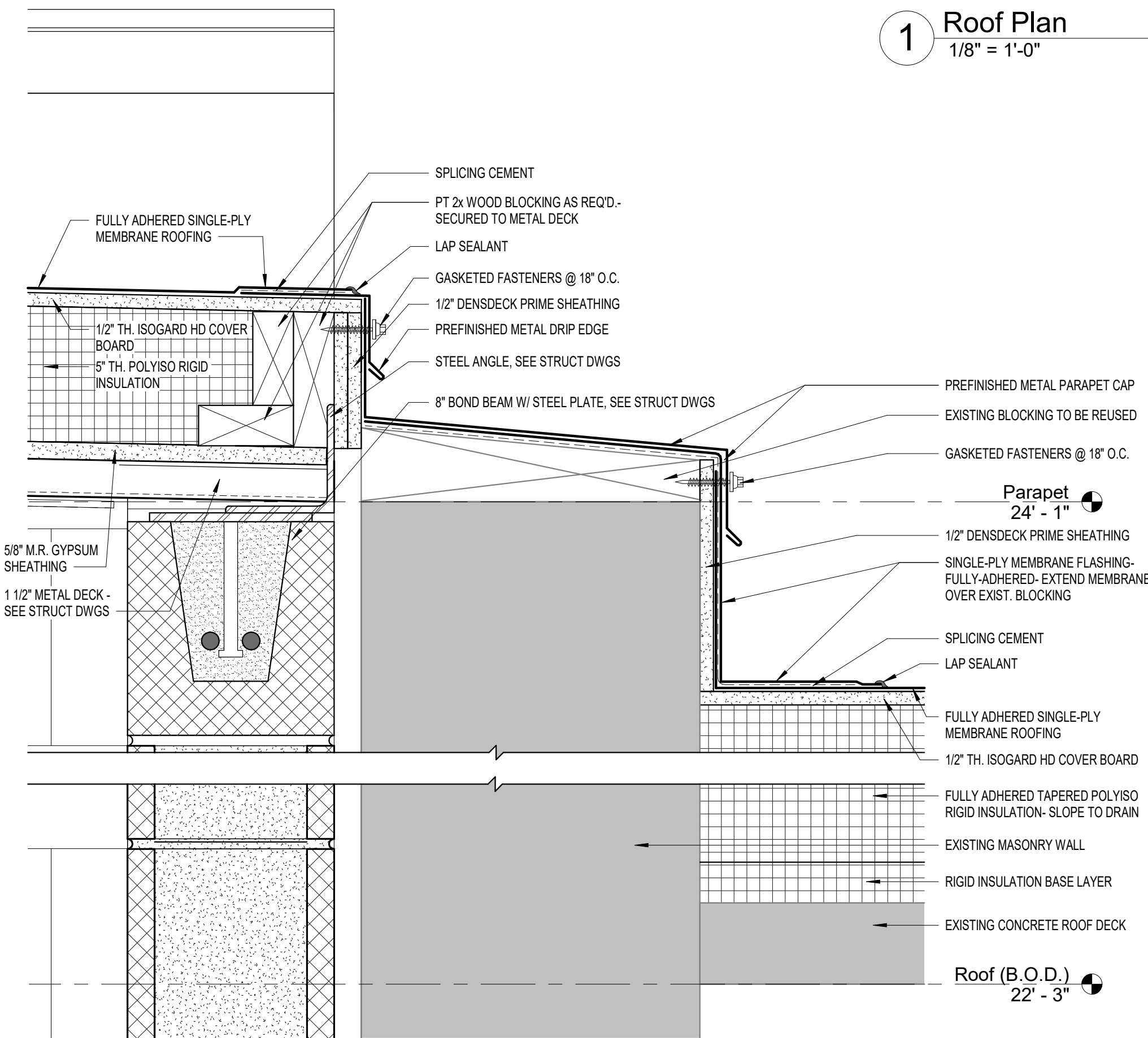
9 Roof Detail - Mechanical Equipment Curb Flashing
6" = 1'-0"



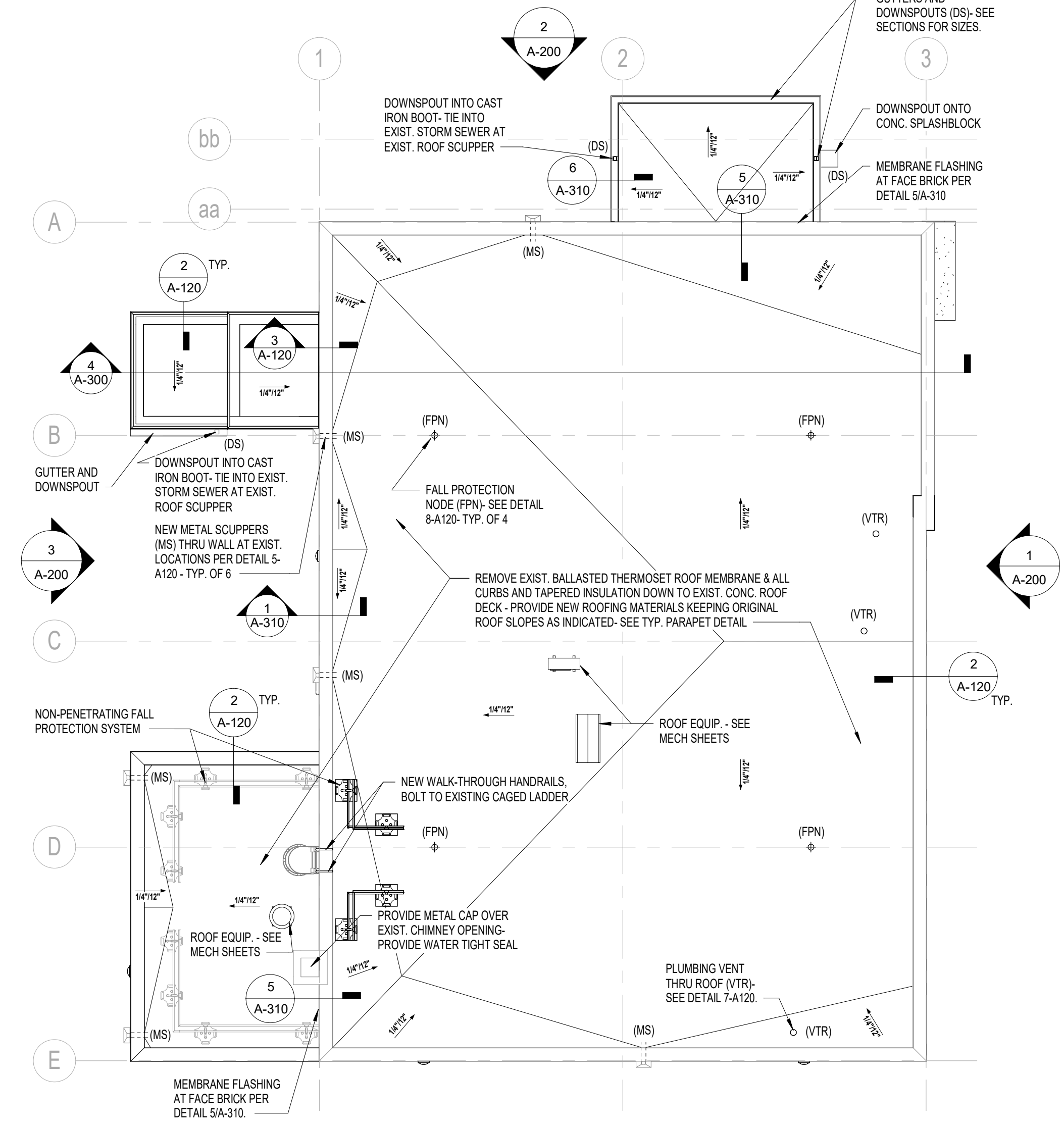
6 Pitch Pan
3" = 1'-0"



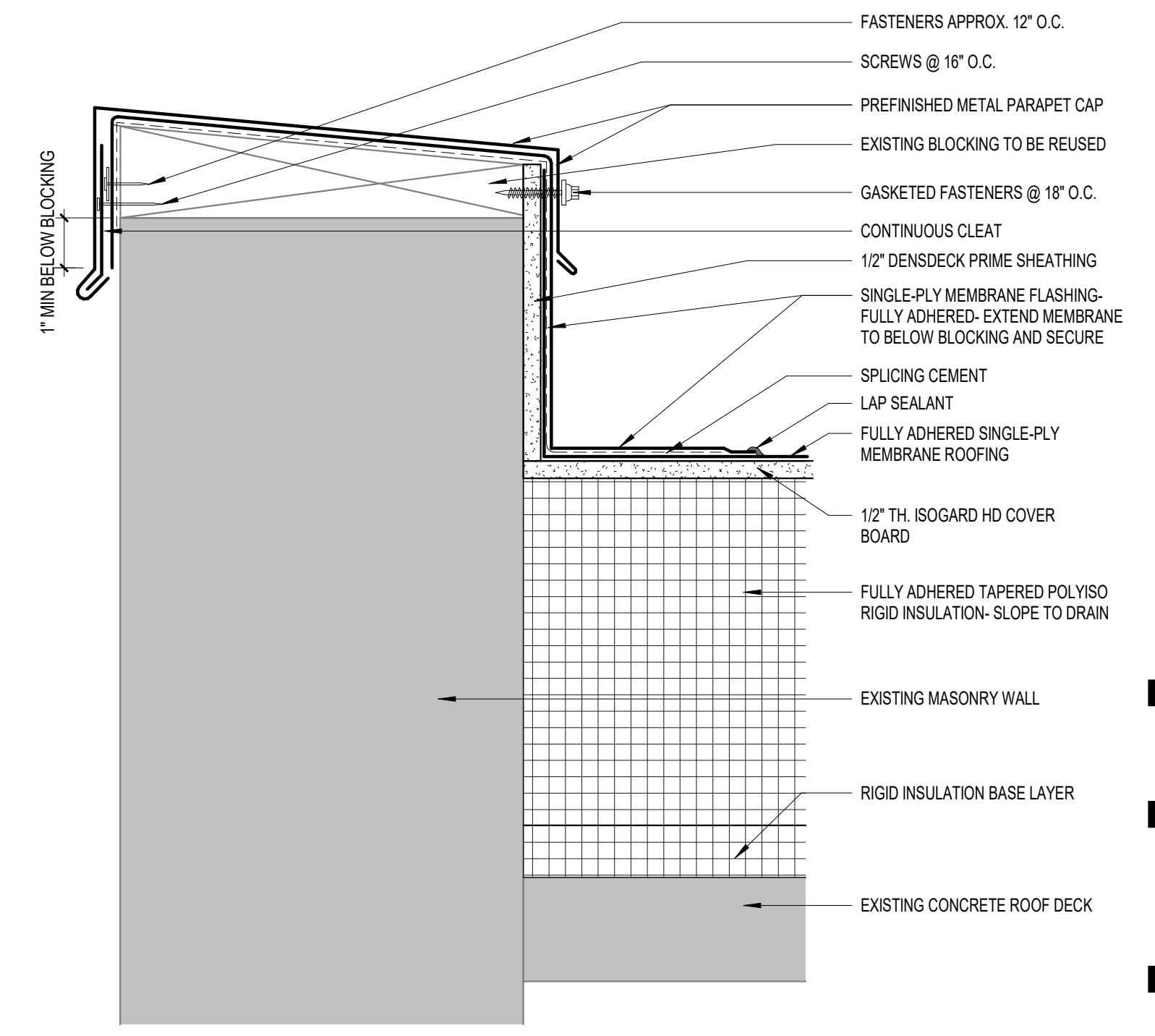
5 Scupper Detail
3" = 1'-0"



3 Parapet Detail
3" = 1'-0"

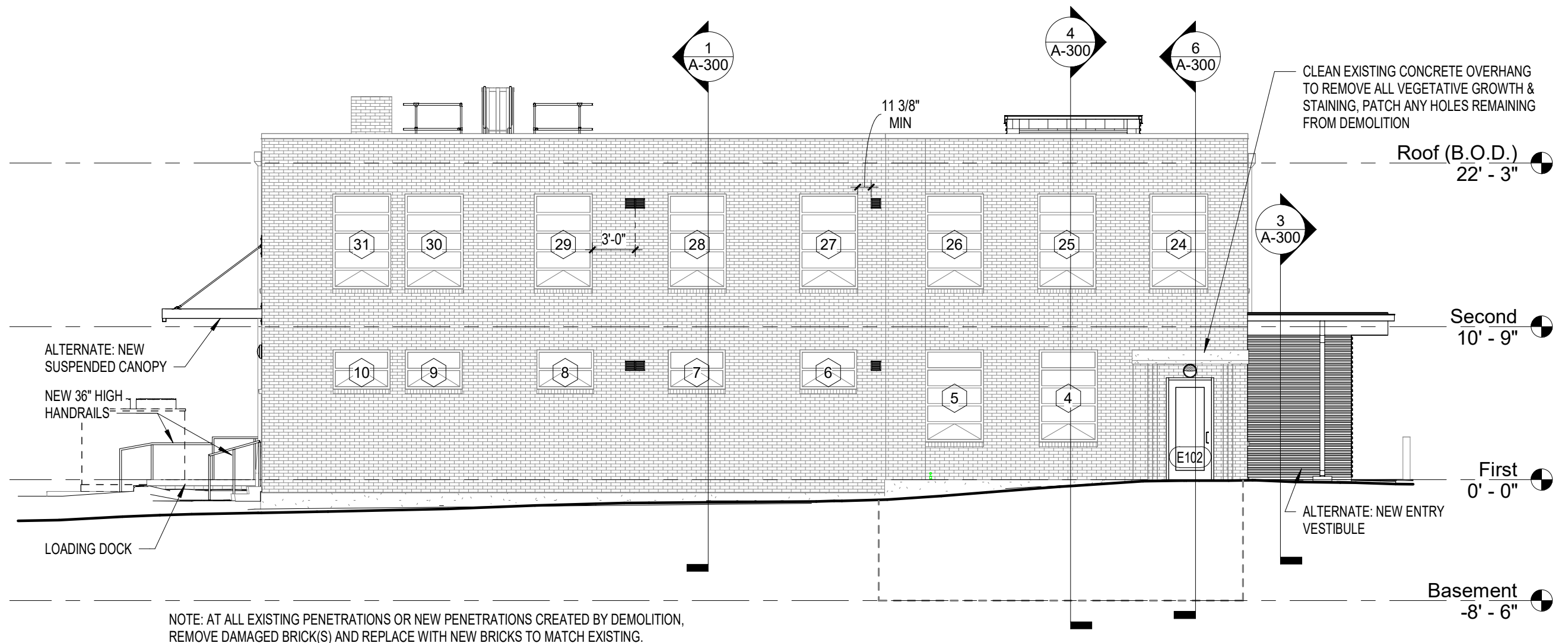


1 Roof Plan
1/8" = 1'-0"



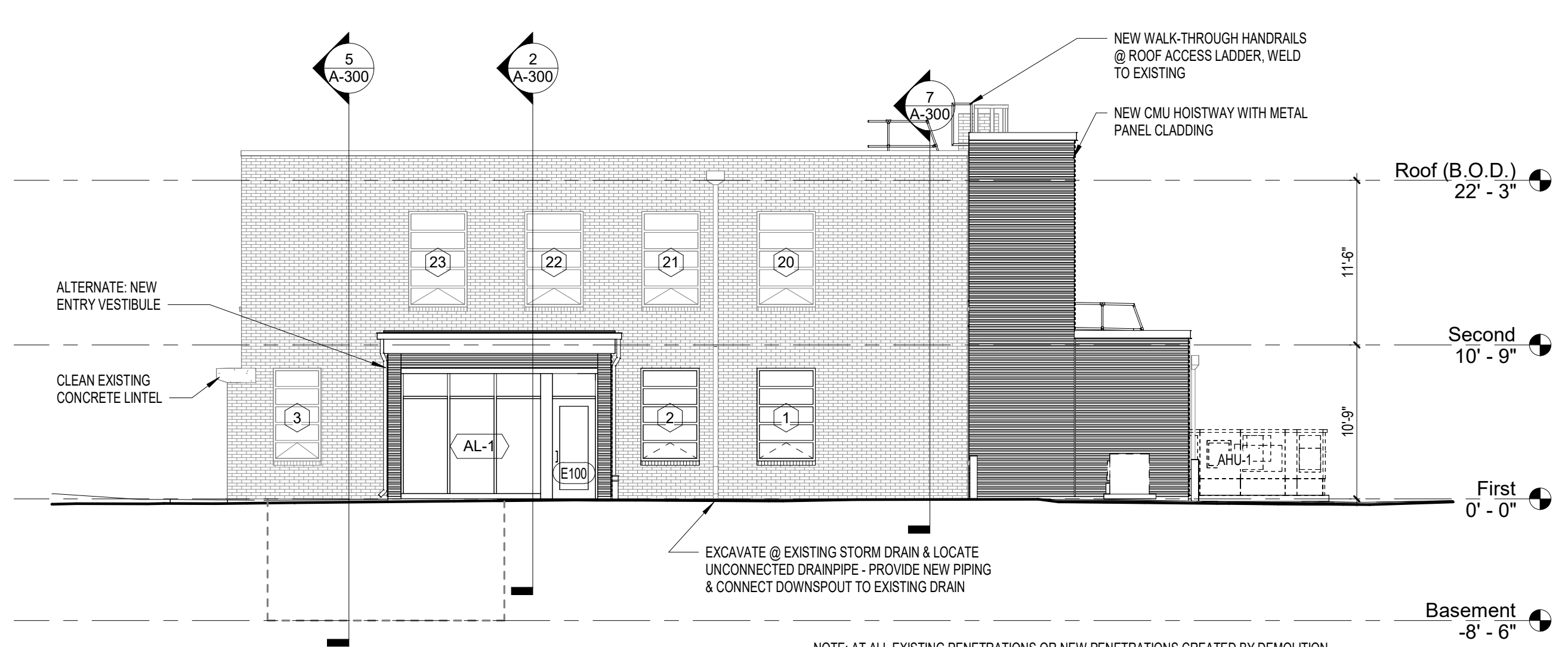
2 Parapet Detail
3" = 1'-0"





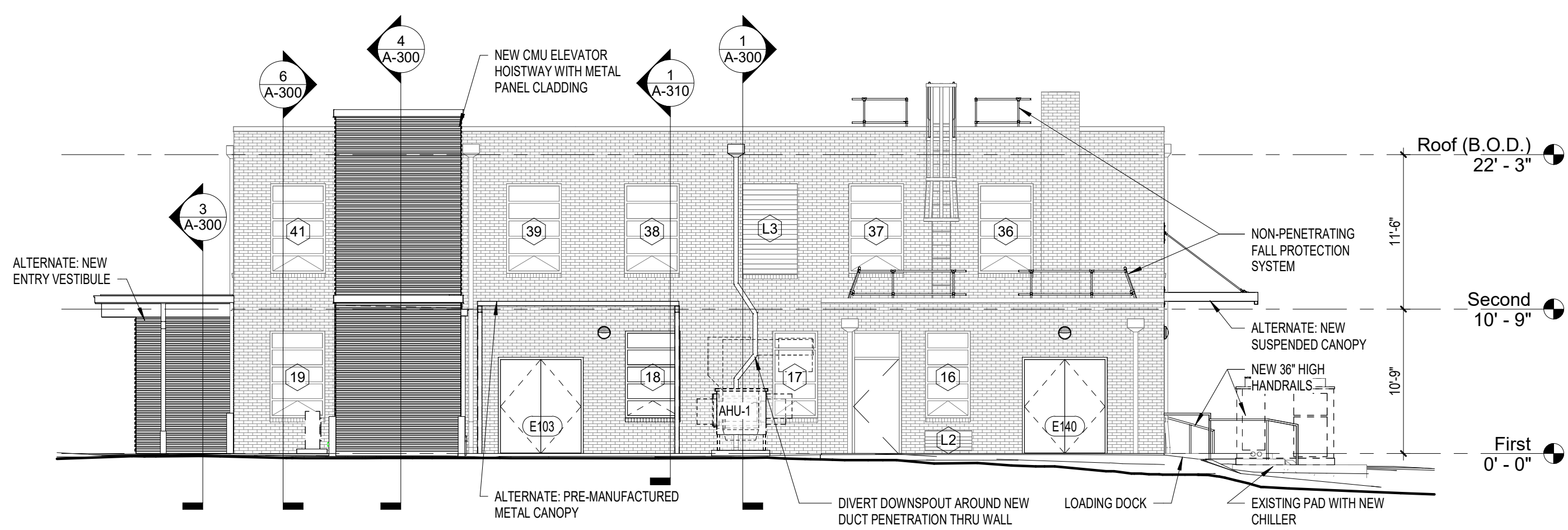
1 East
 1/8" = 1'-0"

NOTE: AT ALL EXISTING PENETRATIONS OR NEW PENETRATIONS CREATED BY DEMOLITION, REMOVE DAMAGED BRICK(S) AND REPLACE WITH NEW BRICKS TO MATCH EXISTING. REPORT AT AREAS OF REPAIR.



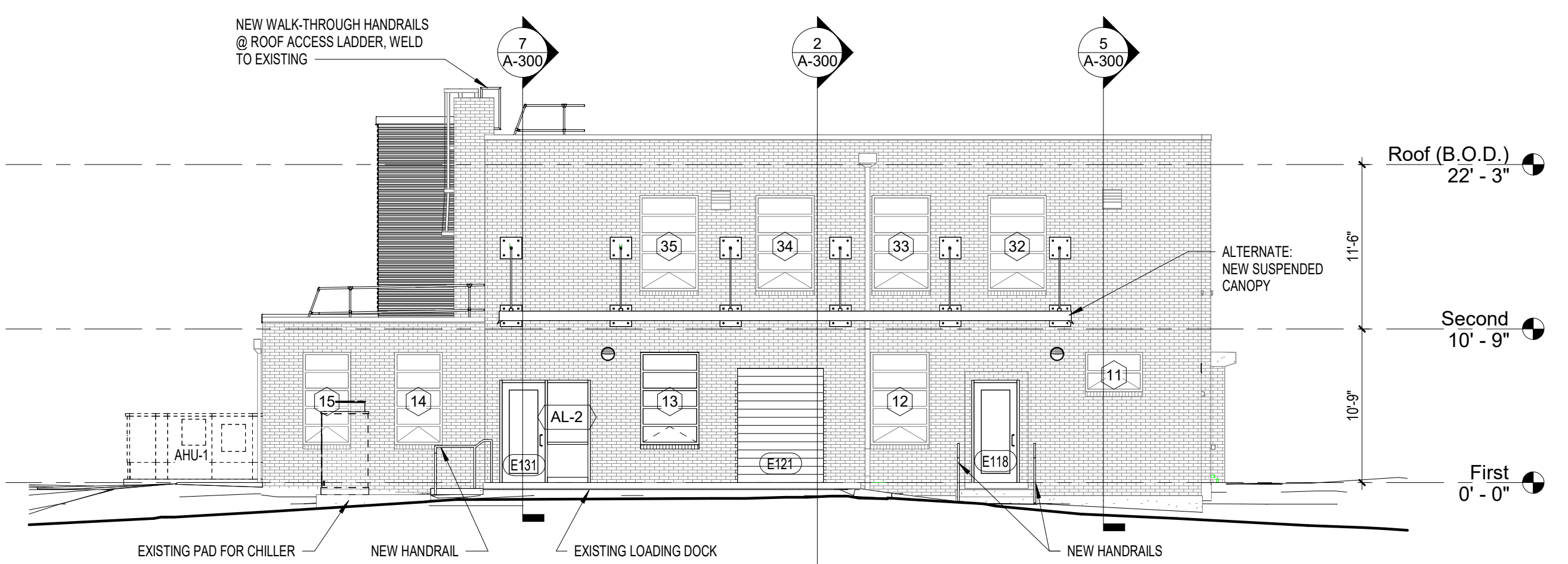
2 North
 1/8" = 1'-0"

NOTE: AT ALL EXISTING PENETRATIONS OR NEW PENETRATIONS CREATED BY DEMOLITION, REMOVE DAMAGED BRICK(S) AND REPLACE WITH NEW BRICKS TO MATCH EXISTING. REPORT AT AREAS OF REPAIR.



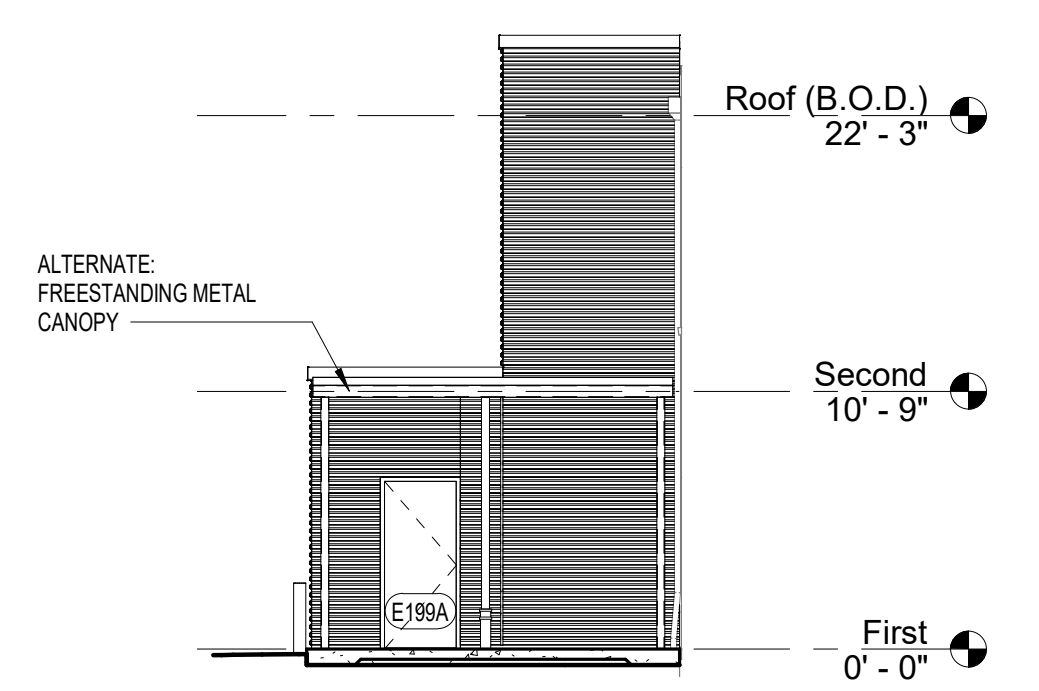
3 West
 1/8" = 1'-0"

NOTE: AT ALL EXISTING PENETRATIONS OR NEW PENETRATIONS CREATED BY DEMOLITION, REMOVE DAMAGED BRICK(S) AND REPLACE WITH NEW BRICKS TO MATCH EXISTING. REPORT AT AREAS OF REPAIR.

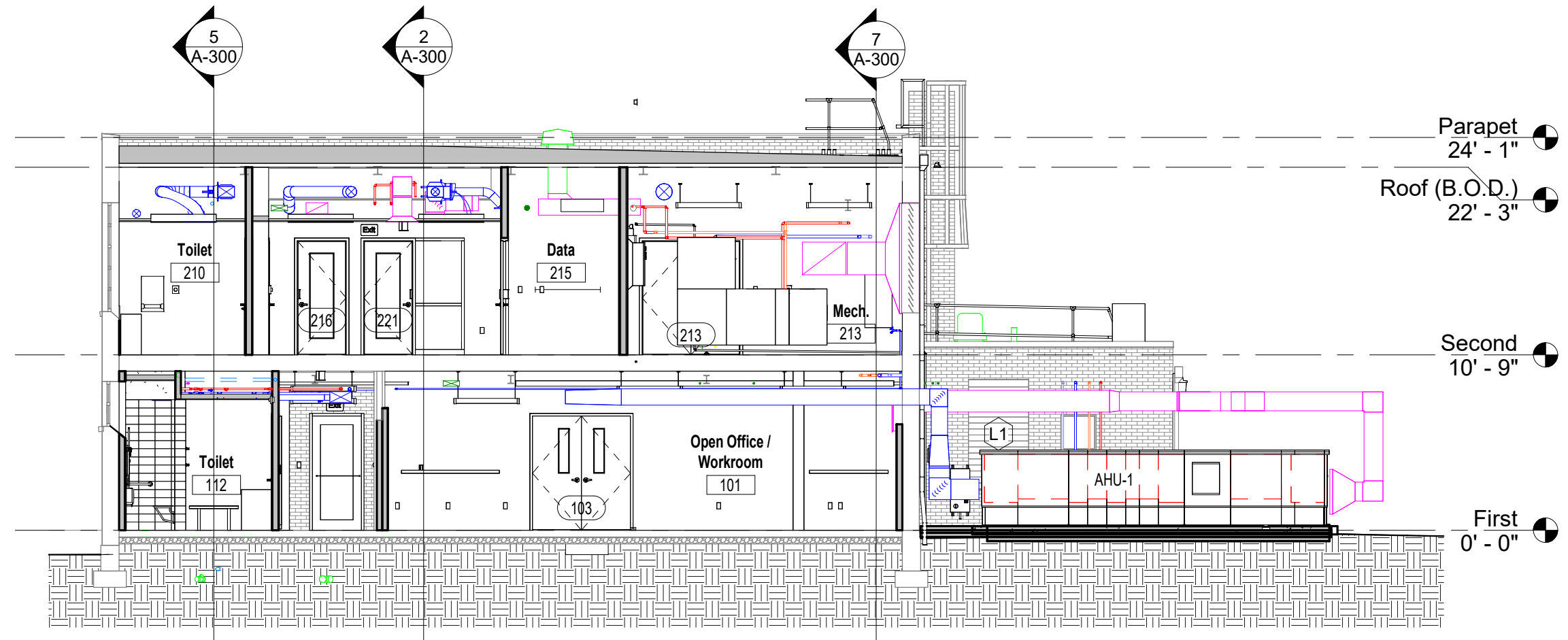


4 South
 1/8" = 1'-0"

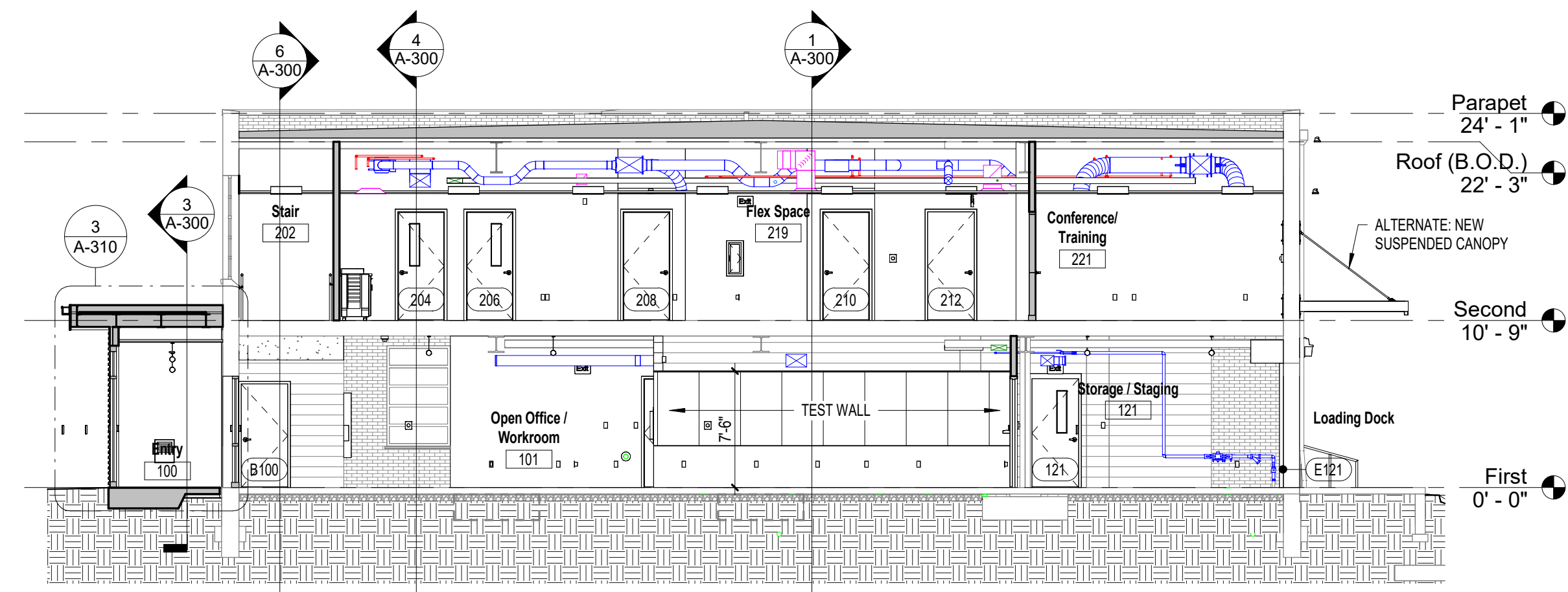
NOTE: AT ALL EXISTING PENETRATIONS OR NEW PENETRATIONS CREATED BY DEMOLITION, REMOVE DAMAGED BRICK(S) AND REPLACE WITH NEW BRICKS TO MATCH EXISTING. REPORT AT AREAS OF REPAIR.



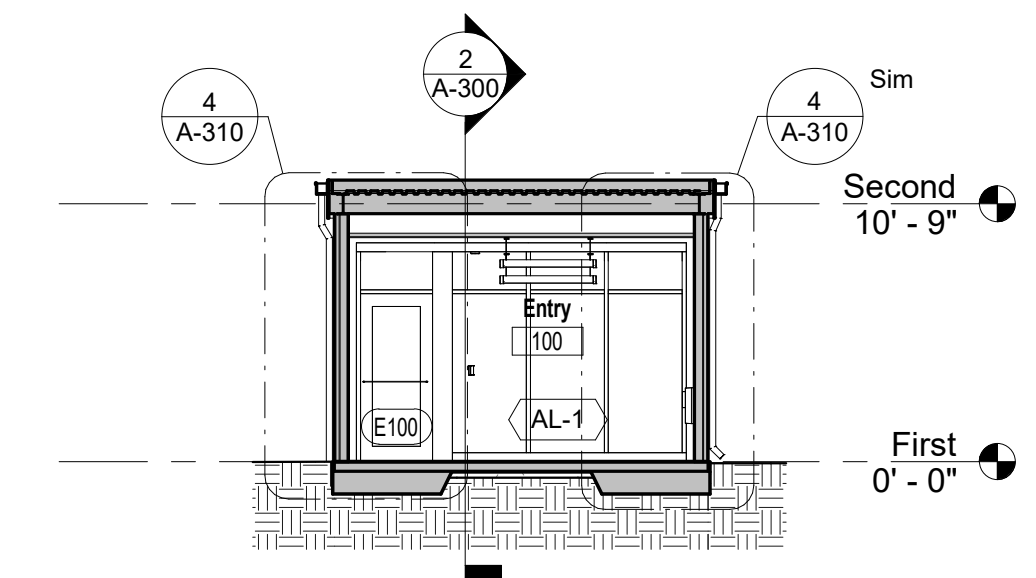
5 South Elevation @ Machine Room
 1/8" = 1'-0"



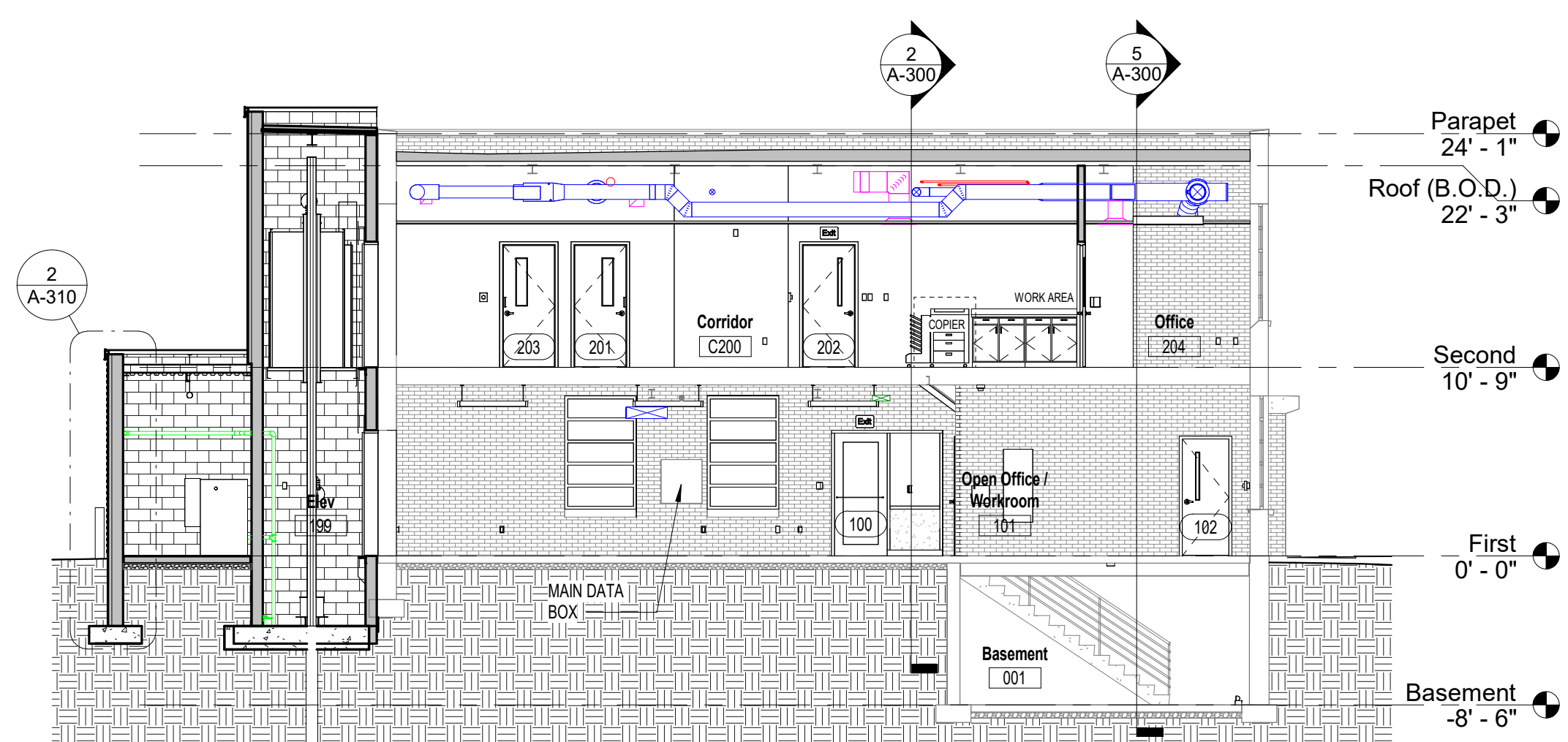
1 Section - All Alternates Shown
1/8" = 1'-0"



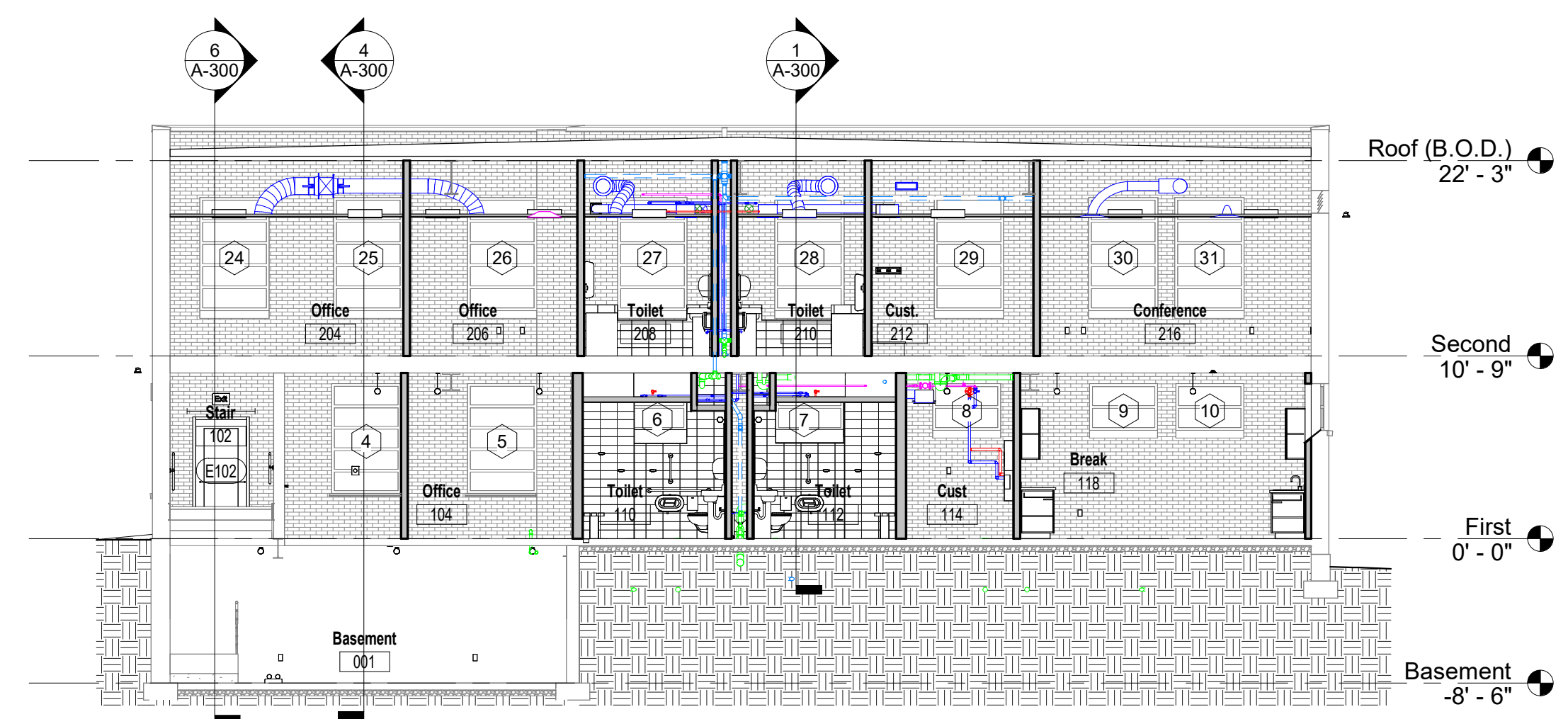
2 Section - All Alternates Shown
1/8" = 1'-0"



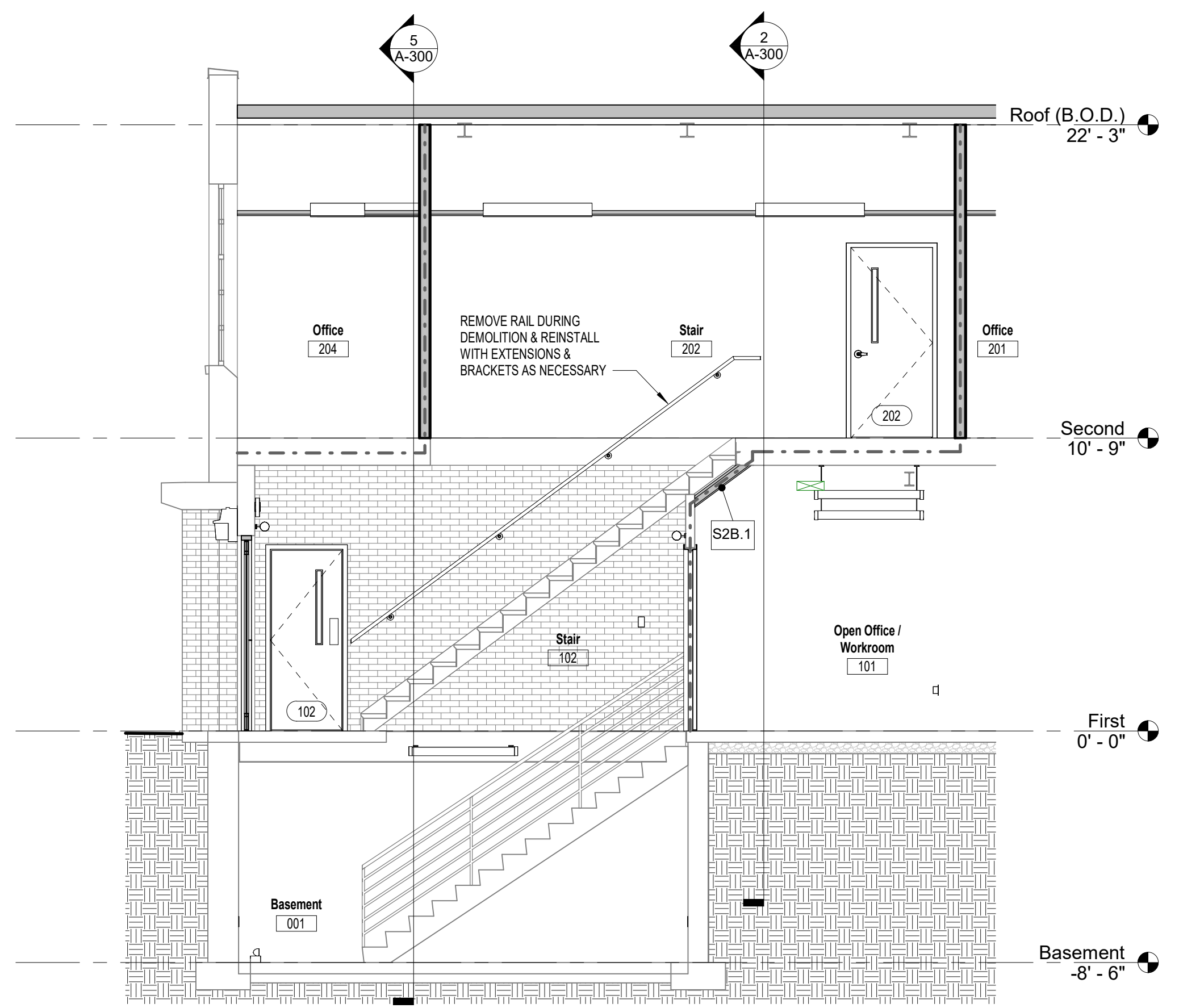
3 Section - Vestibule Alternate
1/8" = 1'-0"



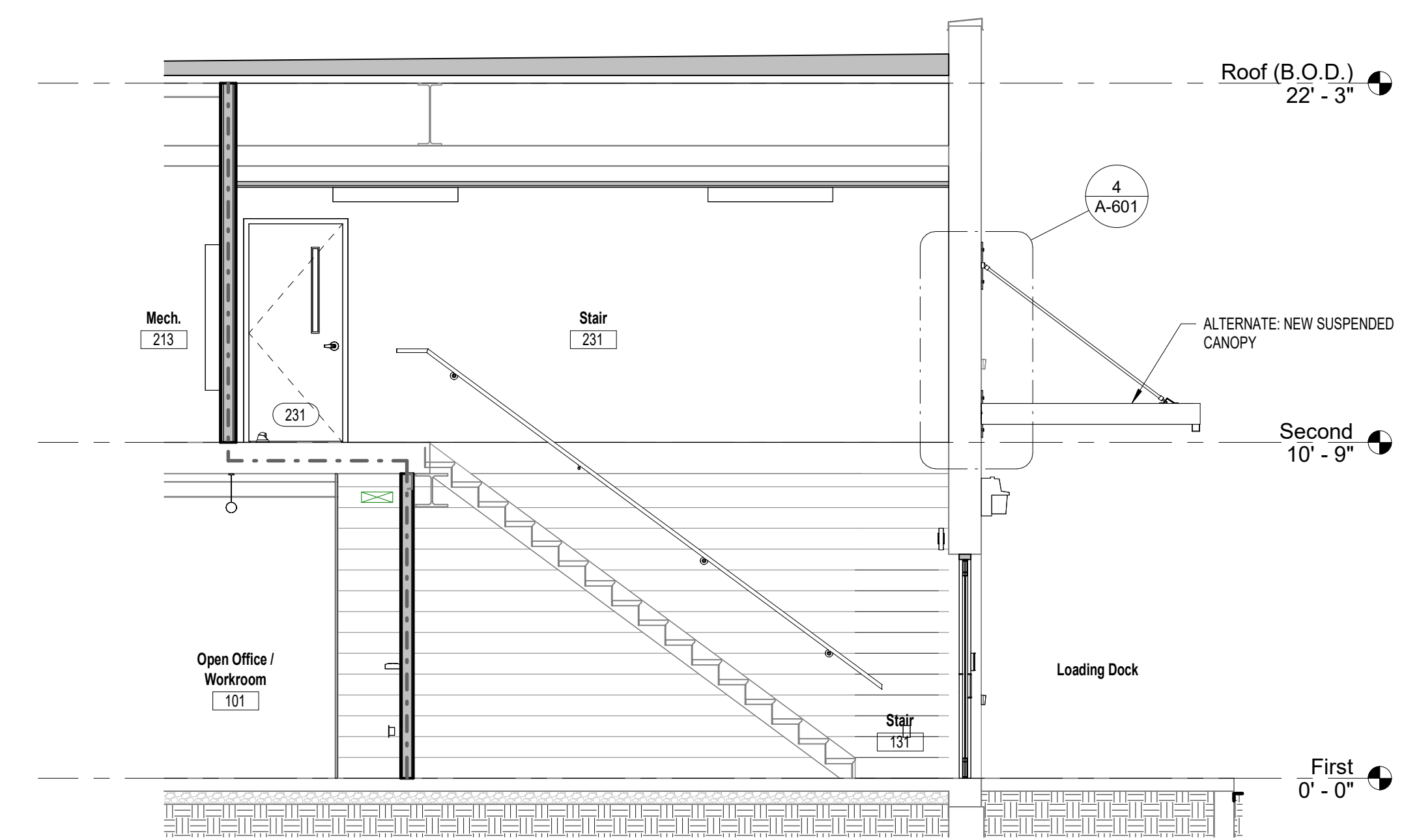
4 Section - All Alternates Shown
1/8" = 1'-0"



5 Section - All Alternates Shown
1/8" = 1'-0"



6 Stair 102 Section - Alternates Shown
1/4" = 1'-0"



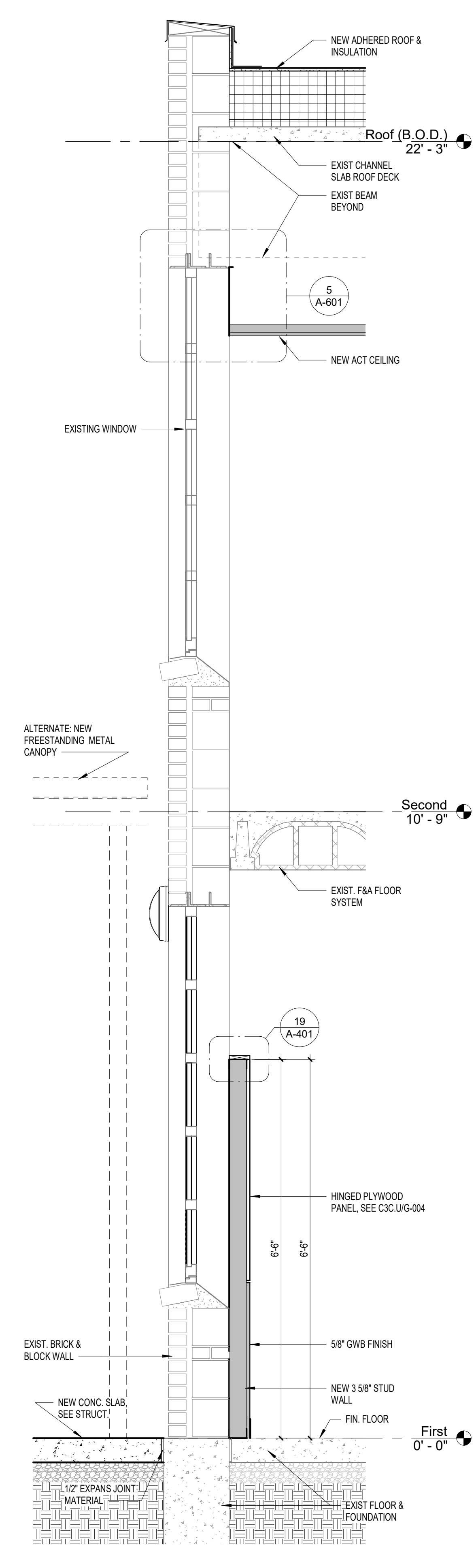
7 Stair 131 Section - Alternates Shown
1/4" = 1'-0"

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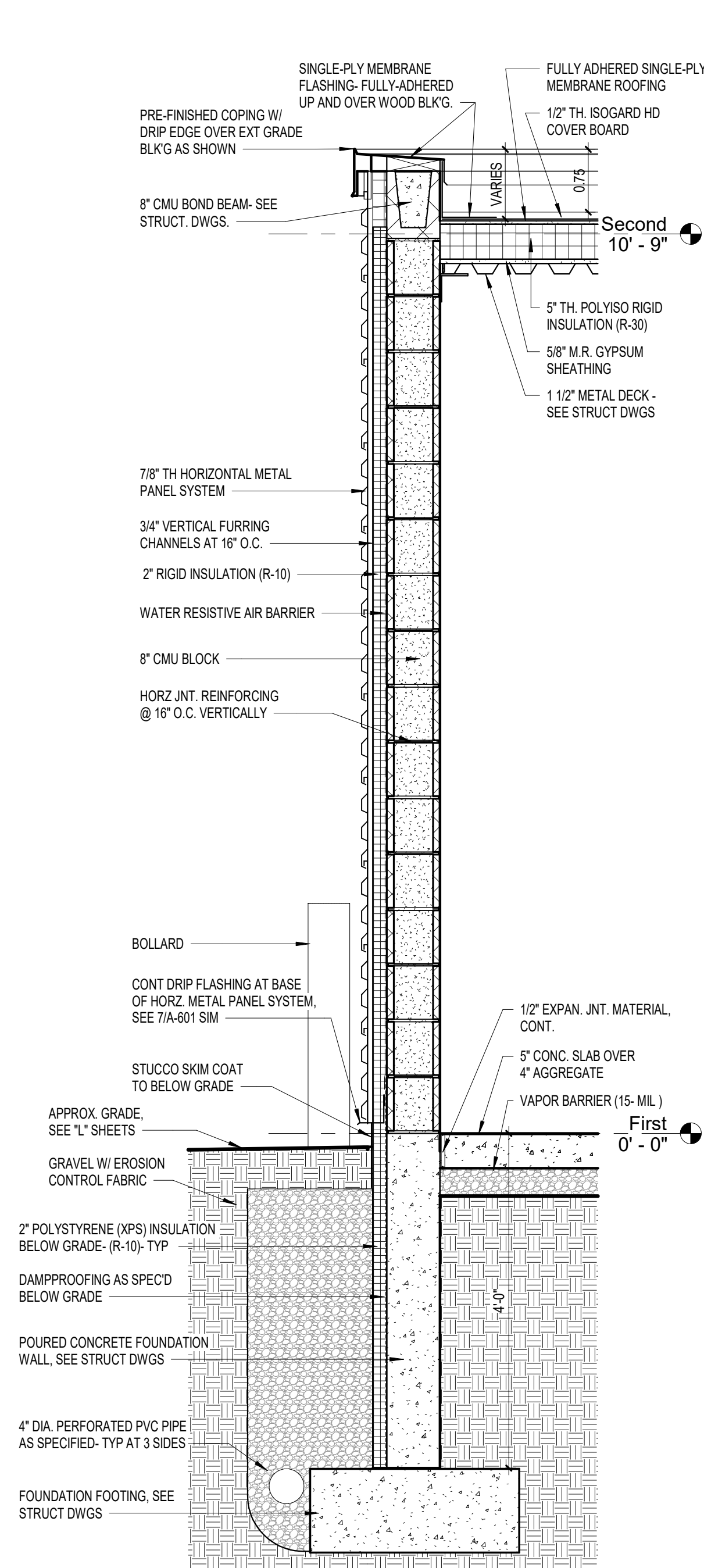
project status
Construction Documents for Bid
owner id
SCO ID# 19-21547-02A
NCSU ID 201920037
seals
ALPHA LYNN KIRWAN
REGISTERED ARCHITECT
10025
revisions
date note

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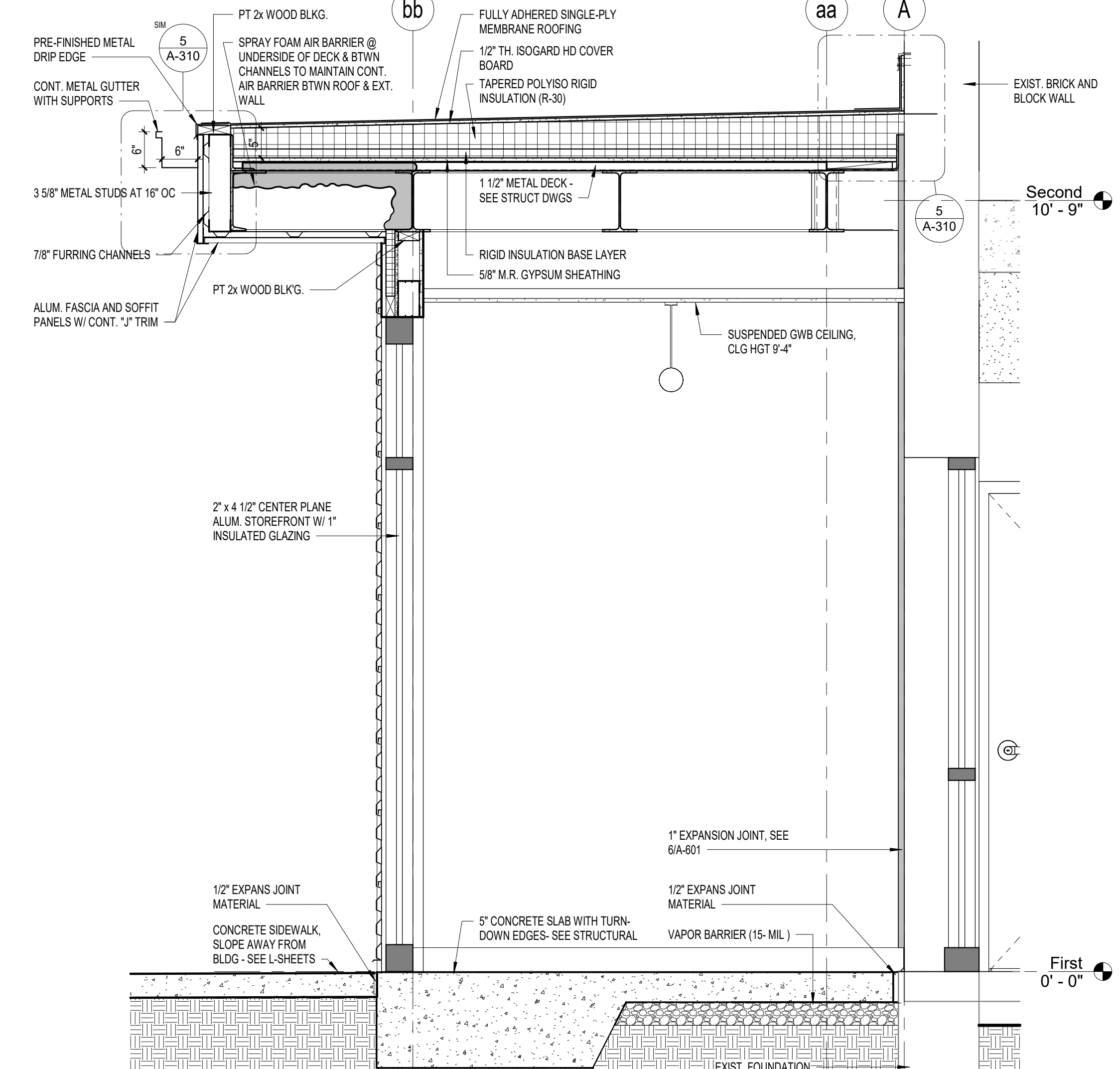
1 Wall Section @ Workroom
3/4" = 1'-0"



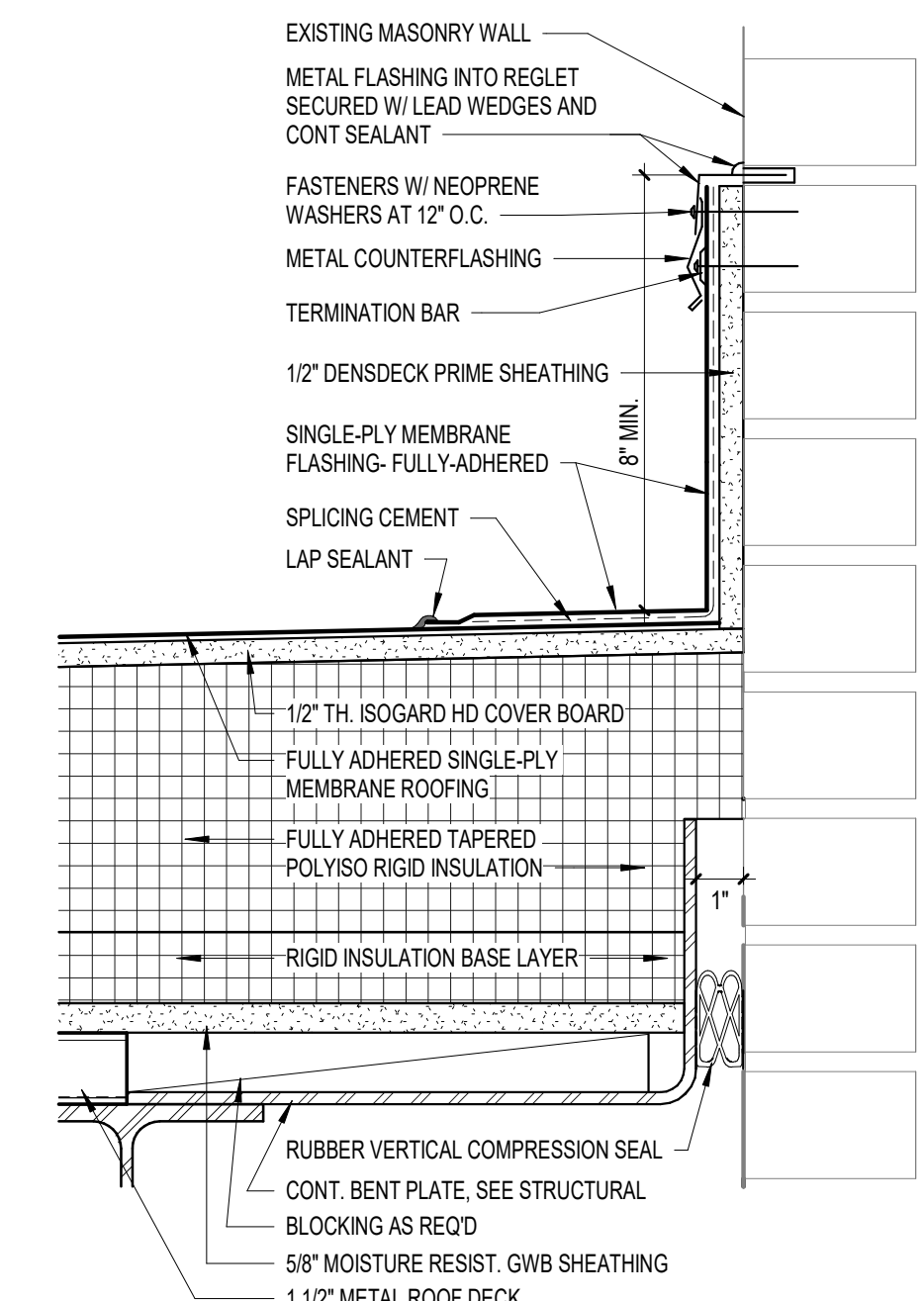
2 Wall Section
3/4" = 1'-0"



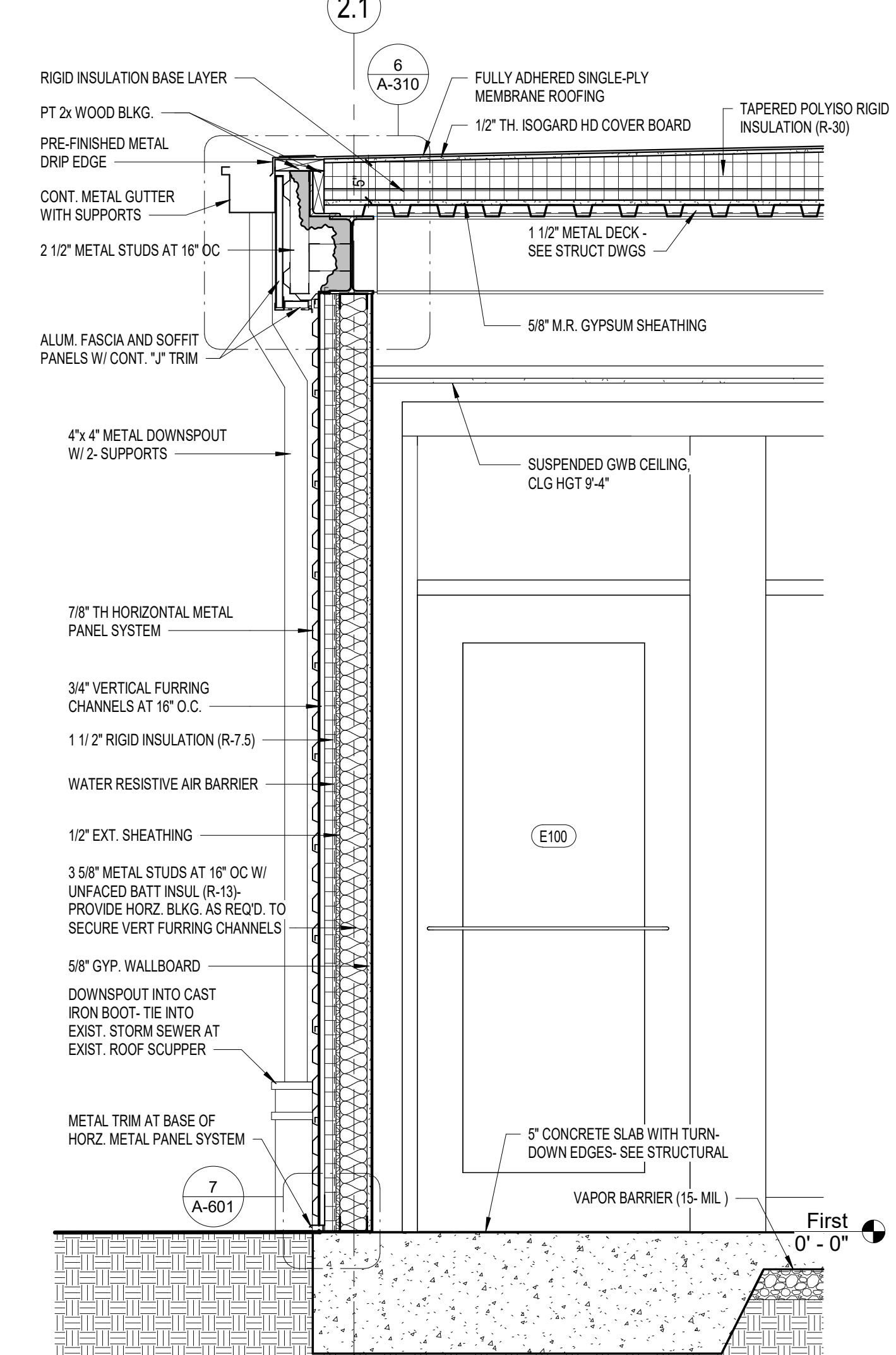
3 Wall Section
3/4" = 1'-0"



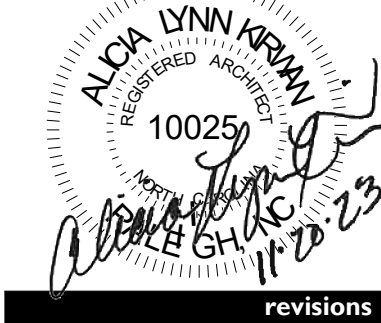
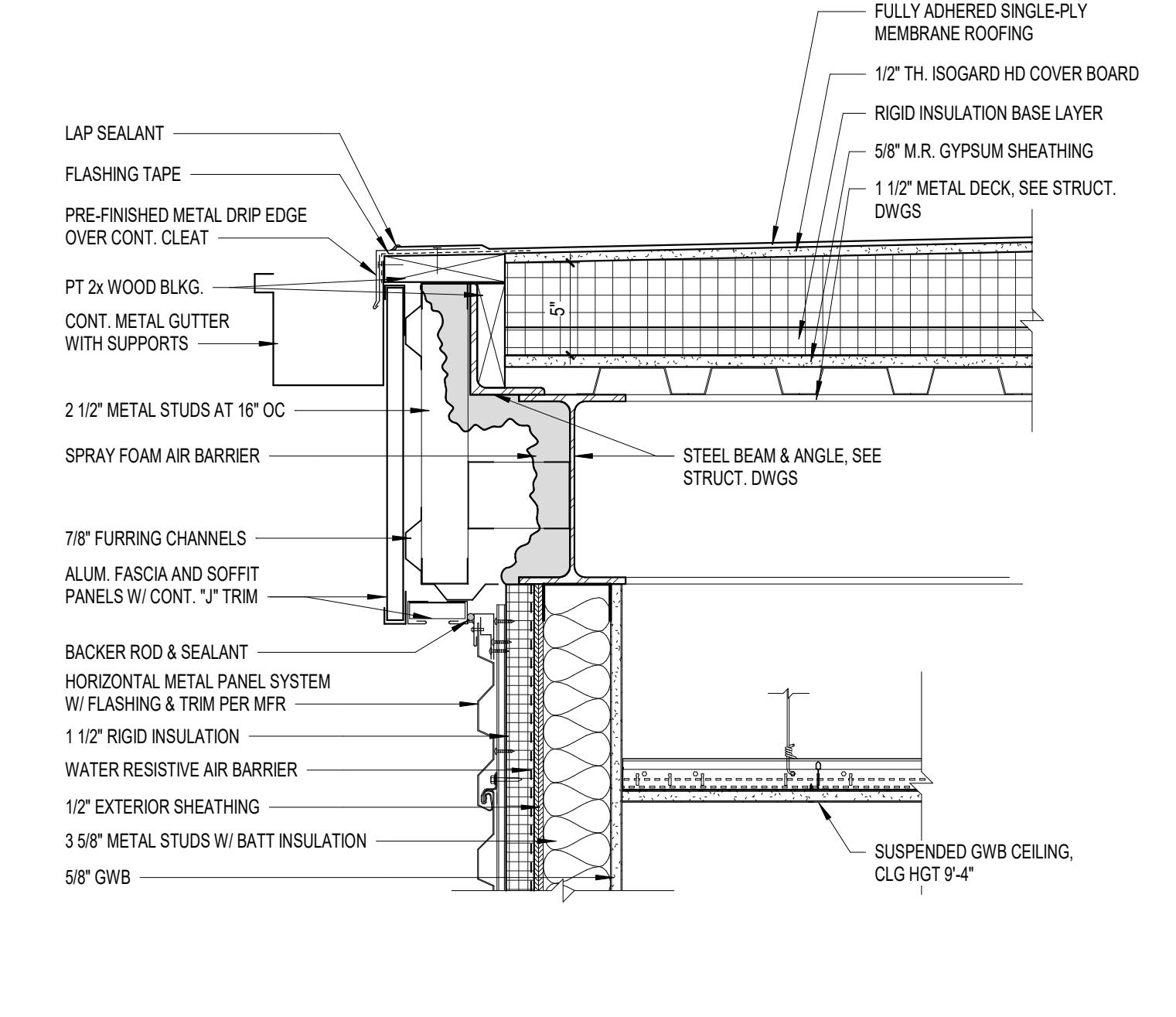
5 Roof Flashing Detail
3" = 1'-0"



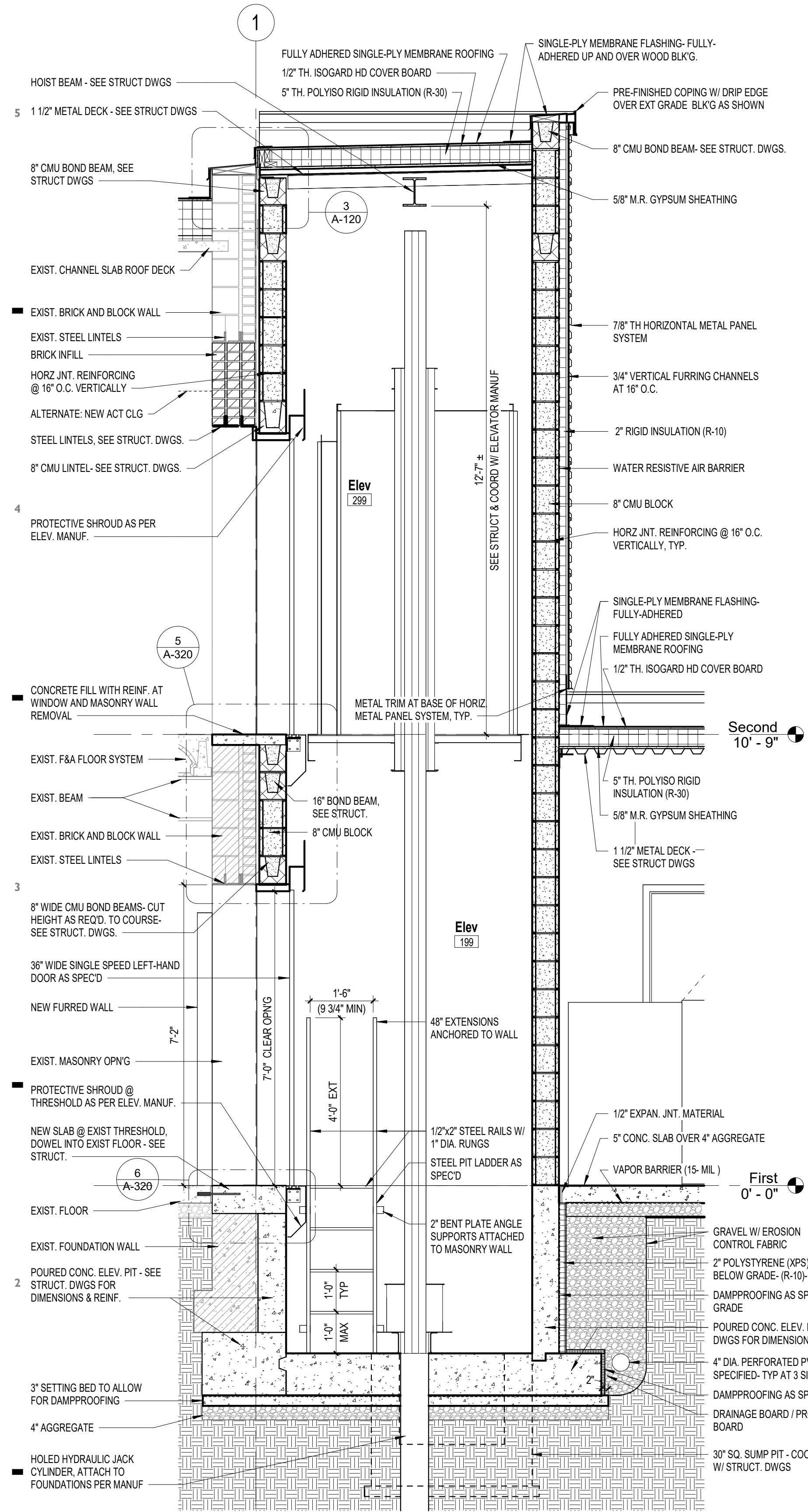
4 Wall Section
3/4" = 1'-0"



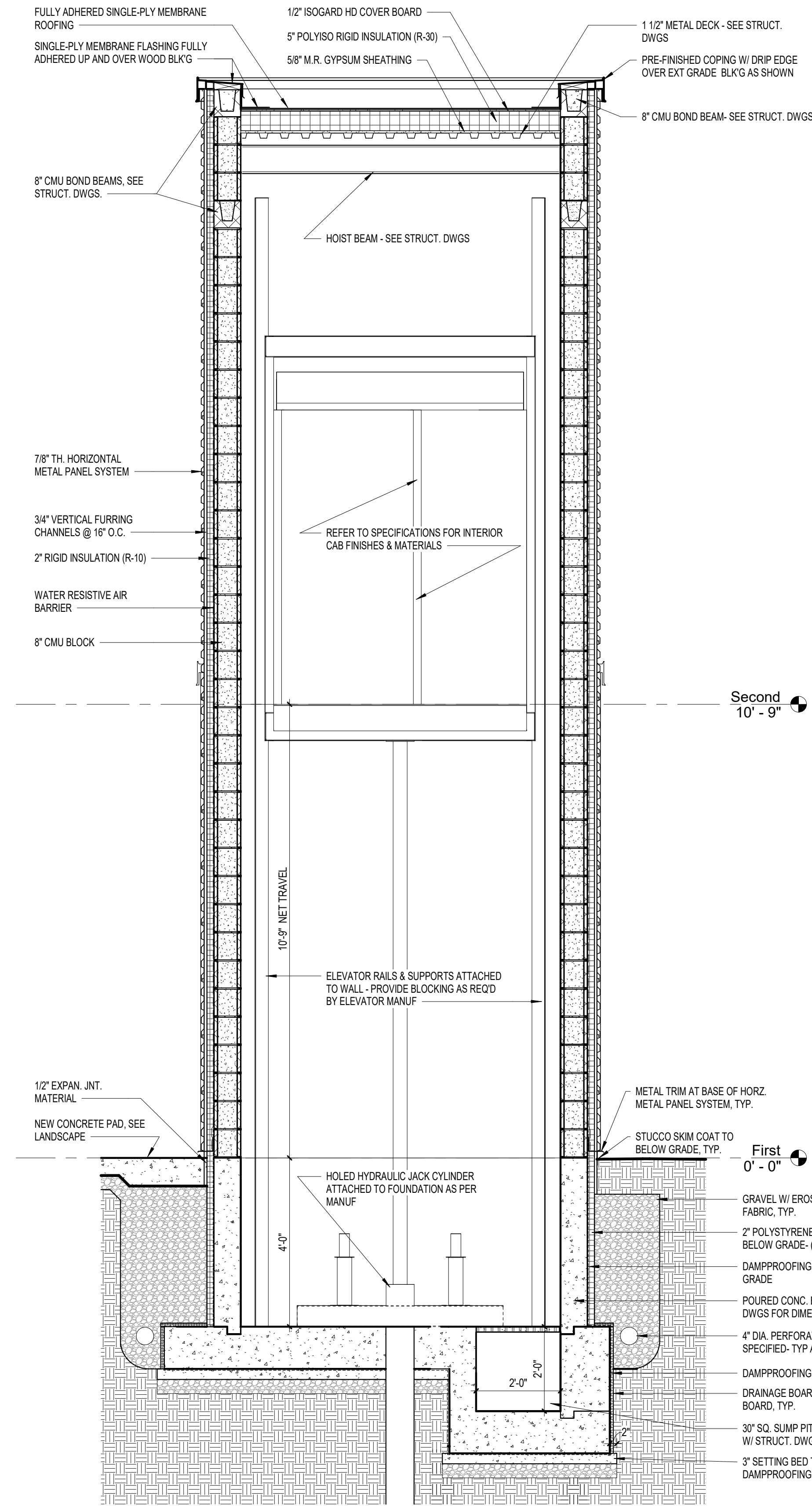
6 Roof Eave
1 1/2" = 1'-0"



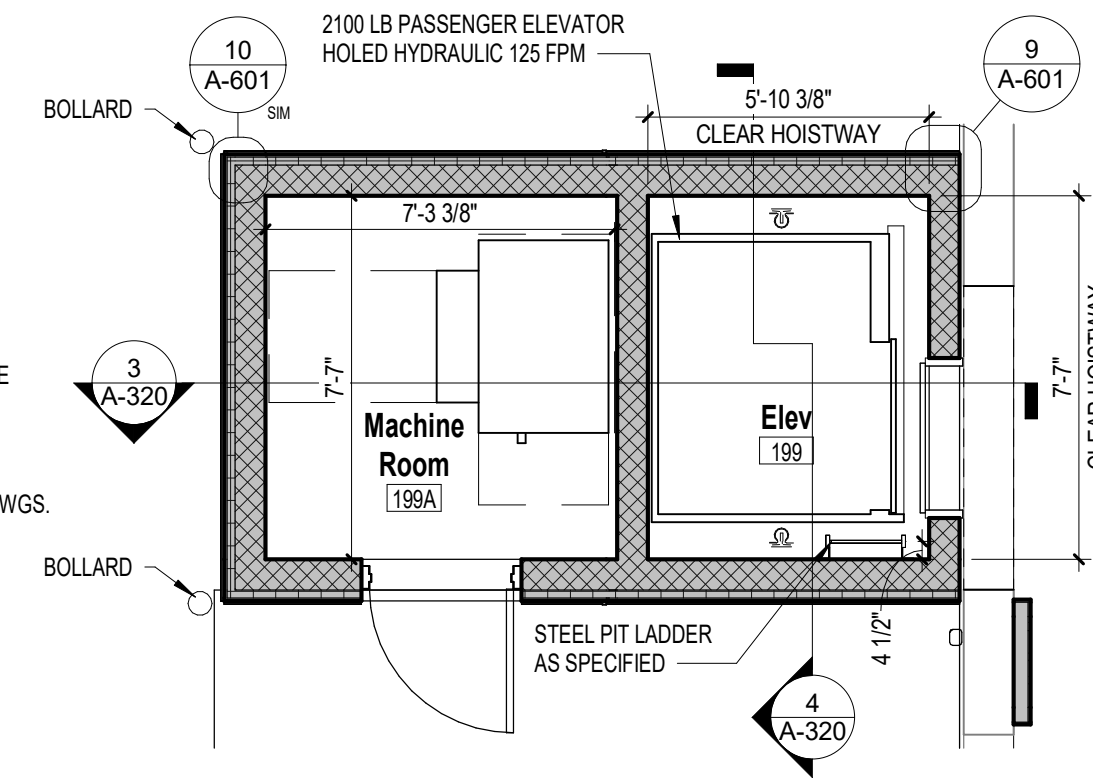
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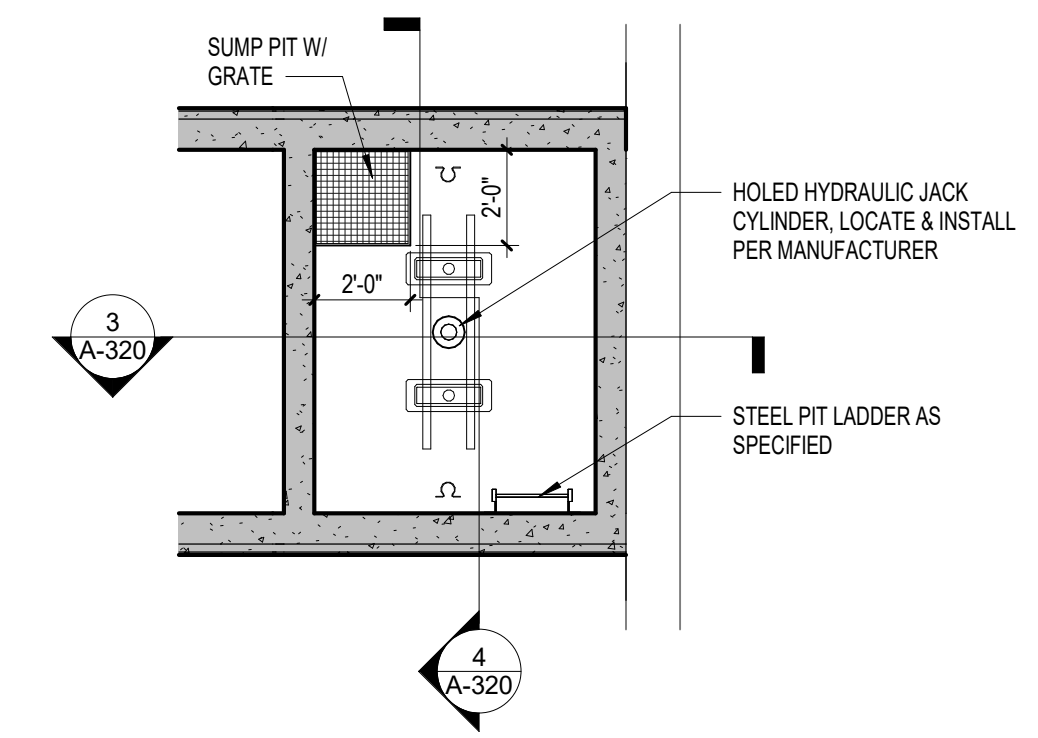
3 Elevator Section
1/2" = 1'-0"



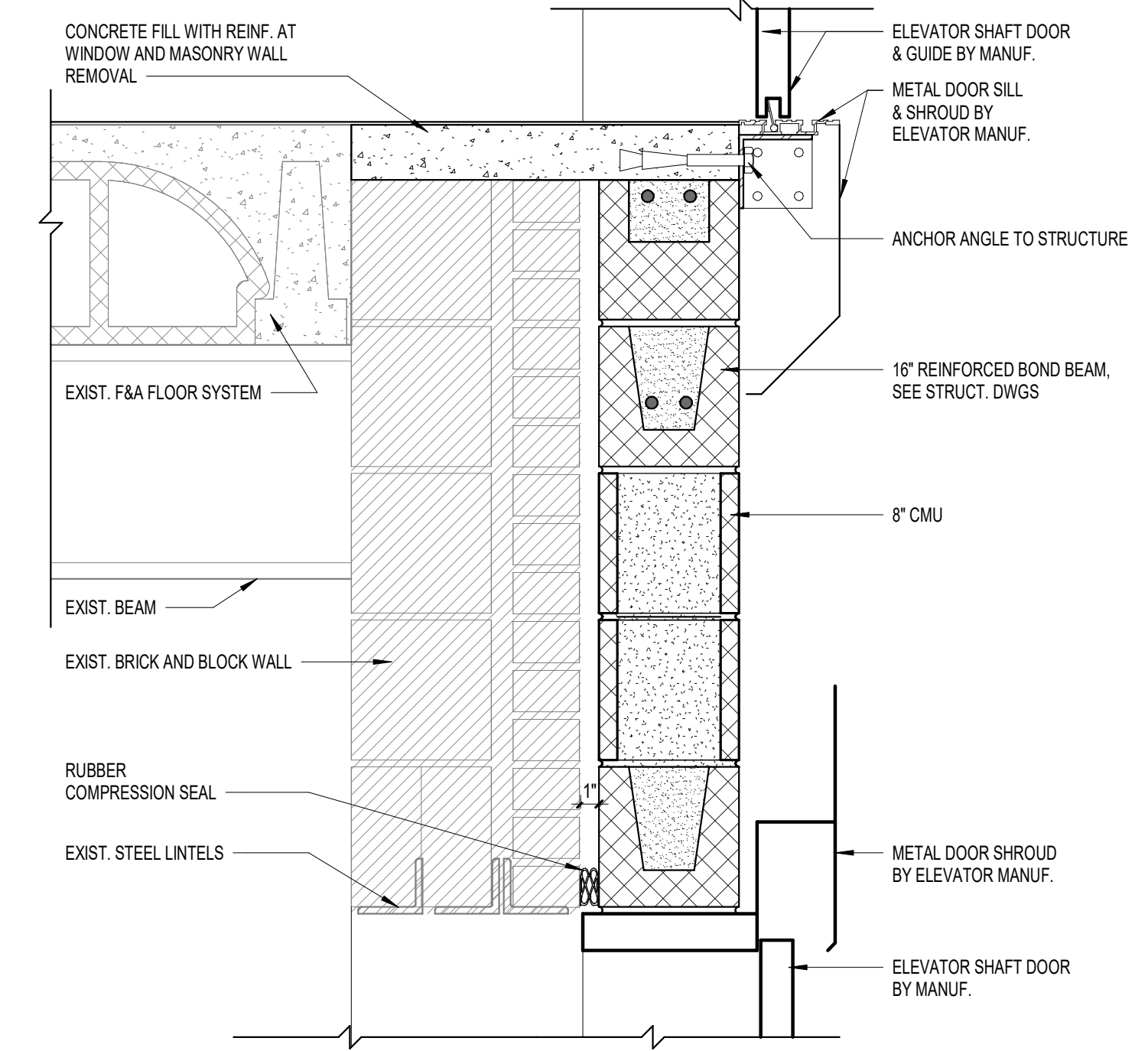
4 Elevator Section
1/2" = 1'-0"



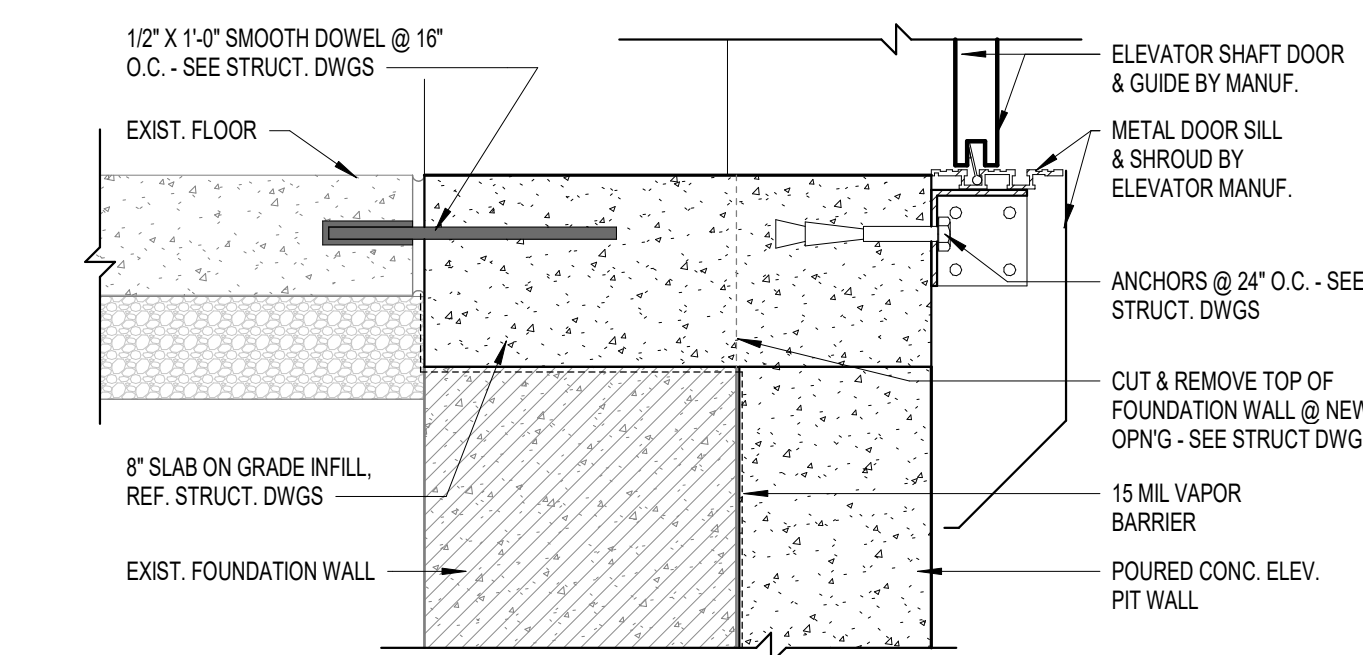
1 Enlarged Plan - Elevator
1/4" = 1'-0"



2 Enlarged Plan - Elevator Pit
1/4" = 1'-0"



5 Detail at Elevator Opening
1 1/2" = 1'-0"

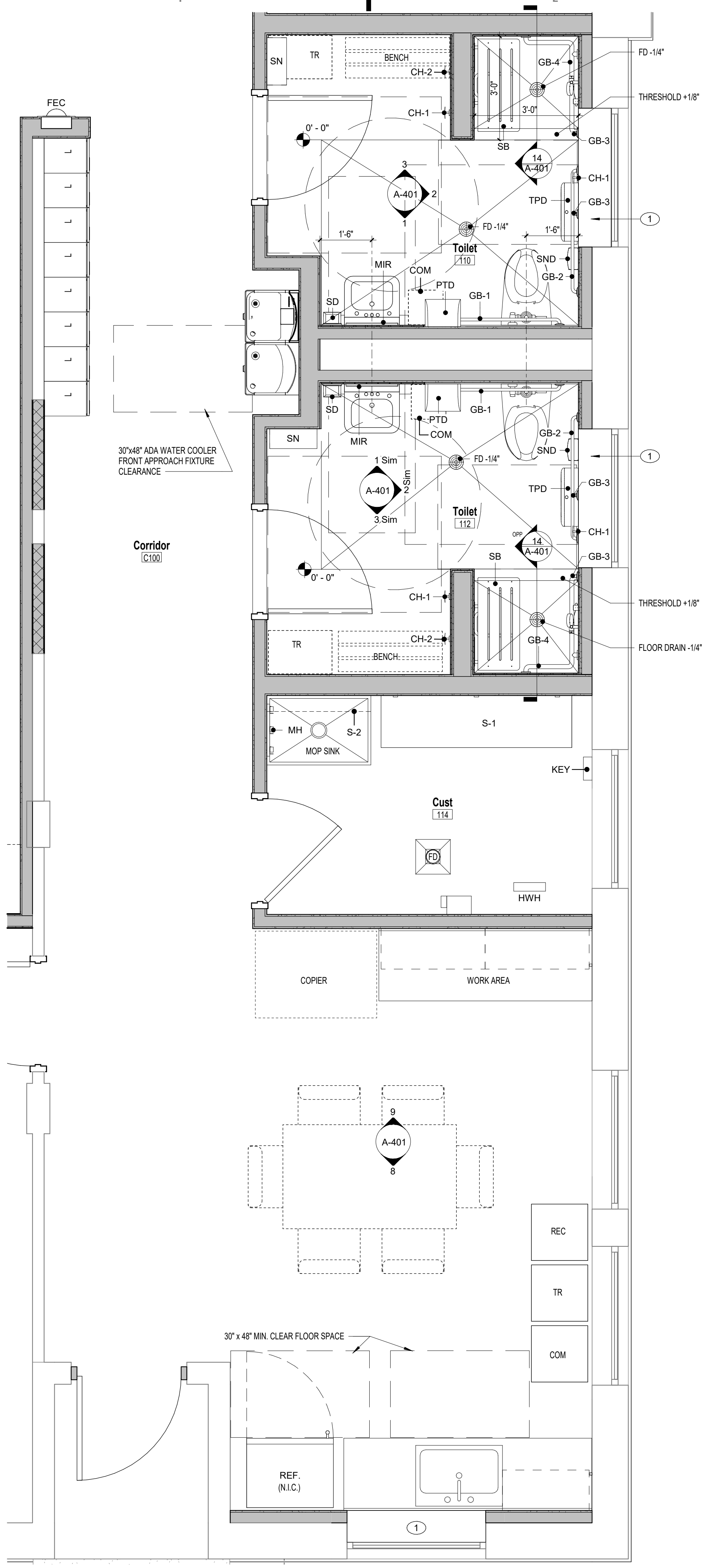


6 Detail at Elevator Opening
1 1/2" = 1'-0"

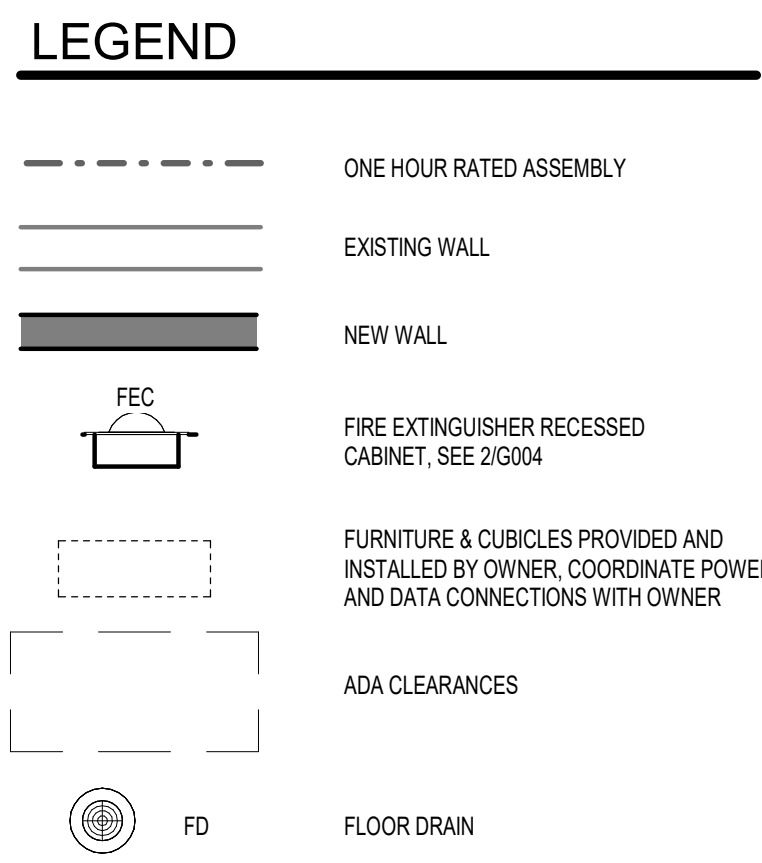
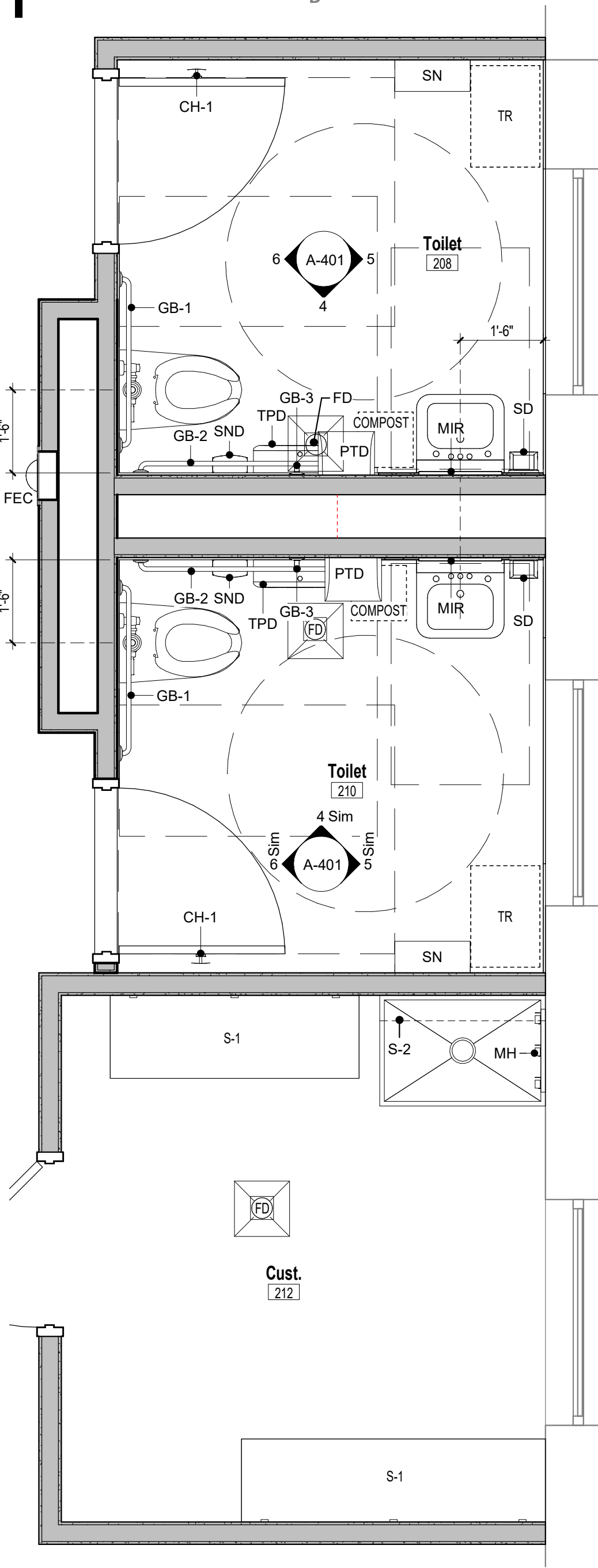


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1 First Floor Enlarged Plan
1/2" = 1'-0"

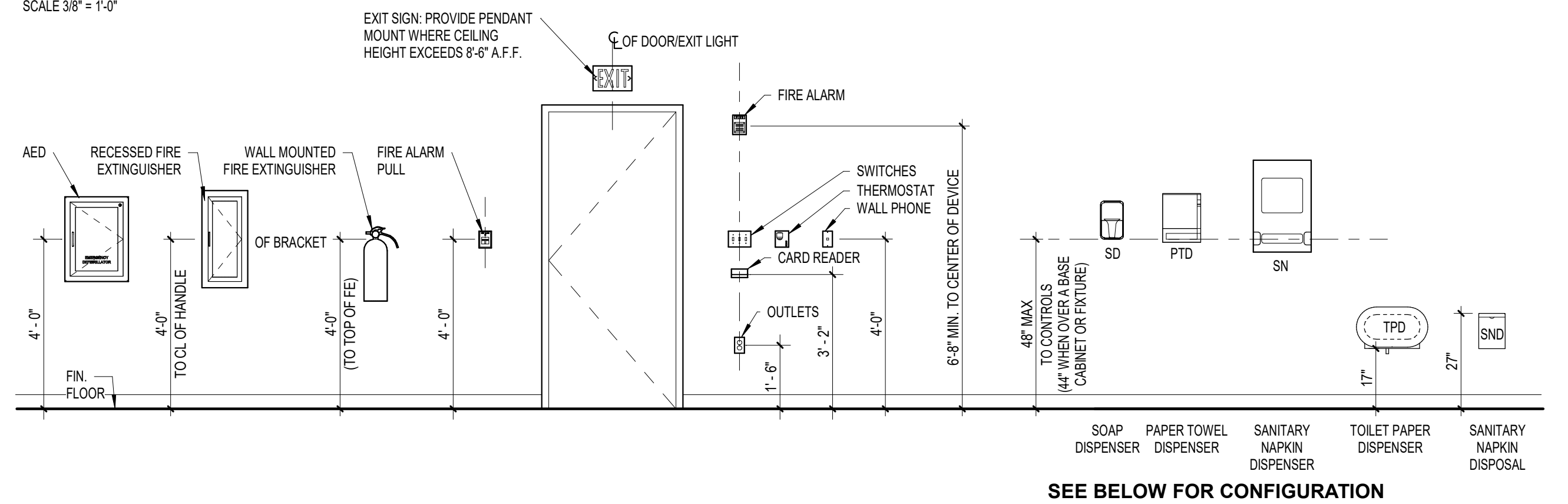


2 Second Floor Enlarged Plan
1/2" = 1'-0"

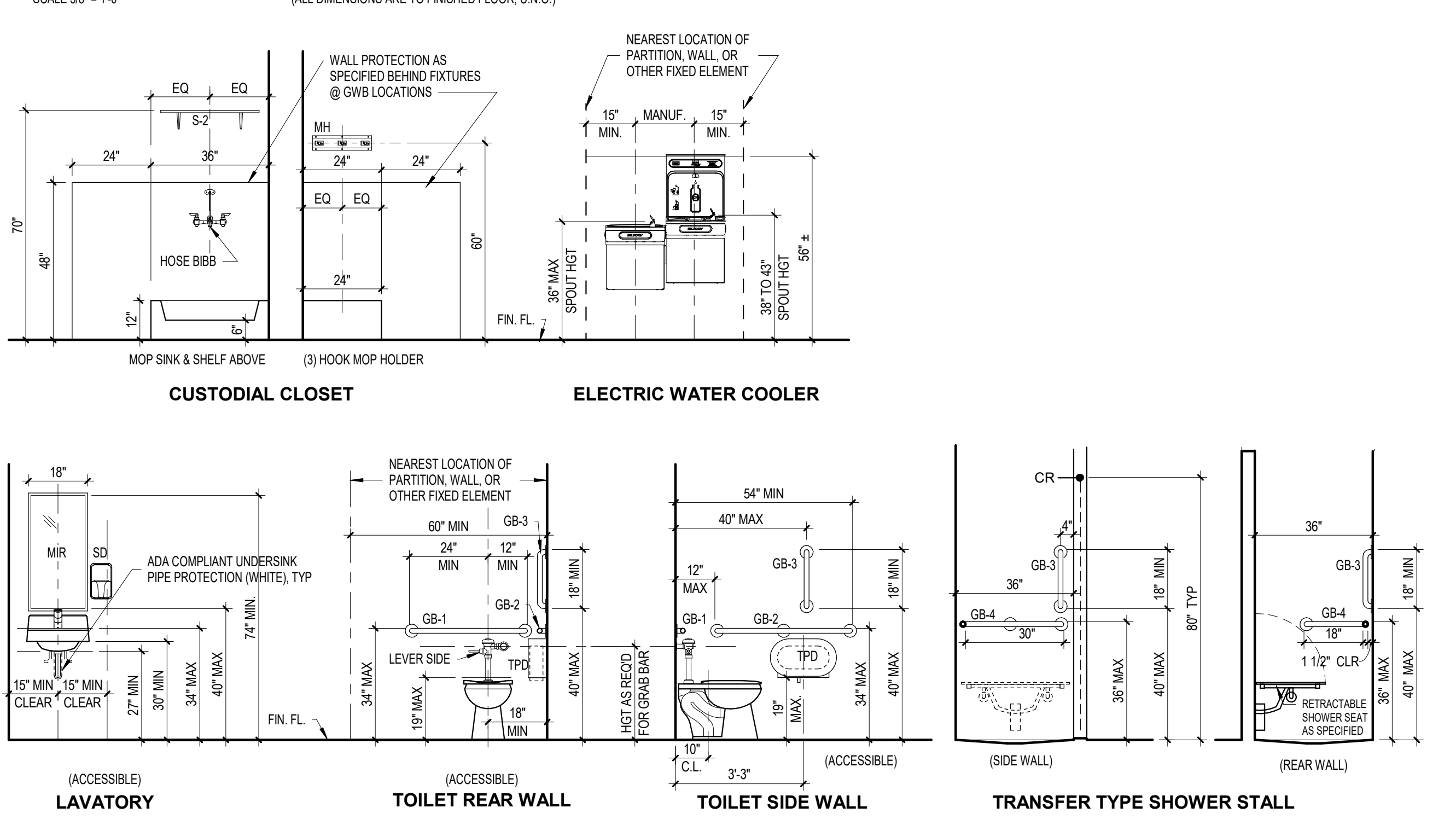


- ENLARGED PLAN KEY NOTES**
- NEW SOLID SURFACE SILL AT NEW FURRED WALL
 - WALL HEATER, SEE PME SHEETS
 - 4x4 STEEL COLUMNS, SEE STRUCTURAL DWGS
 - NEW DOWNSPOUT ONTO CONCRETE SPLASHBLOCK
 - NEW DOWNSPOUT INTO CAST IRON BOOT - TIE INTO EXISTING STORM SEWER AT EXISTING DOWNSPOUT
 - GRID A IS AT FACE OF EXISTING WALL

TYPICAL MOUNTING HEIGHTS

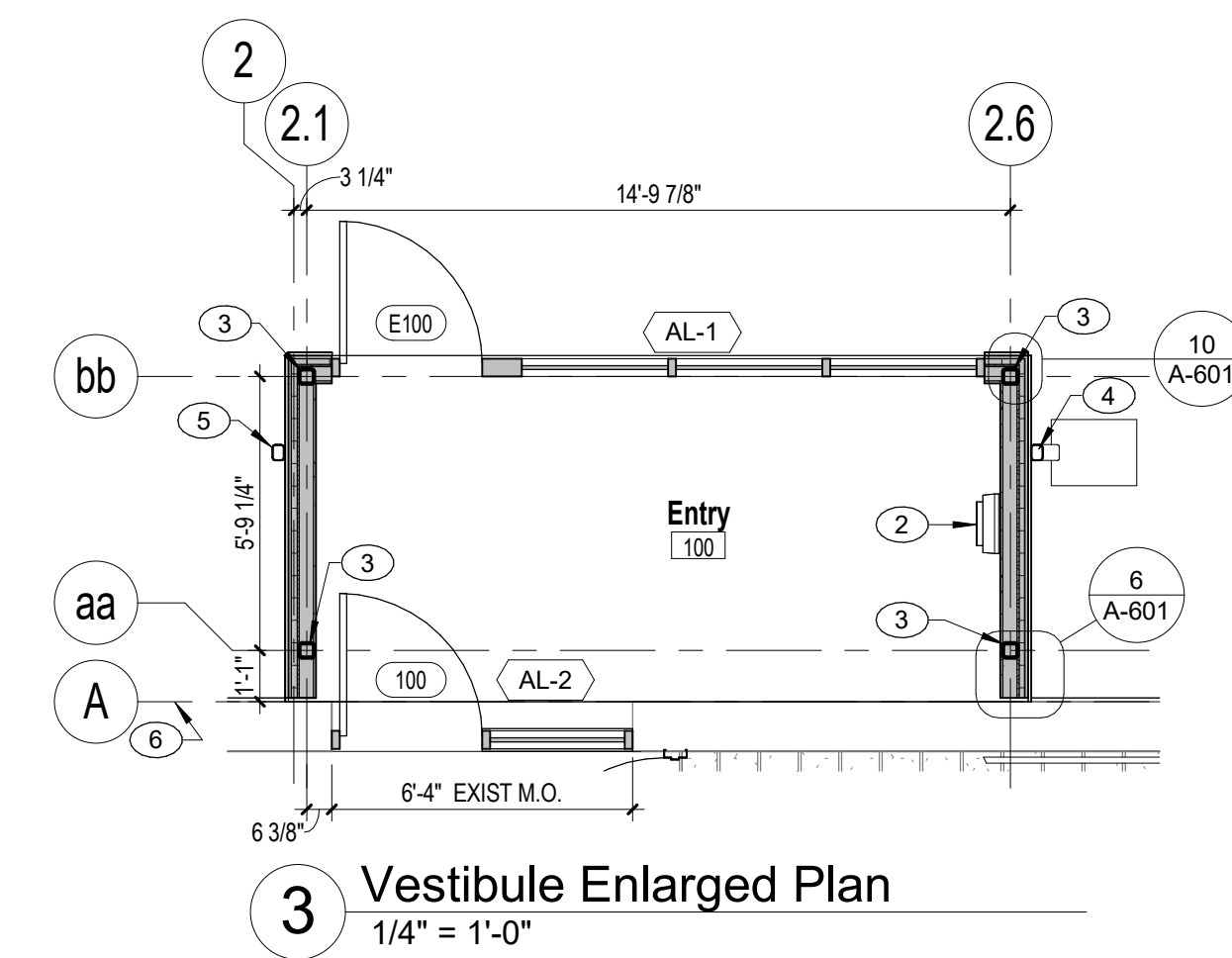


TOILET ACCESSORIES



ENLARGED RESTROOM PLAN GENERAL NOTES

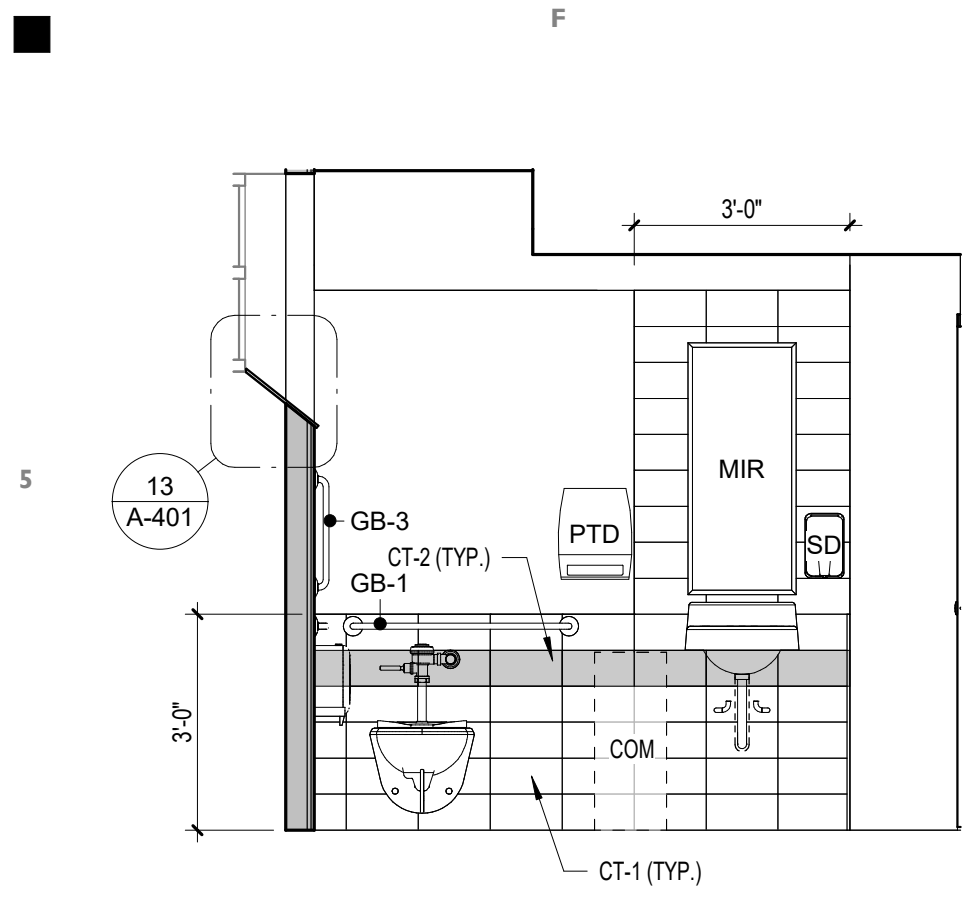
- TOILET ACCESSORIES TO BE FABRICATED FROM TYPE 304 STAINLESS STEEL, FINISH: No. 4 (SATIN).
- REFER TO SPECIFICATIONS SECTION 10 28 00 "TOILET BATH AND LAUNDRY ACCESSORIES" FOR TOILET ACCESSORY PRODUCT INFORMATION.
- DIMENSIONS ON ENLARGED TOILET PLANS TO FACE OF FINISH, U.O.N.
- MOUNTING REQUIREMENTS AND INSTALLATION HEIGHTS, COMPLY WITH APPLICABLE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA) AND MAAB FOR TOILET ACCESSORIES AT TOILETS DESIGNATED AS ACCESSIBLE.
- FIXTURE DIMENSIONS ARE FROM CENTER LINE OF FIXTURE TO FACE OF FINISH MATERIAL.
- TOP OF FLUSH VALVE TO BE 1-1/2 INCHES BELOW THE BOTTOM OF THE GRAB BAR AT ACCESSIBLE TOILETS. SIZE FLUSH VALVE AND GRAB BAR TO ACCOMMODATE.
- PROVIDE BLOCKING AT GRAB BARS AND ACCESSORIES THAT ARE ANCHORED TO THE WALL.



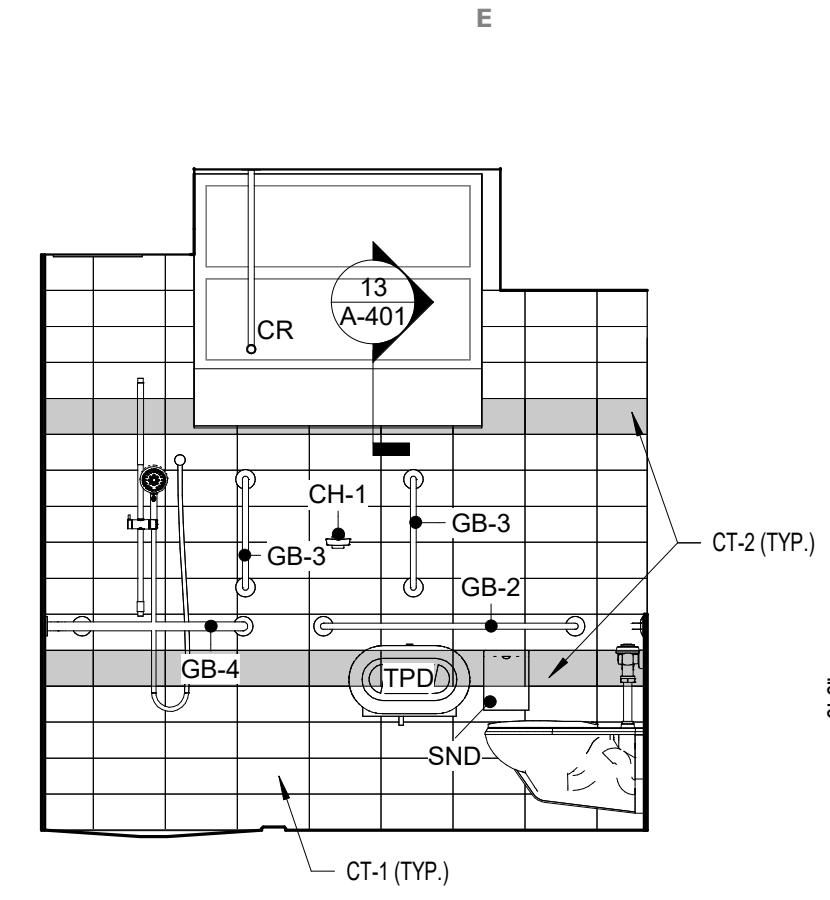
FF&E SCHEDULE	
CH-1	COATHOOK, MOUNT 48" A.F.F. MAX.
CH-2	COATHOOK, MOUNT 60" A.F.F.
CR	1 1/4" DIA. SHOWER CURTAIN ROD, CEILING SUPPORTED @ ONE END
COM	COMPOST BIN, SUPPLIED & INSTALLED BY OWNER
GB-1	36" GRAB BAR
GB-2	42" GRAB BAR
GB-3	18" VERT. GRAB BAR
GB-4	18"x30" L-SHAPED GRAB BAR
HWH	HOT WATER HEATER, SEE PME SHEETS
KEY	KEY ACCESS LOCKER
L	LOCKER - OWNER SUPPLIED, CONTRACTOR INSTALLED
MH	3 HOOK MOP HOLDER
MIR	18"x42" MIRROR
PTD	PAPER TOWEL DISPENSER - OWNER SUPPLIED, CONTRACTOR INSTALLED
REC	RECYCLING BIN, SUPPLIED & INSTALLED BY OWNER
S-1	ADJUSTABLE 3-TIER WALL SHELVING, COORDINATE WITH OWNER
S-2	SHELF @ 70" A.F.F.
SB	FOLDING SHOWER BENCH
SD	SOAP DISPENSER, OWNER SUPPLIED - CONTRACTOR INSTALLED
SN	SANITARY NAPKIN DISPENSER - OWNER SUPPLIED, CONTRACTOR INSTALLED
SND	SANITARY NAPKIN DISPOSAL - OWNER SUPPLIED, CONTRACTOR INSTALLED
TPH	TOILET PAPER HOLDER - OWNER SUPPLIED, CONTRACTOR INSTALLED
TR	TRASH CAN, SUPPLIED & INSTALLED BY OWNER
BENCH	BENCH, SUPPLIED & INSTALLED BY OWNER

seals

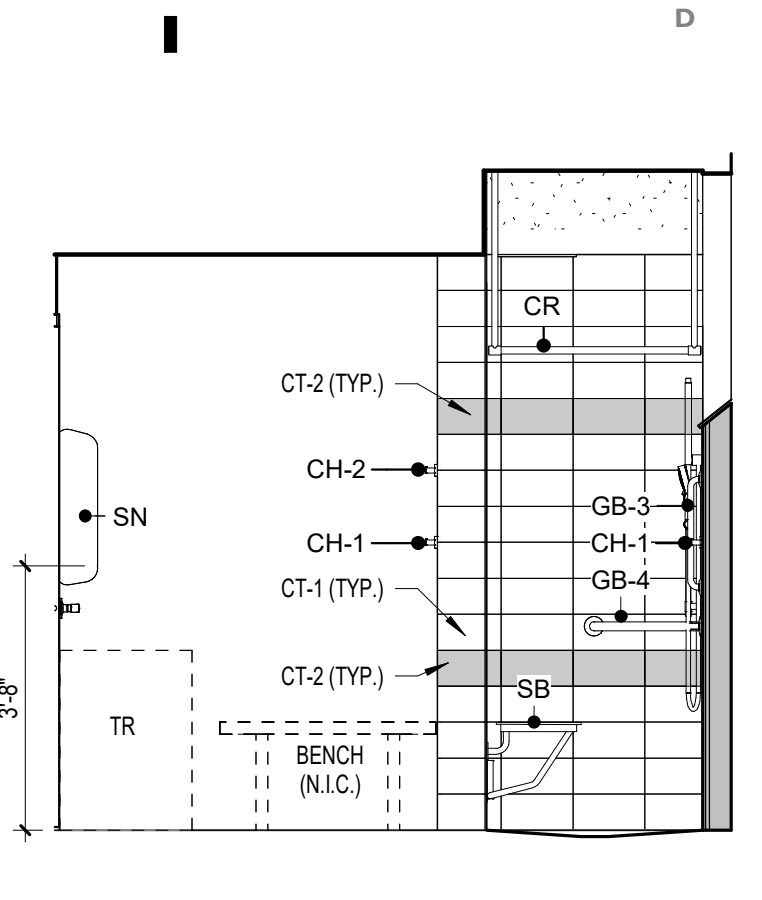
revisions
date note



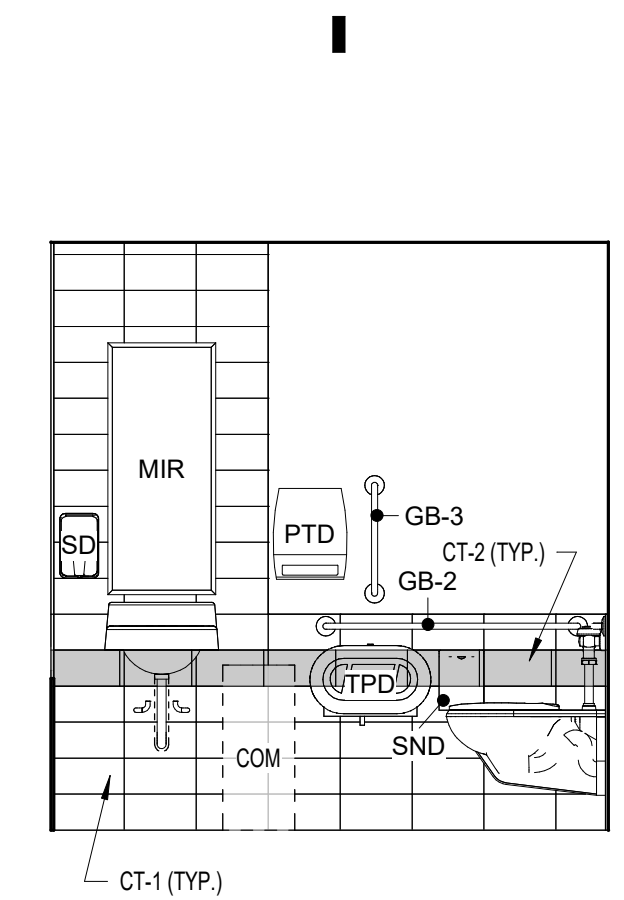
1 First Floor Toilets
3/8" = 1'-0"



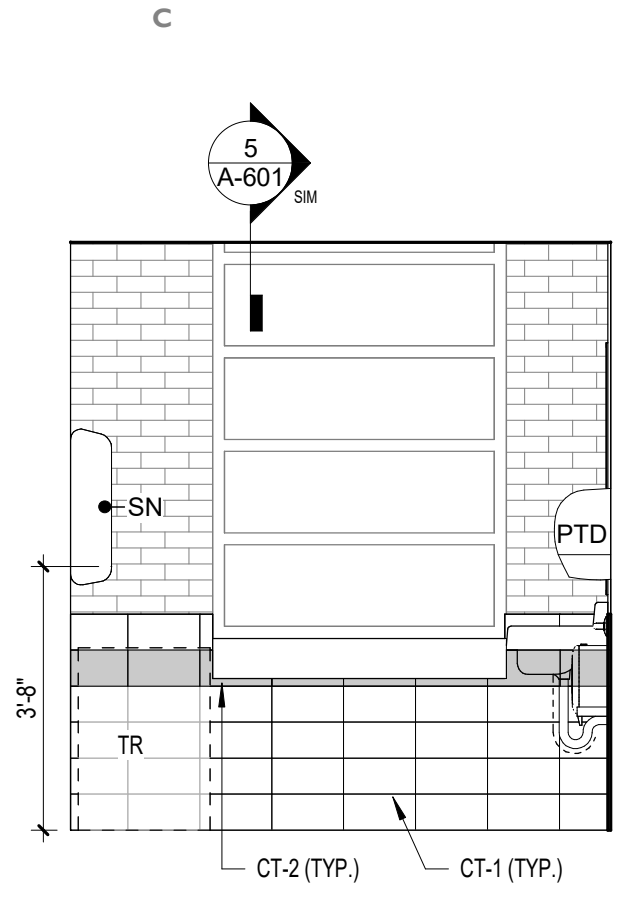
2 First Floor Toilets
3/8" = 1'-0"



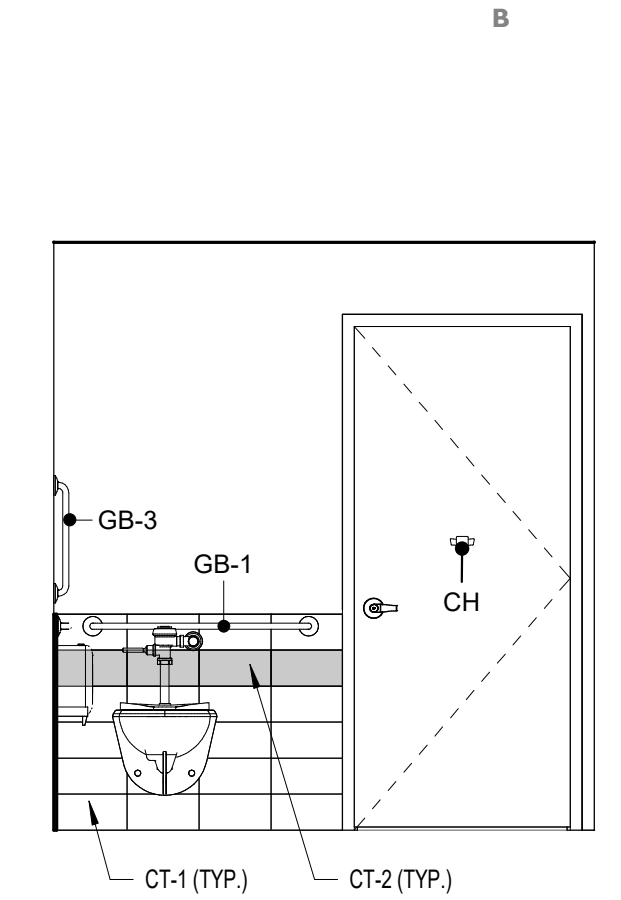
3 First Floor Toilets
3/8" = 1'-0"



4 Second Floor Toilets
3/8" = 1'-0"

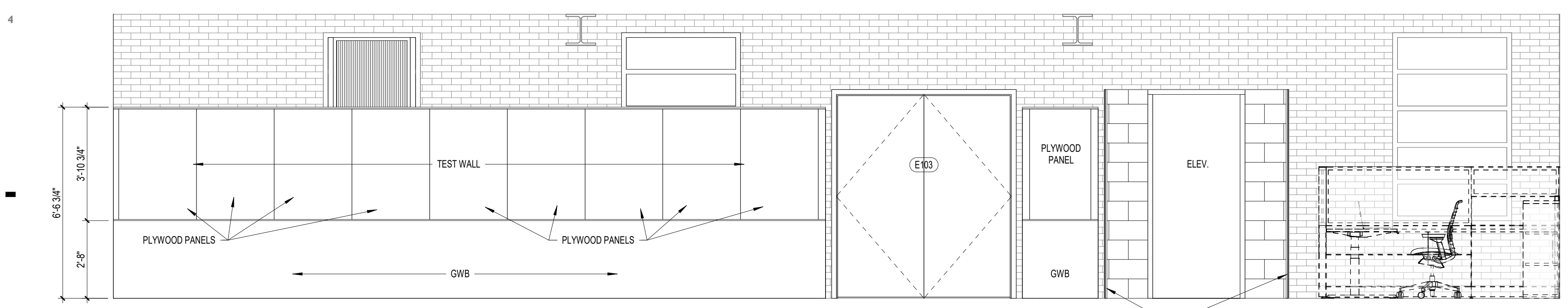


5 Second Floor Toilets
3/8" = 1'-0"

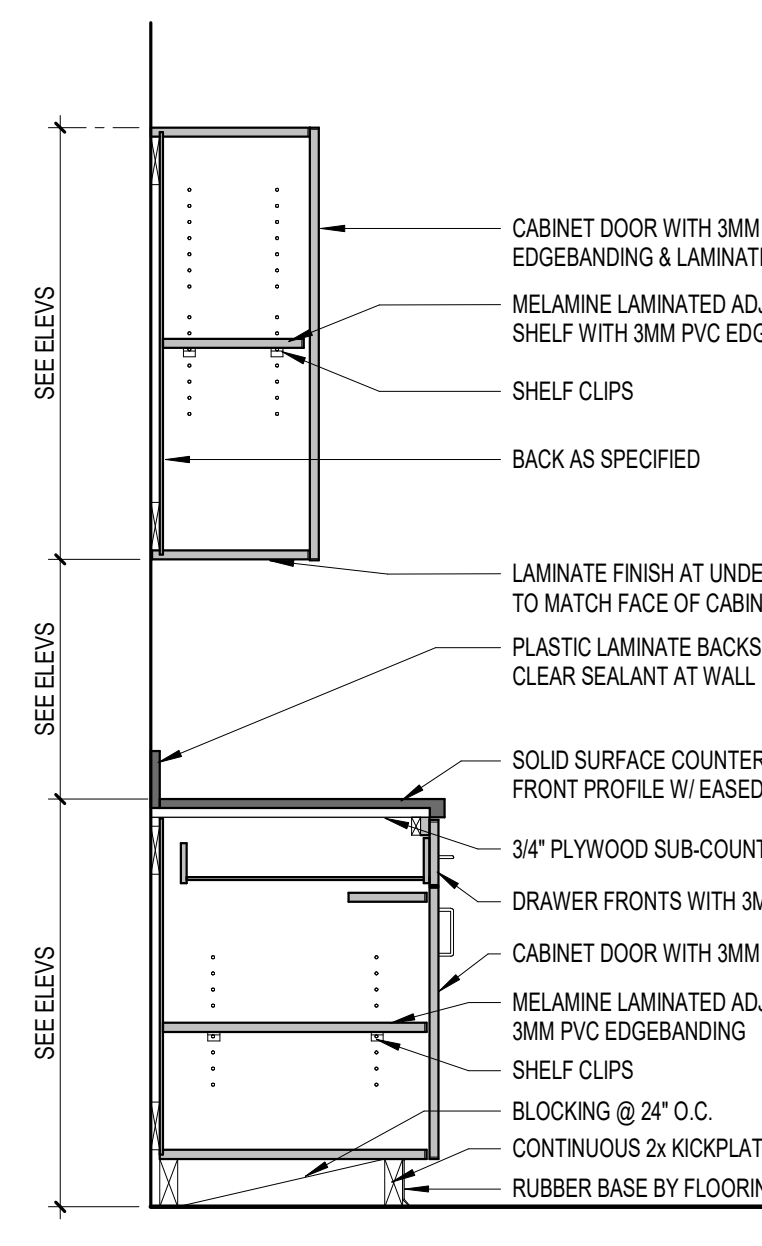


6 Second Floor Toilets
3/8" = 1'-0"

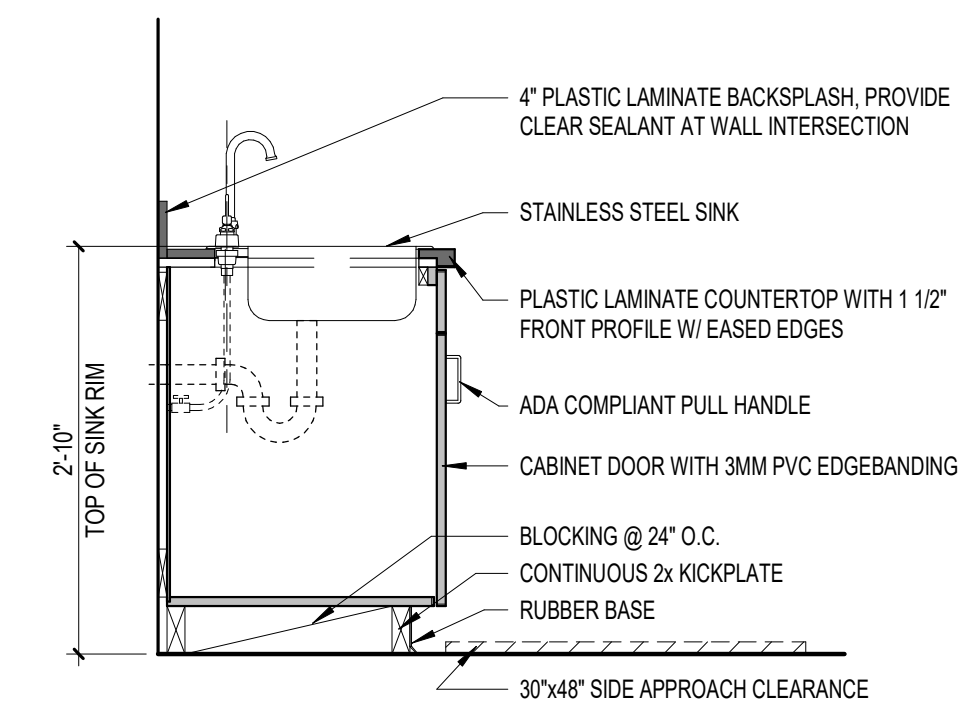
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SND	SANITARY NAPKIN DISPOSAL - OWNER SUPPLIED, CONTRACTOR INSTALLED
TPH	TOILET PAPER HOLDER - OWNER SUPPLIED, CONTRACTOR INSTALLED
TR	TRASH CAN, SUPPLIED & INSTALLED BY OWNER
BENCH	BENCH, SUPPLIED & INSTALLED BY OWNER



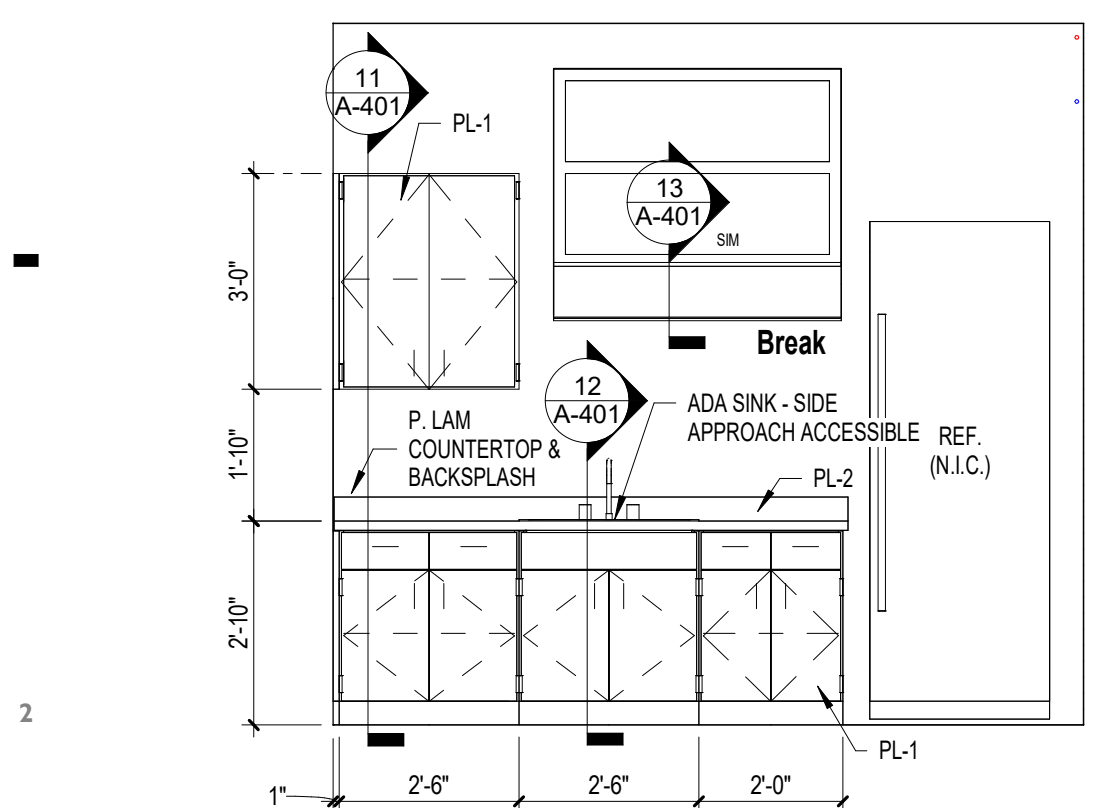
7 Workroom Elevation
3/8" = 1'-0"



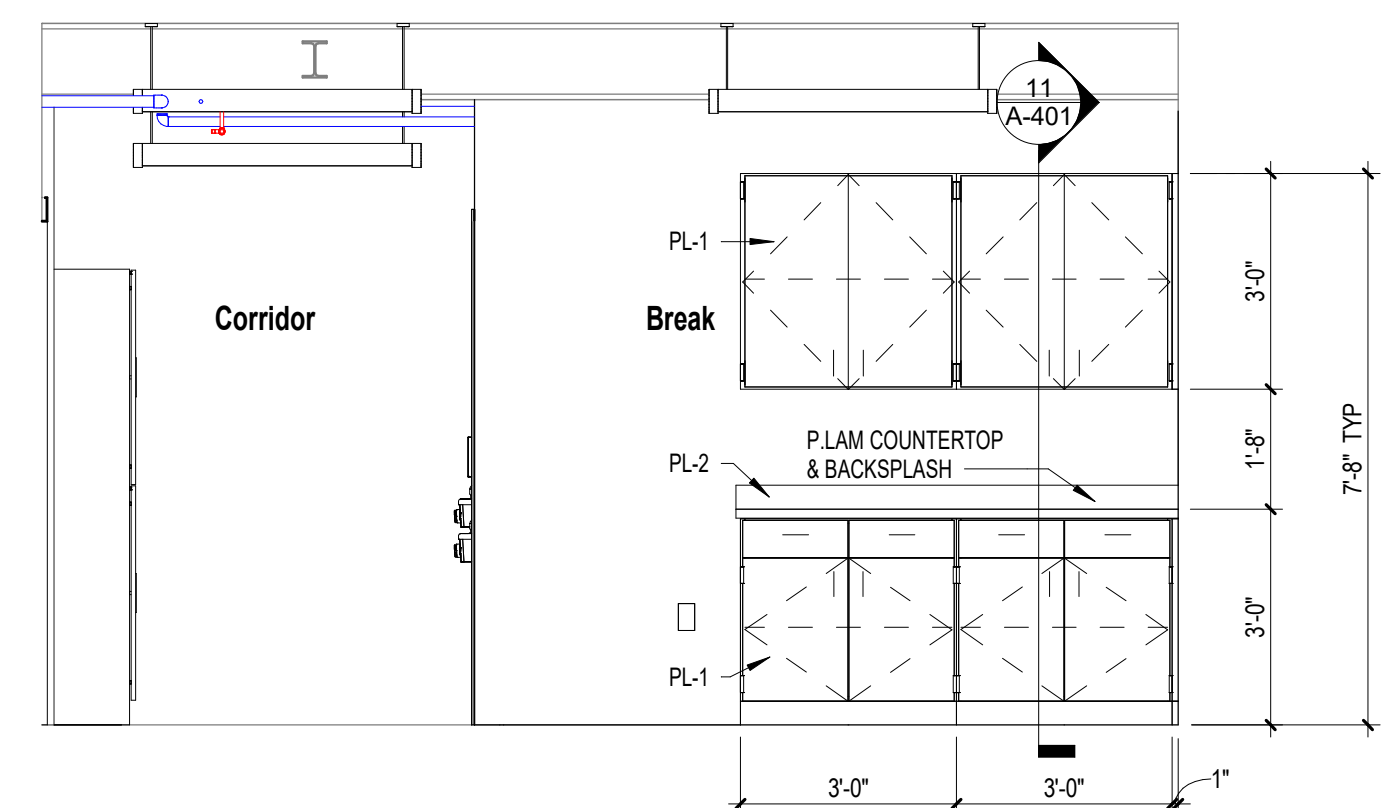
11 Millwork Section
3/4" = 1'-0"



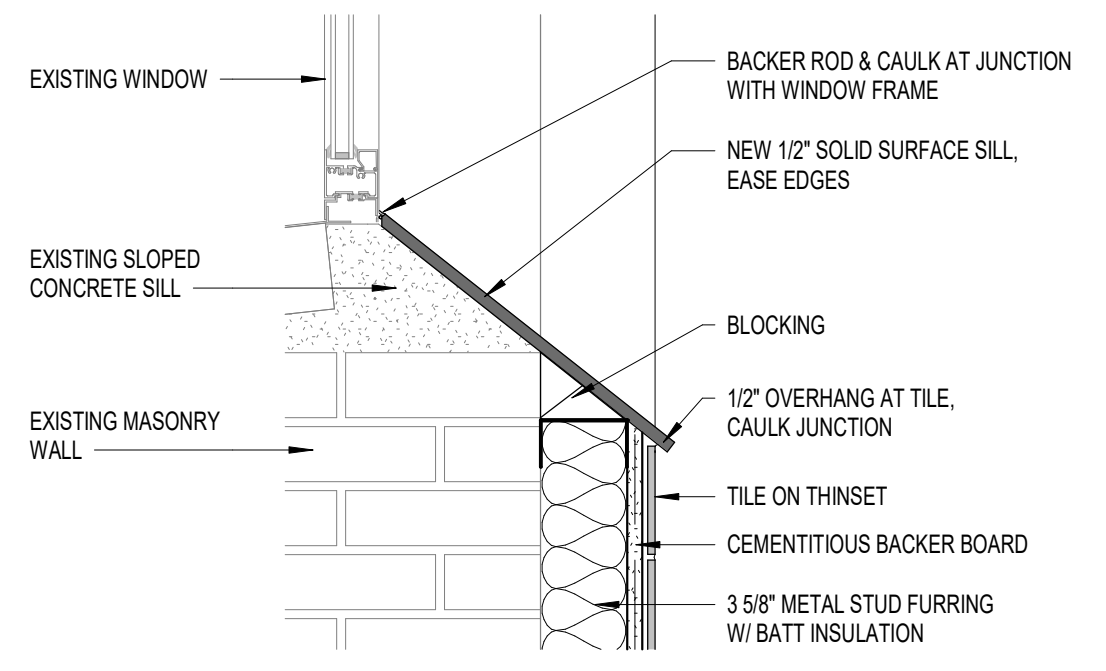
12 Millwork Section @ Sink
3/4" = 1'-0"



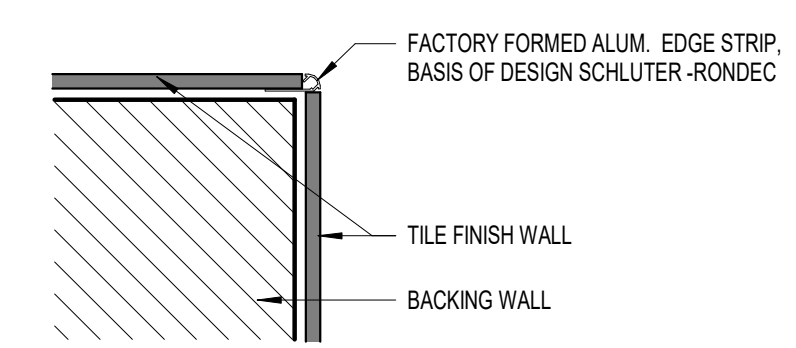
8 Break Room
3/8" = 1'-0"



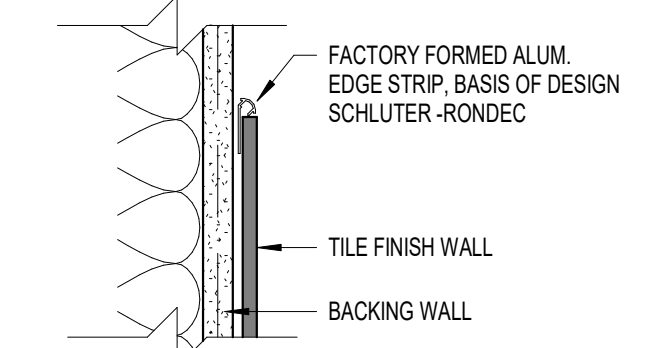
9 Break Room
3/8" = 1'-0"



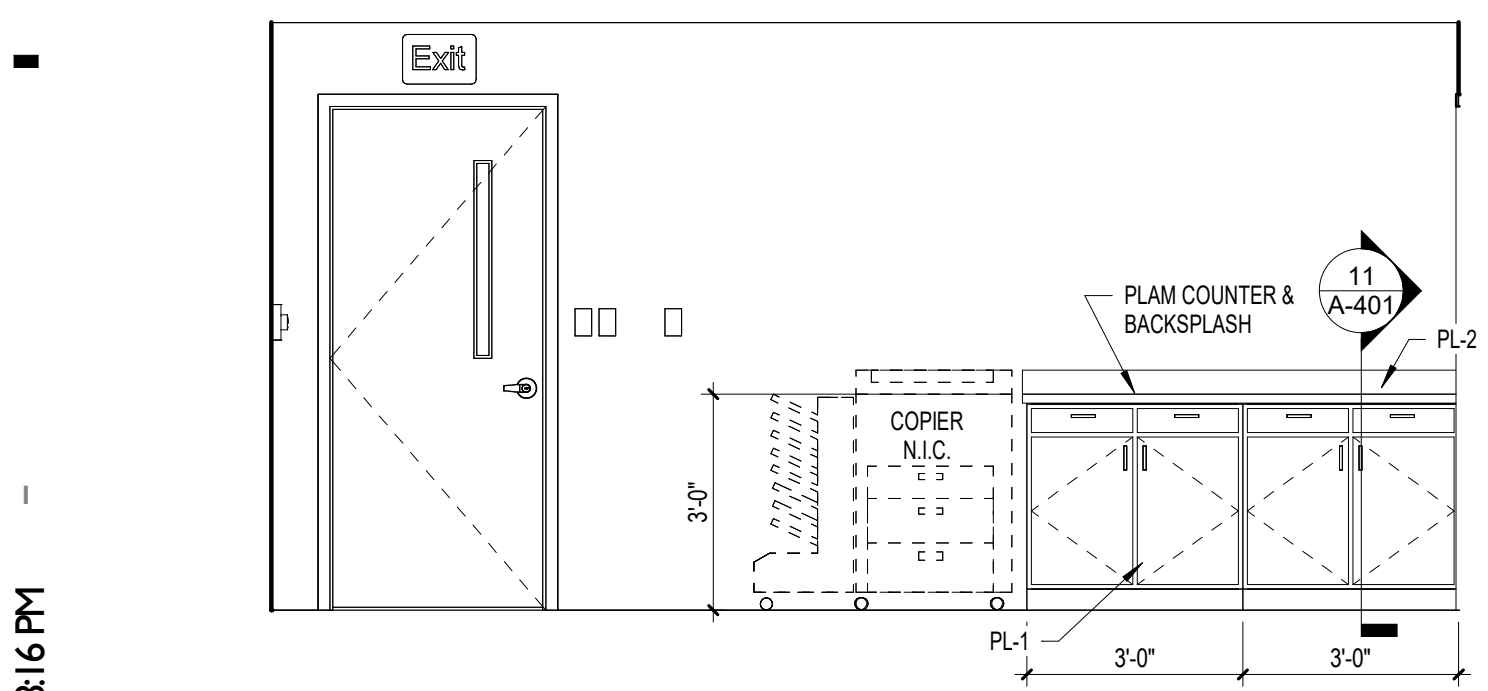
13 Window Sill @ Furred Walls
1 1/2" = 1'-0"



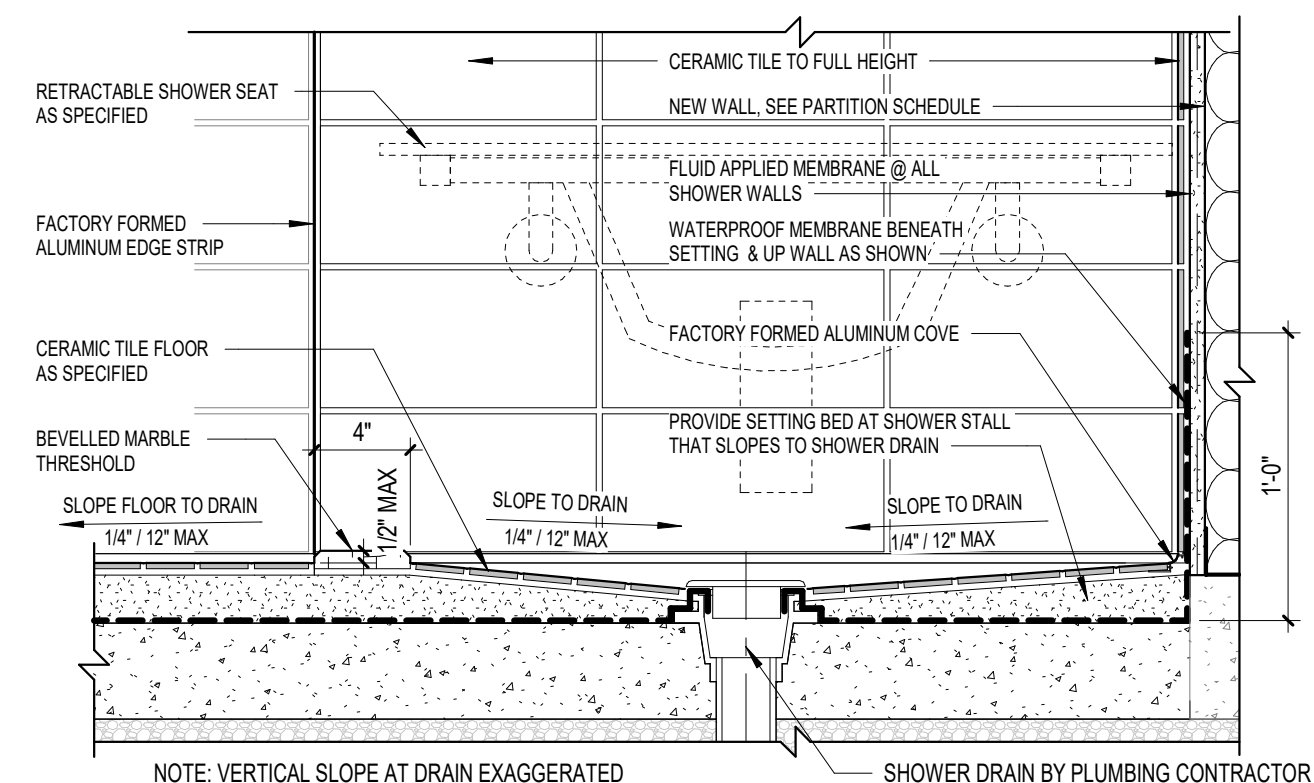
15 Tile @ Outside Corner
3" = 1'-0"



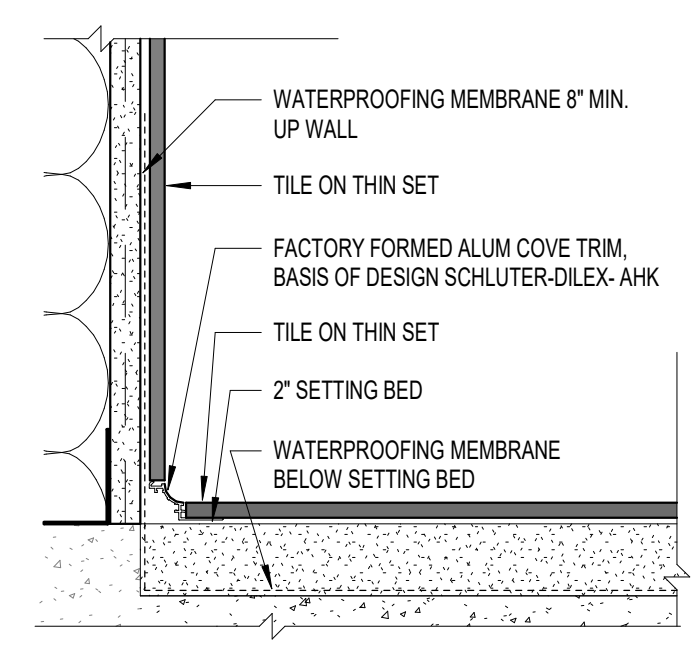
16 Tile @ Edge
3" = 1'-0"



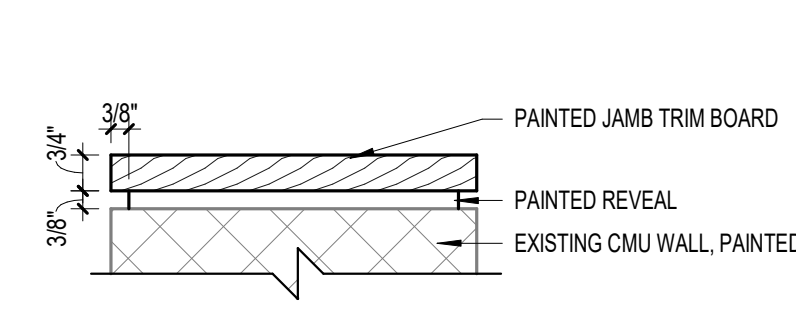
10 Work Area - Alternate #3
3/8" = 1'-0"



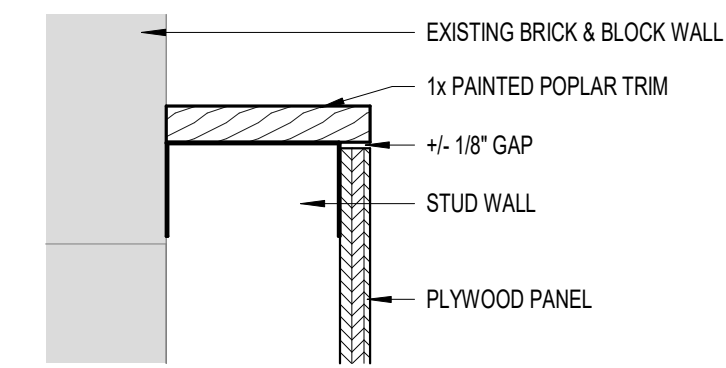
14 Shower Detail
1 1/2" = 1'-0"



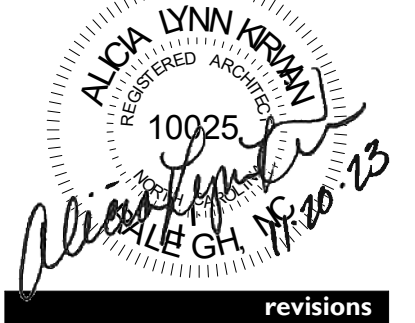
17 Tile Transition at Floor
3" = 1'-0"



18 Detail at Wall End
3" = 1'-0"



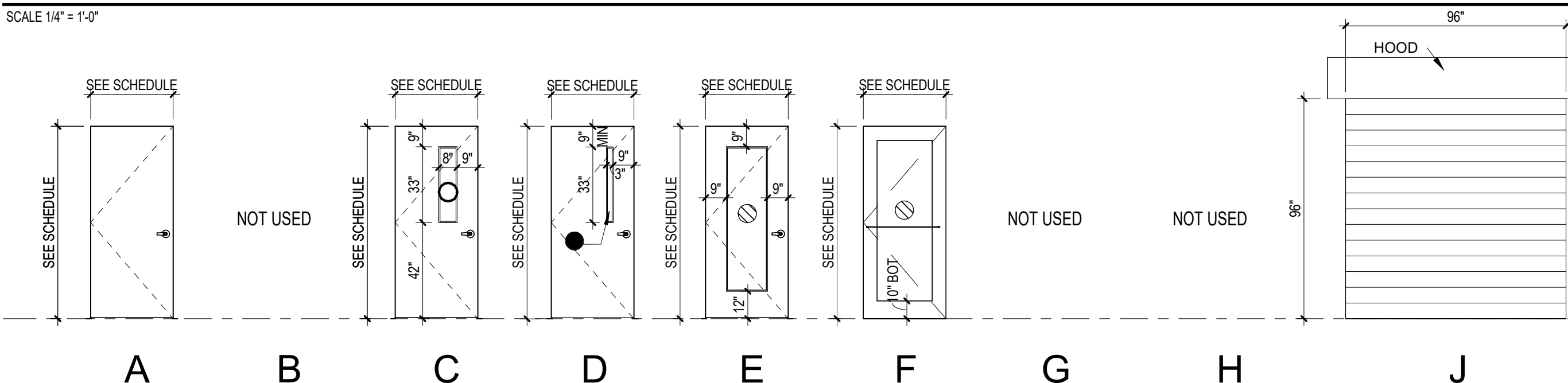
19 Top of Test Wall
3" = 1'-0"



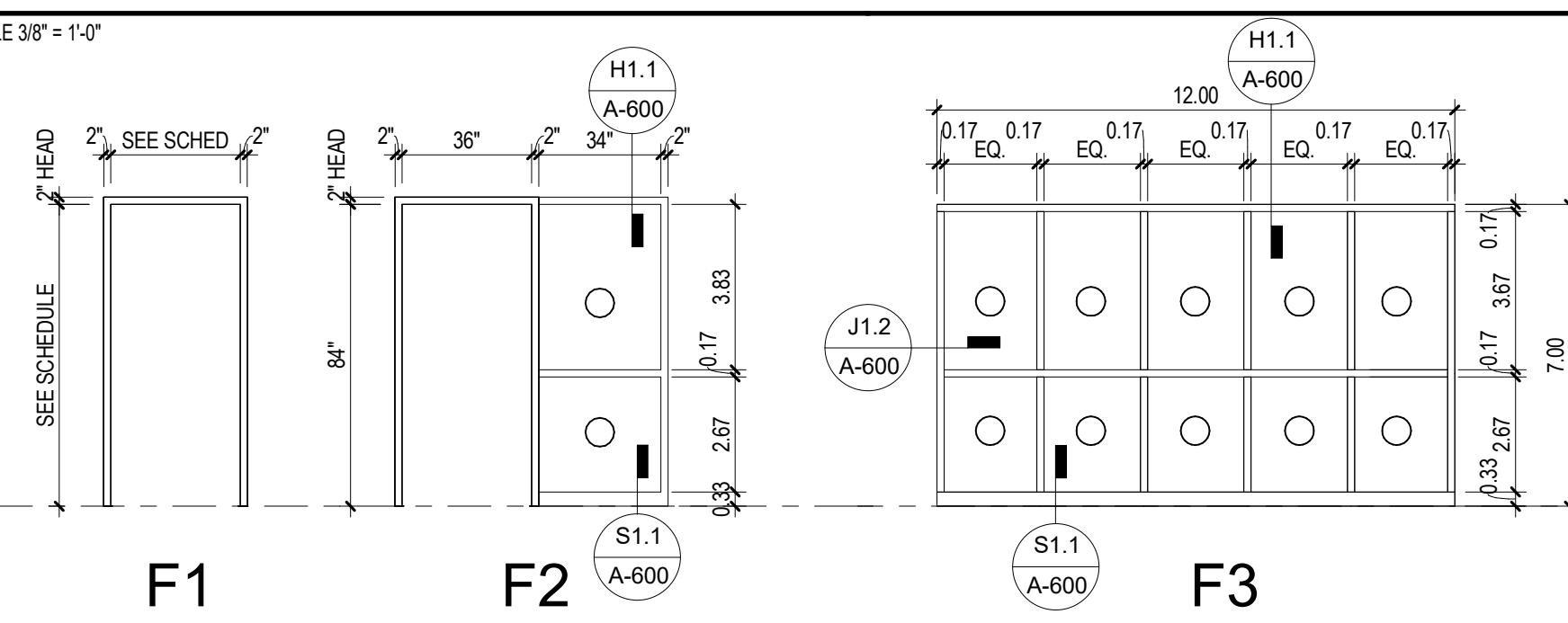
DOOR SCHEDULE																		
NUMBER	TO	FROM	DOOR				FRAME			FIRE RATING	HW SET	HEAD	JAMB	SILL	GLAZING	REMARKS		
			COUNT	WIDTH	HEIGHT	TYPE	MAT'L	FINISH	FRAME TYPE								MAT'L	FINISH
100	Entry	Open Office / Workroom	1	36"	84"	F	AL	FACT	AL-2	AL	FACT	-	5	H3	J3	S3	C	1,2,3,4
102	Stair	Open Office / Workroom	1	32"	80"	D	WD	STN	F1	HM	PT	1 HR	12	H2	J2	S1	B	
103	Open Office / Workroom	Storage / Staging	2	72"	84"	C	WD	STN	F1	HM	PT	-	19	H1	J1	S1	A	1
104	Office	Open Office / Workroom	1	36"	84"	C	WD	STN	F1	HM	PT	-	15	H1	J1	S1	A	
114	Cust	Corridor	1	36"	84"	A	WD	STN	F1	HM	PT	-	10	H1	J1	S1	-	
121	Storage / Staging	Corridor	1	36"	84"	C	WD	STN	F1	HM	PT	-	10	H2.1	J2	S1	A	
136	Toilet	Corridor	1	36"	84"	A	WD	STN	F1	HM	PT	-	11	H1	J1	S2	-	
141	Toilet	Corridor	1	36"	84"	A	WD	STN	F1	HM	PT	-	13	H1	J1	S2	-	
201	Office	Corridor	1	36"	84"	C	WD	STN	F1	HM	PT	-	17	H1	J1	S1	A	
202	Stair	Corridor	1	36"	84"	D	WD	STN	F1	HM	PT	1 HR	12	H1	J1	S1	B	
203	Office	Corridor	1	36"	84"	C	WD	STN	F1	HM	PT	-	17	H1	J1	S1	A	1
204	Office	Corridor	1	36"	84"	C	WD	STN	F1	HM	PT	-	17	H1	J1	S1	A	1
206	Office	Corridor	1	36"	84"	C	WD	STN	F1	HM	PT	-	17	H1	J1	S1	A	1
208	Toilet	Corridor	1	36"	84"	A	WD	STN	F1	HM	PT	-	10	H1	J1	S2.1	-	
210	Toilet	Corridor	1	36"	84"	A	WD	STN	F1	HM	PT	-	10	H1	J1	S2.1	-	
212	Cust.	Corridor	1	36"	84"	A	WD	STN	F1	HM	PT	-	11	H1	J1	S1	-	1
213	Mech.	Flex Space	2	72"	84"	A	WD	STN	F1	HM	PT	-	9	H1	J1	S1	-	
215	Flex Space	Dala	2	72"	84"	A	WD	STN	F1	HM	PT	-	19	H1	J1	S1	-	1
216	Conference	Corridor	1	36"	84"	E	WD	STN	F1	HM	PT	-	16	H1	J1	S1	A	1
221	Conference / Training	Flex Space	1	36"	84"	E	WD	STN	F2	HM	PT	-	16	H1	J1, J1.1, J1.2	S1	A	1
231	Stair	Flex Space	1	36"	84"	D	WD	STN	F1	HM	PT	1 HR	12	H1	J1	S1	B	
B100	Stair	Open Office / Workroom	1	36"	80"	A	WD	STN	F1	HM	PT	1 HR	14	H2	J2	S1	-	
E100	Entry	Exterior	1	36"	84"	F	AL	FACT	AL-1	AL	FACT	-	1	H4.1	J4, J4.1	S4	C	1,2
E102	Stair	Exterior	1	36"	84"	F	AL	FACT	F1	AL	FACT	-	2	H3	J3	S3	C	1,2
E103	Open Office / Workroom	Outdoor Work Area	2	72"	84"	A	HM	PT	F1	HM	PT	-	6	H3.1	J3.1	S3.1	-	1
E118	Corridor	Exterior	1	36"	84"	E	AL	FACT	F1	AL	FACT	-	3	H3	J3	S3	C	1,2
E121	Storage / Staging	Loading Dock	1	72"	96"	J	STL	FACT	F1	STL	FACT	-	4	H5	J5	S5	-	1,5
E131	Stair	Loading Dock	1	36"	84"	E	AL	FACT	AL-2	AL	FACT	-	4	H3	J3	S3	C	1,2
E140	Mechanical	Exterior	2	72"	84"	A	HM	FACT	F1	HM	PT	-	7	H3.1	J3.1	S3.1	-	
E140A	Elev	Exterior	1	40"	84"	A	-	-	-	-	-	-	8	-	-	-	-	EXIST TO REMAIN
E199A	Machine Room	Outdoor Work Area	1	36"	84"	A	HM	PT	F1	HM	PT	-	18	H3.1	J3.1	S3.1	-	

DOOR ABBREVIATIONS	DOOR REMARKS	DOOR GENERAL NOTES
AL ALUMINUM FACT FACTORY FINISH GL GLASS HM HOLLOW METAL PT PAINT STL STEEL STN STAIN WD WOOD NA NOT APPLICABLE	1. PROVIDE CARD READER, SECURITY DEVICES PROVIDED BY SECURITY CONTRACTOR. 2. GLASS IN RATED DOOR GREATER THAN 100 SQ. IN. MUST BE TESTED & LABELED = D-H-T-80 OR D-H-T-W-60 3. PROVIDE PUSH BUTTON AUTOMATIC DOOR OPEN DEVICE 4. BASE BID: HARDWARE GROUP 1, ALTERNATE 4: HARDWARE GROUP 5 5. COILING DOOR	A. DOORS AND DOOR HARDWARE TO BE ADA COMPLIANT WITH LOCAL BUILDING & FIRE CODES. B. SEE FLOOR PLANS AND PARTITION TYPES FOR THROAT DEPTHS C. UNDERCUT DOOR TO CLEAR TOP OF FLOOR FINISHES BY 1/4" U.O.N. D. GLAZING STOP TO BE ON ROOM SIDE OF FRAME WHEN FRAME IS IN CORRIDOR U.O.N. E. LOCK CORES TO BE COMPATIBLE WITH BUILDING STANDARD CYLINDERS AND KEYS TO MASTER SYSTEM. COORDINATE WITH BUILDING ENGINEER. F. ENTRY DOOR AND EXIT DOORS AND EXIT DOORS WITH CARD READERS TO BE TIED INTO FIRE ALARM SYSTEM & LOSS OF POWER AS FAIL SAFE MODE. G. ALL SINGLE DOORS TO RECEIVE 1-1/2" PAIR BUTT HINGES AND DOUBLE DOOR TO RECEIVE 3 PAIR BUTT HINGES. H. DOORS OVER 7'-0" HEIGHT TO RECEIVE 2 PAIR BUTT HINGES AT THE SINGLE DOOR AND 4 PAIR BUTT HINGES AT DOUBLE DOORS I. THE HARDWARE SET IS FURNISHED AS INFORMATION AND AS GUIDE ONLY THE COMPLETE QUANTITY REQUIREMENTS FOR EACH OPENING SHALL BE THE RESPONSIBILITY OF GC.

DOOR ELEVATIONS

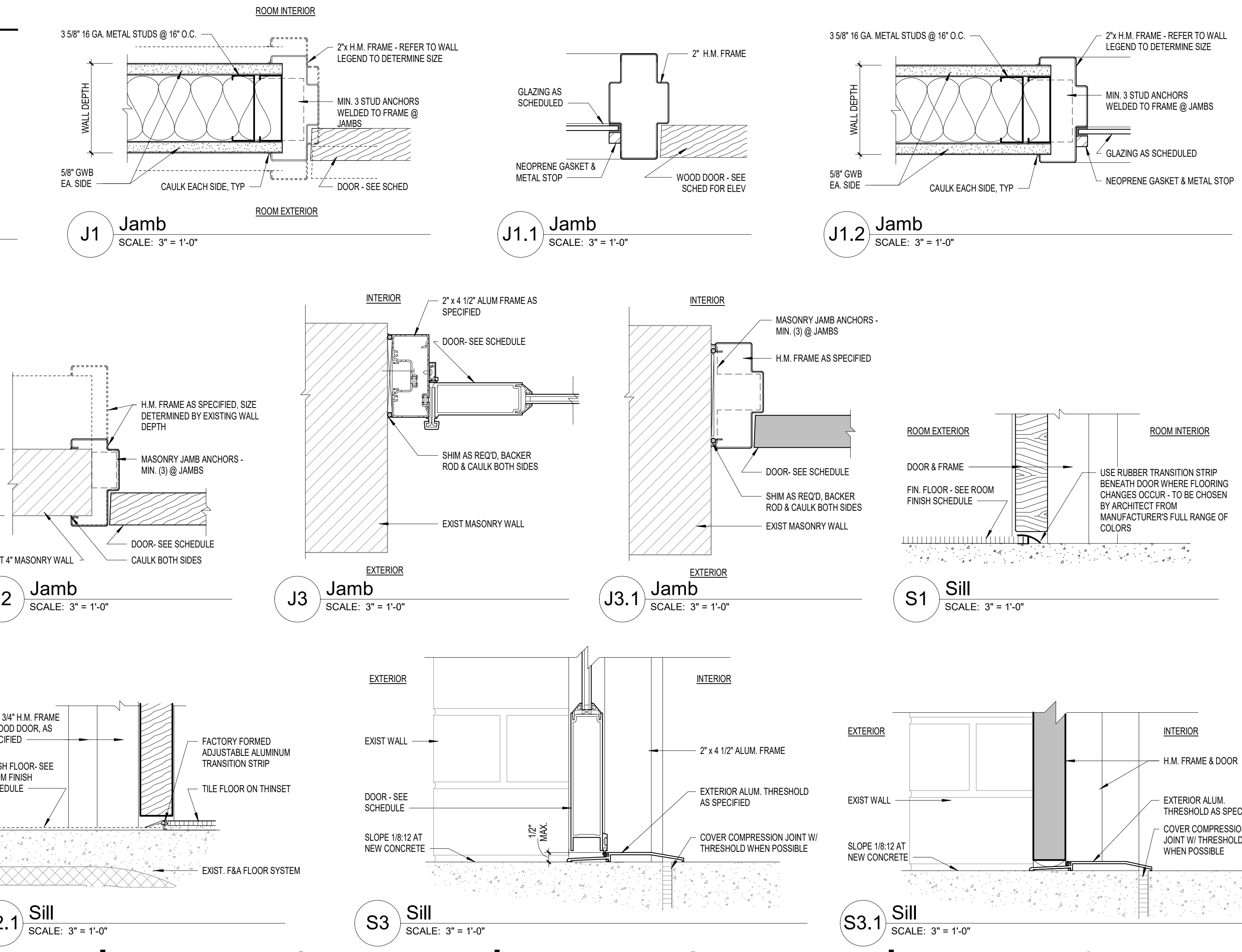
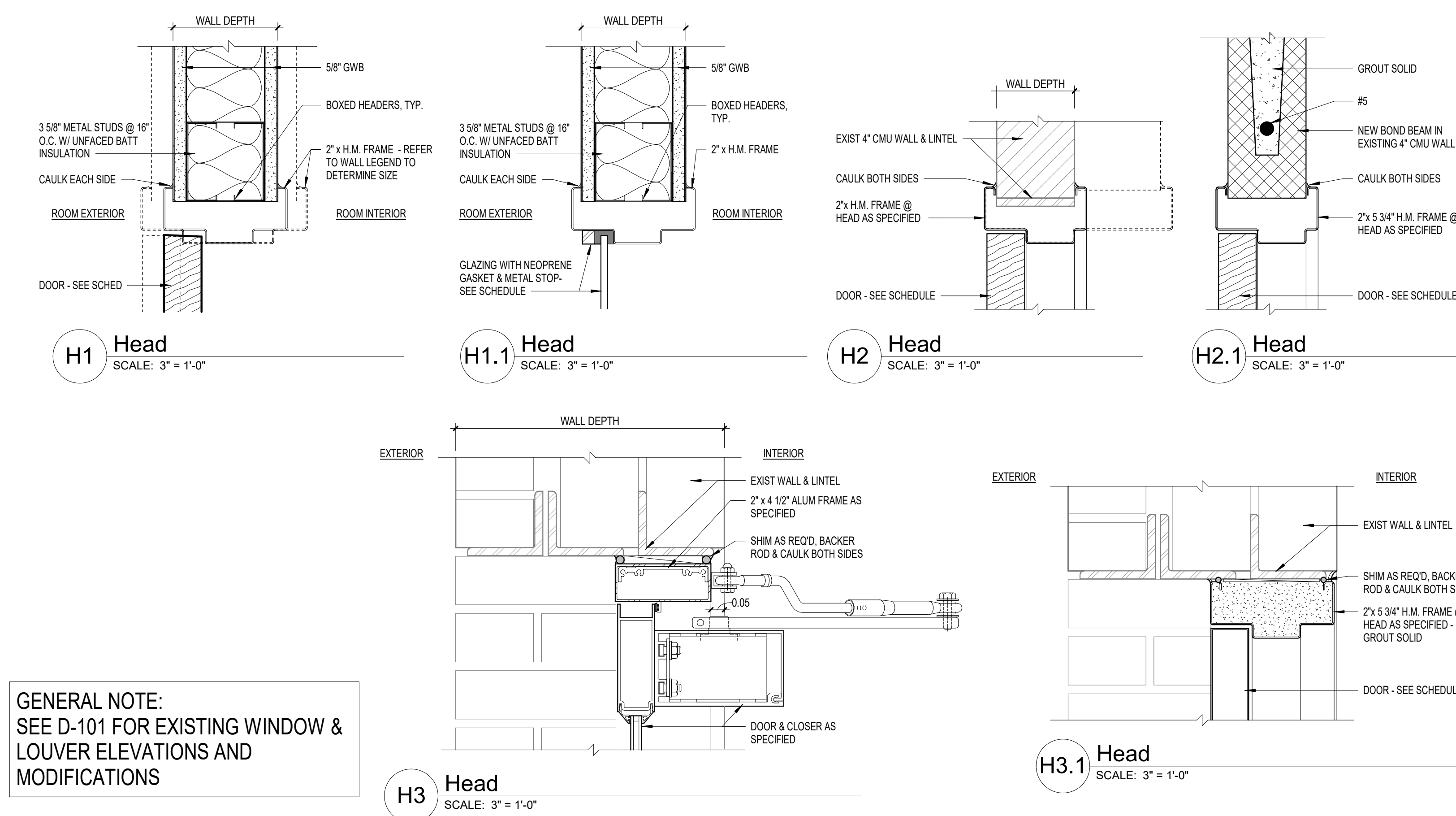
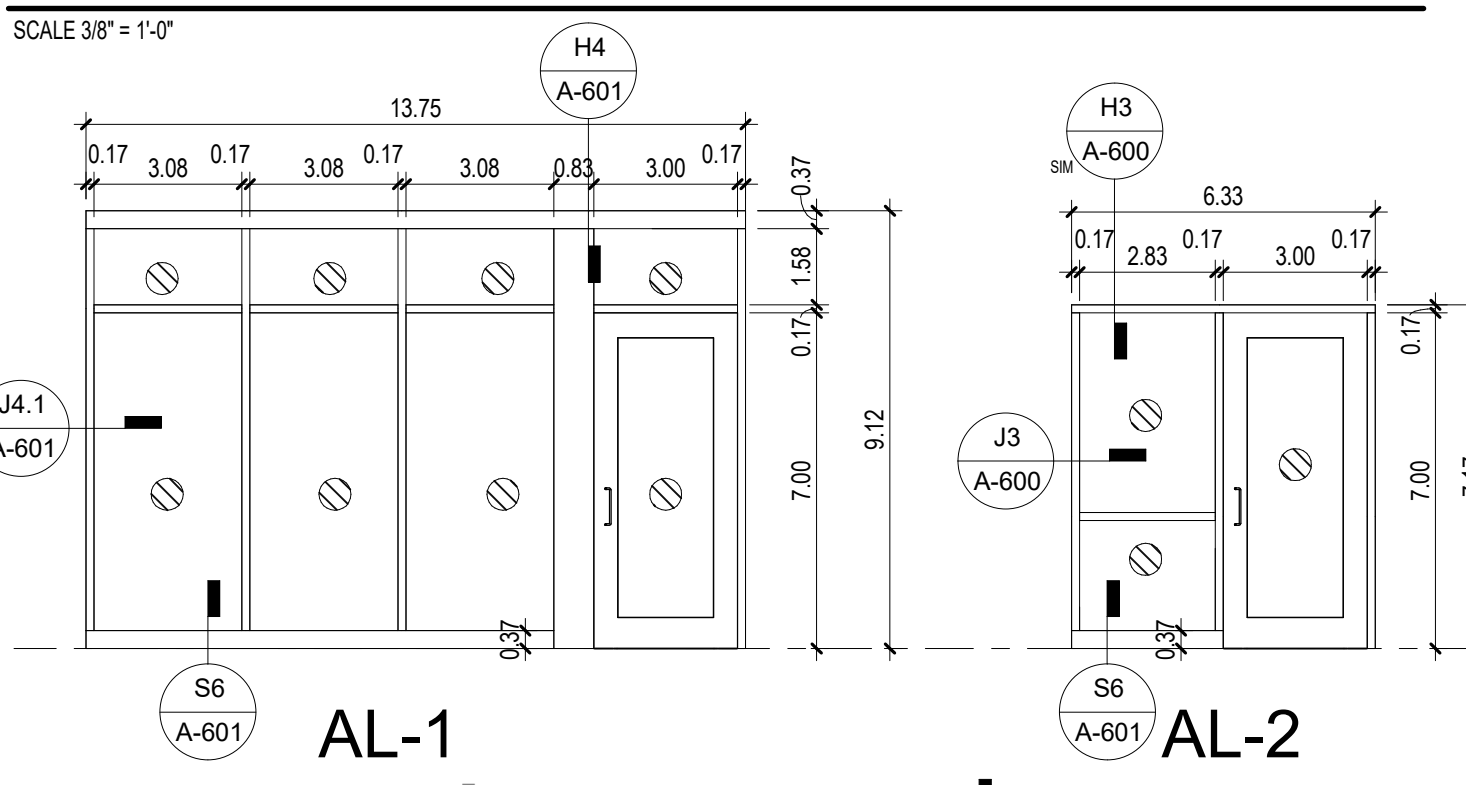


FRAME ELEVATIONS



GLAZING LEGEND	
○	TYPE A 1/4" TEMPERED PLATE - CLEAR
●	TYPE B 5/16" "FIRELITE PLUS" - CLEAR
◌	TYPE C 5/8" TEMPERED LOW E GLAZING - (EXTERIOR DOORS)

STOREFRONT ELEVATIONS



Skinner Farlow Kirwan architecture
 301 Commercial Ave., Suite 200
 Raleigh, NC 27603
 919-222-2022
 sfaarchitecture.com

project status
Construction Documents for Bid
 owner id
SCO ID# 19-21547-02A
NCSU ID 201920037
 seals

50177
 SKINNER FARLOW KIRWAN ARCHITECTURE, P.C.
 10025
 ALCOA LYNN KRAMER
 REGISTERED ARCHITECT
 STATE OF NC
 DATE 01/11/2023

revisions
 # date note

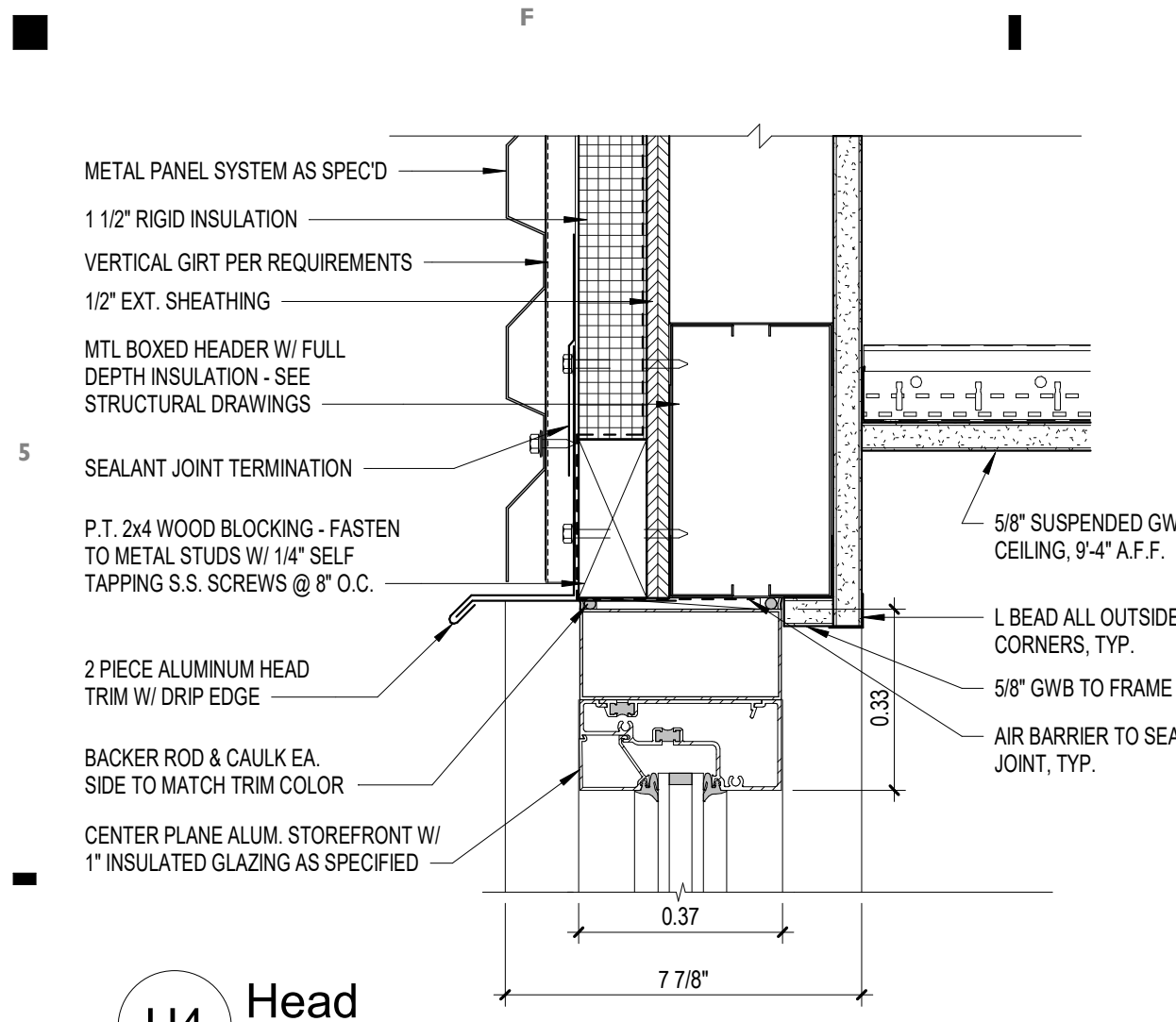
Don E. Ellis Building (133) Renovations
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

PROJECT 1368-20
 DATE 11/20/2023
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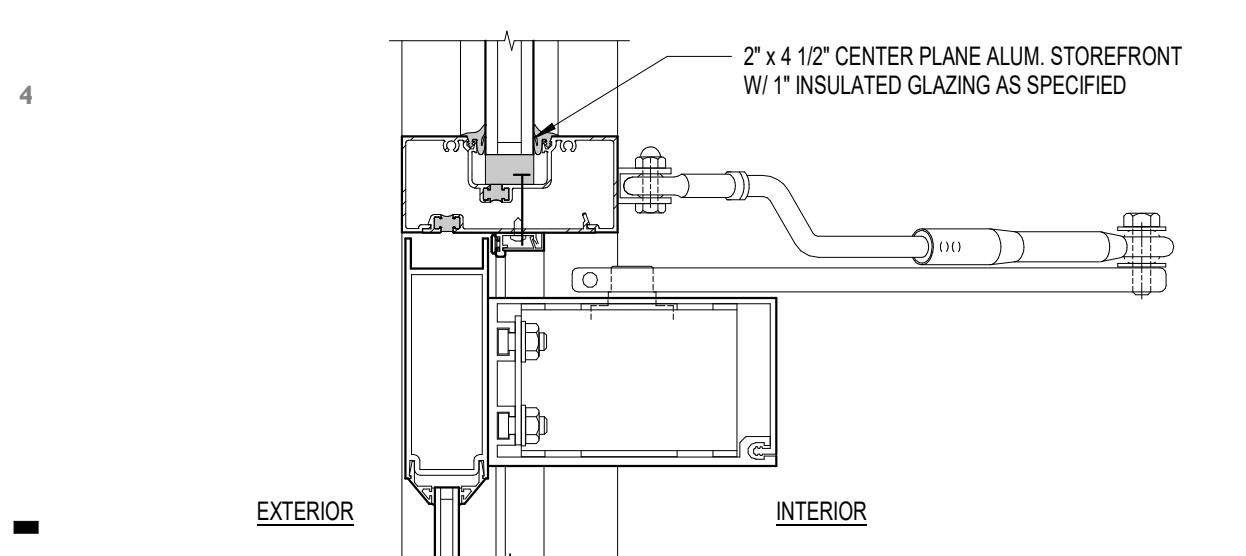
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A-600

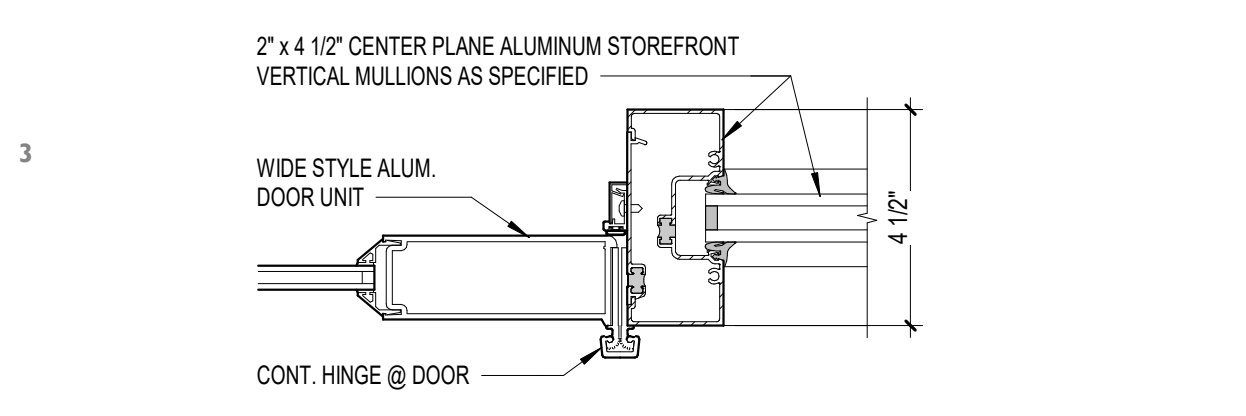
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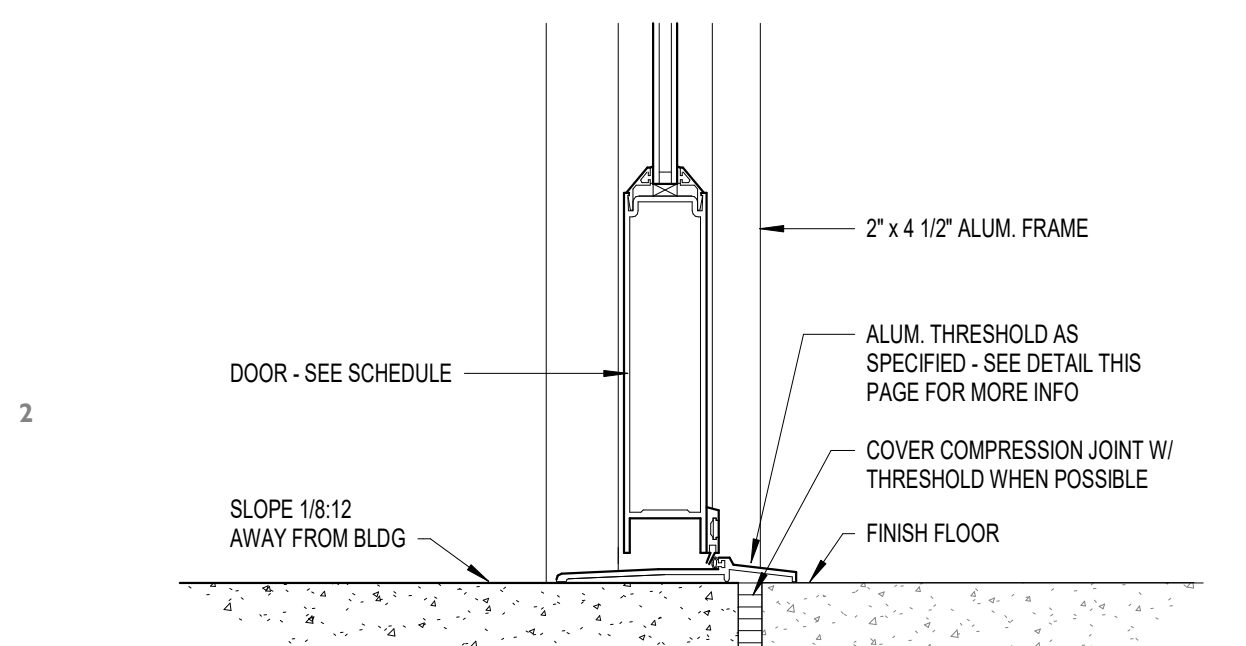
H4 Head
SCALE: 3" = 1'-0"



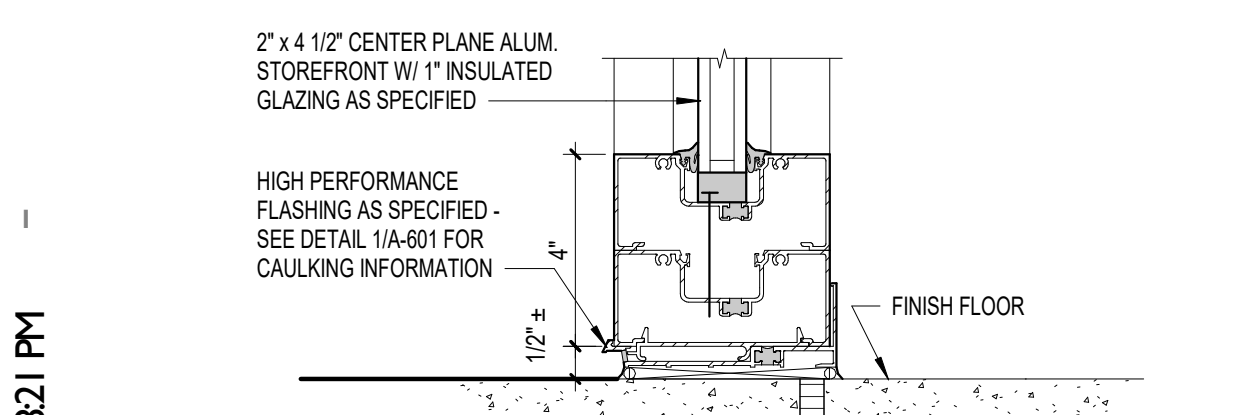
H4.1 Head
SCALE: 3" = 1'-0"



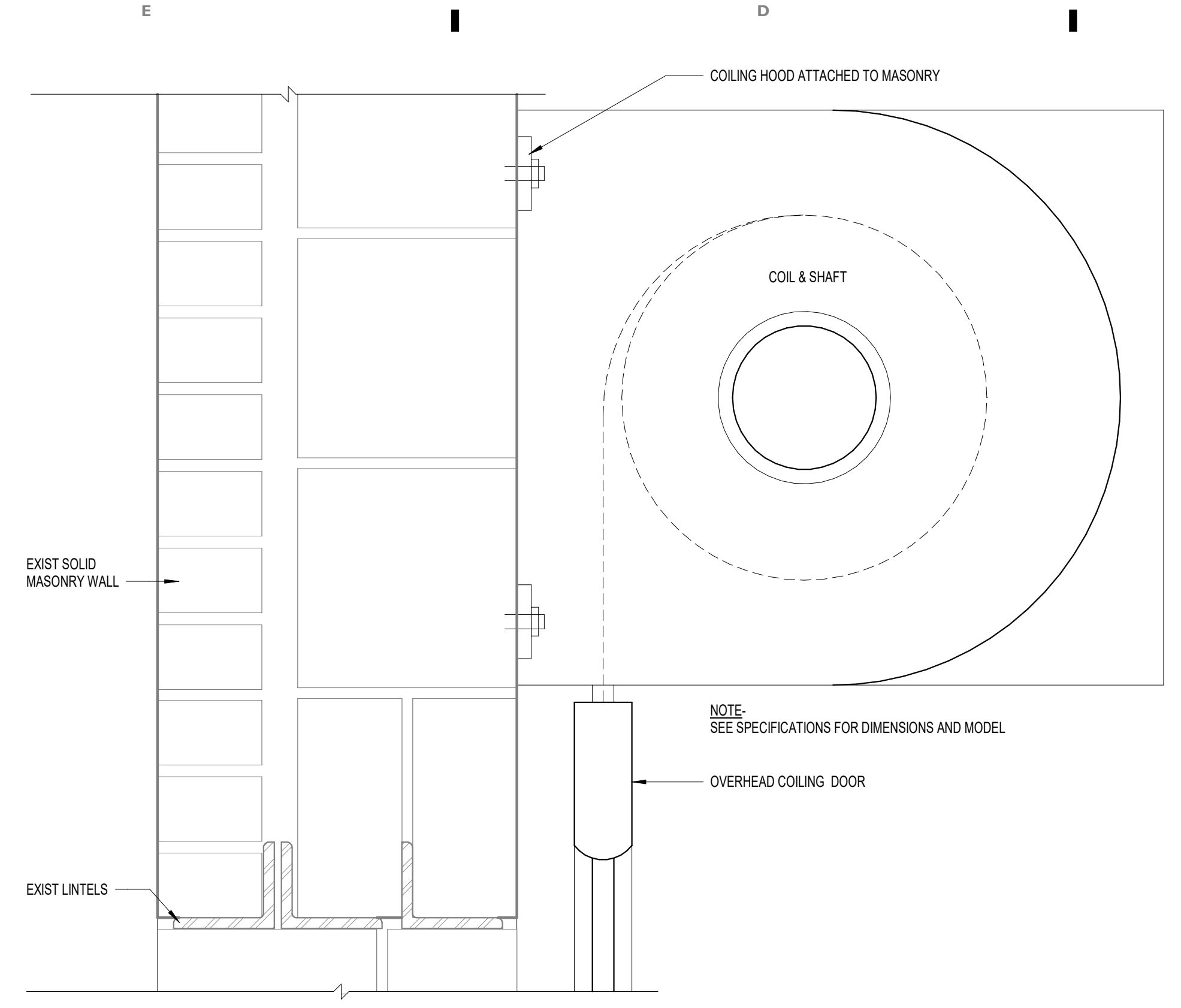
J4 Jamb
SCALE: 3" = 1'-0"



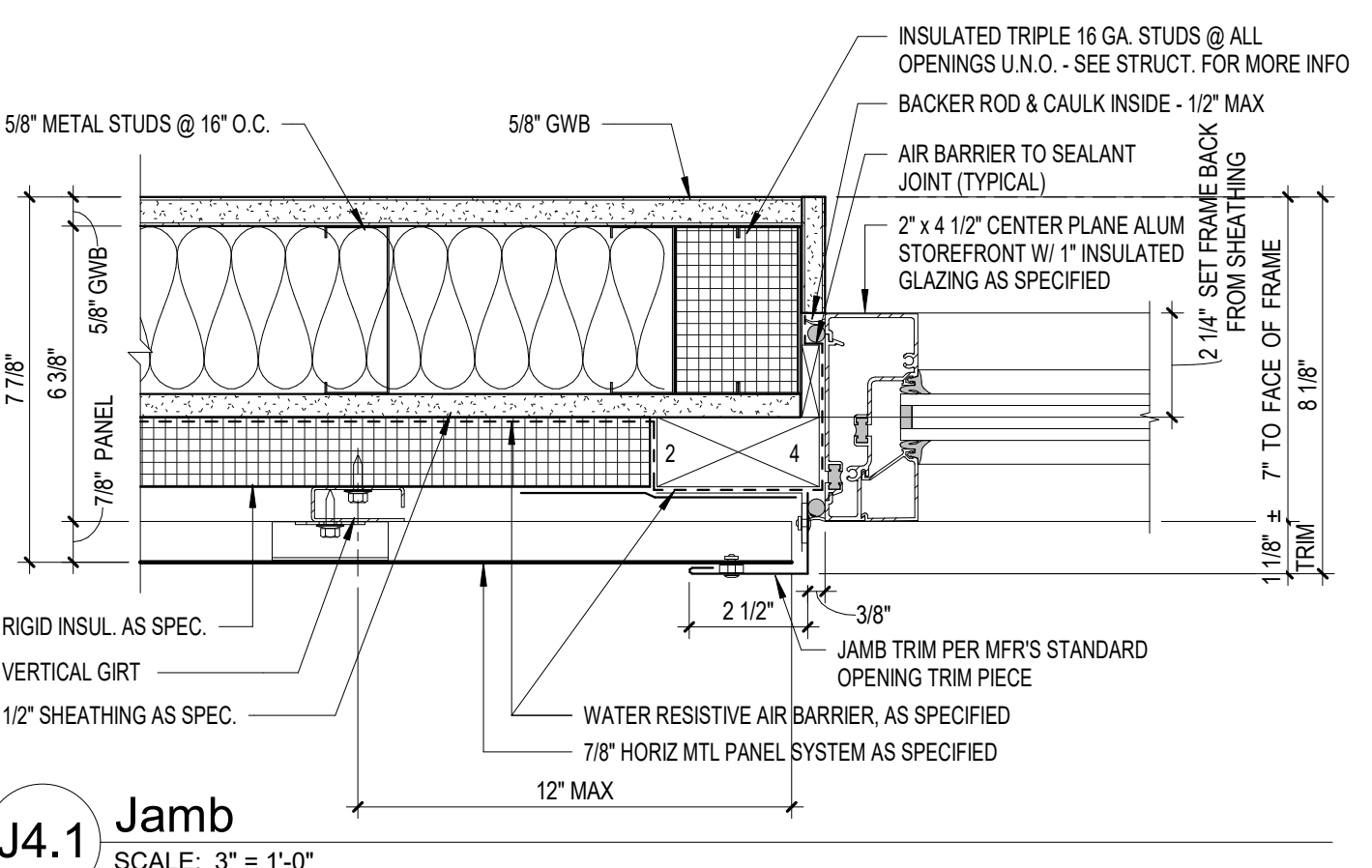
S4 Sill
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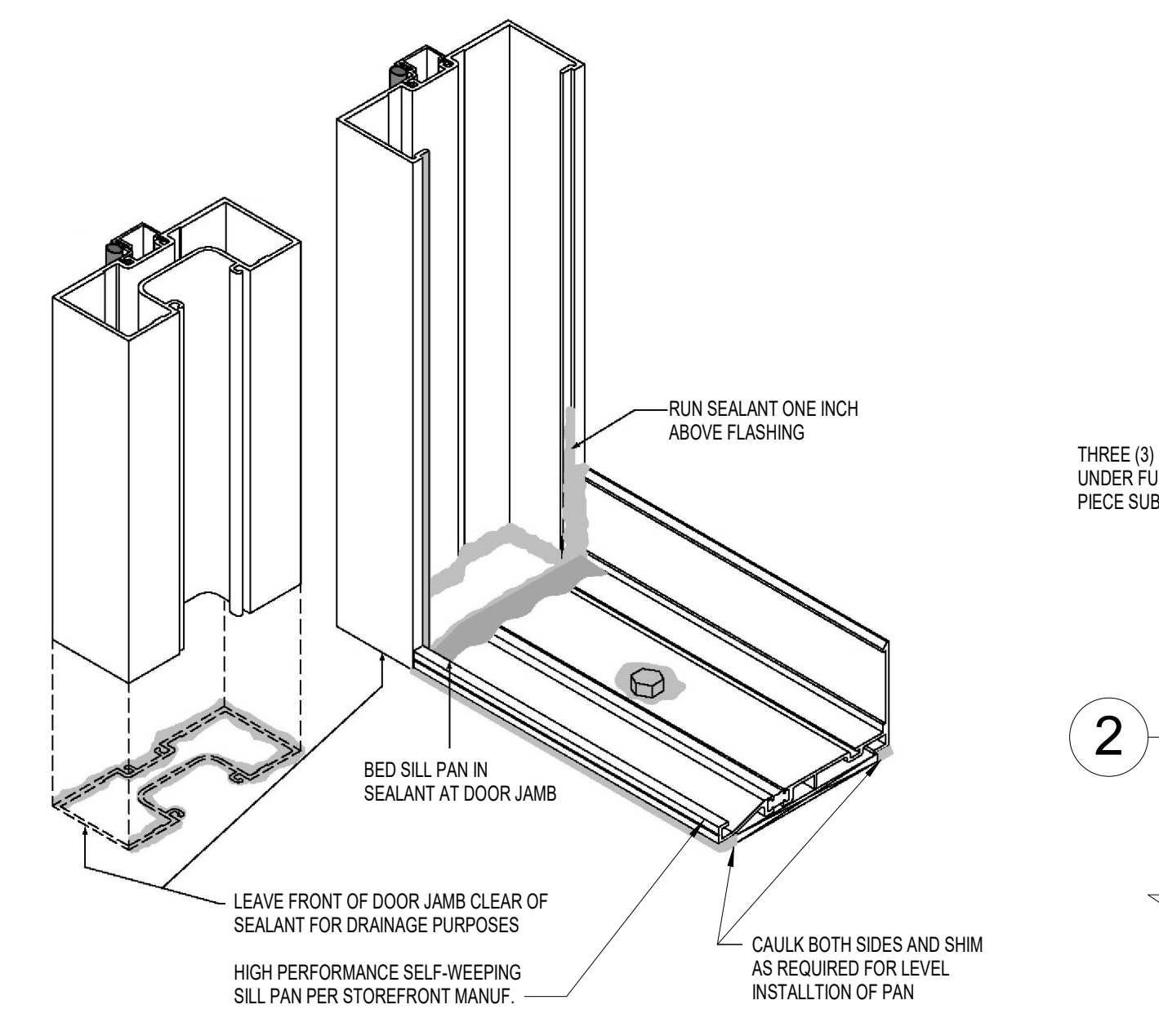
S6 Sill
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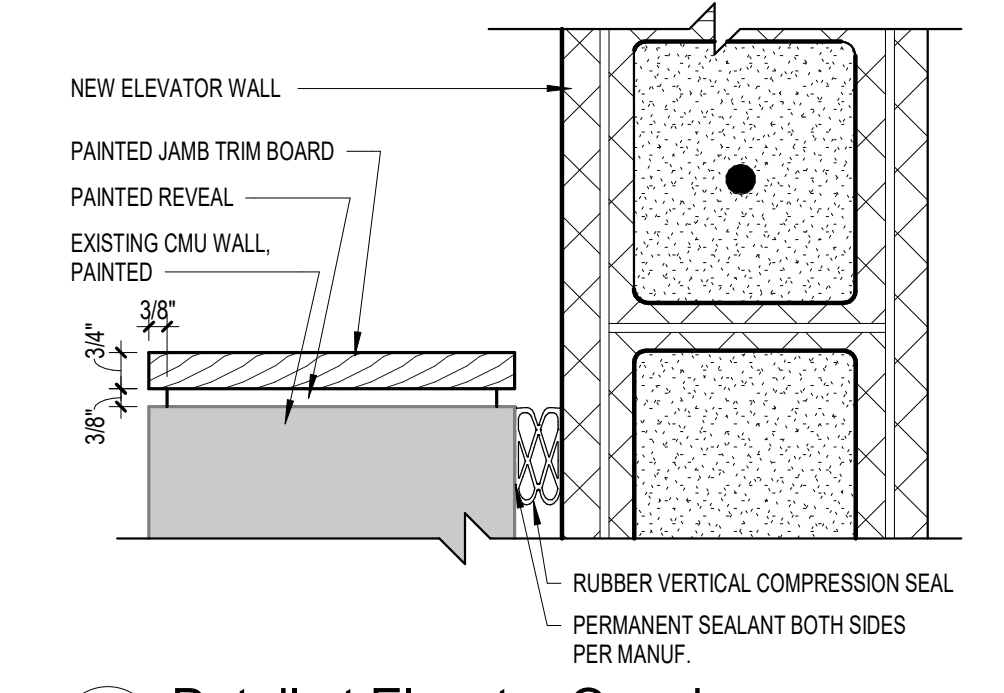
H5 Head
SCALE: 3" = 1'-0"



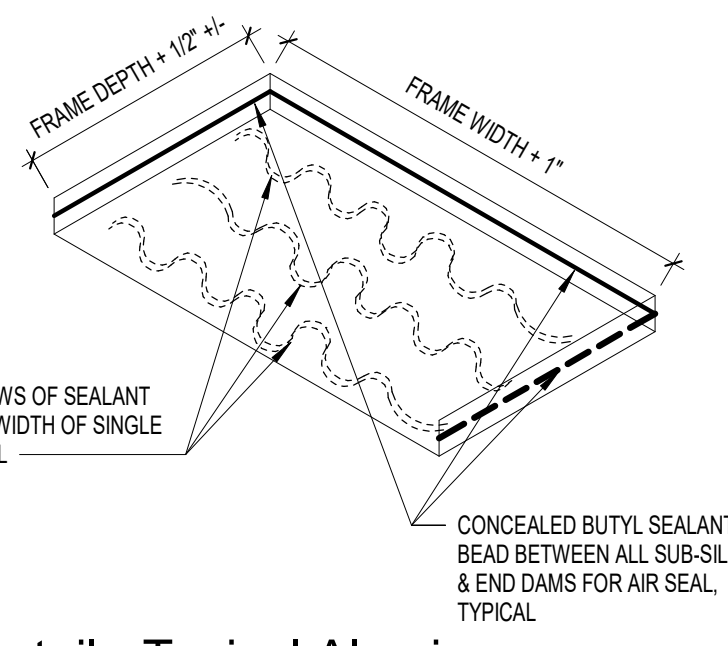
J4.1 Jamb
SCALE: 3" = 1'-0"



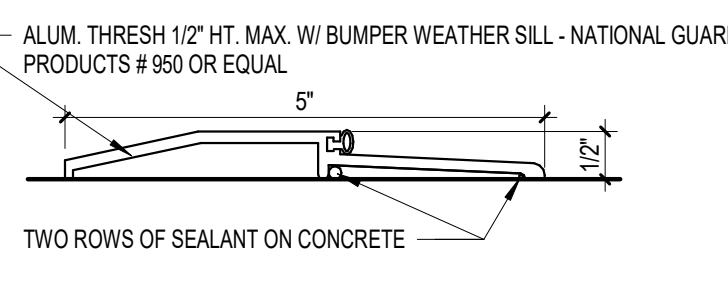
1 Detail - Caulking @ Alum Storefront Entrance Jamb
1 1/2" = 1'-0"



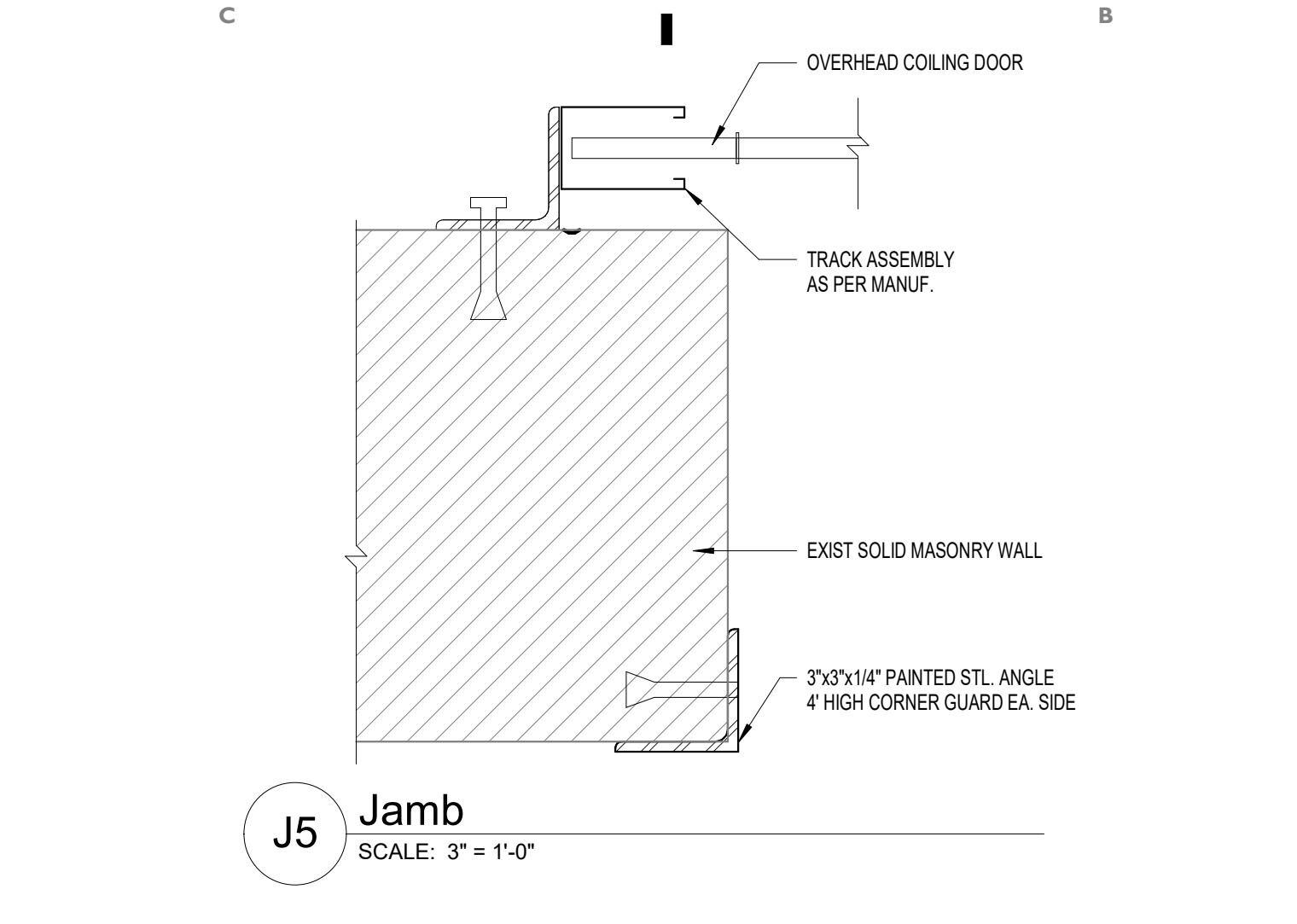
8 Detail at Elevator Opening
3" = 1'-0"



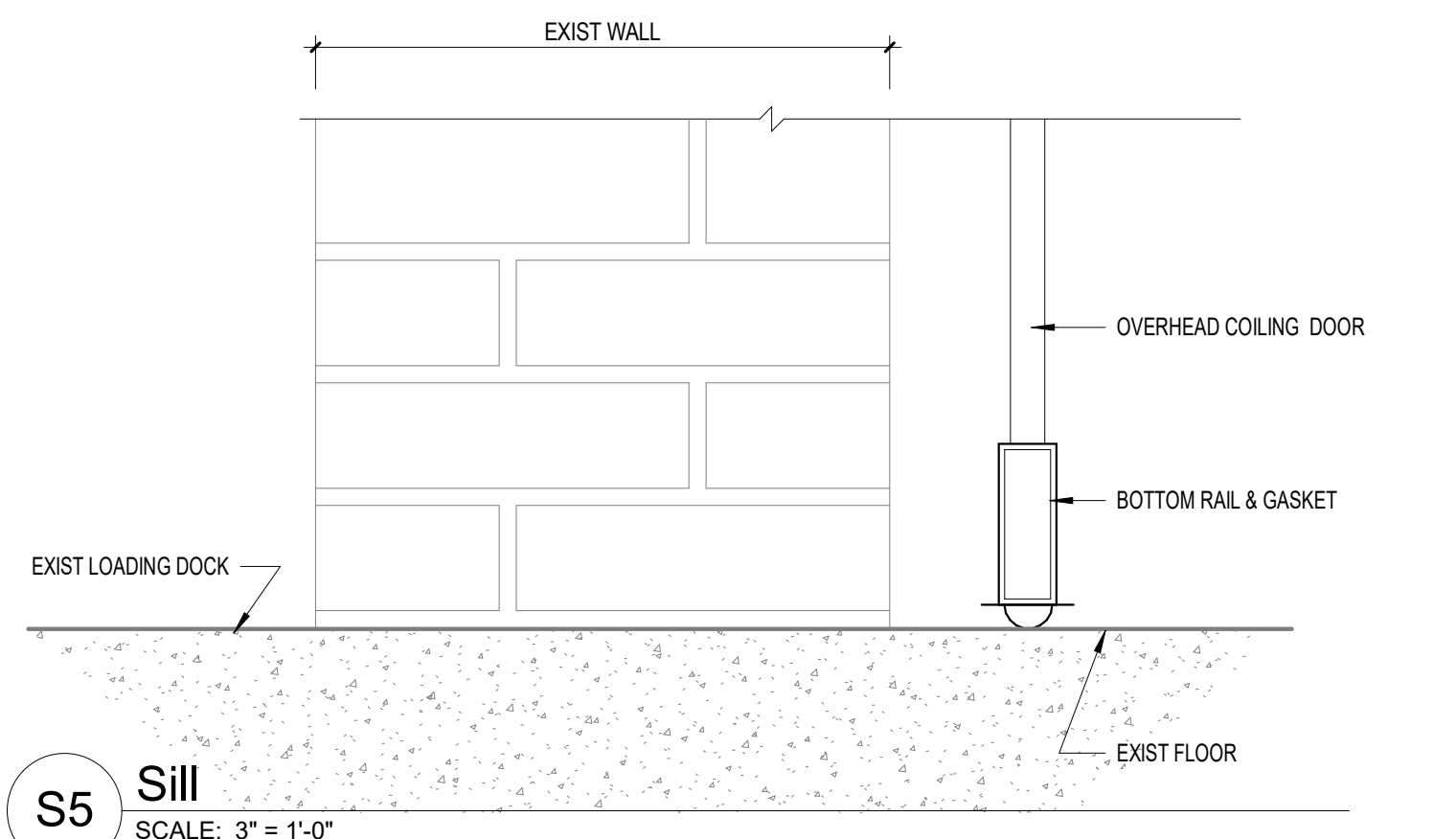
2 Detail - Typical Aluminum Subsill Installation
3" = 1'-0"



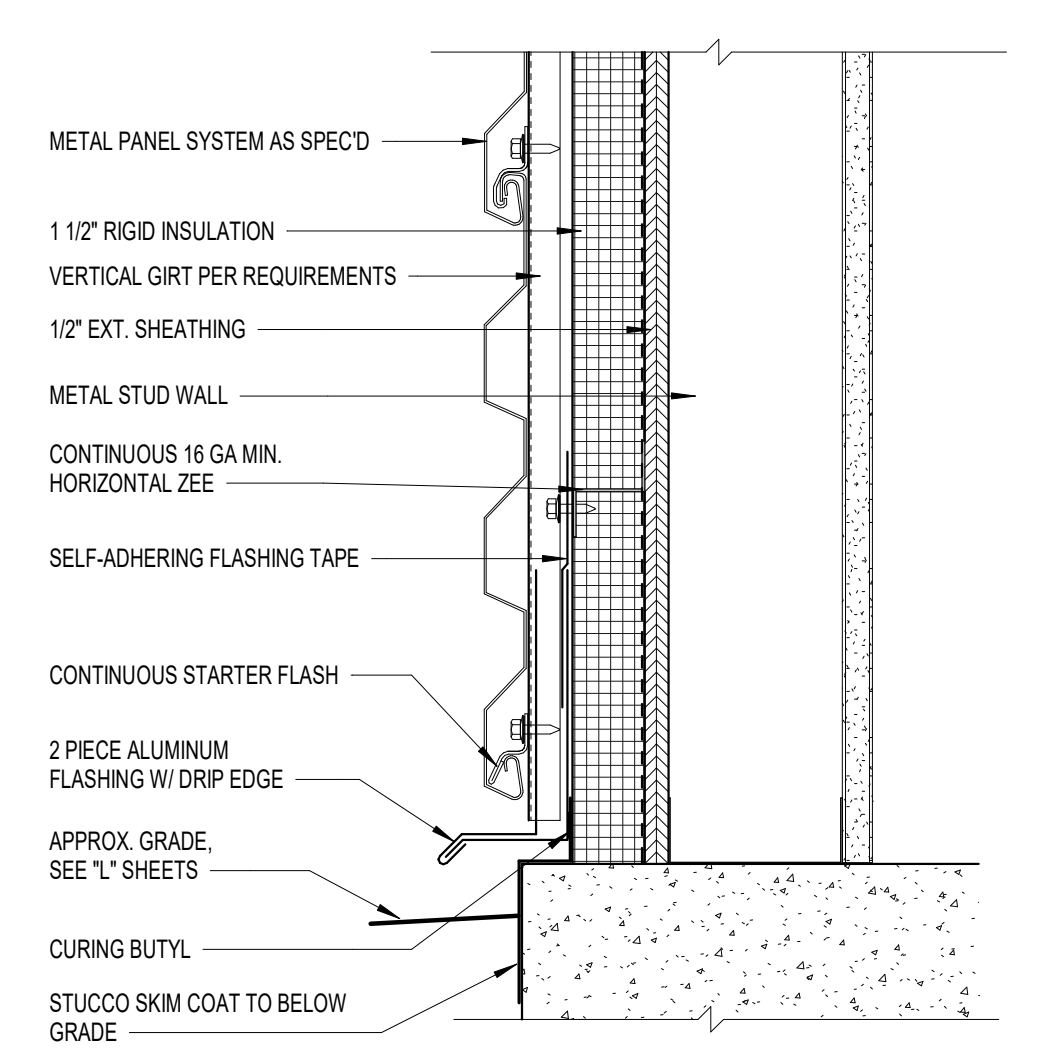
3 Detail - Typical Threshold
6" = 1'-0"



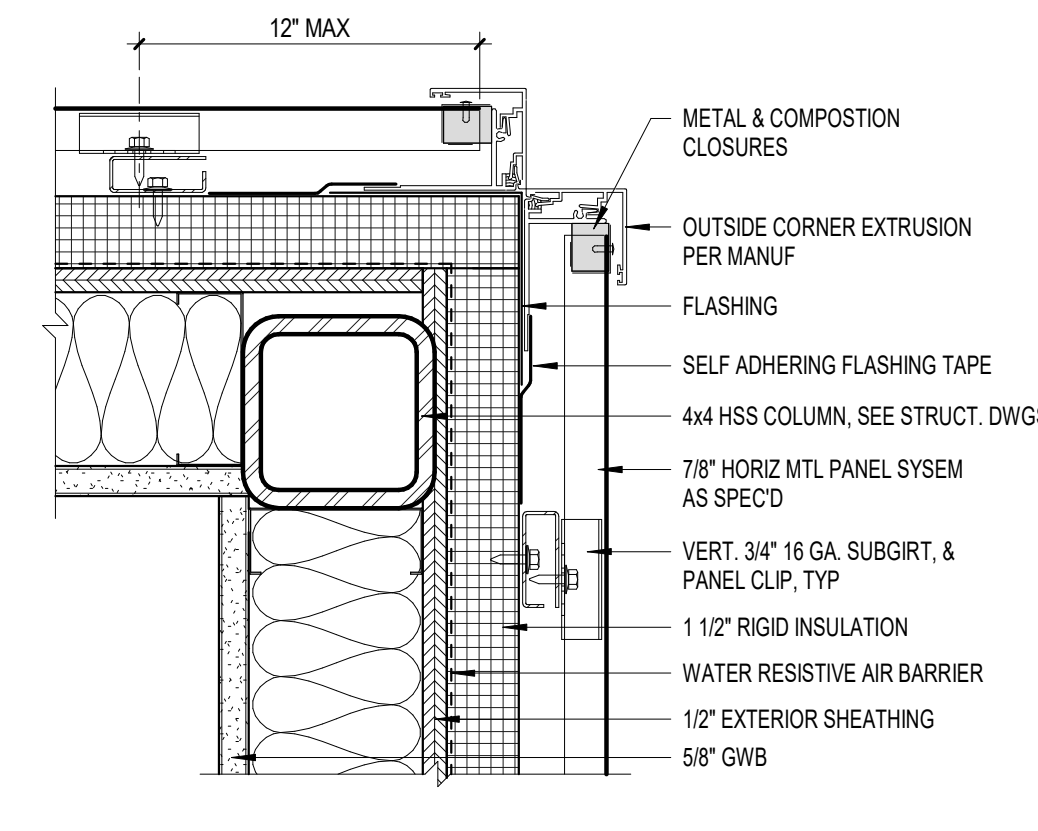
J5 Jamb
SCALE: 3" = 1'-0"



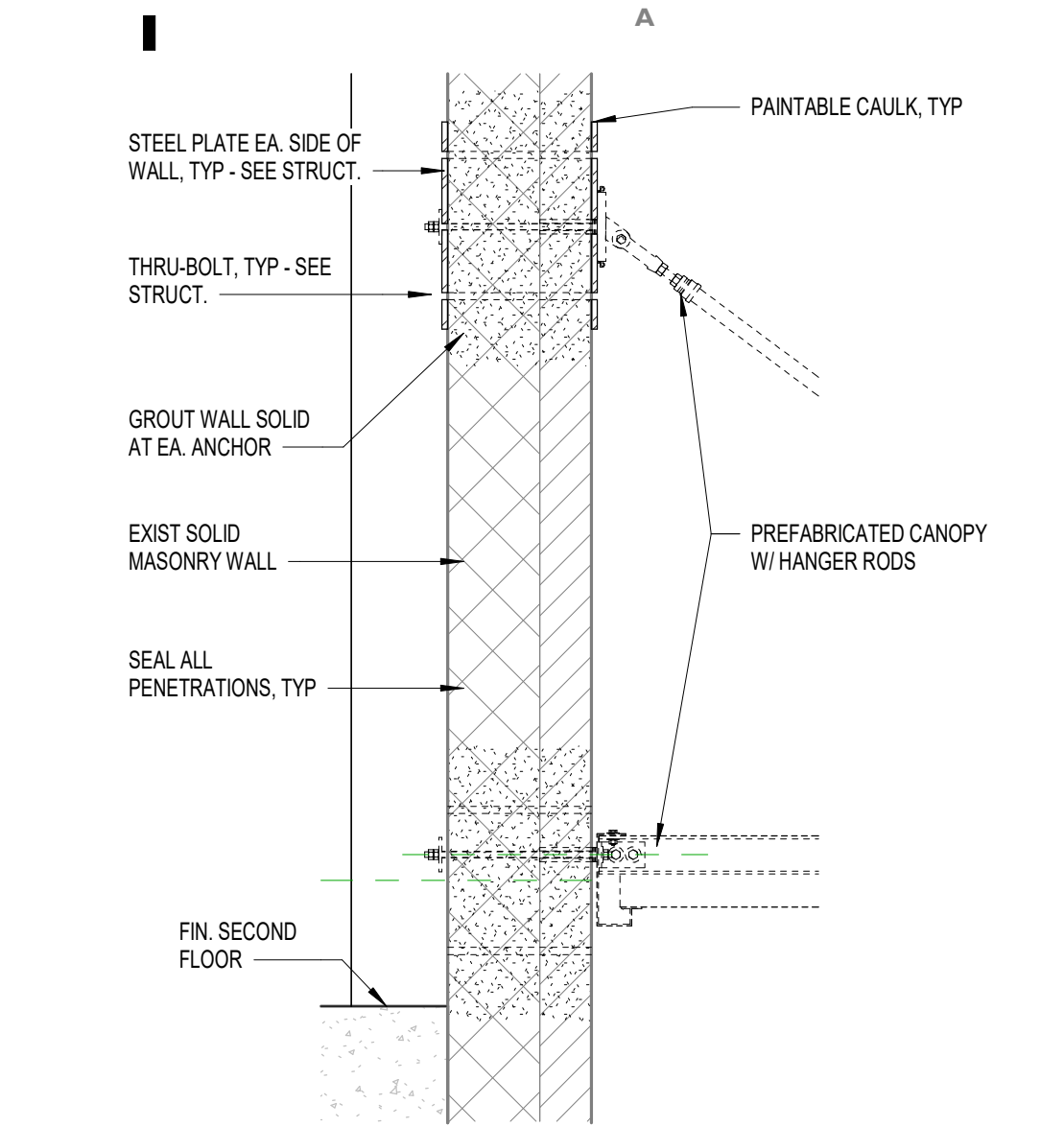
S5 Sill
SCALE: 3" = 1'-0"



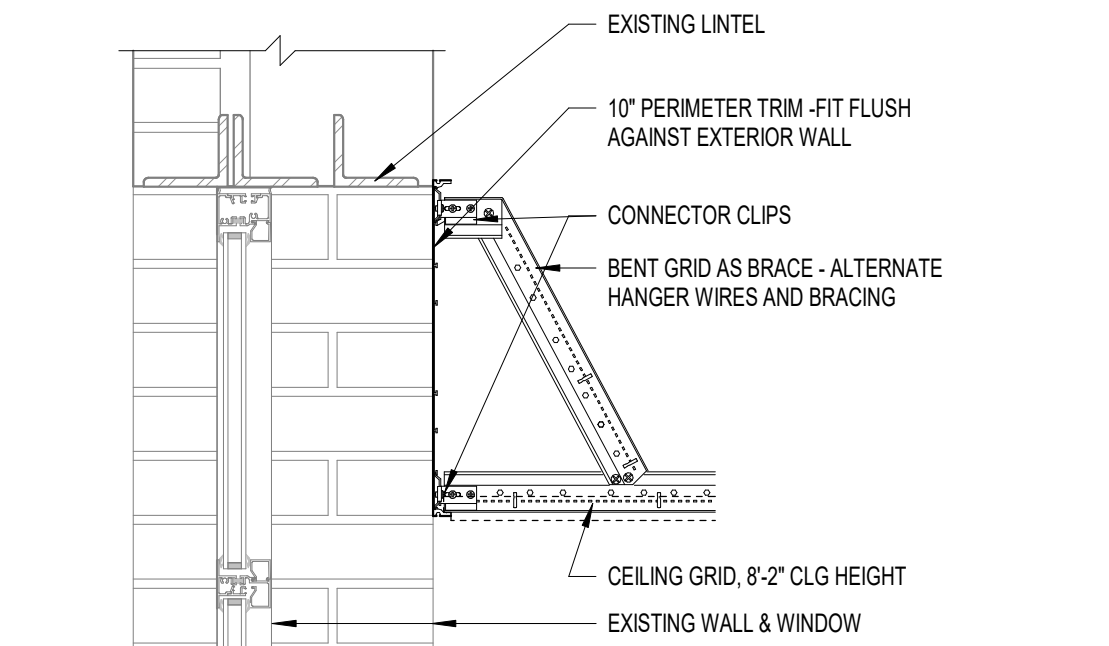
7 Base Flashing
3" = 1'-0"



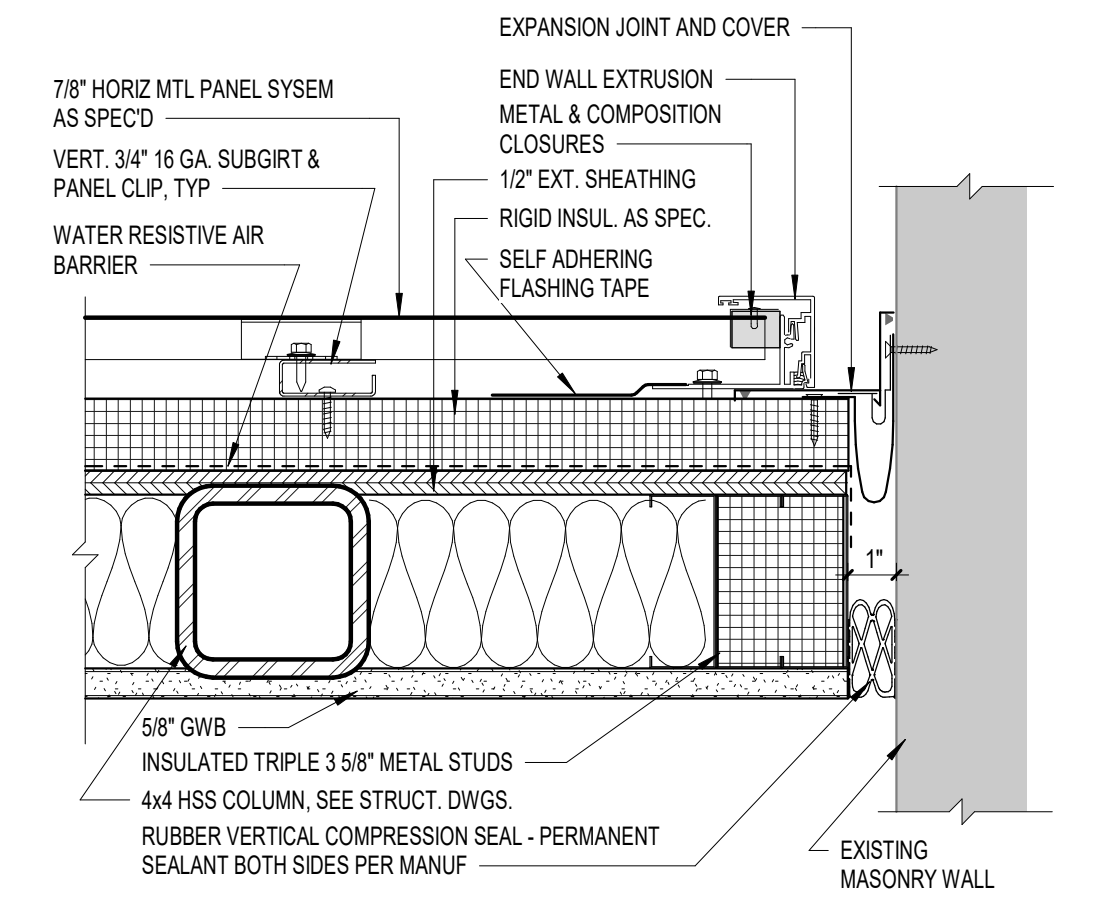
10 Outside Corner @ Metal Panels
3" = 1'-0"



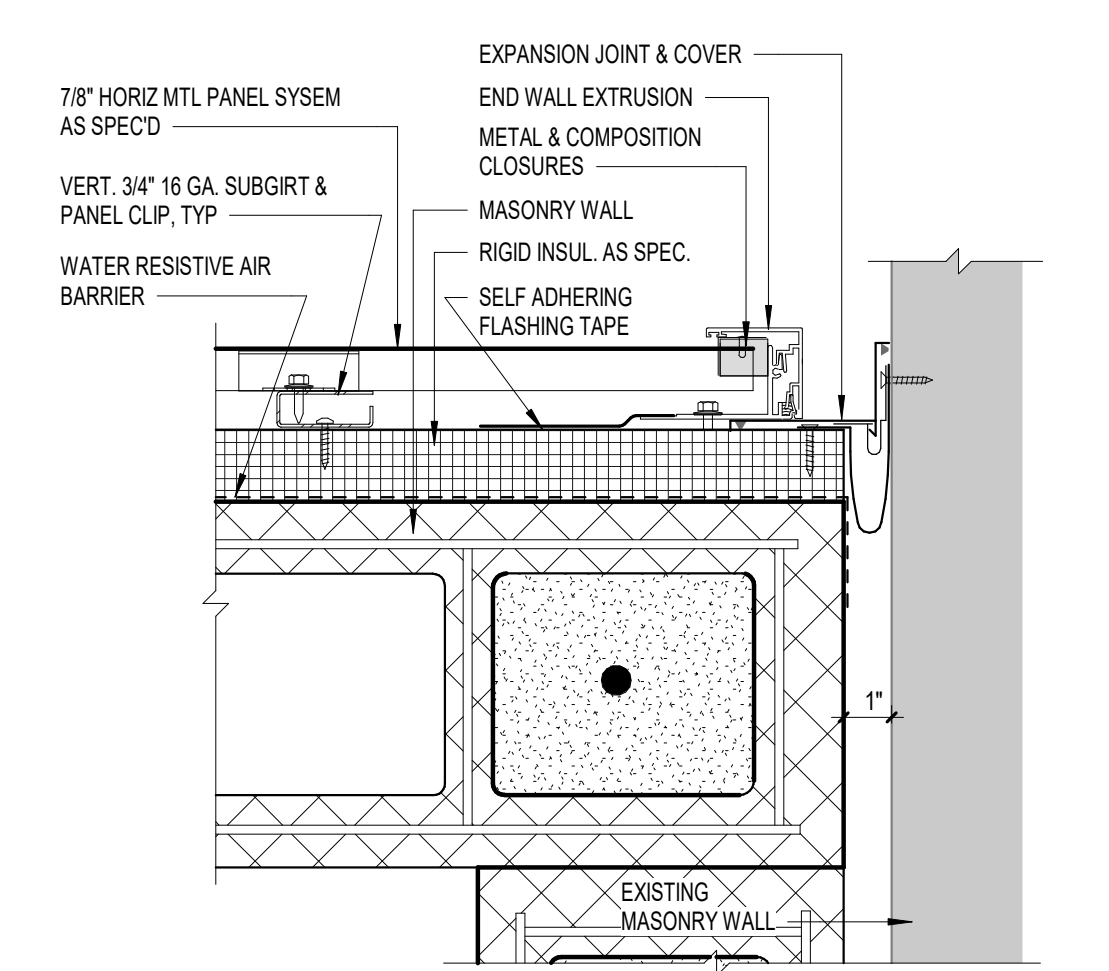
4 Canopy Anchors
3/4" = 1'-0"



5 ACT @ Window
1 1/2" = 1'-0"



6 Expansion Joint @ Vestibule
3" = 1'-0"



9 Expansion Joint @ Masonry
3" = 1'-0"

11/17/2023 4:38:21 PM

consultants

project status

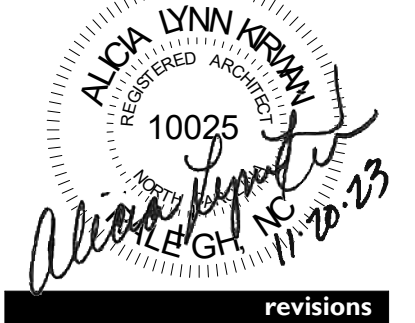
Construction Documents for Bid

owner id

SCO ID# 19-21547-02A

NCSU ID 201920037

seals



revisions

date note

PROJECT 1368-20
DATE 11/20/2023
DRAWN ADQ
CHECKED ALK
sheet name

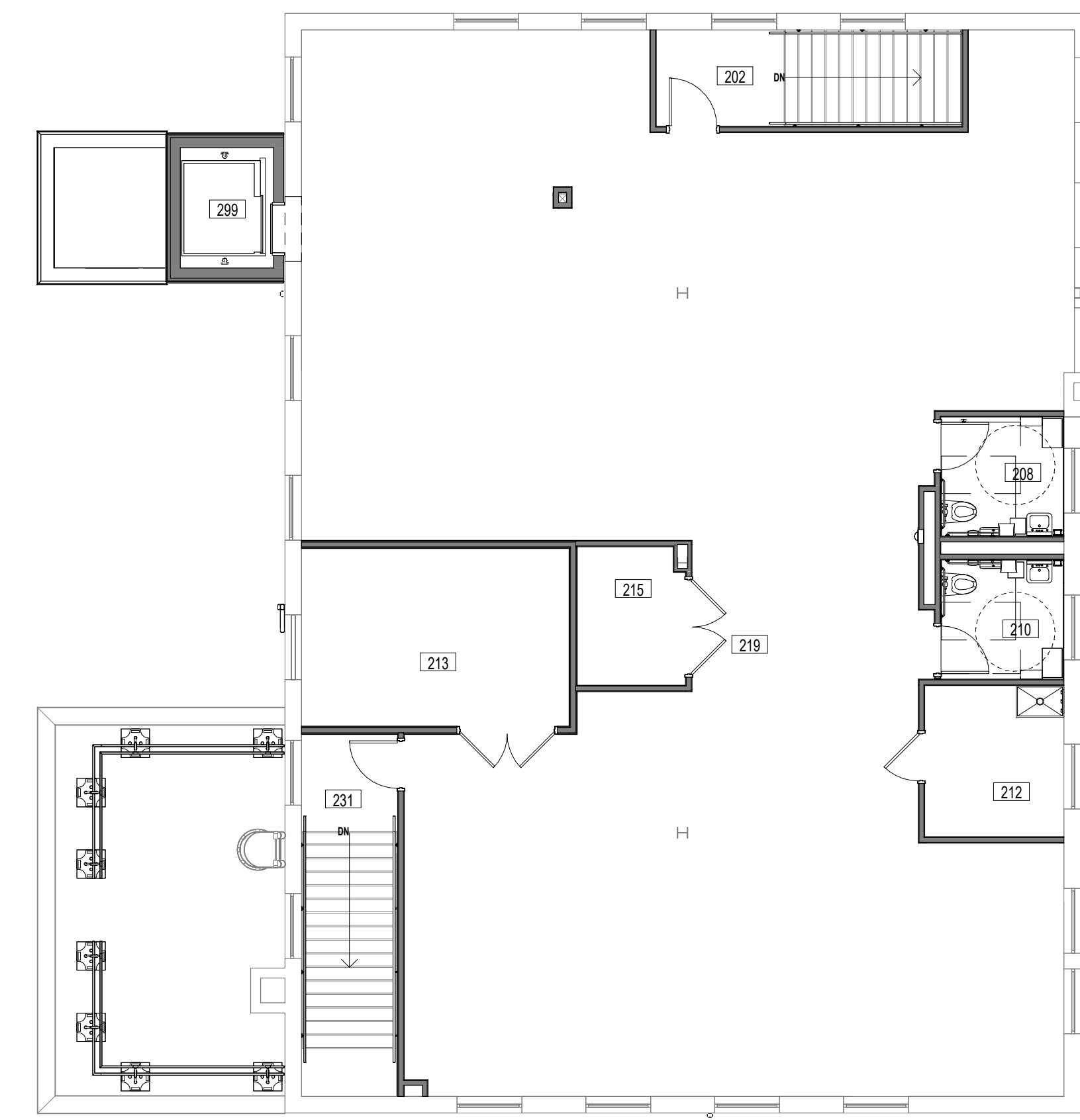
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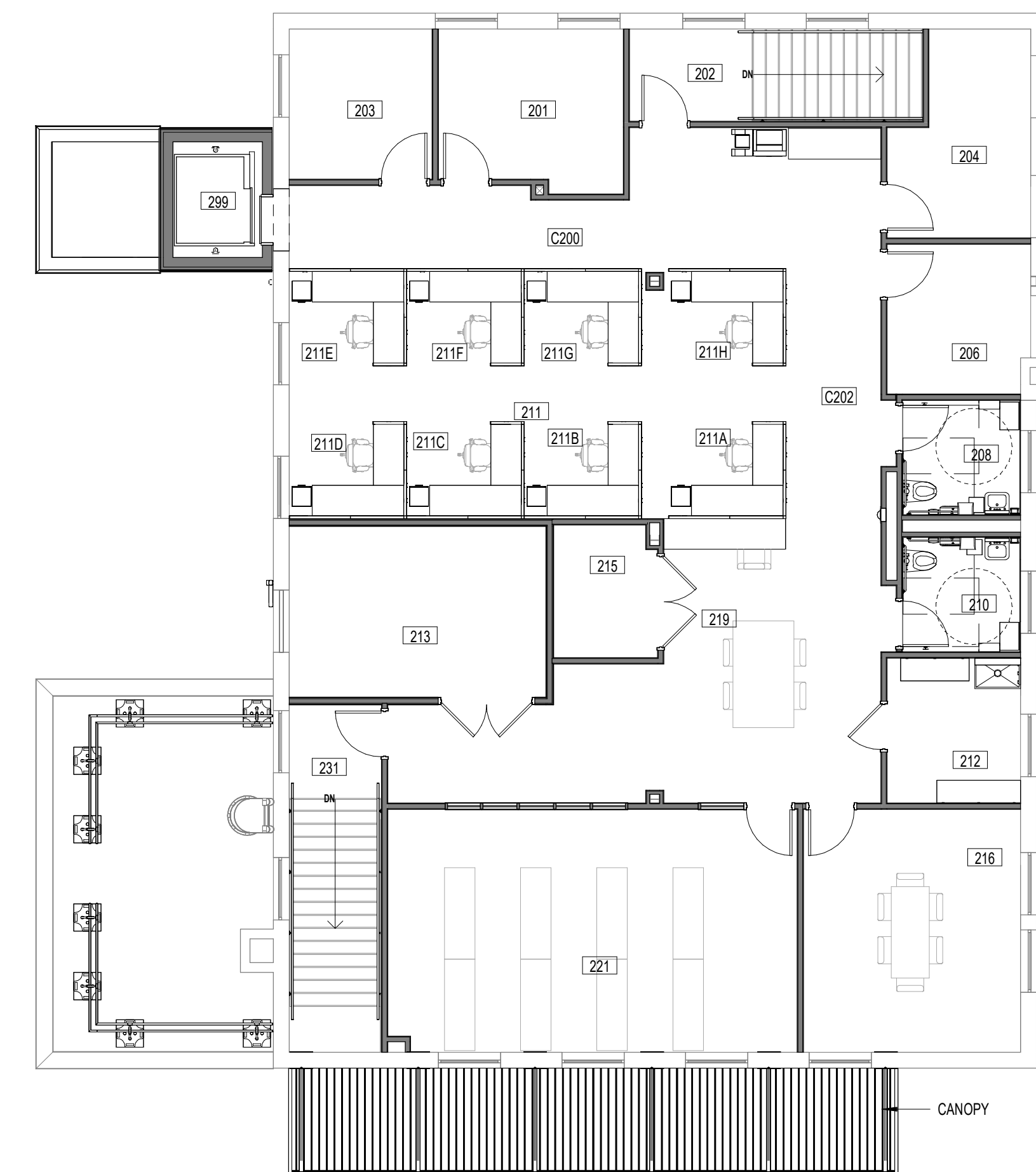
FINISH SCHEDULE - BASE						
Number	Name	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Comments
100	Entry	Walk Off Carpet	Rubber	Paint	GWB	
101	Open Office / Workroom	Polished Concrete	Rubber	Paint	Paint	
101A	Office	Polished Concrete	Rubber	Paint	Paint	
101B	Proj. Mgr.	Polished Concrete	Rubber	Paint	Paint	
101C	Ops. Mgr.	Polished Concrete	Rubber	Paint	Paint	
102	Stair	Walk Off Carpet	Existing	Paint	2x2	
104	Office	Polished Concrete	Rubber	Paint	Paint	
110	Toilet	Porcelain Tile	Porcelain Tile	Paint/ Porcelain Tile	Paint	
112	Toilet	Porcelain Tile	Porcelain Tile	Paint/ Porcelain Tile	Paint	
114	Cust.	Sealed Concrete	Rubber	Paint	Paint	
118	Break	Polished Concrete	Rubber	Paint	Paint	
121	Storage / Staging	Sealed Concrete	Rubber	Paint	Paint	
131	Stair	Walk Off Carpet	Existing	Paint	2x2	
140	Mechanical	Sealed Concrete	Existing	Paint	2x2	
140A	Elec.	Sealed Concrete	Existing	Paint	2x2	
199	Elev Cab	Linoleum Tile	Rubber	Paint	2x2	
199A	Machine Room	Sealed Concrete	Rubber	Paint	2x2	
202	Stair	Existing	Existing	Paint	2x2	
208	Toilet	Porcelain Tile	Porcelain Tile	Paint/ Porcelain Tile	2x2	
210	Toilet	Porcelain Tile	Porcelain Tile	Paint/ Porcelain Tile	2x2	
212	Cust.	Sealed Concrete	Rubber	Paint	2x2	
213	Mech.	Sealed Concrete	Rubber	Paint	2x2	
215	Data	Sealed Concrete	Rubber	Paint	2x2	
219	Flex Space	Existing	Existing	Paint	2x2	
231	Stair	Existing	Existing	Paint	2x2	



1 First Floor Finish Plan - Base + Alternates
1/8" = 1'-0"

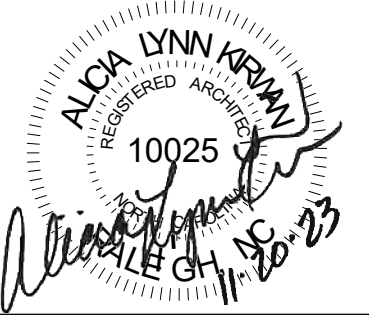


2 Second Floor Finish Plan - Base
1/8" = 1'-0"



3 Second Floor Finish Plan - Base + Alternates
1/8" = 1'-0"

FINISH SCHEDULE - BASE + ALTERNATES						
Number	Name	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Comments
100	Entry	Walk Off Carpet	Rubber	Paint	GWB	
101	Open Office / Workroom	Polished Concrete	Rubber	Paint	Paint	
101A	Office	Polished Concrete	Rubber	Paint	Paint	
101B	Proj. Mgr.	Polished Concrete	Rubber	Paint	Paint	
101C	Ops. Mgr.	Polished Concrete	Rubber	Paint	Paint	
102	Stair	Walk Off Carpet	Existing	Paint	2x2	
104	Office	Polished Concrete	Rubber	Paint	Paint	
110	Toilet	Porcelain Tile	Porcelain Tile	Paint/ Porcelain Tile	Paint	
112	Toilet	Porcelain Tile	Porcelain Tile	Paint/ Porcelain Tile	Paint	
114	Cust.	Sealed Concrete	Rubber	Paint	Paint	
118	Break	Polished Concrete	Rubber	Paint	Paint	
121	Storage / Staging	Sealed Concrete	Rubber	Paint	Paint	
131	Stair	Walk Off Carpet	Existing	Paint	2x2	
140	Mechanical	Sealed Concrete	Existing	Paint	2x2	
140A	Elec.	Sealed Concrete	Existing	Paint	2x2	
199	Elev Cab	Linoleum Tile	Rubber	Paint	2x2	
199A	Machine Room	Sealed Concrete	Rubber	Paint	2x2	
201	Office	Carpet	Rubber	Paint	2x2	
202	Stair	Existing	Existing	Paint	2x2	
203	Office	Carpet	Rubber	Paint	2x2	
204	Office	Carpet	Rubber	Paint	2x2	
206	Office	Carpet	Rubber	Paint	2x2	
208	Toilet	Porcelain Tile	Porcelain Tile	Paint/ Porcelain Tile	2x2	
210	Toilet	Porcelain Tile	Porcelain Tile	Paint/ Porcelain Tile	2x2	
211	Office Suite	Carpet	Rubber	Paint	2x2	
211A	Room	Carpet	Rubber	Paint	2x2	
211B	Room	Carpet	Rubber	Paint	2x2	
211C	Room	Carpet	Rubber	Paint	2x2	
211D	Room	Carpet	Rubber	Paint	2x2	
211E	Room	Carpet	Rubber	Paint	2x2	
211F	Room	Carpet	Rubber	Paint	2x2	
211G	Room	Carpet	Rubber	Paint	2x2	
211H	Room	Carpet	Rubber	Paint	2x2	
212	Cust.	Sealed Concrete	Rubber	Paint	2x2	
213	Mech.	Sealed Concrete	Rubber	Paint	2x2	
215	Data	Sealed Concrete	Rubber	Paint	2x2	
216	Conference	Carpet	Rubber	Paint	2x2	
219	Flex Space	Carpet	Rubber	Paint	2x2	
221	Conference/ Training	Carpet	Rubber	Paint	2x2	
231	Stair	Existing	Existing	Paint	2x2	
C100	Corridor	Polished Concrete	Rubber	Paint	Paint	
C200	Corridor	Carpet	Rubber	Paint	2x2	
C202	Corridor	Carpet	Rubber	Paint	2x2	

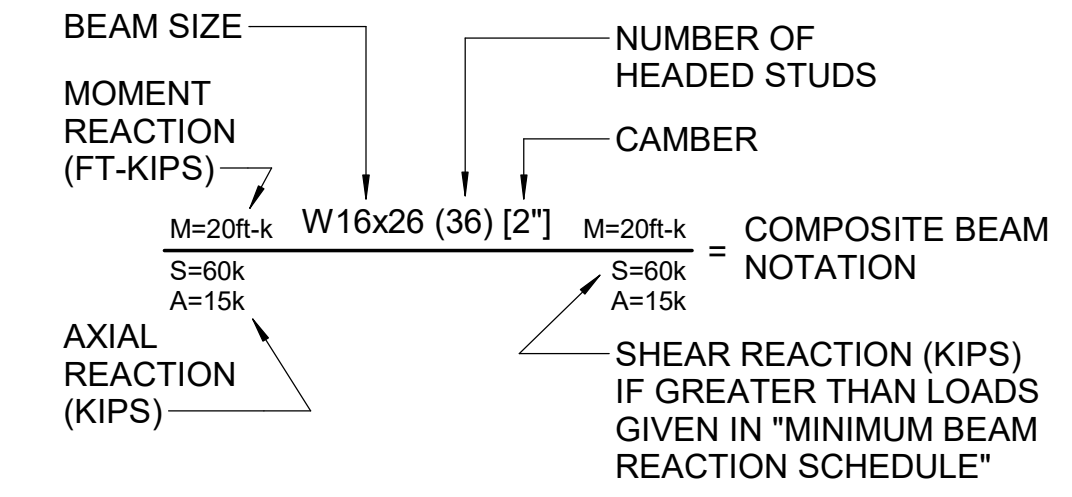


ABBREVIATIONS:

AFF	ABOVE FINISHED FLOOR	HVY	HEAVY
ARCH	ARCHITECT	INT	INTERIOR
BD	BAR DIAMETER	JBE	JOIST BEARING ELEVATION
BF	BRACED FRAME	JT	JOINT
BEJ	BUILDING EXPANSION JOINT	KCJ	KEYED CONSTRUCTION JOINT
BLDG	BUILDING	L	LOW
BM	BEAM	LLH	LONG LEG HORIZONTAL
BOD	BOTTOM OF DECK	LLV	LONG LEG VERTICAL
BOT, B	BOTTOM	LSH	LONG SIDE HORIZONTAL
BRG	BEARING	LSV	LONG SIDE VERTICAL
BTWN	BETWEEN	LTWT	LIGHTWEIGHT
C TO C	CENTER TO CENTER	LWC	LIGHTWEIGHT CONCRETE
CFMF	COLD-FORMED METAL FRAMING	MAS	MASONRY
CJ	CONTROL JOINT	MATL	MATERIAL
CL	CENTERLINE	MAX	MAXIMUM
CLR	CLEAR	MECH	MECHANICAL
CMU	CONCRETE MASONRY UNIT	MF	MOMENT FRAME
COL	COLUMN	MFR	MANUFACTURER
CONC	CONCRETE	MID	MIDDLE
CONN	CONNECTION	MIN	MINIMUM
CONSTR	CONSTRUCTION	MOD	MODIFY
CONT	CONTINUOUS	MOS	MIDDEPTH OF SLAB
COORD	COORDINATE	NOM	NOMINAL
CTR	CENTER	NTS	NOT TO SCALE
CTR'D	CENTERED	OC	ON CENTER
CW	CURTAIN WALL	OPH	OPPOSITE HAND
DBL	DOUBLE	OPNG	OPENING
DC	DIAPHRAGM CHORD	PAF	POWDER ACTUATED FASTENER
DCJ	DOWELED CONSTRUCTION JOINT	PAR	PARALLEL
DIA, Ø	DIAMETER	PC	PIECE
DJ	DOUBLE JOIST	PEMB	PRE-ENGINEERED METAL BUILDING
DWGS	DRAWINGS	PEN	PENETRATE, PENETRATION
EA	EACH	PERP	PERPENDICULAR
EF	EACH FACE	PL	PLATE
EJ	EXPANSION JOINT	R	RADIUS
EL	ELEVATION	REF	REFERENCE, REFER TO
ELEV	ELEVATOR	REIN	REINFORCE, REINFORCED, REINFORCING
EMBED	EMBEDMENT	REQD	REQUIRED
EOD	EDGE OF DECK	REQMTS	REQUIREMENTS
EOS	EDGE OF SLAB	SCHED	SCHEDULE
EQ	EQUAL	SF	STEPPED FOOTING
EW	EACH WAY	SGB	STEPPED GRADE BEAM
EXIST	EXISTING	SIM	SIMILAR
EXP	EXPANSION	SJ	SAWED JOINT
EXT	EXTERIOR	SL	SLOPE
FD	FLOOR DRAIN	SOG	SLAB-ON-GRADE
FDN	FOUNDATION	SPF	SIDEPLATE FRAME
FO	FACE OF	STD	STANDARD
FF EL	FINISHED FLOOR ELEVATION	TBE	TRUSS BEARING ELEVATION
FIN	FINISH	T&B	TOP & BOTTOM
FIN FLR	FINISHED FLOOR	T&G	TONGUE AND GROOVE
FOB	FACE OF BUILDING	THK	THICKNESS
FOC	FACE OF CONCRETE	TOC	TOP OF CONCRETE
FOM	FACE OF MASONRY	TOF	TOP OF FOOTING
FOS	FACE OF SLAB/ STUD	TOM	TOP OF MASONRY
FRMG	FRAMING	TOCP	TOP OF CONCRETE PEDESTAL
FTG	FOOTING	TOS	TOP OF STEEL
FV, ±	FIELD VERIFY	TS	THICKENED SLAB
GALV	GALVANIZED	TYP	TYPICAL
GEN	GENERAL	UON	UNLESS OTHERWISE NOTED
GR BM	GRADE BEAM	VERT	VERTICAL
H	HIGH	W/	WITH
HK	HOOK	WP	WORKING POINT
HORIZ	HORIZONTAL	WSP	WOOD STRUCTURAL PANEL(S)
HSS	HOLLOW STRUCTURAL SECTION	WWR	WELDED WIRE REINFORCING
HT	HEIGHT		

PLAN LEGEND:

TOS = +X'-X"	=	TOP OF STEEL ELEVATION MEASURED FROM REFERENCED FINISHED FIRST FLOOR ELEVATION = 0'-0"
TOM = +X'-X"	=	TOP OF MASONRY ELEVATION MEASURED FROM REFERENCED FINISHED FIRST FLOOR ELEVATION = 0'-0"
BOD = +X'-X"	=	BOTTOM OF DECK ELEVATION MEASURED FROM REFERENCED FINISHED FIRST FLOOR ELEVATION = 0'-0"
RTU-X XXXX#	=	MECHANICAL UNIT SUPPORTED ABOVE FRAMING (WEIGHT IN POUNDS) - COORD W/ MECH DWGS
RTU-X XXXX#	=	MECHANICAL UNIT SUPPORTED ABOVE FRAMING (WEIGHT IN POUNDS) - COORD W/ MECH DWGS
	=	FLOOR / ROOF OPENING
(-X'-X")	=	TOP OF FOOTING ELEVATION MEASURED FROM REFERENCED FINISHED FIRST FLOOR ELEVATION = 0'-0"
<-X'-X">	=	TOP OF EXISTING FOOTING ELEVATION MEASURED FROM REFERENCED FINISHED FIRST FLOOR ELEVATION = 0'-0"
X'-X"	=	TOP OF SLAB ELEVATION MEASURED FROM REFERENCED FINISHED FIRST FLOOR ELEVATION = 0'-0"
	=	CHANGE IN ELEVATION - REF ARCH DWGS FOR DIMENSIONS
SL	=	DIRECTION OF SLOPE
	=	KCJ, CJ, OR SJ LINE ON PLAN
	=	PIPE CROSSING FOOTING
(X) OR (X)	=	PLAN KEY NOTE MARK
(X)	=	COLUMN GRID MARK
	=	CMU SHEARWALL



	=	SECTION/DETAIL NUMBER/LETTER
	=	SECTION/DETAIL MARK
	=	SHEET NUMBER WHERE SECTION/DETAIL MARK IS DRAWN
	=	MOMENT CONNECTION
	=	AXIAL CONNECTION
	=	BEAM BOTTOM FLANGE BRACE
BP-X	=	BEARING PLATE MARK
SW-X	=	SHEAR WALL MARK
BW-X	=	BEARING WALL MARK
CB_x_	=	CONCRETE BEAM MARK
L-X	=	CONCRETE / STEEL LINTEL MARK
GB_x_	=	GRADE BEAM MARK
WFX	=	WALL FOOTING MARK
CFX	=	COLUMN FOOTING MARK
±	=	FIELD VERIFY
S-X	=	SLAB MARK / SPAN DIRECTION

DRAWING INDEX	
SHEET NUMBER	SHEET NAME
S-000	ABBREVIATIONS AND DRAWING SYMBOLS
S-001	GENERAL NOTES
S-002	GENERAL NOTES
S-003	SPECIAL INSPECTIONS NC
S-111	FOUNDATION PLAN
S-112	SLAB PLAN
S-121	SECOND FLOOR FRAMING PLAN
S-122	SECOND FLOOR SLAB PLAN
S-131	ROOF FRAMING PLAN
S-132	ROOF DECK PLAN
S-401	ENLARGED PLANS
S-402	ENLARGED VESTIBULE PLANS - ALTERNATE #4
S-501	TYPICAL DETAILS
S-502	TYPICAL DETAILS
S-503	TYPICAL DETAILS

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project status
CONSTRUCTION DOCUMENTS FOR BID
 owner id
SCO ID# 19-21547-01A
NCSU ID 201920037

seals

#	date	note

New Building For:
Don E. Ellis Building (133) Renovations
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

PROJECT	1368-20
DATE	11/20/2023
DRAWN	JMN
CHECKED	SWR
sheet name	ABBREVIATIONS AND DRAWING SYMBOLS

sheet no
S-000

STRUCTURAL STEEL NOTES:

- STRUCTURAL STEEL MUST BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) 360.
- STRUCTURAL STEEL MUST COMPLY WITH THE FOLLOWING SPECIFICATIONS:
 - STRUCTURAL STEEL SHAPES, PLATES AND BARS UNLESS OTHERWISE NOTED - ASTM A36, Fy = 36 KSI
 - STRUCTURAL STEEL W-SHAPES - ASTM A992, Fy = 50 KSI
 - HOLLOW STRUCTURAL SECTIONS (HSS):
 - SQUARE AND RECTANGULAR - ASTM A500, GRADE C, Fy = 50 KSI OR ASTM 1085
 - ROUND - ASTM A500, GRADE C, Fy = 46 KSI
 - ANCHOR RODS - ASTM F1554, GRADE 36
 - HIGH STRENGTH BOLTS - ASTM A325 (TYPICAL UON)
 - WASHERS - ASTM F436
 - NUTS - ASTM A563
- UNLESS OTHERWISE NOTED, ALL REQUIRED DESIGN STRENGTHS AND REACTIONS INDICATED ARE BASED ON THE "LOADING COMBINATIONS USING STRENGTH DESIGN OR LOAD AND RESISTANCE FACTOR DESIGN" PER SECTION 1605.2 OF THE BUILDING CODE.
- STRUCTURAL STEEL FRAME IS CONSIDERED AS UNRESTRAINED FOR FIRE PROTECTION PURPOSES.
- UNLESS OTHERWISE NOTED, BEAM CONNECTIONS MUST BE AISC "SIMPLE SHEAR CONNECTIONS" WITH ASTM A325 BOLTS DESIGNED FOR ONE HALF THE MAXIMUM TOTAL UNIFORM LOAD FOR LATERALLY SUPPORTED BEAMS GIVEN IN TABLE 3-6 OF THE "STEEL CONSTRUCTION MANUAL."
- HIGH STRENGTH BOLTS MAY BE TIGHTENED TO THE "SNUG TIGHT" CONDITION IN LIEU OF FULL PRETENSIONING.
- REFER TO THE SPECIFICATIONS FOR REQUIREMENTS OF "DELEGATED DESIGN" CONNECTIONS.
- FOR STRUCTURAL STEEL CONNECTIONS INDICATED AS "DELEGATED DESIGN", INCLUDE STRUCTURAL CALCULATIONS SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA RESPONSIBLE FOR THEIR PREPARATION. IN ADDITION, THE PROFESSIONAL ENGINEER RESPONSIBLE FOR CONNECTION DESIGN MUST REVIEW THE SHOP DRAWINGS PRIOR TO SUBMITTAL TO VERIFY THAT THE CONNECTIONS AS DETAILED ON THE SHOP DRAWINGS COMPLY WITH THE CONNECTION DESIGN REQUIREMENTS OF THE FINAL CALCULATIONS. A REVIEW LETTER, SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER RESPONSIBLE FOR CONNECTION DESIGN MUST BE PROVIDED WITH THE SHOP DRAWINGS AND CALCULATION SUBMITTAL STATING THAT THIS REVIEW AND VERIFICATION HAS BEEN COMPLETED.
- PROVIDE ANGLE FRAMING AROUND OPENINGS LARGER THAN 6 INCHES IN ANY DIMENSION (INCLUDING ROOF DRAINS) TO SUPPORT STEEL DECK, TYPICAL UNLESS OTHERWISE NOTED OR DETAILED AS FOLLOWS:

JOIST/BEAM SPACING	ANGLE SIZE
TO 4'-0"	L3x3x1/4

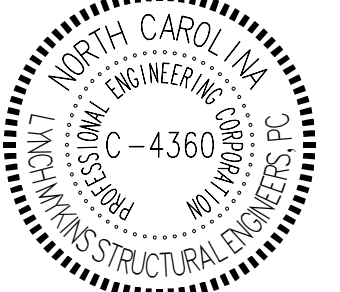
- WELDING MUST BE IN ACCORDANCE WITH AWS D1.1, "STRUCTURAL WELDING CODE - STEEL." WELD ELECTRODES MUST BE E70XX LOW HYDROGEN. UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS FILLET WELDS WITH MINIMUM SIZE REQUIRED BY TABLE J2.4 AISC 360.
- COORDINATE ALL MEMBER LOCATIONS, UNIT WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED.
- STRUCTURAL STEEL SCHEDULED TO RECEIVE SPRAYED-ON FIREPROOFING MUST NOT BE PRIME PAINTED.
- HOT-DIP GALVANIZE AFTER FABRICATION THE FOLLOWING:
 - ANGLES AND PLATES SUPPORTING MASONRY IN EXTERIOR WALLS.
 - LINTELS AND LINTEL ASSEMBLIES SUPPORTING MASONRY IN EXTERIOR WALLS.
 - ALL STEEL EXPOSED TO WEATHER IN THE FINAL CONSTRUCTION.
 - ITEMS IDENTIFIED AS GALVANIZED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS.
- ALL MEMBERS EXPOSED TO VIEW IN THE FINISHED CONSTRUCTION MUST BE CONSIDERED ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS).

STEEL DECK NOTES:

- STEEL DECK MUST BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI), "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" AND THE STEEL DECK INSTITUTE (SDI), "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS."
- STEEL DECK INSTALLATION MUST COMPLY WITH THE FOLLOWING:
 - ROOF DECK: 1 1/2" x 20 GAGE TYPE 'B' GALVANIZED. UNLESS OTHERWISE NOTED, ATTACH DECK TO SUPPORTS WITH 5/8 INCH DIAMETER PUDDLE WELDS IN ALL RIBS WHERE END LAPS OCCUR AND AT 12 INCHES ON CENTER ALONG SUPPORTS WITH A 36/4 PATTERN. FASTEN SIDE LAPS WITH #10 SELF-TAPPING HEX HEAD SCREWS AT 1/4 POINTS BETWEEN SUPPORTS. FASTEN EDGESTOCK DECK PANEL TO STEEL FRAMING WITH 5/8 INCH DIAMETER PUDDLE WELDS AT 6" INCHES ON CENTER WITH 36/7 PATTERN.
- STEEL DECK MUST BE INSTALLED PERPENDICULAR TO SUPPORTS AND MUST HAVE A MINIMUM OF THREE CONTINUOUS SPANS. ENDLAPS MUST ONLY OCCUR AT SUPPORTS.
- WELDING MUST BE IN ACCORDANCE WITH AWS D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL".
- PERMANENT SUSPENDED LOADS MUST NOT BE SUPPORTED BY STEEL ROOF DECK.
- STEEL DECK SCHEDULED TO RECEIVE SPRAYED-ON FIREPROOFING MUST BE GALVANIZED.

POST-INSTALLED ANCHOR NOTES:

- ALL POST INSTALLED ANCHORS INDICATED ON THE DRAWINGS ARE BY HILTI, INC, AND MUST BE CONSIDERED THE BASIS OF DESIGN PRODUCT. WHERE NOT EXPLICITLY INDICATED IN THE DRAWINGS, THE FOLLOWING ANCHORS/ADHESIVES MUST BE USED:
 - ANCHORAGE TO CONCRETE
 - ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
 - HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM SYSTEM (VC 20-U OR VC40U) WITH STEEL THREADED ROD PER ICC ESR-3187.
 - SCREW ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
 - HILTI KWIK HUS EZ SCREW ANCHORS PER ICC ESR-3027.
 - REBAR DOWELING INTO CONCRETE
 - ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
 - HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM SYSTEM (VC 20-U OR VC 40-U) WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3187.
 - ANCHORAGE TO SOLID GROUTED MASONRY
 - ADHESIVE ANCHORS USE:
 - HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM (ICC PENDING).
 - STEEL ANCHOR ELEMENT MUST BE HILTI HAS-E CONTINUOUSLY THREADED ROD.
 - MECHANICAL ANCHORS USE:
 - HILTI KWIK HUS EZ SCREW ANCHORS PER ICC ESR 3056.
 - ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY
 - ADHESIVE ANCHORS USE:
 - HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM PERICCESR-3342.
 - STEEL ANCHOR ELEMENT MUST BE HILTI HAS-E CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR.
 - THE APPROPRIATE SIZE SCREEN TUBE MUST BE USED PER ADHESIVE MANUFACTURER'S RECOMMENDATION.
 - ALTERNATE POST INSTALLED ANCHOR PRODUCTS MAY BE SUBMITTED TO THE ENGINEER FOR REVIEW AND POSSIBLE APPROVAL. ALL SUBSTITUTION REQUESTS MUST BE ACCOMPANIED BY AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE. ALTERNATE PRODUCTS MAY REQUIRE MODIFICATIONS TO ANCHOR DIAMETER, SPACING, AND EMBEDMENT. ALTERNATE PRODUCTS MAY INCLUDE THOSE MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, INC OR DEWALT.
 - INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
 - THE CONTRACTOR MUST ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF ANCHOR INSTALLATION.
 - ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
 - EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR MUST LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY FERROSCAN OR GPR.
 - ALL POST INSTALLED ANCHORS REQUIRE CONTINUOUS SPECIAL INSPECTIONS TO VERIFY INSTALLATION HAS BEEN PERFORMED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. REFERENCE THE STATEMENT AND SCHEDULE OF SPECIAL INSPECTIONS FOR ADDITIONAL INFORMATION.



STATEMENT OF SPECIAL INSPECTION SERVICES

PROJECT: Don E. Ellis Building (133) Renovations
 LOCATION: 1320 Varsity Drive Raleigh, NC
 OWNER'S REPRESENTATIVE: Melissa Diamond
 OWNER'S ADDRESS: NCSU Capital Project Management
 2701 Sullivan Drive, Suite 331
 Raleigh, NC 27695

THIS STATEMENT OF SPECIAL INSPECTIONS IS SUBMITTED AS A CONDITION FOR PERMIT ISSUANCE IN ACCORDANCE WITH THE SPECIAL INSPECTION REQUIREMENTS OF THE 2018 NORTH CAROLINA STATE BUILDING CODE. IT INCLUDES A SCHEDULE OF SPECIAL INSPECTION SERVICES APPLICABLE TO THIS PROJECT, THE NAME OF THE SPECIAL INSPECTOR, THE IDENTITY OF OTHER APPROVED AGENCIES RETAINED FOR CONDUCTING SPECIAL INSPECTIONS, AND THE REQUIRED INSPECTOR QUALIFICATIONS. THIS STATEMENT OF SPECIAL INSPECTIONS WAS PREPARED BY THE FOLLOWING DESIGNERS OF RECORD:

STRUCTURAL	Susan Russell	<i>Susan Russell</i>	2023-11-20
ARCHITECTURAL	Alicia Kirwan		
MECHANICAL	John Quichocho		
OTHER			

THE SPECIAL INSPECTOR MUST KEEP RECORDS OF ALL SPECIAL INSPECTIONS AND TESTS AND MUST FURNISH REPORTS TO THE STATE CONSTRUCTION OFFICE AND THE DESIGNERS OF RECORD. REPORTS MUST INDICATE IF THE WORK INSPECTED OR TESTED WAS OR WAS NOT COMPLETED IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. DISCOVERED DISCREPANCIES MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF SUCH DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION OF THE STATE CONSTRUCTION OFFICE AND THE DESIGNERS OF RECORD. THE SPECIAL INSPECTIONS PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITIES.

INTERIM REPORTS MUST BE SUBMITTED TO THE STATE CONSTRUCTION OFFICE, OWNER, AND THE DESIGNERS OF RECORD.

INTERIM REPORT FREQUENCY: MONTHLY

A FINAL REPORT OF SPECIAL INSPECTIONS DOCUMENTING COMPLETION OF ALL REQUIRED SPECIAL INSPECTIONS, TESTING, AND CORRECTION OF ANY DISCREPANCIES SHOULD BE SUBMITTED PRIOR TO ISSUANCE OF A CERTIFICATE OF USE AND OCCUPANCY.

JOB SITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

OWNER'S AUTHORIZATION ACCEPTED FOR THE SCO BY:

(Signature) (Date) (Signature) (Date)

SCHEDULE OF SPECIAL INSPECTION SERVICES A

THE FOLLOWING COMPRISES THE REQUIRED SCHEDULE OF SPECIAL INSPECTIONS FOR THIS PROJECT. THE CONSTRUCTION DIVISIONS WHICH REQUIRE SPECIAL INSPECTIONS FOR THIS PROJECT ARE AS FOLLOWS.

- STRUCTURAL STEEL & HIGH STRENGTH BOLTING
- WELDING OF STRUCTURAL STEEL
- COLD-FORMED STEEL DECK
- OPEN-WEB STEEL JOISTS & JOIST GIRDERS
- COLD-FORMED STEEL FRAMING
- CONCRETE CONSTRUCTION
- MASONRY CONSTRUCTION
- WOOD CONSTRUCTION
- SOILS
- DRIVEN DEEP FOUNDATIONS
- CAST-IN-PLACE DEEP FOUNDATIONS
- HELICAL PILE FOUNDATIONS
- RAMMED AGGREGATE PIERS & STONE COLUMNS
- SPRAYED FIRE-RESISTANT MATERIAL
- MASTIC & INTUMESCENT FIRE-RESISTANT COATINGS
- EXTERIOR INSULATION & FINISH SYSTEM
- FIRE-RESISTANT PENETRATIONS & JOINTS
- SMOKE CONTROL
- RETAINING WALL & SYSTEMS > 5 FEET
- SPECIAL INSPECTIONS FOR WIND RESISTANCE
- SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE

- A. THE INSPECTION FREQUENCY INDICATED ON THE FOLLOWING INSPECTION TABLES ARE "C" CONTINUOUS, "P" PERIODIC, & "O" RANDOM ON A DAILY BASIS.
- B. LEVEL A IS THE MINIMUM INSPECTION PROGRAM FOR EMPIRICALLY / PRESCRIPTIVELY DESIGNED MASONRY IN RISK CATEGORY I, II OR III STRUCTURES. LEVEL B IS THE MINIMUM INSPECTION PROGRAM FOR EMPIRICALLY / PRESCRIPTIVELY DESIGNED MASONRY IN RISK CATEGORY IV STRUCTURES AND ENGINEERED MASONRY IN RISK CATEGORY I, II OR III STRUCTURES. LEVEL C IS THE MINIMUM INSPECTION PROGRAM FOR ENGINEERED MASONRY IN RISK CATEGORY IV STRUCTURES. ENGINEERED MASONRY STRUCTURES ARE THOSE DESIGNED IN ACCORDANCE WITH PORTIONS OF THE TMS 402-13 / ACI 530-13/ASCE 5-13 OTHER THAN PART 4 OR APPENDIX A.

INSPECTION AGENTS	FIRM NAME & POINT OF CONTACT	ADDRESS / PHONE / E-MAIL
1. SPECIAL INSPECTOR (SI-1)		
2. TESTING AGENCY (TA-1)		
3. TESTING AGENCY (TA-2)		
4. GEOTECHNICAL ENGINEER (GE-1)		
5. OTHER (O-1)		

NOTE: THE INSPECTION AND TESTING AGENT(S) MUST BE ENGAGED BY THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL OF RECORD ACTING AS THE OWNER'S AGENT, AND NOT BY THE CONTRACTOR OR SUBCONTRACTOR WHOSE WORK IS TO BE INSPECTED OR TESTED. ANY CONFLICT OF INTEREST MUST BE DISCLOSED TO THE STATE CONSTRUCTION OFFICE, PRIOR TO COMMENCING WORK.

SEISMIC DESIGN CATEGORY: A B C D
 BASIC WIND SPEED (V_{ASD}): 90-109 MPH 110-119 MPH >120 MPH
 WIND EXPOSURE CATEGORY: B C D

CONCRETE CONSTRUCTION

INSPECTION TASK	TASK REQD	FREQ	REFERENCE FOR CRITERIA	
			STANDARD	NCBC
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT	<input checked="" type="checkbox"/>	P	ACI CH 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. REINFORCING BAR WELDING:			AWS D1.4	
a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706 AND COLLECT REPORTS	<input checked="" type="checkbox"/>	P	ACI 26.6.4	1704.5
b. INSPECT SINGLE-PASS FILLET WELDS ≤ 5/16"	<input checked="" type="checkbox"/>	P	ACI 26.6.4	
c. INSPECT ALL WELDS OTHER THAN SINGLE-PASS FILLET WELDS ≤ 5/16"	<input checked="" type="checkbox"/>	C	ACI 26.6.4	
3. CONCRETE ANCHORS:				
a. INSPECT ANCHORS CAST IN CONCRETE	<input checked="" type="checkbox"/>	P	ACI 17.8.2	
b. INSPECT ADHESIVE ANCHORS INSTALLED IN HARDENED CONCRETE WITH HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS THAT RESIST SUSTAINED TENSION LOADS	<input checked="" type="checkbox"/>	C	ACI 17.8.2.4	
c. INSPECT ADHESIVE ANCHORS INSTALLED IN HARDENED CONCRETE WITH ORIENTATIONS DIFFERENT FROM ITEM 3.B	<input checked="" type="checkbox"/>	P	ACI 17.8.2	
d. INSPECT MECHANICAL ANCHORS INSTALLED IN HARDENED CONCRETE	<input checked="" type="checkbox"/>	P	ACI 17.8.2	
4. COLLECT MIX DESIGNS AND VERIFY THE CORRECT MIX USED DURING INSTALLATION	<input checked="" type="checkbox"/>	P	ACI CH 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
5. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	<input checked="" type="checkbox"/>	C	ASTM C172, ASTM C31, ACI 26.4, 26.12	1908.10
6. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	<input checked="" type="checkbox"/>	C	ACI 26.5	1908.6, 1908.7, 1908.8
7. COLLECT REPORTS OF PRECONSTRUCTION TESTS FOR SHOTCRETE WHEN PRECONSTRUCTION TESTS ARE REQUIRED BY NCBC SECTION 1908.4	<input checked="" type="checkbox"/>	C		1704.5, 1908.5
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	<input checked="" type="checkbox"/>	P	ACI 26.5.3-26.5.5	1908.9
9. INSPECTIONS FOR PRESTRESSED CONCRETE				
a. OBSERVE APPLICATION OF PRESTRESSING FORCE	<input type="checkbox"/>	C	ACI 26.10	
b. INSPECT GROUTING OF BONDED PRESTRESSING TENDONS	<input type="checkbox"/>	C	ACI 26.10	
10. VERIFY CONCRETE STRENGTH PRIOR TO STRESSING OF PT TENDONS AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM PT & MILD BEAMS AND STRUCTURAL SLABS	<input checked="" type="checkbox"/>	P	ACI 26.11.2	
11. INSPECT ERECTION OF PRECAST MEMBERS	<input checked="" type="checkbox"/>	P	ACI 26.8	
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	<input checked="" type="checkbox"/>	P	ACI 26.11.1.2(B)	
13. COLLECT MILL TEST REPORTS FOR ASTM A615 REBAR USED BY SFRS SPECIAL MOMENT FRAMES, SPECIAL STRUCTURAL WALLS OR COUPLING BEAMS	<input checked="" type="checkbox"/>	C	ACI 20.2.2.5	1704.5

A. REFERENCES TO "ACI" IN THIS TABLE ARE TO THE ACI 318-14.

SOILS

INSPECTION TASK	TASK REQD	FREQ	REFERENCE FOR CRITERIA	
			STANDARD	NCBC
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	<input checked="" type="checkbox"/>	P		1705.6
2. VERIFY EXCAVATIONS EXTEND TO PROPER DEPTH AND HAVE REACHED THE CORRECT SOIL MATERIAL	<input checked="" type="checkbox"/>	P		1705.6
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	<input checked="" type="checkbox"/>	P		1705.6
4. VERIFY THAT MATERIALS USED, DENSITIES, LIFT THICKNESS AND PROCEDURES USED DURING PLACEMENT AND COMPACTION OF COMPACTED FILL ARE IN ACCORDANCE WITH THE APPROVED SOILS REPORT AND THE CONSTRUCTION DOCUMENTS	<input checked="" type="checkbox"/>	C		1705.6
5. PRIOR TO PLACEMENT OF COMPACTED FILL, VERIFY THAT THE SUBGRADE HAS BEEN PREPARED IN ACCORDANCE WITH THE APPROVED SOILS REPORT AND THE CONSTRUCTION DOCUMENTS	<input checked="" type="checkbox"/>	P		1705.6

SPRAYED FIRE-RESISTANT MATERIALS_A

INSPECTION TASK	TASK REQD	FREQ	REFERENCE FOR CRITERIA	
			STANDARD	NCBC
1. PRIOR TO THE APPLICATION OF SPRAYED ON FIRE RESISTANT MATERIALS, VERIFY STRUCTURAL MEMBER SURFACES ARE PREPARED IN ACCORDANCE WITH THE APPROVED FIRE-RESISTANCE DESIGN AND THE WRITTEN INSTRUCTIONS OF THE APPROVED MANUFACTURER	<input checked="" type="checkbox"/>	P		1705.14.2
2. DURING THE APPLICATION OF SPRAYED ON FIRE RESISTANT MATERIALS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
a. SUBSTRATE HAS MINIMUM AMBIENT TEMPERATURE BEFORE AND AFTER APPLICATION AS SPECIFIED BY THE FIRE RESISTANCE DESIGN AND APPROVED MANUFACTURER'S WRITTEN INSTRUCTIONS	<input checked="" type="checkbox"/>	P		1705.14.3
b. WORK AREA PROPERLY VENTILATED DURING AND AFTER APPLICATION	<input checked="" type="checkbox"/>	P		1705.14.3
c. THICKNESS OF SPRAYED ON MATERIAL CONFORMS WITH THE APPROVED FIRE RESISTANCE DESIGN AND NCBC MINIMUMS	<input checked="" type="checkbox"/>	P		1705.14.4, 1705.14.4.4, 1705.14.4.5, 1705.14.4.6, 1705.14.4.7, 1705.14.4.8, 1705.14.4.9
d. THE DENSITY OF SPRAYED ON MATERIALS IS NOT LESS THAN THE REQUIREMENTS OF THE APPROVED FIRE-RESISTANCE DESIGN	<input checked="" type="checkbox"/>	P		1705.14.5
e. THE COHESIVE / ADHESIVE BOND STRENGTH IS NOT LESS THAN 150 POUNDS PER SQUARE FOOT	<input checked="" type="checkbox"/>	P		1705.14.6

A. INSPECTIONS MUST BE PERFORMED AFTER THE ROUGH INSTALLATION OF ELECTRICAL, AUTOMATIC SPRINKLER, MECHANICAL AND PLUMBING SYSTEMS, AND SUSPENSION SYSTEMS FOR CEILINGS.

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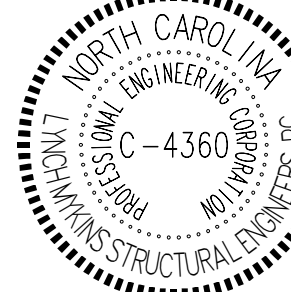
CONSTRUCTION DOCUMENTS FOR BID

owner id

SCO ID# 19-21547-01A

NCSU ID 201920037

seals



revisions

date note

New Building For:
Don E. Ellis Building (133) Renovations
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

PROJECT 1368-20
 DATE 11/20/2023
 DRAWN JMN
 CHECKED SWR

sheet name

SPECIAL INSPECTIONS
 NC

sheet no

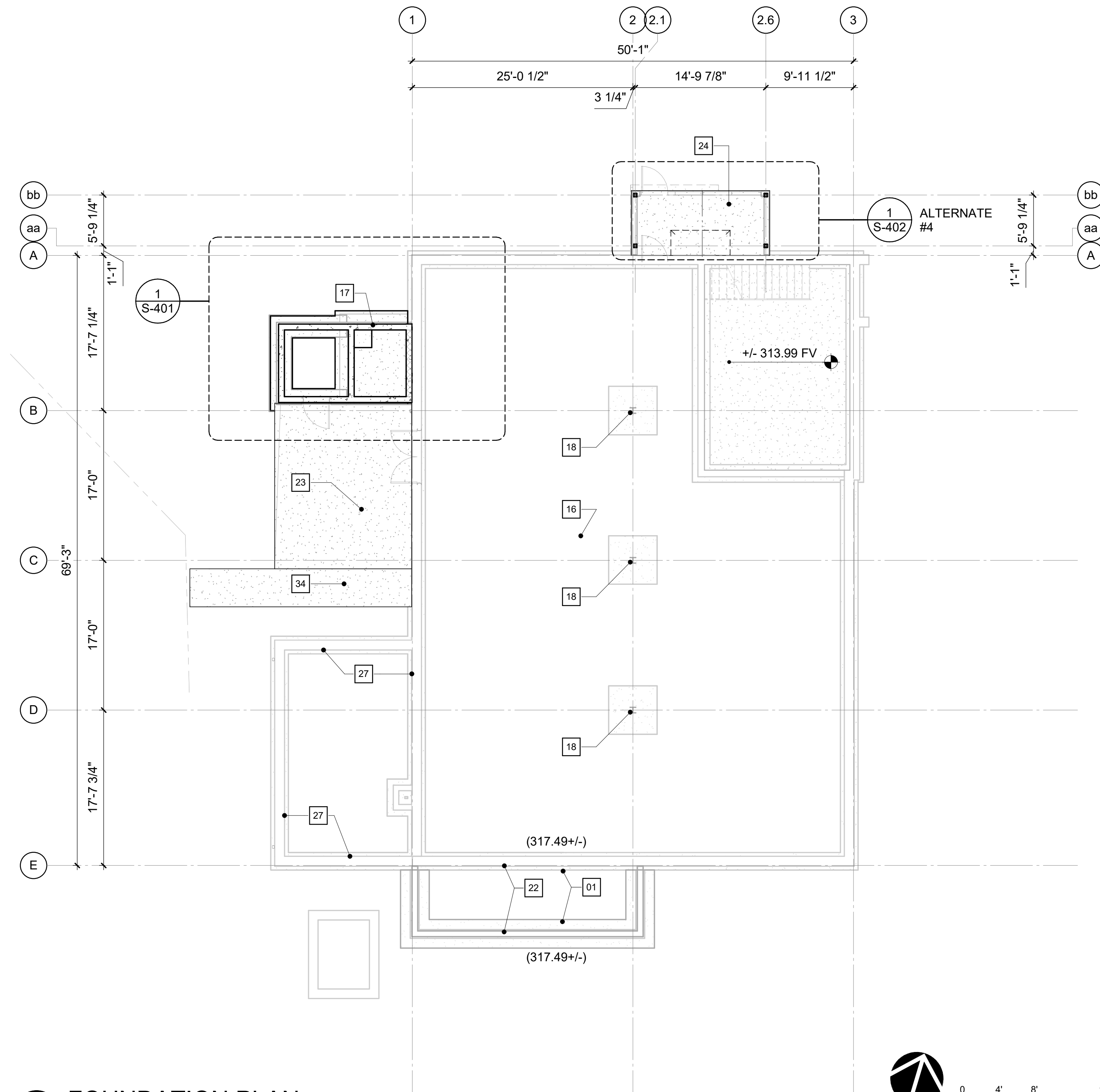
S-003

FOUNDATION / SLAB PLAN NOTES

1. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.
2. UNLESS OTHERWISE NOTED, ALL ELEVATIONS ARE BASED ON A FINISHED FIRST FLOOR REFERENCE OF 322.49'. SEE SITE PLAN FOR ACTUAL FINISHED FLOOR ELEVATIONS. FINISHED FLOOR ELEVATIONS AT EACH LEVEL ARE INDICATED ON SLAB PLANS. REFERENCE ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIALS.
3. NOT ALL UTILITY LOCATIONS ARE SHOWN ON PLAN. THE CONTRACTOR MUST COORDINATE THE LOCATIONS, SIZES, AND INVERTS OF UTILITIES. AT LOCATIONS WHERE UTILITIES PASS BELOW THE TOP OF FOOTING ELEVATION, STEP THE TOP OF FOOTING DOWN ON EACH SIDE PER THE "STEPPED FOOTING DETAIL" AND SLEEVE THE UTILITY THROUGH THE FOUNDATION WALL. THE CONTRACTOR MAY, AT HIS/HER OPTION, SLEEVE THE UTILITY THROUGH THE FOUNDATION PER THE "UTILITY SLEEVE DETAIL".
4. UNLESS OTHERWISE INDICATED, EXTEND WALL FOOTINGS A MINIMUM OF 6 INCHES BEYOND ENDS OF WALLS.
5. NOT ALL SITE WALLS ARE NOT SHOWN ON PLAN. CONTRACTOR MUST COORDINATE CIVIL AND LANDSCAPE DRAWINGS FOR SITE WALL INFORMATION.
6. DIMENSIONS SHOWN ON FOUNDATION PLAN ARE TO COLUMN GRIDLINES AND OUTSIDE FACE OF FOUNDATION WALLS, UNLESS OTHERWISE NOTED.

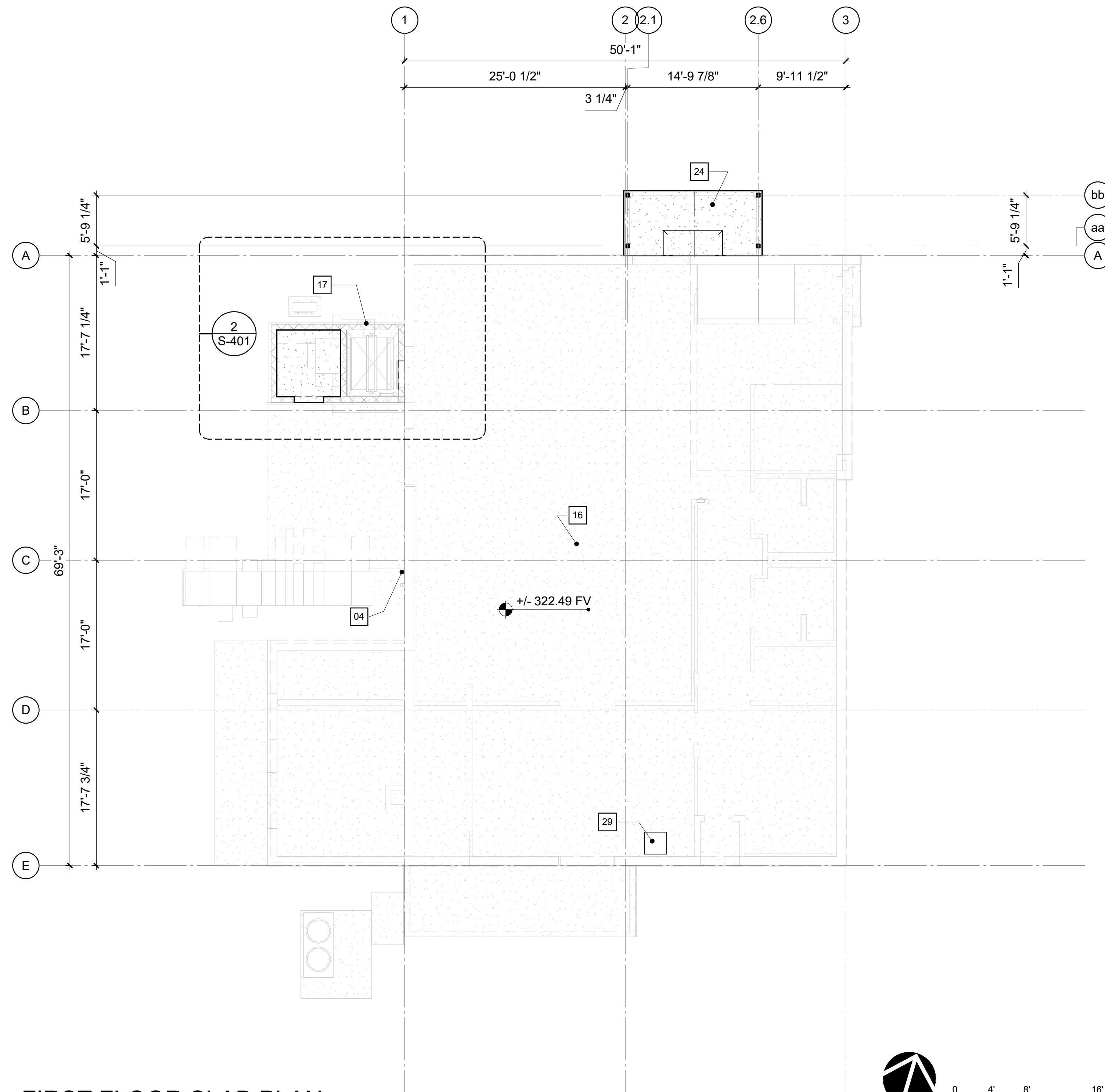
Key Notes

- 01 EXISTING FOUNDATION WALL FOOTINGS
- 16 EXISTING STRUCTURE TO REMAIN
- 17 NEW ELEVATOR STRUCTURE - REF ENLARGED PLANS
- 18 REPAIR AND PROTECTION AT EXISTING COLUMN - REF TYPICAL DETAIL
- 22 EXISTING 13 1/2" +/- CONCRETE FOUNDATION WALL - FIELD VERIFY
- 23 EXTERIOR SLAB ON GRADE - REF LANDSCAPE AND CIVIL DRAWINGS
- 24 NEW VESTIBULE STRUCTURE - REF ENLARGED PLANS
- 27 CORE DRILL NEW OPENING THROUGH FOUNDATION WALL - REFER MECHANICAL DRAWINGS
- 34 EXTERIOR EQUIPMENT PAD - REFER TO DETAIL 4/S501.



1 FOUNDATION PLAN
1/8" = 1'-0"

1/20/2023 8:19:58 AM



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

SLAB PLAN NOTES

1. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.
2. UNLESS OTHERWISE NOTED, ALL ELEVATIONS ARE BASED ON A FINISHED FIRST FLOOR REFERENCE OF 322.49'. SEE SITE PLAN FOR ACTUAL FINISHED FLOOR ELEVATIONS. FINISHED FLOOR ELEVATIONS AT EACH LEVEL ARE INDICATED ON SLAB PLANS. REFERENCE ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIALS.
3. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT LIMITS OF SLAB DEPRESSIONS AND OMITTED SLABS.
4. FLOOR SINKS AND DRAINS ARE NOT SHOWN ON PLAN. REFERENCE PME DRAWINGS FOR LOCATIONS.
5. REFERENCE CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE SLABS AND PAVING.
6. SLAB-ON-GRADE JOINTS MUST BE SAWED JOINTS OR KEYED CONSTRUCTION JOINTS, UNLESS OTHERWISE NOTED. CONTRACTOR MUST COORDINATE ALL SLAB JOINTS WITH JOINTS IN BONDED FLOOR FINISHES. REFERENCE ARCHITECTURAL DRAWINGS FOR FLOOR FINISH JOINT LOCATIONS.
7. PLACE (1) #4 x 3'-0" IN MIDDLE OF SLAB AT RE-ENTRANT CORNERS WHERE A SLAB JOINT DOES NOT OCCUR.

Key Notes

- 04 5" CONCRETE (AIR ENTRAINED) SLAB ON GRADE REINFORCED WITH 6x6-W2.9xW2.9 WITH TURN-DOWN EDGES. PROVIDE 15MIL CLASS A VAPOR BARRIER AND 4" COMPACTED WASHED STONEBASE.
- 16 EXISTING STRUCTURE TO REMAIN
- 17 NEW ELEVATOR STRUCTURE - REF ENLARGED PLANS
- 24 NEW VESTIBULE STRUCTURE - REF ENLARGED PLANS
- 29 REMOVE EXISTING 5"+/- SLAB ON GRADE FOR INSTALLATION OF NEW UTILITES. REF TYPICAL DETAIL S501 FOR REPLACEMENT.

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CONSTRUCTION
DOCUMENTS FOR BID
owner id
SCO ID# 19-21547-01A
NCSU ID 201920037

seals

revisions

#	date	note

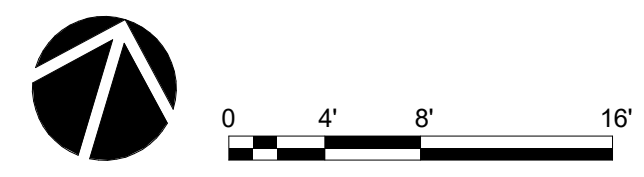
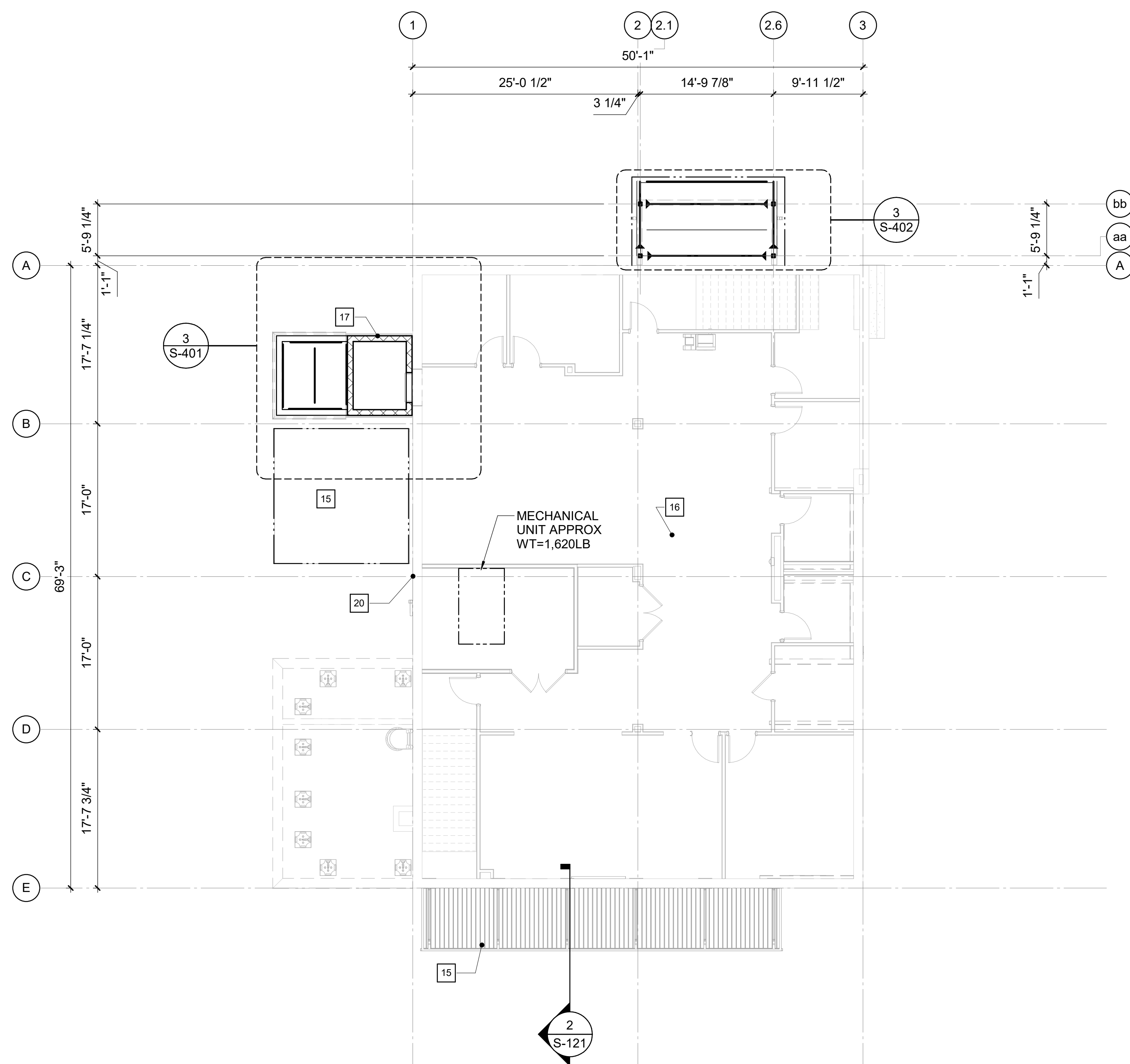
New Building For:
Don E. Ellis Building (133)
Renovations
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DATE 1/20/2023
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sheet name
SLAB PLAN

sheet no
S-112

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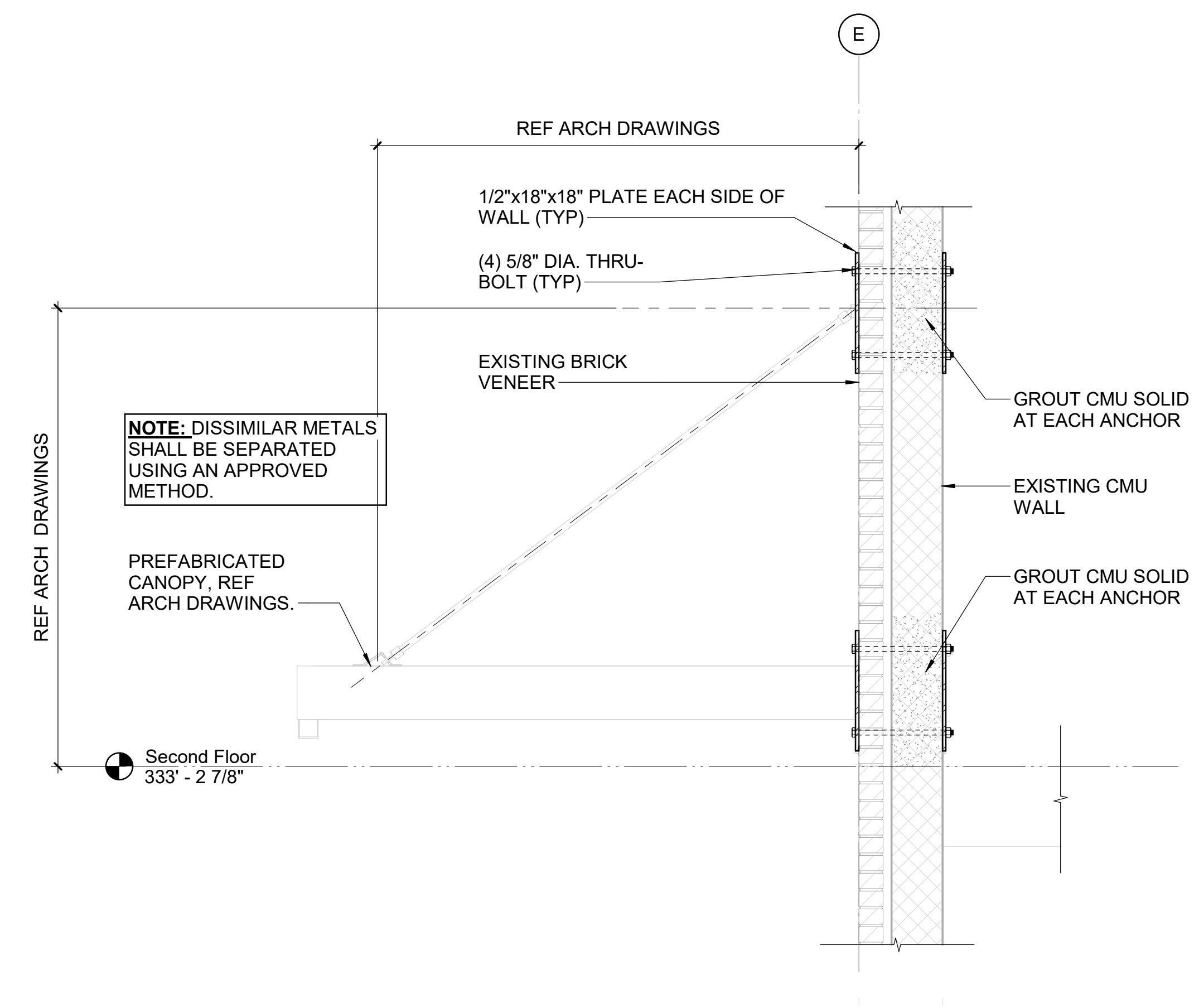


FRAMING PLAN NOTES

1. REFERENCE FOUNDATION PLAN AND ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
2. TOP OF FINISHED FLOOR ELEVATION SHALL BE AS NOTED ON SLAB PLANS.
3. STEEL ROOF FRAMING SUPPORTING 1 1/2" STEEL ROOF DECK MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 5'-0" ON-CENTER).
4. AT STEEL ROOF FRAMING, TOP OF STEEL ELEVATIONS ARE SHOWN ON PLAN. INTERMEDIATE ELEVATIONS SHALL BE STRAIGHT LINES BETWEEN GIVEN ELEVATIONS. INTERPOLATE AS REQUIRED FOR INTERMEDIATE BEARING ELEVATIONS, UNLESS OTHERWISE NOTED.
5. COORDINATE AND VERIFY ALL MEMBER LOCATIONS, DIMENSIONS, WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR ALL MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED. INCLUDE THIS INFORMATION ON THE JOIST AND STRUCTURAL STEEL SHOP DRAWINGS.

Key Notes

- | | |
|----|--|
| 15 | PREMANUFACTURED CANOPY - REFER TO ARCHITECTURAL AND CIVIL DRAWINGS |
| 16 | EXISTING STRUCTURE TO REMAIN |
| 17 | NEW ELEVATOR STRUCTURE - REF ENLARGED PLANS |
| 20 | OPENING IN EXISTING MASONRY WALL - REF TYPICAL DETAIL AND COORD WITH MECHANICAL DRAWINGS |



Key Notes

- 15 PREMANUFACTURED CANOPY - REFER TO ARCHITECTURAL AND CIVIL DRAWINGS
- 16 EXISTING STRUCTURE TO REMAIN
- 17 NEW ELEVATOR STRUCTURE - REF ENLARGED PLANS

project status

CONSTRUCTION DOCUMENTS FOR BID

owner id

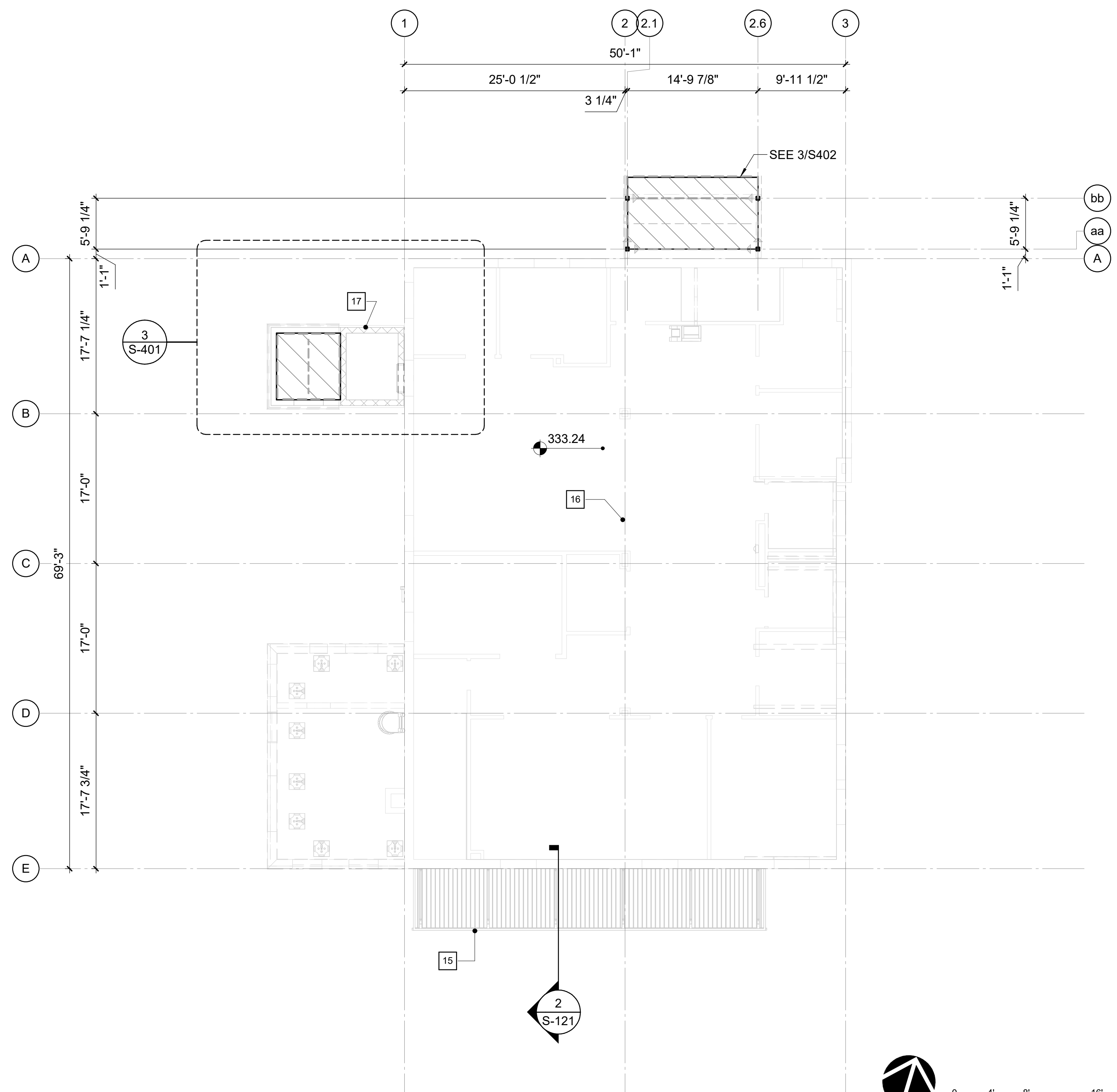
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NCSU ID 201920037**

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

1/20/2023 8:20:06 AM

New Building For:
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PROJECT	1368-20
DATE	1/20/2023
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CHECKED	SWR

sheet name
SECOND FLOOR SLAB PLAN

sheet no

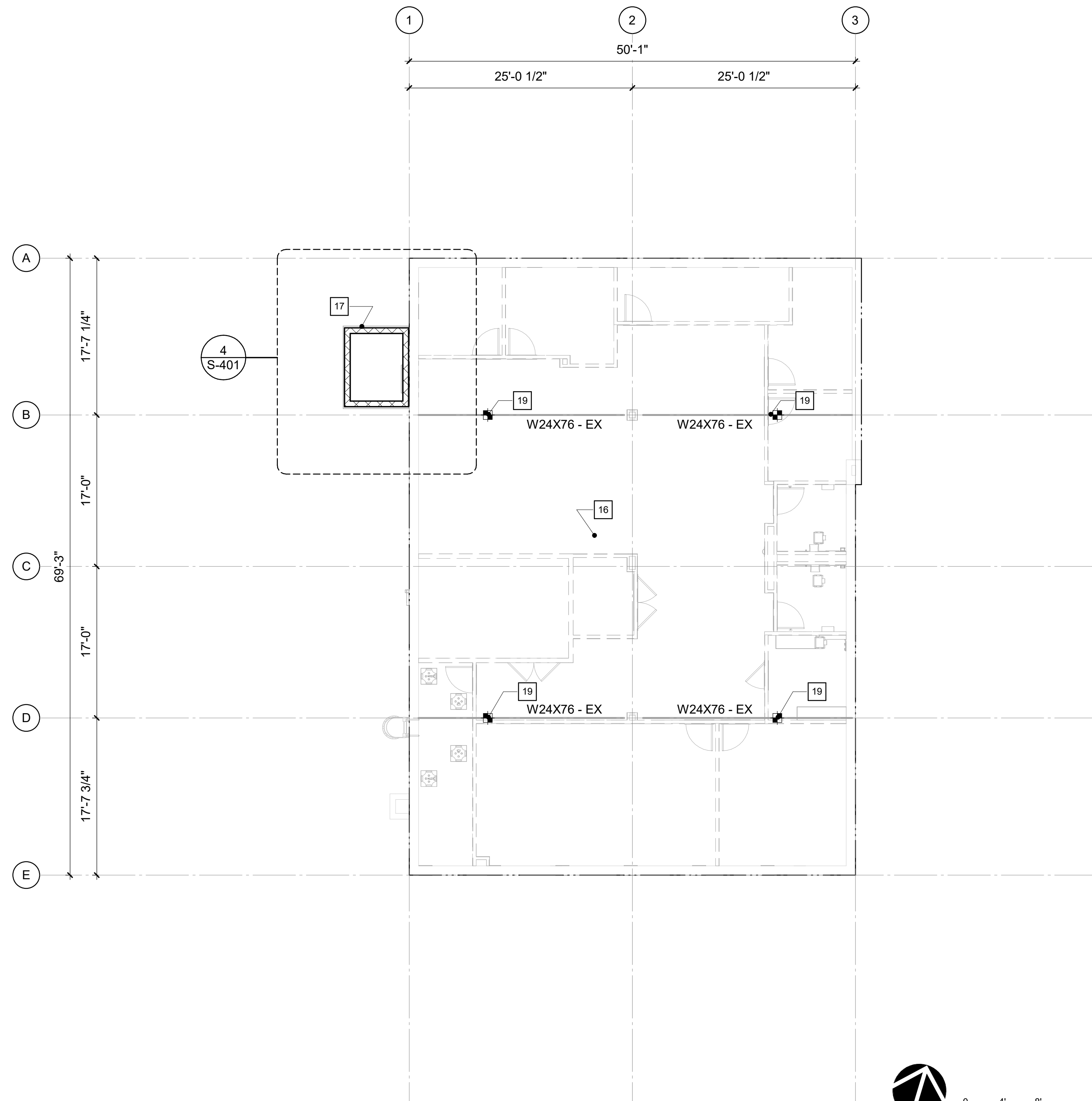
S-122

ROOF FRAMING PLAN NOTES

1. REFER TO FOUNDATION PLAN AND ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
2. TOP OF EXISTING FINISHED FLOOR ELEVATION: SECOND FLOOR ELEVATION = 333.24'(+/-); TOP OF EXISTING ROOF DECK ELEVATION = 344.74'(+/-).
3. FLOOR JOISTS MUST BE EQUALLY SPACED NOT TO EXCEED 4'-0" OC TO SUPPORT DECK.
4. TOP OF ROOF STEEL ELEVATION ARE SHOWN ON PLAN. INTERMEDIATE ELEVATIONS. INTERPOLATE AS REQUIRED FOR INTERMEDIATE BEARING ELEVATIONS, UNLESS OTHERWISE NOTED.
5. ROOF FRAMING MUST BE EQUALLY SPACED NOT TO EXCEED 5'-0" OC TO SUPPORT STEEL ROOF DECK
6. COORDINATE AND VERIFY ALL MEMBER LOCATIONS, DIMENSIONS, WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR ALL MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED. INCLUDE THIS INFORMATION ON THE JOIST AND STRUCTURAL STEEL SHOP DRAWINGS.

Key Notes

- 16 EXISTING STRUCTURE TO REMAIN
- 17 NEW ELEVATOR STRUCTURE - REF ENLARGED PLANS
- 19 FALL PROTECTION ANCHORAGE - REF TYPICAL DETAIL 4/S-503



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

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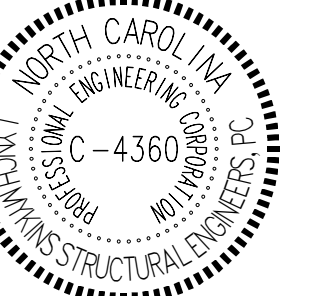
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DOCUMENTS FOR BID

owner id

SCO ID# 19-21547-01A

NCSU ID 201920037

seals



revisions

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Renovations
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PROJECT 1368-20
DATE 1/20/2023
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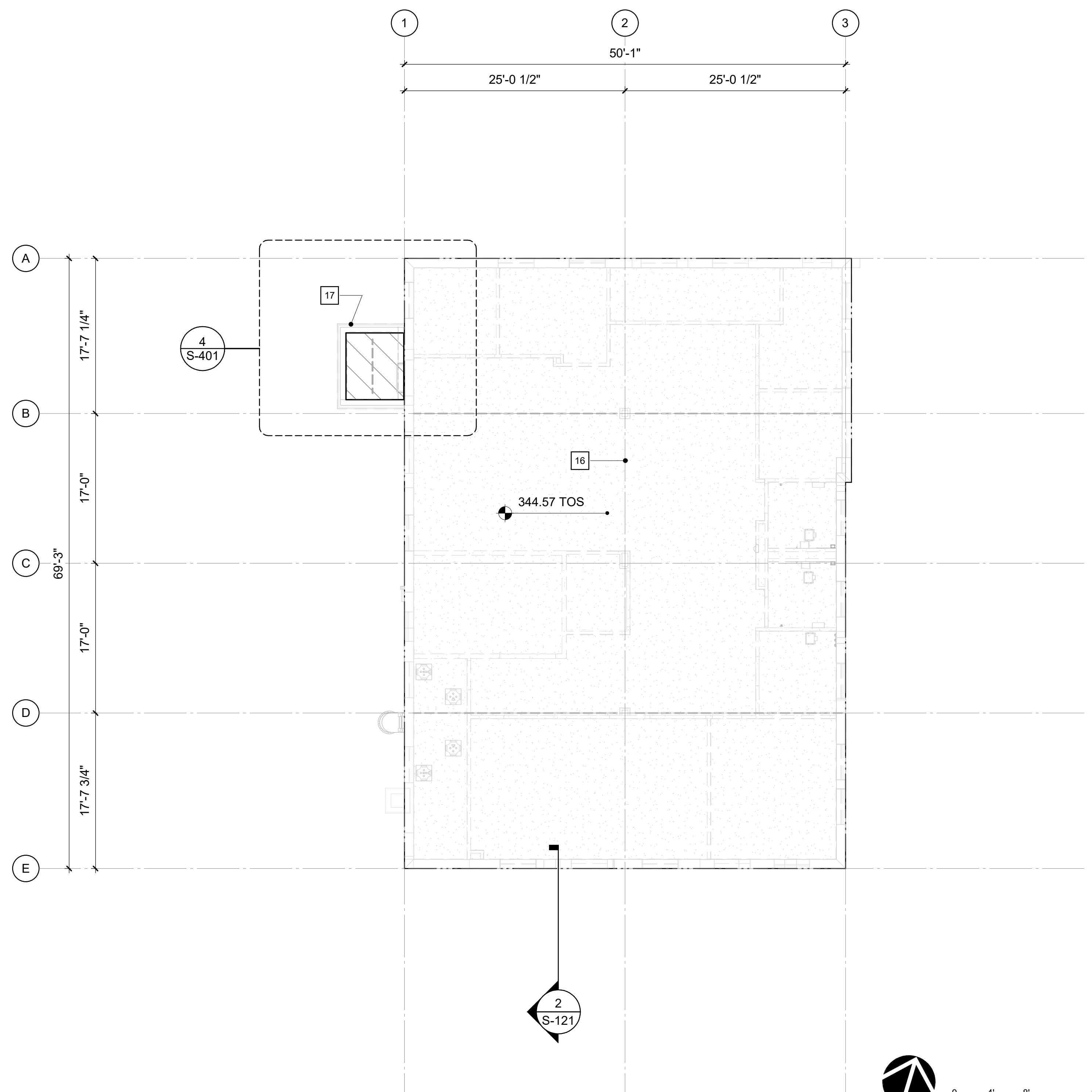
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ROOF FRAMING PLAN

sheet no

S-131

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1 ROOF DECK PLAN
1/8" = 1'-0"

Key Notes

- 16 EXISTING STRUCTURE TO REMAIN
- 17 NEW ELEVATOR STRUCTURE - REF ENLARGED PLANS

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CONSTRUCTION
DOCUMENTS FOR BID
owner id
SCO ID# 19-21547-01A
NCSU ID 201920037



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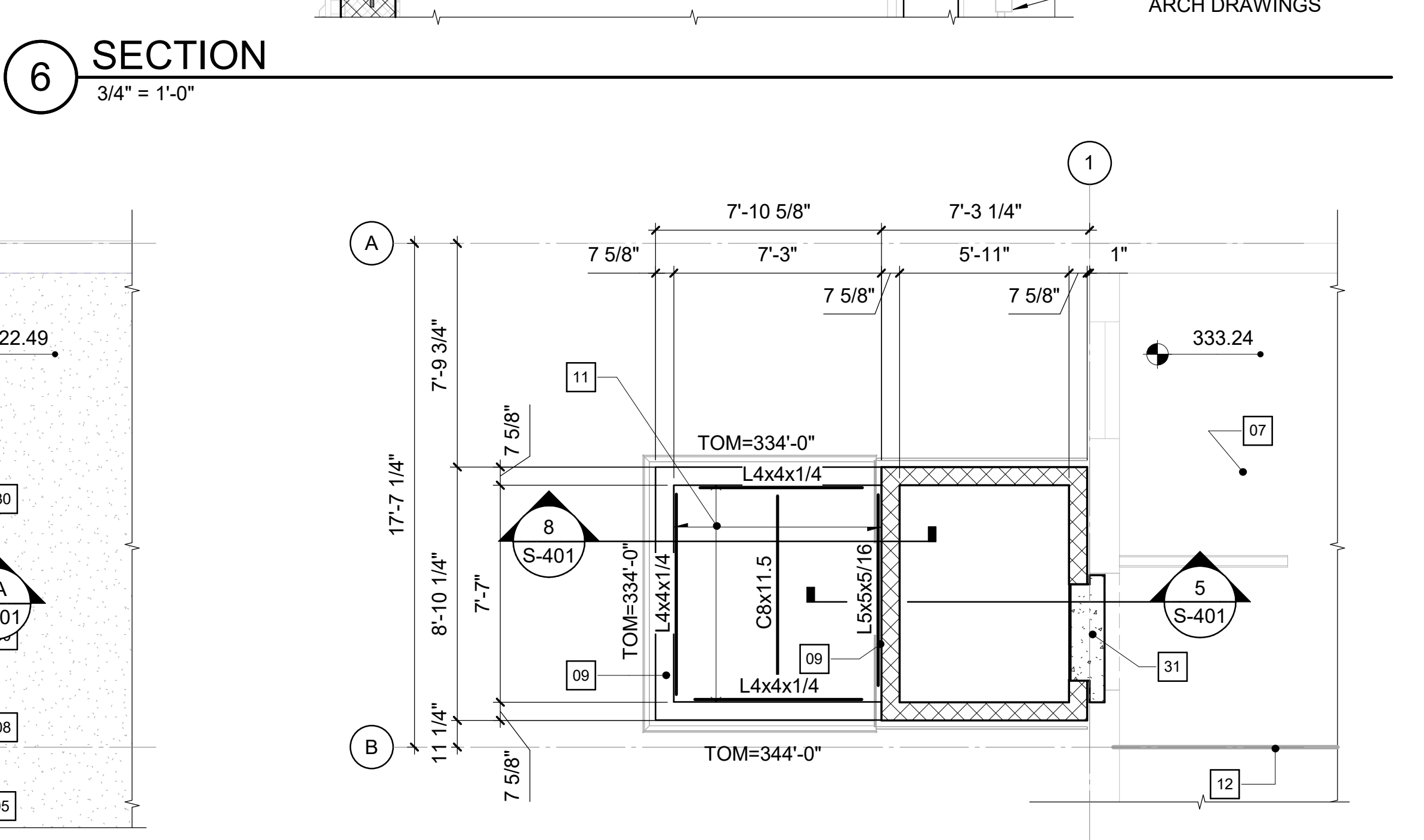
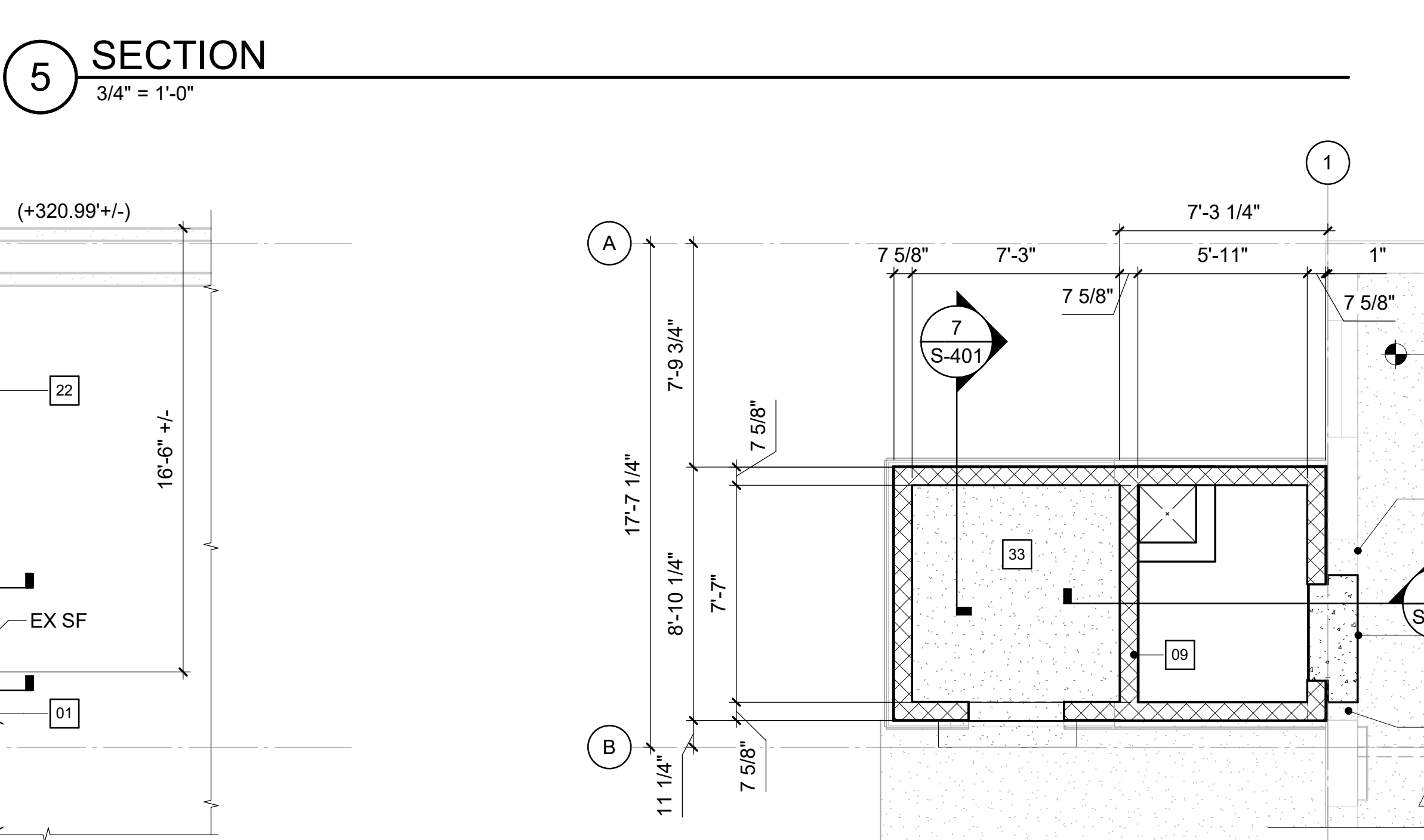
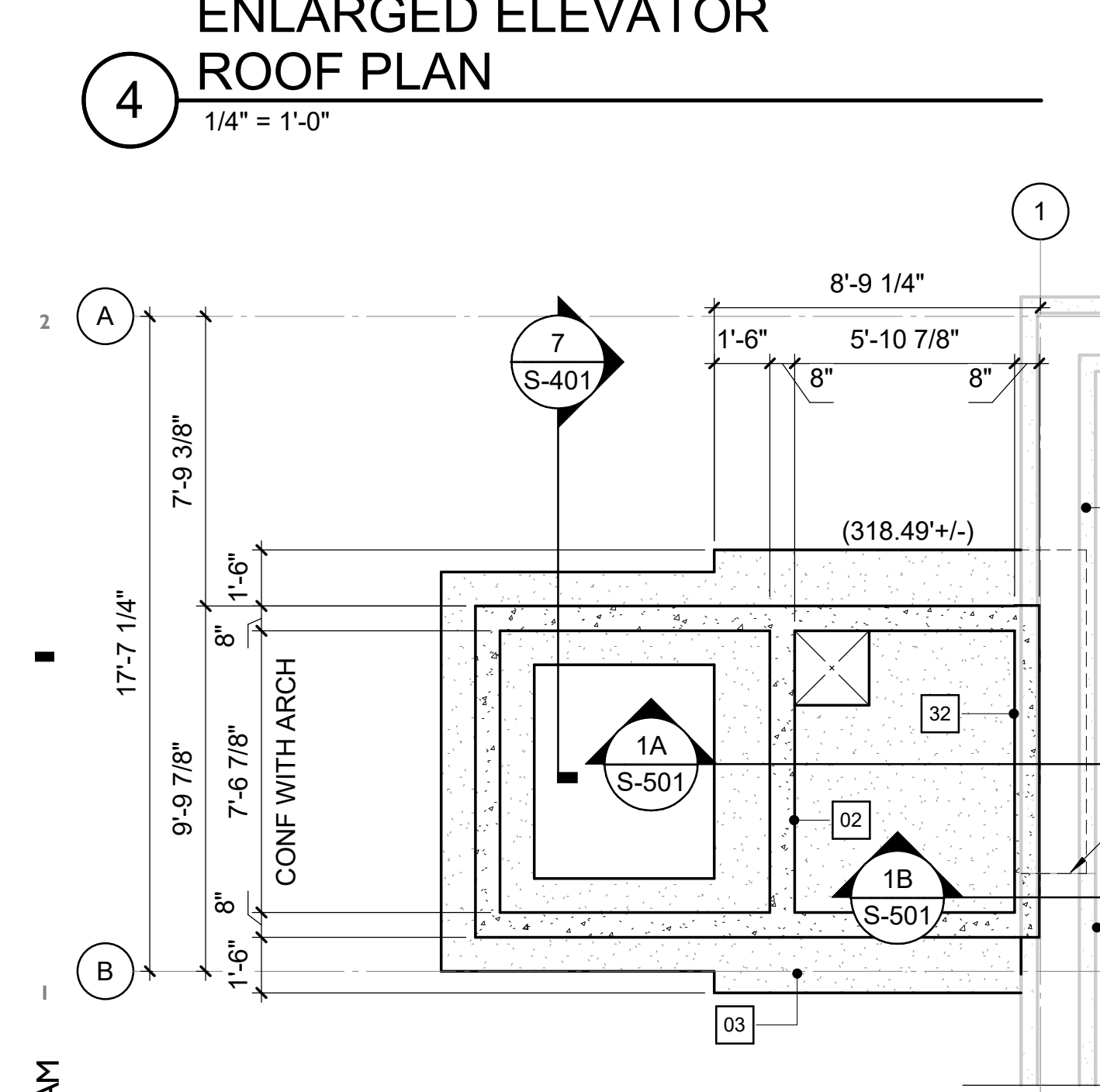
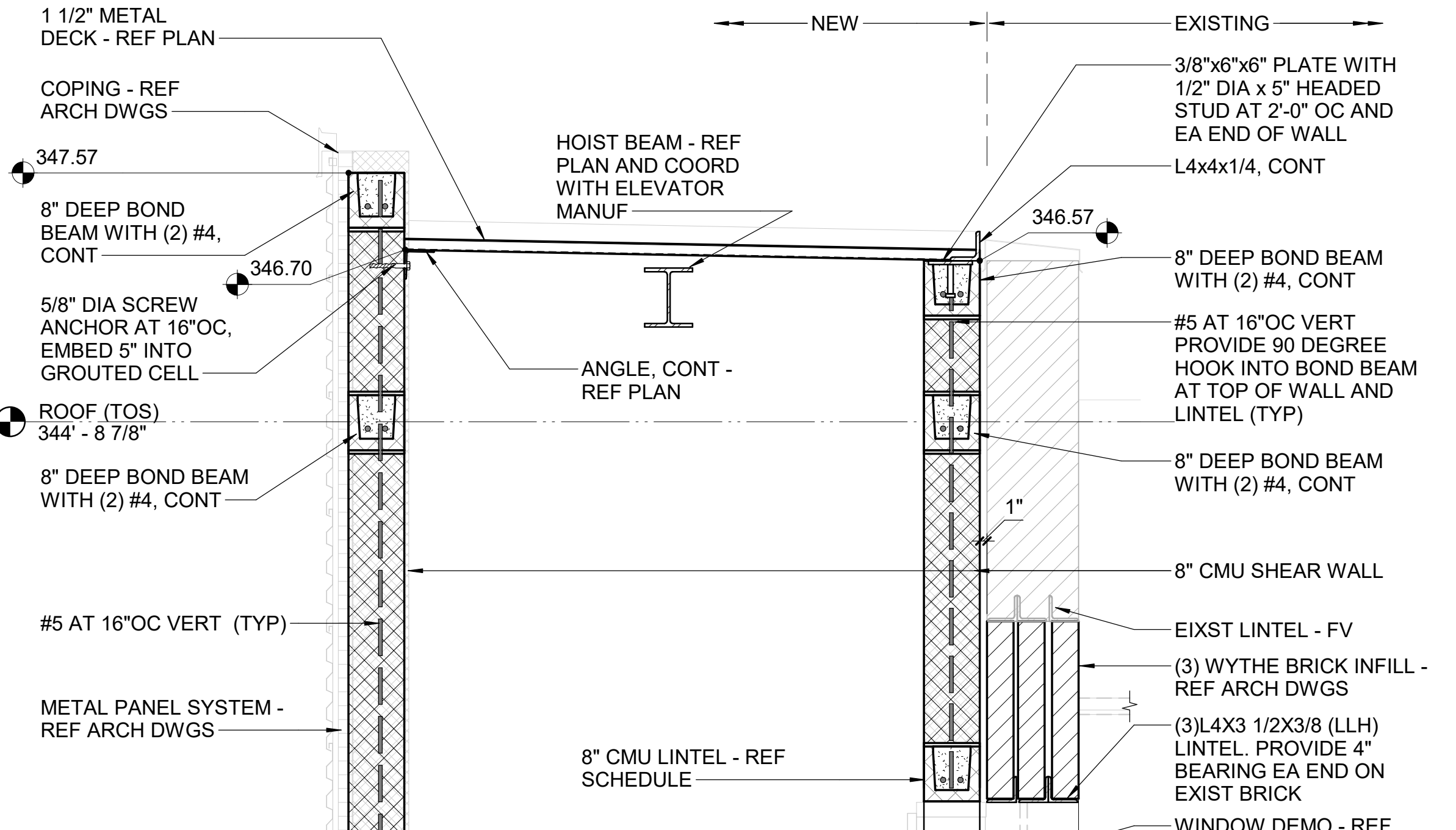
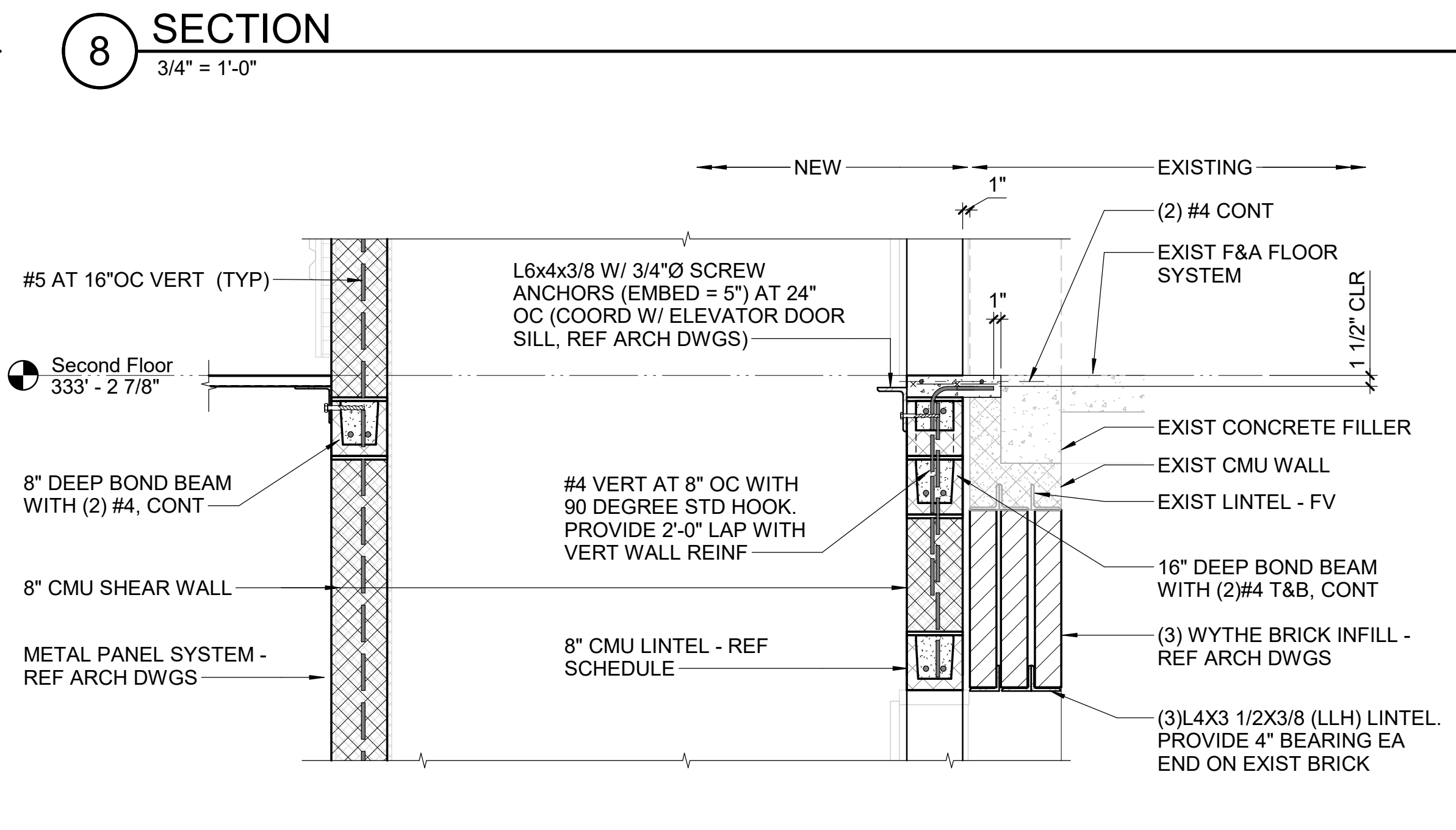
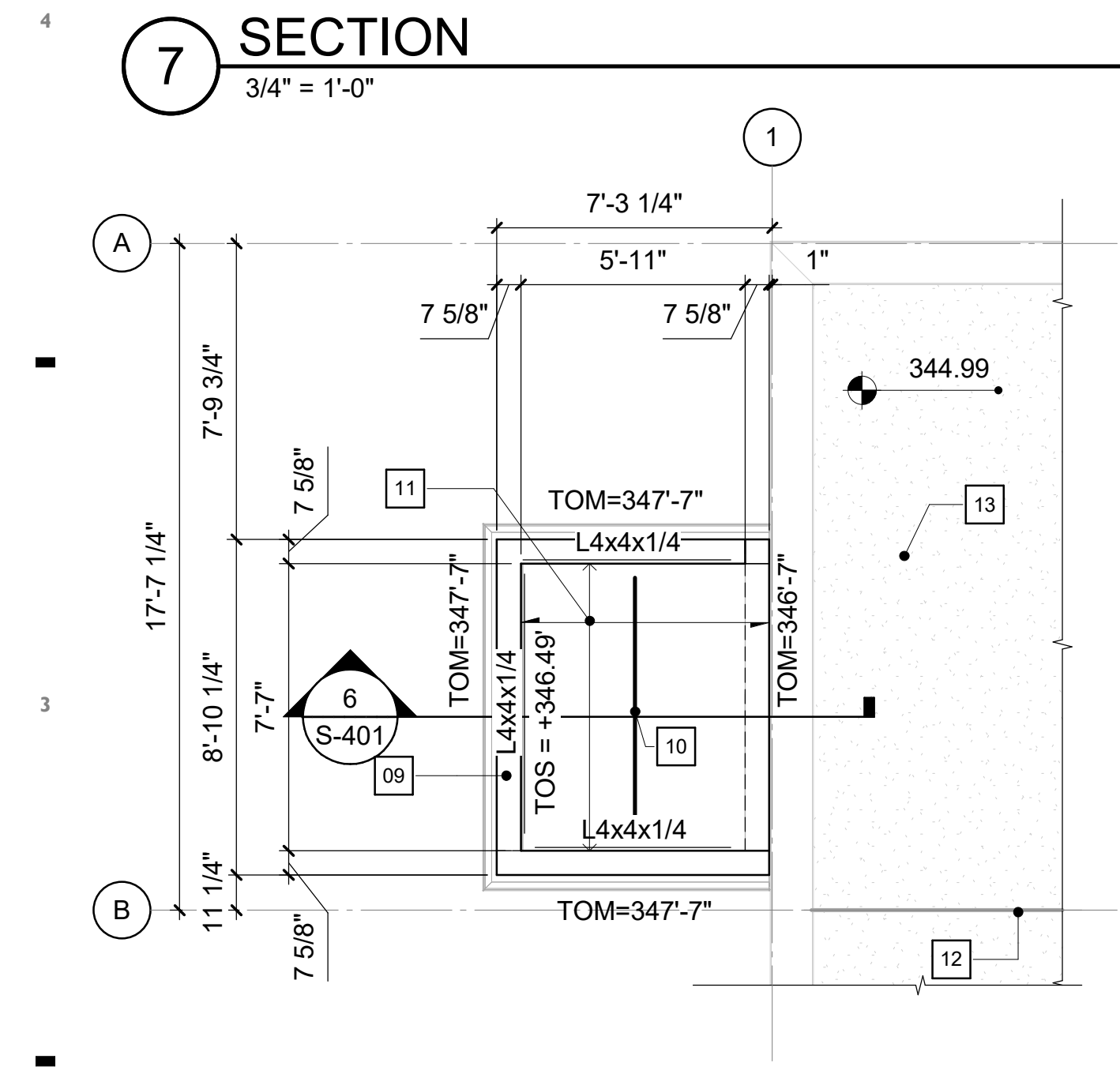
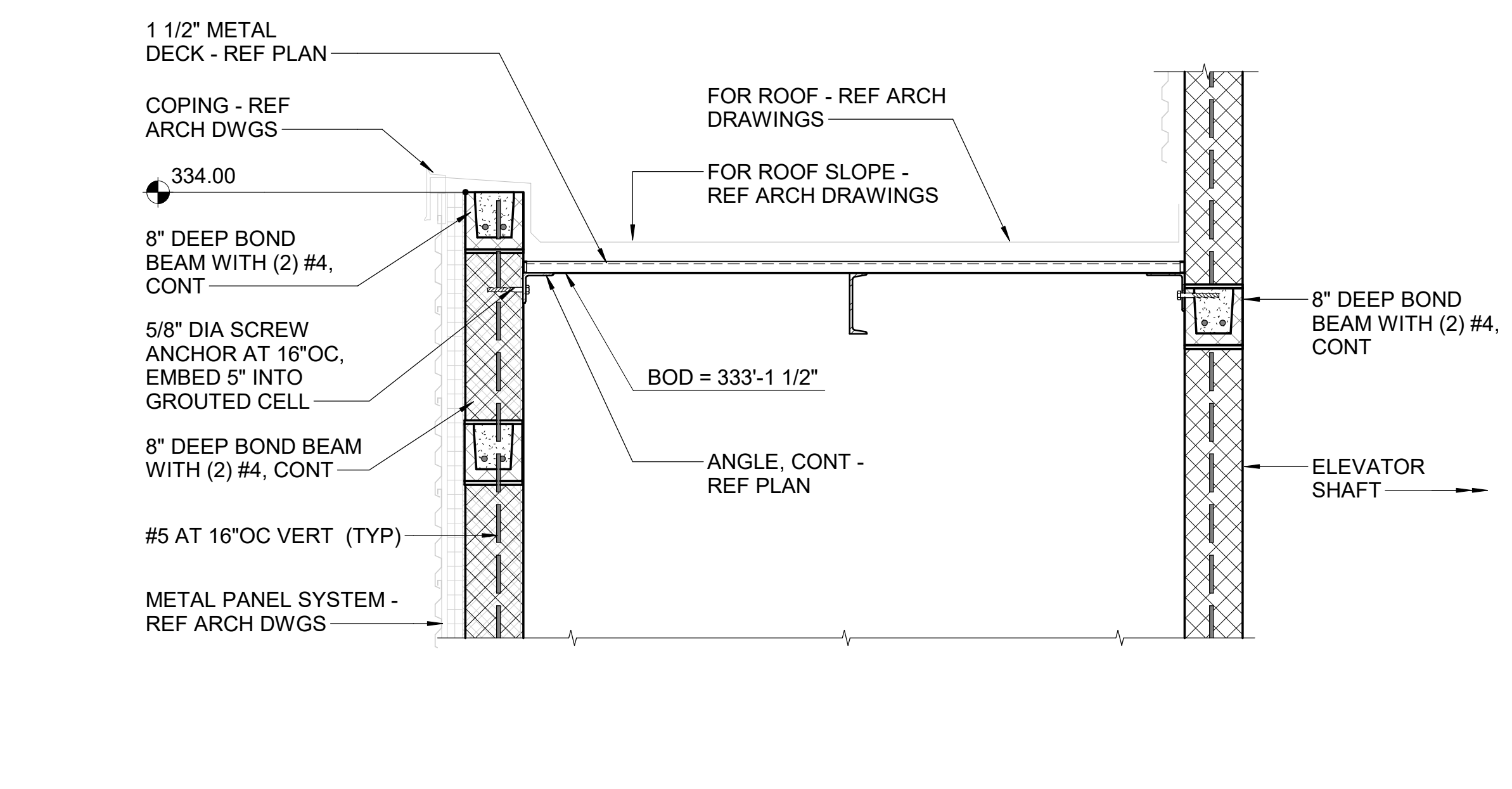
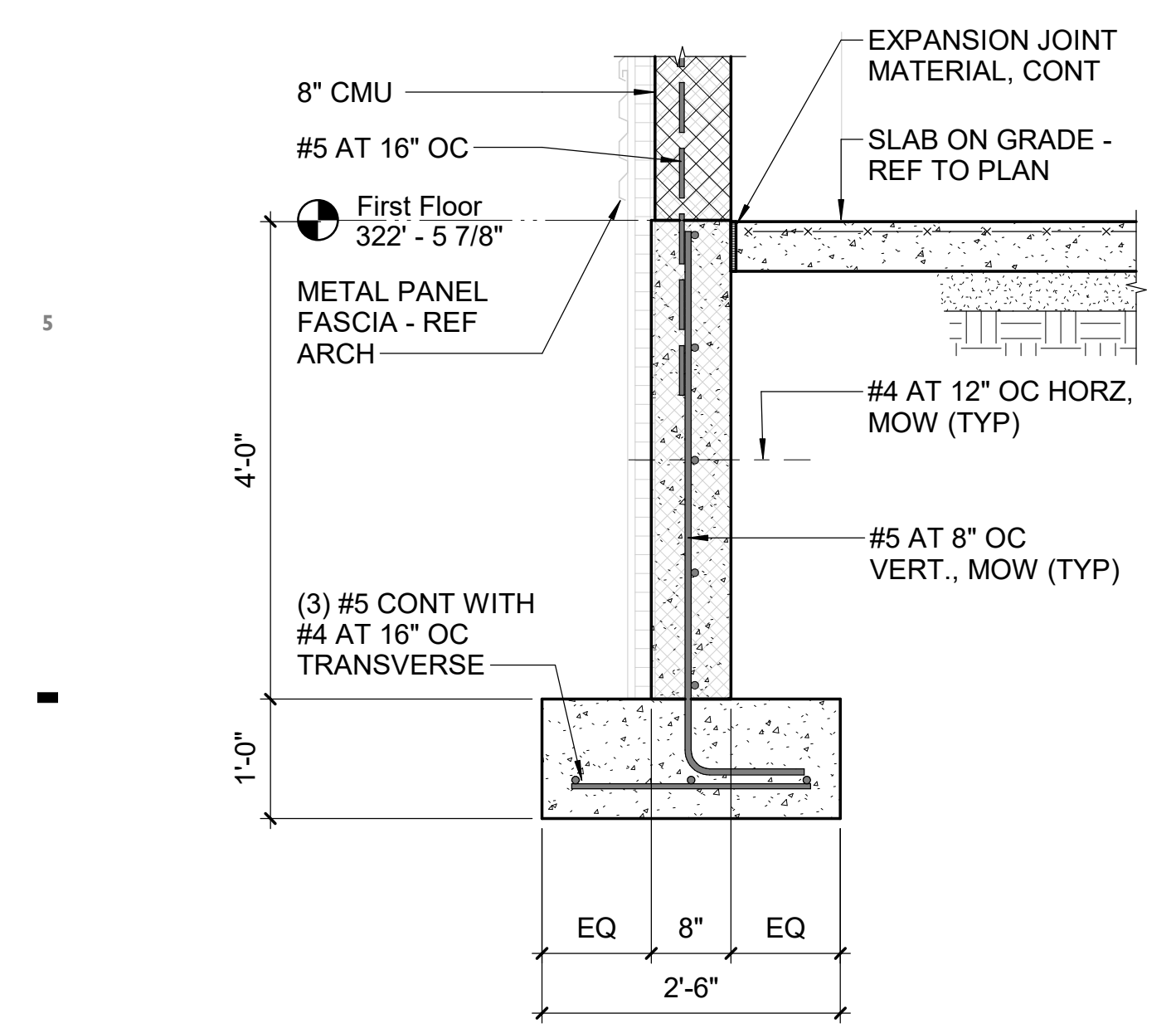
New Building For:
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Renovations
1320 Varsity Drive, Raleigh, NC 27606
North Carolina State University

PROJECT 1368-20
DATE 1/20/2023
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CHECKED SWR
sheet name
ROOF DECK PLAN

sheet no
S-132

Key Notes

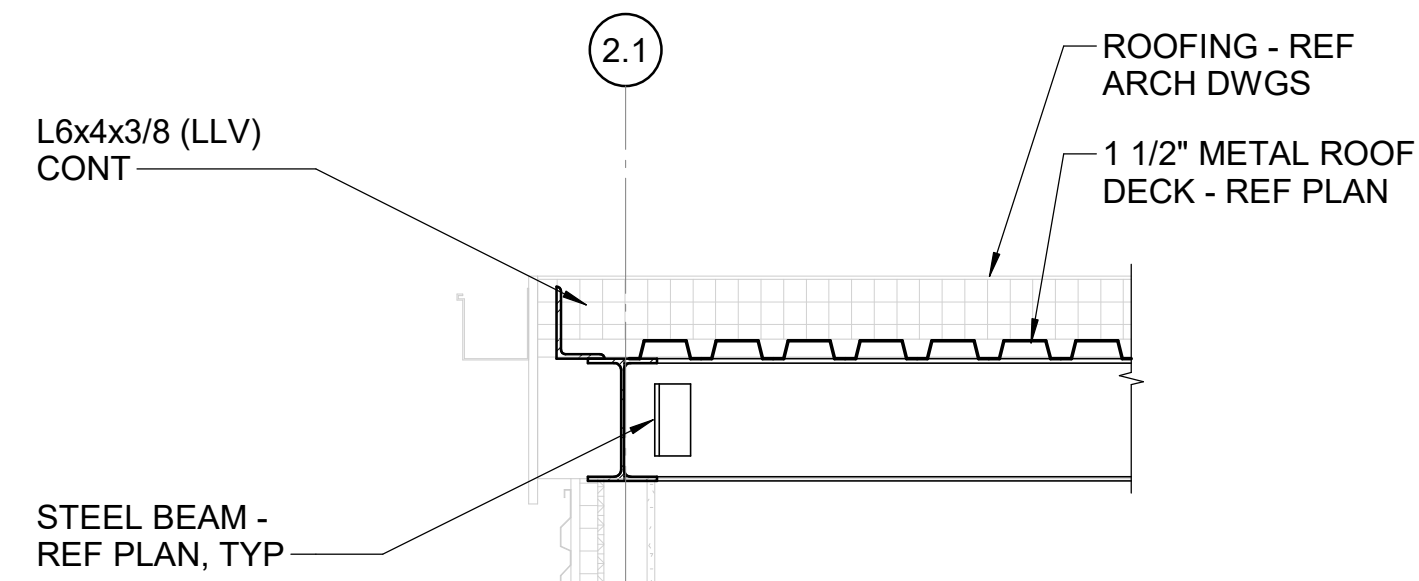
- 01 EXISTING FOUNDATION WALL FOOTINGS
- 02 8" CONCRETE PIT FOUNDATION WALL
- 03 12" CONCRETE PIT SLAB
- 05 EXISTING 5" CONCRETE SLAB ON GRADE
- 07 EXISTING F AND A FLOOR SYSTEM
- 08 BRICK INFILL
- 09 8" CMU WALL
- 10 W8x28 HOIST BEAM
- 11 1 1/2" ROOF DECK
- 12 EXISTING STEEL BEAM
- 13 EXISTING CHANNELCRETE ROOF SYSTEM
- 22 EXISTING 13 1/2" CONCRETE FOUNDATION WALL - FIELD VERIFY
- 30 8" SLAB ON GRADE WITH 15 MIL CLASS A VAPOR BARRIER - REF DETAIL FOR REINFORCING
- 31 6" ELEVATED CONCRETE SLAB - REF DETAIL FOR REINFORCING
- 32 EXISTING FOOTING - EXCAVATION AND RESUPPORT TO BE INSTALLED IN 3-0" MAX INCREMENTS ALONG LENGTH OF FOOTING. REF DETAIL FOR ADDITIONAL INFORMATION
- 33 5" CONCRETE SLAB ON GRADE REINFORCED WITH 6x6-W2.9xW2.9. PROVIDE 15MIL CLASS A VAPOR BARRIER AND 4" COMPACTED WASHED STONEBASE.



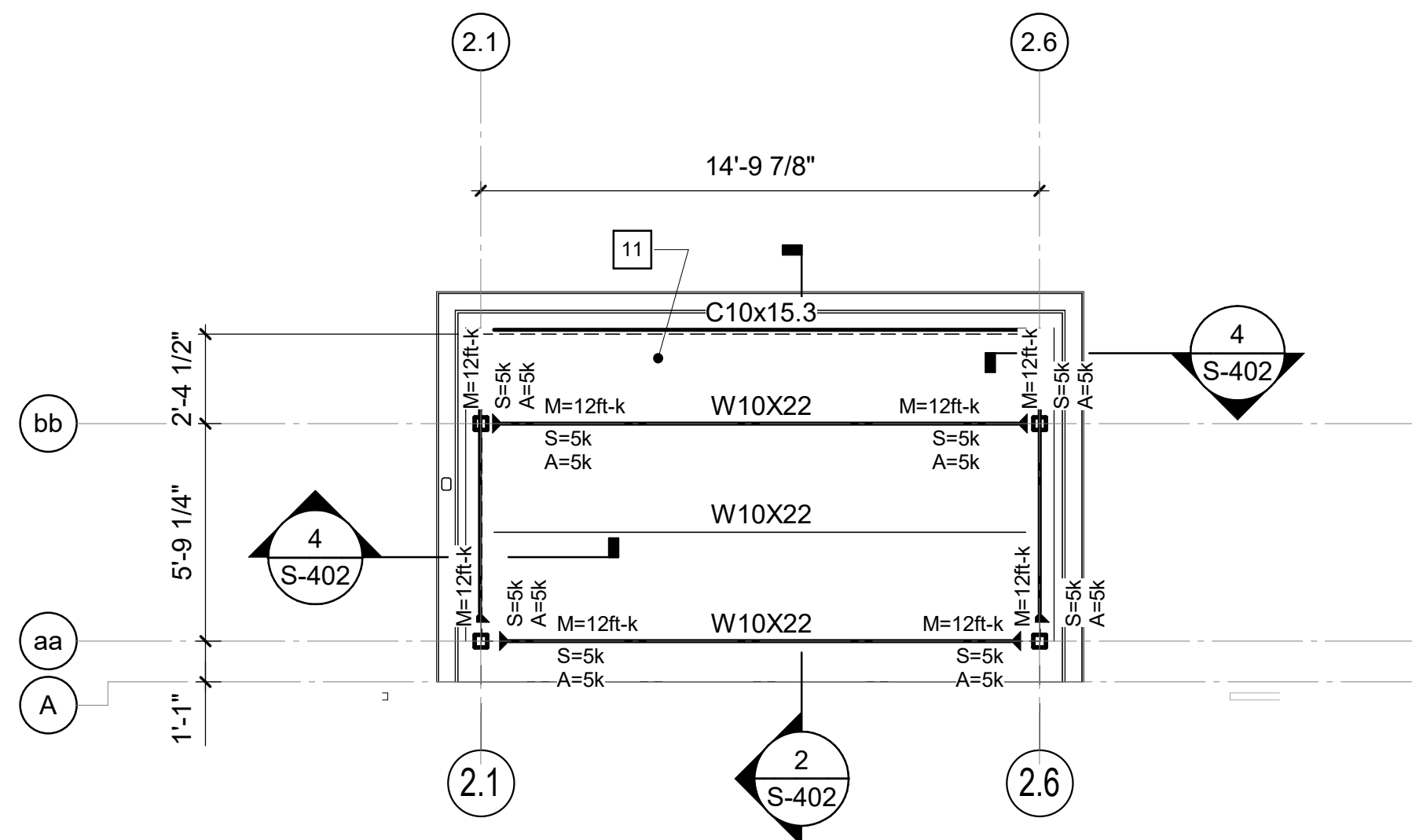
1 ENLARGED ELEVATOR FOUNDATION PLAN
1/4" = 1'-0"

2 ENLARGED ELEVATOR SOG PLAN
1/4" = 1'-0"

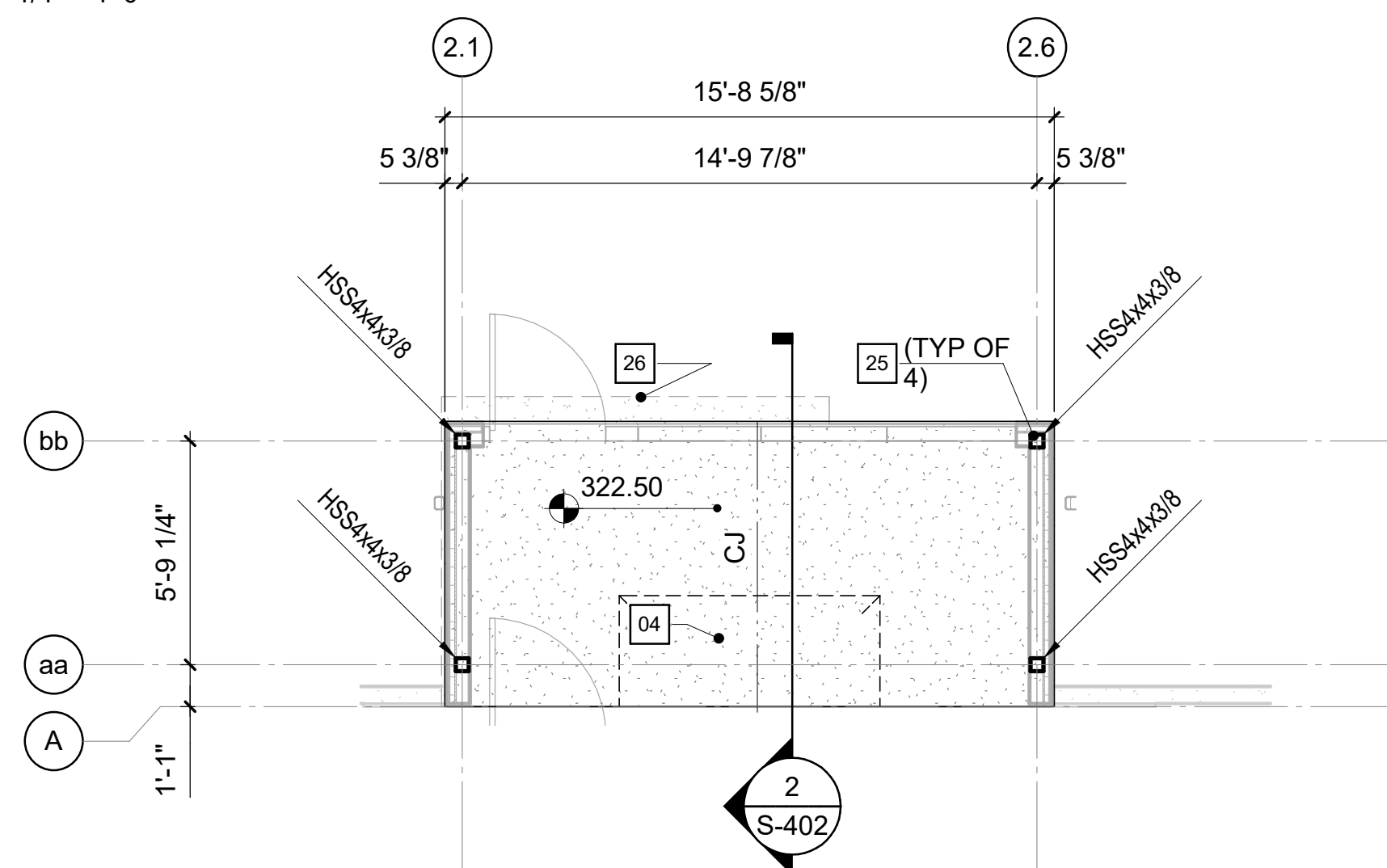
3 ENLARGED SECOND LVL ELEVATOR PLAN
1/4" = 1'-0"



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



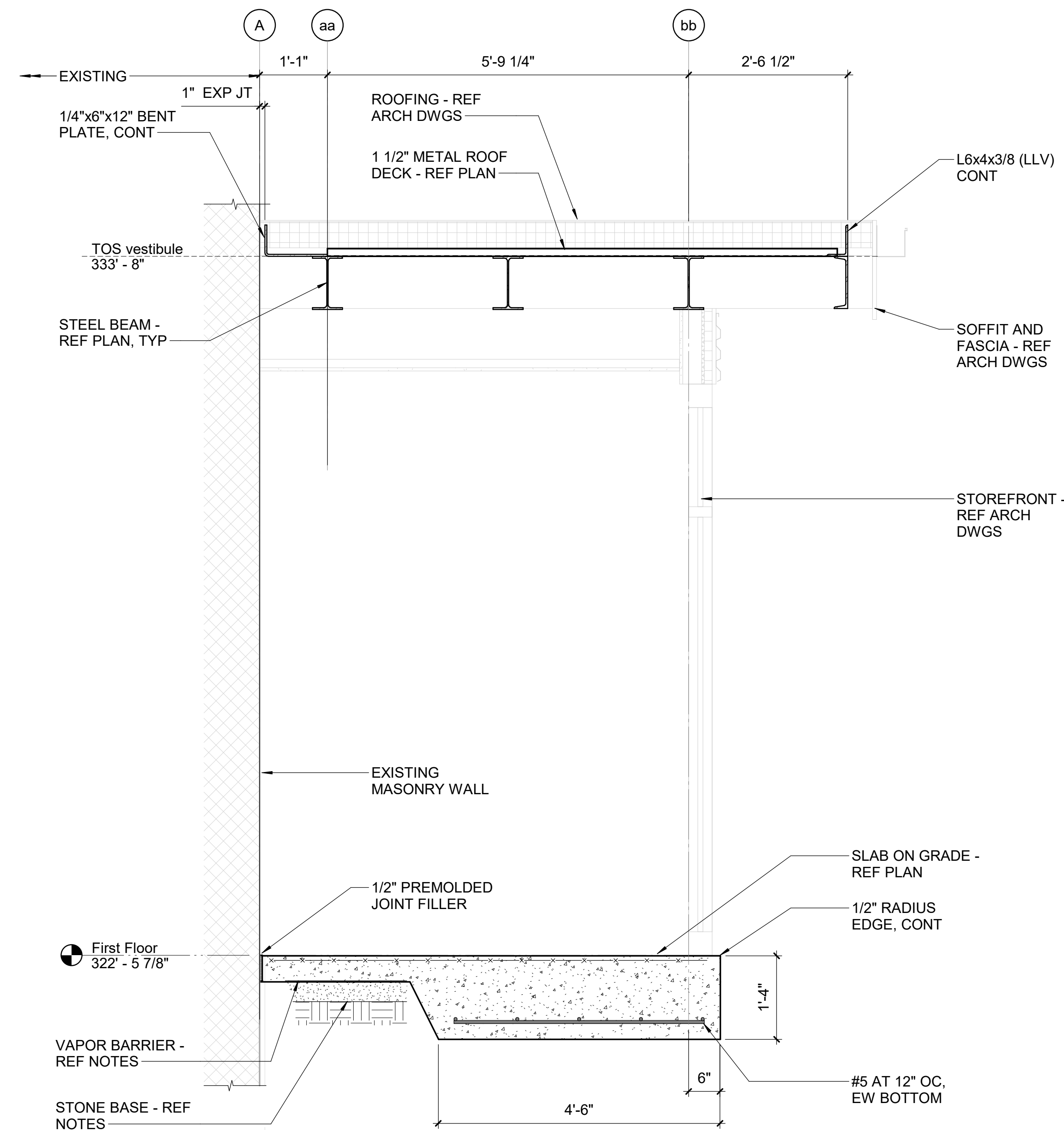
3 ENLARGED FRAMING PLAN
1/4" = 1'-0"



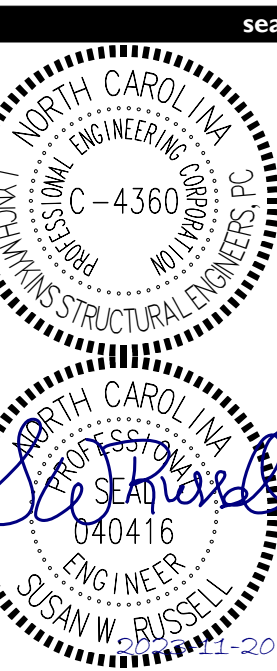
1 ENLARGED FOUNDATION PLAN
1/4" = 1'-0"

Key Notes

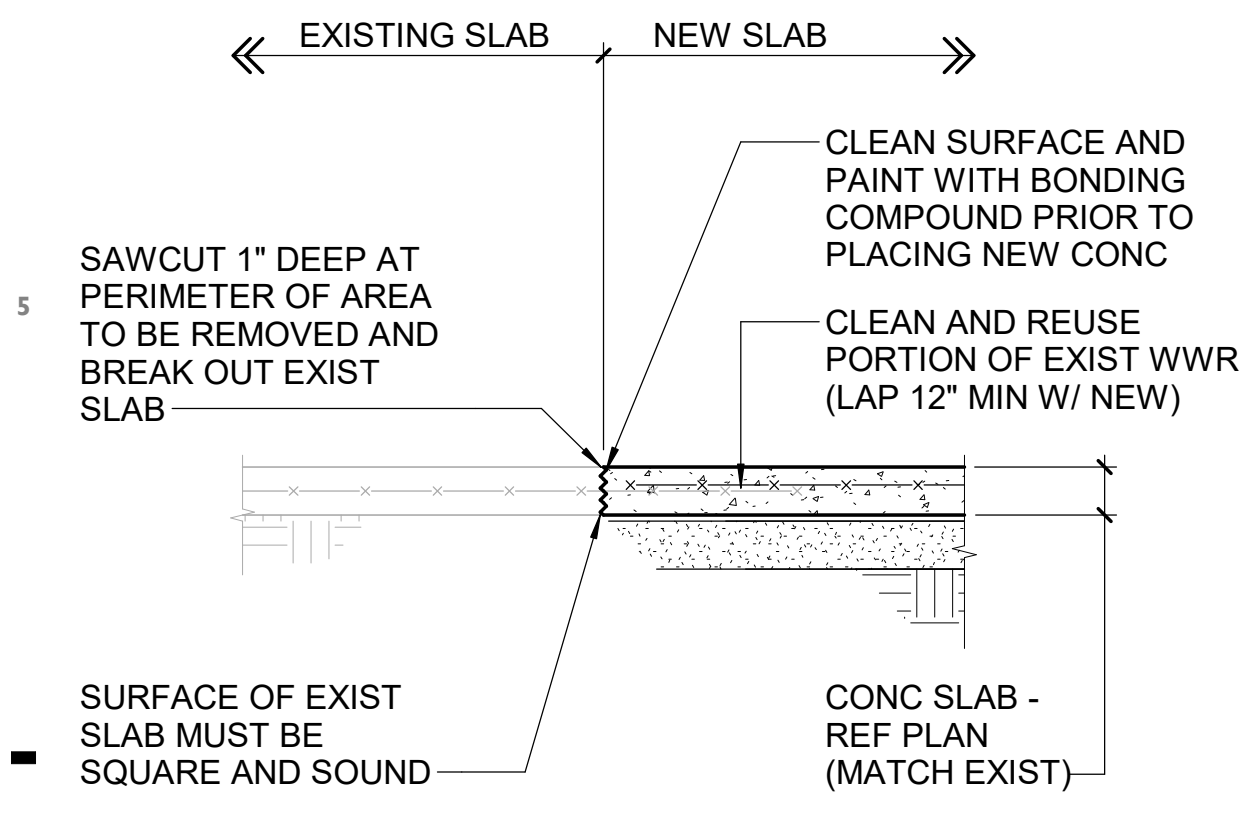
- 04 5" CONCRETE (AIR ENTRAINED) SLAB ON GRADE REINFORCED WITH 6x6-W2.9xW2.9 WITH TURN-DOWN EDGES. PROVIDE 15MIL CLASS A VAPOR BARRIER AND 4" COMPACTED WASHED STONEBASE.
- 11 1 1/2" ROOF DECK
- 25 BASE PLATE - REF 6/501
- 26 EXISTING PAD TO BE REMOVED - REF LANDSCAPE DWGS



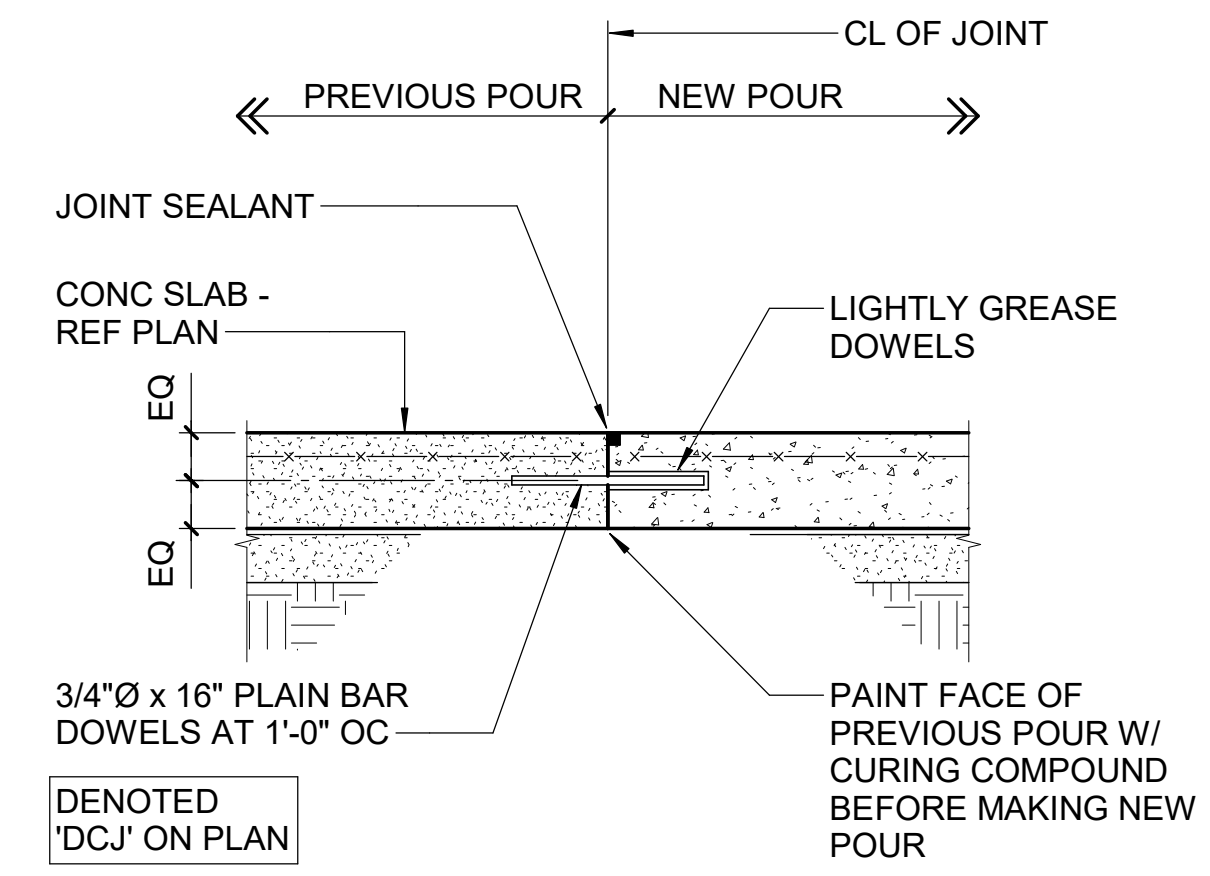
2 SECTION
3/4" = 1'-0"



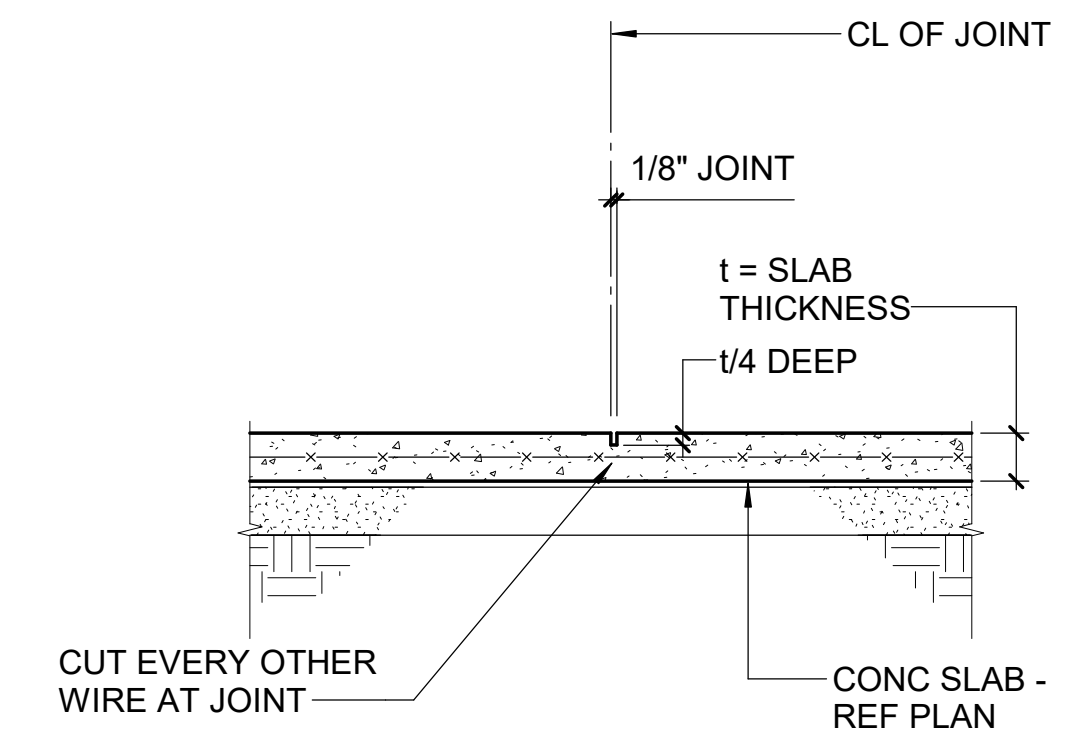
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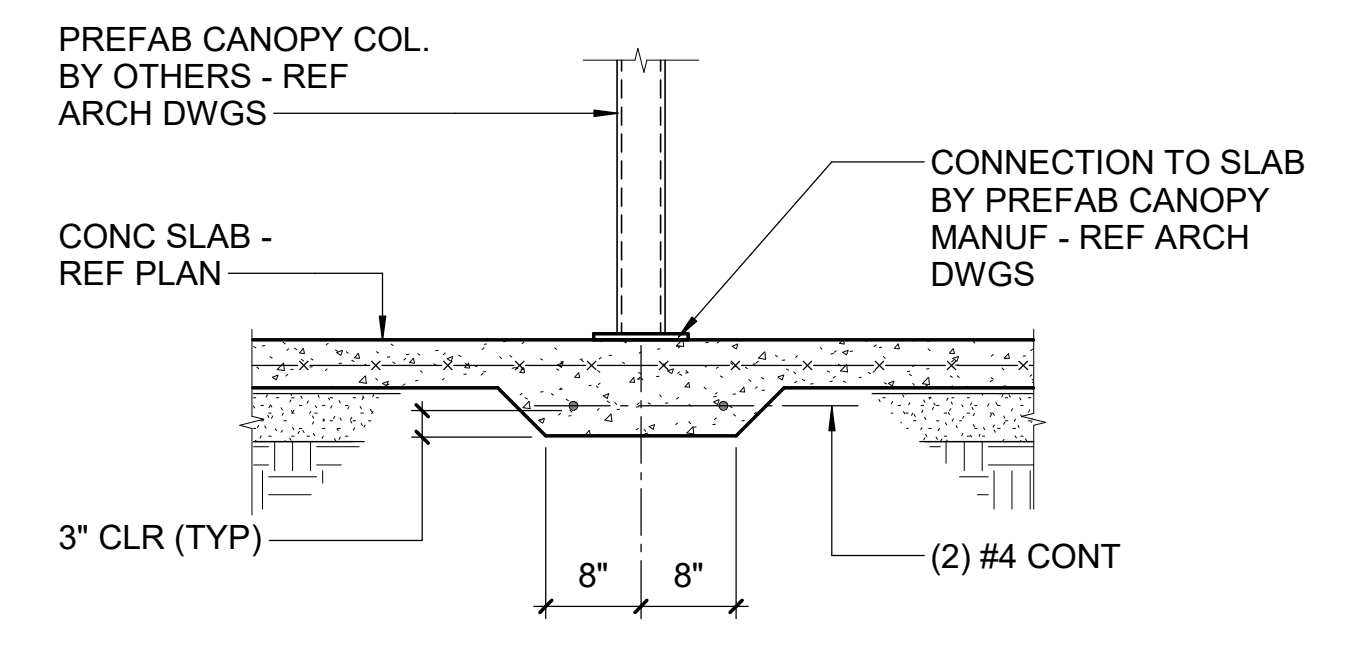
7 TYPICAL SLAB REMOVAL & REPLACEMENT DETAIL
3/4" = 1'-0"



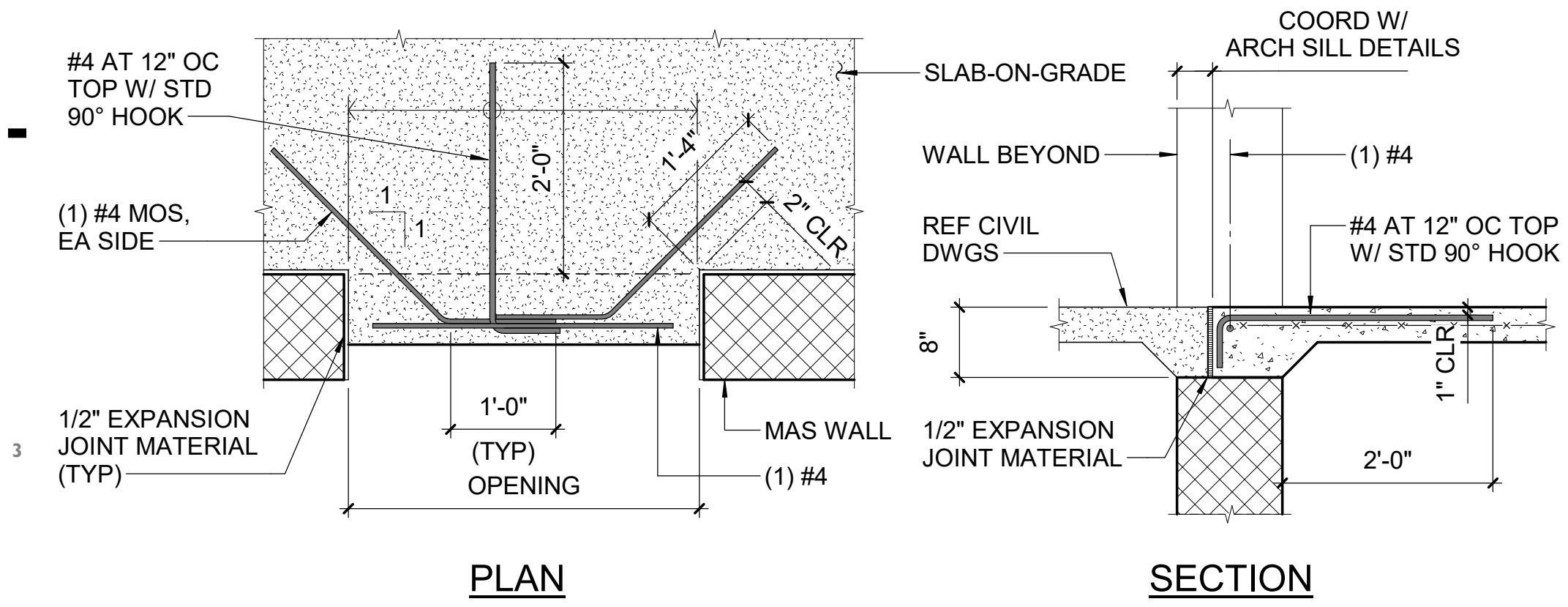
8 TYPICAL DOWELED CONSTRUCTION JOINT DETAIL
3/4" = 1'-0"



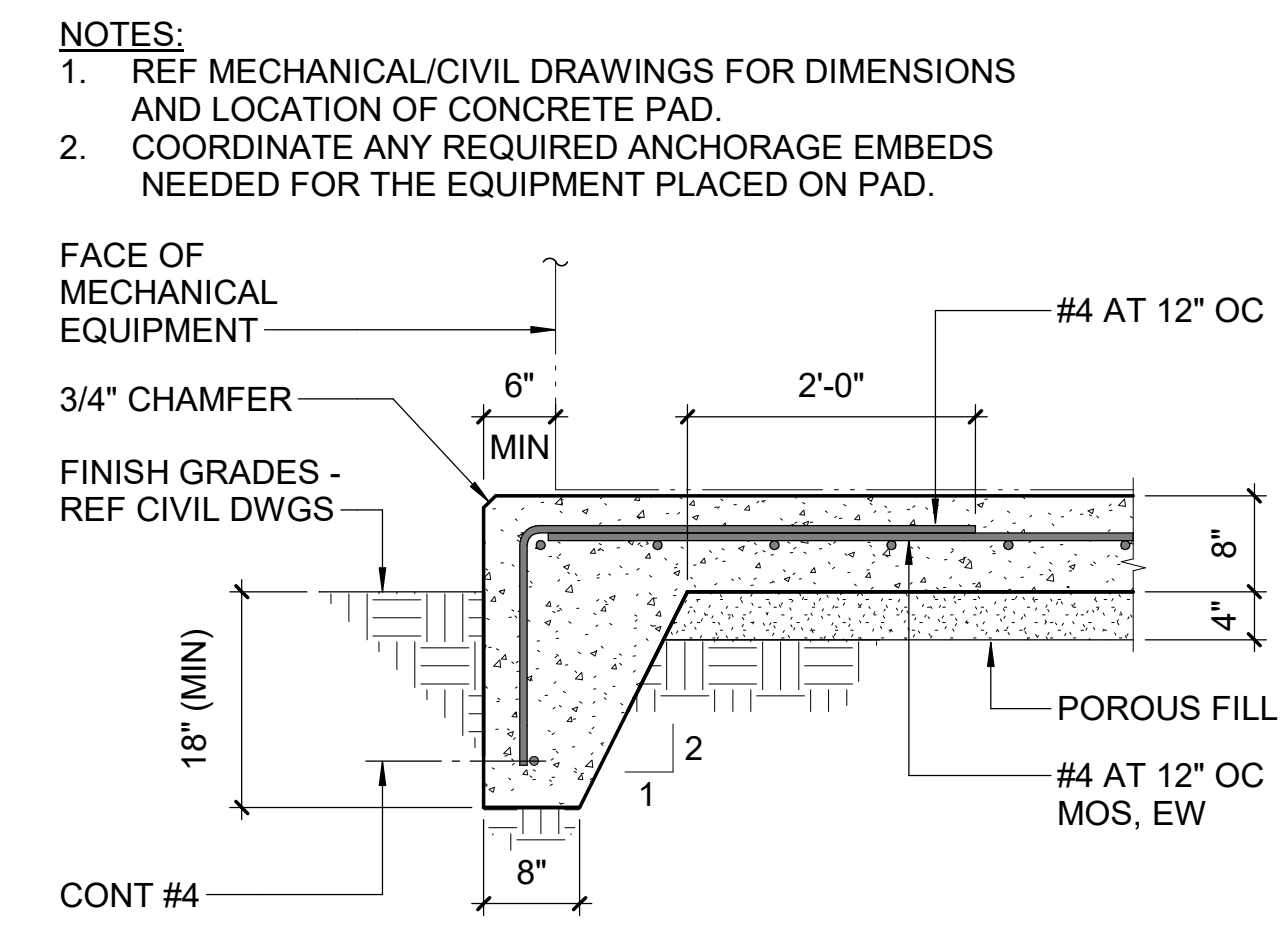
9 TYPICAL SAWED JOINT DETAIL
3/4" = 1'-0"



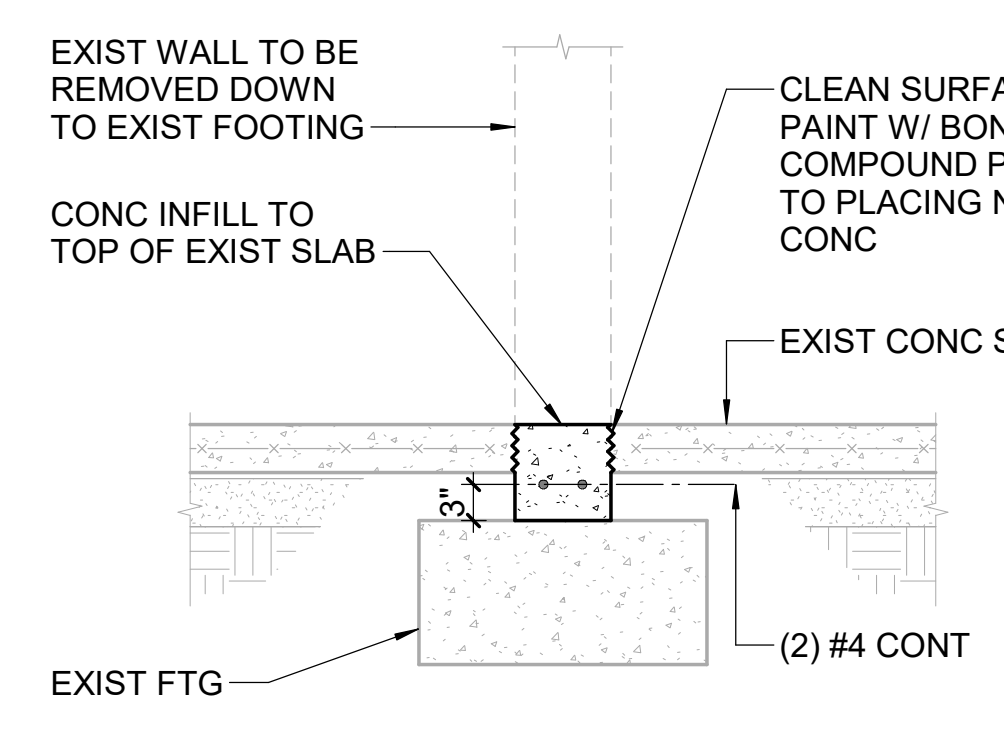
10 TYPICAL THICKENED SLAB DETAIL
3/4" = 1'-0"



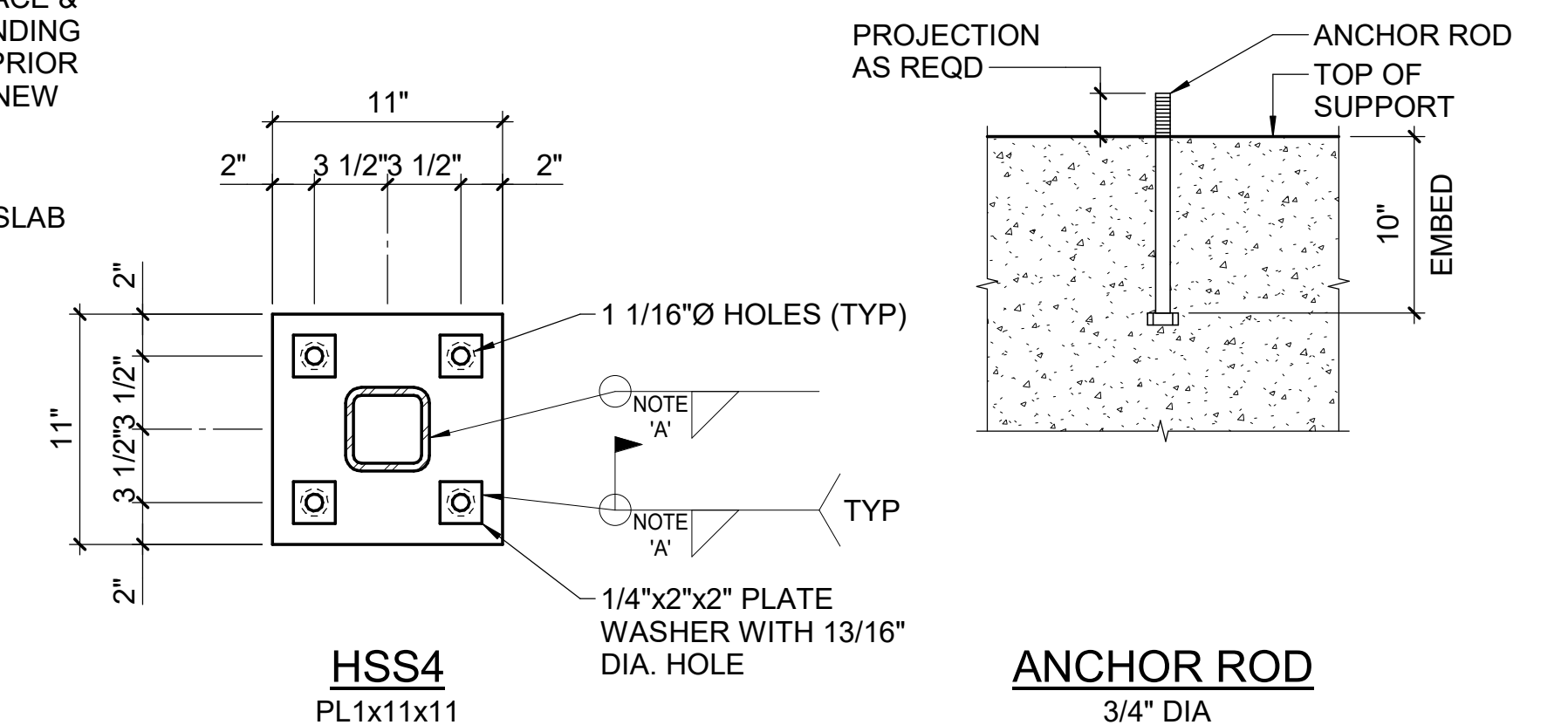
3 TYPICAL EXTERIOR DOORS / OPENINGS DETAIL
3/4" = 1'-0"



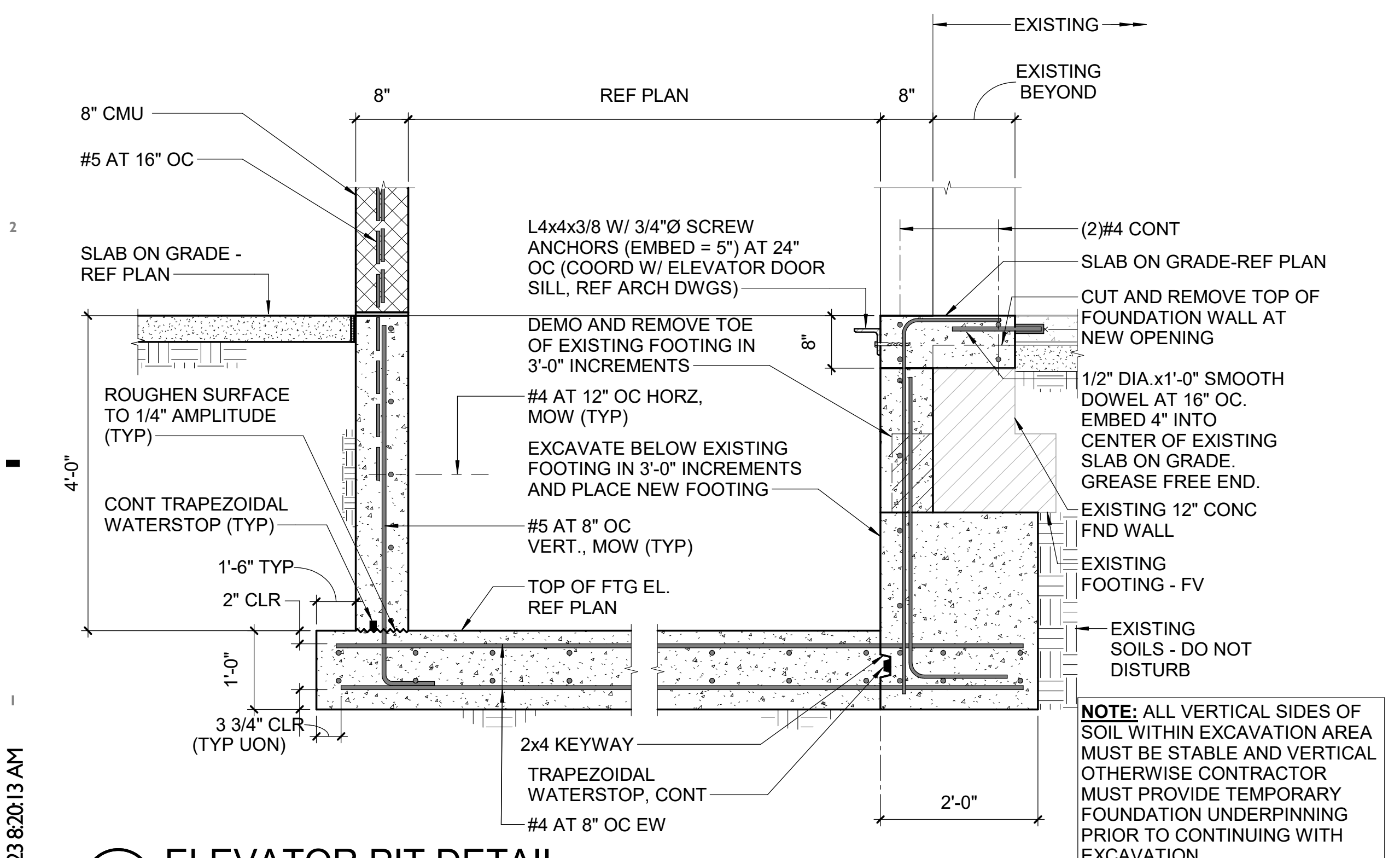
4 TYPICAL EXTERIOR EQUIPMENT PAD DETAIL
3/4" = 1'-0"



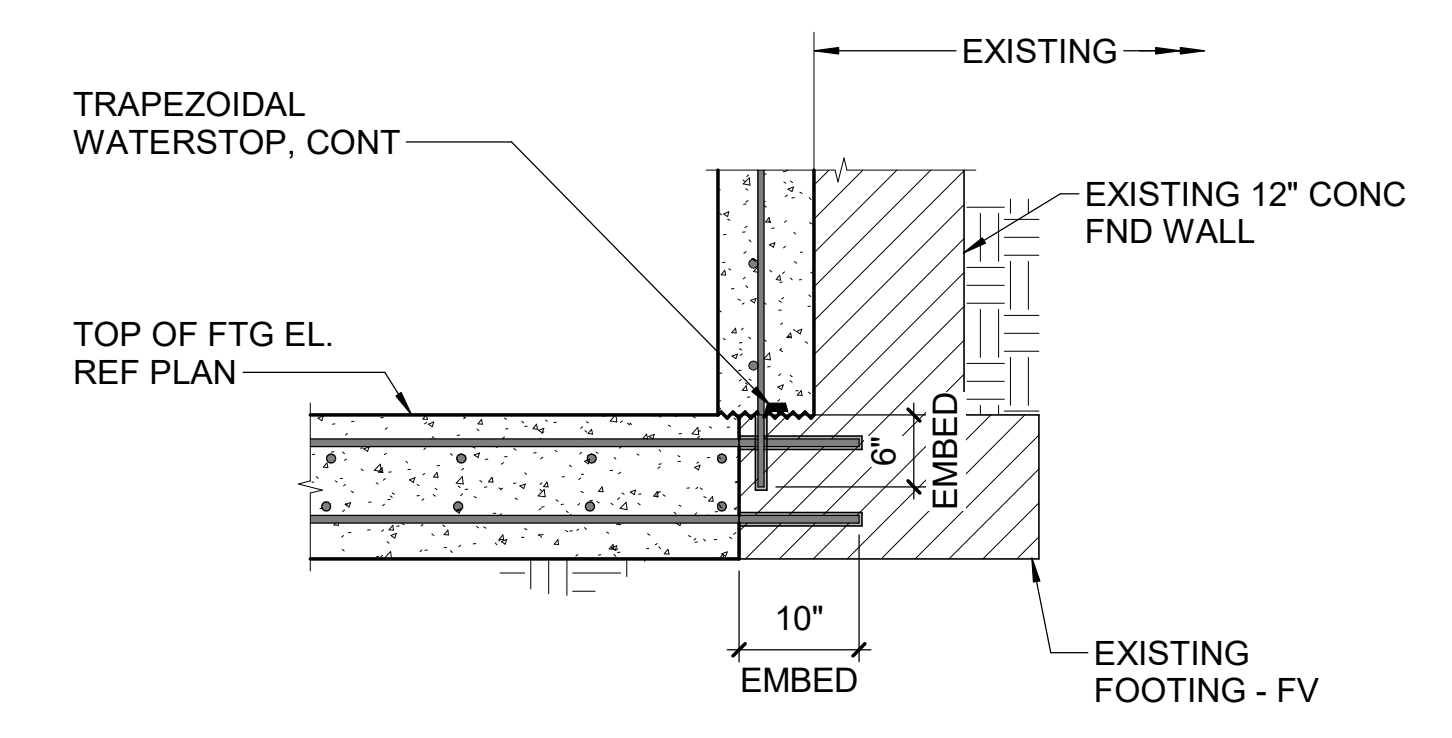
5 TYPICAL EXISTING CMU WALL REMOVAL DETAIL
3/4" = 1'-0"



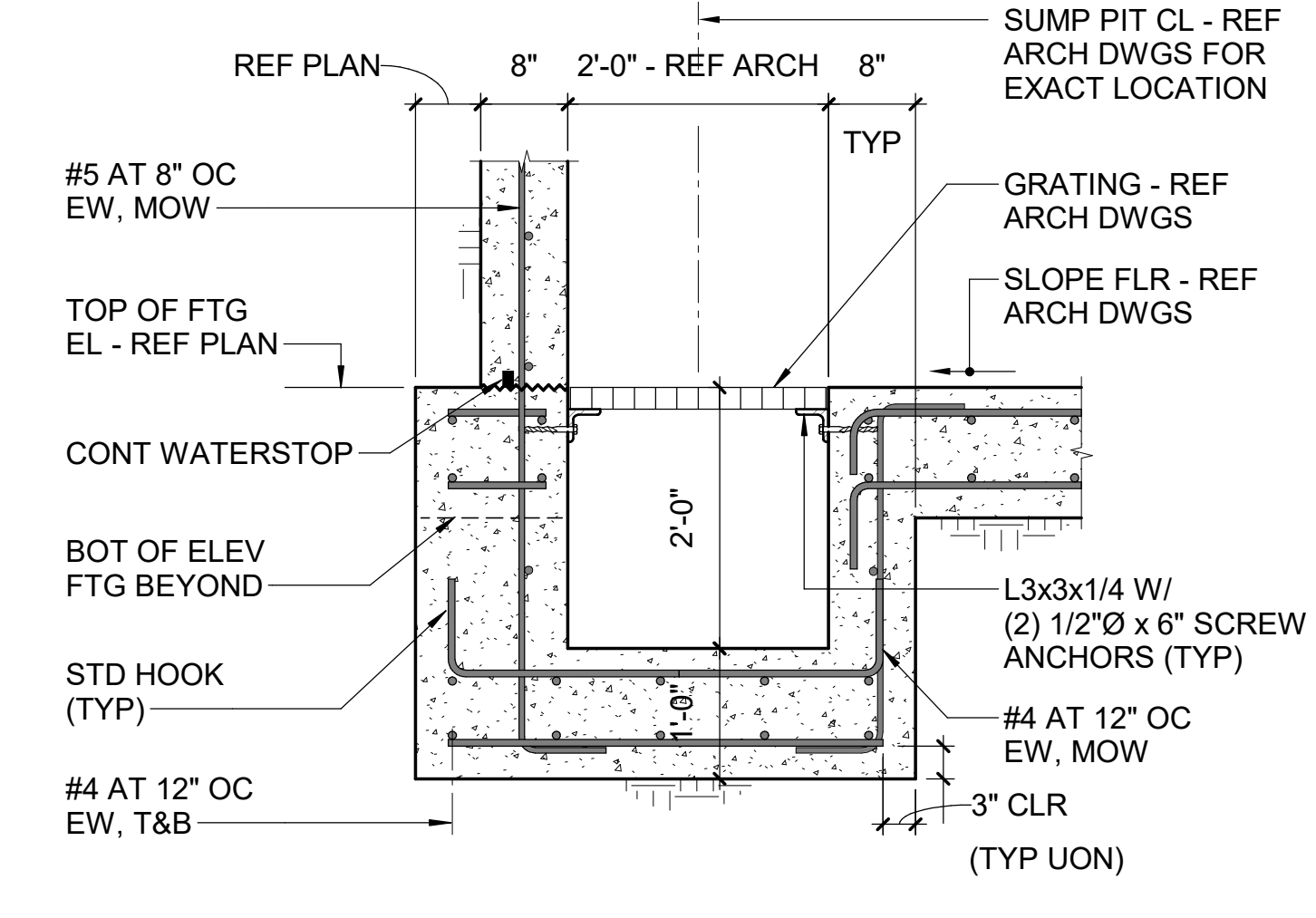
6 BASE PLATE & ANCHOR ROD DETAILS
1 1/2" = 1'-0"



1A ELEVATOR PIT DETAIL
3/4" = 1'-0"

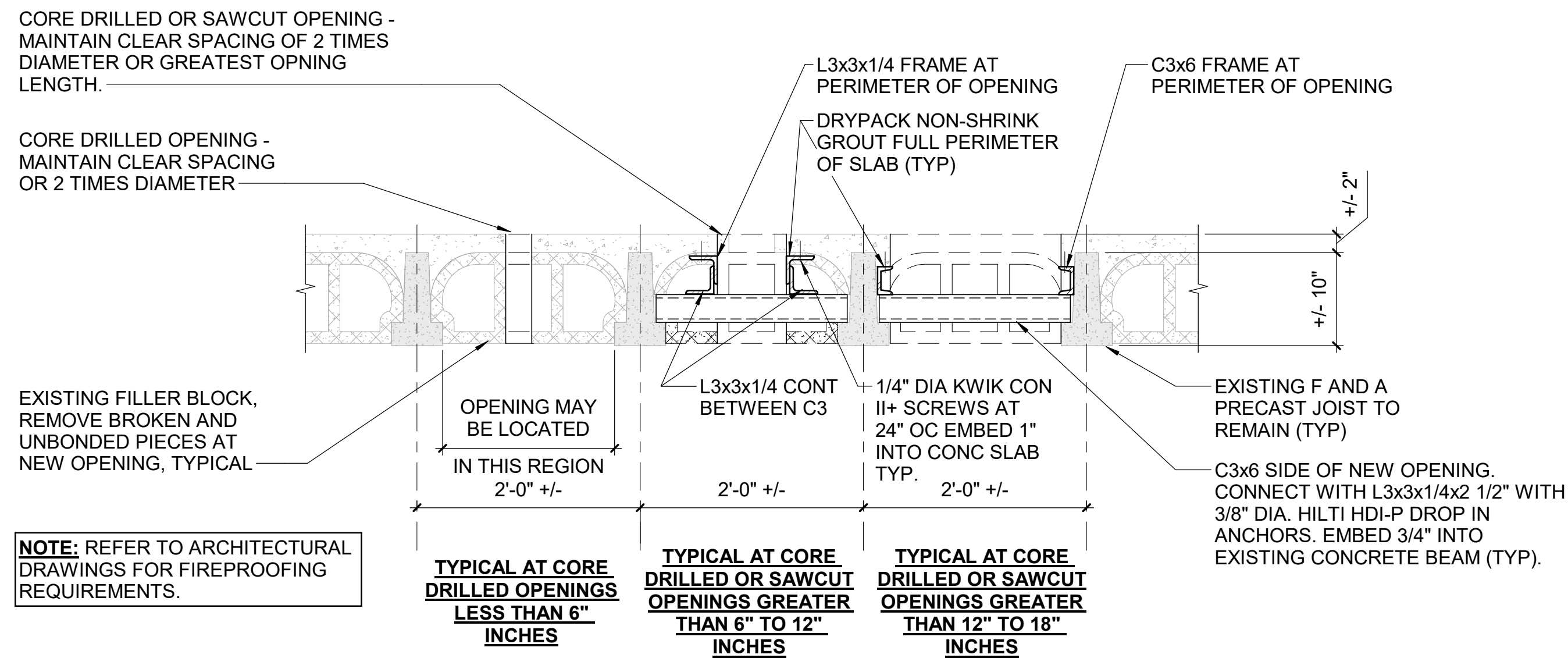


1B ELEVATOR PIT DETAIL
3/4" = 1'-0"

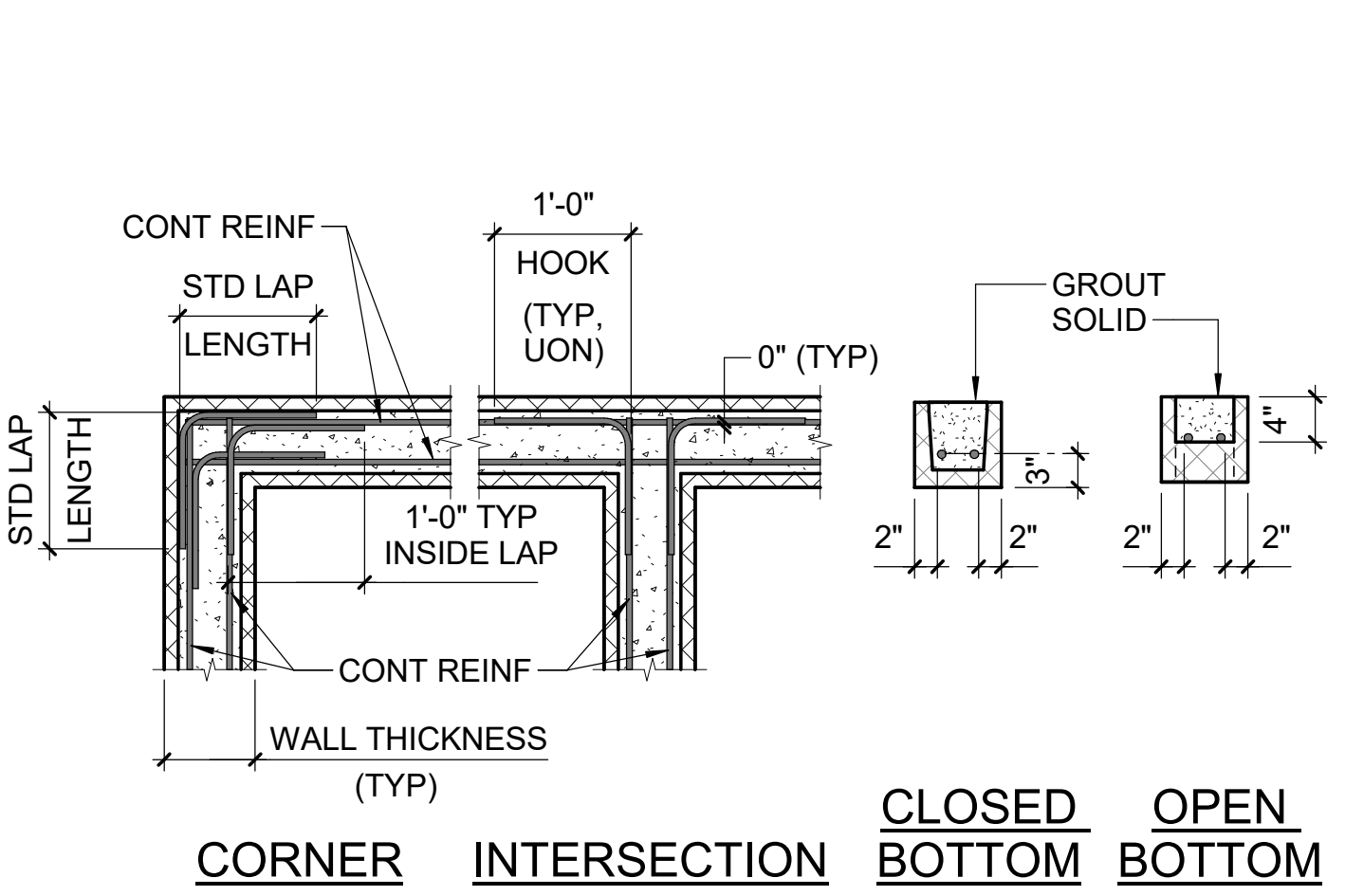


2 ELEVATOR SUMP PIT DETAIL
3/4" = 1'-0"

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7 OPENING IN EXISTING FLOOR DETAILS
3/4" = 1'-0"

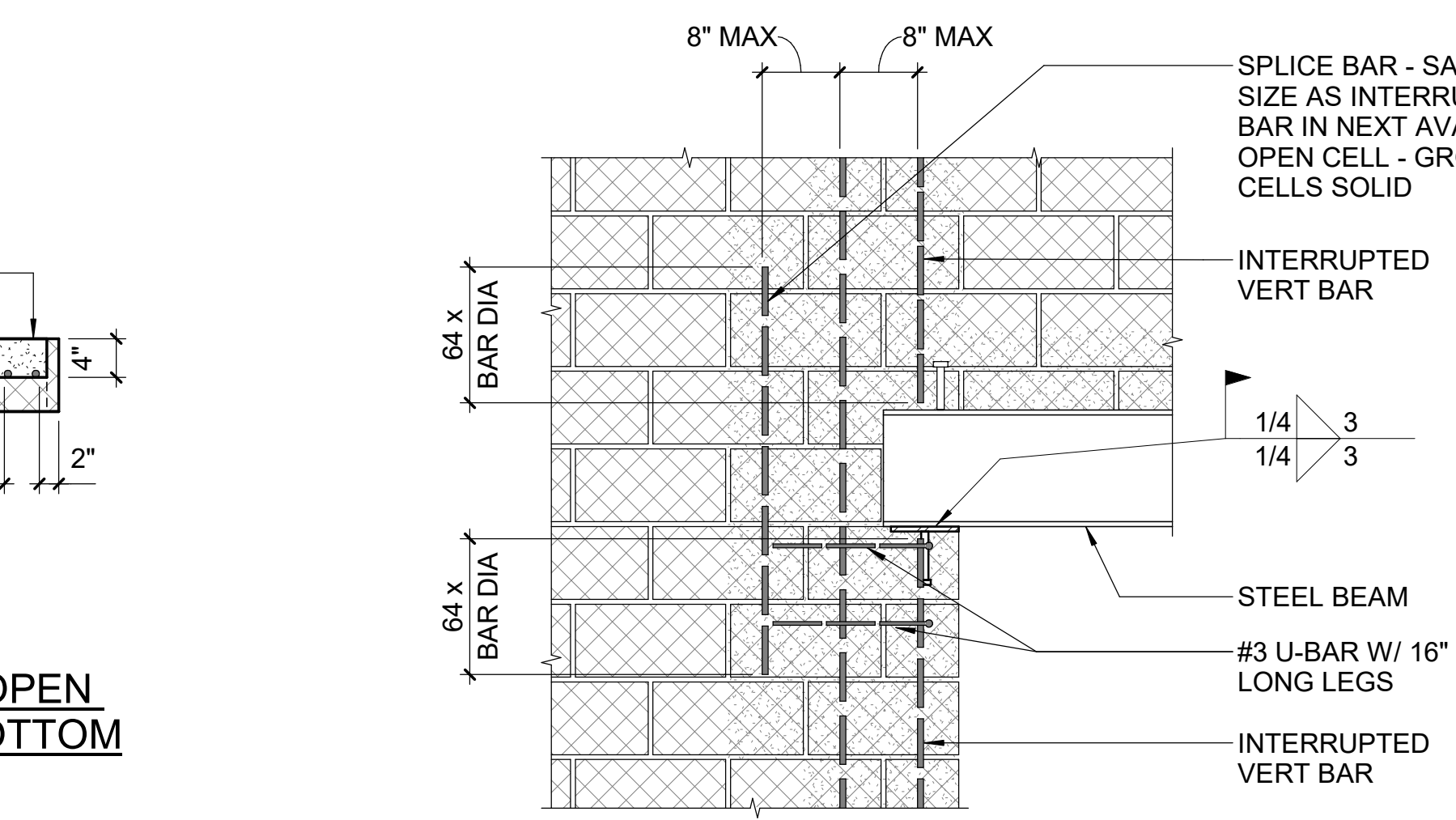


3 TYPICAL BOND BEAM REINFORCING DETAILS
3/4" = 1'-0"

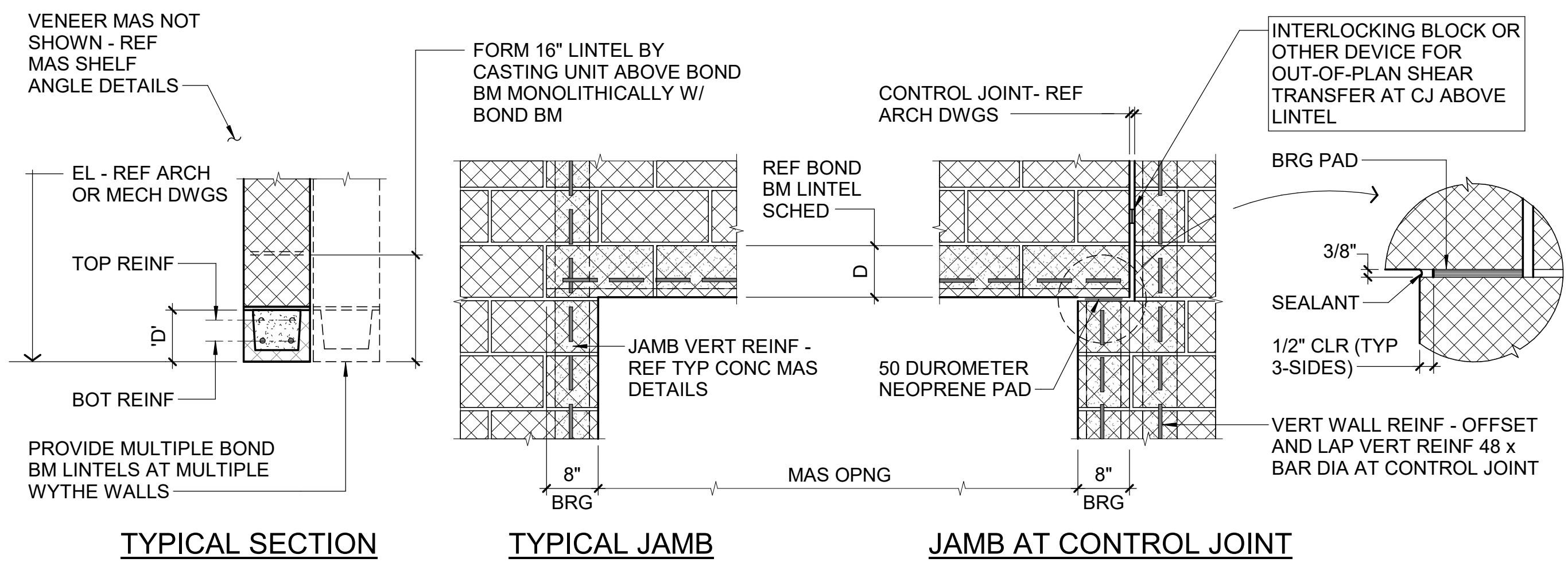
BOND BEAM LINTEL SCHEDULE				
CLEAR SPAN	DEPTH 'D'	REINFORCING		
		6" WIDE	8" & 10" WIDE	12" WIDE
0 TO 3'-4"	8"	(1) #4 BOTTOM	(2) #4 BOTTOM	(2) #5 BOTTOM
3'-5" TO 5'-4"	8"	(1) #5 BOTTOM	(2) #5 BOTTOM	(2) #5 BOTTOM
5'-5" TO 6'-8"	16"	(1) #5 BOTTOM	(2) #5 BOTTOM	(2) #5 BOTTOM
6'-9" TO 8'-0"	16"	(1) #5 TOP&BOT	(2) #5 TOP&BOT	(2) #5 TOP&BOT

- NOTES:**
- REFER TO ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF OPENINGS; FOR DUCT OPENINGS REFER TO MECHANICAL DRAWINGS.
 - REFER TO ARCHITECTURAL DRAWINGS FOR WIDTH OF LINTEL.
 - SCHEDULE APPLIES ONLY TO LINTELS NOT OTHERWISE SHOWN ON THE DRAWINGS.

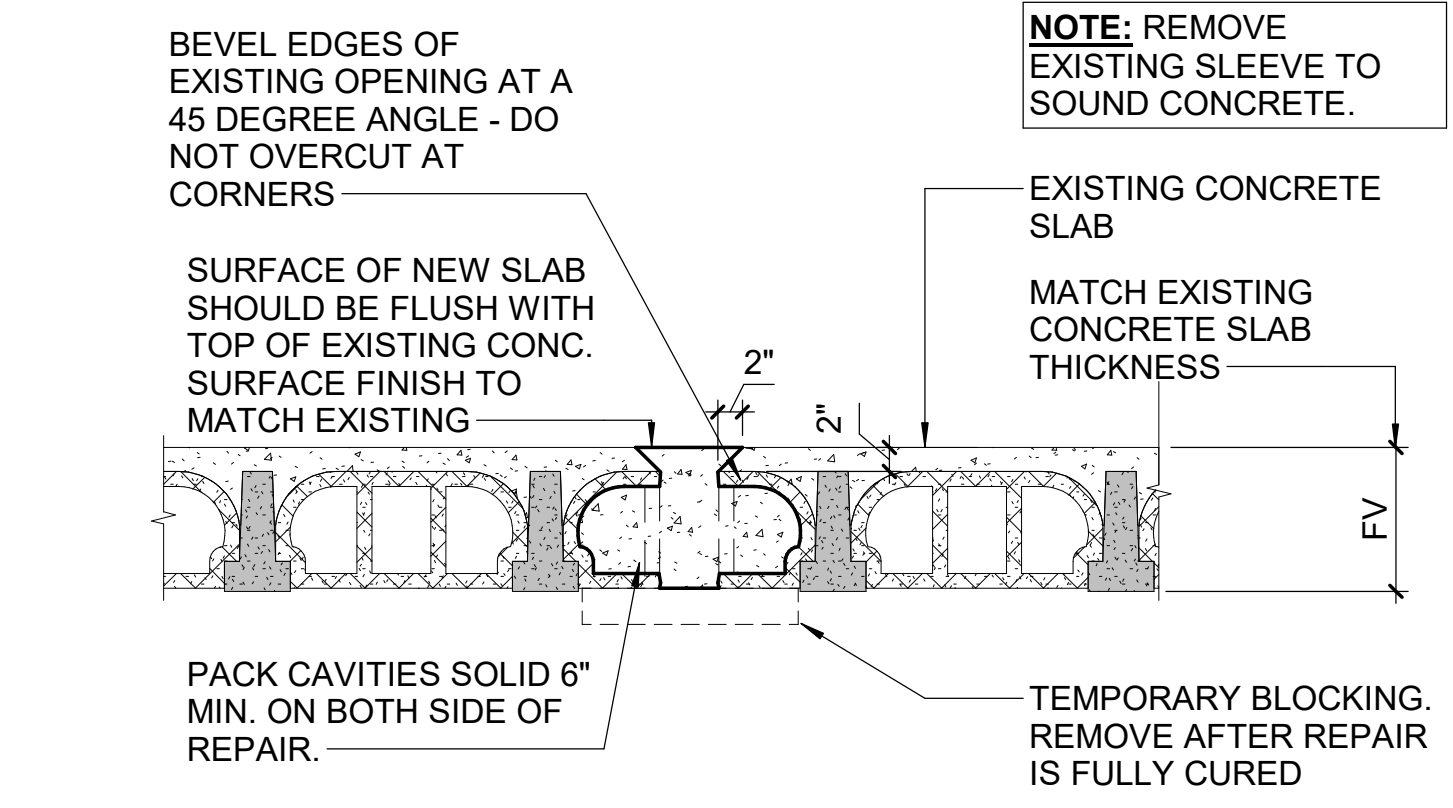
1 BOND BEAM LINTEL DETAILS
3/4" = 1'-0"



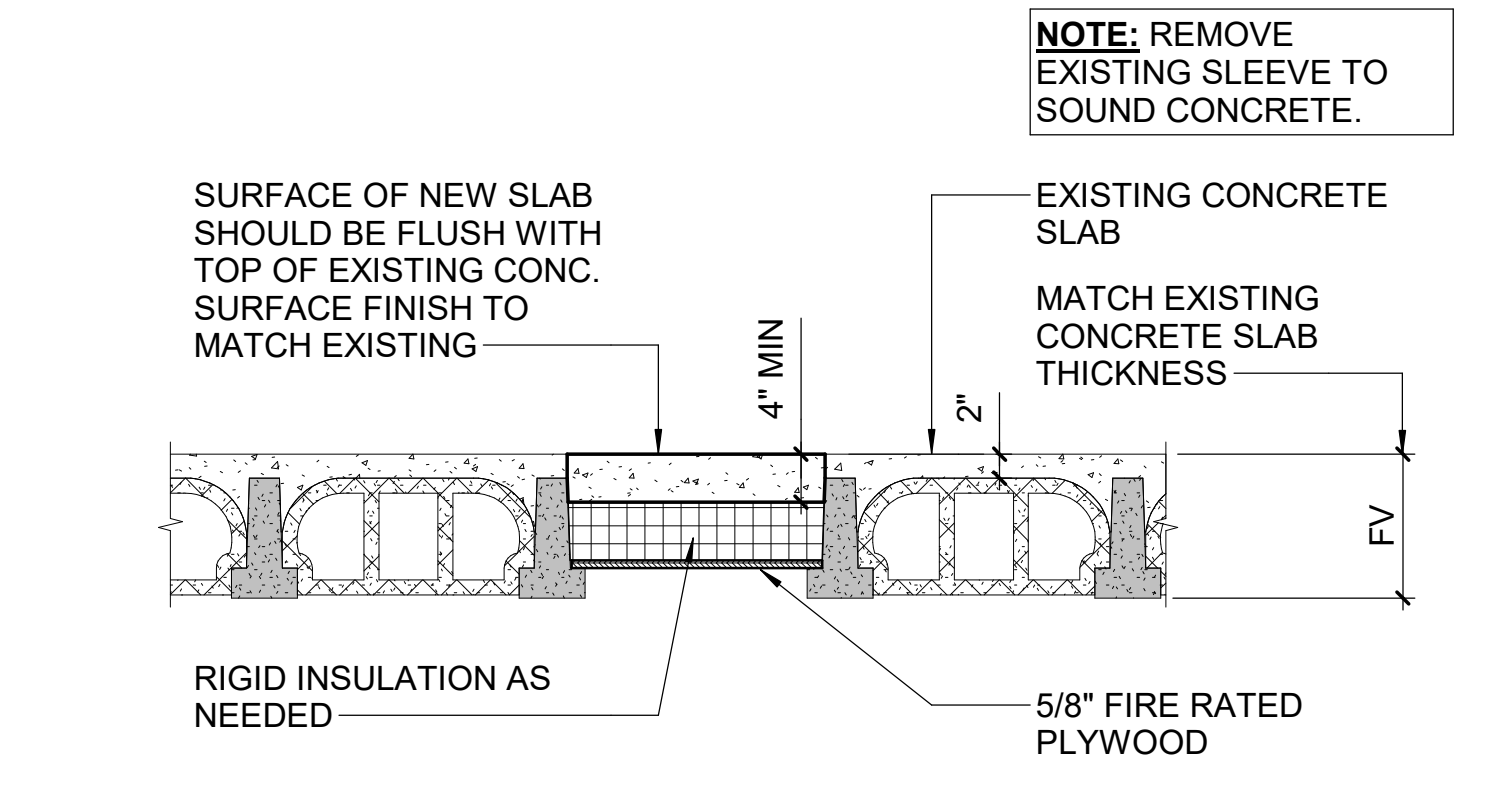
4 TYPICAL OFFSET SPLICE AT MASONRY WALL DETAIL
3/4" = 1'-0"



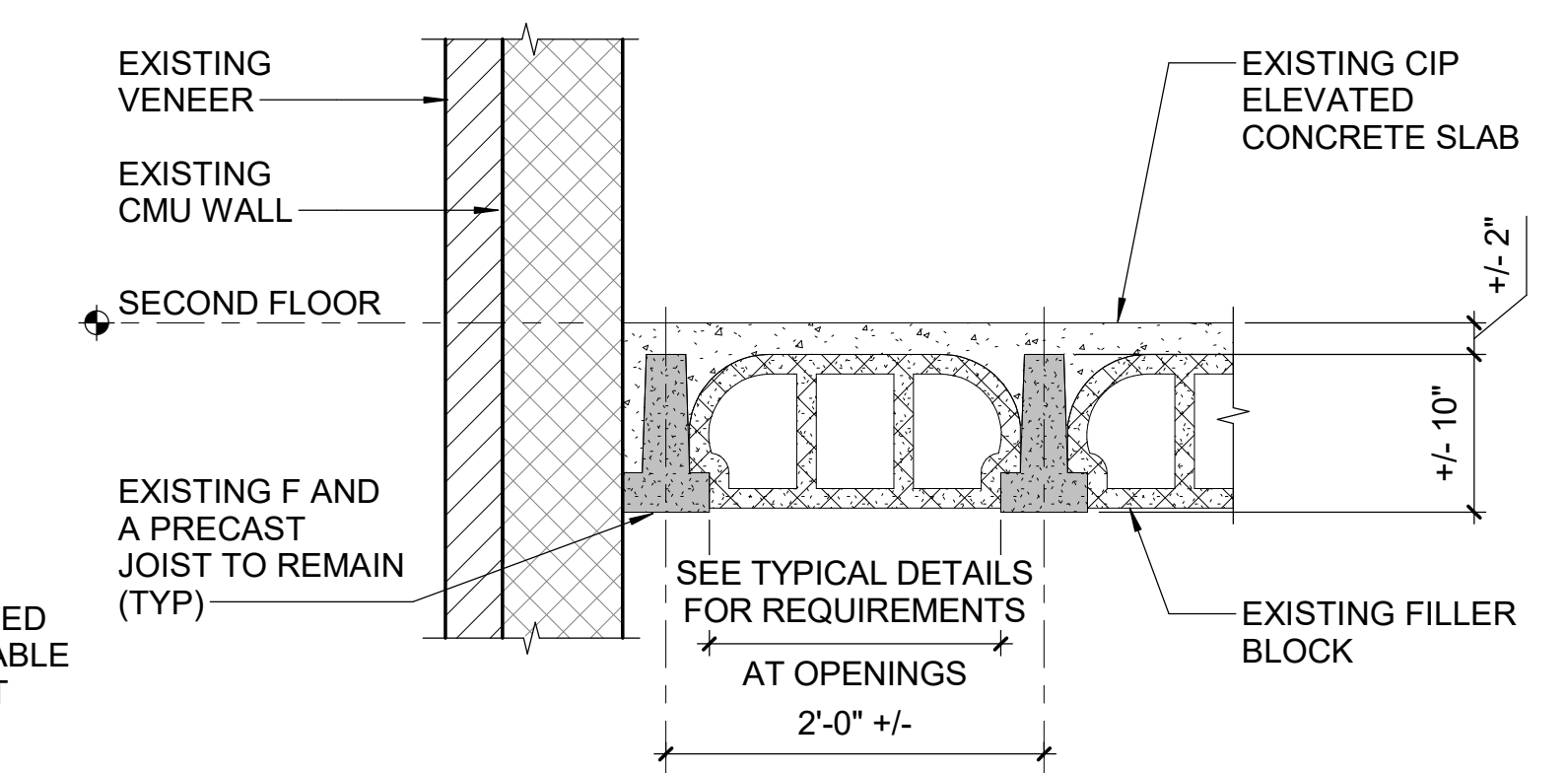
5 TYPICAL HOUSEKEEPING PAD DETAIL
3/4" = 1'-0"



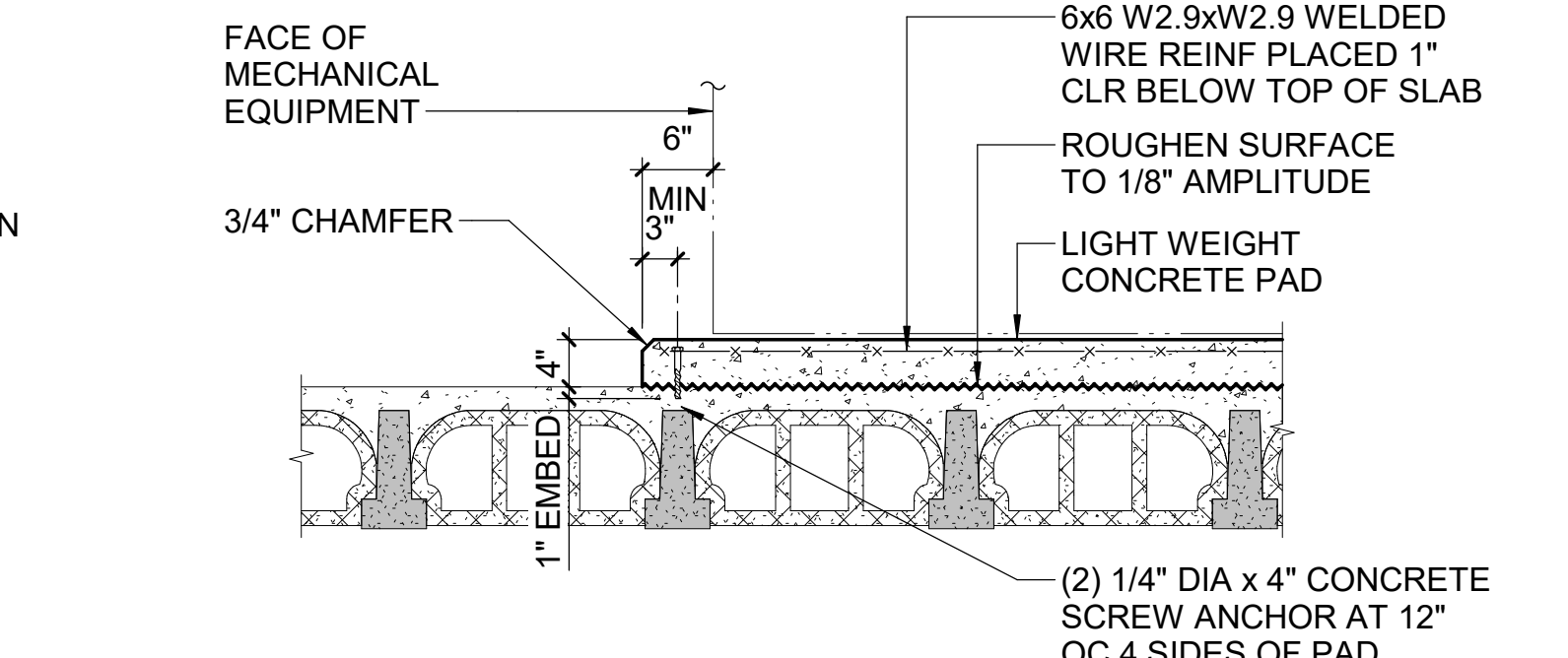
8 TYPICAL INFILL OF EXISTING FLOOR OPENINGS LESS THAN 6"
3/4" = 1'-0"



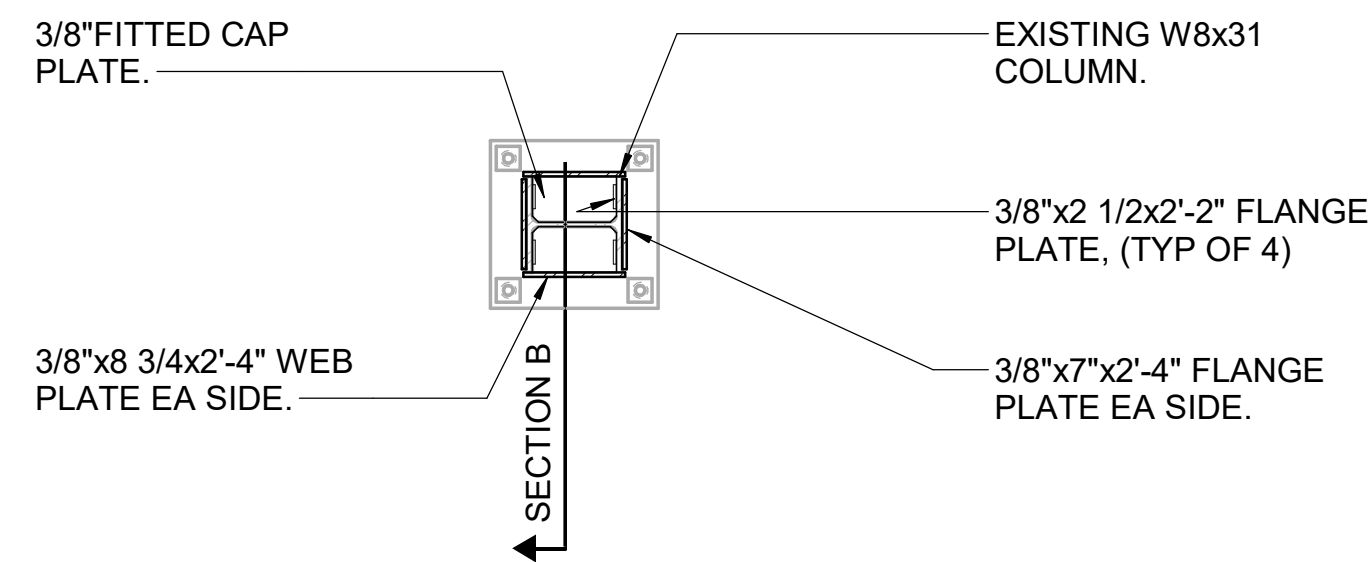
9 TYPICAL INFILL OF EXISTING FLOOR OPENINGS UP TO 2'-0"
3/4" = 1'-0"



6 EXISTING FLOOR DETAIL
1" = 1'-0"



2 TYPICAL BEAM BEARING ON MASONRY DETAILS
3/4" = 1'-0"



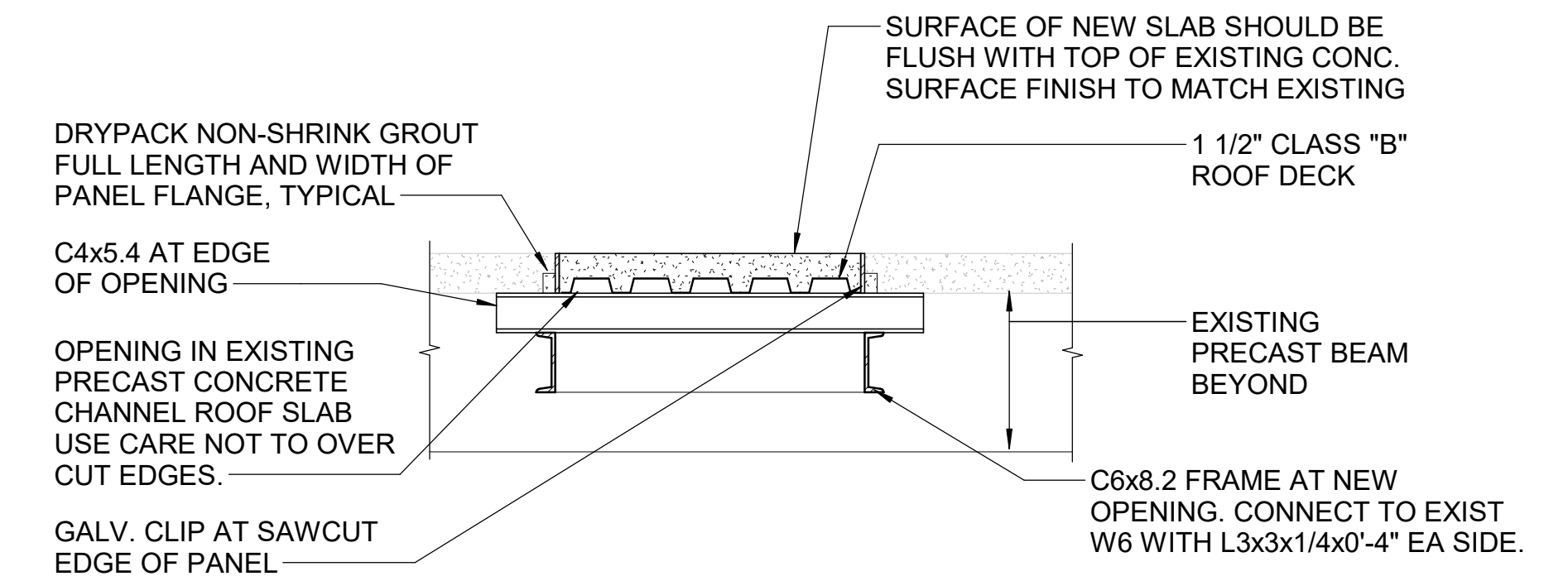
SECTION A

COLUMN REPAIR SEQUENCE NOTES:

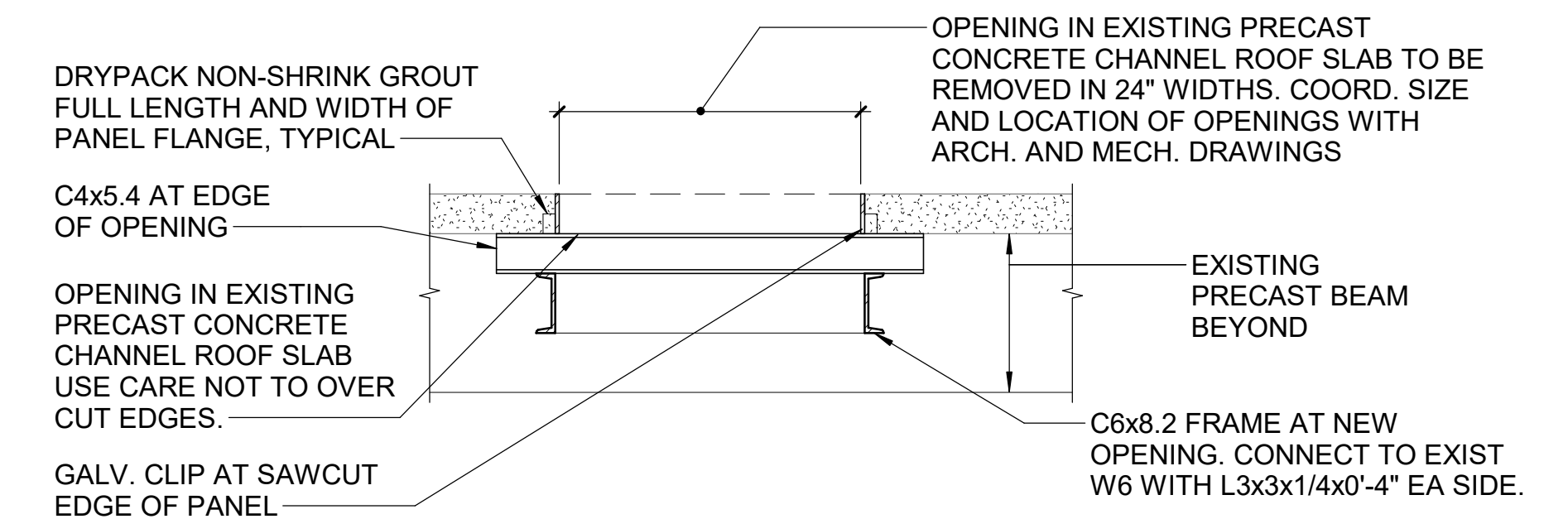
CONTRACTOR SHALL BE RESPONSIBLE FOR SEQUENCING WORK TO MEET REQUIREMENTS OF REPAIR DETAIL. BELOW IS A SUGGESTED SEQUENCE OF WORK REQUIRED FOR INSTALLATION OF NEW REPAIR.

CONTRACTOR SHALL NOTIFY ENGINEER TO REVIEW CONDITION AT BASE OF COLUMN AFTER REMOVAL OF EXISTING CONCRETE SLAB TO CONFIRM EXTENT OF REPAIR REQUIRED.

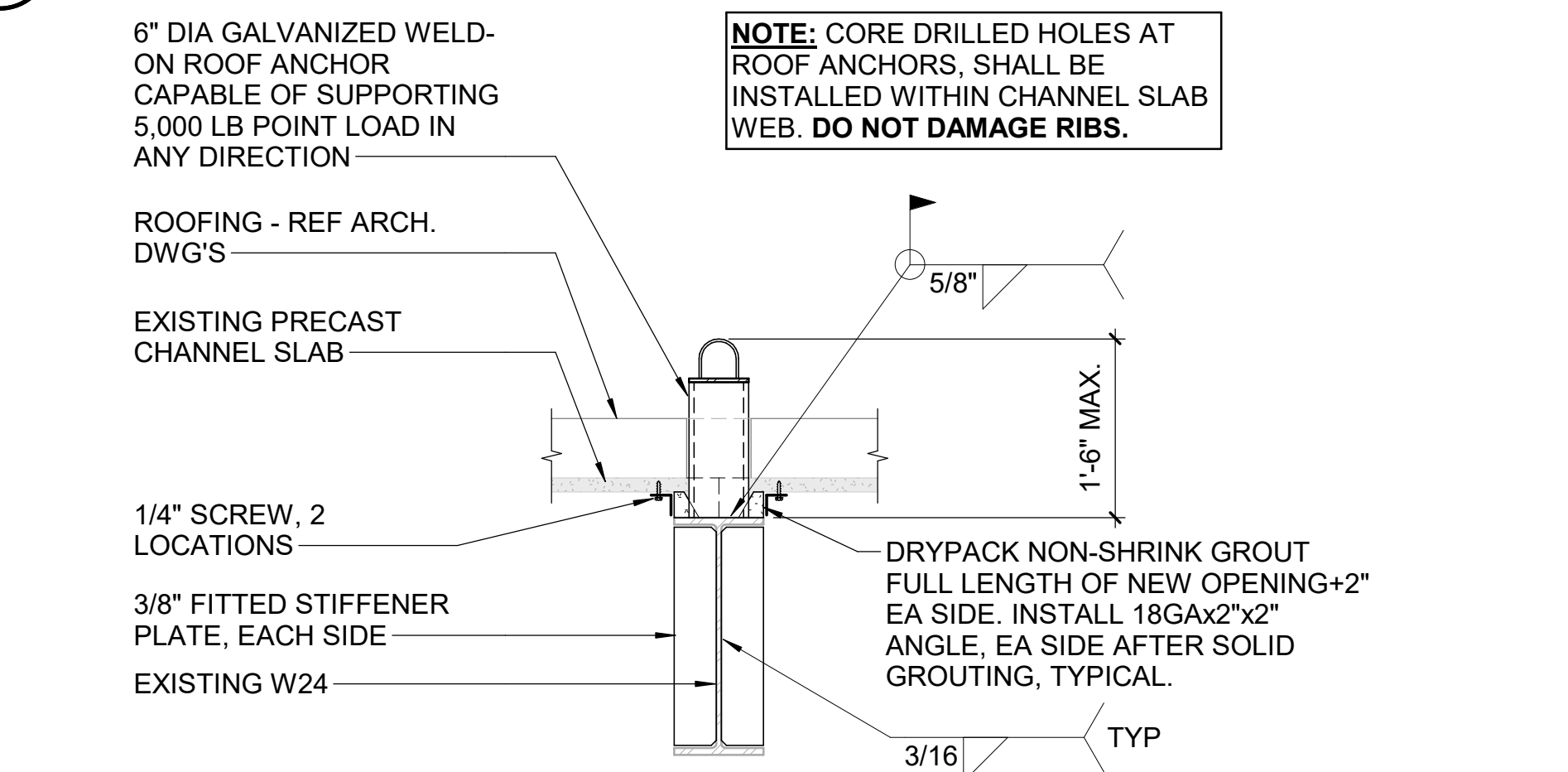
1. INSTALL SHORING
2. REMOVE CONCRETE SLAB TO ACCESS BASE OF STEEL COLUMN
3. BLAST CLEAN STEEL
4. INSTALL FLANGE REPAIR PLATES
5. REMOVE SECTION OF L4 AND INSTALL WEB PLATES
6. INSTALL COATING SYSTEM ON NEW AND EXISTING STEEL (INCLUDING BOTTOM SIDE OF CAP PLATE)
7. INSTALL CAP PLATE
8. INSTALL COATING SYSTEM ON REMAINDER OF SECTIONS



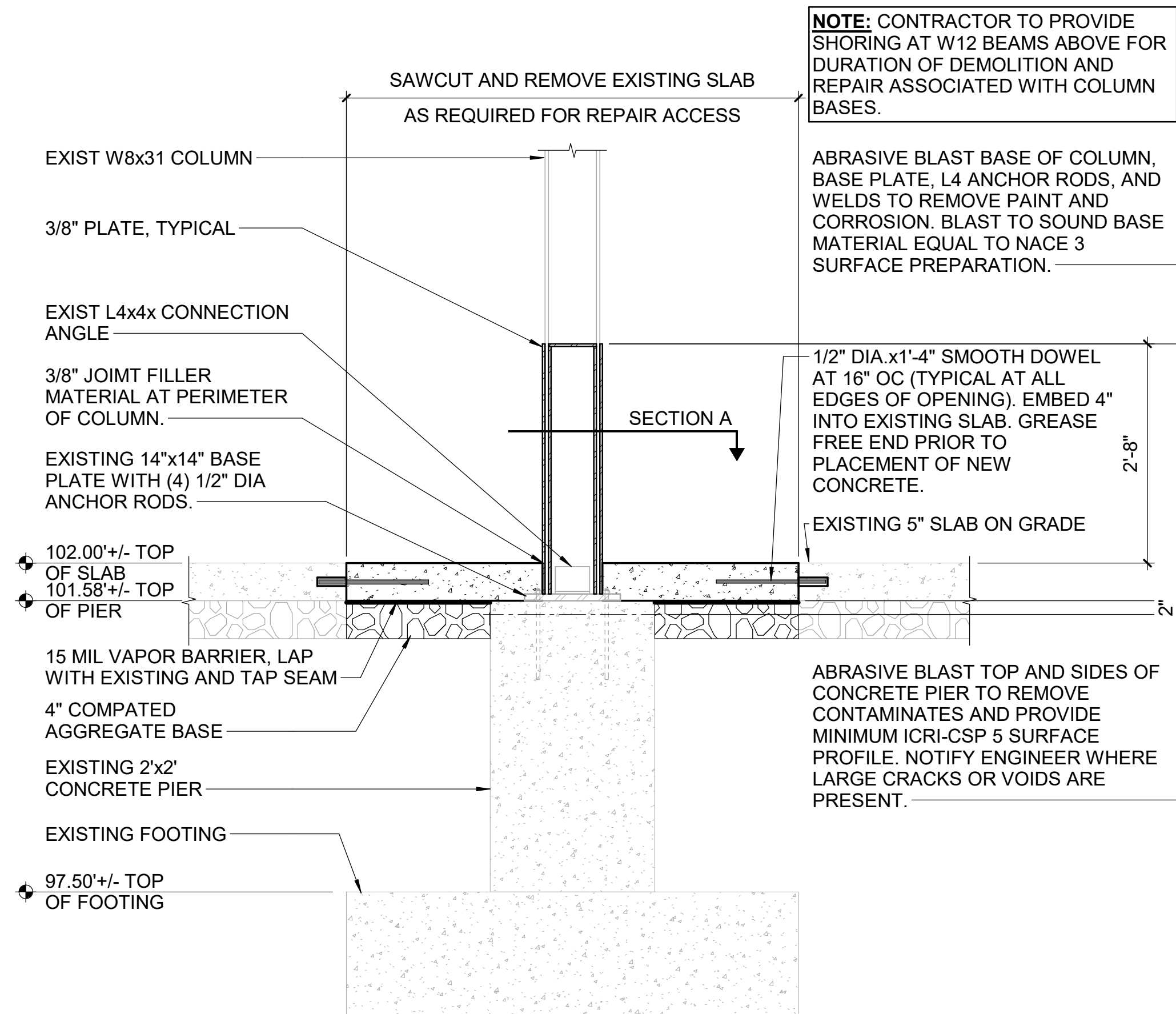
6 TYPICAL DETAIL - OPENING IN PRECAST CHANNEL ROOF
3/4" = 1'-0"



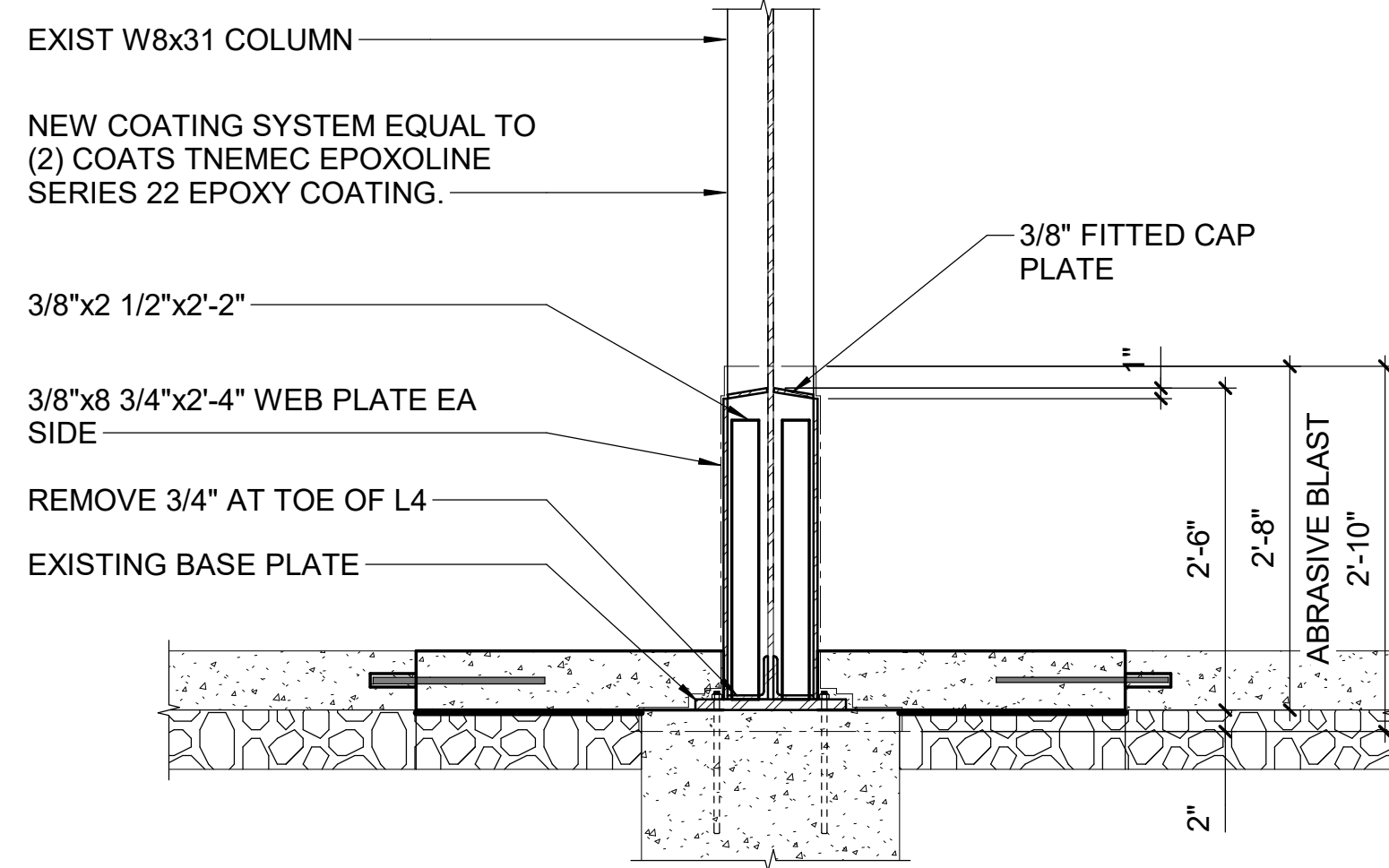
5 TYPICAL DETAIL - OPENING IN PRECAST CHANNEL ROOF
3/4" = 1'-0"



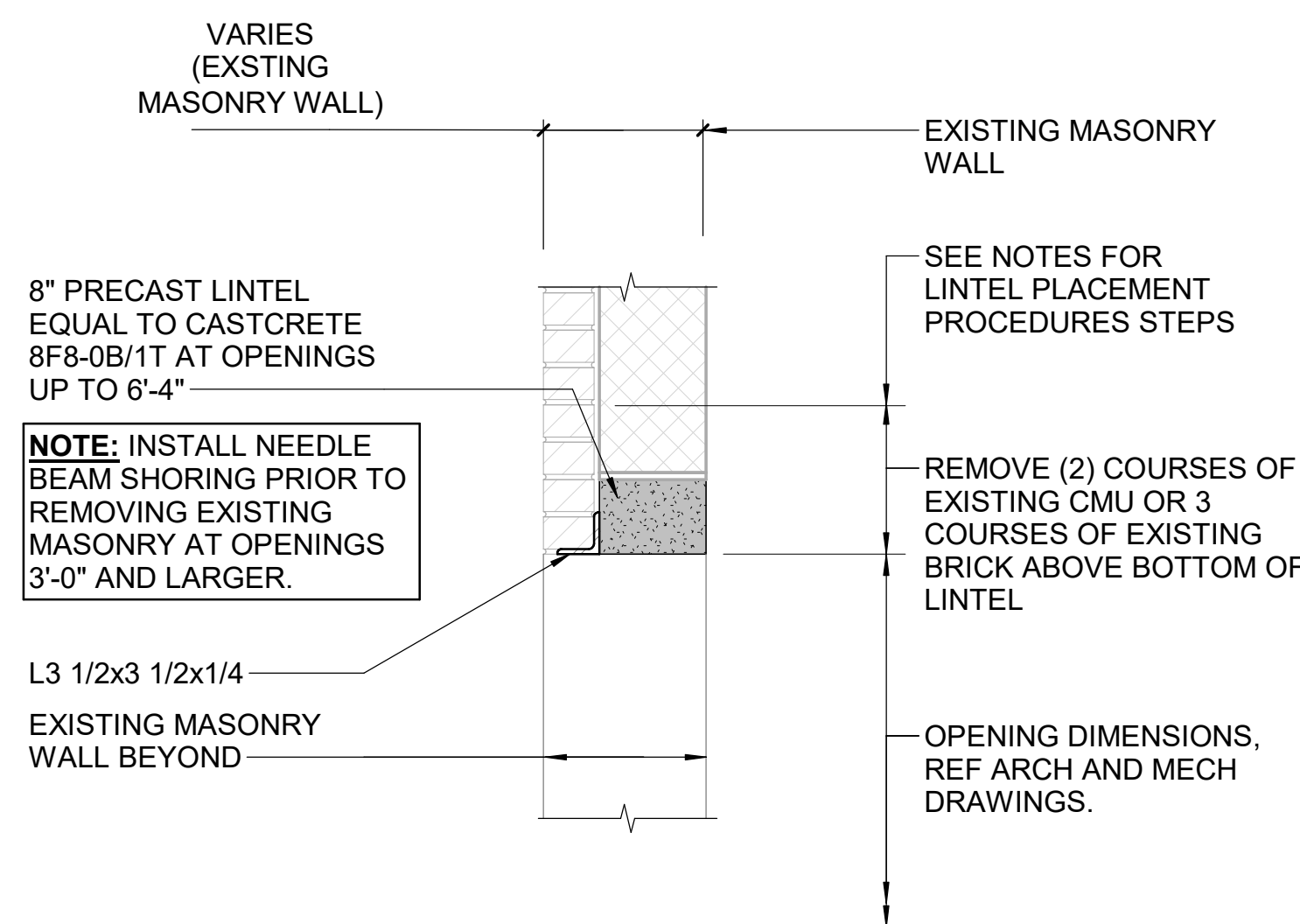
4 FALL PROTECTION ANCHORAGE TYPICAL DETAIL
3/4" = 1'-0"



3 COLUMN REPAIR TYPICAL DETAILS
3/4" = 1'-0"



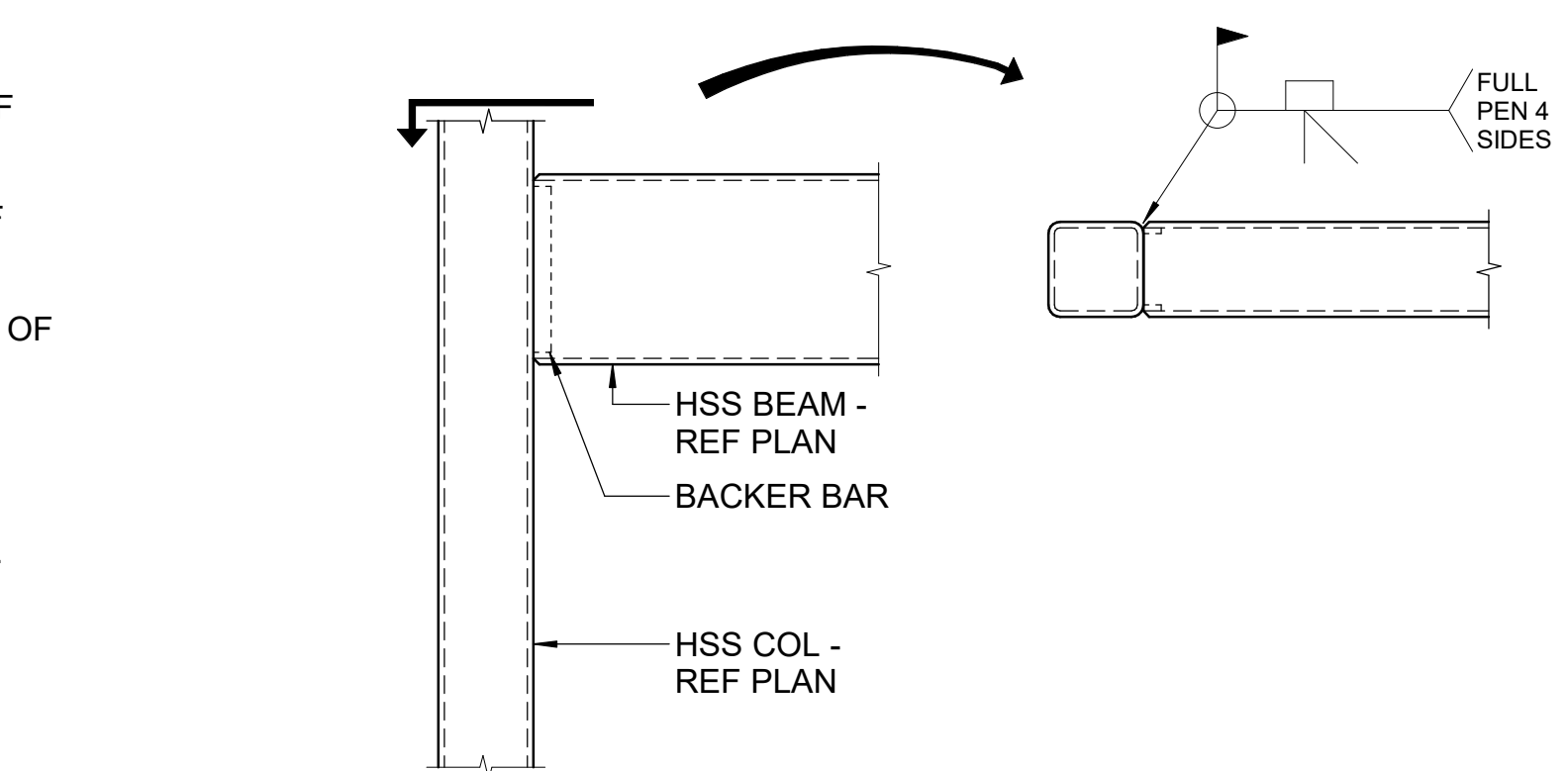
SECTION B



1 NEW OPENING IN EXISTING WALL TYPICAL DETAIL
1" = 1'-0"

PROCEDURE NOTES:

1. NEW WALL OPENING
 - A. FOR ALL EXPOSED OPENINGS THE CONTRACTOR SHALL REMOVE AND RETOOTH ALL BRICK REQUIRED TO FORM SMOOTH, SQUARE, FINISHED BRICK JAMB. EACH SIDE OF OPENINGS.
2. REMOVE MAXIMUM 2 COURSES CMU ABOVE BOTTOM OF LINTEL, BY WIDTH OF CLEAR OPENING PLUS 8" AT EACH END.
3. REMOVE MAXIMUM 2 COURSES CMU BELOW BOTTOM OF LINTEL BY WIDTH CLEAR OPENING.
4. INSTALL PRECAST LINTEL IN VOID CREATED BY REMOVING THE CMU. LENGTH OF PRECAST IS EQUAL TO WIDTH OF CLEAR OPENING PLUS 16". REST EACH END OF PRECAST LINTEL ON THE 8" CMU SHELF.
5. PUSH PRECAST TO BACK OF VOID.
6. PLACE 2 COURSES CMU AND MORTAR ON TOP OF PRECAST.
7. DRYPACK TOP JOINT SOLID WITH PRE-HYDRATED MORTAR AND TUCK POINT.
8. WAIT 72 HOURS FOR MASONRY TO CURE PROPERLY BEFORE PROCEEDING WITH STEP 9.
9. GO TO OTHER SIDE OF WALL
10. REMOVE MAXIMUM 1 WYTHE OF BRICK, 3 COURSES ABOVE BOTTOM OF LINTEL, BY WIDTH OF CLEAR OPENING PLUS 8" AT EACH END.
11. REMOVE MAXIMUM 1 WYTHE OF BRICK, 3 COURSES HIGH BY WIDTH OF CLEAR OPENING. (COURSES BELOW BOTTOM OF LINTEL).
12. INSTALL L4x4x1/4 IN VOID CREATED BY REMOVING THE BRICK. LENGTH OF ANGLE IS EQUAL TO WIDTH OF CLEAR OPENING PLUS 16". REST EACH END OF ANGLE ON THE 8" BRICK SHELF.
13. PUSH ANGLE BACK TO INSIDE OF INTERIOR BRICK FACE.
14. PLACE 3 COURSES HIGH OF BRICK MASONRY AND MORTAR ON ANGLE.
15. DRYPACK TOP JOINT SOLID WITH PRE-HYDRATED MORTAR AND TUCK POINT.
16. WAIT 72 HOURS FOR MASONRY WORK TO CURE PROPERLY BEFORE PROCEEDING WITH STEP 17.
17. REMOVE PORTION OF WALL BELOW AS REQUIRED FOR OPENING DEPTH, (SEE ARCH. AND MECH. DRAWINGS).



2 TYPICAL HSS TO HSS MOMENT CONNECTION DETAIL
3/4" = 1'-0"

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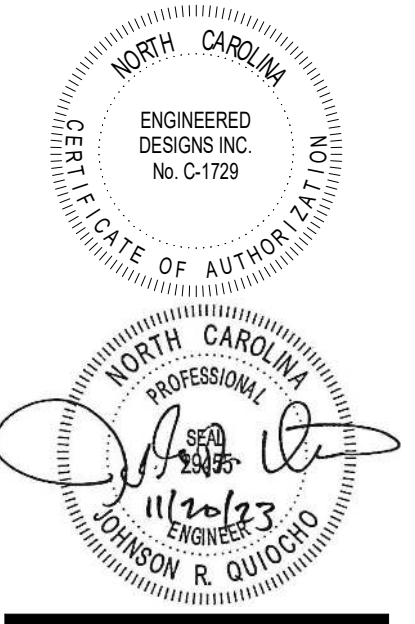
PLUMBING SYMBOLS AND ABBREVIATIONS

ABBREVIATION	DEFINITION	ABBREVIATION	DEFINITION	ABBREVIATION	DEFINITION
A	ARGON	GAL	GALLON	PC	PLUMBING CONTRACTOR
AD	AREA DRAIN	GC	GENERAL CONTRACTOR	POC	POINT OF CONNECTION
AFF	ABOVE FINISHED FLOOR	GPM	GALLON PER MINUTE	PRV	PRESSURE REDUCING VALVE
AG	ABOVE GROUND	GPH	GALLON PER HOUR	PSI	POUNDS PER SQUARE INCH
AGA	AMERICAN GAS ASSOCIATION	H	HYDROGEN	R	THERMAL RESISTANCE
AHJ	AUTHORITY HAVING JURISDICTION	HD	HEAD	RDL	ROOF DRAIN LEADER
AMP	AMPERE	HE	HELIUM	RPZ	REDUCED PRESSURE ZONE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	HG	MERCURY	SEC	SECOND
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	HGT	HEIGHT	SIM	SIMILAR
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS	HP	HORSEPOWER	SPEC	SPECIFICATION(S)
ATM	ATMOSPHERE	HR	HOUR	SPG	SPECIALTY GAS
BTU	BRITISH THERMAL UNITS	HWS	HOT WATER SUPPLY	SQ	SQUARE
BTUH	BRITISH THERMAL UNITS PER HOUR	HWR	HOT WATER RETURN	SS	STAINLESS STEEL
CA	COMPRESSED AIR	IE	INVERT ELEVATION	S/S	SANITARY SEWER
CIP	CAST IRON PIPE	IN	INCHES	STD	STANDARD
CISPI	CAST IRON SOIL AND PIPE INSTITUTE	IN 2	SQUARE INCHES)	T	TEMPERATURE
CL	CHLORINE	IN 3	CUBIC INCHES)	TD	TRENCH DRAIN
CONT	CONTINUED	IPS	IRON PIPE SIZE	TEMP	TEMPERATURE DIFFERENCE
CO	CLEANOUT	L	LENGTH	TPV	TRAP PRIMER VALVE
CU	COPPER	LB	POUND	TW	TEMPERED WATER
CWS	COLD WATER SUPPLY	LBS	POUNDS	TPY	TYPICAL
DC	DOUBLE CHECK	LPG	LIQUIFIED PETROLEUM GAS	UG	UNDERGROUND
DEG	DEGREE	MA	MEDICAL AIR	UL	UNDERWRITERS LABORATORIES
DI	DE-IONIZED WATER	MIN	MINUTE	V	VACUUM
DIP	DUCTILE IRON PIPE	N	NITROGEN	VAC	VOLTAGE ALTERNATING CURRENT
DIA	DIAMETER	N C	NORMALLY CLOSED	VERT	VERTICAL
EC	ELECTRICAL CONTRACTOR	N O	NORMALLY OPEN	VIV	VALVE IN VERTICAL
EL	ELEVATION	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	VT	VENT
F	FLUORINE	NG	NATURAL GAS	VTR	VENT THROUGH ROOF
FCO	FLOOR CLEANOUT	NIC	NOT IN CONTRACT	W	WIDTH
FD	FLOOR DRAIN	NPS	NOMINAL PIPE SIZE	WT	WEIGHT
FF	FINISHED FLOOR	NTS	NOT TO SCALE	WCO	WALL CLEANOUT
FFE	FINISHED FLOOR ELEVATION	NO	NUMBER	WHA	WATER HAMMER ARRESTOR
FL	FLOOR	N/A	NOT APPLICABLE	X	EXISTING
FT	FOOT/FEET	NZO	NITROUS OXIDE		
FT 2	SQUARE FOOT/FEET	OIL	OVERFLOW DRAIN LEADER		
FT 3	CUBIC FOOT/FEET	OX	OXYGEN		
FU	FIXTURE UNIT	OZ	OUNCE(S)		
FS	FLOOR SINK				

SYMBOLS	DEFINITION	SYMBOLS	DEFINITION	SYMBOLS	DEFINITION
	BALL VALVE		MIXING VALVE		POINT OF CONNECTION TO EXISTING
	CHECK VALVE		PUMP		DEMOLITION CALLOUT
	CIRCUIT SETTER		REDUCED PRESSURE ZONE BACKFLOW PREVENTER		DETAIL CALLOUT
	DOUBLE CHECK BACKFLOW PREVENTER		ROOF DRAIN		REVISION CALLOUT
	EQUIPMENT DESIGNATION		TRAP PRIMER VALVE		KEYNOTE TAG
	EXTERIOR CLEANOUT		TEMPERATURE & PRESSURE RELIEF VALVE		DEMOLISHED PIPE
	FLOOR DRAIN		UNION		
	FLOOR SINK		VACUUM BREAKER		
	HOSE BIBB		WALL CLEANOUT		
	INTERIOR FLOOR CLEANOUT		WATER HAMMER ARRESTOR		

LINETYPES	DEFINITIONS	LINETYPES	DEFINITIONS
	CONDENSATE DRAIN		EXISTING DOMESTIC COLD WATER
	DOMESTIC COLD WATER		EXISTING DOMESTIC HOT WATER
	DOMESTIC HOT WATER		EXISTING DOMESTIC HOT WATER RETURN
	DOMESTIC HOT WATER RETURN		EXISTING SANITARY
	SANITARY		EXISTING SANITARY VENT
	SANITARY VENT		

CD'S FOR BID
SCO ID# 19-21547-02A
NCSU ID 201920037



date note

New Building For:
Don E. Ellis Building (133)
Renovations
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

PROJECT 1368-20
 DATE 11/20/23
 DRAWN SES
 CHECKED JRQ
PLUMBING NOTES
LEGENDS AND
ABBREVIATIONS

PLUMBING FIXTURE SCHEDULE table with columns: ITEM, FIXTURE DESCRIPTION, EQUIPMENT SPECIFICATION, ADA (Y/N), POTABLE WATER CONNECTIONS (COLD, HOT, TW), WASTE AND VENT CONNECTIONS (WASTE, VENT).

PLUMBING FIXTURE SCHEDULE table with columns: ITEM, FIXTURE DESCRIPTION, EQUIPMENT SPECIFICATION, ADA (Y/N), POTABLE WATER CONNECTIONS (COLD, HOT, TW), WASTE AND VENT CONNECTIONS (WASTE, VENT).



PLUMBING/ELECTRICAL EQUIPMENT SCHEDULE										
EQUIPMENT DESIGNATION	EQUIPMENT DESCRIPTION	EQUIPMENT FURNISHED BY	VOLTAGE/ PHASE	KW	HP	FLA	DISCONNECT FURNISHED BY	STARTER FURNISHED BY	CONTROLS	REMARKS
EDF-1	DRINKING FOUNTAIN W/ BOTTLE FILLER	PC	115/1	-	-	-	EC	N/A	WIEQUIP	ELKAY MODEL VRCLDDWSK
IWH-1	INSTANTANEOUS ELECTRIC WATER HEATER	PC	208/3	19	-	-	EC	N/A	WIEQUIP	EEMAX MODEL EX190TC
HWRP-1	HOT WATER RECIRCULATION PUMP	PC	115/1	-	3/20	-	EC	N/A	WIEQUIP	GRUNDFOS MODEL UPS-15-35-SFC
SP-1	BASEMENT SUMP PUMP	PC	115/1	-	1/2	-	EC	N/A	WIEQUIP	ZOELLER MODEL M98
SP-2	ELEVATOR SUMP PUMP	PC	115V	-	1/2	-	EC	N/A	WIEQUIP	ZOELLER MODEL M98

DOMESTIC WATER SYSTEM SUMMARY

FIXTURE/EQUIPMENT DESCRIPTION	QUANTITY	FIXTURE UNIT VALUES	FIXTURE UNIT SUB-TOTALS	
AUTOCLAVE	-	-	-	-
BATH TUB WITHOUT SHOWER HEAD	-	-	-	-
BATH TUB WITH SHOWER HEAD	-	-	-	-
CAGE WASHER	-	-	-	-
DISHWASHER - RESIDENTIAL	-	-	-	-
DISHWASHER - COMMERCIAL	-	-	-	-
DRINKING FOUNTAIN - SINGLE UNIT	-	-	-	-
DRINKING FOUNTAIN - HIGH/LOW UNIT	-	-	-	-
ELECTRIC WATER COOLER - SINGLE UNIT	1	0.25	0.25	-
ELECTRIC WATER COOLER - HIGH/LOW UNIT	-	-	-	-
ICE MACHINE - COMMERCIAL	-	-	-	-
LAVATORY	4	2.0	8.0	-
MOP SINK	2	3.0	6.0	-
PEDICURE STATION	-	-	-	-
SHOWER - PRIVATE	-	-	-	-
SHOWER - PUBLIC	2	4.0	8.0	-
SHOWER - GANG	-	-	-	-
SINK - BAR	-	-	-	-
SINK - BREAK ROOM	1	4.0	4.0	-
SINK - CLASS ROOM	-	-	-	-
SINK - CUSTODIAL	-	-	-	-
SINK - DENTAL UNIT	-	-	-	-
SINK - EXAM ROOM	-	-	-	-
SINK - KITCHEN - COMMERCIAL	-	-	-	-
SINK - LABORATORY ROOM	-	-	-	-
SINK - LOUNGE ROOM	-	-	-	-
SINK - SCRUB	-	-	-	-
SINK - SCULLERY	-	-	-	-
SINK - SHAMPOO	-	-	-	-
SINK - STERILIZATION	-	-	-	-
SINK - UTILITY	-	-	-	-
STERILIZER	-	-	-	-
URINAL - 3/4" SUPPLY	-	-	-	-
URINAL - 1" SUPPLY	-	-	-	-
WASHING MACHINE - RESIDENTIAL GRADE	-	-	-	-
WASHING MACHINE - (8LBS)	-	-	-	-
WASHING MACHINE - (15LBS)	-	-	-	-
WATER CLOSET - FLUSH VALVE - PRIVATE	-	-	-	-
WATER CLOSET - FLUSH TANK - PRIVATE	-	-	-	-
WATER CLOSET - FLUSH VALVE - PUBLIC	4	10.0	40.0	-
WATER CLOSET - FLUSH TANK - PUBLIC	-	-	-	-

TOTAL FIXTURE UNITS		66.25
70 FU =	58.0 GPM	
- 60 FU =	- 54.0 GPM	
10 FU =	4.0 GPM	
4.0 GPM		
10 FU =	.04 GPM	
66.25 FU		
- 60.00 FU	X .04 GPM =	0.25 GPM
6.25 FU		
54.0 GPM		
+ 0.25 GPM		
54.25 GPM		

SELECTED PIPE SIZE:	2	(INCH)
WATER VELOCITY (APPROXIMATE):	6	FPS
PRESSURE DROP PER 100 FEET (APPROXIMATE):	5	PSI

NOTES:
(1) FIXTURE UNITS, WATER VELOCITY, AND PRESSURE DROP ARE CALCULATED PER NCBC - PLUMBING, 2018 EDITION.
(2) PIPING SIZED PER FIGURE E103.3, NCBC - PLUMBING, 2018 EDITION.

DOMESTIC HOT WATER SYSTEM SUMMARY

TOTAL FIXTURE UNITS		24.5
25 FU =	38.0 GPM	
- 20 FU =	- 35.5 GPM	
5 FU =	3.5 GPM	
3.5 GPM		
5 FU =	.70 GPM	
24.5 FU		
- 20 FU	X .70 GPM =	3.85 GPM
5.5 FU		
35.5 GPM		
+ 3.85 GPM		
39.35 GPM		

SELECTED PIPE SIZE:	1.5	(INCH)
WATER VELOCITY (APPROXIMATE):	5.25	FPS
PRESSURE DROP PER 100 FEET (APPROXIMATE):	5	PSI

NOTES:
(1) FIXTURE UNITS, WATER VELOCITY, AND PRESSURE DROP ARE CALCULATED PER NCBC - PLUMBING, 2018 EDITION.
(2) PIPING SIZED PER FIGURE E103.3, NCBC - PLUMBING, 2018 EDITION.

WATER HEATING SYSTEM SUMMARY

FIXTURE/EQUIPMENT DESCRIPTION	QTY.	GALLONS PER FIXTURE PER HOUR	SUB-TOTAL GALLONS PER FIXTURE PER HOUR	
AUTOCLAVE	-	- GPH	-	GPH
BATH TUB WITHOUT SHOWER HEAD	-	- GPH	-	GPH
BATH TUB WITH SHOWER HEAD	-	- GPH	-	GPH
CAGE WASHER	-	- GPH	-	GPH
DISHWASHER - RESIDENTIAL	-	- GPH	-	GPH
DISHWASHER - COMMERCIAL	-	- GPH	-	GPH
LAVATORY	4	6 GPH	24	GPH
MOP SINK	2	20 GPH	40	GPH
PEDICURE STATION	-	- GPH	-	GPH
SHOWER - PRIVATE	-	- GPH	-	GPH
SHOWER - PUBLIC	2	30 GPH	60	GPH
SHOWER - GANG	-	- GPH	-	GPH
SINK - BAR	-	- GPH	-	GPH
SINK - BREAK ROOM	1	20 GPH	20	GPH
SINK - CLASS ROOM	-	- GPH	-	GPH
SINK - CUSTODIAL	-	- GPH	-	GPH
SINK - DENTAL UNIT	-	- GPH	-	GPH
SINK - EXAM ROOM	-	- GPH	-	GPH
SINK - KITCHEN - COMMERCIAL	-	- GPH	-	GPH
SINK - LABORATORY ROOM	-	- GPH	-	GPH
SINK - LOUNGE ROOM	-	- GPH	-	GPH
SINK - SCRUB	-	- GPH	-	GPH
SINK - SCULLERY	-	- GPH	-	GPH
SINK - SHAMPOO	-	- GPH	-	GPH
SINK - STERILIZATION	-	- GPH	-	GPH
SINK - UTILITY	-	- GPH	-	GPH
STERILIZER	-	- GPH	-	GPH
WASHING MACHINE - RESIDENTIAL GRADE	-	- GPH	-	GPH
WASHING MACHINE - (8LBS)	-	- GPH	-	GPH
WASHING MACHINE - (15LBS)	-	- GPH	-	GPH

TOTAL GALLONS PER HOUR:	144	GPH
DEMAND FACTOR:	X .30	
ADJUSTED GALLONS PER HOUR:	43.2	GPH
STORAGE CAPACITY FACTOR:	X 1.0	
TOTAL GALLONS OF STORAGE CAPACITY REQUIRED:	43.2	GAL

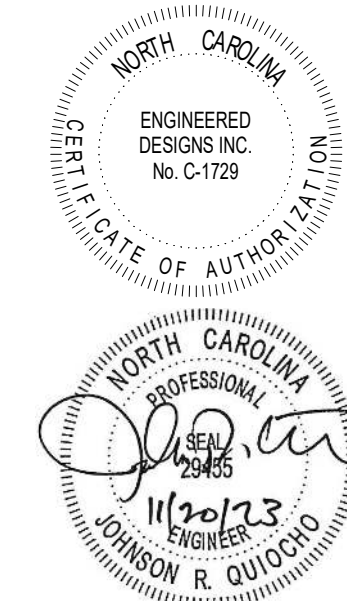
WATER HEATER REQUIREMENTS (APPROXIMATE)
REQUIRED GPH (FIRST HOUR RECOVERY @ 90°F RISE) 43.2 GPH
REQUIRED STORAGE CAPACITY N/A GAL

NOTES:
(1) SIZED PER 2019 ASHRAE HANDBOOK, "HVAC APPLICATIONS", CHAPTER 51 - "SERVICE WATER HEATING".

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Skinner | Farlow | Kirwan
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301 University Ave., Suite 300
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919-222-9972
sfaarchitecture.com

CD'S FOR BID
SCO ID# 19-21547-02A
NCSU ID 201920037



date note

New Building For:
Don E. Ellis Building (133) Renovations
1320 Varsity Drive, Raleigh, NC 27606
North Carolina State University

PROJECT 1368-20
DATE 11/20/23
DRAWN SES
CHECKED JRQ

PLUMBING SCHEDULES

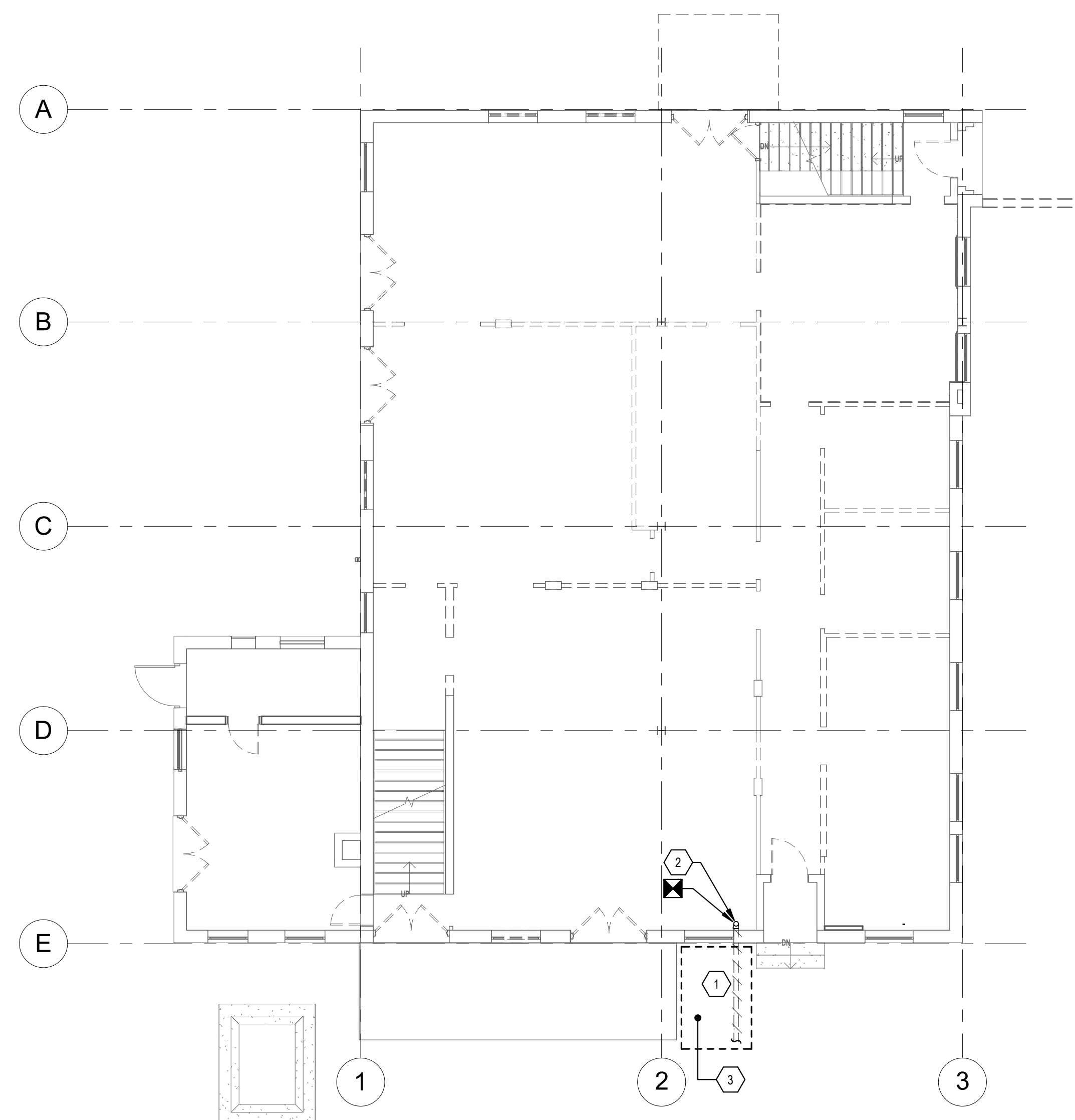
P-102

GENERAL NOTES

1. ALL EXISTING MAIN FLOOR DRAINS AND ASSOCIATED P-TRAPS SHALL BE DEMOLISHED AND CAPPED AT DEMOLITION POINT UPSTREAM OF TRAP. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING FLOOR DRAINS & LOCATIONS AND COORDINATE DEMOLITION WITH ARCHITECT / OWNER AS NEEDED; PATCH EXISTING FLOOR SLAB AND MATCH TO EXISTING.
2. EXISTING UNDERGROUND SANITARY PIPING SHALL BE ABANDONED IN PLACE AND A PIPE VOID FILL PERFORMED. PIPE VOID FILL SHALL BE CODE COMPLIANT AND INSTALLED USING INDUSTRY BEST PRACTICES.

KEYED NOTES

1. EXISTING 3 INCH SANITARY PIPING TO BE SITE CLEARED FROM POINT OF DEMOLITION BACK TO MANHOLE AND CAPPED FOR NEW PIPING CONNECTION IN NEW WORK PHASE; COORDINATE WITH SITE / CIVIL.
2. EXISTING UNDERGROUND SANITARY PIPING SERVING BUILDING SHALL BE CAPPED AT POINT OF DEMOLITION AND ABANDONED IN PLACE.
3. NOTE: CONTRACTOR SHALL REMOVE SOIL IN THIS AREA TO FIELD VERIFY LOCATION OF ALL EXISTING PIPING ROUTED INTO THIS AREA ENTERING THE BUILDING. THIS SHOULD BE DONE PRIOR TO THE BEGINNING OF SANITARY NEW WORK TO AVOID DAMAGE TO EXISTING PIPING SYSTEMS DURING NEW WORK PHASE AND VERIFY THE PROPER INSTALLATION OF THE NEW SANITARY PIPING CAN BE ACCOMPLISHED.

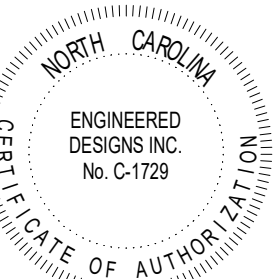


1 First Floor Plan - Demolition
 PD-201 SCALE: 1/8" = 1'-0"

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CD'S FOR BID

SCO ID# 19-21547-02A
 NCSU ID 201920037



#	date	note
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New Building For:
Don E. Ellis Building (133)
Renovations
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

PROJECT	1368-20
DATE	11/20/23
DRAWN	SES
CHECKED	JRQ

PLUMBING PLANS -
DEMOLITION

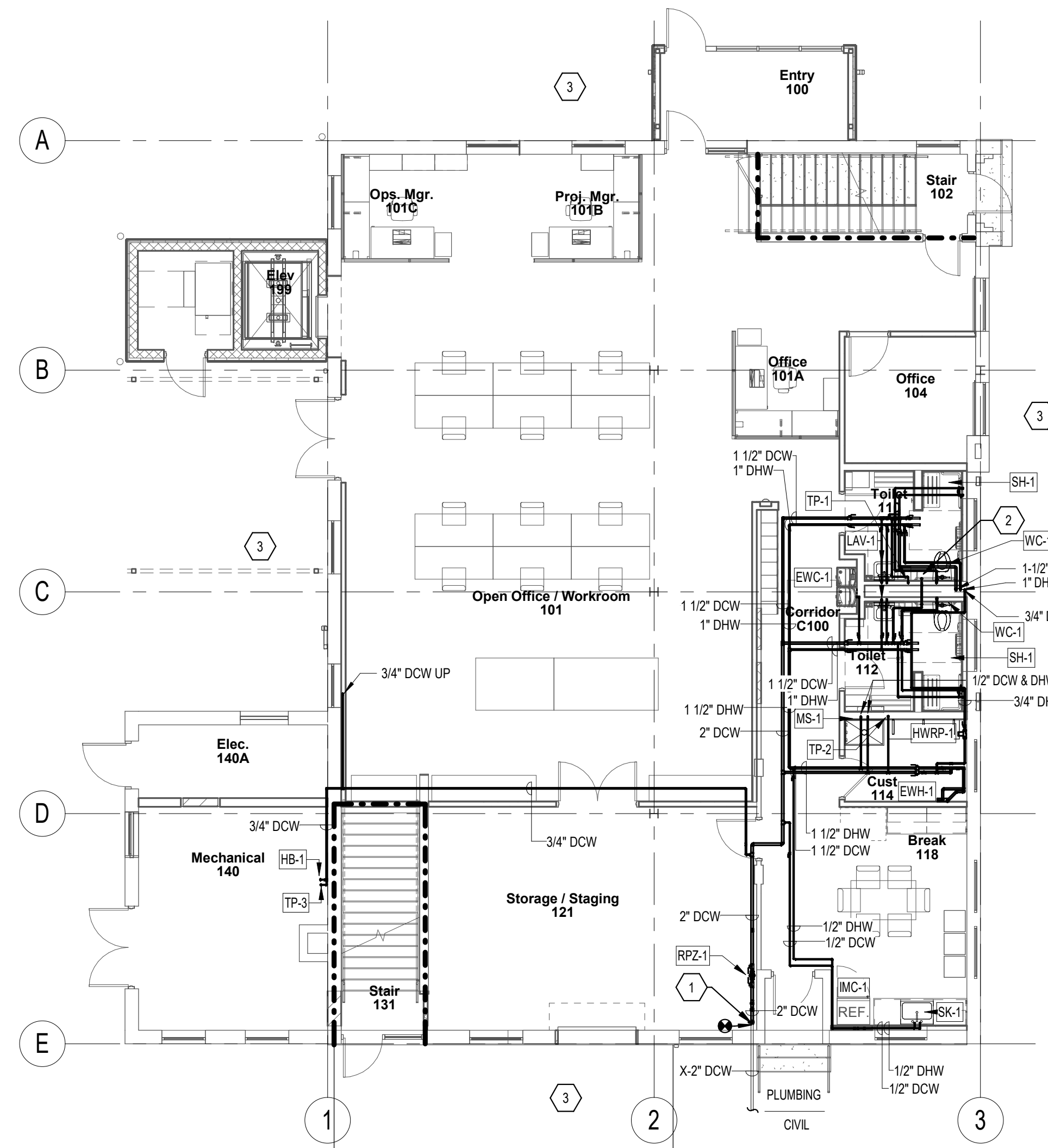
PD-201

GENERAL NOTES

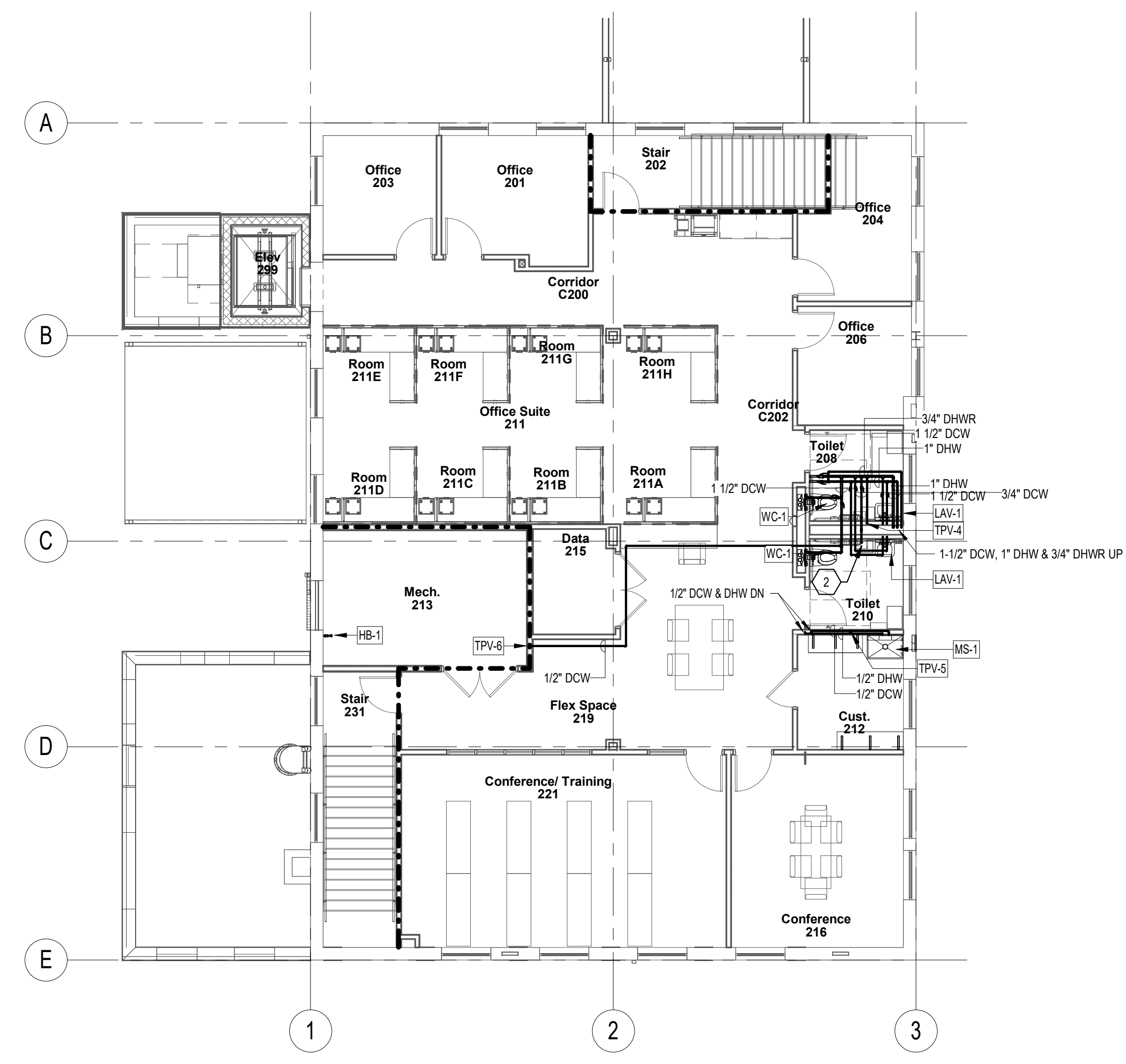
- TRP-1 SERVES TOILET 110 AND TOILET 112; TRP-2 SERVES CUSTODIAL 114; TRP-3 SERVES MECHANICAL ROOM 140; TRP-4 SERVES TOILET 208 AND TOILET 210; TRP-5 SERVES CUSTODIAL 212; TRP-6 SERVES MECHANICAL ROOM 213.

KEYED NOTES

- NEW 2-INCH SHUT-OFF VALVE FOR EXISTING DOMESTIC WATER SERVICE FOR BUILDING.
- TPYICAL: INTERIOR HOSE BIBB FOR RESTROOMS.
- CONTRACTOR SHALL FIELD VERIFY QUANTITY AND LOCATION OF ALL EXISTING WALL HYDRANTS TO BE REPLACED ALONG THE EXTERIOR OF THE BUILDING.



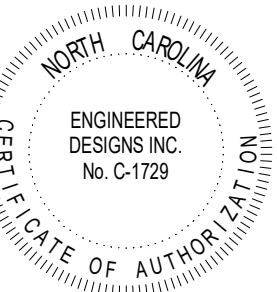
1 FIRST FLOOR PLAN - DOMESTIC WATER - BASE
P-201 SCALE: 1/8" = 1'-0"



2 SECOND FLOOR PLAN - DOMESTIC WATER - BASE
P-201 SCALE: 1/8" = 1'-0"

CD'S FOR BID

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1320 Varsity Drive, Raleigh, NC 27606
North Carolina State University

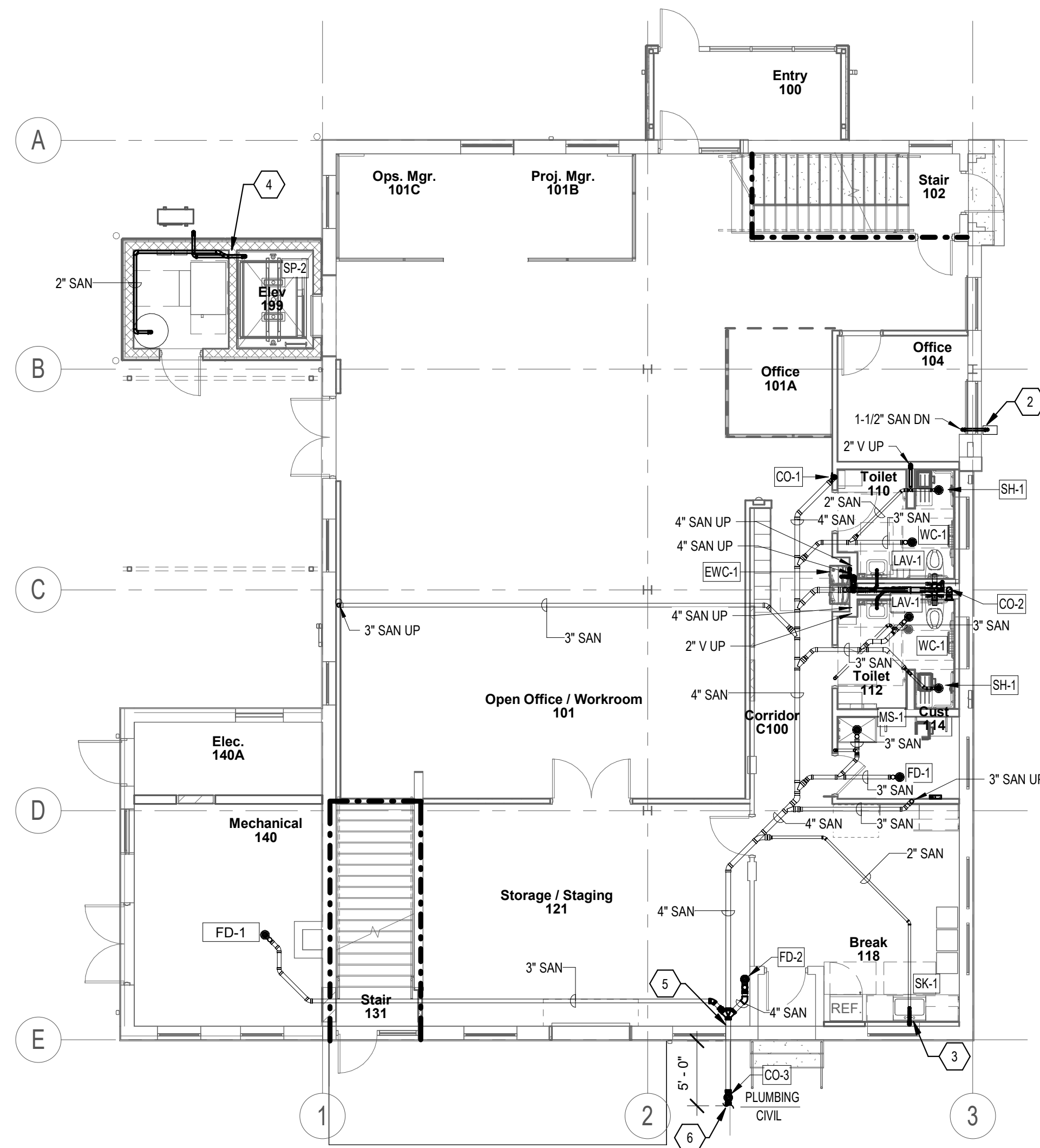
PROJECT 1368-20
DATE 11/20/23
DRAWN Author
CHECKED Checker

PLUMBING PLANS -
NEW WORK

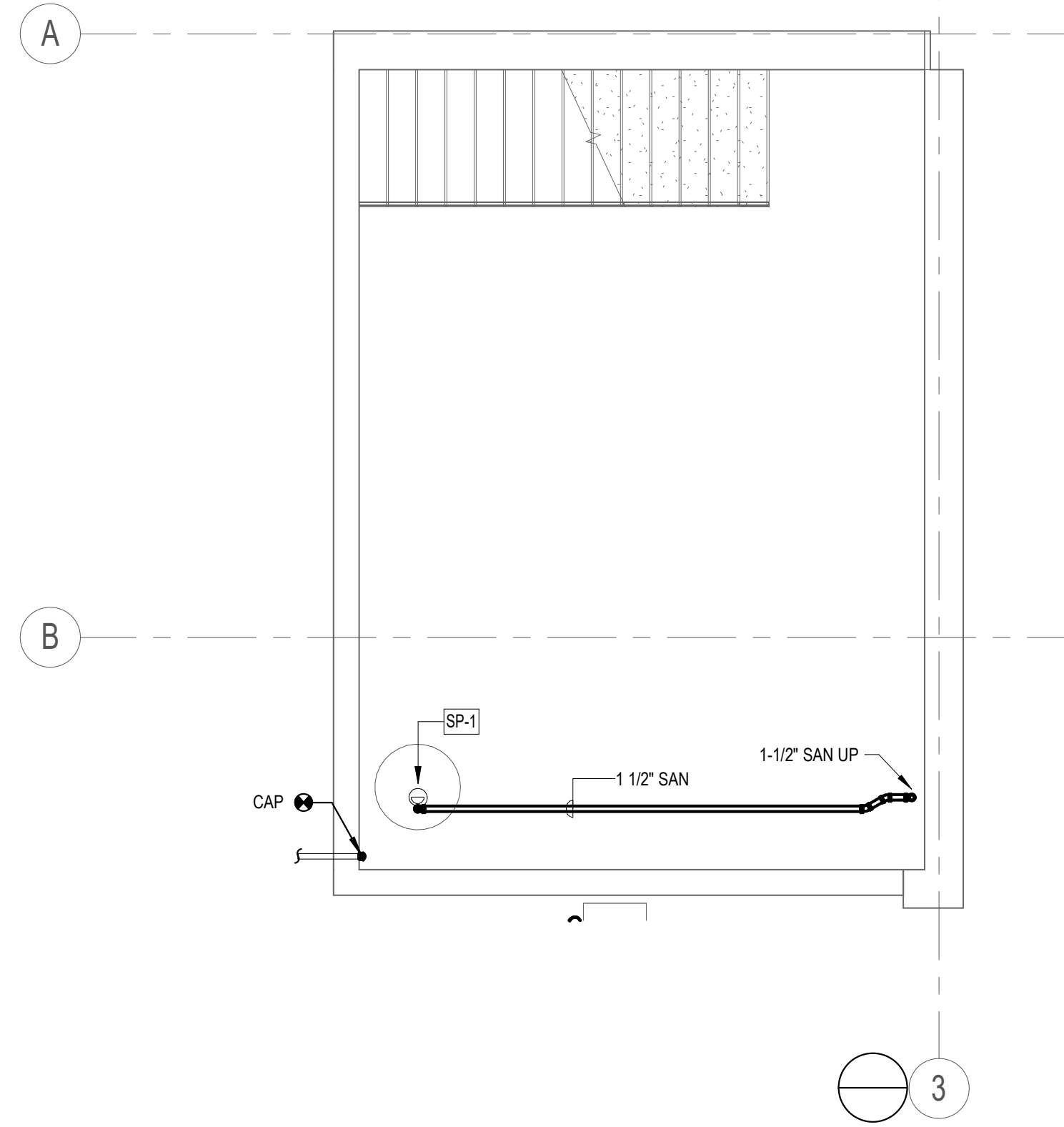
P-201

KEYED NOTES

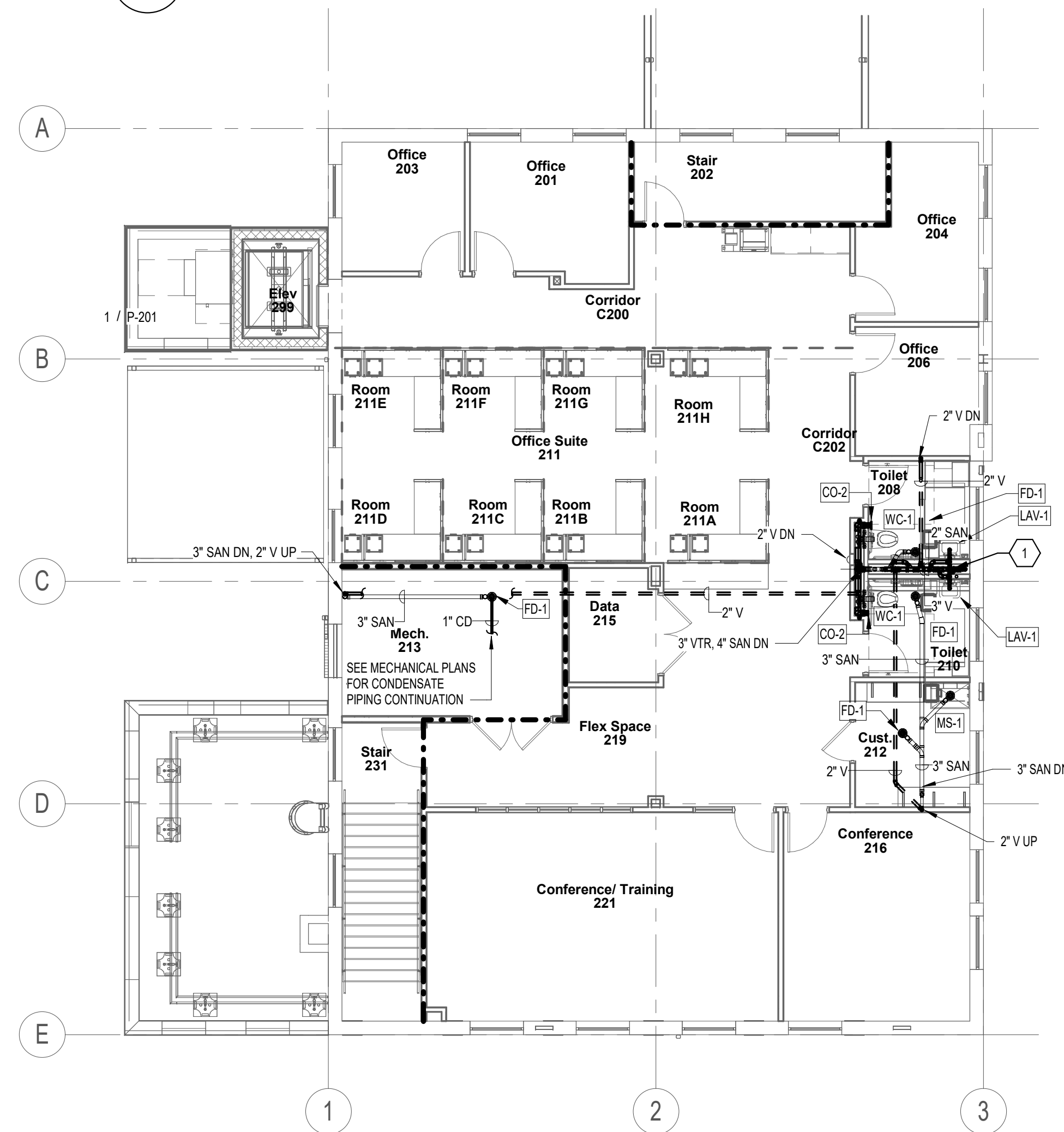
- 1 CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING ROOF PENETRATION REMAINING FROM PREVIOUS SANITARY WASTE & VENT PIPING DEMOLITION. CONTRACTOR SHALL REMOVE EXISTING CAPPED SECTION OF 4" PIPING LEFT FROM DEMOLITION PHASE AND ROUTE NEW VENT THROUGH EXISTING ROOF PENETRATION. CONTRACTOR SHALL SEAL PENETRATION WITH ALL NECESSARY FLASHING AND BRACING FOR VENT PIPING.
- 2 BASEMENT SUMP PUMP PIPING ROUTED TO EXTERIOR AND TURNED DOWN TO SPLASH BLOCK.
- 3 AIR-ADMITTANCE VALVE LOCATED BELOW COUNTER IN 1-1/2" SANITARY LINE TO PROVIDE VENTING FOR BREAKROOM SINK SK-1.
- 4 PIPING SERVING ELEVATOR SUMP PUMP (SP-2) ROUTED UP FROM ELEVATOR PIT. PIPING SHALL BRANCH TO (1) EXTERIOR OF BUILDING TO GRADE AND (2) TO OIL HOLDING TANK (HT-1) LOCATED IN ELEVATOR MACHINE ROOM. PROVIDE "BIRD SCREEN" OVER EXTERIOR PIPING OUTLET TO PREVENT ENTRANCE OF ANIMALS INTO THE INTERIOR PIPING SYSTEM.
- 5 CONTRACTOR SHALL FIELD VERIFY INVERT BENEATH SLAB OF EXISTING SANITARY PIPING AT POINT OF CONNECTION PRIOR TO BEGINNING OF NEW WORK TO CONFIRM THAT REQUIRED SLOPE CAN BE ACHIEVED PER PROPOSED ROUTING. DESIGN INVERT IS 37.182' BELOW FINISHED FLOOR.
- 6 SITE UTILITY CONTRACTOR TO CONNECT AND ROUTE NEW 4" SANITARY PIPE FROM POINT OF PLUMBING / CIVIL DEMARCATION TO EXISTING SANITARY SYSTEM IN MANHOLE; REFER TO CIVIL SITE PLANS.



1 FIRST FLOOR PLAN - WASTE & VENT - BASE
 P-202 SCALE: 1/8" = 1'-0"



3 BASEMENT - WASTE & VENT - BASE
 P-202 SCALE: 1/4" = 1'-0"

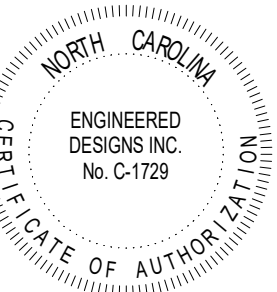


2 SECOND FLOOR PLAN - WASTE & VENT - BASE
 P-202 SCALE: 1/8" = 1'-0"

11/20/2023 4:02:57 PM

CD'S FOR BID

SCO ID# 19-21547-02A
 NCSU ID 201920037



date note

New Building For:
Don E. Ellis Building (133)
Renovations
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

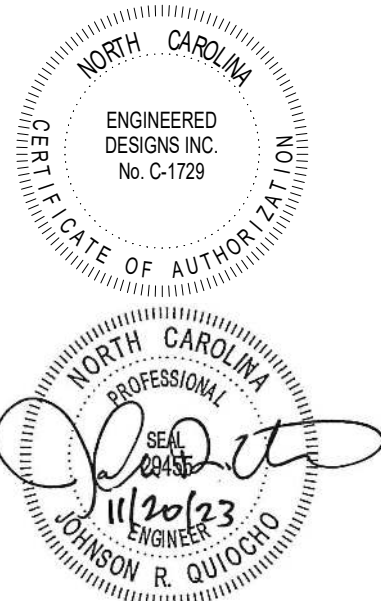
PROJECT 1368-20
 DATE 11/20/23
 DRAWN SES
 CHECKED JRQ

PLUMBING PLANS - NEW WORK

P-202

CD'S FOR BID

SCO ID# 19-21547-02A
 NCSU ID 201920037



date note

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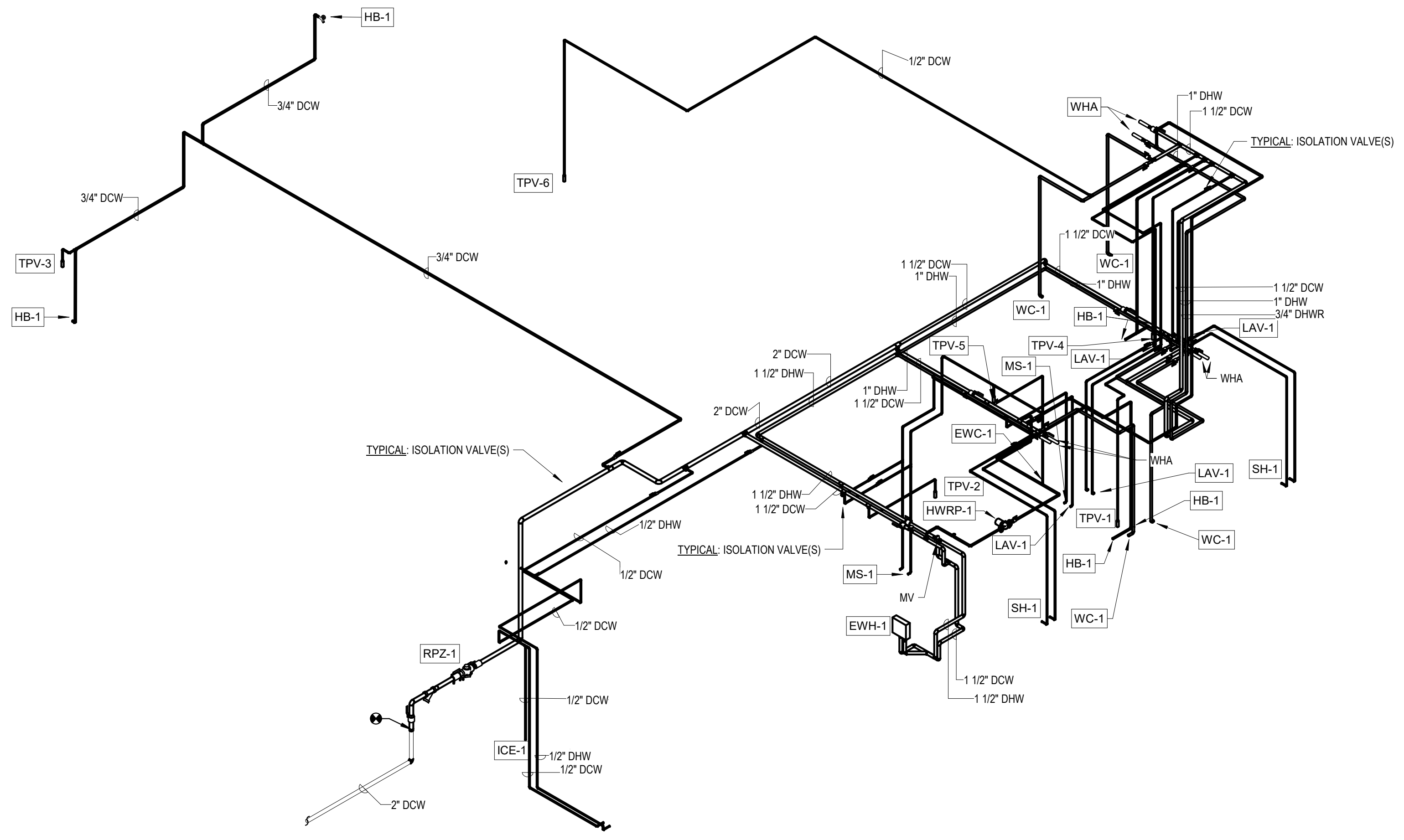
PROJECT 1368-20
 DATE 11/20/23
 DRAWN SES
 CHECKED JRQ

PLUMBING RISER DIAGRAMS

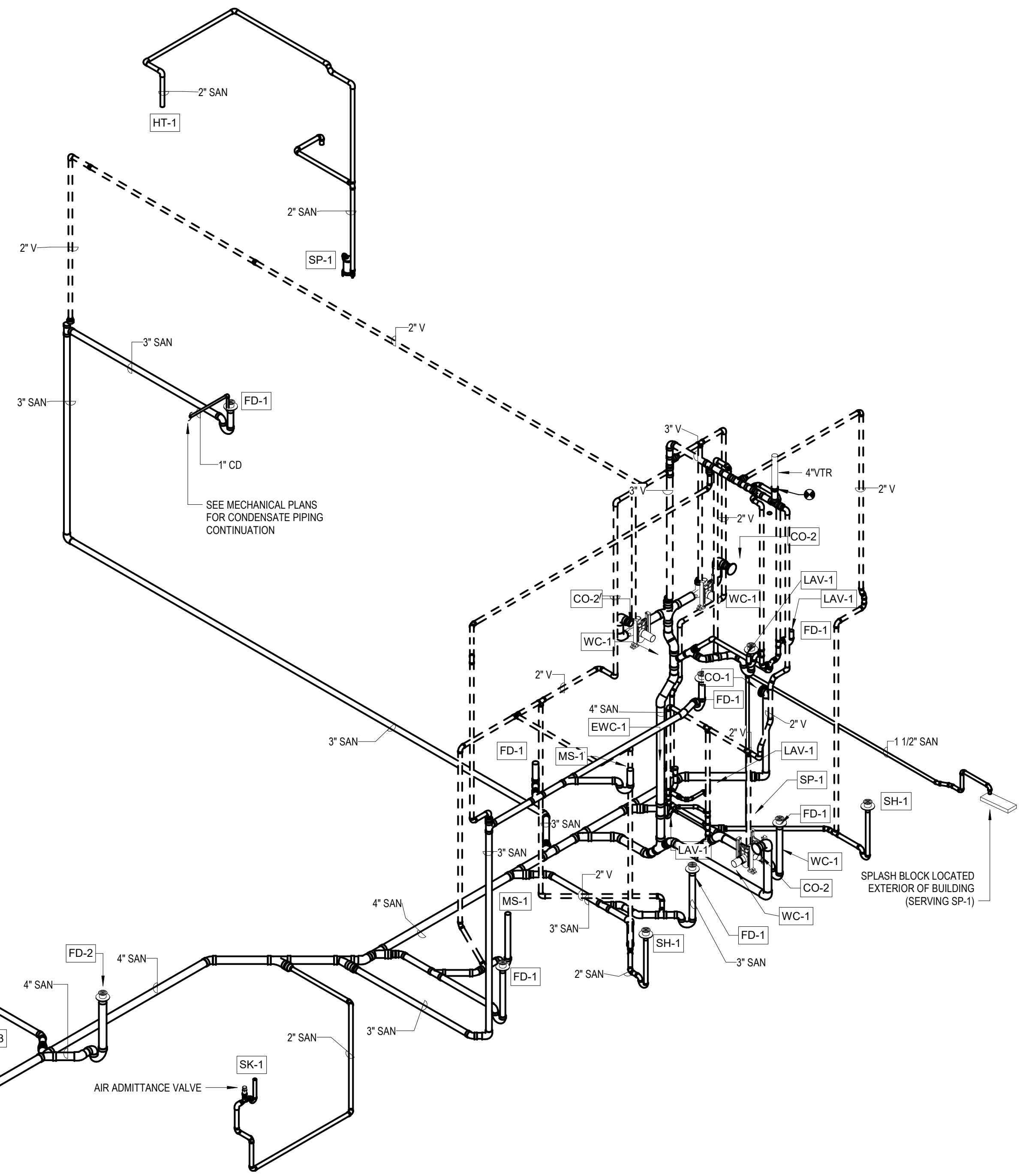
P-401

GENERAL NOTES

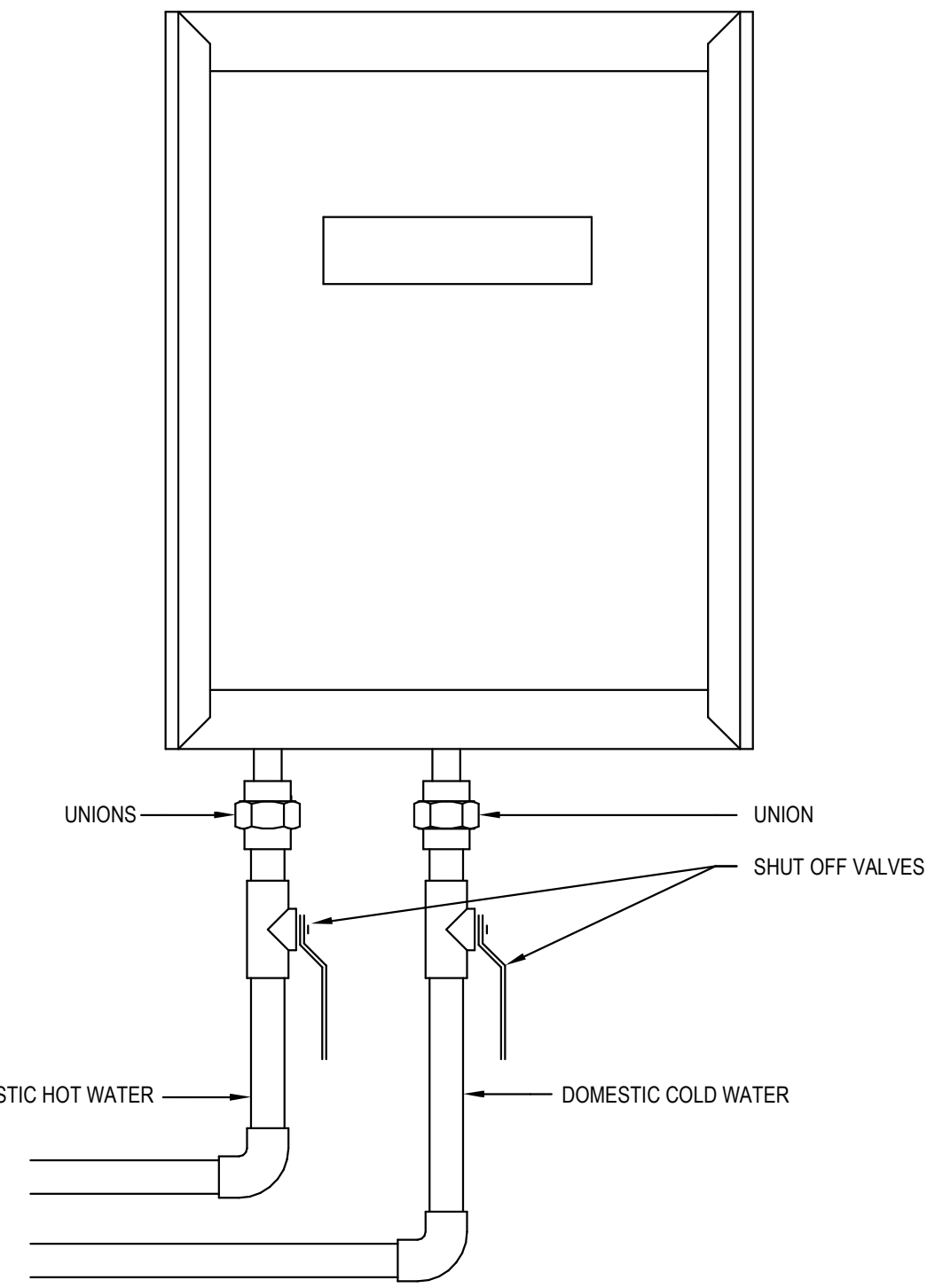
- TRP-1 SERVES TOILET 110 AND TOILET 112; TRP-2 SERVES CUSTODIAL 114; TRP-3 SERVES MECHANICAL ROOM 140; TRP-4 SERVES TOILET 208 AND TOILET 210; TRP-5 SERVES CUSTODIAL 212; TRP-6 SERVES MECHANICAL ROOM 213.



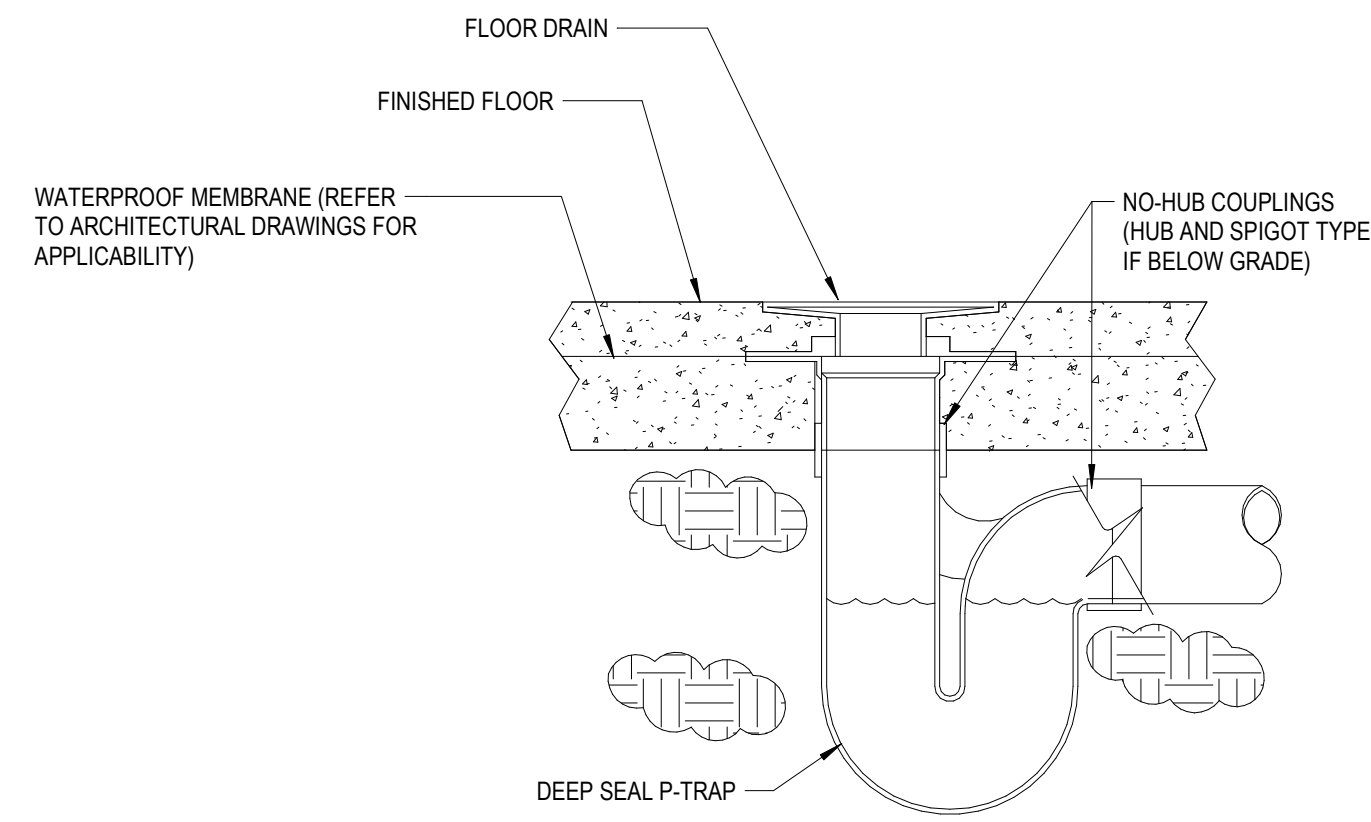
1 RISER DIAGRAM - DOMESTIC WATER - BASE
 P-401 SCALE:



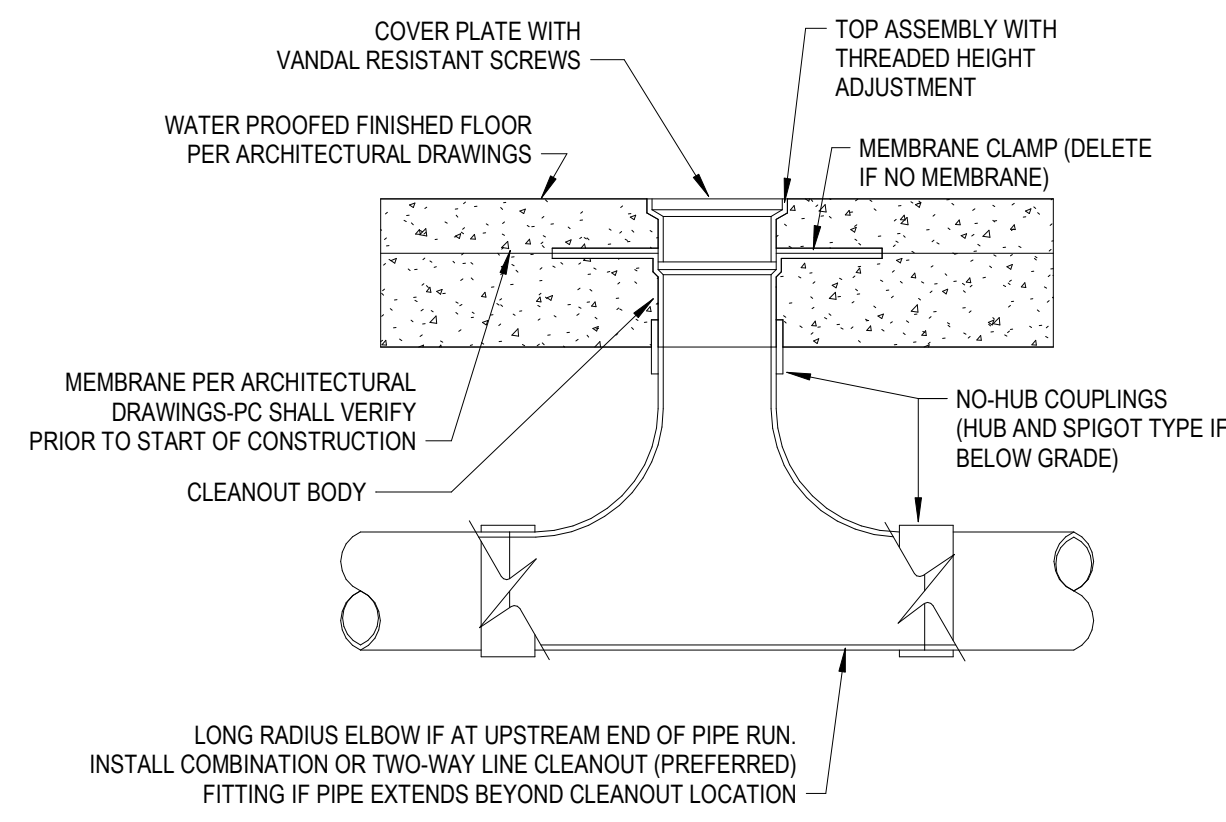
2 RISER DIAGRAM - WASTE & VENT - BASE
 P-401 SCALE:



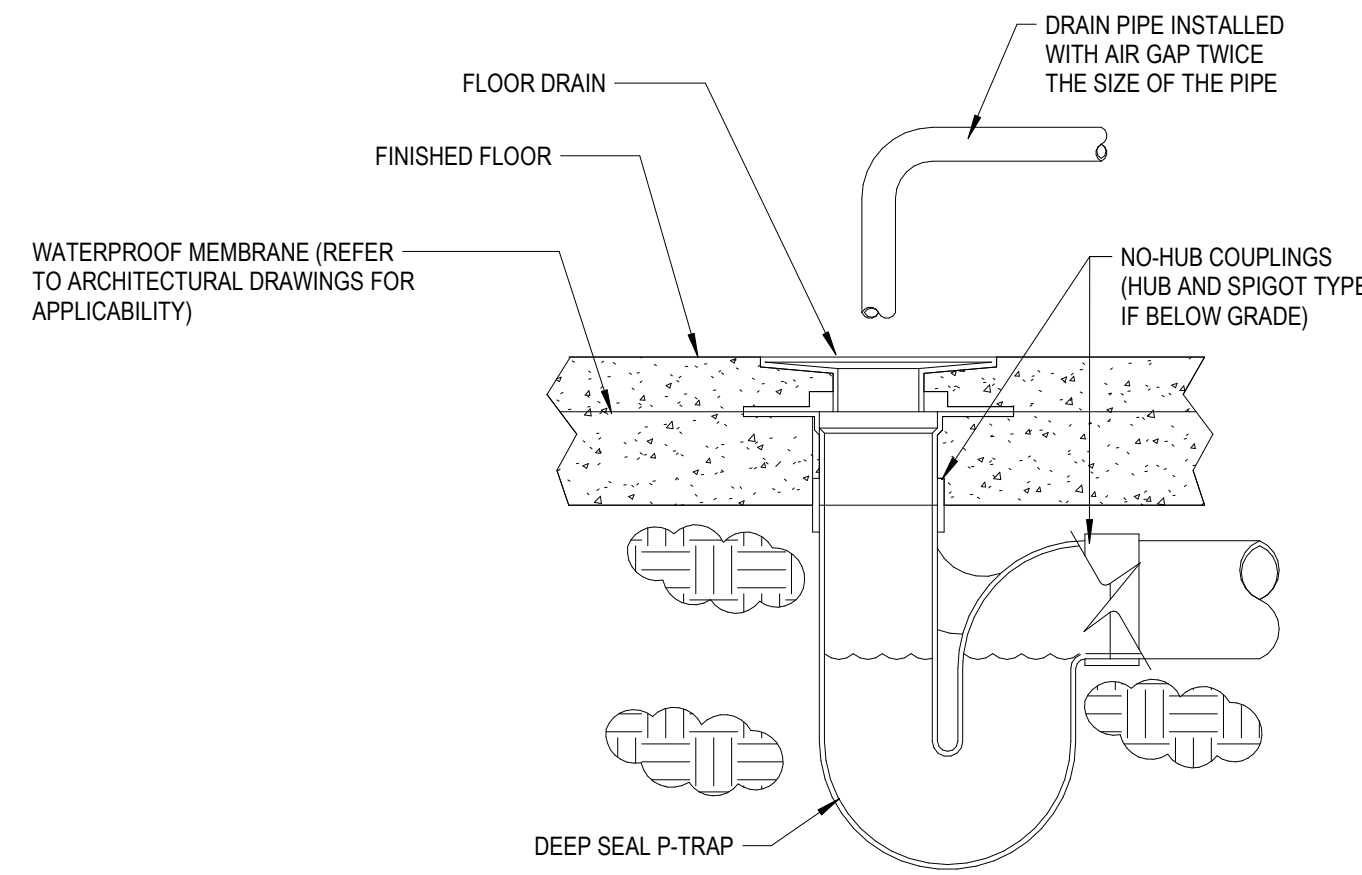
3 INSTANTANEOUS WATER HEATER - ELECTRIC
P-501 SCALE: NOT TO SCALE



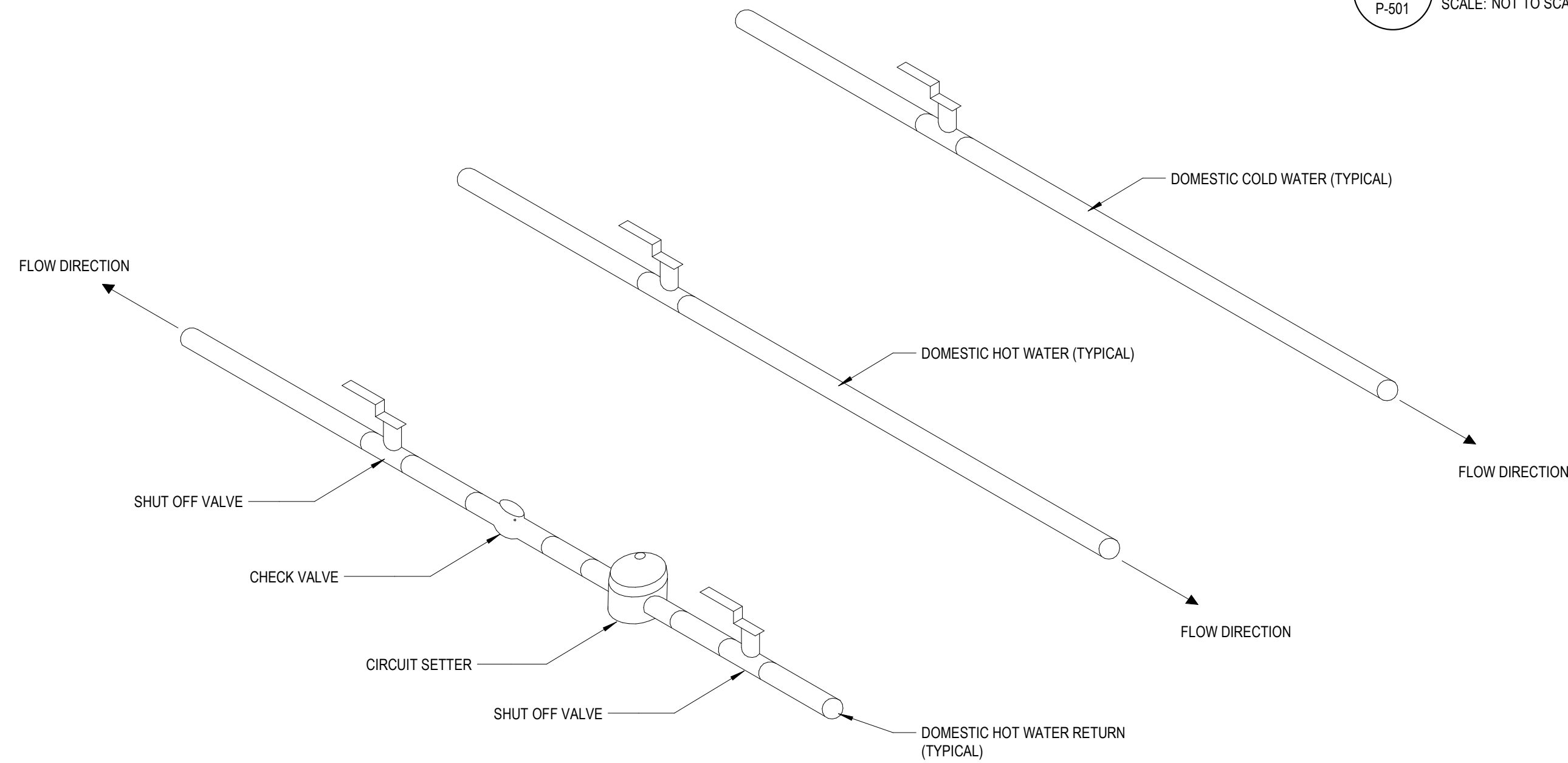
6 FLOOR DRAIN
P-501 SCALE: 12" = 1'-0"



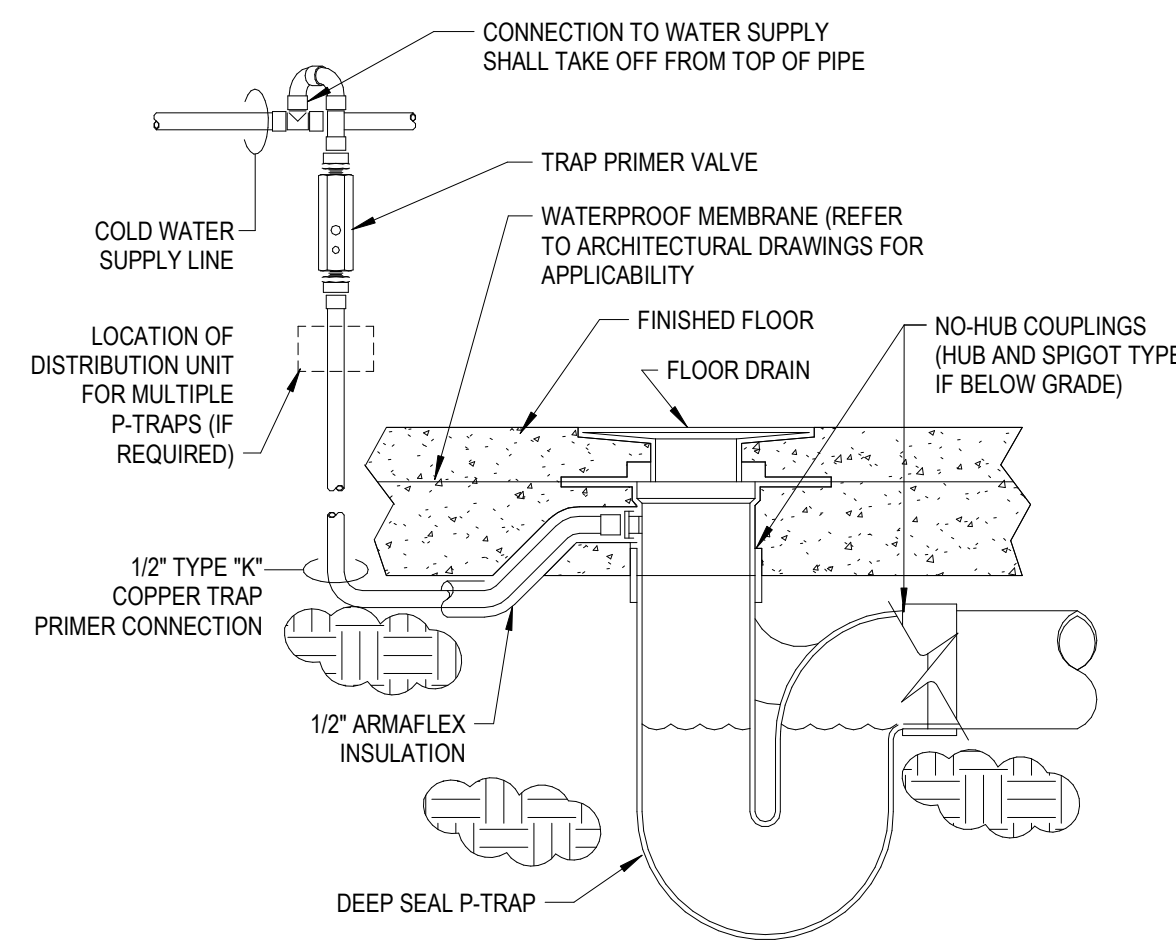
2 INTERIOR CLEANOUT
P-501 SCALE: NOT TO SCALE



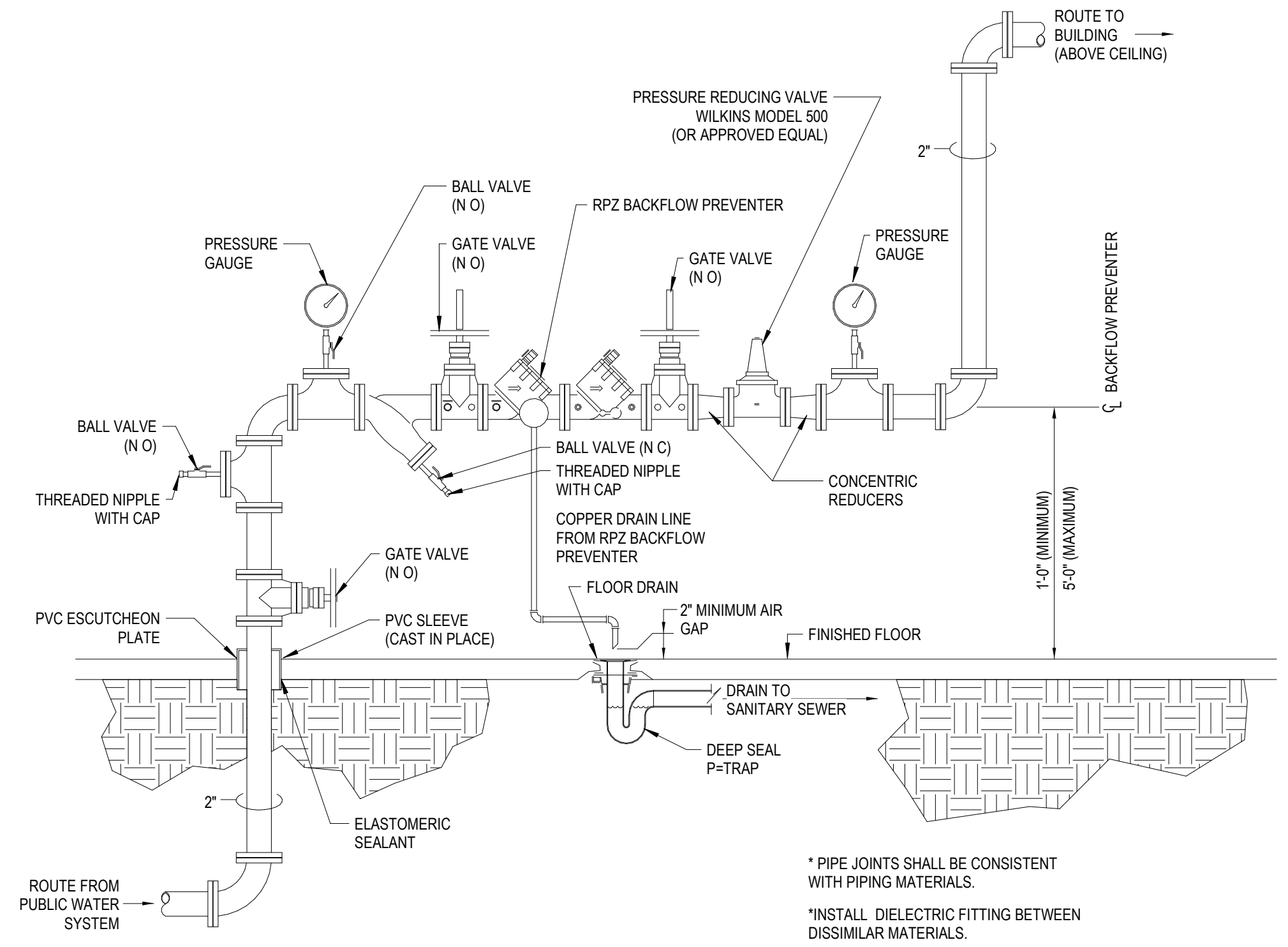
5 FLOOR DRAIN W/O TRAP PRIMER
P-501 SCALE: NOT TO SCALE



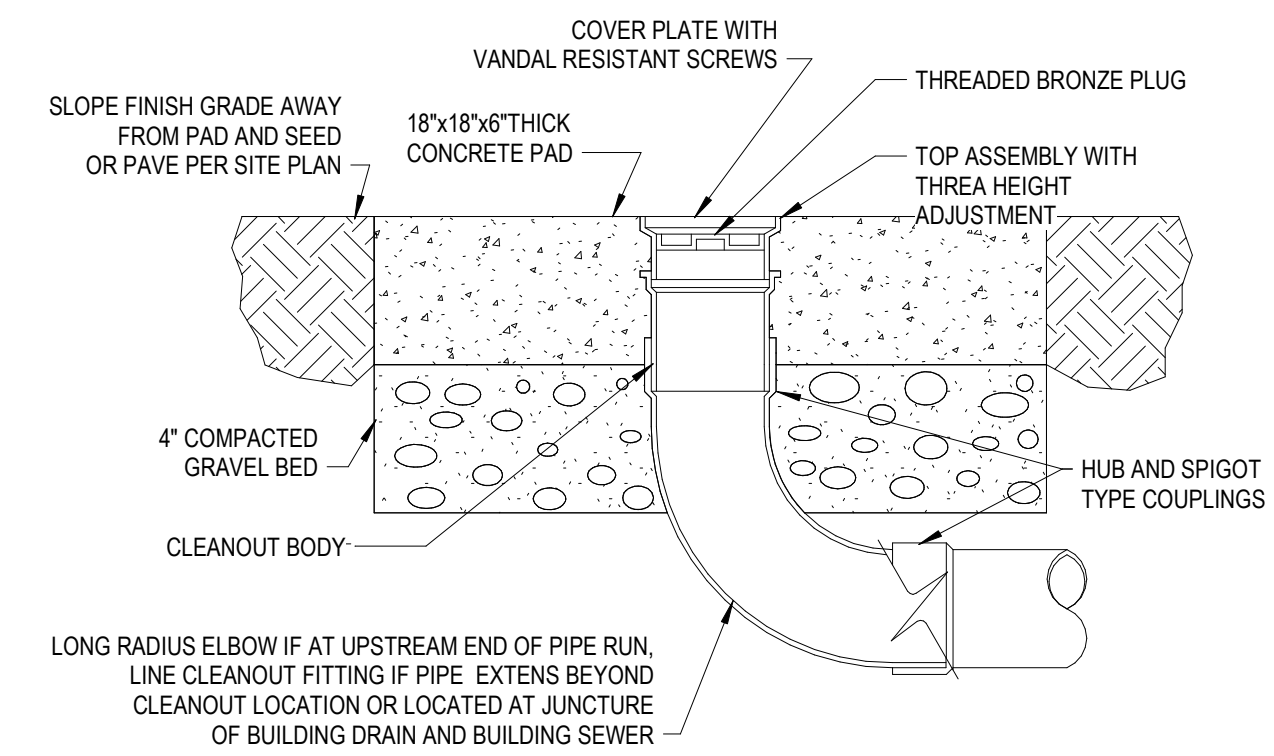
9 BRANCH CONNECTION DETAIL
P-501 SCALE: 12" = 1'-0"



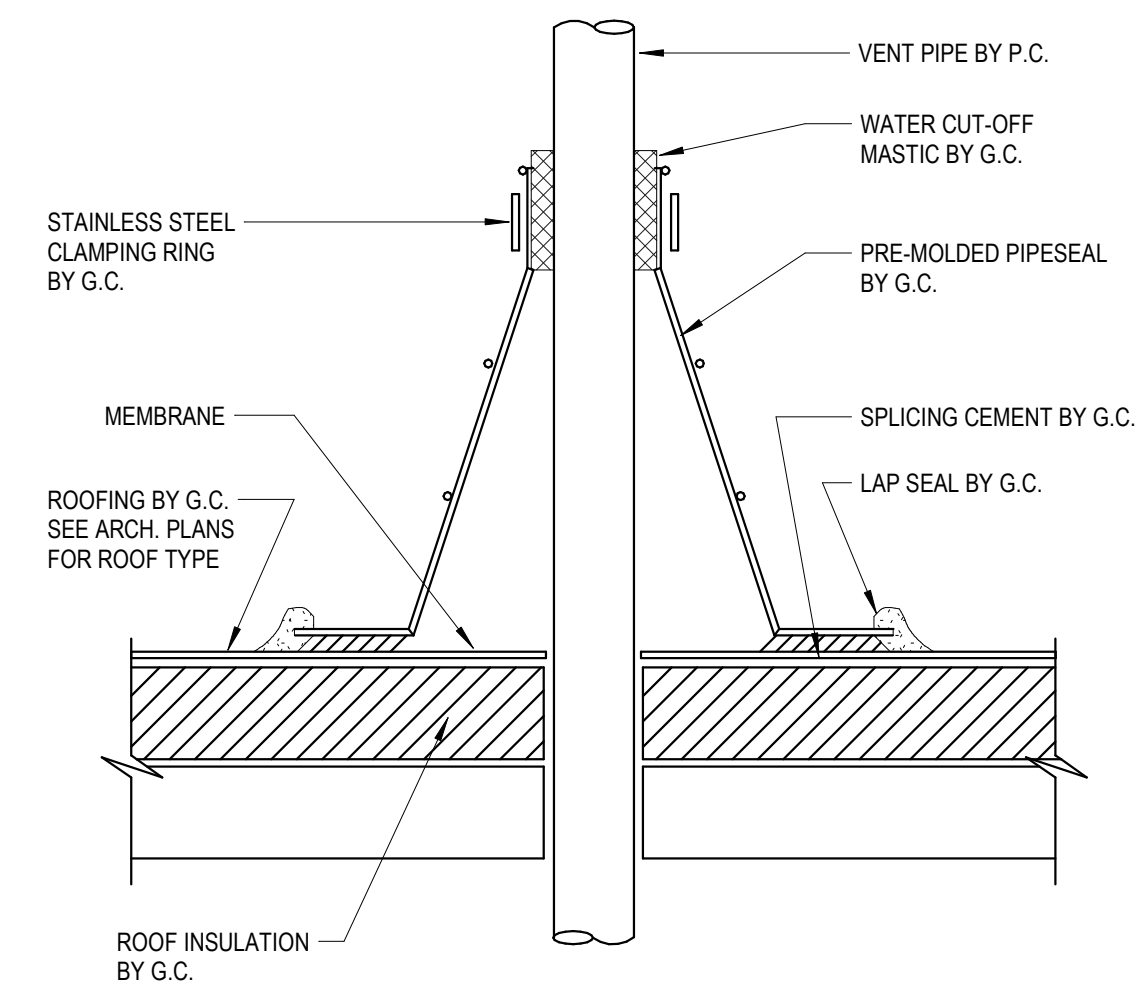
8 FLOOR DRAIN W/TRAP PRIMER
P-501 SCALE: NOT TO SCALE



1 RPZ FEED FROM BELOW
P-501 SCALE: NOT TO SCALE

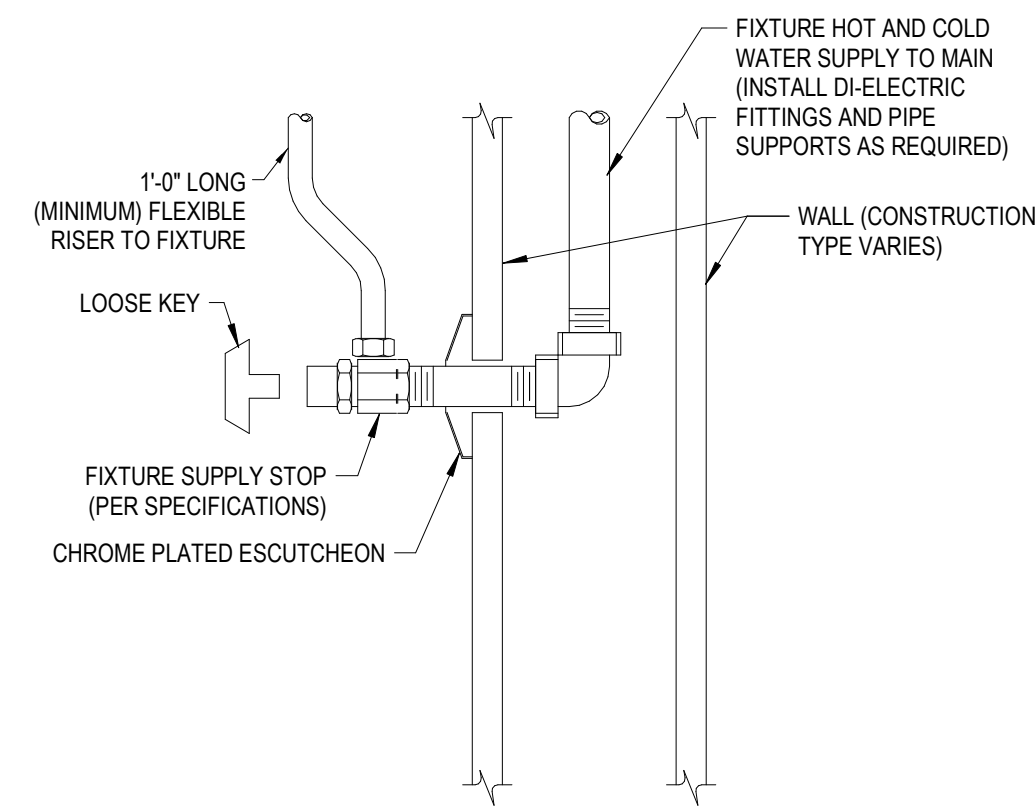


4 EXTERIOR CLEANOUT
P-501 SCALE: 12" = 1'-0"

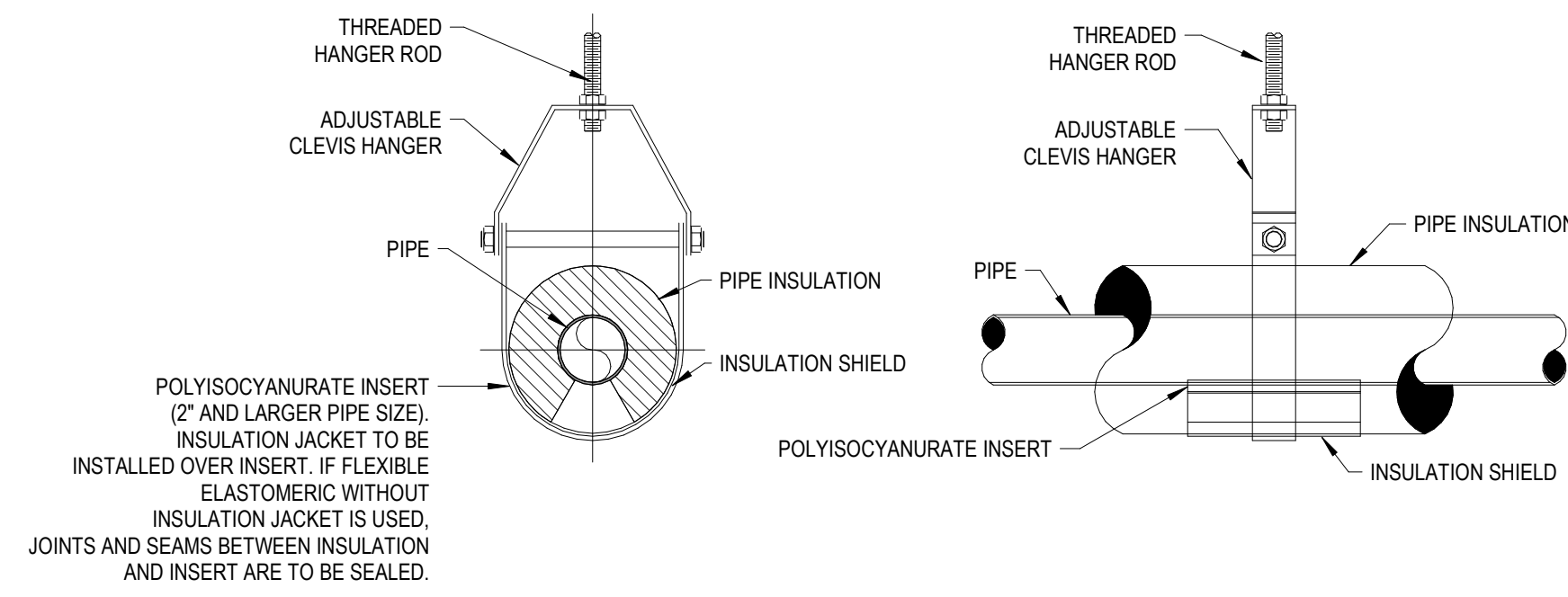


7 VENT THROUGH ROOF
P-501 SCALE: NOT TO SCALE

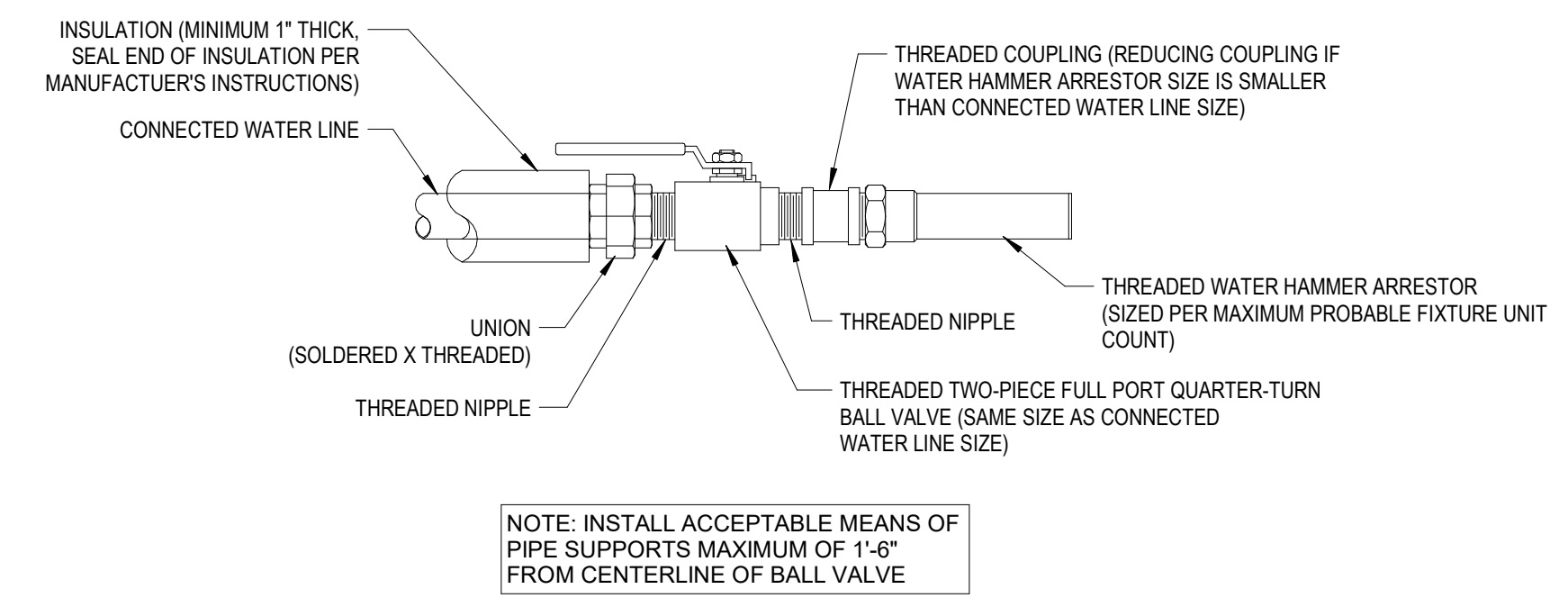
- NOTES:**
1. PRE-MOLDED PIPE SEAL SHALL BE PROVIDED BY P.C. P.C. SHALL VERIFY EXACT SIZE AND LOCATION WITH G.C.
 2. ALL WOTK AND MATERILA NOT NOTED BY G.C. SHALL BE PROVIDED BY P.C.



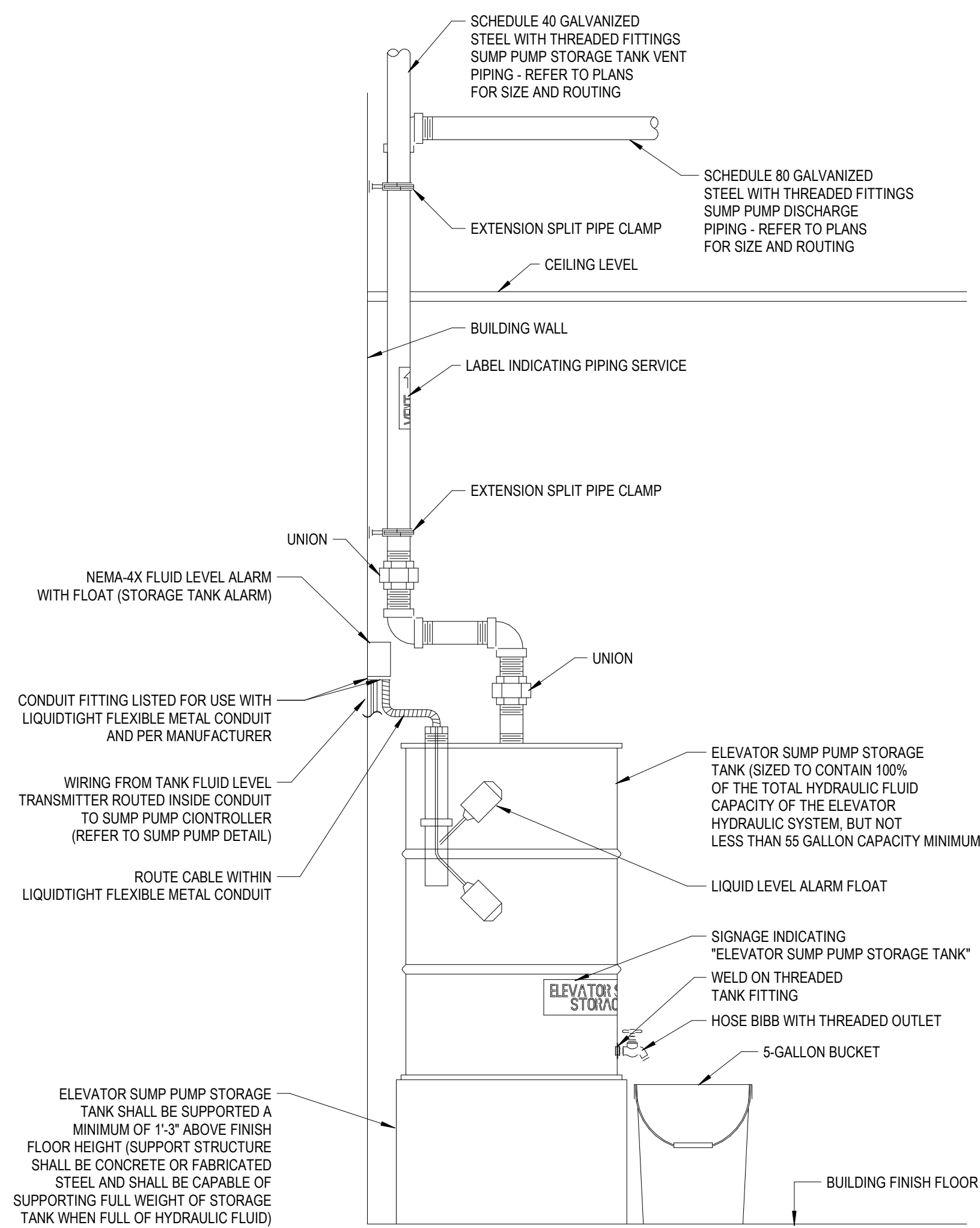
3 BELOW SINK SYSTEM DRAIN
P-502 SCALE: NOT TO SCALE



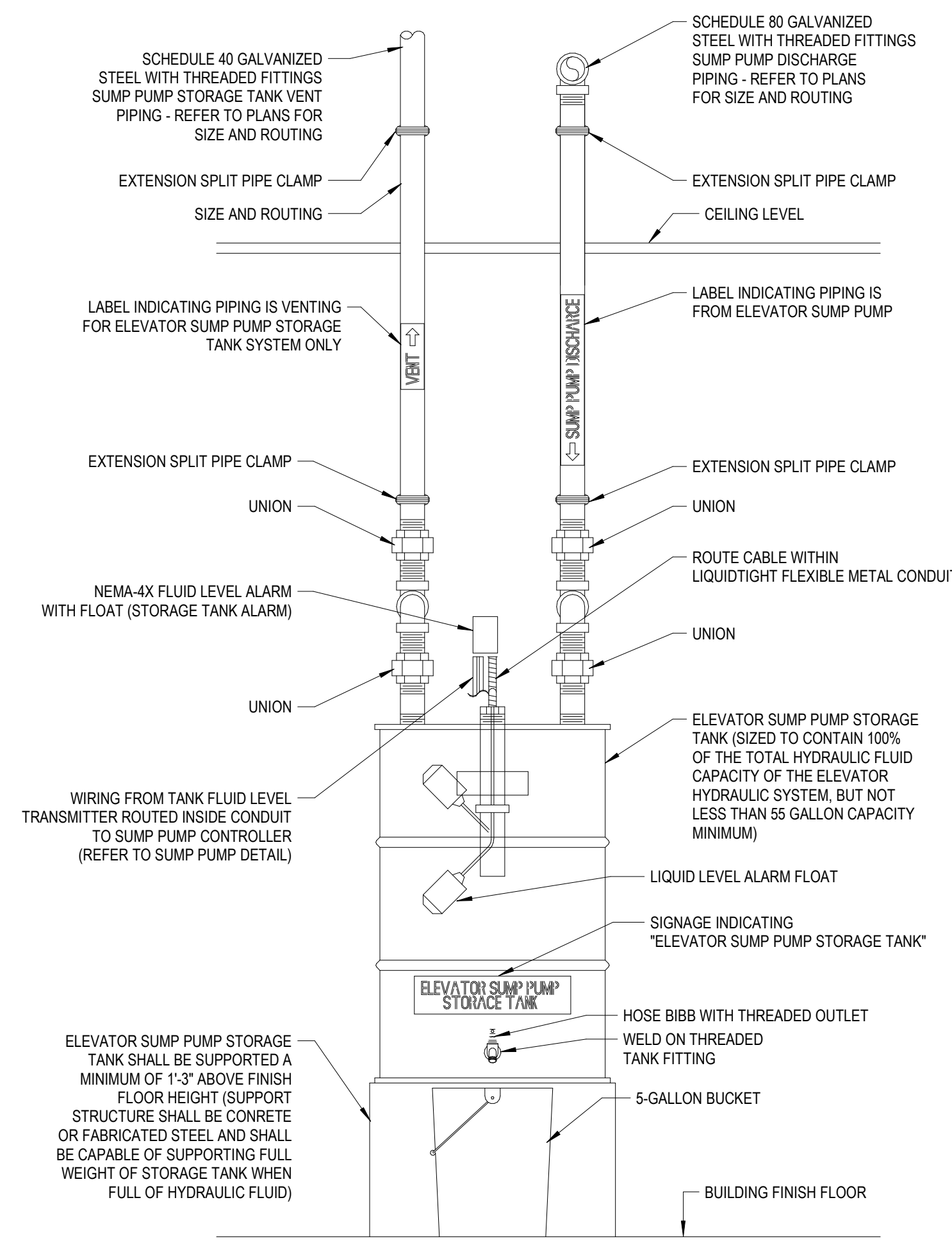
2 CLEVIS PIPE HANGER
P-502 SCALE: NOT TO SCALE



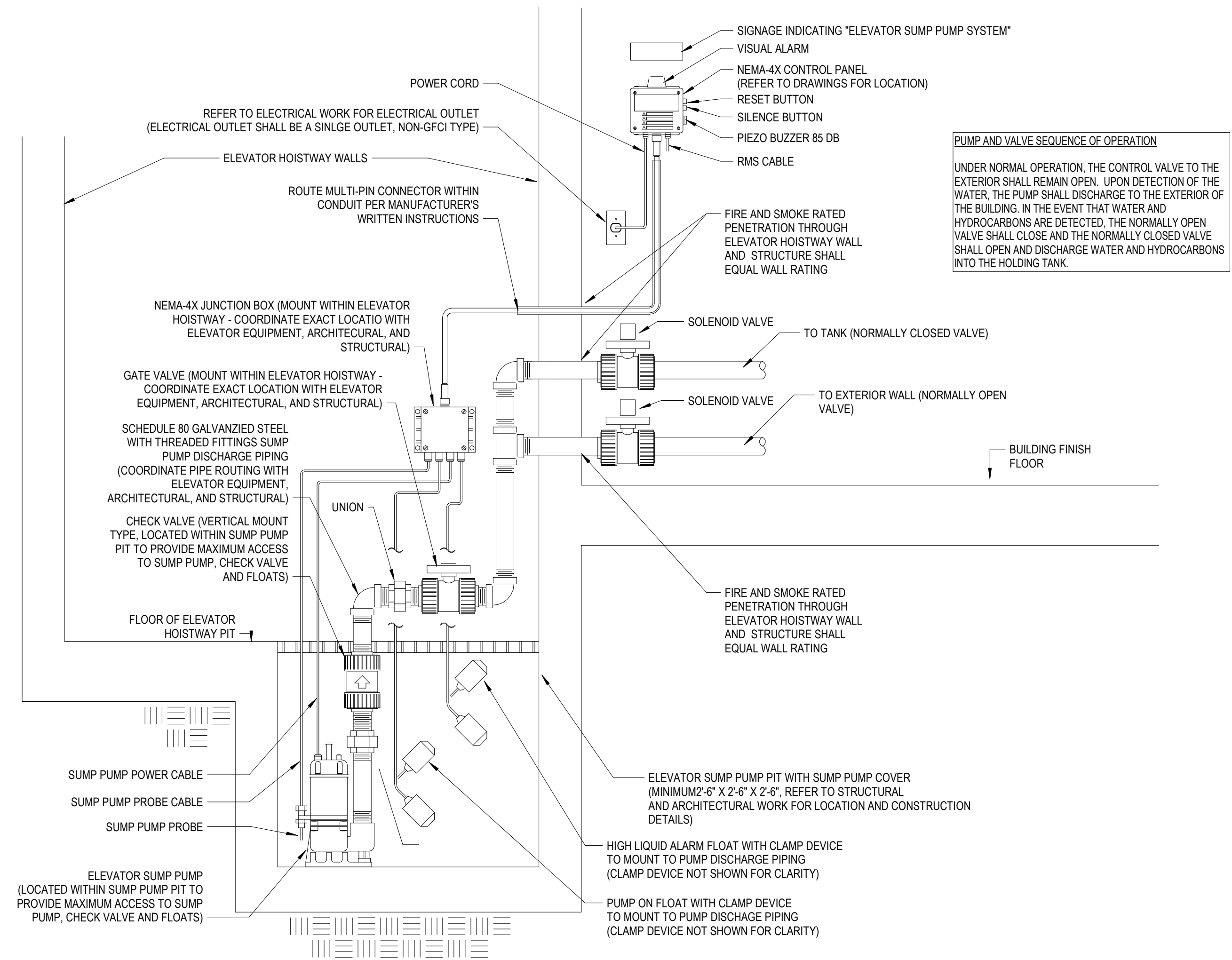
1 WATER HAMMER ARRESTOR
P-502 SCALE: NOT TO SCALE



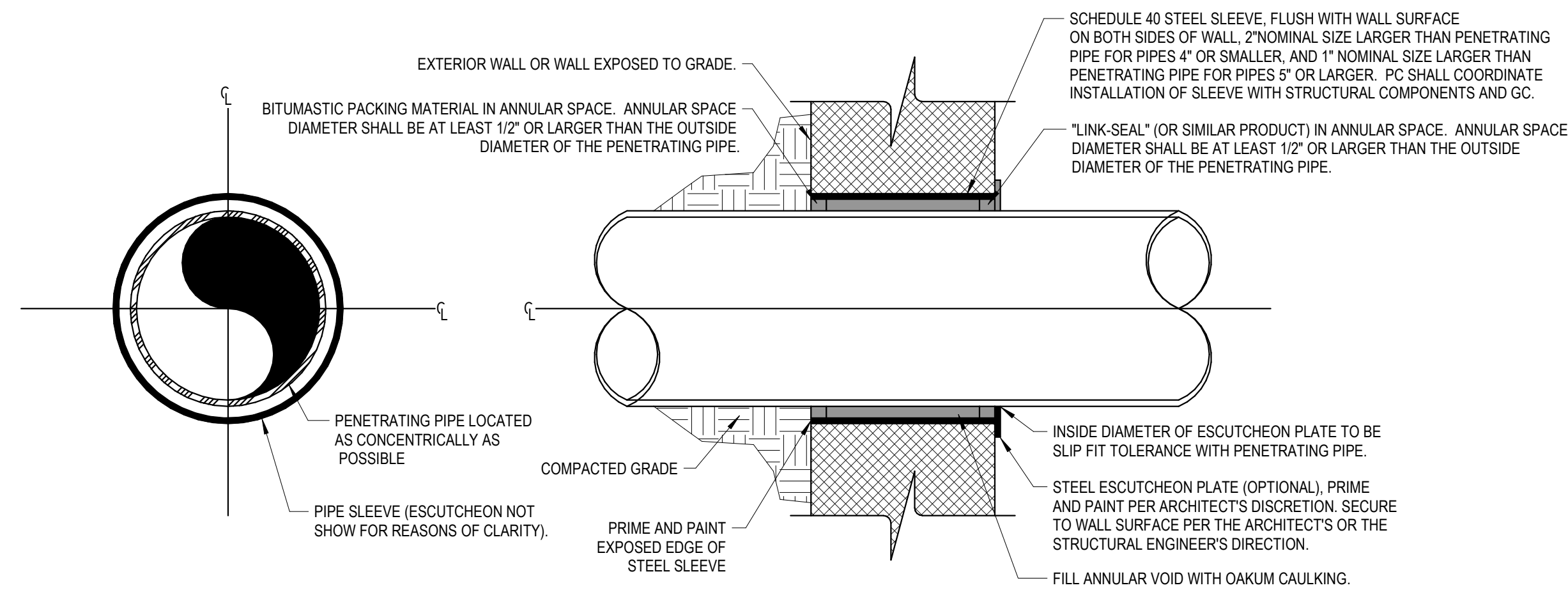
6 ELEVATOR HYDRAULIC FLUID STORAGE TANK
P-502 SCALE: NOT TO SCALE



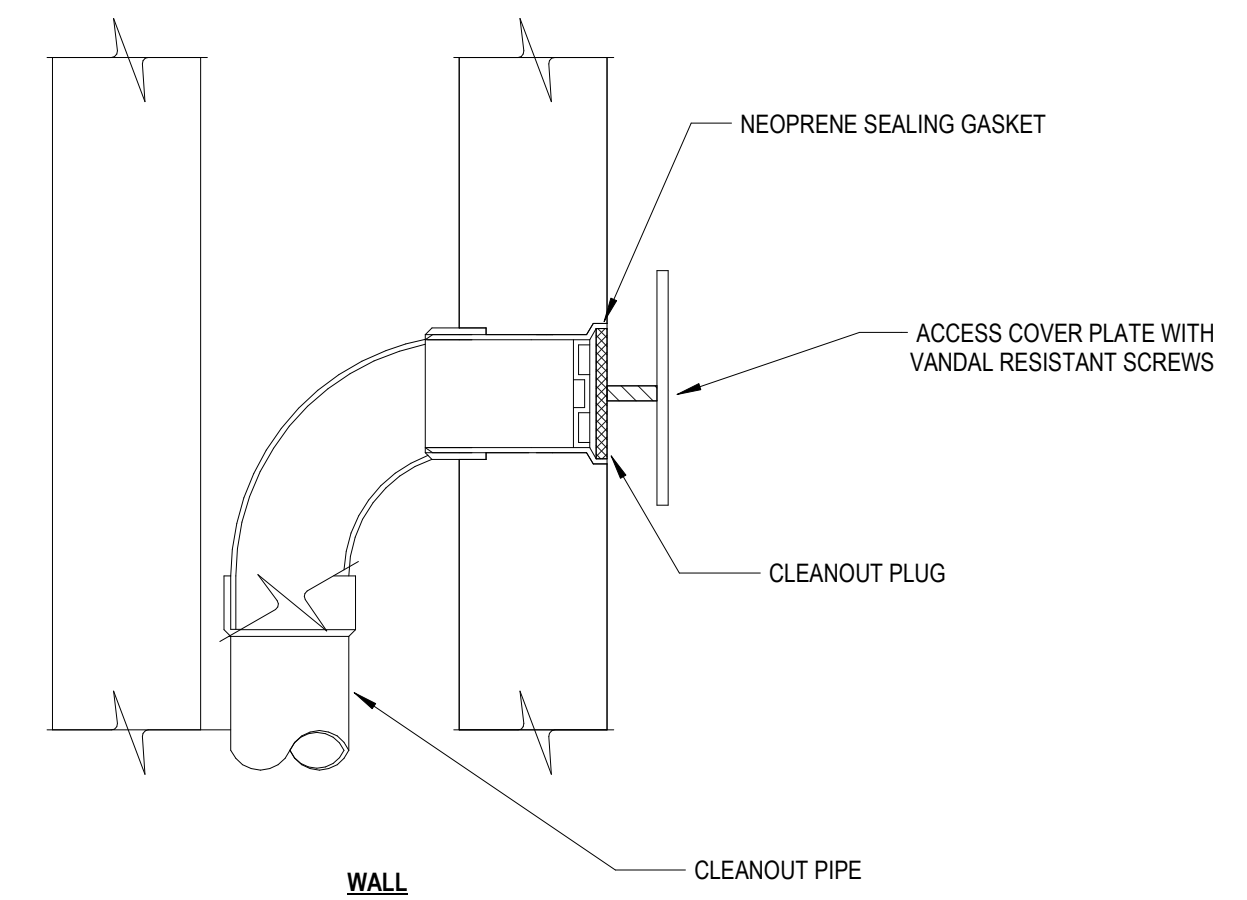
5 ELEVATOR SUMP PUMP - OILMINDER ABOVE GRADE
P-502 SCALE: NOT TO SCALE



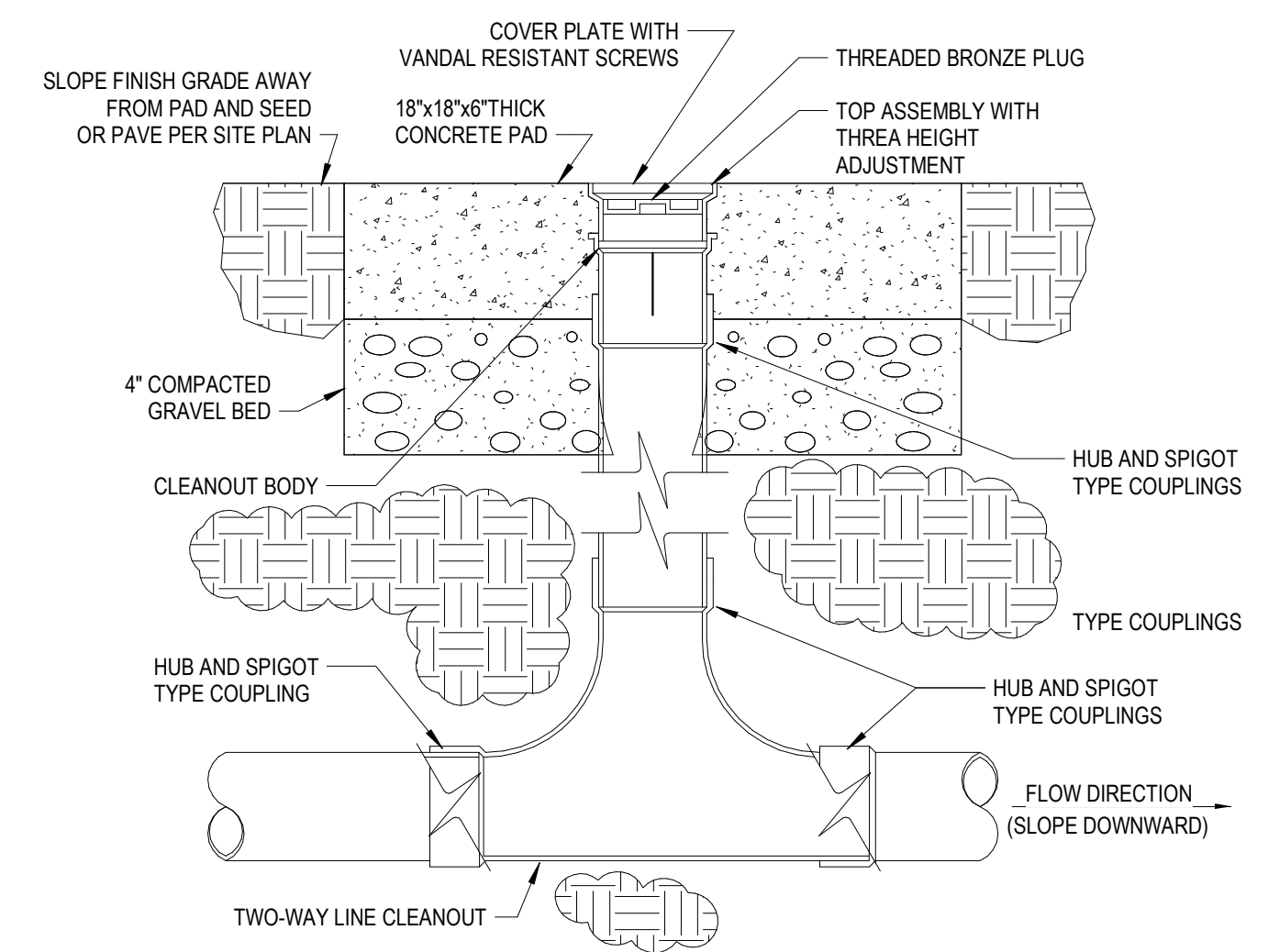
PUMP AND VALVE SEQUENCE OF OPERATION
UNDER NORMAL OPERATION, THE CONTROL VALVE TO THE EXTERIOR SHALL REMAIN OPEN. UPON DETECTION OF THE WATER, THE PUMP SHALL DISCHARGE TO THE EXTERIOR OF THE BUILDING. IN THE EVENT THAT WATER AND HYDROCARBONS ARE DETECTED, THE NORMALLY OPEN VALVE SHALL CLOSE AND THE NORMALLY CLOSED VALVE SHALL OPEN AND DISCHARGE WATER AND HYDROCARBONS INTO THE HOLDING TANK.



2 BELOW GRADE WALL PENETRATION
P-503 SCALE: 12" = 1'-0"



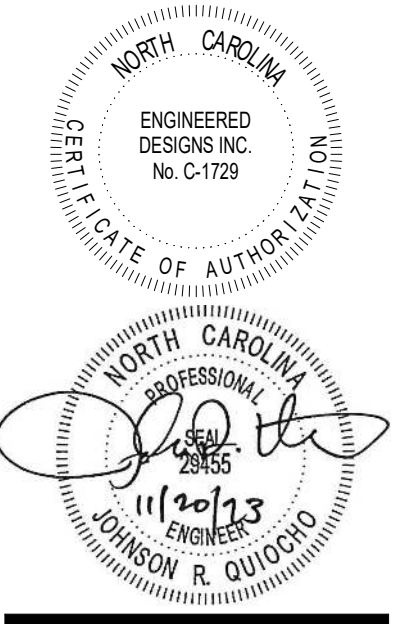
1 WALL CLEANOUT
P-503 SCALE: 12" = 1'-0"



3 EXTERIOR IN-LINE CLEANOUT
P-503 SCALE: NOT TO SCALE

11/16/2023 3:05:33 PM

CD'S FOR BID
SCO ID# 19-21547-02A
NCSU ID 201920037



date note

New Building For:
**Don E. Ellis Building (133)
Renovations**
1320 Varsity Drive, Raleigh, NC 27606
North Carolina State University

PROJECT 1368-20
DATE 11/20/23
DRAWN SES
CHECKED JRQ

PLUMBING
DETAILS

P-503

MECHANICAL / ELECTRICAL EQUIPMENT COORDINATION SCHEDULE											
EQUIPMENT DESIGNATION	EQUIPMENT DESCRIPTION	EQUIPMENT FURN. BY	VOLTAGE/ PHASE	HEATER KW	FAN/MOTOR HP	MCA	MOCP	DISCONNECT FURN. BY	STARTER FURN. BY	CONTROLS	REMARKS
AHU-1	AIR HANDLING UNIT	MC	208/3	NA		8.5	15	MC	NA	BMS	SUPPLY FAN
AHU-1	AIR HANDLING UNIT	MC	208/3	NA		8.5	15	MC	NA	BMS	RETURN FAN
AHU-2	AIR HANDLING UNIT	MC	208/3	NA	5			MC	NA	BMS	
CH-1	CHILLER	MC	208/3	NA		138.8	175	MC	NA	BMS	
B-1	BOILER	MC	115/1	NA			15	MC	NA	BMS	
B-2	BOILER	MC	115/1	NA			15	MC	NA	BMS	4.5
P-1	PUMP	MC	208/3		3			MC	NA	BMS	
P-2	PUMP	MC	208/3		3			MC	NA	BMS	
P-3	PUMP	MC	208/1		1/3			MC	NA	BMS	
F-1	FAN	MC	115/1		18.6W			MC	NA	LIGHT SWITCH BY EC	
F-2	FAN	MC	115/1		18.6W			MC	NA	LIGHT SWITCH BY EC	
F-3	FAN	MC	115/1		18.6W			MC	NA	LIGHT SWITCH BY EC	
F-4	FAN	MC	115/1		128W			MC	NA	LIGHT SWITCH BY EC	
F-5	FAN	MC	115/1		128W			MC	NA	LIGHT SWITCH BY EC	
F-6	FAN	MC	115/1		128W			MC	NA	LIGHT SWITCH BY EC	
F-7	FAN	MC	115/1		1/10			MC	NA	TSTAT	3
MOD	MOTOR OPERATED DAMPER	MC	24AC					NA	NA	BMS	
SSI-01	MINI-SPLIT UNIT	MC	208/1					MC	NA	TSTAT	1
SSI-01	MINI-SPLIT UNIT	MC	208/1			7.0	15	MC	NA	TSTAT	
SSI-02	MINI-SPLIT UNIT	MC	208/1					MC	NA	TSTAT	1
SSI-02	MINI-SPLIT UNIT	MC	208/1			17.1	20	MC	NA	TSTAT	
VAV BOXES	TERMINAL BOXES	MC	115/1								2.5
EH-1	ELECTRIC HEATER	MC	208/1	3.3				FWE	NA	TSTAT	
EH-2	ELECTRIC HEATER	MC	120/1	1.5				FWE	NA	TSTAT	

ABBREVIATIONS: MC = MECHANICAL CONTRACTOR, EC = ELEC CONTRACTOR, FWE = FURNISHED WITH EQUIP

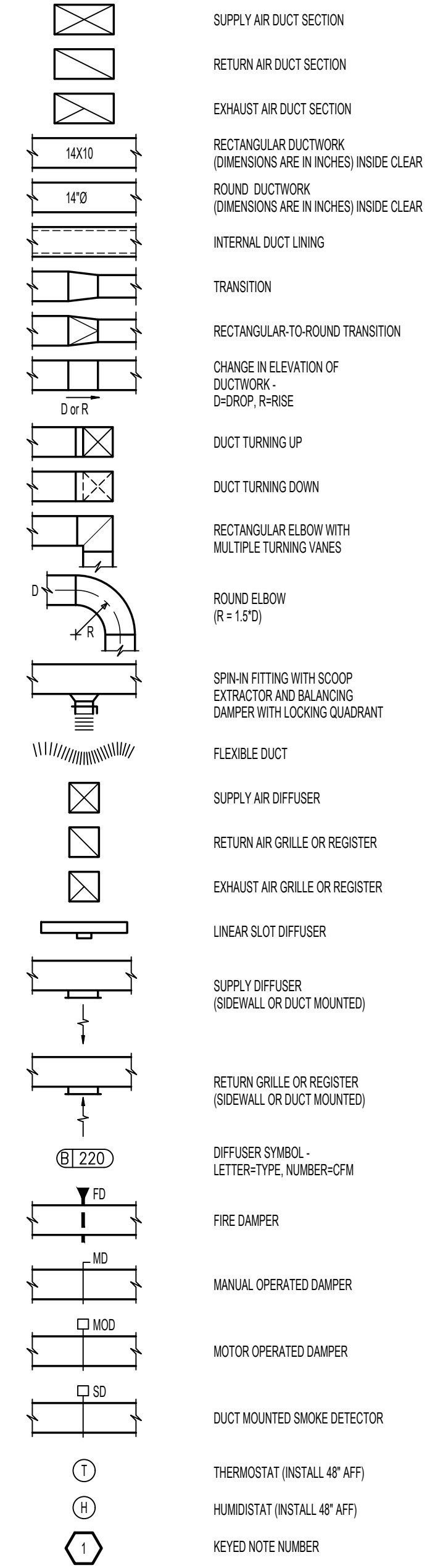
REMARKS

1. INDOOR UNIT IS POWERED FROM THE OUTDOOR UNIT.
2. CONTROL POWER
3. LINE VOLTAGE TSTAT BY MC.
4. BOILER IS 100% STANDBY, BOTH BOILERS WILL NOT OPERATE AT THE SAME TIME.
5. ALT BID.

MECHANICAL ABBREVIATIONS

AC/HR	AIR CHANGES PER HOUR
∅	ROUND OR DIAMETER
AFF	ABOVE FINISHED FLOOR
AHU-1	AIR HANDLING UNIT AND NUMBER
AI	ANALOG INPUT
ALUM	ALUMINUM
AMCA	AIR MOVEMENT AND CONTROL ASSOCIATION
ANSI	AMERICAN NATIONAL STANDARDS ASSOCIATION
AO	ANALOG OUTPUT
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
AS	AIR SEPARATOR
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BHP	BRAKE HORSEPOWER
BI	BINARY INPUT
BO	BINARY OUTPUT
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
CFM	CUBIC FEET PER MINUTE
CHWP	CHILLED WATER PUMP
CLG	CEILING
CONST	CONSTRUCTION
CONT	CONTINUED
COMB	COMBUSTION
CONTR	CONTRACTOR
COORD	COORDINATE
DB	DRY BULB
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
EF-1	EXHAUST FAN AND NUMBER
EFF	EFFICIENCY
EH-1	ELECTRIC HEATER AND NUMBER
EL	ELEVATION
EQPM	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EW	ENTERING WATER TEMPERATURE
EXIST	EXISTING
FC	FAN-COIL
FPM	FEET PER MINUTE
GA	GAUGE
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HWP	HOT WATER PUMP
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
IN	INCH
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LB	POUNDS
MAX	MAXIMUM
MBH	1,000 BTU PER HOUR
MC	MECHANICAL CONTRACTOR
MFR	MANUFACTURER
MIN	MINIMUM
MTD	MOUNTED
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
N/A	NOT APPLICABLE
NO	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
P-1	PUMP AND NUMBER
PC	PLUMBING CONTRACTOR
QTY	QUANTITY
RA	RETURN AIR
REQ'D	REQUIRED
REV	REVISION
RH	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
STD	STANDARD
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VSD	VARIABLE SPEED DRIVE
W/	WITH
W/O	WITHOUT
WB	WET BULB

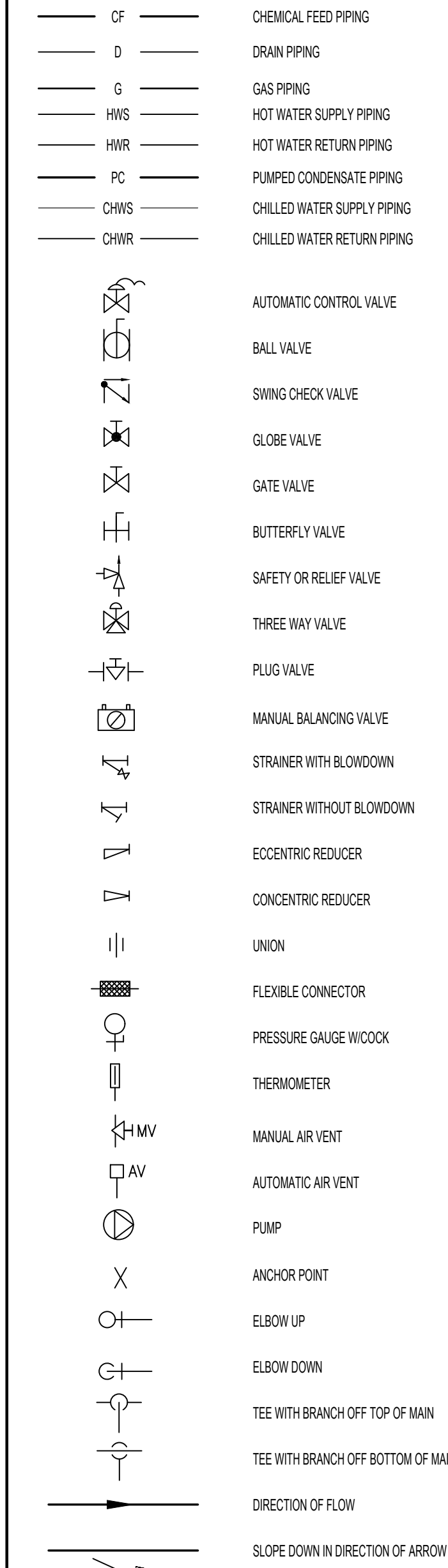
MECHANICAL HVAC LEGEND



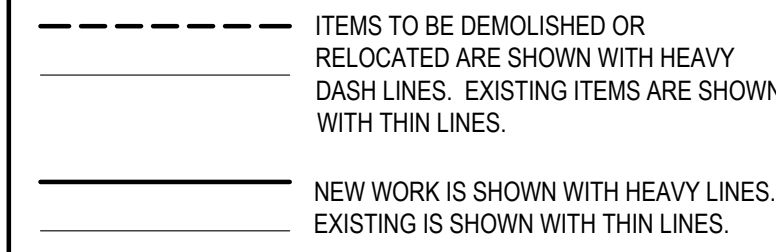
CONTROLS LEGEND

	TEMPERATURE GAUGE
	PRESSURE GAUGE
	MANUAL ISOLATION VALVE
	TRIPLE DUTY VALVE
	PUMP
	MOTOR
	CIRCUIT SENSOR
	FLOW METER
	MOTOR OPERATED VALVE
AI	ANALOG INPUT
AO	ANALOG OUTPUT
BI	BINARY INPUT
BO	BINARY OUTPUT
VFD	VARIABLE FREQUENCY DRIVE
	BALANCING DEVICE
	DIFFERENTIAL PRESSURE SENSOR
	DIRECTION OF FLOW

MECHANICAL PIPING LEGEND

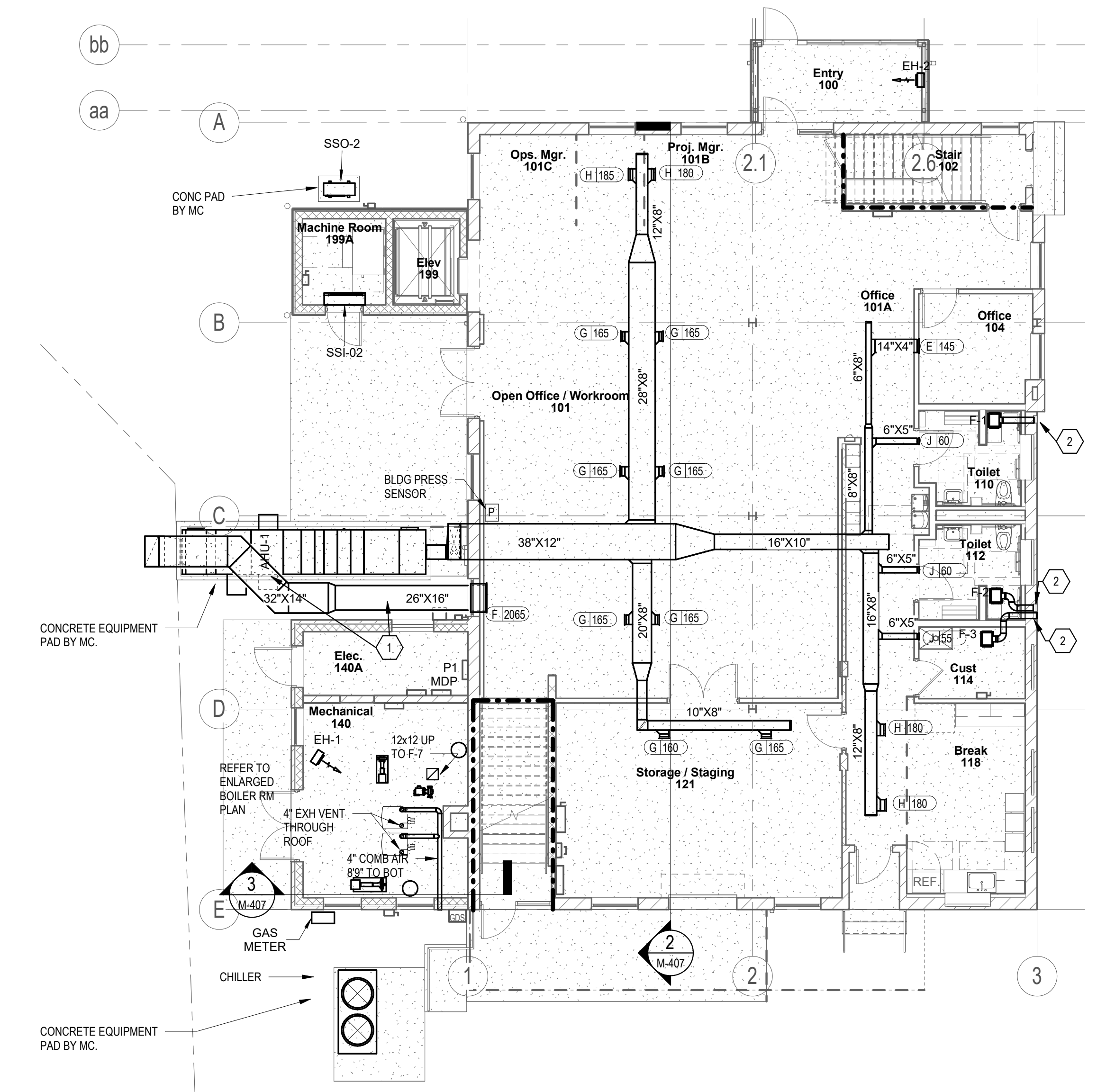


DEMOLITION, EXISTING & NEW WORK

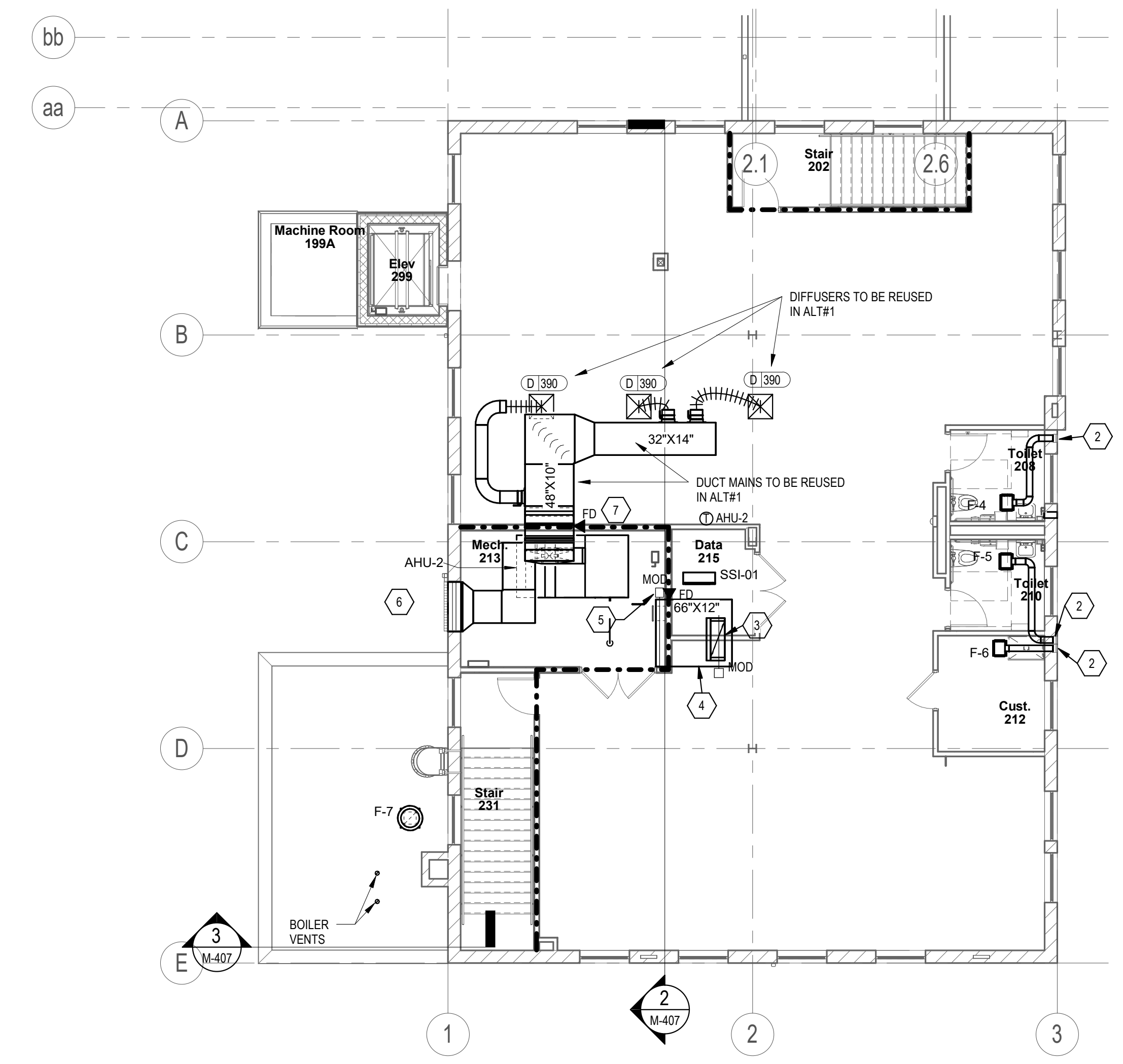


KEYNOTES

- 1 PROVIDE SUPPORTS FOR DUCT.
- 2 PROVIDE HANGING HARDWARE AND WALL CAP WITH BACKDRAFT DAMPER.
- 3 42X14 DUCT UP TO GRAVITY HOOD.
- 4 DUCT WITH OPEN ENDS FOR RETURN & RELIEF AIR.
- 5 PROVIDE MOTORIZED DAMPER. DAMPER SHALL CLOSE WHEN AHU IS IN ECONOMIZER MODE.
- 6 SET VFD FOR AHU-2 TO 1170 CFM.
- 7 PROVIDE ACCESS DOOR FOR FIRE DAMPERS.



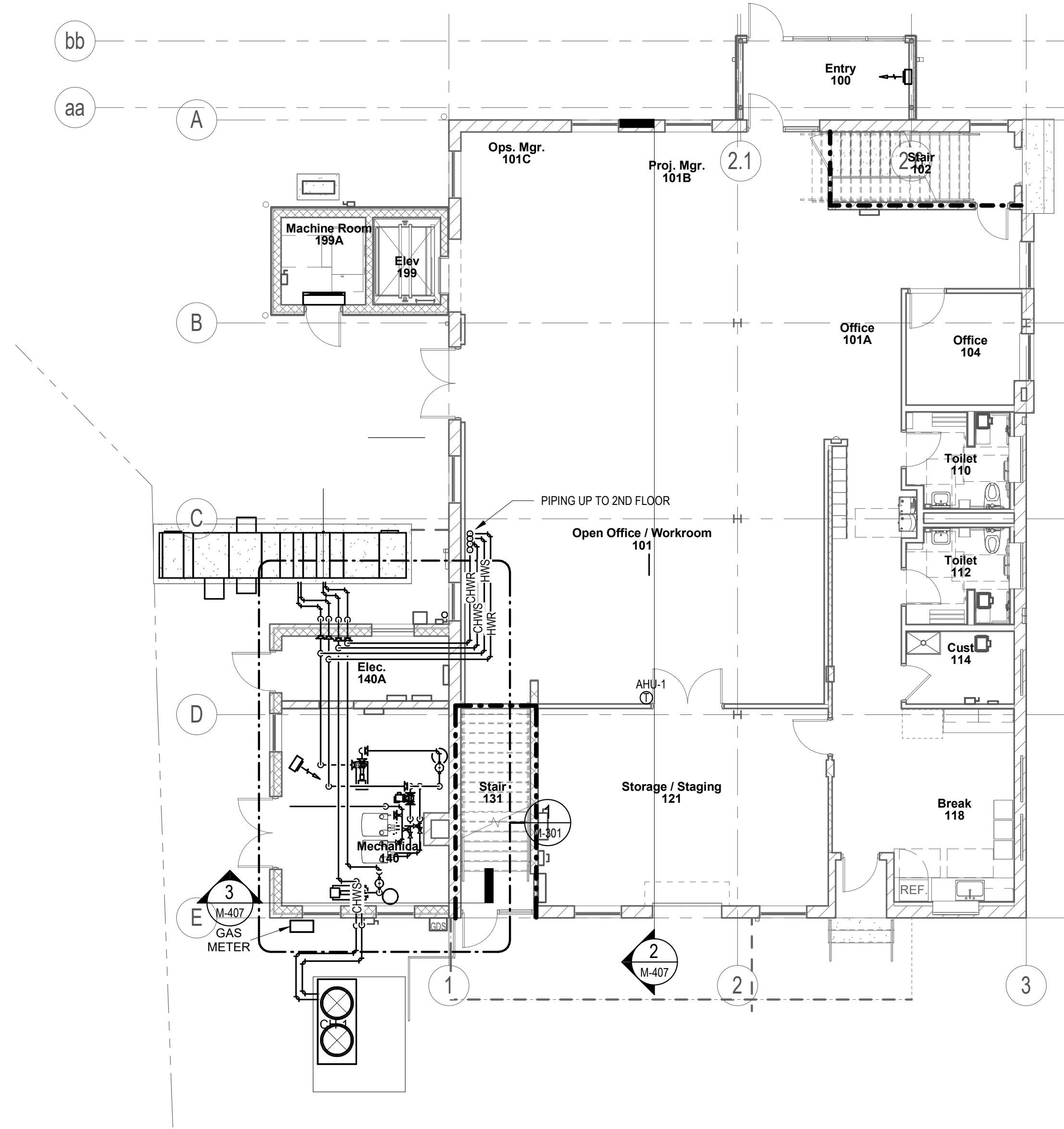
1 FIRST FLOOR MECHANICAL PLAN - DUCT - NEW WORK - BASE
 M-100 SCALE: 1/8" = 1'-0"



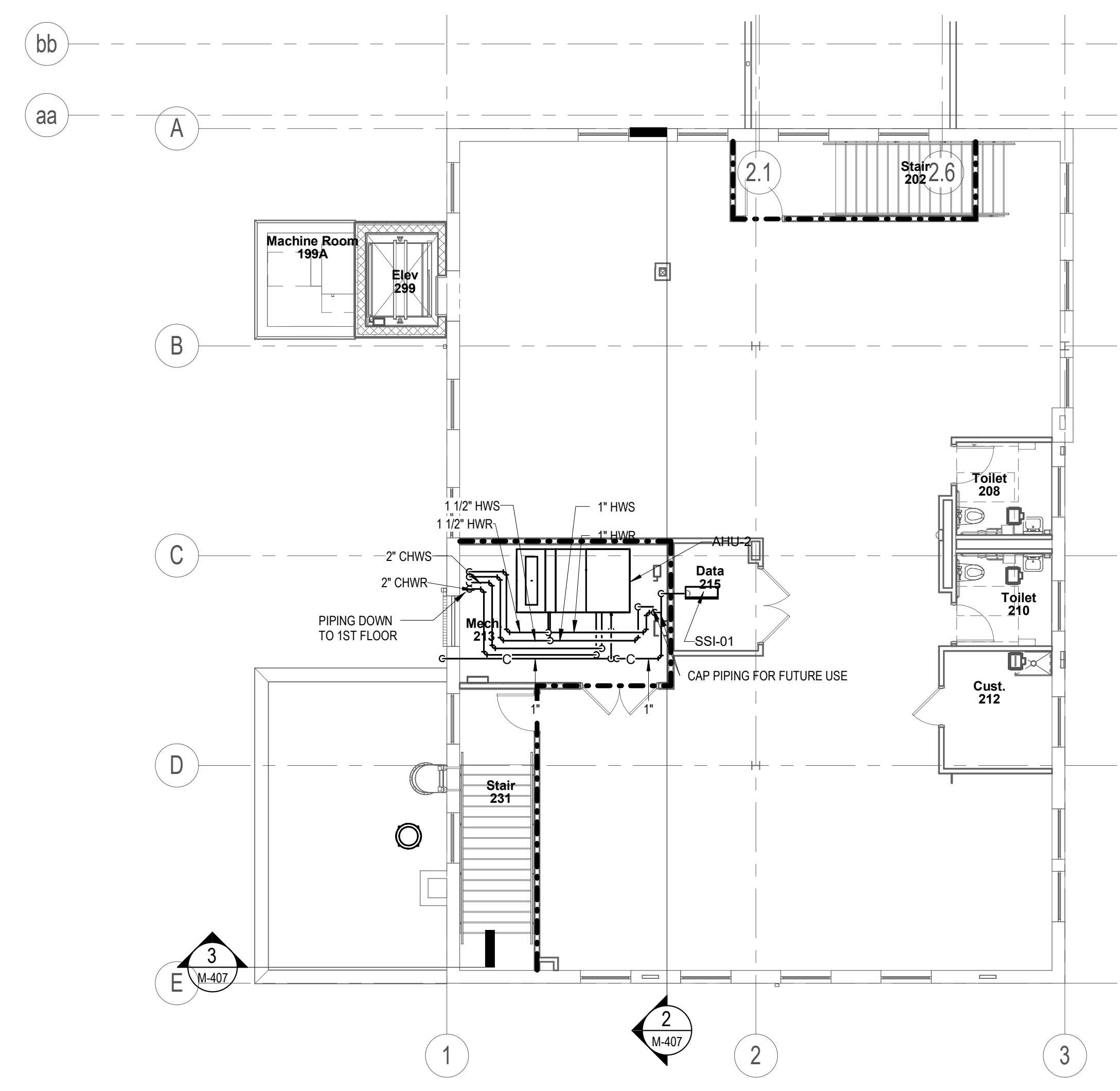
2 SECOND FLOOR MECHANICAL PLAN - DUCT - NEW WORK - BASE
 M-100 SCALE: 1/8" = 1'-0"

RATED WALL LEGEND
 1 HOUR RATED WALL - - - - -

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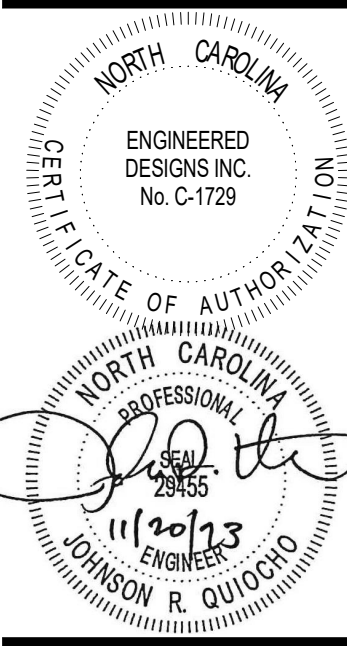


1 FIRST FLOOR PLAN - PIPING - NEW WORK - BASE BID
 M-201 SCALE: 1/8" = 1'-0"

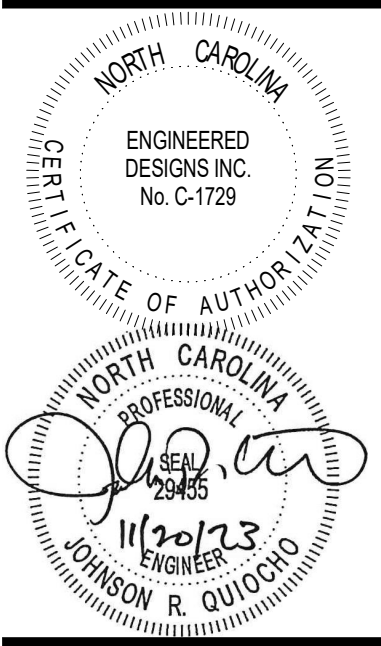


2 SECOND FLOOR PLAN - PIPING - NEW WORK - BASE BID
 M-201 SCALE: 1/8" = 1'-0"

RATED WALL LEGEND
 1 HOUR RATED WALL - - - - -



date note



date note

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 1320 Varsity Drive, Raleigh, NC 27606
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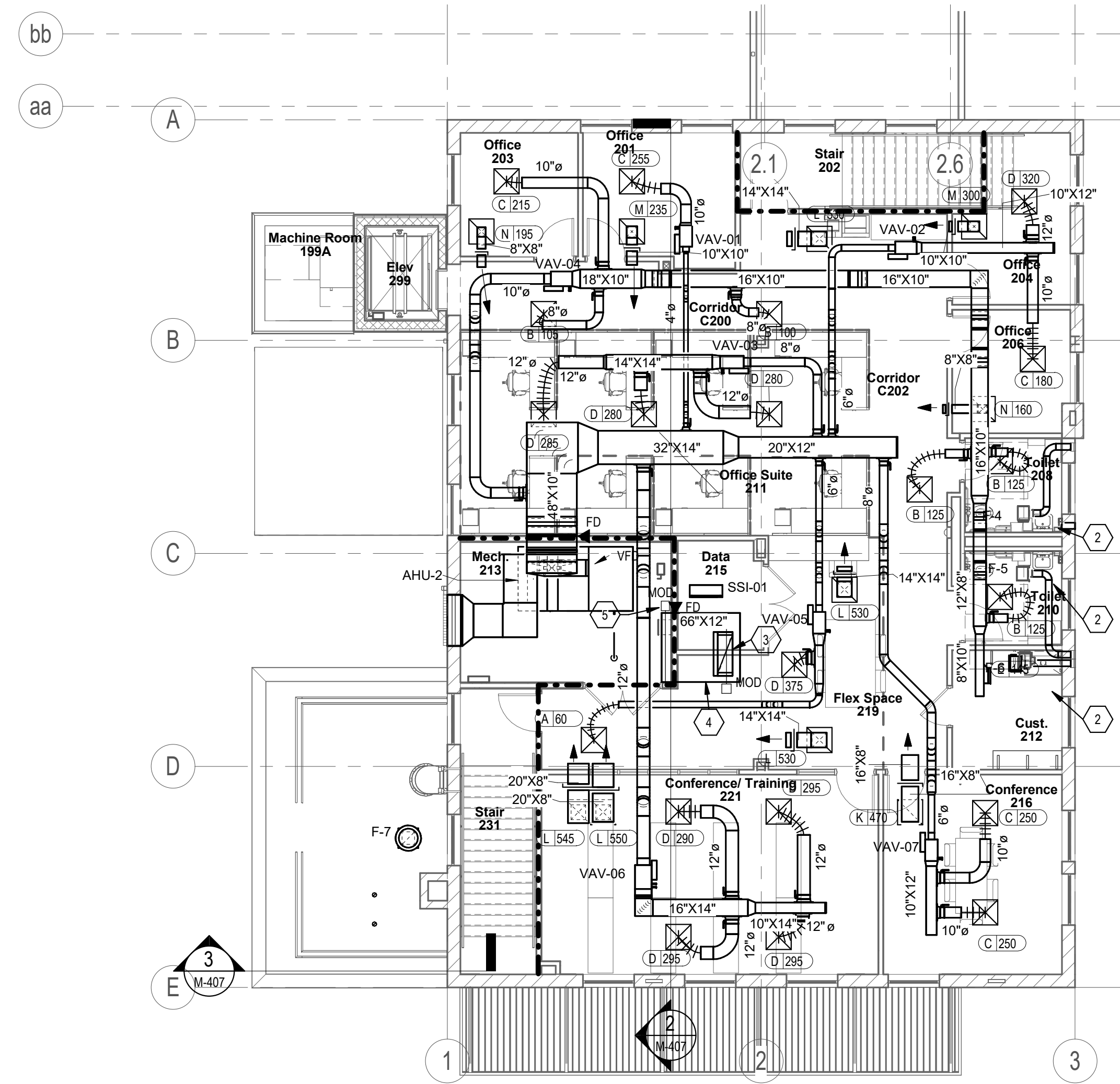
PROJECT 1368-20
 DATE 11-20-23
 DRAWN DNF
 CHECKED JRQ

HVAC ALT BID 2ND FLOOR

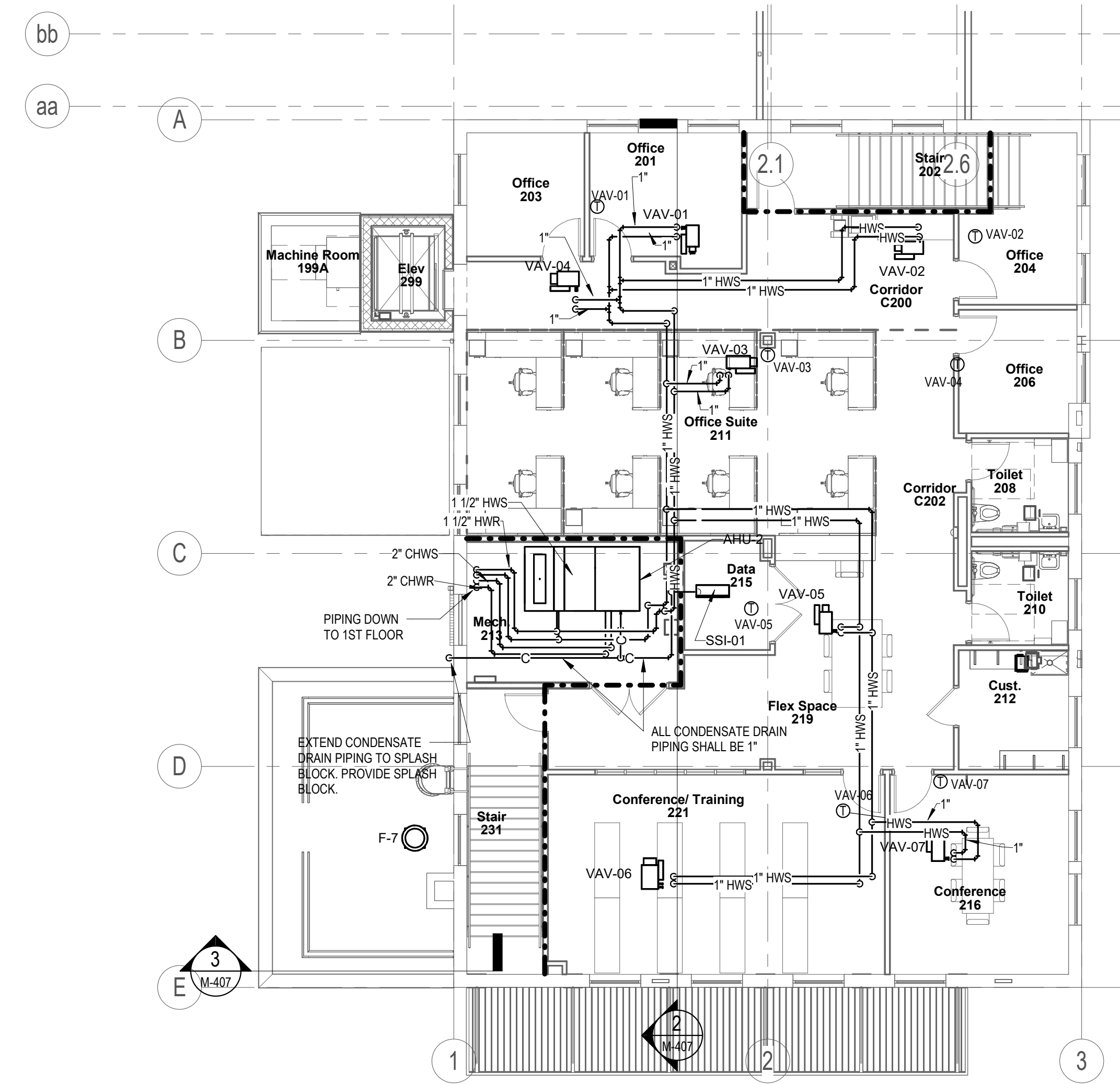
M-202

KEYNOTES

- 1 (NOT USED)
- 2 PROVIDE HANGING HARDWARE AND WALL CAP WITH BACKDRAFT DAMPER.
- 3 42X14 DUCT UP TO GRAVITY HOOD.
- 4 DUCT WITH OPEN ENDS FOR RETURN & RELIEF AIR.
- 5 PROVIDE MOTORIZED DAMPER. DAMPER SHALL CLOSE WHEN AHU IS IN ECONOMIZER MODE.

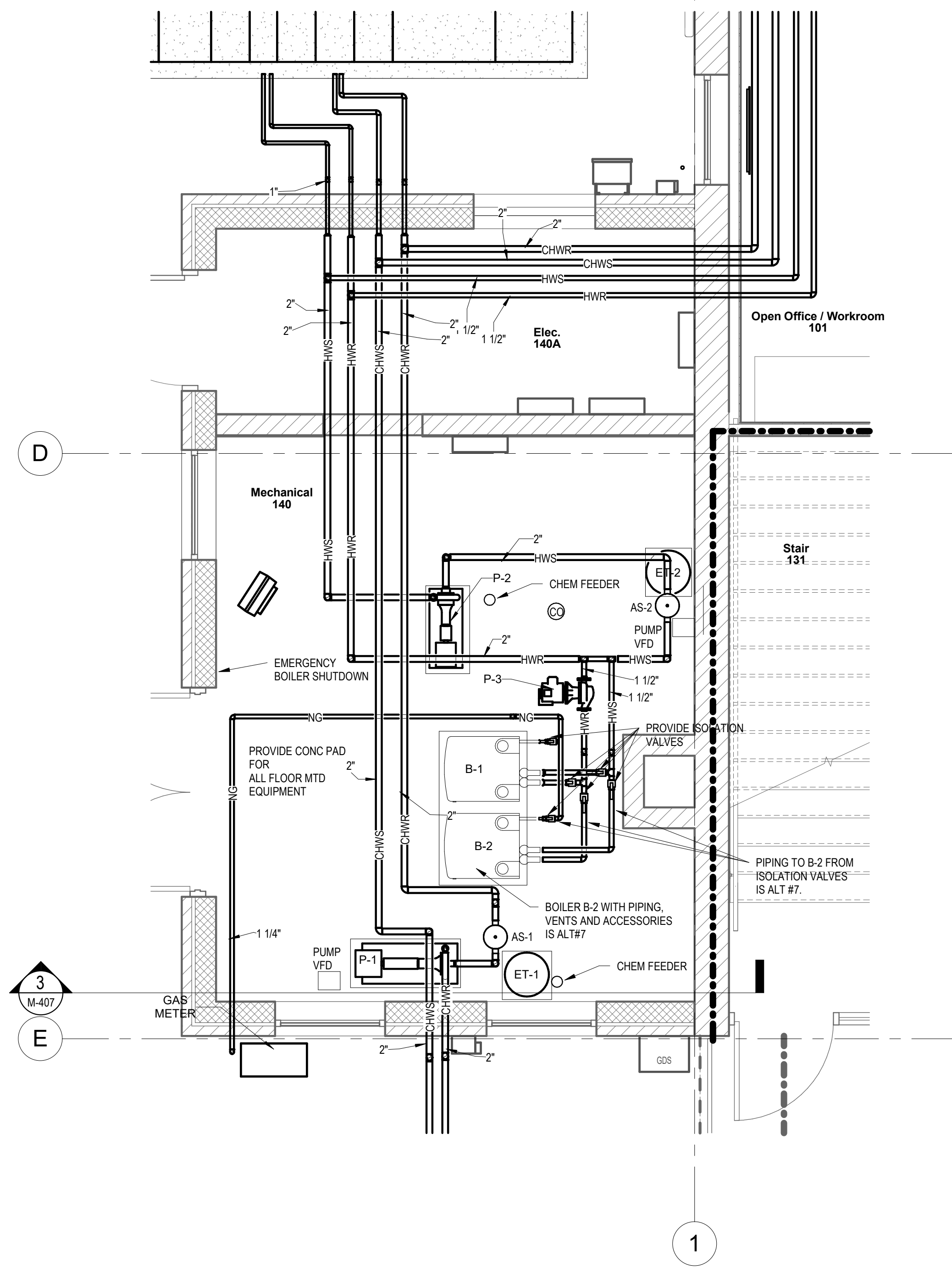


1 SECOND FLOOR MECHANICAL PLAN - DUCT - NEW WORK - ALT#1
 M-202 SCALE: 1/8" = 1'-0"

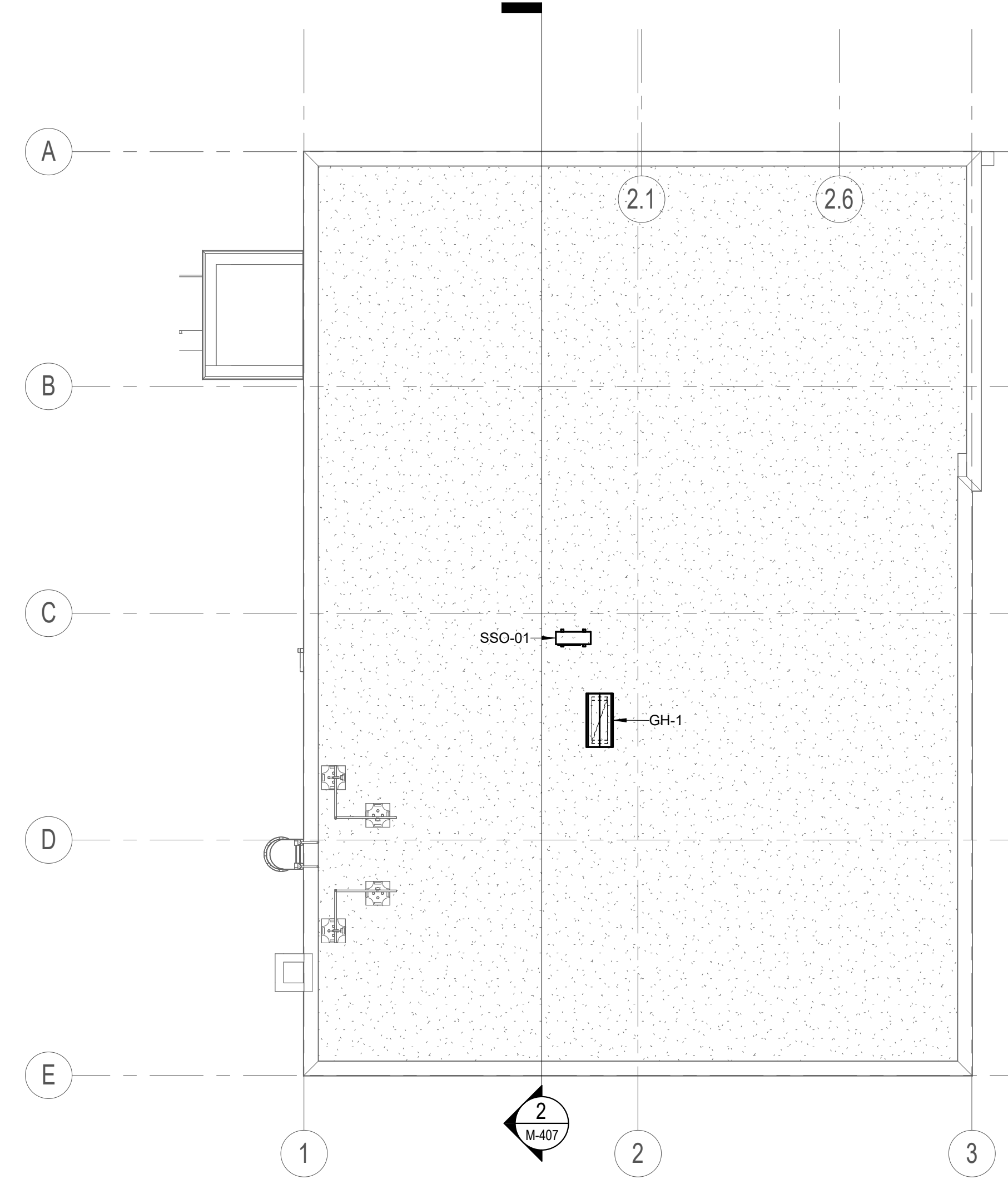


2 SECOND FLOOR PLAN - PIPING - NEW WORK - ALT#1
 M-202 SCALE: 1/8" = 1'-0"

RATED WALL LEGEND
 1 HOUR RATED WALL - - - - -



1 BOILER ROOM ENLARGED PLAN
 M-301 SCALE: 3/8" = 1'-0"

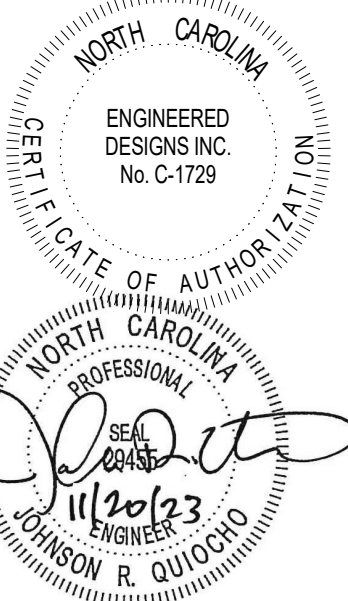


2 MECHANICAL ROOF PLAN
 M-301 SCALE: 1/8" = 1'-0"

11/20/2023 8:16:34 AM

CDs FOR BID

SCO ID# 19-21547-02A
NCSU ID 20190037



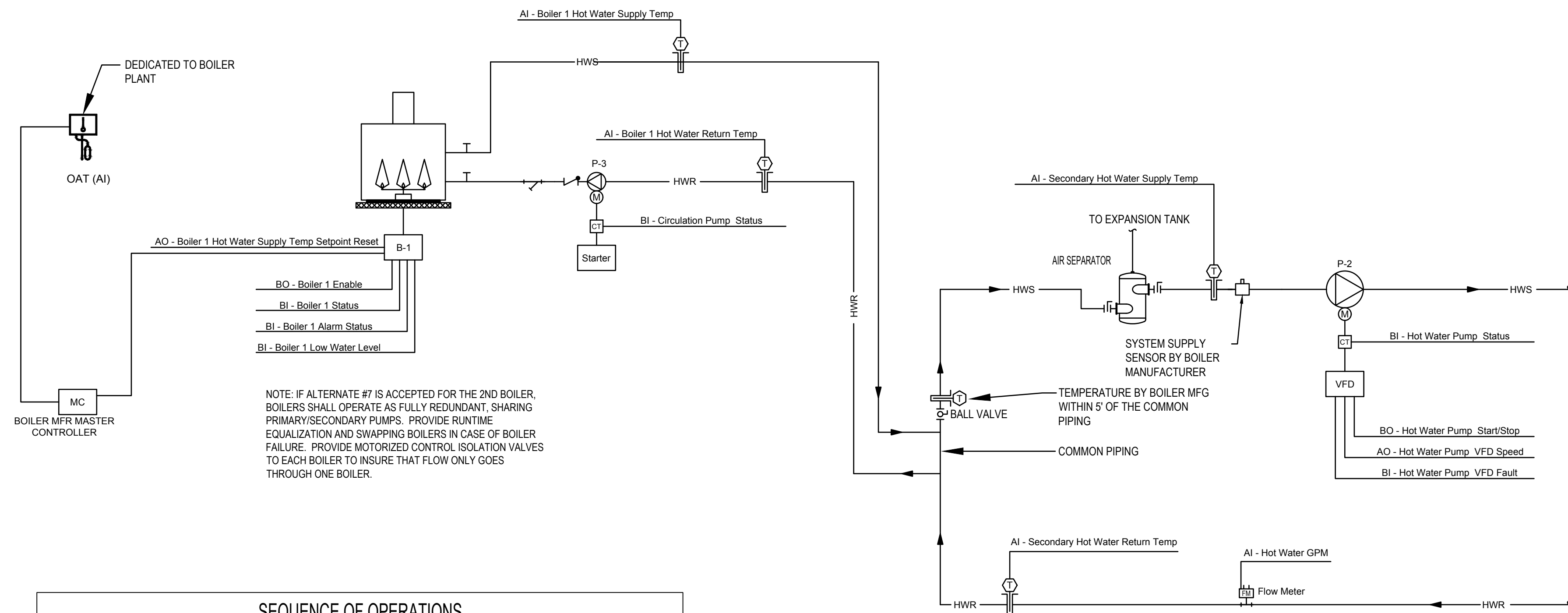
date note

New Building For:
Don E. Ellis Building (133) Renovations
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

PROJECT 1368-20
 DATE 11-20-23
 DRAWN DNF
 CHECKED JRQ

ENLARGED PLANS AND SECTIONS

M-301



SEQUENCE OF OPERATIONS

One Boiler System – B-1

Boiler System – Run Conditions:
 The boiler shall be enabled to run whenever outside air temperature is less than 65°F (adj.). To prevent short cycling, the boiler shall run for and be off for minimum adjustable times (both user definable), unless shutdown on safeties or outside air conditions. The boiler shall run subject to its own internal safeties and controls.

The boiler shall also run for freeze protection whenever outside air temperature is less than 38°F (adj.)

Boiler Safeties:

The following safeties shall be monitored:

- Boiler alarm.
- Low Water Level.

Alarms shall be provided as follows:

- Boiler alarm.
- Low Water Level alarm.

Boiler Enable:

The boiler shall be enabled when the boiler system is commanded on via outside air temperature or a call for heating. The boiler shall be enabled after the boiler pump status is proven on and shall run subject to its own internal safeties and controls.

Alarms shall be provided as follows:

- Boiler Failure: Commanded on, but the status is off.
- Boiler Running in Hand: Commanded off, but the status is on.
- Boiler Runtime Exceeded: Status runtime exceeds a user definable limit.

Hot Water Supply Temperature Setpoint Reset:

The hot water supply temperature setpoint shall reset based on outside air temperature.

As outside air temperature rises from 0°F (adj.) to 70°F (adj.) the hot water supply temperature setpoint shall reset downwards by subtracting from 0°F (adj.) up to 20°F (adj.) from the current boiler setpoint.

Primary Hot Water Temperature Monitoring:

The following temperatures shall be monitored:

- Boiler hot water supply and return

Alarms shall be provided as follows:

- High Primary Hot Water Supply Temp: If greater than 200°F (adj.).
- Low Primary Hot Water Supply Temp: If less than 80°F (adj.).

Primary Pump P-3:

The circulation pump shall run anytime the respective boiler is called to run and shall have a user definable (adj.) delay on stop.

Alarms shall be provided as follows for the pump:

- Circulation Pump Failure: Commanded on, but the status is off.
- Circulation Pump Running in Hand: Commanded off, but the status is on.
- Circulation Pump Runtime Exceeded: Status runtime exceeds a user definable limit.

Secondary Hot Water Pump P-2:

The hot water pump shall run anytime the boiler is called to run and shall have a user definable delay (adj.) on stop.

Alarms shall be provided as follows for each pump:

- Hot Water Pump Failure: Commanded on, but the status is off.
- Hot Water Pump Running in Hand: Commanded off, but the status is on.
- Hot Water Pump Runtime Exceeded: Status runtime exceeds a user definable limit.
- Hot Water Pump VFD Failure

Additional Alarms:

Additional alarms shall be provided as follows:

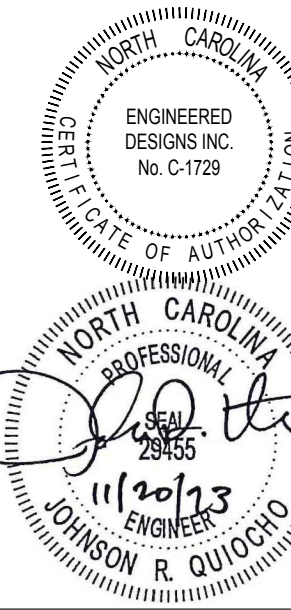
- Any pump operating in Hand mode
- Any pump operating above runtime setpoint (adj.)
- Boiler operating in Hand mode
- Boiler operating above runtime setpoint (adj.)
- High Loop differential pressure (adj.)

1 HOT WATER CONTROL SCHEMATIC

M-401 SCALE: NONE

REFER TO EQUIPMENT SCHEDULES AND PIPING DETAILS FOR COMPLETE PIPING ACCESSORIES

Point Name	Hardware Points				Software Points			Show On Graphic
	AI	AO	BI	BO	Sched	Trend	Alarm	
Secondary Hot Water Return Temp	x					x		x
Secondary Hot Water Return Flow	x					x		x
Secondary Hot Water Supply Temp	x					x		x
B-1 Boiler Enable				x	x			x
B-1 Boiler Status			x					x
B-1 Boiler Alarm			x			x	x	x
B-1 Boiler Low Water Level			x					x
B-1 Boiler Hot Water Supply Temp Setpoint Reset	x				x	x		x
B-1 Hot Water Supply Temp	x					x		x
B-1 Hot Water Return Temp	x					x		x
Primary Supply Flow	x					x		x
B-1 Boiler Pump P-3 Status			x			x		x
Secondary Pump P-2 Status			x					x
Outside Air Temp								x
Boiler B-1 Running in Hand						x	x	
Boiler B-1 Runtime Exceeded						x	x	
High Primary Hot Water Supply Temp						x	x	
Hot Water Loop Diff. Pressure	x					x	x	x
P-2 Running in Hand							x	
P-2 Runtime Exceeded							x	
Low Primary Hot Water Supply Temp							x	x

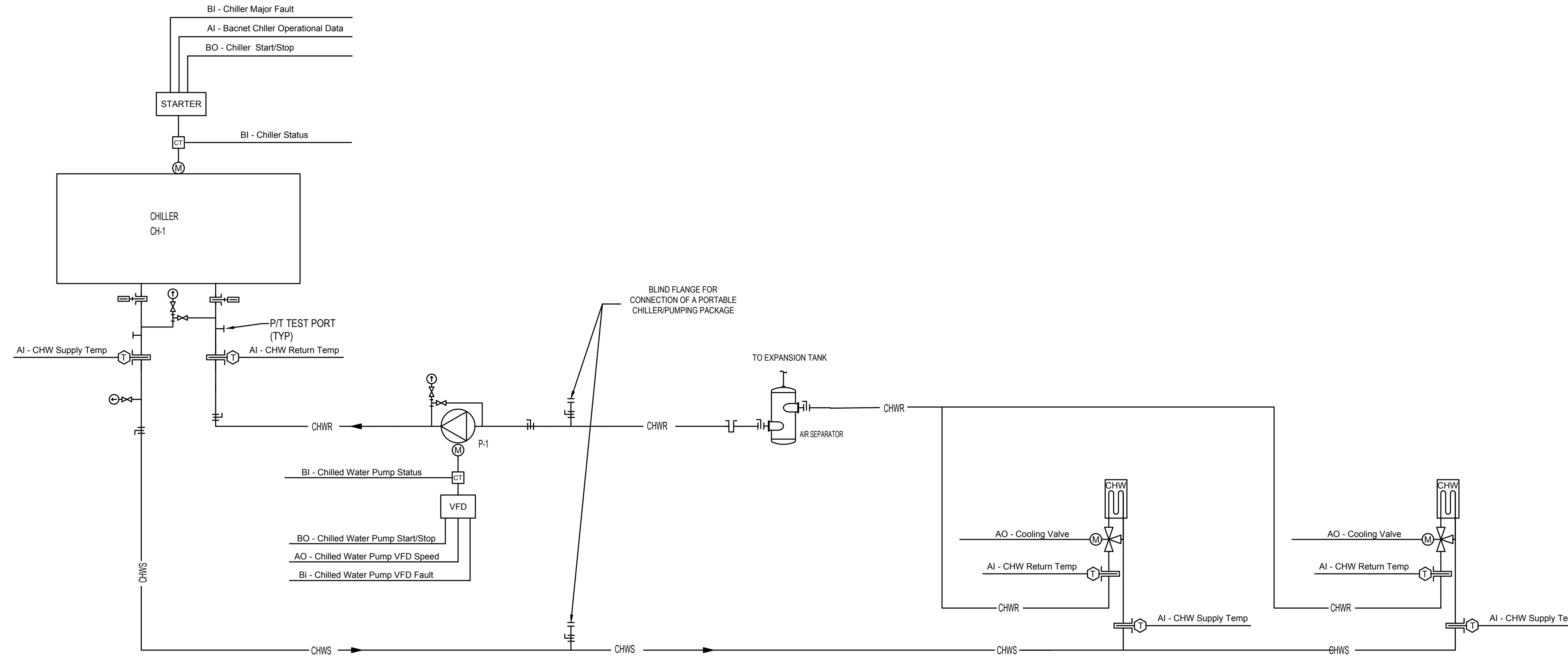


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PROJECT 1368-20
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M-401



1 CHILLED WATER SCHEMATIC
 M-402 SCALE: NONE
 REFER TO EQUIPMENT SCHEDULES AND PIPING DETAILS FOR COMPLETE PIPING ACCESSORIES

Point Name	Hardware Points				Software Points			
	AI	AO	BI	BO	Sched	Trend	Alarm	Show On Graphic
Chilled Water Return Temp	x					x		x
Chilled Water Supply Temp	x					x		x
Chiller CH-1 Stop/Start			x	x	x			x
Chiller CH-1 Major Fault			x			x	x	x
Chiller CH-1 Bacnet Data	x						x	x
Chiller CH-1 - Status			x				x	x
Chiller CH-1 Supply Temp.	x							x
Chiller CH-1 Return Temp.	x							x
Chilled Water Supply Temp Setpoint Reset		x			x	x		x
Chilled Water Pump P-1 Status			x			x	x	x
Chilled Water Pump P-1 Stop/Start			x			x		x
Chilled Water Pump P-1 Status			x			x	x	x
Chilled Water Pump P-1 Running in Hand							x	x
Chiller Running in Hand							x	x
High Chilled Water Supply Temp							x	x
Low Chilled Water Supply Temp							x	

SEQUENCE OF OPERATION

Air Cooled Chiller CH-1

Chiller - Run Conditions:
 The chiller shall be enabled to run whenever the outside air temperature is greater than 54°F (adj.), or upon both of the following conditions:
 • Proof of flow thru the pump
 • Any zone requiring cooling.

The chiller shall be enabled via a user adjustable time after the chiller pump status is proven on. The chiller shall therefore have a user adjustable delay on start.
 The delay time shall be set appropriately to allow for orderly chilled water system start-up, shutdown and sequencing.
 The chiller shall run subject to its own internal safeties and controls.
 The chiller shall maintain a supply water temperature of 44 deg. (adj.).
 To prevent short cycling, the chiller shall run for and be off for minimum adjustable times (both user definable), unless shutdown on safeties or outside air conditions.

Alarms shall be provided as follows for each chiller:
 • Chiller Failure: Commanded on, but the status is off.
 • Chiller Running in Hand: Commanded off, but the status is on.
 • Chiller Runtime Exceeded: Status runtime exceeds a user definable limit.
 • Chiller Major Fault thru Bacnet connection

Chilled Water Pump Operation P-1
 The chilled water pump P-1 shall run anytime the chiller is called to run.
 The chilled water pump shall also run for freeze protection whenever the outside air temperature is less than a user definable setpoint (adj.).

The pump shall start prior to the chiller being enabled and shall stop only after the chiller is disabled. The pump shall therefore have:
 • A user adjustable delay on start.
 • AND a user adjustable delay on stop.

The delay times shall be set appropriately to allow for orderly chilled water system start-up, shutdown and sequencing.

Alarms shall be provided as follows for Chilled Water Pump P-1:
 • Failure: Commanded on, but the status is off.
 • Running in Hand: Commanded off, but the status is on.
 • Runtime Exceeded: Status runtime exceeds a user definable limit.

Chilled Water Supply Temperature Re-set:
 The chilled water supply temperature setpoint shall reset based on outside air temperature.
 As outside air temperature drops from 75°F (adj.) to 50°F (adj.) the chilled water supply temperature setpoint shall reset linearly upwards by 14°F (adj.) between the high and low values.

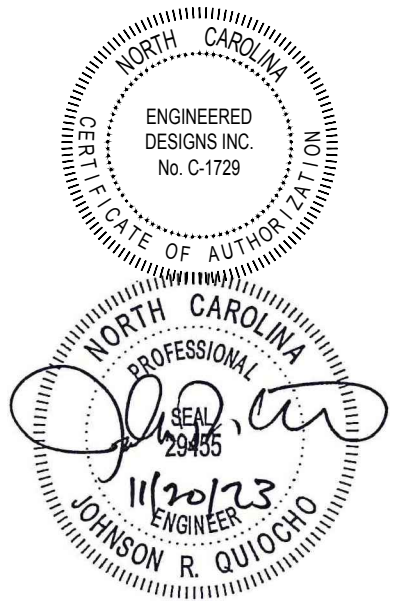
Chilled Water Temperature Monitoring:
 The following temperatures shall be monitored:
 • Chilled water supply.
 • Chilled water return.

Alarms shall be provided as follows:
 • High Chilled Water Supply Temp: If the chilled water supply temperature is greater than 55°F (adj.).
 • Low Chilled Water Supply Temp: If the chilled water supply temperature is less than 38°F (adj.).

The delay times shall be set appropriately to allow for orderly chilled water system start-up, shutdown and sequencing.

Alarms shall be provided as follows for the pump:
 • Chilled Water Pump Failure: Commanded on, but the status is off.
 • Chilled Water Pump Running in Hand: Commanded off, but the status is on.
 • Chilled Water Pump Runtime Exceeded: Status runtime exceeds a user definable limit.

Alarms shall be provided as follows:
 • High Chilled Water Differential Pressure: If the chilled water differential pressure is 25% (adj.) greater than setpoint.
 • Low Chilled Water Differential Pressure: If the chilled water differential pressure is 25% (adj.) less than setpoint.



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MECHANICAL SCHEMATICS

SEQUENCE OF OPERATION

Constant Air Volume AHU-1
 Run Conditions - Scheduled:
 The unit shall run based upon an operator adjustable schedule.

Space Temperature Control:
 The unit shall control the temperature to maintain the thermostat setpoint. Supply fan shall be constant volume.

Freeze Protection:
 The unit shall generate an alarm upon receiving a freeze status. Supply fan shall stop, OA Damper shall close, HW & CHW valves shall open and Chilled Water Pump shall start.

Return Air Smoke Detection:
 The unit shall shut down and generate an alarm upon receiving a return air smoke detector status.

AHU Optimal Start:
 The unit shall start prior to scheduled occupancy based on the time necessary for the zones to reach their occupied setpoints. The start time shall automatically adjust based on changes in outside air temperature and zone temperatures.

Alarms shall be provided as follows:
 - Supply or Return Fan Failure: Commanded on, but the status is off.
 - Supply or Return Fan in Hand: Commanded off, but the status is on.
 - Supply or Return Fan VFD Failure

Pre-heat Coil Valve:
 The controller shall measure the supply air temperature and modulate the pre-heat coil valve to maintain its pre-heat coil setpoint (adj.).

The pre-heat shall be enabled whenever:
 - Outside air temperature is less than 50°F (adj.).
 - AND the economizer is disabled or fully open.
 - AND the supply fan status is on.
 - AND the heating is not active.

Cooling Coil Valve:
 The controller shall measure the supply air temperature and modulate the cooling coil valve to maintain its cooling setpoint.

The cooling shall be enabled whenever:
 - Outside air temperature is greater than 60°F (adj.).
 - AND the economizer is disabled or fully open.
 - AND the supply fan status is on.
 - AND the heating is not active.

The cooling coil valve shall open to 50% (adj.) whenever the freeze status is on.

Supply Air Temperature Re-set
 The supply air temperature shall reset based on outside air temperature as follows:
 - Outside air Temp is 80 deg. or above, supply air temp. shall be set to 55 deg. F.
 - Outside air Temp is 70 deg. -79 deg., supply air temp. shall be set to 58 deg. F.
 - Outside air Temp. is 55 deg. -69 deg., supply air temp. shall be set to 60 deg. F.
 - Outside air Temp. is below 55 degrees, supply air temp. shall be set to 55 deg. F.
 Space Air Humidity level shall remain between 50-60% during supply air reset operation. If space humidity level rises above 60%, supply air reset shall be disabled.

Low Supply Air Temperature Alarm:
 The controller shall alarm if the supply air temperature is less than 45°F (adj.).

Building pressure control (relief air):
 The supply fan is running and the measured space static pressure is greater than the space static setpoint of 0.09 in. w.c. (adj.), the relief air damper shall be commanded to modulate open. When space static pressure is restored to the setpoint, the relief air damper shall be commanded to modulate closed.

Demand control ventilation (during occupied mode):
 Using a single return duct CO2 input, the controller shall monitor and compare the measured average space CO2 to the CO2 concentration setpoint of 850 ppm (adj.). At an average CO2 reading of 850 ppm, the outside air damper shall be open to its non-demand controlled minimum position required for building pressurization. When the measured average CO2 concentration reaches the setpoint of 850 ppm (adj.), the outside air damper shall modulate open incrementally until the return air CO2 level is satisfied or the outside air damper reaches the max open air flow. If the measured CO2 concentration falls, the outside air damper shall modulate toward the minimum position. If the mixed air temperature drops below the mixed air low limit setpoint the CO2 sensor input is overridden and modulates the outside air damper closed to maintain the mixed air temperature low limit setpoint of 50 deg. f (adj.). When the mixed air temperature rises above the mixed air low limit setpoint, CO2 operation is restored.

Economizer:
 The controller shall measure the mixed air temperature and modulate the outdoor air / return air / relief dampers in sequence to maintain a setpoint 2°F (adj.) less than the supply air temperature setpoint. In economizer mode, the return air fan shall adjust speed in response to building pressure such that the speed of the fan increases to maintain building pressure at .05" sp (adj.).

The economizer shall be enabled whenever:
 - Outside air temperature is less than 55°F (adj.).
 - AND the outside air temperature is less than the return air temperature.
 - AND the supply fan status is on.

The economizer shall close whenever:
 - Mixed air temperature drops from 40°F to 35°F (adj.).
 - OR the freeze status is on.
 - OR on loss of supply fan status.

The outside and relief air dampers shall close and the return air damper shall open when the unit is off.

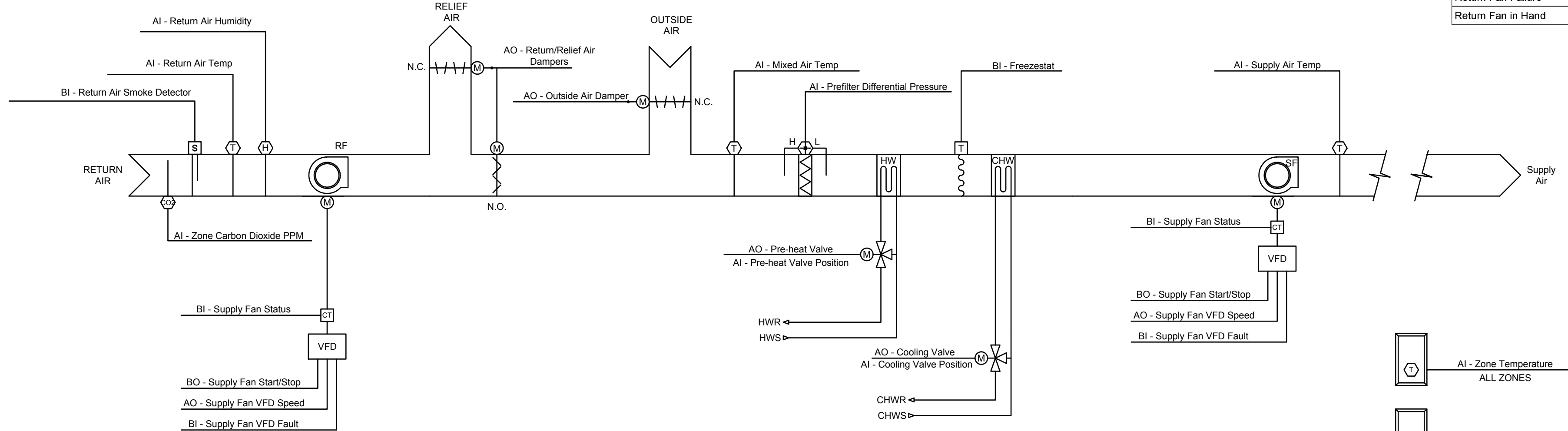
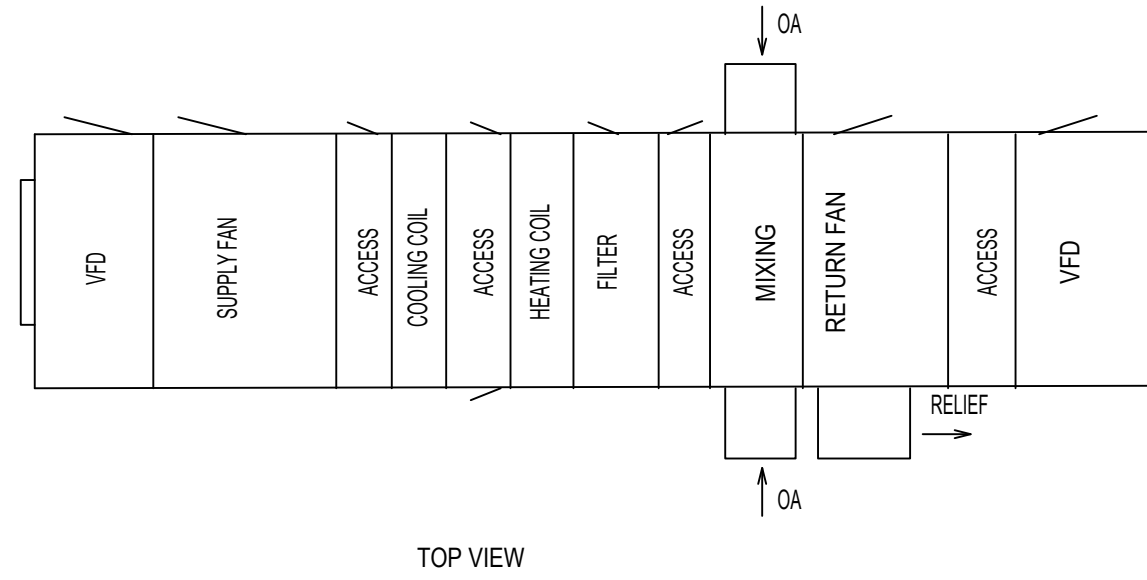
Filter Differential Pressure Monitor:
 The controller shall monitor the differential pressure across the filter.

Alarms shall be provided as follows:
 - Filter Change Required: Filter differential pressure exceeds a user definable limit (adj.).

Mixed Air Temperature:
 The controller shall monitor the mixed air temperature and use as required for economizer control or freeze status shut-down.

Return Air Temperature and Humidity:
 The controller shall monitor the return air temperature and use as required for setpoint control or economizer control.

Supply Air Temperature:
 The controller shall monitor the supply air temperature and use as required to maintain discharge air setpoint and economizer control.



2 AHU-1 CONTROL SCHEMATIC, SEQUENCE AND POINTS LIST - CONSTANT AIR SYSTEM
 SCALE: NONE

DESCRIPTION	LENGTH INCHES	DOOR WIDTH INCHES	WINDOW	REMARKS
ACCESS SECTION	2			
CONTROLS SECTION	21.875	18		
ACCESS SECTION	10			
FAN SECTION - RETURN	37.25	17	X	
AIR MIXING SECTION	34.125			
ACCESS SECTION	19.125	15	X	
FILTER SECTION	14	10		
COIL SECTION - PREHEAT	10			
ACCESS SECTION	24	18	X	ACCESS DOOR ON BOTH SIDES OF UNIT
COIL SECTION - COOLING	14			
ACCESS SECTION	14.125	10		
FAN SECTION - SUPPLY	37.25	17	X	
CONTROLS SECTION	26.5	18		

UNIT MOUNTED ON 6" HOUSEKEEPING PAD	
TOTAL	264.25
HEIGHT	41.125
WIDTH	44

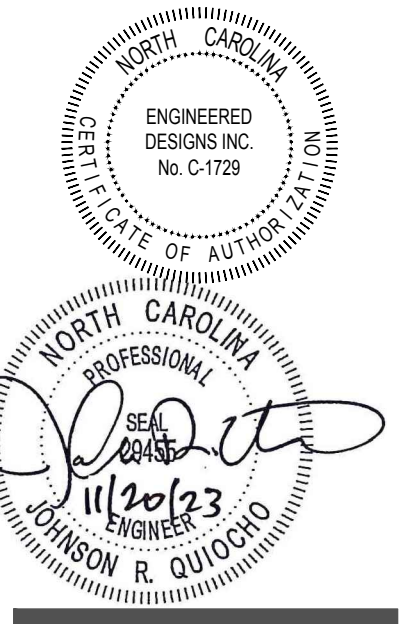
Point Name	Hardware Points			Sch	Trend	Alarm	Show On Graphic
	AI	AO	BI				
Mixed Air Temp	x				x		x
Filter Differential Pressure	x				x		
Return Air Humidity	x				x		x
Return Air Temp	x				x		x
Supply Air Temp	x				x		x
Pre-Heat Valve	x	x					x
Pre-Heat Valve Position	x						x
Cooling Valve	x	x					x
Cooling Valve Position	x						x
Outdoor Air Damper	x				x		x
Relief Air Damper	x				x		x
Return Air Damper	x				x		x
Freeze Status		x			x	x	x
Return Air Smoke Detector		x			x	x	x
Zone CO2	x						x
Supply Fan Status		x			x		x
Return Fan Status		x			x		x
Supply Duct Static Pressure	x						x
Supply Duct High Static		x				x	
Supply Fan Start/Stop				x		x	x
Supply Fan VFD speed		x				x	x
Supply Fan VFD Fault		x				x	x
Return Fan Start/Stop			x			x	x
Supply Air Temp Setpoint		x				x	x
Schedule				x			
Filter Change Required		x				x	x
Supply Fan Failure		x				x	
Supply Fan in Hand		x				x	
Return Fan Failure		x				x	
Return Fan in Hand		x				x	

Skinner | Farlow | Kirwan
 architecture

ENGINEERED DESIGNS INC.
 North Carolina License #C-1729

CDs FOR BID

SCO ID# 19-21547-02A
 NCSU ID 201920037



date note

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Don E. Ellis Building (133) Renovations
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

PROJECT 1368-20
 DATE 11-20-23
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MECHANICAL SCHEMATICS

M-403

11/17/2023 8:56:39 AM

SEQUENCE OF OPERATION

Variable Air Volume AHU-1
 Run Conditions - Scheduled:
 The unit shall run based upon an operator adjustable schedule.

Freeze Protection:
 The unit shall generate an alarm upon receiving a freestat status. Supply fan shall stop, OA Damper shall close, HW & CHW valves shall open and Chilled Water Pump shall start.

Return Air Smoke Detection:
 The unit shall shut down and generate an alarm upon receiving a return air smoke detector status.

AHU Optimal Start:
 The unit shall start prior to scheduled occupancy based on the time necessary for the zones to reach their occupied setpoints. The start time shall automatically adjust based on changes in outside air temperature and zone temperatures.

Supply Fan - VAV Operation
 The supply fan shall be enabled anytime the unit is commanded to run, unless shutdown on safeties. The supply fan VFD shall vary the speed of the supply fan to deliver airflow as required by the duct static pressure sensor.

Alarms shall be provided as follows:
 - Supply Fan Failure: Commanded on, but the status is off.
 - Supply Fan in Hand: Commanded off, but the status is on.
 - Supply Fan VFD Failure
 - Supply Air High Static Pressure

Heating Coil Valve:
 The controller shall measure the supply air temperature and modulate the heating coil valve to maintain its heating setpoint.
 The pre-heat shall be enabled whenever:
 - Outside air temperature is less than 50°F (adj.).
 - AND the economizer is disabled or fully open.
 - AND the supply fan status is on.
 - AND the cooling is not active.

Cooling Coil Valve:
 The controller shall measure the supply air temperature and modulate the cooling coil valve to maintain its cooling setpoint.
 The cooling shall be enabled whenever:
 - Outside air temperature is greater than 60°F (adj.).
 - AND the economizer is disabled or fully open.
 - AND the supply fan status is on.
 - AND the heating is not active.

The cooling coil valve shall open to 50% (adj.) whenever the freestat is on, and shall fall open upon loss of communication or power.

Building pressure control (relief air):
 The supply fan is running and the measured space static pressure is greater than the space static setpoint of 0.08 in. w.c. (adj.), the relief air damper shall be commanded to modulate open. When space static pressure is restored to the setpoint, the relief air damper shall be commanded to modulate closed.

Demand control ventilation (during occupied mode):
 Using a single return duct CO2 input, the controller shall monitor and compare the measured average space CO2 to the CO2 concentration setpoint of 850 ppm (adj.). At an average CO2 reading of 850 ppm, the outside air damper shall be open to its non-demand controlled minimum position required for building pressurization. When the measured average CO2 concentration reaches the setpoint of 850 ppm (adj.), the outside air damper shall modulate open incrementally until the return air CO2 level is satisfied or the outside air damper reaches the max open air flow. If the measured CO2 concentration falls, the outside air damper shall modulate toward the minimum position. If the mixed air temperature drops below the mixed air low limit setpoint the CO2 sensor input is overridden and modulates the outside air damper closed to maintain the mixed air temperature low limit setpoint of 50 deg. F (adj.). When the mixed air temperature rises above the mixed air low limit setpoint, CO2 operation is restored.

Low Supply Air Temperature Alarm:
 The controller shall alarm if the supply air temperature is less than 45°F (adj.).

Supply Air Temperature Re-set
 The supply air temperature shall reset based on outside air temperature as follows:
 - Outside air Temp is 80 deg. or above, supply air temp. shall be set to 55 deg. F.
 - Outside air Temp is 70 deg. - 79 deg., supply air temp. shall be set to 50 deg. F. If there is no call for dehumidification.
 - Outside air Temp. is 50 deg. - 69 deg., supply air temp. shall be set to 60 deg. F. If there is no call for dehumidification.
 - Outside air Temp. is a below 55 degrees, supply air temp. shall be set to 62 deg. F. If there is no call for dehumidification.

Space Humidity levels shall remain between 50-60% during supply air reset operation. If Humidity levels rises above 60% in any space, supply air reset shall be disabled.

Economizer:
 The controller shall measure the mixed air temperature and modulate the outdoor air / return air / relief dampers in sequence to maintain a setpoint 2°F (adj.) less than the supply air temperature setpoint. In economizer mode, the return air fan shall adjust speed in response to building pressure such that the speed of the fan increases to maintain building pressure at .05" sp (adj.).

The economizer shall be enabled whenever:
 - Outside air temperature is less than 60°F (adj.).
 - AND the outside air temperature is less than the return air temperature.
 - AND the supply fan status is on.

The economizer shall close whenever:
 - Mixed air temperature drops from 40°F to 35°F (adj.).
 - OR the freestat is on.
 - OR on loss of supply fan status.

The outside and relief air dampers shall close and the return air damper shall open when the unit is off.

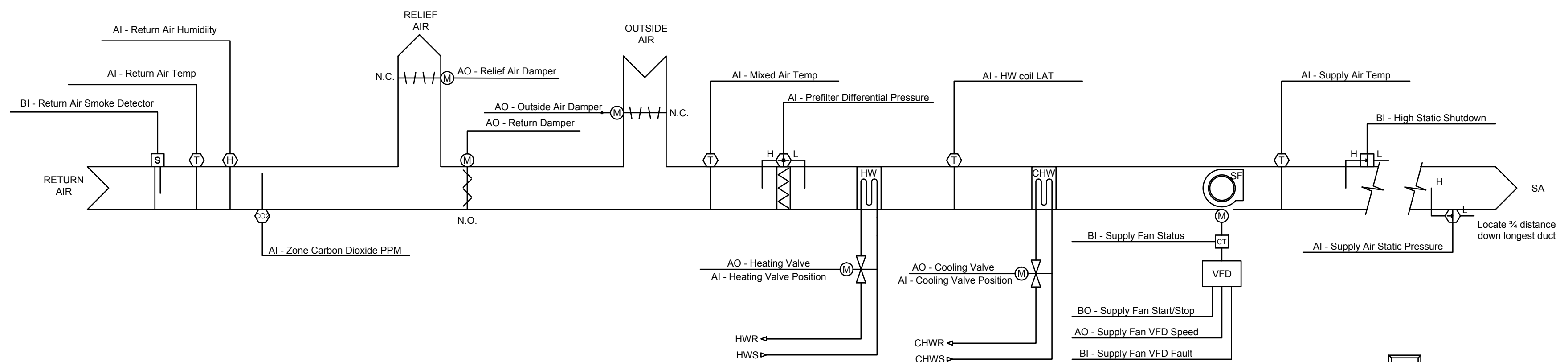
Filter Differential Pressure Monitor:
 The controller shall monitor the differential pressure across the filter.

Alarms shall be provided as follows:
 - Filter Change Required: Filter differential pressure exceeds a user definable limit (adj.).

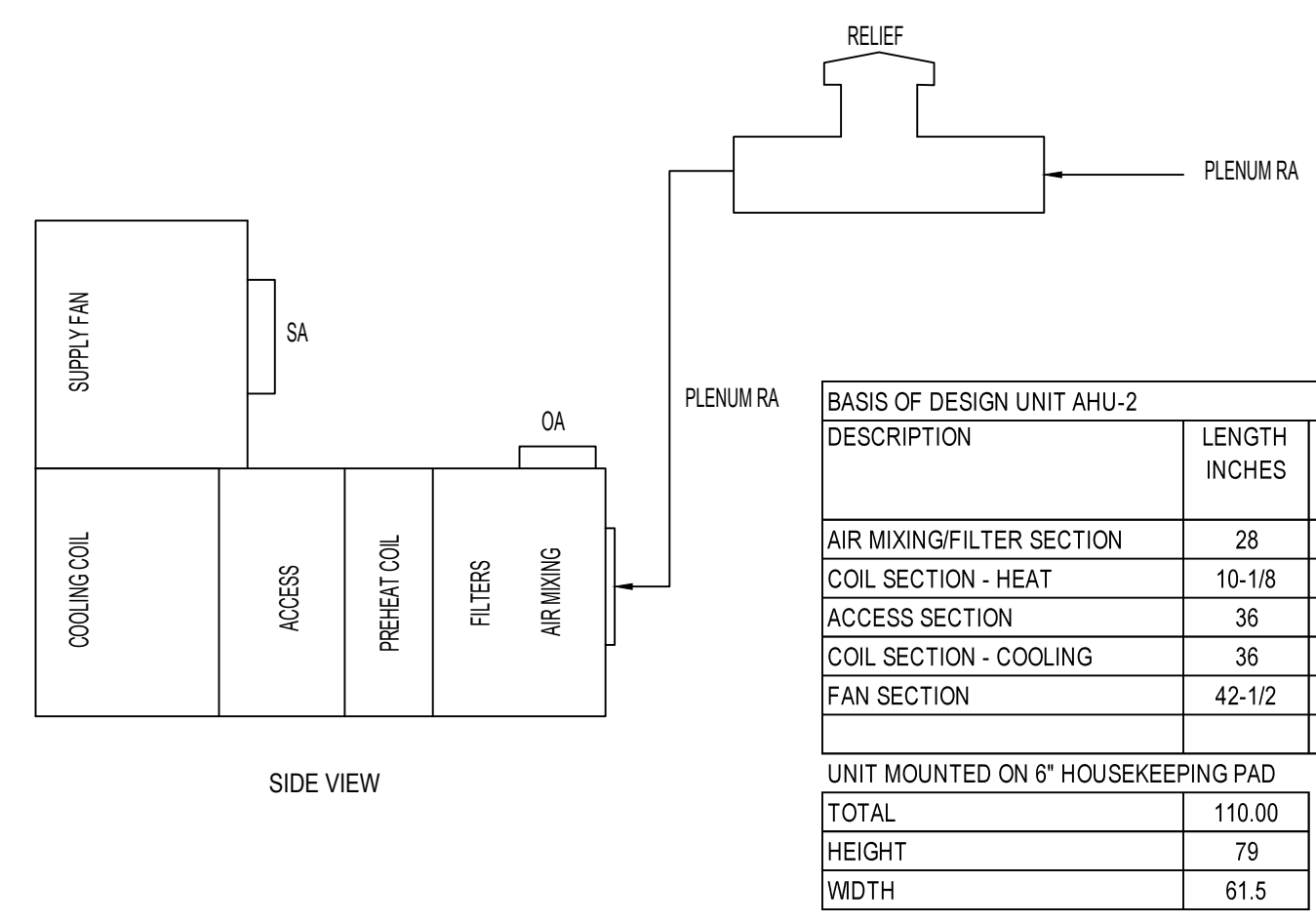
Mixed Air Temperature:
 The controller shall monitor the mixed air temperature and use as required for economizer control or freestat shut-down.

Return Air Temperature and Humidity:
 The controller shall monitor the return air temperature and use as required for setpoint control or economizer control.

Supply Air Temperature:
 The controller shall monitor the supply air temperature and use as required to maintain discharge air setpoint and economizer control.



Point Name	Hardware Points				Sched	Trend	Alarm	Show On Graphic
	AI	AO	BI	BO				
Mixed Air Temp	x					x		x
Filter Differential Pressure	x					x		
Return Air Humidity	x					x		x
Return Air Temp	x					x		x
Supply Air Temp	x					x		x
Pre-Heat Valve	x	x						x
Cooling Valve	x	x						x
Outdoor Air Damper						x		x
Relief Air Damper						x		x
Return Air Damper						x		x
Freeze/Stat Status				x		x	x	x
Return Air Smoke Detector				x		x	x	x
Supply Fan VFD Speed	x	x				x		x
Supply Fan VFD Fault				x			x	x
Supply Fan Status				x				x
Supply Duct Static Pressure	x							x
Supply Duct High Static				x				x
Supply Fan Start/Stop				x		x		x
Economizer Mixed Air Temp Setpoint			x			x		x
Supply Air Temp Setpoint			x			x		x
Schedule					x			
Filter Change Required				x			x	x
Supply Fan Failure							x	
Supply Fan in Hand				x				x



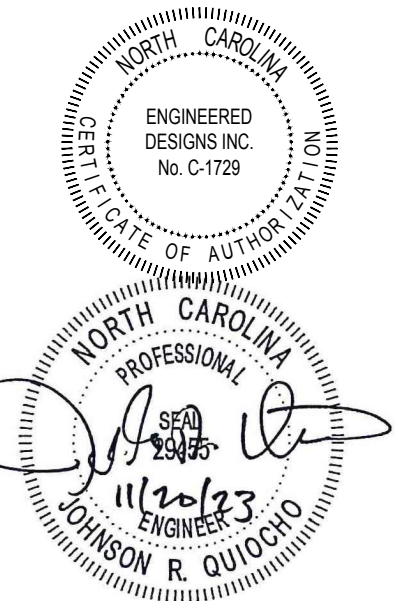
BASIS OF DESIGN UNIT AHU-2

DESCRIPTION	LENGTH INCHES	DOOR WIDTH INCHES	WINDOW
AIR MIXING/FILTER SECTION	28	22	X
COIL SECTION - HEAT	10-1/8		
ACCESS SECTION	36	19	
COIL SECTION - COOLING	36		X
FAN SECTION	42-1/2	17	X

UNIT MOUNTED ON 6" HOUSEKEEPING PAD

TOTAL	110.00
HEIGHT	79
WIDTH	61.5

1 AHU-2 CONTROL SCHEMATIC, SEQUENCE AND POINTS LIST - VARIABLE AIR SYSTEM
 M-06.03 SCALE: NONE



date note

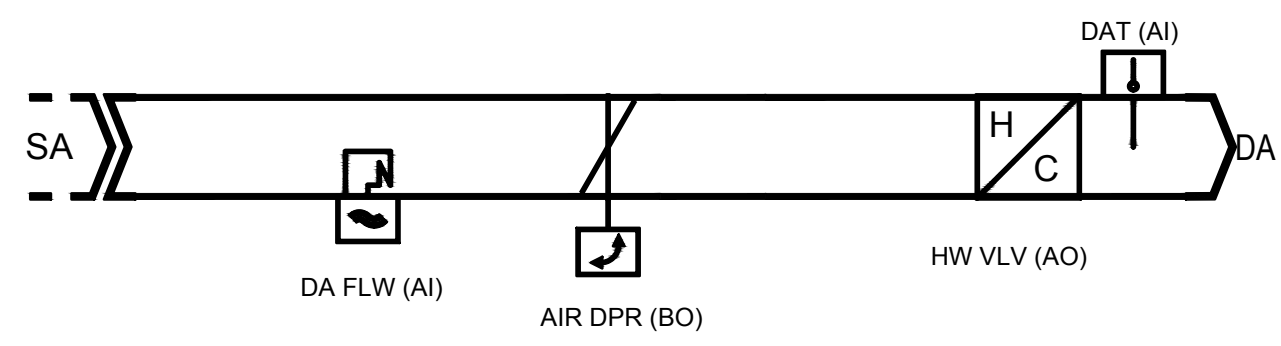
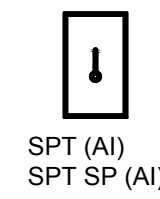
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MECHANICAL SCHEMATICS

M-404

11/17/2023 8:57:18 AM



1 FLOW DIAGRAM: TERMINAL BOX
M-405 SCALE: NONE

Points List: TERMINAL BOX

System Point Description	Point	Alarm
TREND ITEMS MARKED WITH AN ASTERISK (*), TRENDING SET TO 15 MINUTES INCREMENTS (ADJ.).		
AIR VALVE DRIVE COMMAND	X	
AIR DPR	X	
DISCHARGE AIR TEMPERATURE	X	X
DAT	X	
HEATING VALVE COMMAND	X	
HW VLV	X	
SPACE TEMPERATURE LOCAL	X	X
SPT	X	
SPACE TEMPERATURE SETPOINT LOCAL	X	
SPT SP	X	
SUPPLY AIRFLOW	X	X
DA FLW	X	
BAS COMMUNICATION STATE		X
BAS COM		X
MAXIMUM COOLING AIRFLOW SETPOINT	X	
MAX CLG FLW SP	X	
MINIMUM COOLING AIRFLOW SETPOINT	X	
MIN CLG FLW SP	X	
HEATING AIRFLOW SETPOINT	X	
HTG FLW SP	X	
OCCUPIED BYPASS TIMER	X	
OCC BYP TMR	X	
OCCUPIED COOLING SETPOINT	X	
OCC CLG SP	X	
OCCUPIED HEATING SETPOINT	X	
OCC HTG SP	X	
UNOCCUPIED COOLING SETPOINT	X	
UNOCC CLG SP	X	
UNOCCUPIED HEATING SETPOINT	X	
UNOCC HTG SP	X	

SEQUENCE OF OPERATIONS: TERMINAL BOX

BUILDING AUTOMATION SYSTEM INTERFACE:

THE BUILDING AUTOMATION SYSTEM (BAS) SHALL SEND THE CONTROLLER OCCUPIED, AND UNOCCUPIED COMMANDS. THE BAS MAY ALSO SEND A HEAT/COOL MODE, PRIORITY SHUTDOWN COMMANDS, SPACE TEMPERATURE AND/OR SPACE TEMPERATURE SETPOINT. IF COMMUNICATION IS LOST WITH THE BAS, THE CONTROLLER SHALL OPERATE USING ITS LOCAL SETPOINTS.

OCCUPIED:

NORMAL OPERATING MODE FOR OCCUPIED SPACES OR DAYTIME OPERATION. THE EXACT SCHEDULE WILL BE COORDINATED WITH THE OWNER. THE DEFAULT TEMPERATURE SETPOINTS ARE THE INTERIOR DESIGN CONDITIONS INDICATED ON THE MECHANICAL SUMMARY ON THE BUILDING CODE SUMMARY. WHEN THE UNIT IS IN THE OCCUPIED MODE THE VAV SHALL MAINTAIN THE SPACE TEMPERATURE AT THE ACTIVE OCCUPIED HEATING OR COOLING SETPOINT. APPLICABLE VENTILATION AND AIRFLOW SETPOINTS SHALL BE ENFORCED. THE OCCUPIED MODE SHALL BE THE DEFAULT MODE OF THE VAV.

UNOCCUPIED:

NORMAL OPERATING MODE FOR UNOCCUPIED SPACES OR NIGHTTIME OPERATION. THE EXACT SCHEDULE WILL BE COORDINATED WITH THE OWNER. THE DEFAULT TEMPERATURE SETPOINTS ARE 82 DEG. F (ADJ.) IN THE COOLING MODE AND 65 DEG. F (ADJ.) IN THE HEATING MODE. WHEN THE UNIT IS IN UNOCCUPIED MODE THE VAV CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE AT THE STORED UNOCCUPIED HEATING OR COOLING SETPOINT REGARDLESS OF THE PRESENCE OF A HARDWIRED OR COMMUNICATED SETPOINT.

WHEN THE SPACE TEMPERATURE EXCEEDS THE ACTIVE UNOCCUPIED SETPOINT, COOLING REQUEST IS SENT. WHEN A MINIMUM FOUR (4) ZONES (EXACT NUMBER TO BE DETERMINED DURING TAB PROCESS) ON A UNIT REQUEST COOLING, IT TURNS ON AND ALL BOXES ON THAT UNIT GOES TO MINIMUM COOLING AIRFLOW. AFTER 15 MINUTES IF UNOCCUPIED SETPOINT SATISFIED, EVERYTHING GOES TO UNOCCUPIED AGAIN.

OCCUPIED BYPASS:

MODE USED TO TEMPORARILY PLACE THE UNIT INTO THE OCCUPIED OPERATION. TENANTS SHALL BE ABLE TO OVERRIDE THE UNOCCUPIED MODE FROM THE SPACE SENSOR. THE OVERRIDE SHALL LAST FOR A MAXIMUM OF 4 HOURS (ADJ.). THE TENANTS SHALL BE ABLE TO CANCEL THE OVERRIDE FROM THE SPACE SENSOR AT ANY TIME. DURING THE OVERRIDE THE UNIT SHALL OPERATE IN OCCUPIED MODE.

HEAT/COOL SETPOINT:

THE SPACE TEMPERATURE SETPOINT SHALL BE DETERMINED BY THE COMMUNICATED VALUE SET BY THE OWNER AT THE BMS. THERE SHALL BE NO LOCAL CONTROL OF THE SETPOINTS.

COOLING MODE:

WHEN THE UNIT IS IN COOLING MODE, THE VAV CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE AT THE ACTIVE COOLING SETPOINT BY MODULATING THE AIRFLOW BETWEEN THE ACTIVE COOLING MINIMUM AIRFLOW SETPOINT TO THE MAXIMUM COOLING AIRFLOW SETPOINT. THE VAV SHALL USE THE MEASURED SPACE TEMPERATURE AND THE ACTIVE COOLING SETPOINT TO DETERMINE THE REQUESTED COOLING CAPACITY.

HEATING MODE:

WHEN THE UNIT IS IN HEATING MODE, THE VAV CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE AT THE ACTIVE HEATING SETPOINT BY MODULATING THE AIRFLOW BETWEEN THE ACTIVE HEATING MINIMUM AIRFLOW SETPOINT TO THE MAXIMUM HEATING AIRFLOW SETPOINT. THE VAV CONTROLLER SHALL USE THE MEASURED SPACE TEMPERATURE AND THE ACTIVE HEATING SETPOINT TO DETERMINE THE REQUESTED HEATING CAPACITY BY MODULATING THE HOT WATER VALVE AS NOTED BELOW.

REHEAT CONTROL:

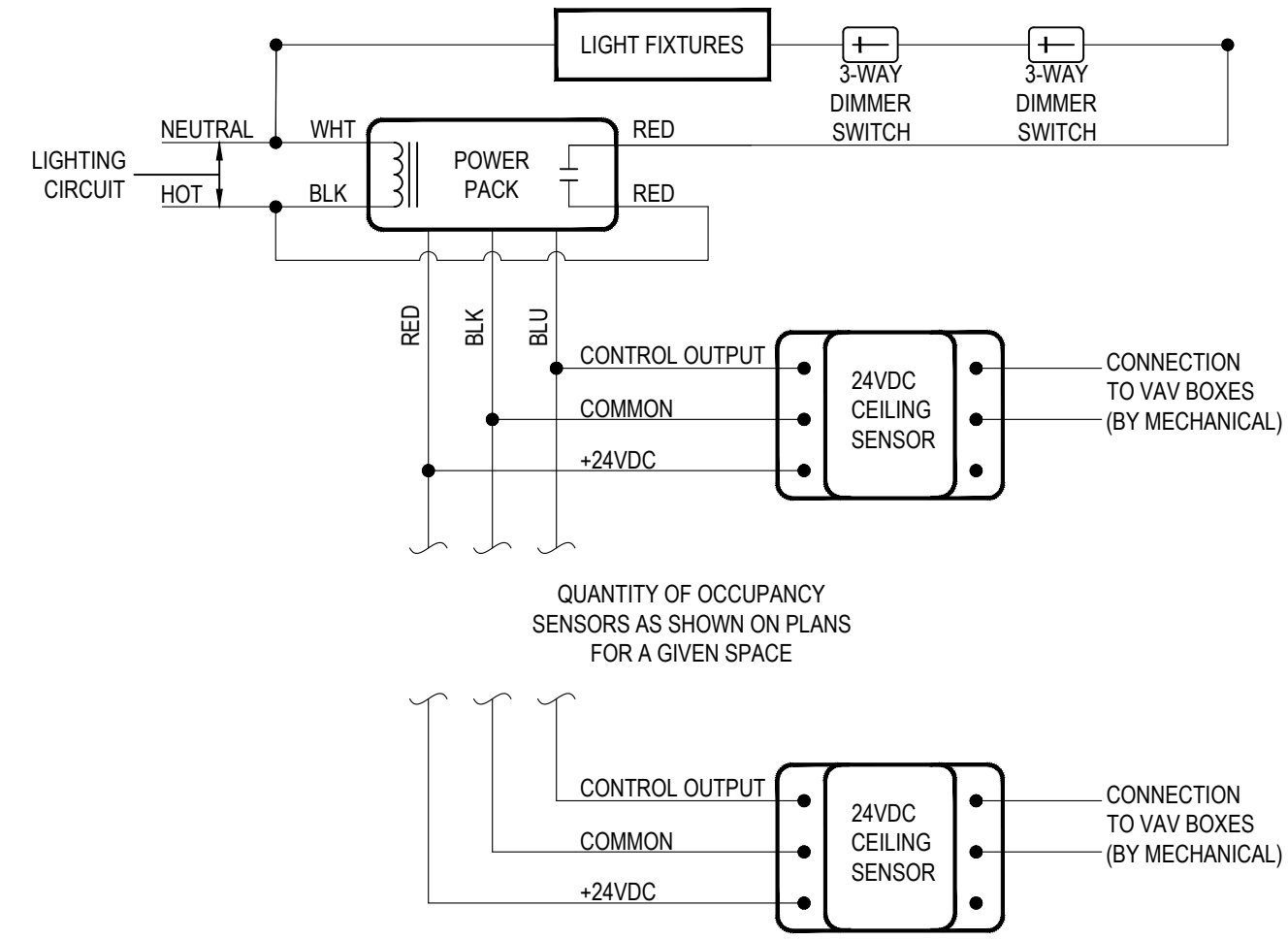
REHEAT WILL ONLY BE ALLOWED WHEN THE PRIMARY AIR TEMPERATURE IS 5.0 DEG. F BELOW THE CONFIGURED REHEAT ENABLE SETPOINT OF 70.0 DEG. F (ADJ.). THE REHEAT SHALL BE ENABLED WHEN THE SPACE TEMPERATURE DROPS BELOW THE ACTIVE HEATING SETPOINT AND THE MINIMUM AIRFLOW REQUIREMENTS ARE MET. DURING REHEAT THE VAV SHALL OPERATE AT ITS MINIMUM HEATING AIRFLOW SETPOINT AND ENERGIZE THE HEAT AS FOLLOWS:

PROPORTIONAL HOT WATER REHEAT:

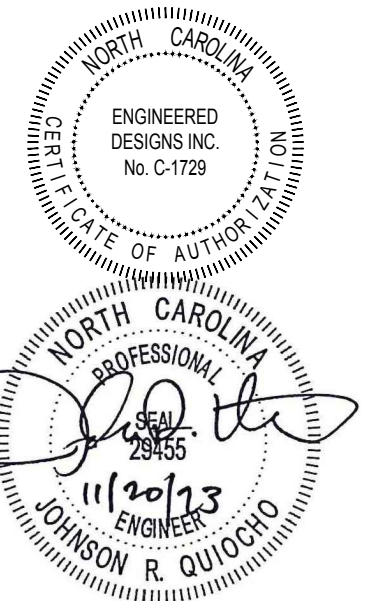
IF THE SPACE TEMPERATURE IS BELOW THE HEATING SETPOINT THE HOT WATER REHEAT VALVE SHALL CONTROL AS REQUIRED TO MAINTAIN THE ACTIVE HEATING SETPOINT.

SPACE SENSOR FAILURE:

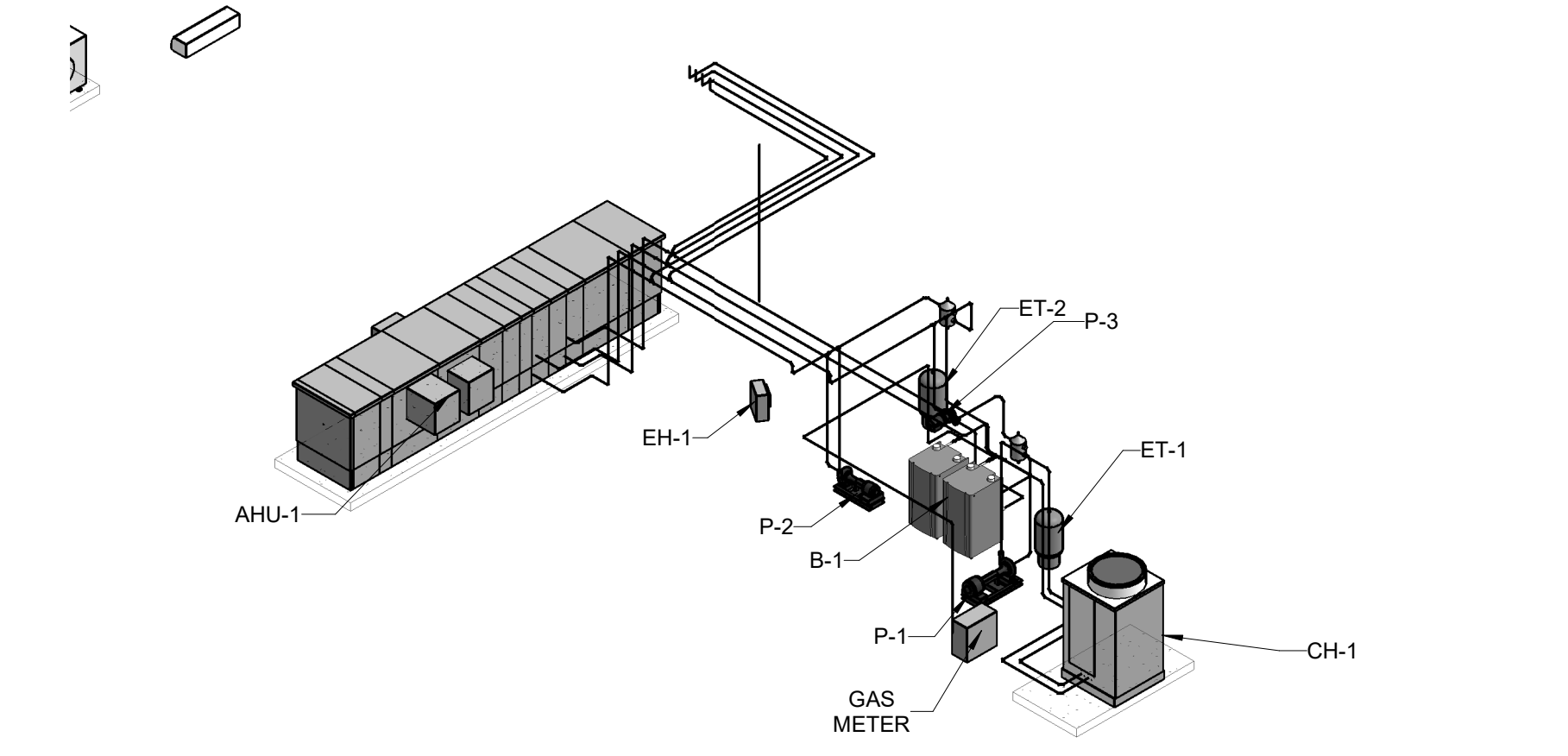
IF THERE IS A FAULT WITH THE OPERATION OF THE ZONE SENSOR AN ALARM SHALL BE ANNUNCIATED AT THE BAS. SPACE SENSOR FAILURE SHALL CAUSE THE VAV TO DRIVE THE DAMPER TO MINIMUM AIR FLOW IF THE VAV IS IN THE OCCUPIED MODE, OR DRIVE IT CLOSED IF THE VAV IS IN THE UNOCCUPIED MODE.



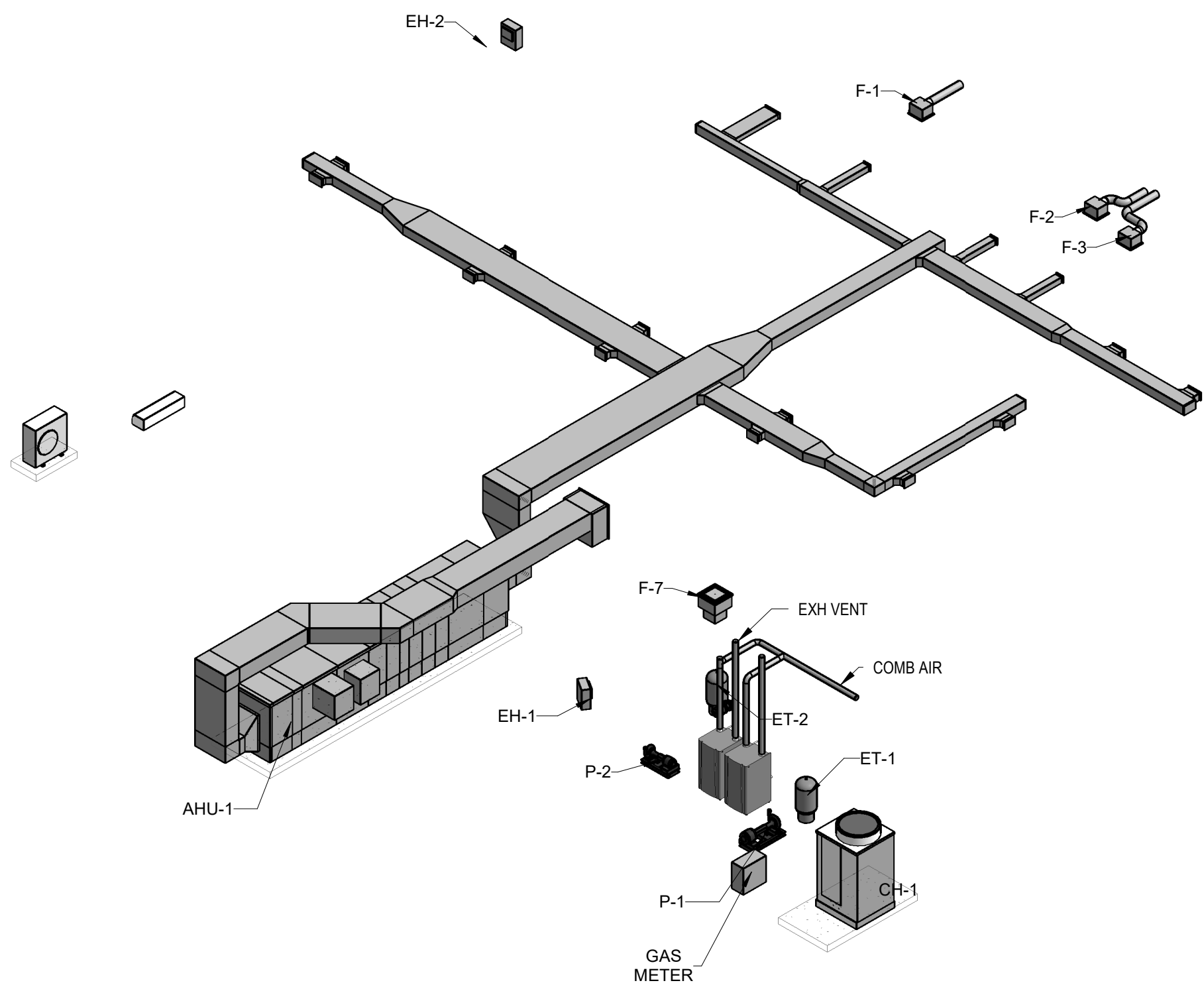
2 VACANCY SENSOR WIRING DIAGRAM
M-405 SCALE: N.T.S.



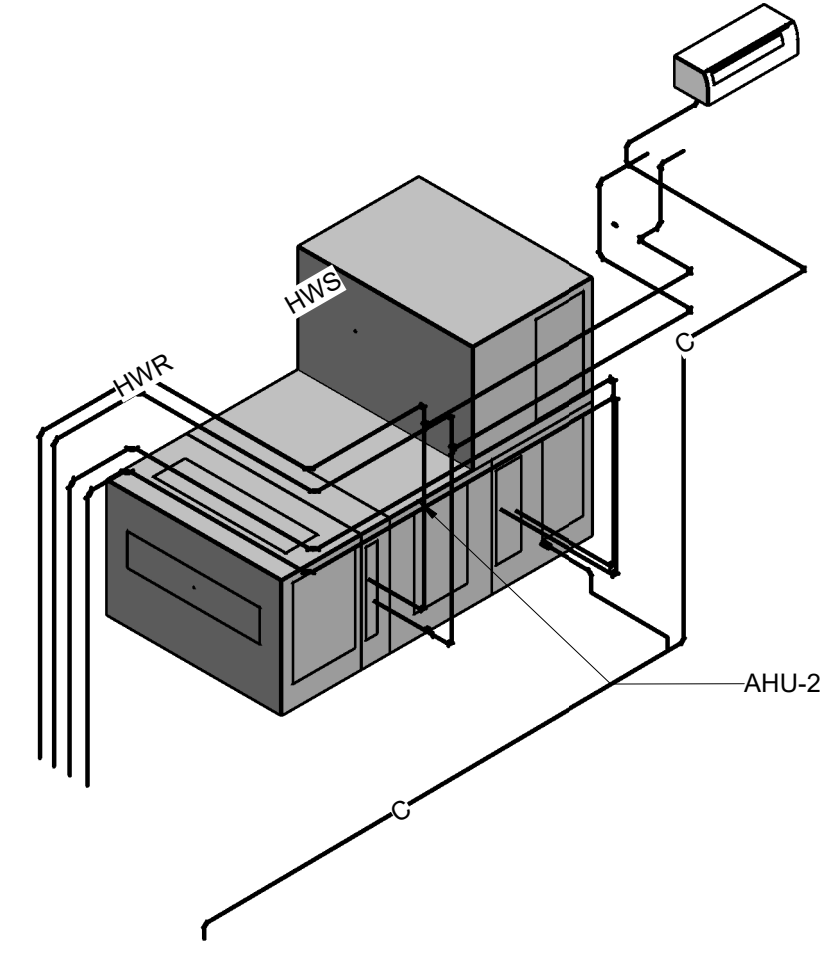
11/17/2023 8:47:54 AM



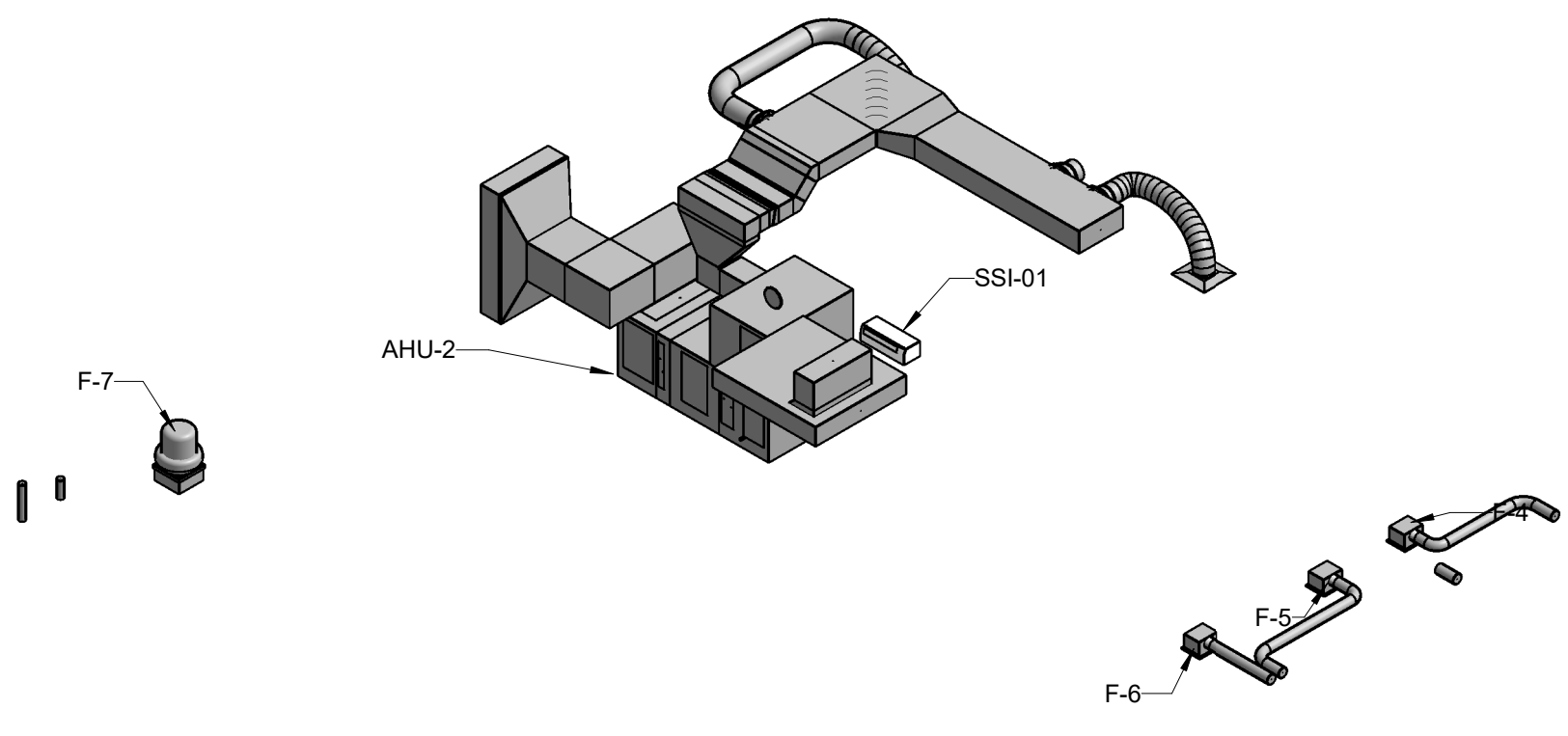
3 Mech Isometric FIRST FLOOR PIPING
M-406 SCALE:



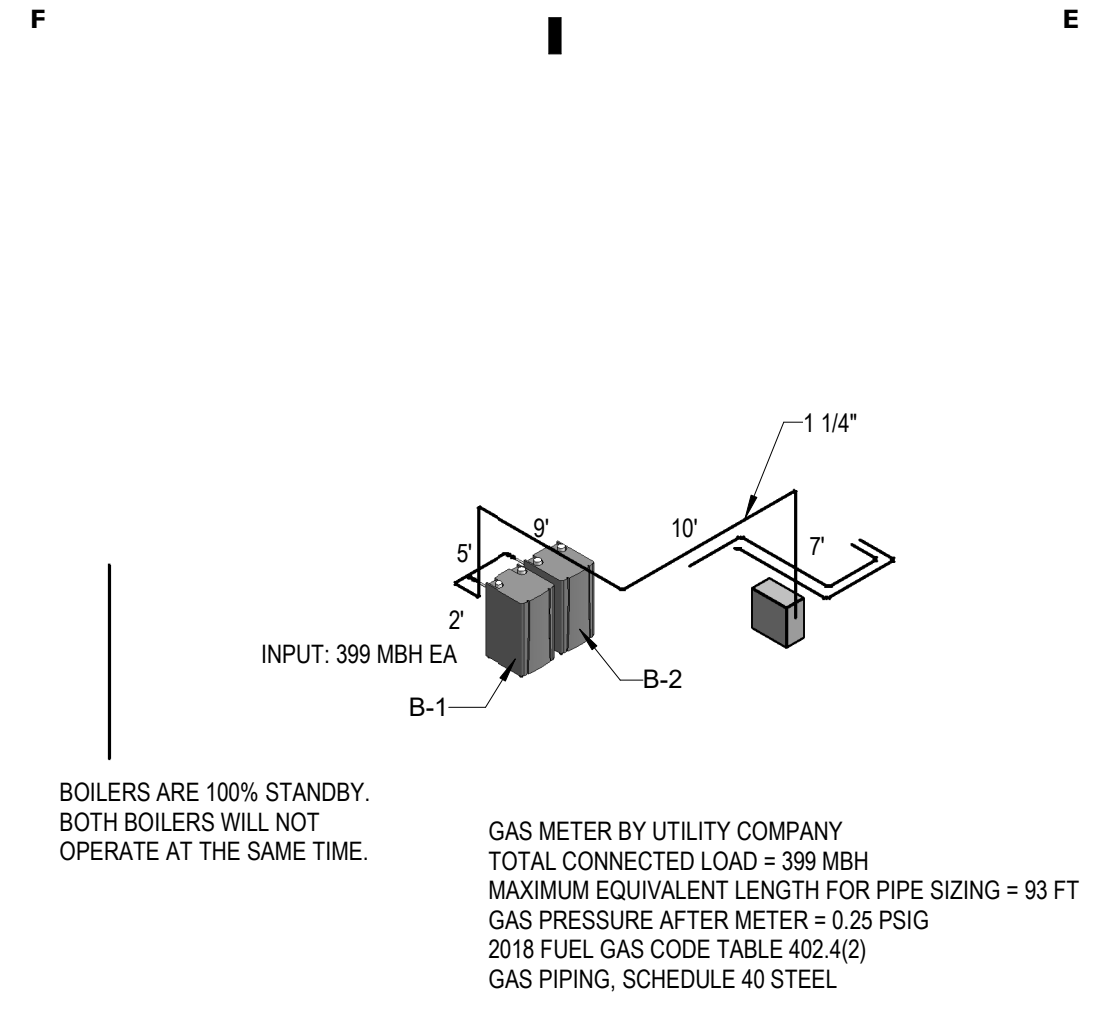
1 Mech Isometric FIRST FLOOR
M-406 SCALE:



4 Mech Isometric SECOND FLOOR PIPING - HVAC BASE
M-406 SCALE:



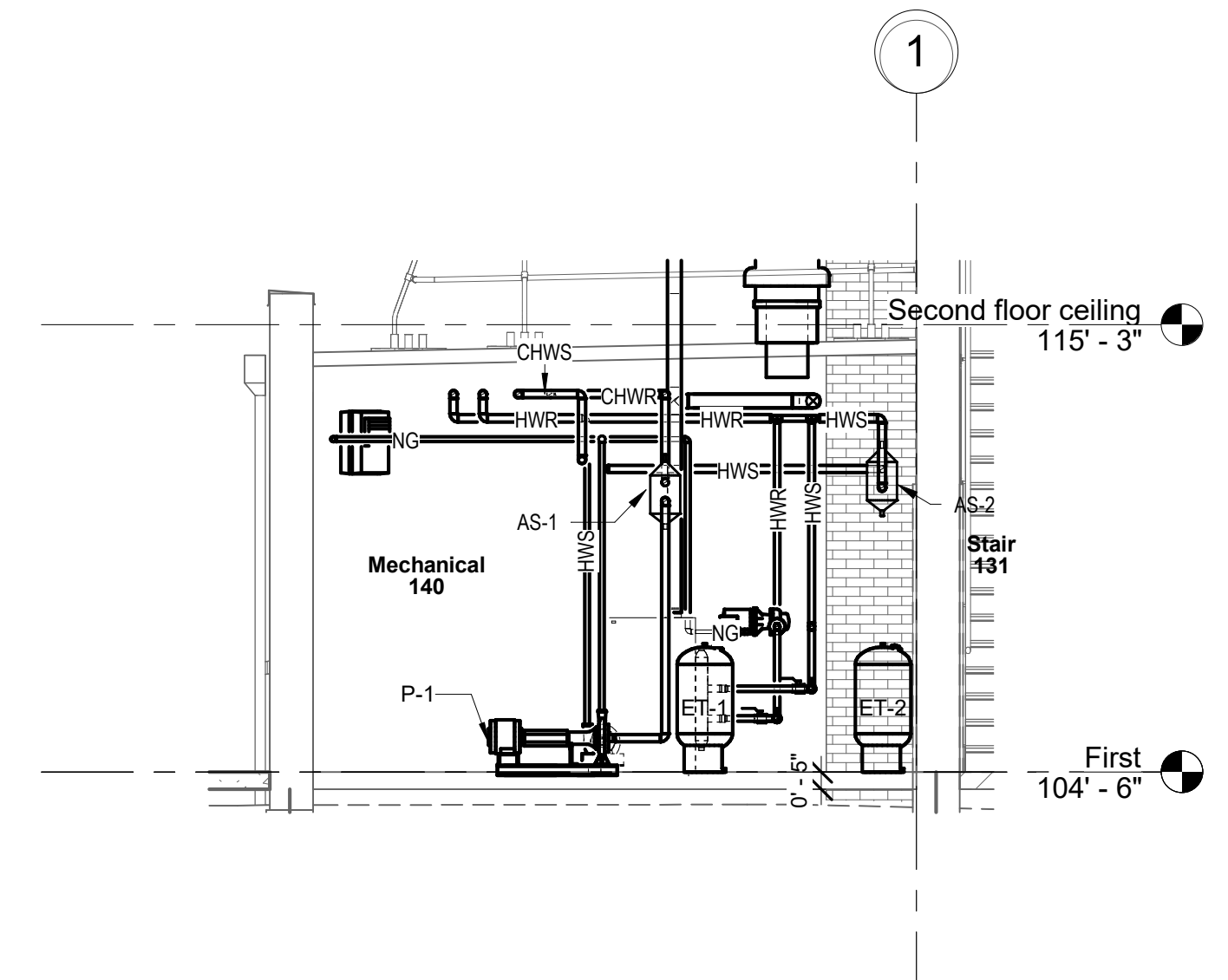
2 Mech Isometric SECOND FLOOR - HVAC BASE
M-406 SCALE:



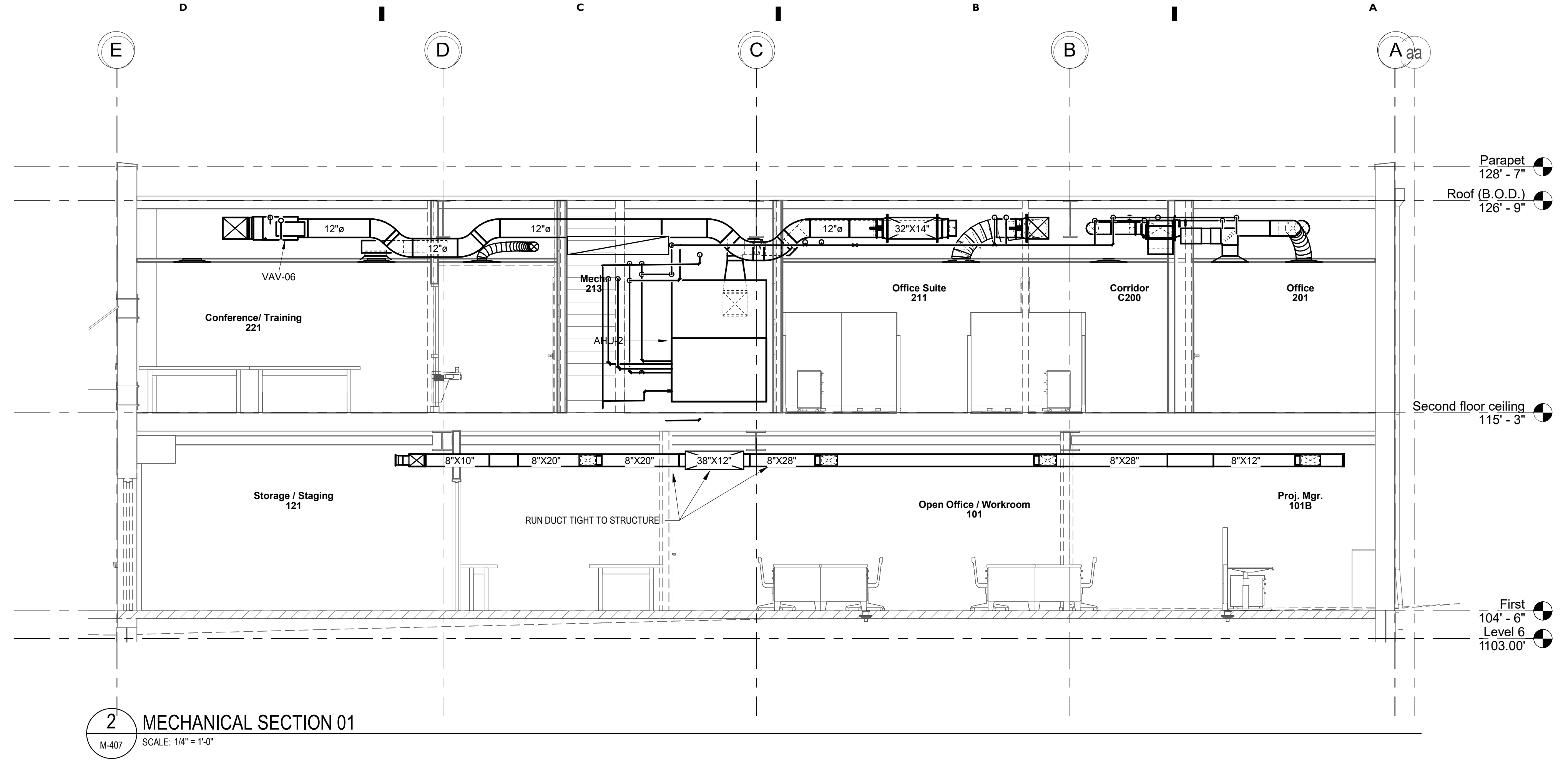
BOILERS ARE 100% STANDBY. BOTH BOILERS WILL NOT OPERATE AT THE SAME TIME.

GAS METER BY UTILITY COMPANY
 TOTAL CONNECTED LOAD = 399 MBH
 MAXIMUM EQUIVALENT LENGTH FOR PIPE SIZING = 93 FT
 GAS PRESSURE AFTER METER = 0.25 PSIG
 2018 FUEL GAS CODE TABLE 402.4(2)
 GAS PIPING, SCHEDULE 40 STEEL

1 Mech Isometric FIRST FLOOR GAS PIPING
 M-407 SCALE:



3 MECHANICAL SECTION 02
 M-407 SCALE: 1/4" = 1'-0"



2 MECHANICAL SECTION 01
 M-407 SCALE: 1/4" = 1'-0"

Parapet 128' - 7"
 Roof (B.O.D.) 126' - 9"
 Second floor ceiling 115' - 3"
 First 104' - 6"
 Level 6 1103.00'

Skinner | Farlow | Kirwan
architecture
 301 Greenwood Ave. Suite 200
 Raleigh, NC 27603
 919.286.2022
 sfarchitecture.com

ENGINEERED DESIGNS INC.
 North Carolina License #C-1729
 105 S. Clay Parkway, Suite 200, Cary, North Carolina 27518
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CDs FOR BID
SCO ID# 19-21547-02A
NCSU ID 20190037

NORTH CAROLINA
ENGINEERED DESIGNS INC.
 No. C-1729
STATE OF NORTH CAROLINA
PROFESSIONAL ENGINEER
 11/20/23
JOHNSON R. QUIGG

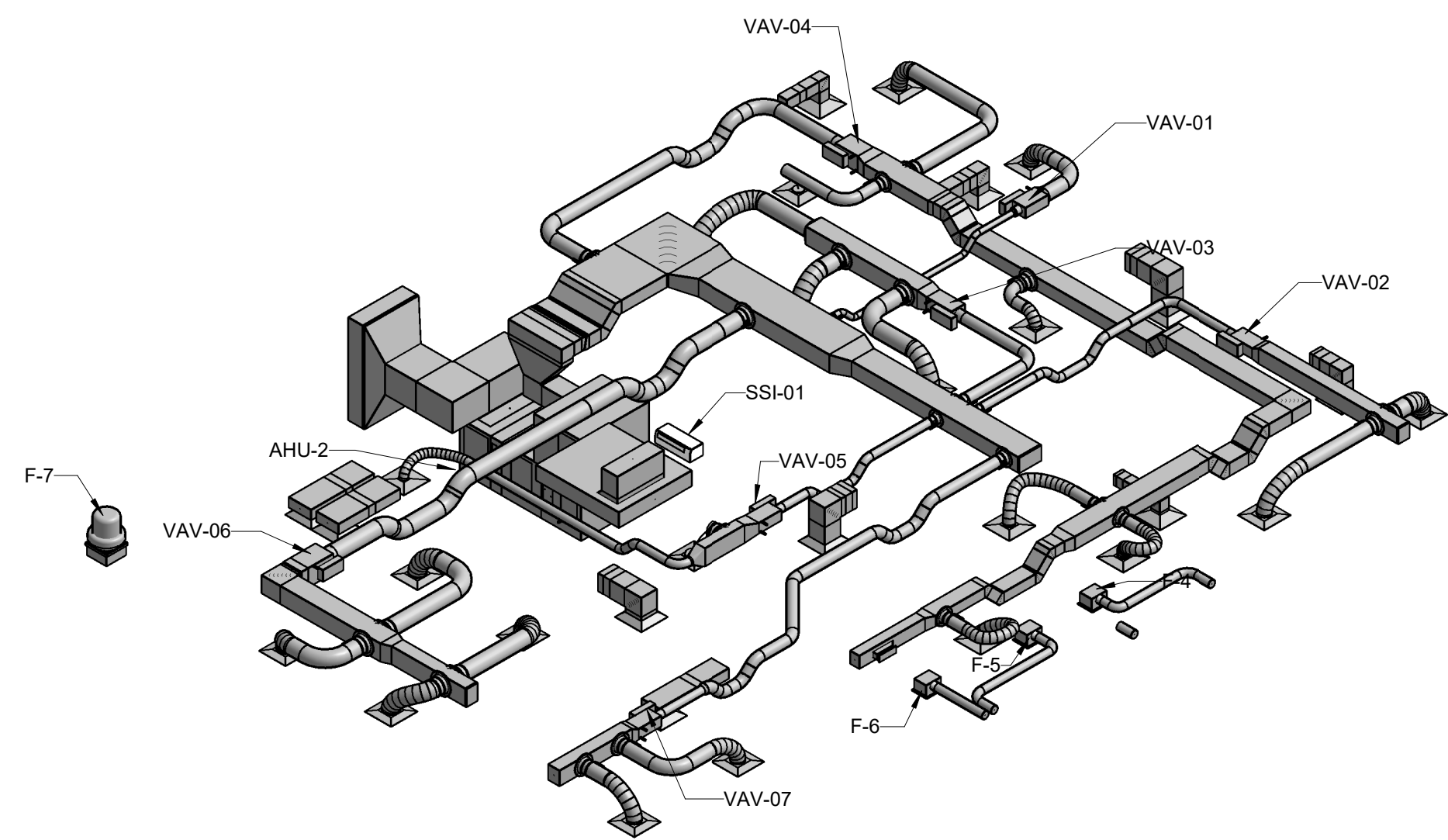
date note

New Building For:
Don E. Ellis Building (133) Renovations
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

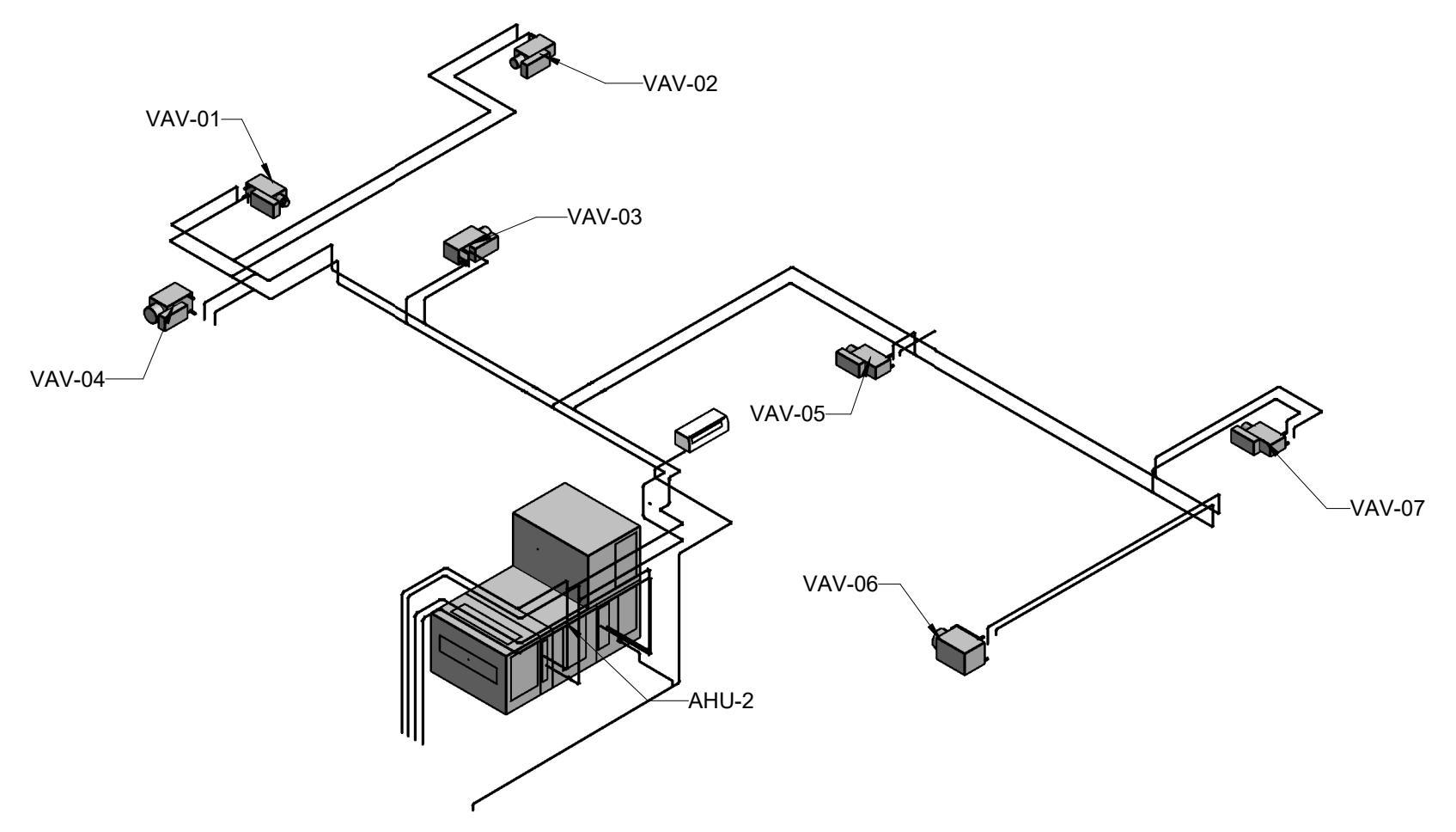
PROJECT 1368-20
 DATE 11-20-23
 DRAWN DNF
 CHECKED JRQ

MECHANICAL SCHEMATICS & SECTIONS

M-407



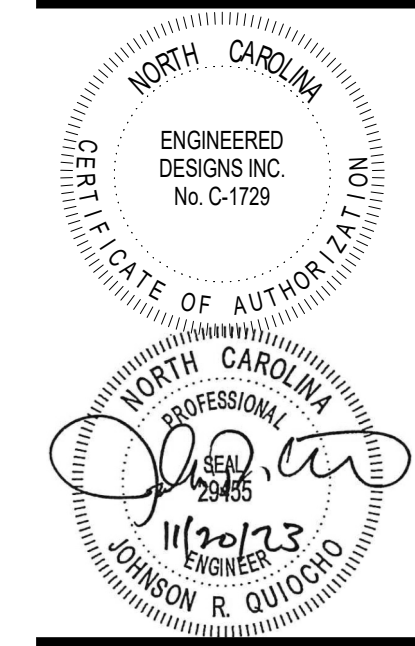
1 Mech Isometric SECOND FLOOR - HVAC ALT #1
M-408 SCALE:



2 Mech Isometric SECOND FLOOR PIPING - HVAC ALT #1
M-408 SCALE:

11/17/2023 8:48:51 AM

CDs FOR BID
SCO ID# 19-21547-02A
NCSU ID 20190037



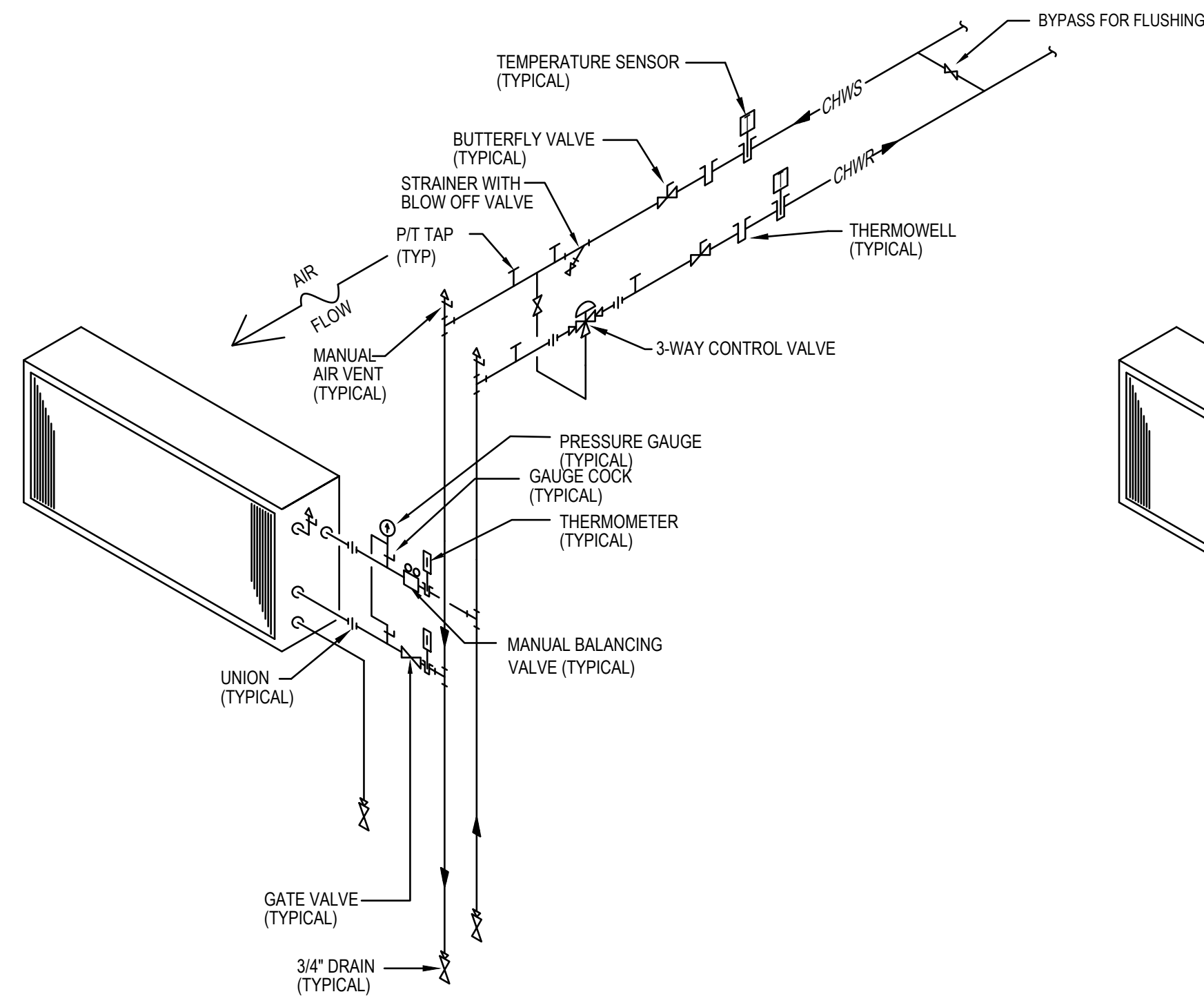
date note

New Building For:
Don E. Ellis Building (133)
Renovations
1320 Varsity Drive, Raleigh, NC 27606
North Carolina State University

PROJECT 1368-20
DATE 11-20-23
DRAWN DNF
CHECKED JRQ

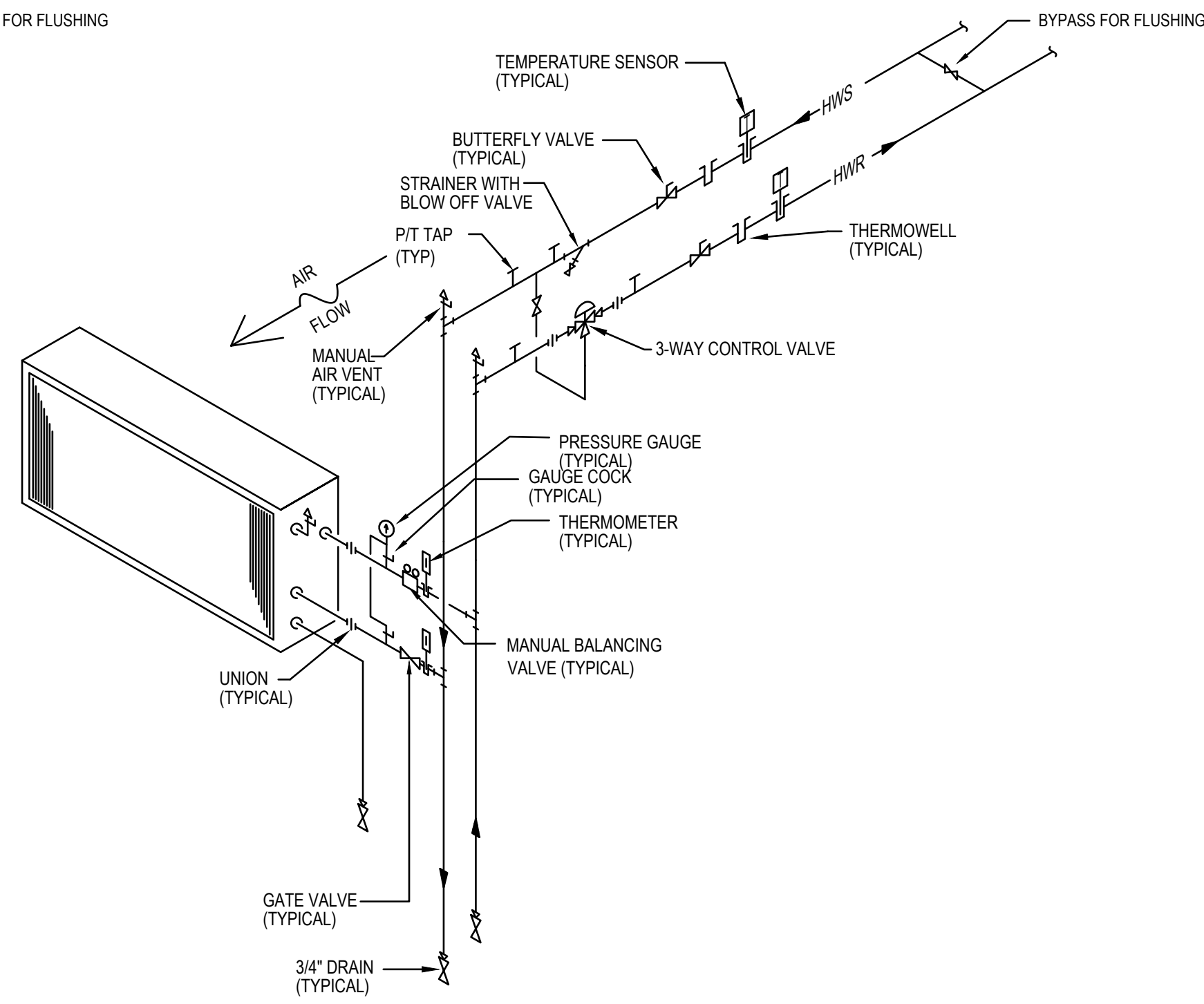
HVAC ALT

M-408



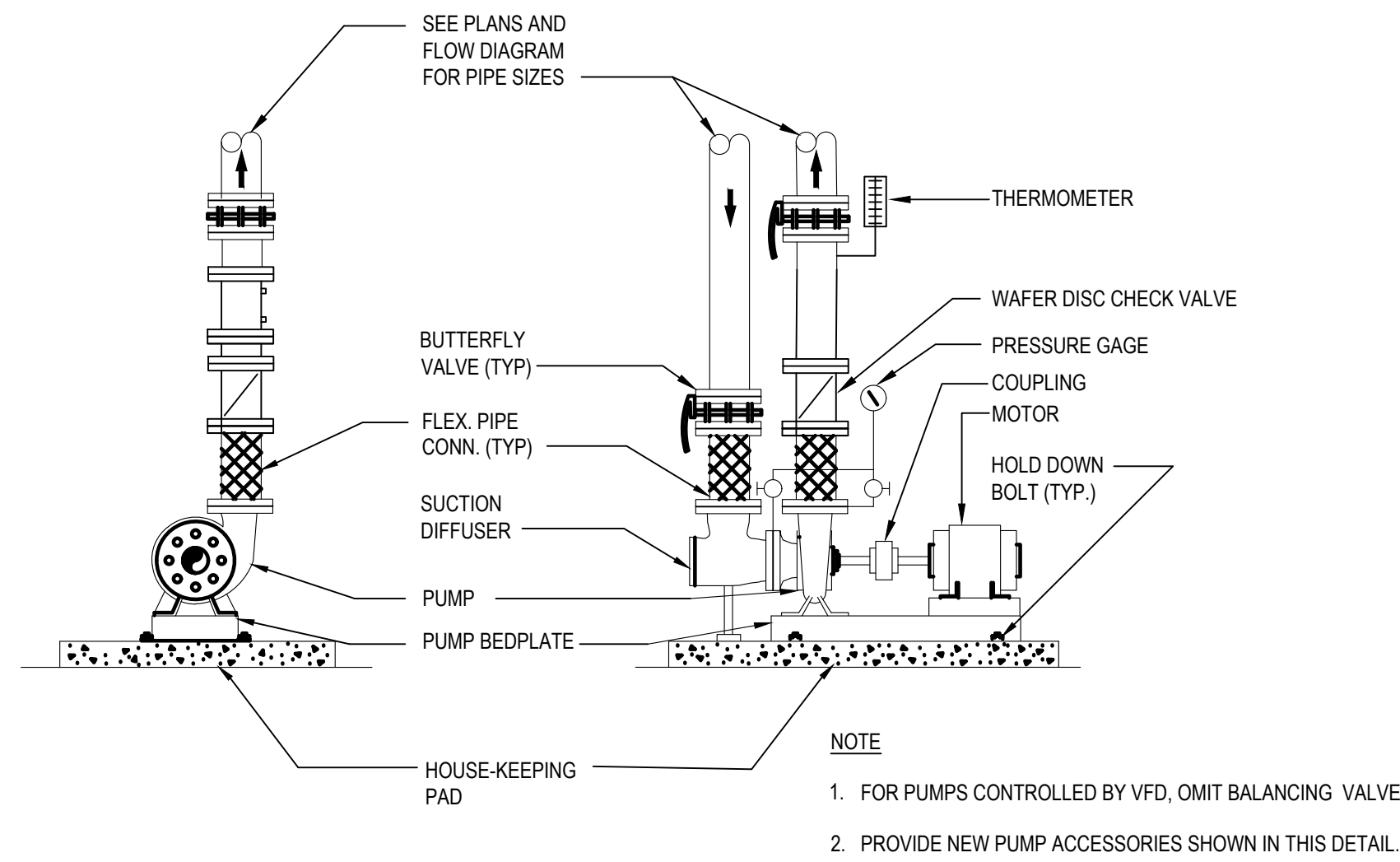
1 CHILLED WATER COIL PIPING DIAGRAM

M-601 SCALE: NOT TO SCALE 3-WAY CONTROL VALVE



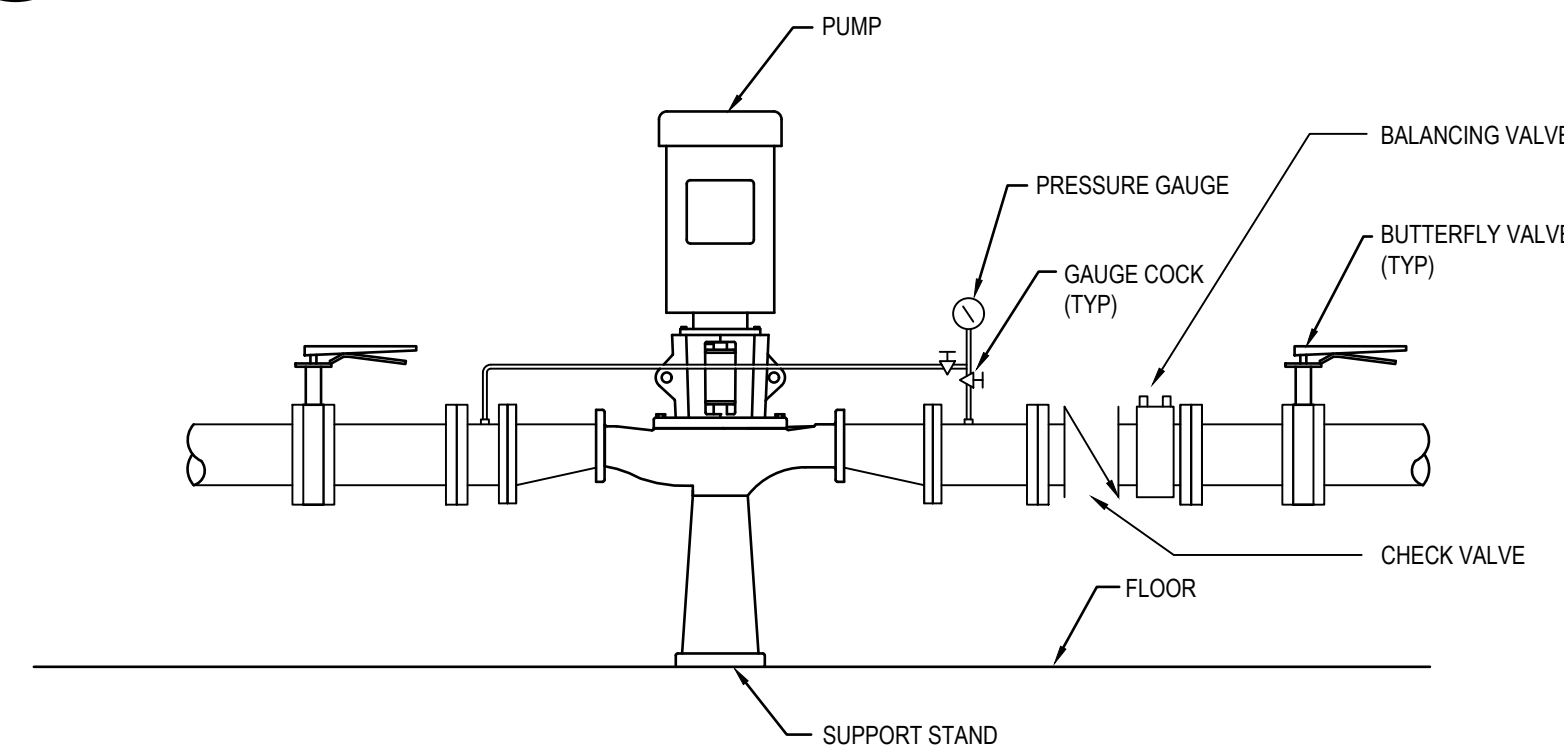
2 HOT WATER COIL PIPING DIAGRAM

M-601 SCALE: NOT TO SCALE 3-WAY CONTROL VALVE



4 END SUCTION PUMP DETAIL

M-601 SCALE: NONE

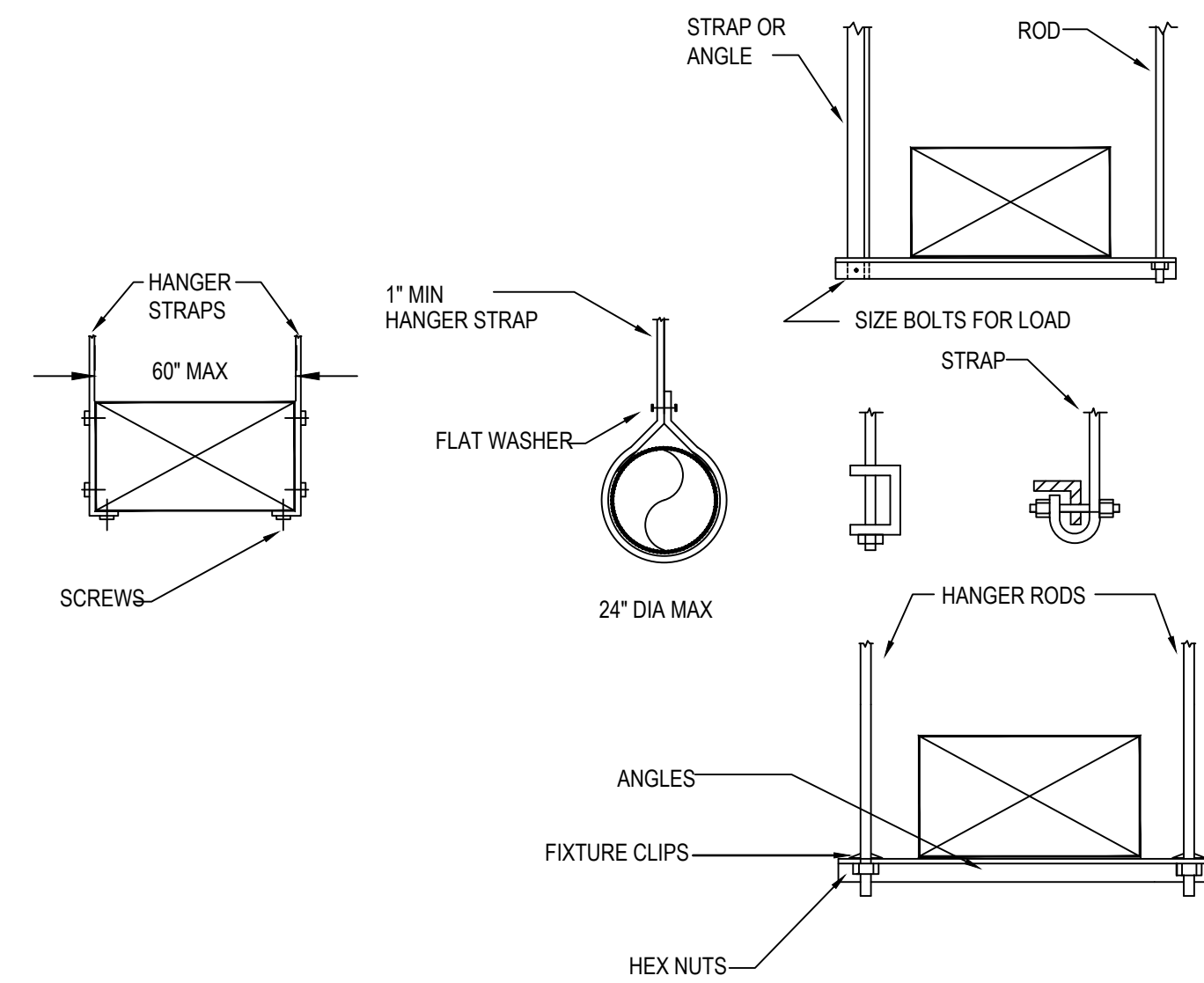


5 INLINE PUMP DETAIL

M-601 SCALE: NONE

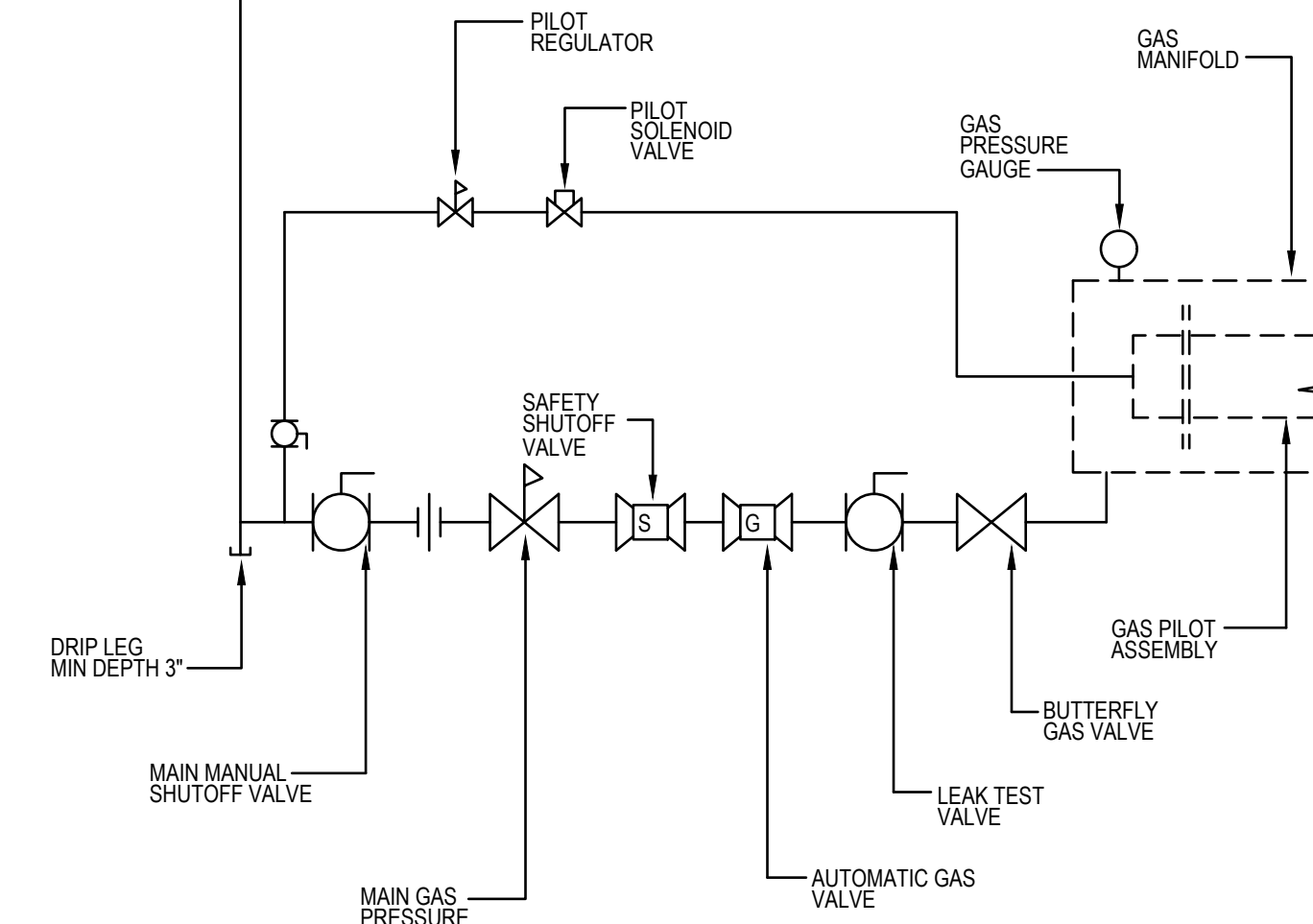
3 VAV UNIT INSTALLATION DETAIL

M-601 SCALE: NOT TO SCALE 3-WAY VALVE



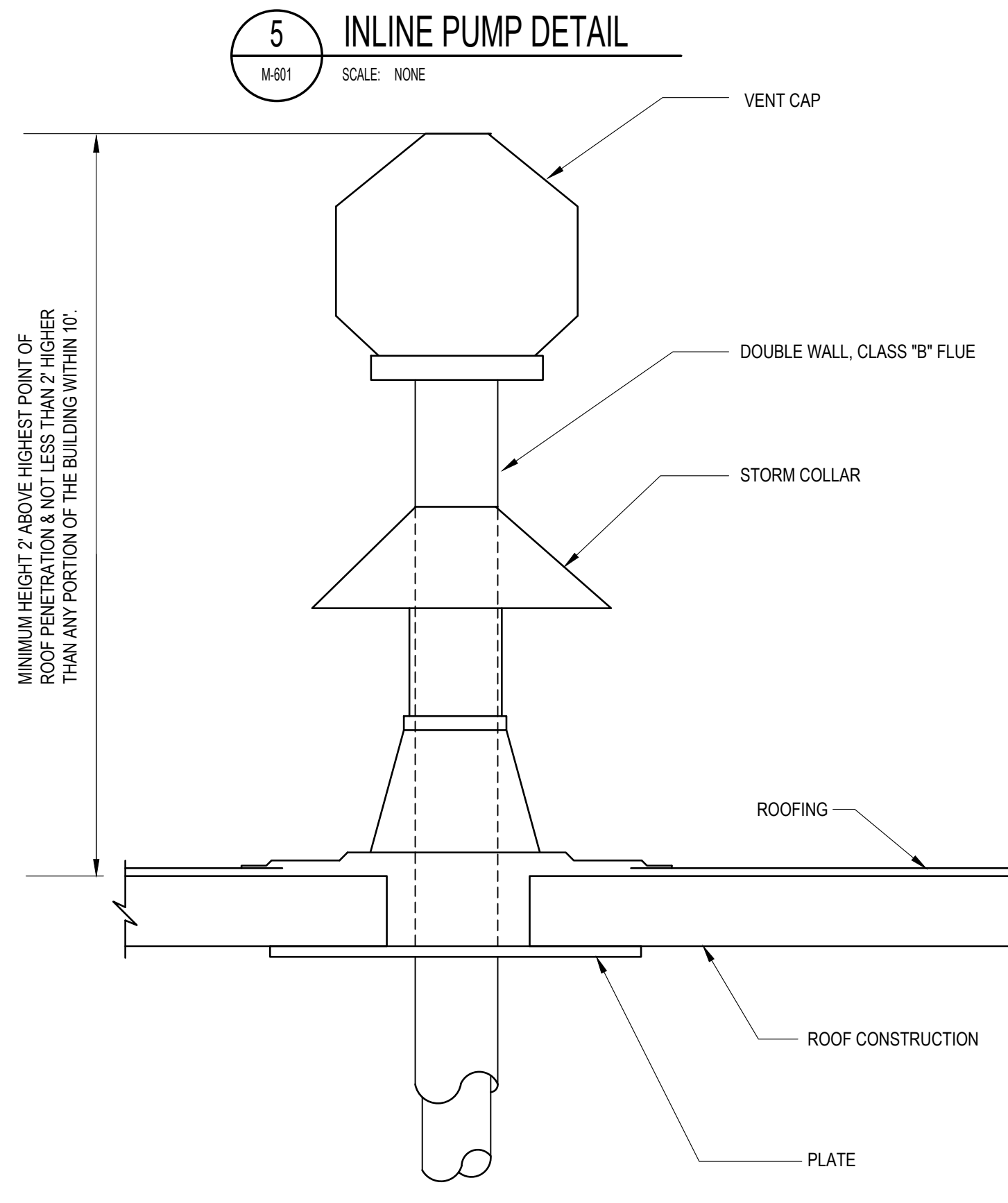
6 DUCT HANGER DETAILS

M-601 SCALE: NONE



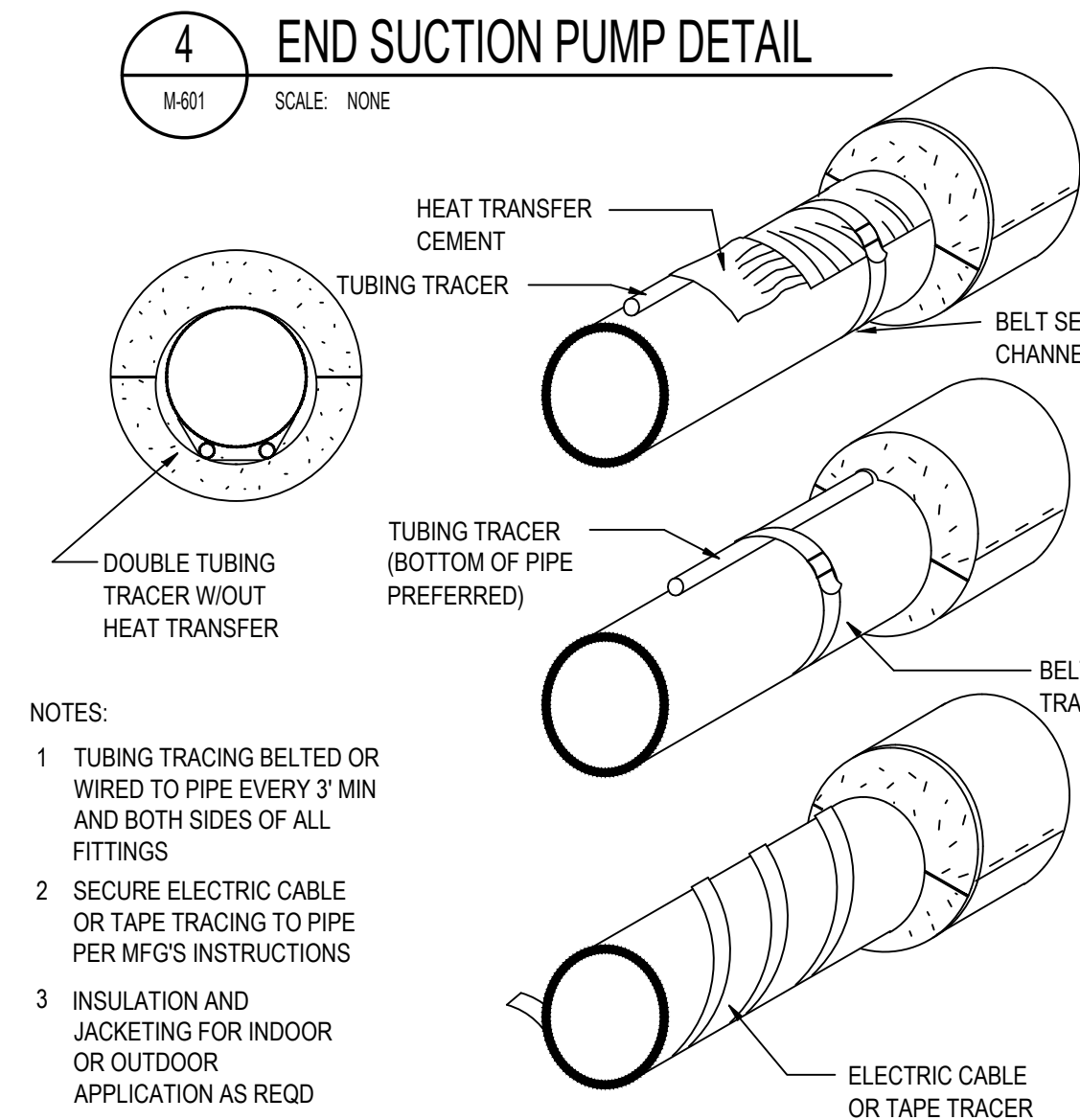
9 GAS TRAIN DETAIL

M-601 SCALE: NOT TO SCALE



8 FLUE VENT DETAIL

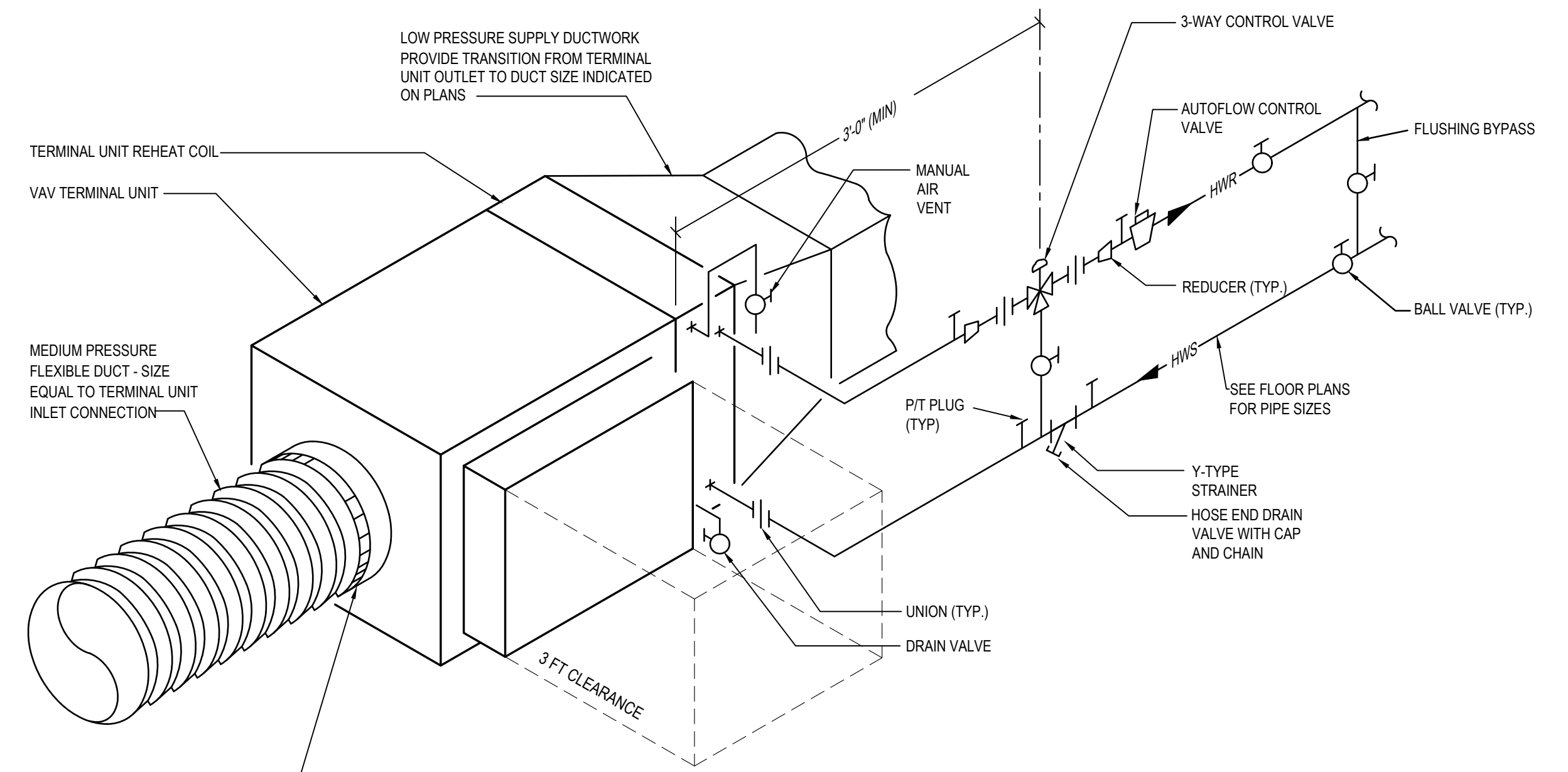
M-601 SCALE: NOT TO SCALE



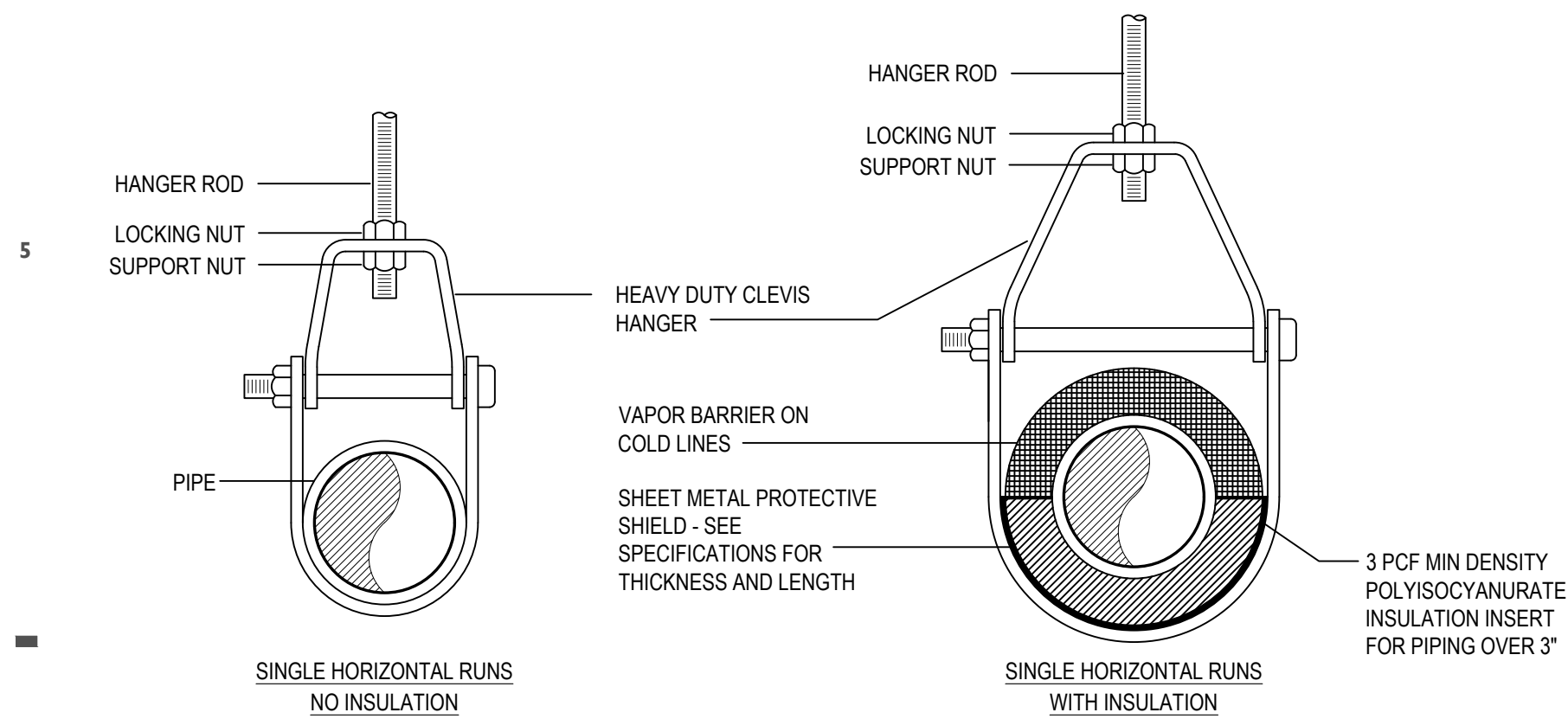
7 HEAT TRACE PIPING DETAIL

M-601 SCALE: NOT TO SCALE

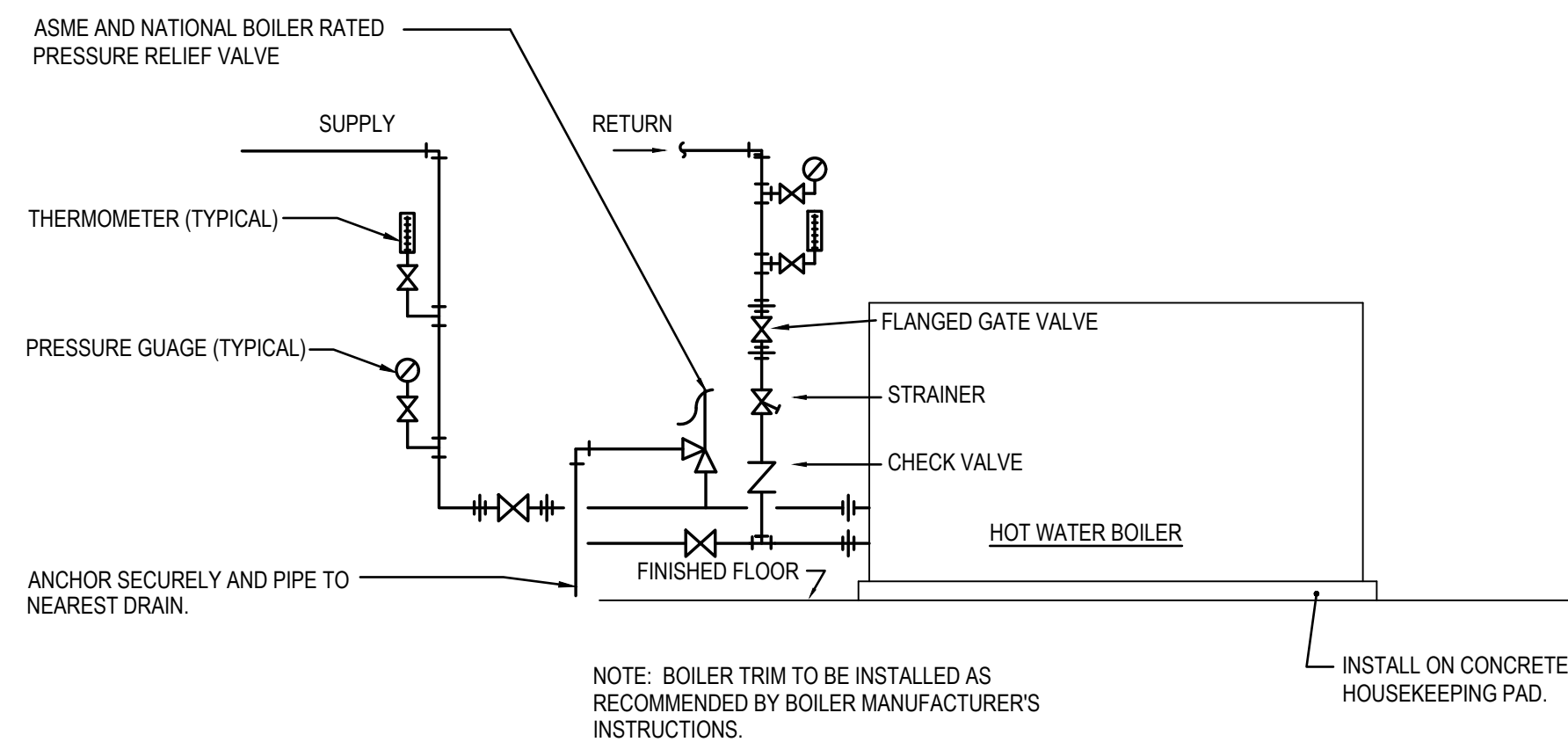
- NOTES:
- TUBING TRACING BELTED OR WIRED TO PIPE EVERY 3' MIN AND BOTH SIDES OF ALL FITTINGS
 - SECURE ELECTRIC CABLE OR TAPE TRACING TO PIPE PER MFG'S INSTRUCTIONS
 - INSULATION AND JACKETING FOR INDOOR OR OUTDOOR APPLICATION AS REQD



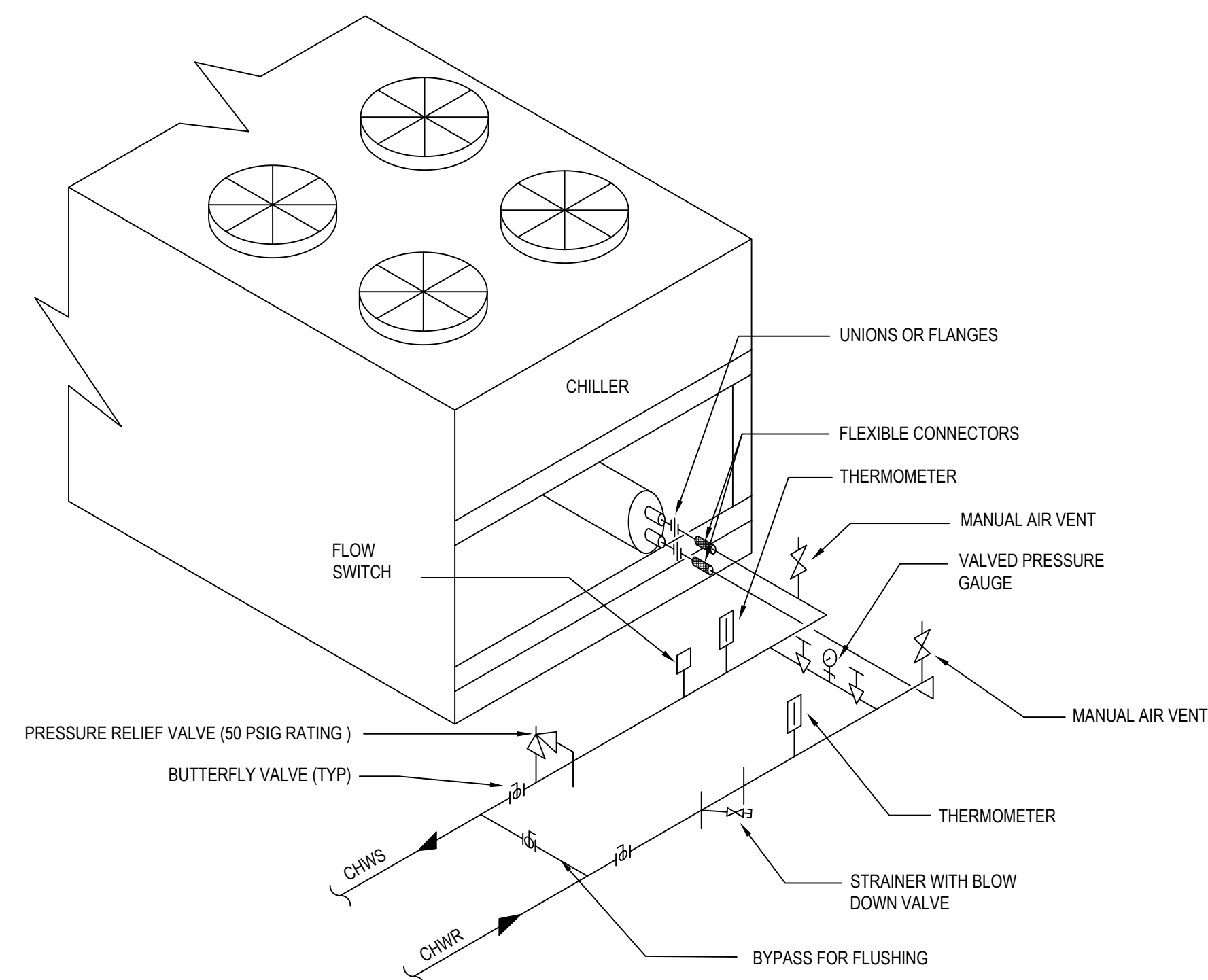
- NOTES:
- PROVIDE A MINIMUM OF 30" CLEARANCE IN FRONT OF CONTROL PANEL FOR ACCESS AND MAINTENANCE. COORDINATE WITH ALL TRADES TO INSURE ADEQUATE CLEARANCES.
 - PROVIDE ACCESS PANEL ABOVE GYPSUM BOARD CEILINGS FOR ADEQUATE HOT WATER VAV UNIT ACCESS.
 - PROVIDE ACCESS DOOR ON THE BOTTOM OF THE UNIT BETWEEN THE DAMPER AND THE REHEAT COIL.
 - CONTROLS AND VALVE ASSEMBLY SHALL BE ON THE SAME SIDE OF THE UNIT.
 - ALL PIPING TO/FROM THE VAV AT THE HWS/HWR BALL VALVES SHALL BE COPPER.



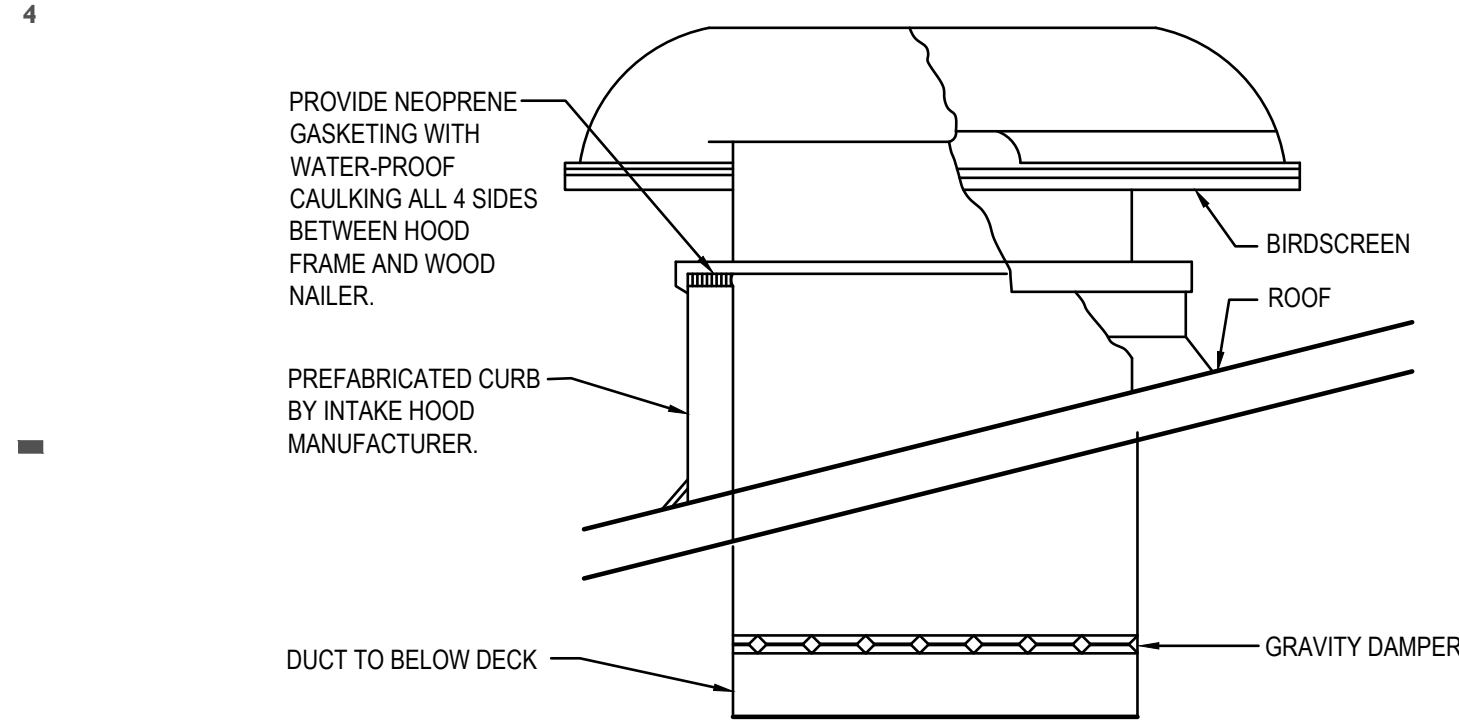
1 CLEVIS HANGER DETAIL
M-602 SCALE: NONE



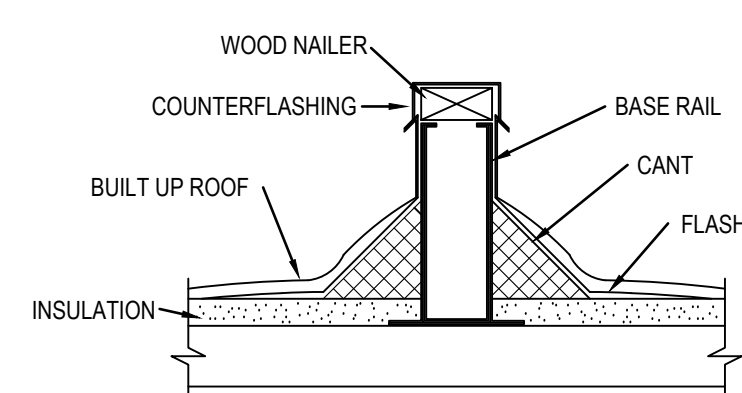
2 BOILER PIPING DETAIL
M-602 SCALE: NONE



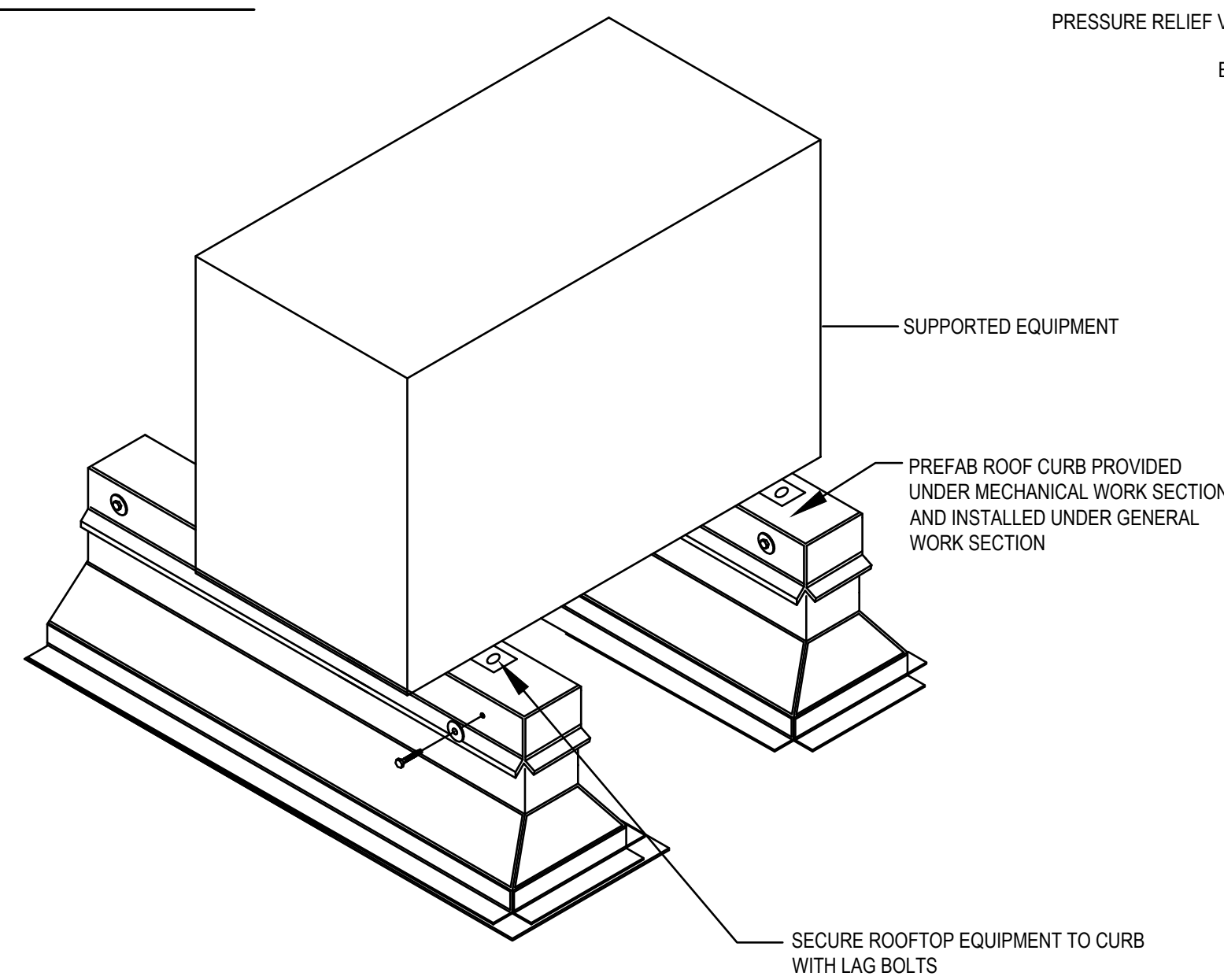
3 CHILLER PIPING DETAIL
M-602 SCALE: NONE



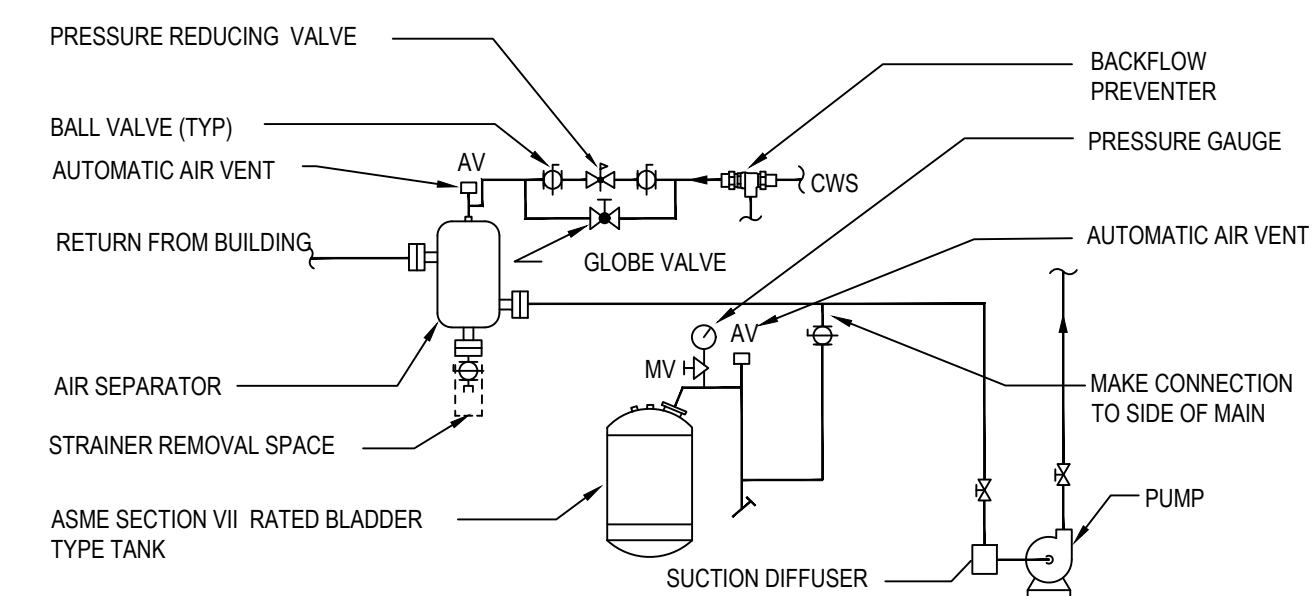
4 GRAVITY INTAKE HOOD DETAIL
M-602 SCALE: NOT TO SCALE



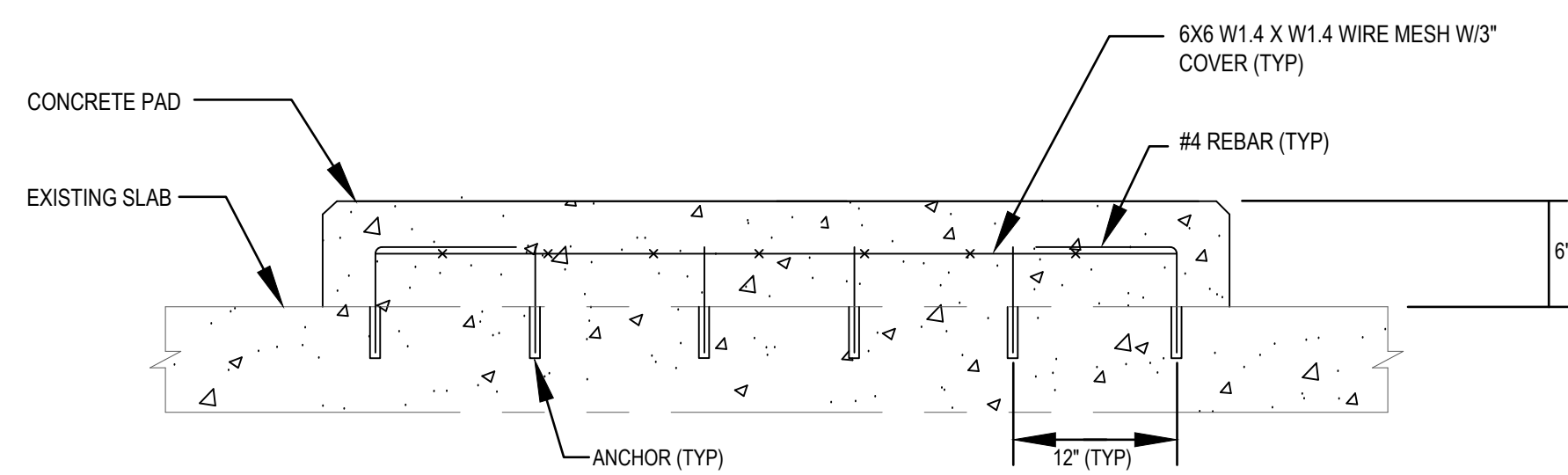
5 EQUIPMENT SUPPORT DETAIL
M-602 SCALE: NONE



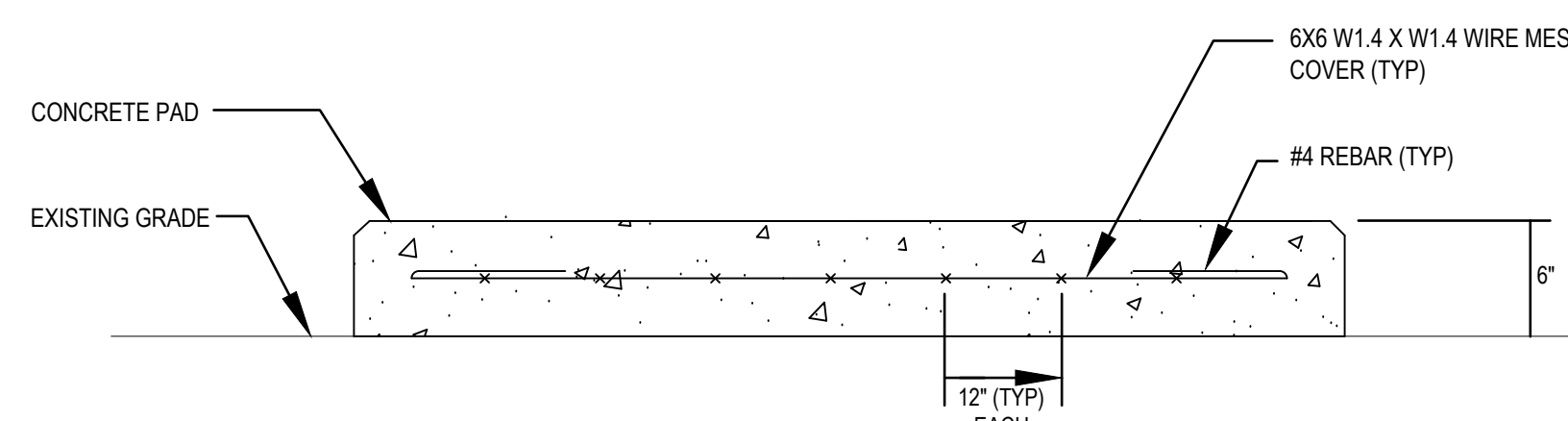
6 EQUIPMENT SUPPORT DETAIL
M-602 SCALE: NONE



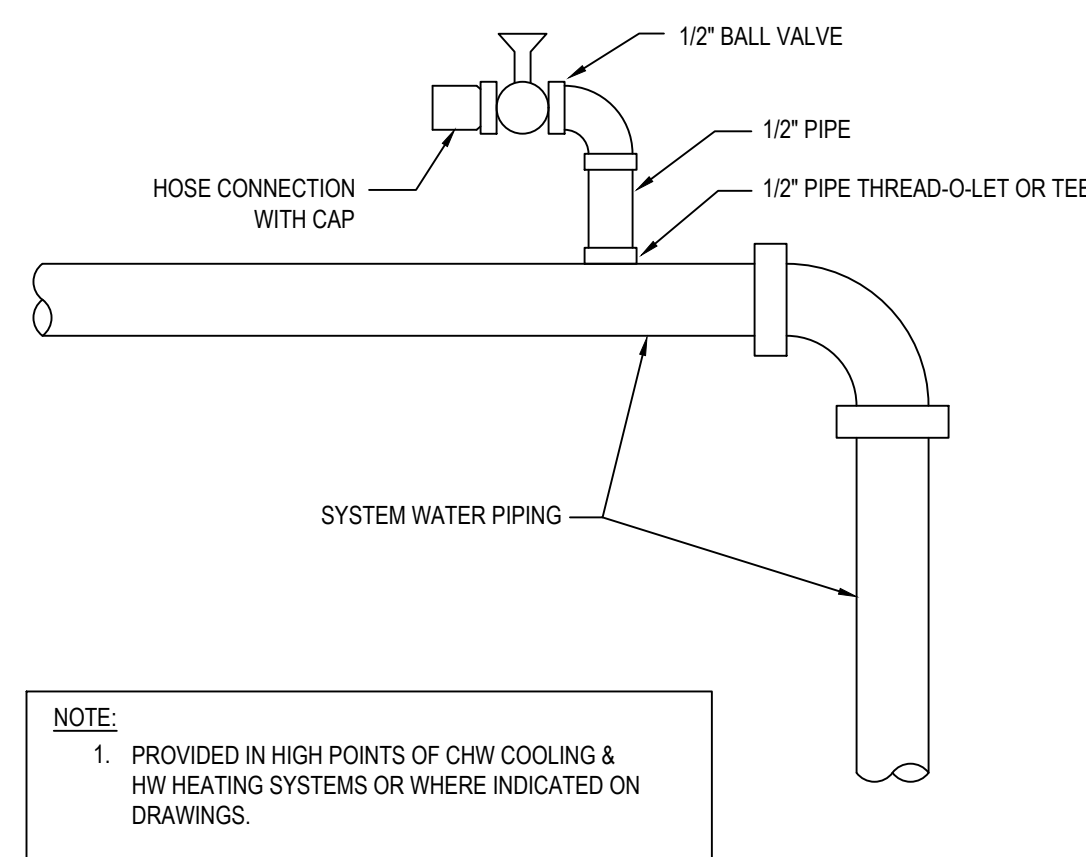
9 AIR SEPARATOR PIPING WITH FLOOR MTD. BLADDER TYPE EXPANSION TANK
M-602 SCALE: NONE



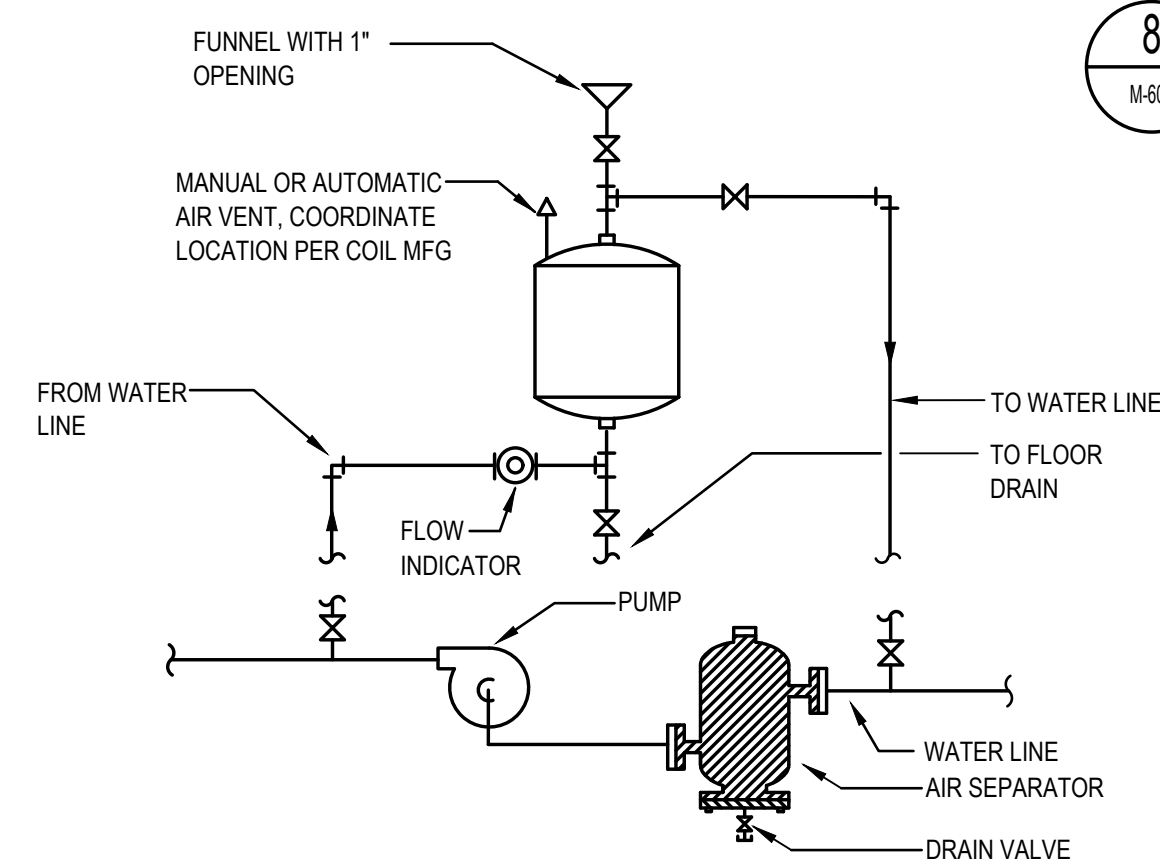
7 CONCRETE PAD DETAIL
M-602 SCALE: NONE



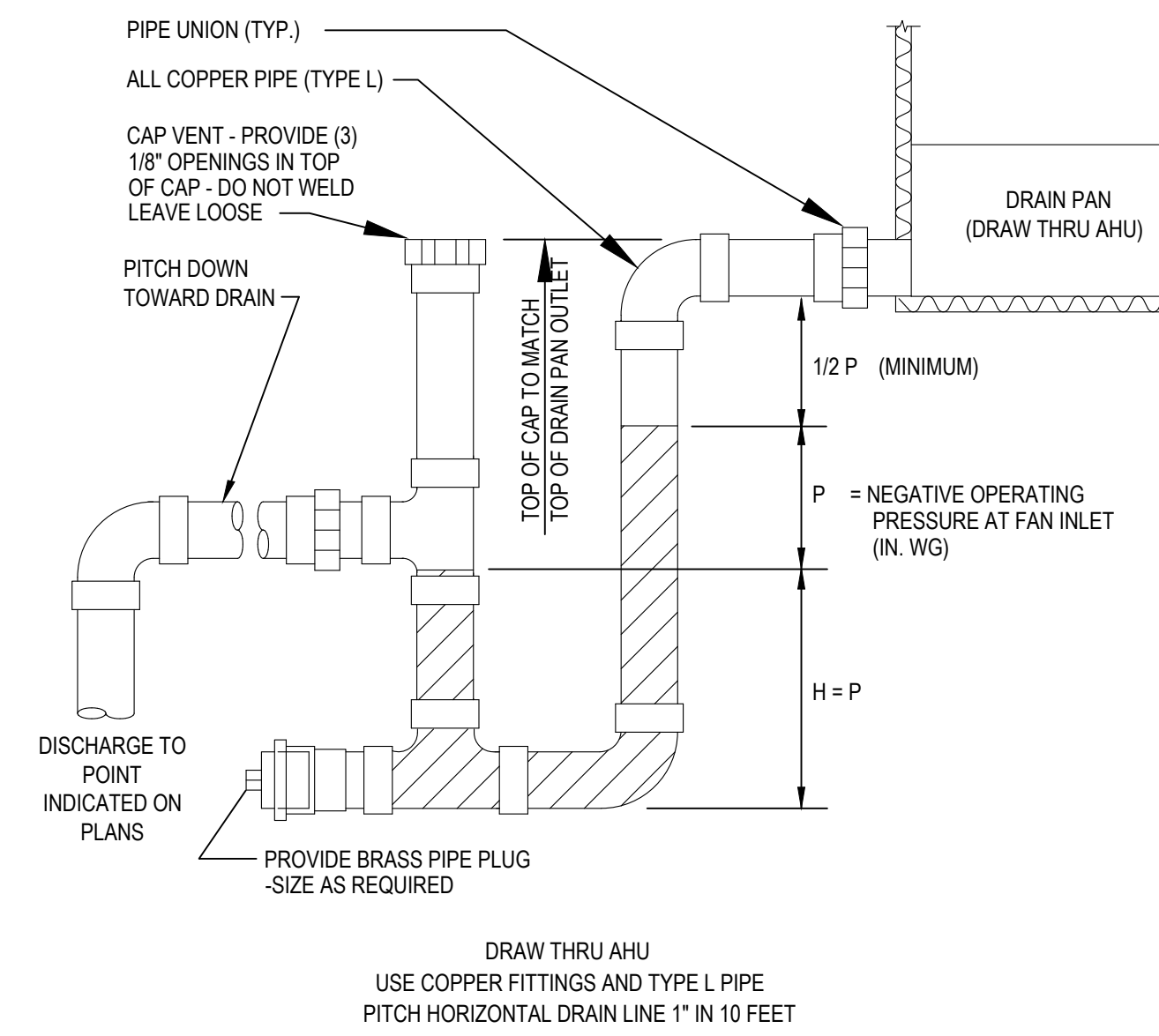
8 CONCRETE PAD DETAIL
M-602 SCALE: NONE



10 MANUAL AIR VENT DETAIL
M-602 SCALE: NONE



11 CHEMICAL SHOT FEEDER PIPING DETAIL
M-602 SCALE: NONE



12 CONDENSATE DRAIN DETAIL
M-602 SCALE: NOT TO SCALE

SINGLE-LINE SYMBOLS

Table of electrical symbols and descriptions including equipment outline, switchboard, circuit breaker, generator, transformer, ground, and panelboard.

POWER/DATA SYMBOLS

Table of power and data symbols including wall-mounted duplex and quadplex receptacles, telephone outlets, data drops, and floor boxes.

RACEWAY SYMBOLS

Table of raceway symbols including conduit, unswitched lighting circuits, homeruns, and under-ground electrical.

LIGHT FIXTURE SYMBOLS

Table of light fixture symbols including LED, linear LED, fluorescent strip, and exit lights.

LIGHTING CONTROL SYMBOLS

Table of lighting control symbols including single pole, three-way, and four-way switches, dimmer switches, and sensors.

FIRE ALARM SYMBOLS

Table of fire alarm symbols including horns, strobe units, pull stations, and various detectors.

SECURITY SYMBOLS

Table of security symbols including headends, card readers, cameras, and system interfaces.

ABBREVIATIONS

Table of abbreviations for electrical and mechanical components like conduit, ground, and equipment.

ENERGY CODE SUMMARY

Summary table for energy code compliance, including prescriptive requirements, lighting schedule, and equipment efficiency.

COORDINATION NOTE TO ELECTRICAL CONTRACTOR

The electrical contractor shall coordinate all power requirement needs for door hardware with door hardware vendor prior to rough-in.

EXPOSED ELECTRICAL INSTALLATION NOTES

- Installation of electrical boxes and systems shall be concealed within walls, ceilings, and surfaces throughout.

ROUGH-IN NOTES

- Receptacles: Mount at 18" A.F.F. to centerline unless otherwise noted.
- Above-counter receptacles: Mount at 4" above countertop or backsplash as applicable.

VOLTAGE DROP WIRING NOTE

The contractor shall be responsible for ensuring voltage drop conditions of final conduit / conductor routings do not exceed the following maximum values and upsized conductors and conduit as required.

MECHANICAL/ELECTRICAL CONTROLS WIRING COORDINATION NOTE

The mechanical and electrical contractors shall fully coordinate all work prior to rough-in of any mechanical or electrical equipment.

EQUAL LIGHTING MANUFACTURER NOTE

The lighting fixtures indicated within this fixture schedule only indicate the minimal quality standards that are required for the fixtures that are to be installed.

LIGHT FIXTURE SCHEDULE

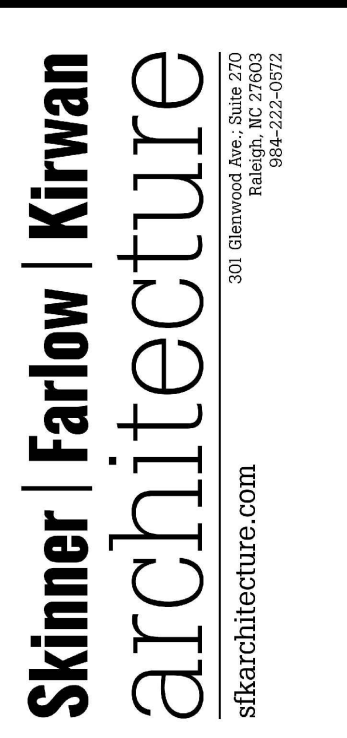
Large table with columns for fixture type, description, mounting, watts, lumens, manufacturer, series no., and remarks.

LIGHT FIXTURE SCHEDULE NOTES:

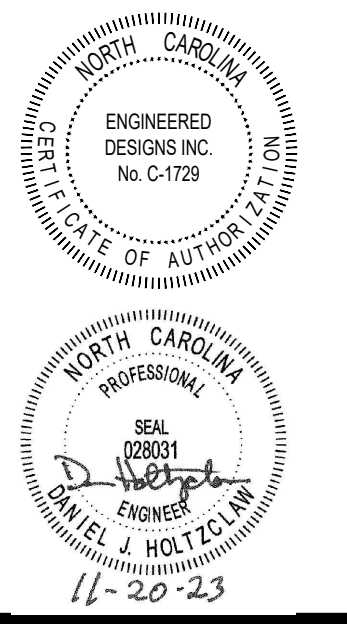
- All lighting fixtures shall be U.L. listed.
- All LED fixture shall have minimum CRI of 80 unless specifically noted otherwise.

LED LIGHT FIXTURE POWER CIRCUITRY NOTE TO E.C.

Contractor shall not exceed the LED manufacturer's recommended maximum load ratings for LED light fixture circuits that are provided and installed for this project.



CDs For BID
SCO ID# 19-21547-02A
NCSU ID 201920037



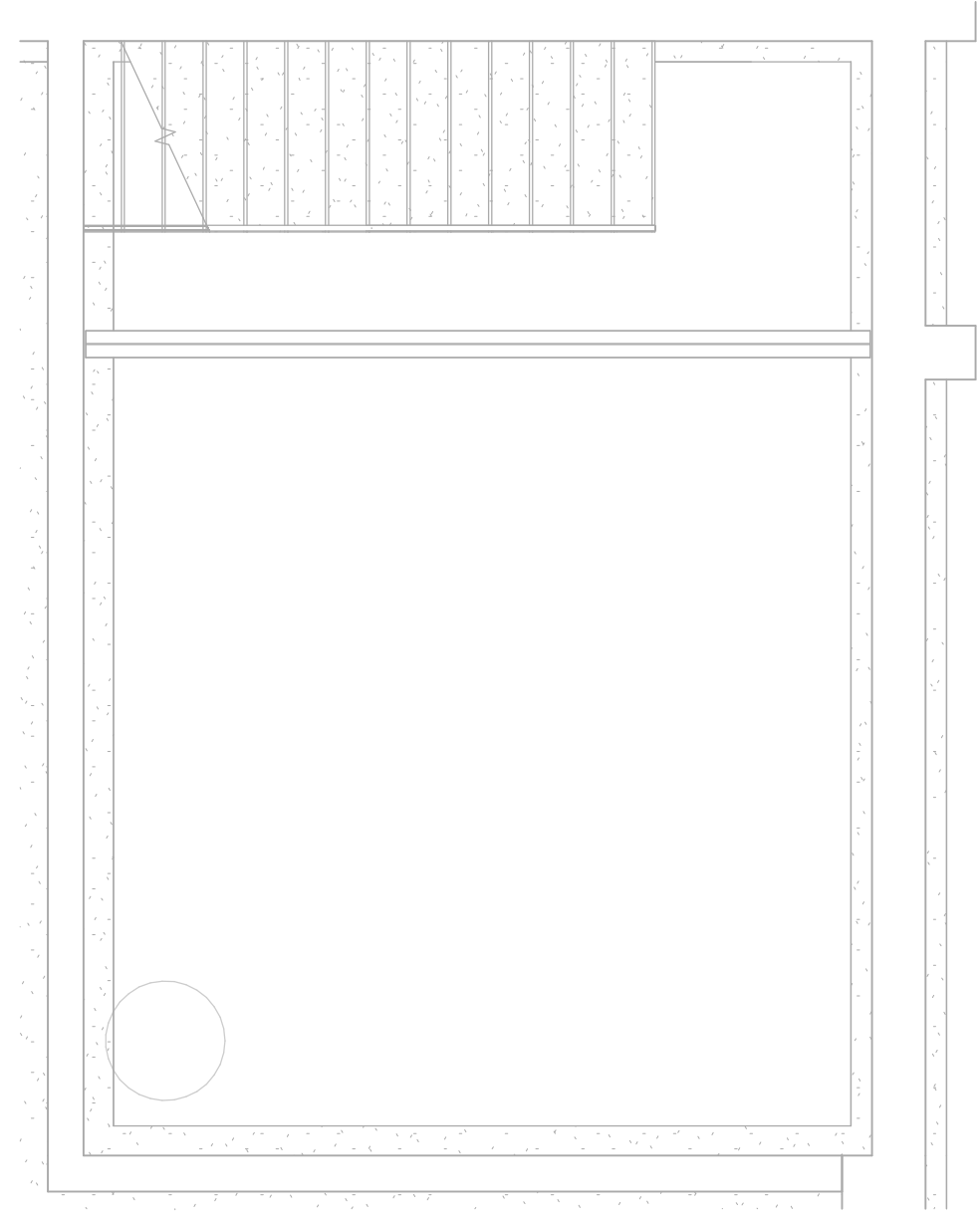
date note

New Building For: Don E. Ellis Building (133) Renovations
1320 Varsity Drive, Raleigh, NC 27606
North Carolina State University

PROJECT 1368-20
DATE 11-20-23
DRAWN DJH
CHECKED JRK

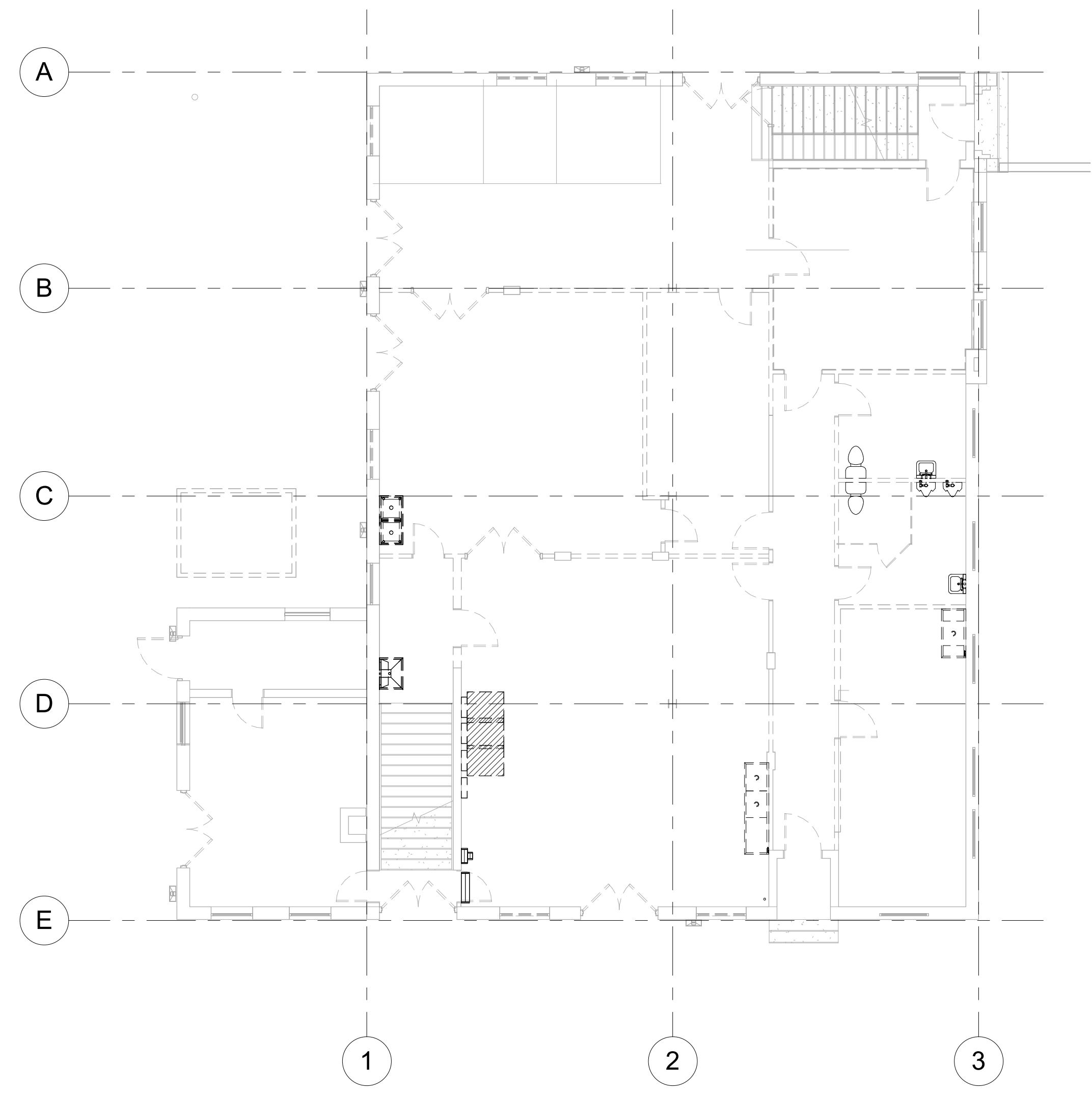
ELECTRICAL ABBREVIATIONS, NOTES AND SYMBOLS

E-001

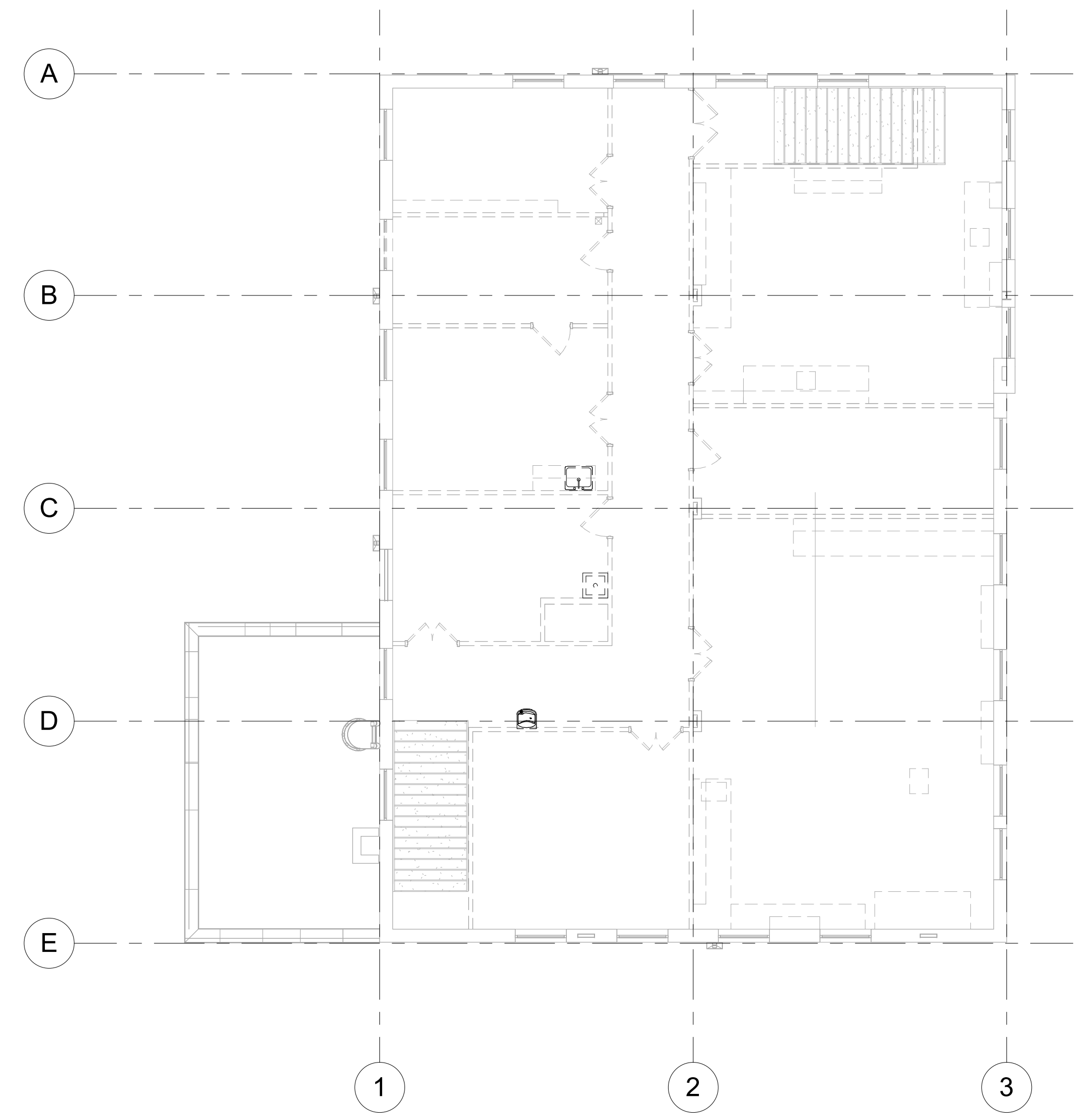


3 BASEMENT LIGHTING - DEMO
ED-100 SCALE: 1/4" = 1'-0"

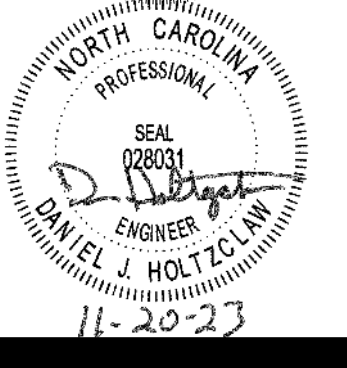
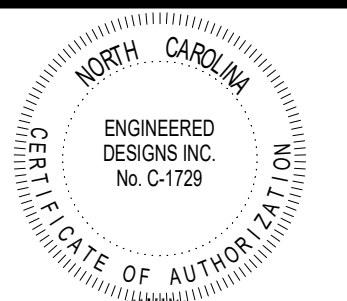
GENERAL NOTES:
A. UNLESS NOTED OTHERWISE ON THE PLANS, ALL LIGHT FIXTURES, SWITCHES AND ASSOCIATED WIRE/CONDUIT ARE TO BE REMOVED.



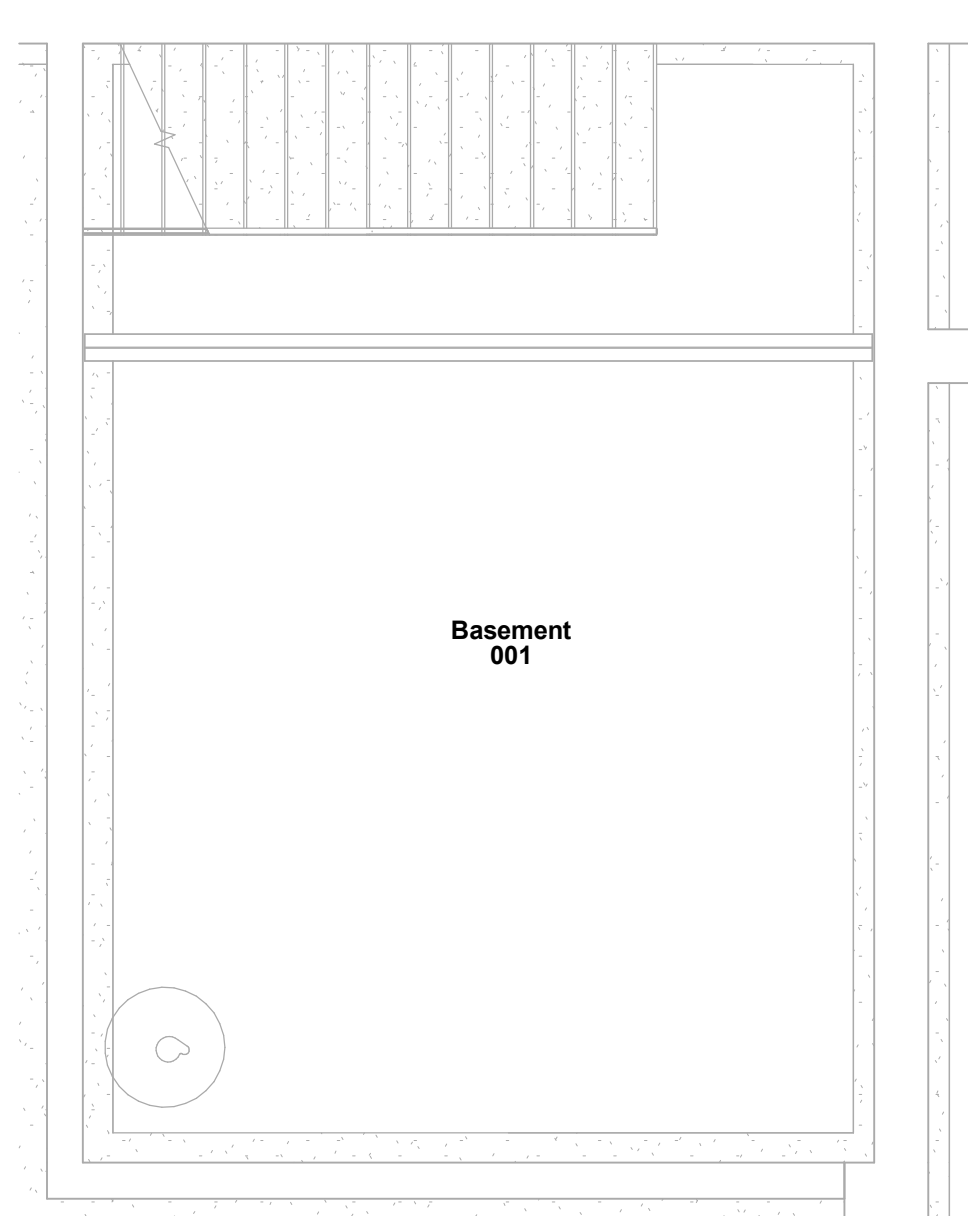
1 FIRST FLOOR LIGHTING - DEMO
ED-100 SCALE: 1/8" = 1'-0"



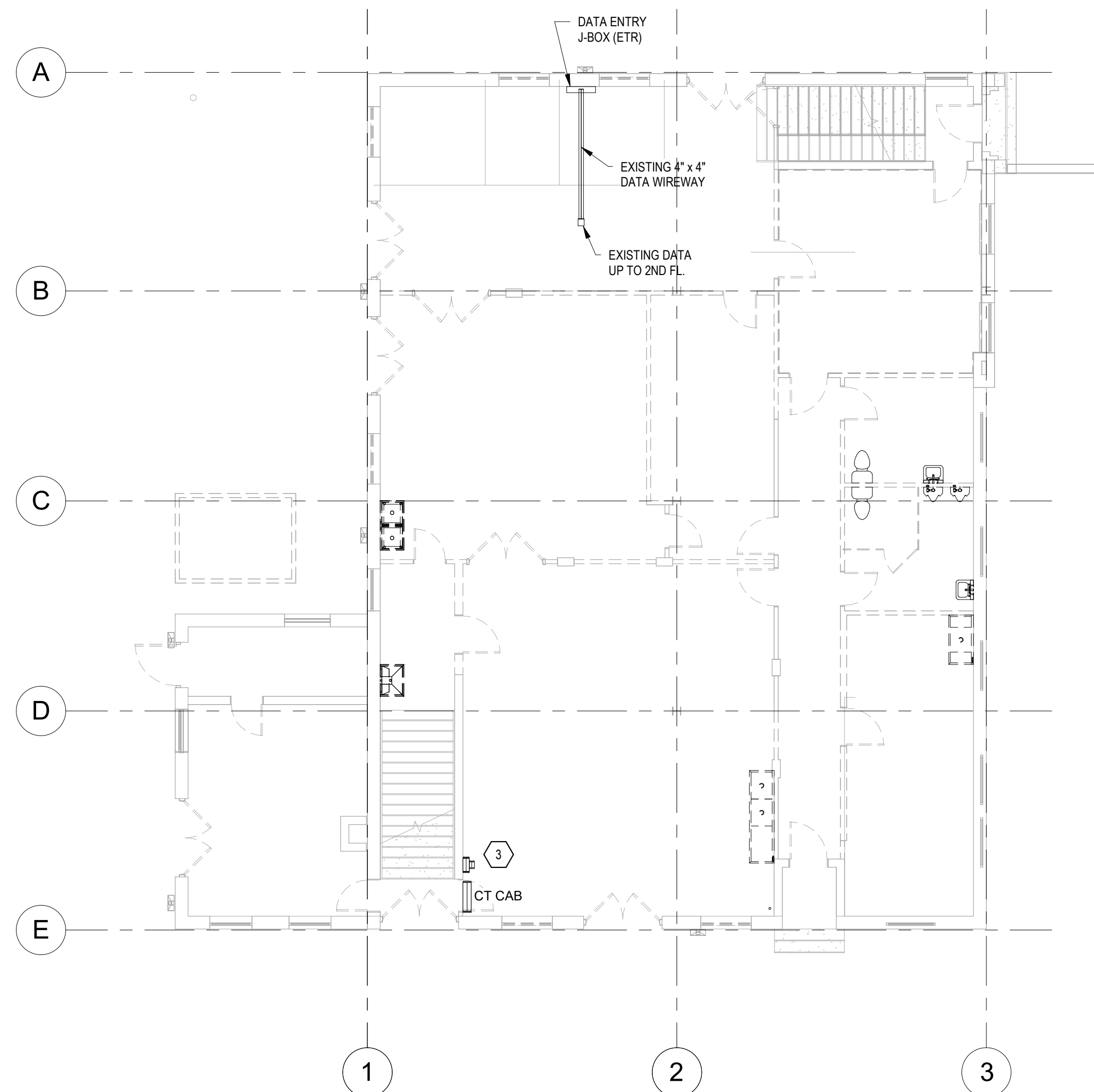
2 SECOND FLOOR LIGHTING - DEMO
ED-100 SCALE: 1/8" = 1'-0"



date note



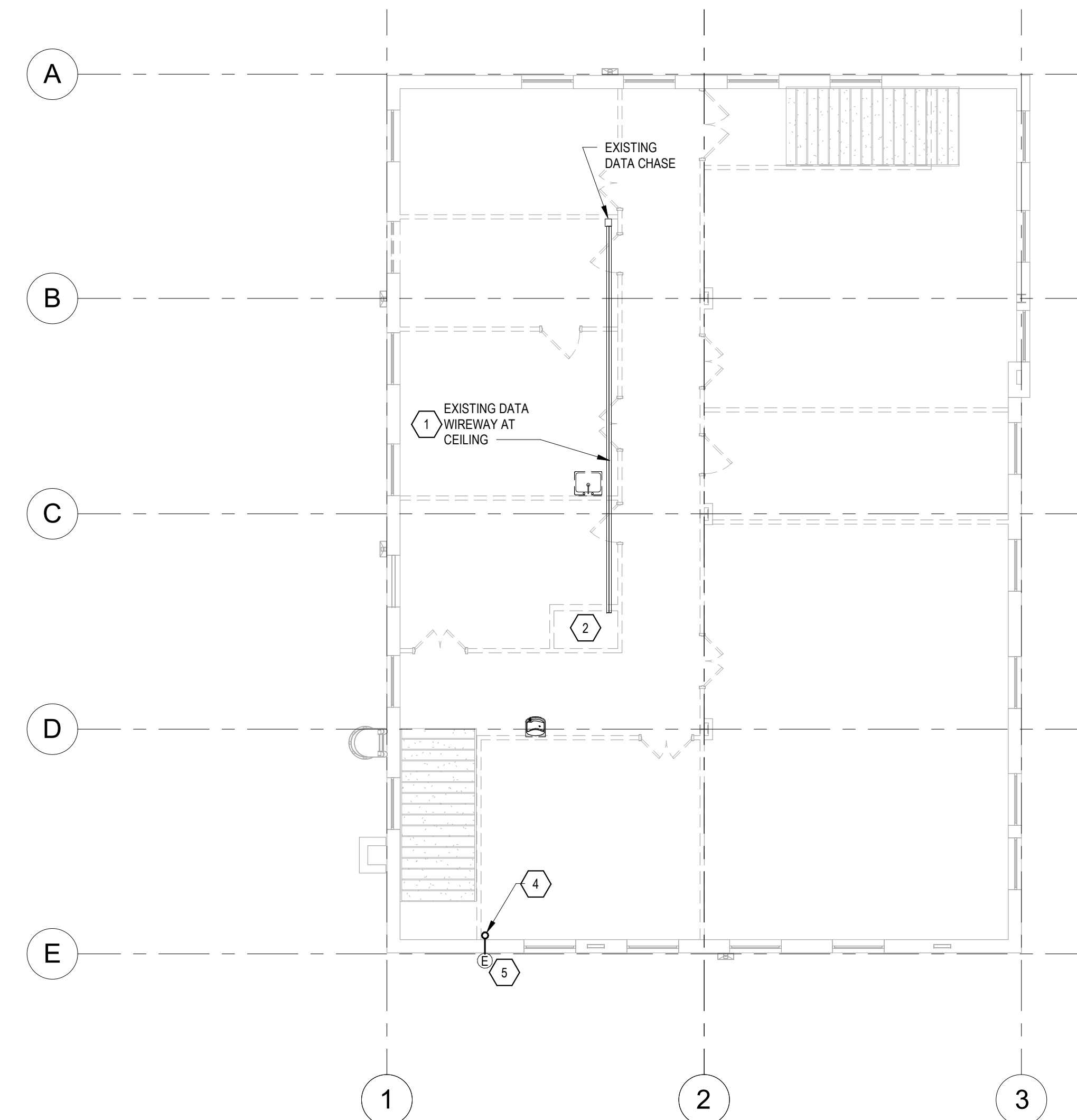
3 BASEMENT POWER - DEMO
ED-200 SCALE: 1/4" = 1'-0"



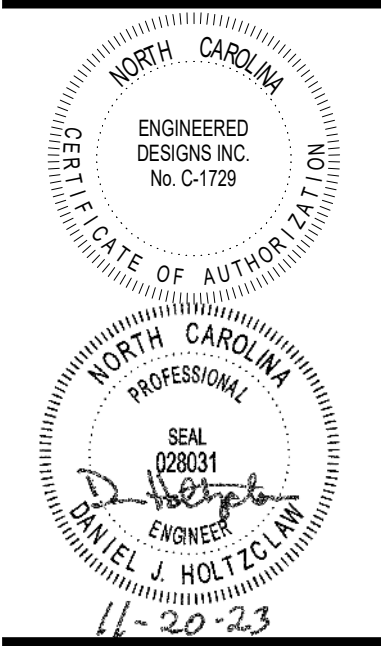
1 FIRST FLOOR POWER - DEMO
ED-200 SCALE: 1/8" = 1'-0"

GENERAL NOTES:
A. UNLESS NOTED OTHERWISE ON THE PLANS, ALL POWER/DATA/FIRE ALARM EQUIPMENT AND DEVICES AND ASSOCIATED WIRE/CONDUIT ARE TO BE REMOVED.

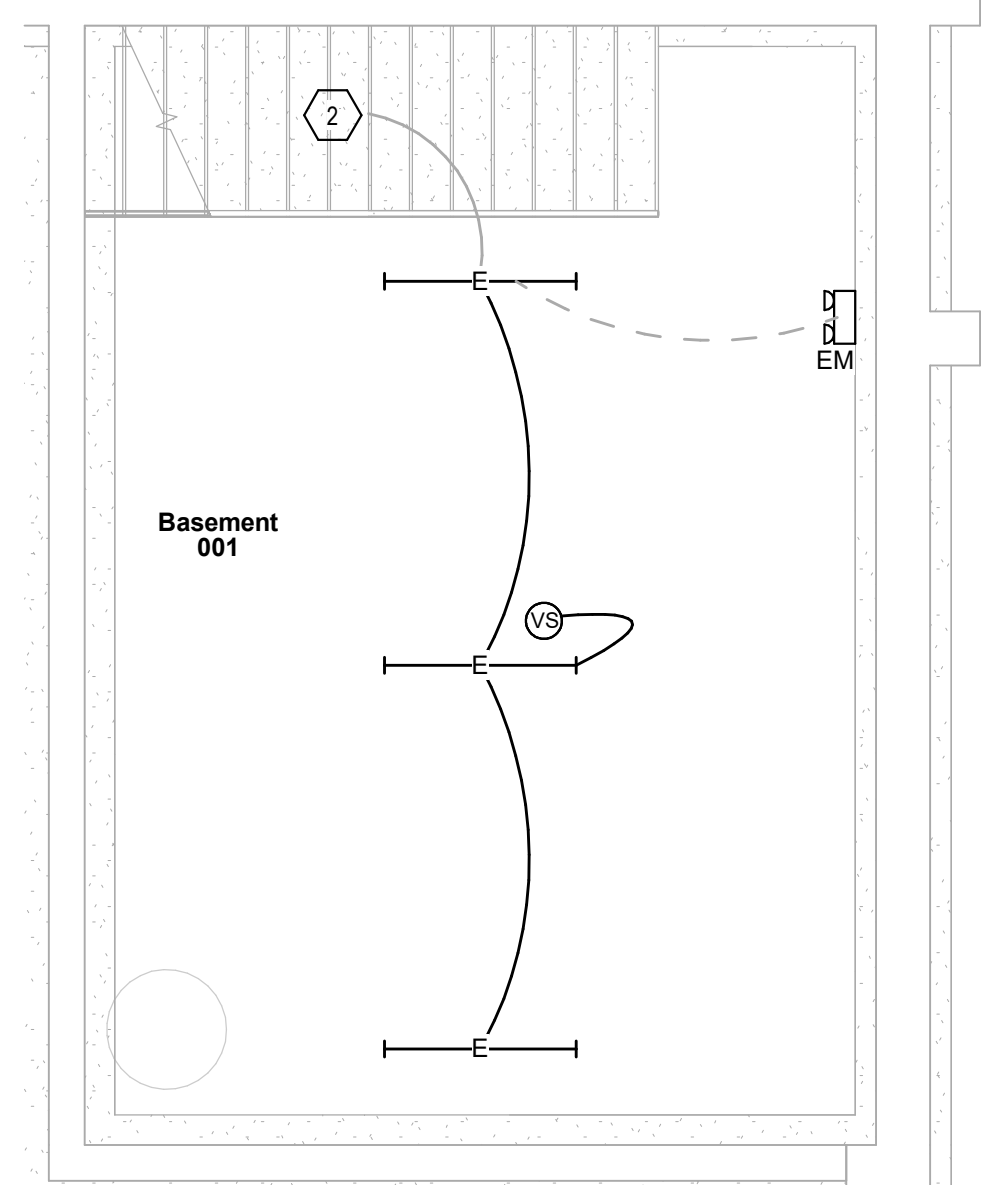
- KEYED NOTES:**
- 1 NCSU COMTECH PERSONNEL TO REMOVE STATION CABLES IN EXISTING WIREWAY. CONTRACTOR SHALL REMOVE CABLES AND CONDUITS FROM WIREWAY OUT TO EXISTING TELECOM OUTLET BOXES AND INSTALL KNOCKOUT SEALS IN WIREWAY WHERE CONDUITS WERE REMOVED. EXISTING WIREWAY TO BE REROUTED AS NOTED ON SHEET E-200 TO NEW DATA ROOM.
 - 2 NCSU COMTECH PERSONNEL TO REMOVE ALL EQUIPMENT FROM EXISTING TELECOM ROOM. COMTECH WILL PULL BACK EXISTING ENTRANCE CABLES INTO WIREWAY.
 - 3 EXISTING METER AND CT CABINET TO REMAIN.
 - 4 REMOVE EXISTING INCOMING ELECTRICAL SERVICE. 3" CONDUIT DOWN THE CORNER OF THE ROOM, THROUGH THE FLOOR AND OVER TO ABOVE THE CT CABINET ON THE FIRST FLOOR. REMOVE CABLES BACK TO SPLICE WITH OVER-HEAD SERVICE CONDUCTORS.
 - 5 EXISTING SERVICE WEATHERHEAD TO REMAIN.



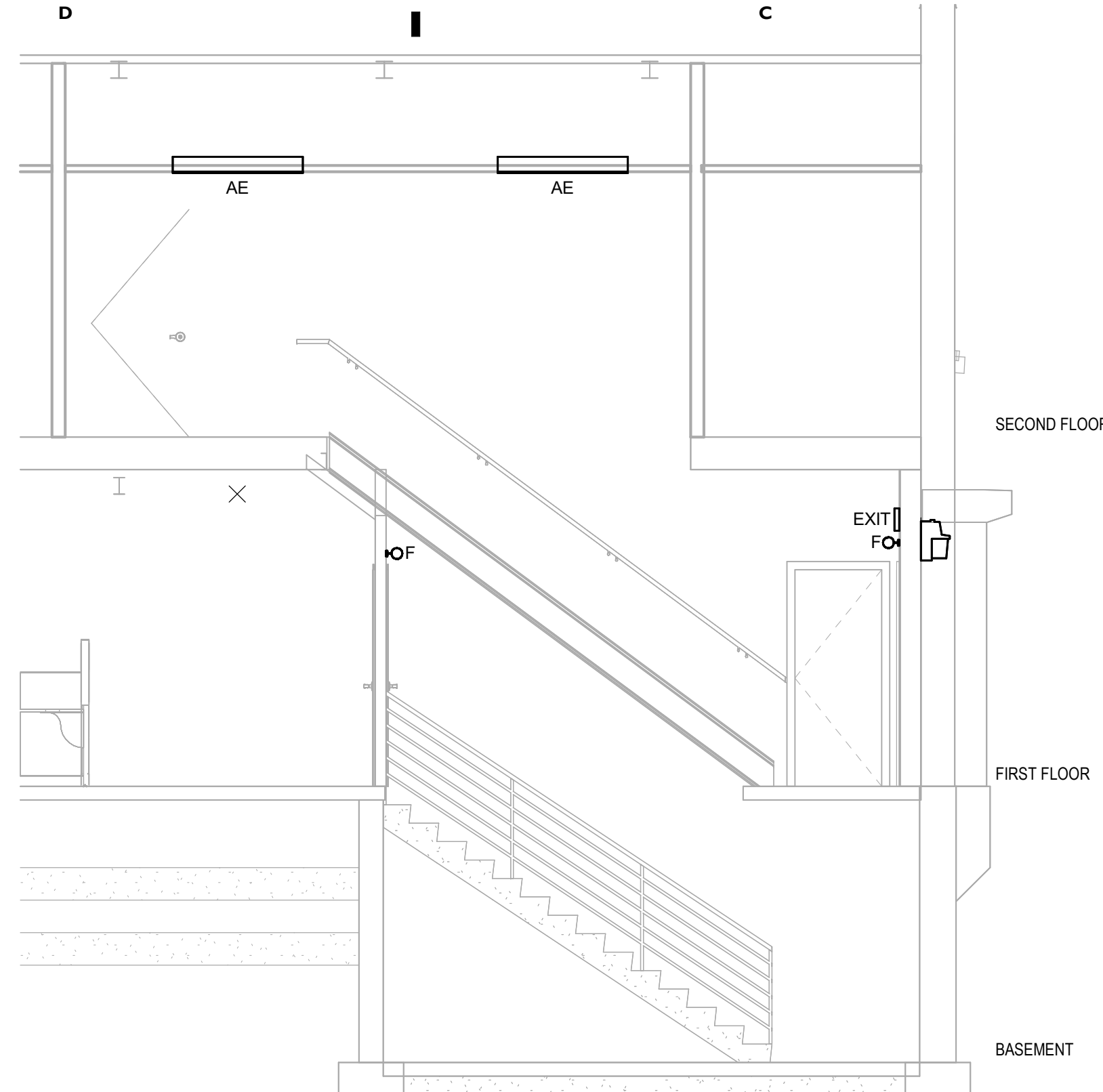
2 SECOND FLOOR POWER - DEMO
ED-200 SCALE: 1/8" = 1'-0"



date note



3 BASEMENT LIGHTING - NEW - BASE
E-100 SCALE: 1/4" = 1'-0"

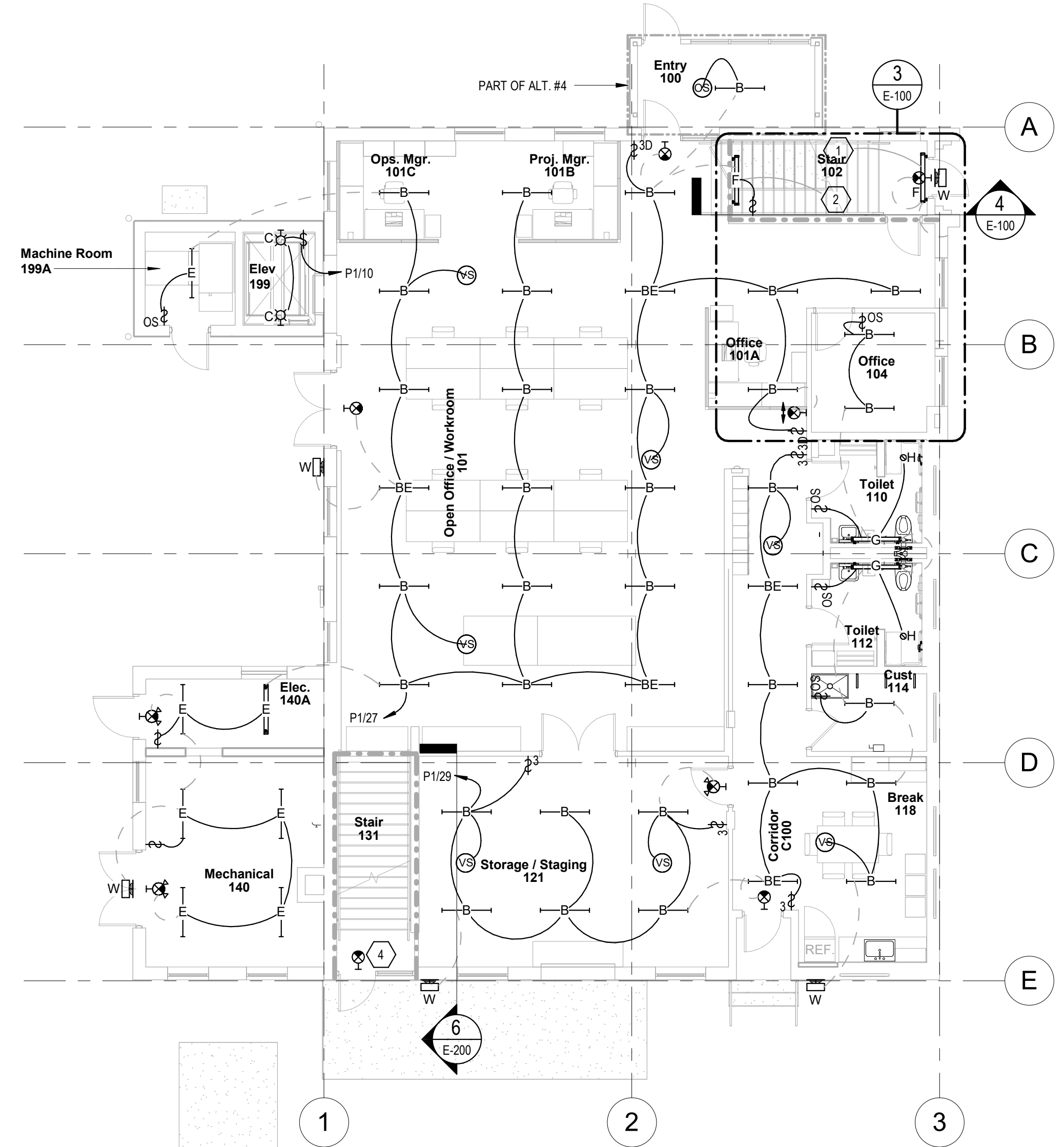


4 STAIRWELL ELEVATION - BASE
E-100 SCALE: 1/4" = 1'-0"

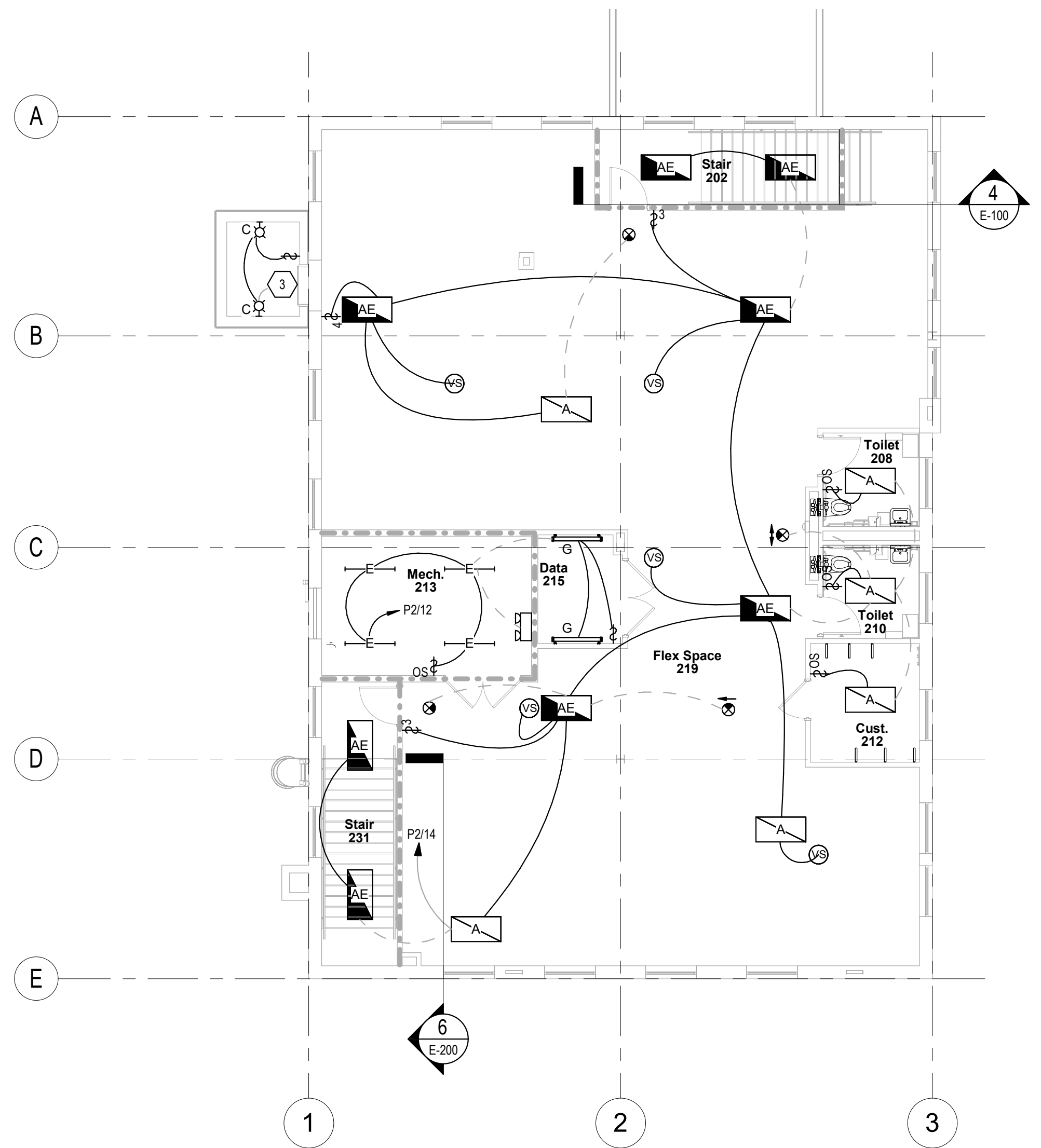
- KEYED NOTES THIS SHEET:**
- CONNECT TO SECOND FLOOR STAIRWELL LIGHTS.
 - CONNECT BASEMENT LIGHTS TO SWITCH AT TOP OF STAIRS.
 - CONNECT SECOND FLOOR ELEVATOR SHAFT LIGHTS TO ELEVATOR PIT LIGHTS. REFER TO DETAIL 1 ON THIS SHEET.
 - CONNECT EXIT SIGN, UNSWITCHED, TO STAIRWELL LIGHTING SHOWN ON SECOND FLOOR LIGHTING PLAN.

GENERAL NOTES THIS SHEET:

A. FIRST FLOOR DEVICES SHOWN AS CEILING-MOUNTED SHALL BE MOUNTED TO THE EXISTING STRUCTURE. THERE IS NO GRID OR GYP CEILING BELOW THE STRUCTURE. DEVICES SHOWN AS 'ABOVE CEILING' SHALL BE MOUNTED ABOVE 9'-2" A.F.F. (ABOVE THE WINDOWS).



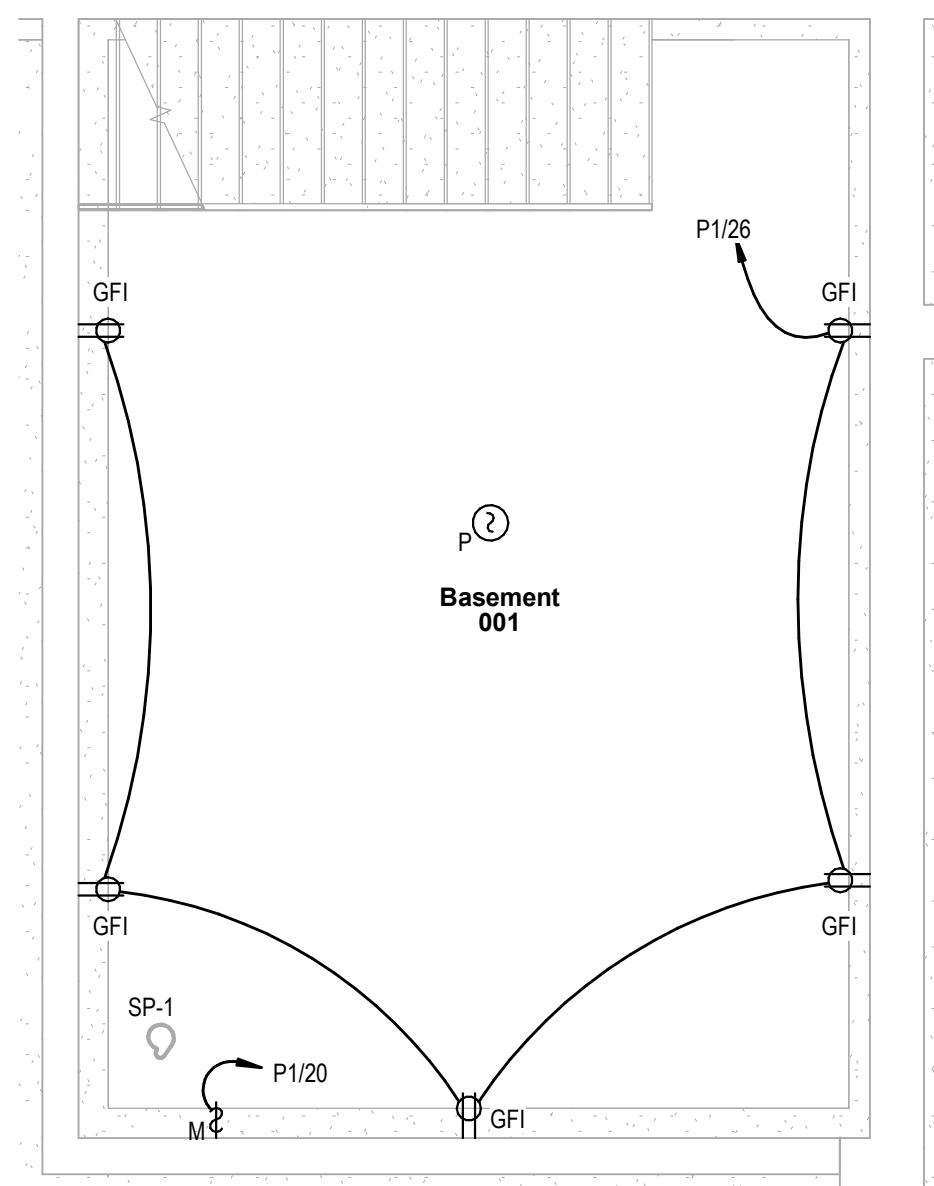
1 FIRST FLOOR LIGHTING - NEW WORK - BASE
E-100 SCALE: 1/8" = 1'-0"



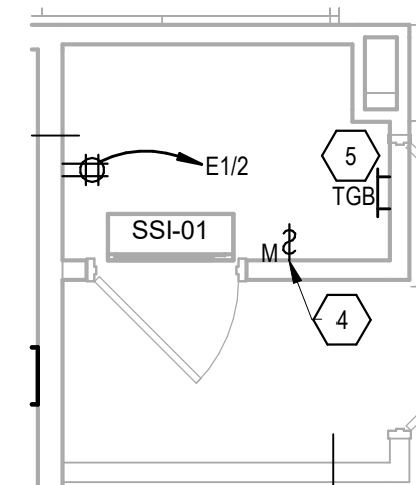
2 SECOND FLOOR LIGHTING - NEW WORK - BASE
E-100 SCALE: 1/8" = 1'-0"



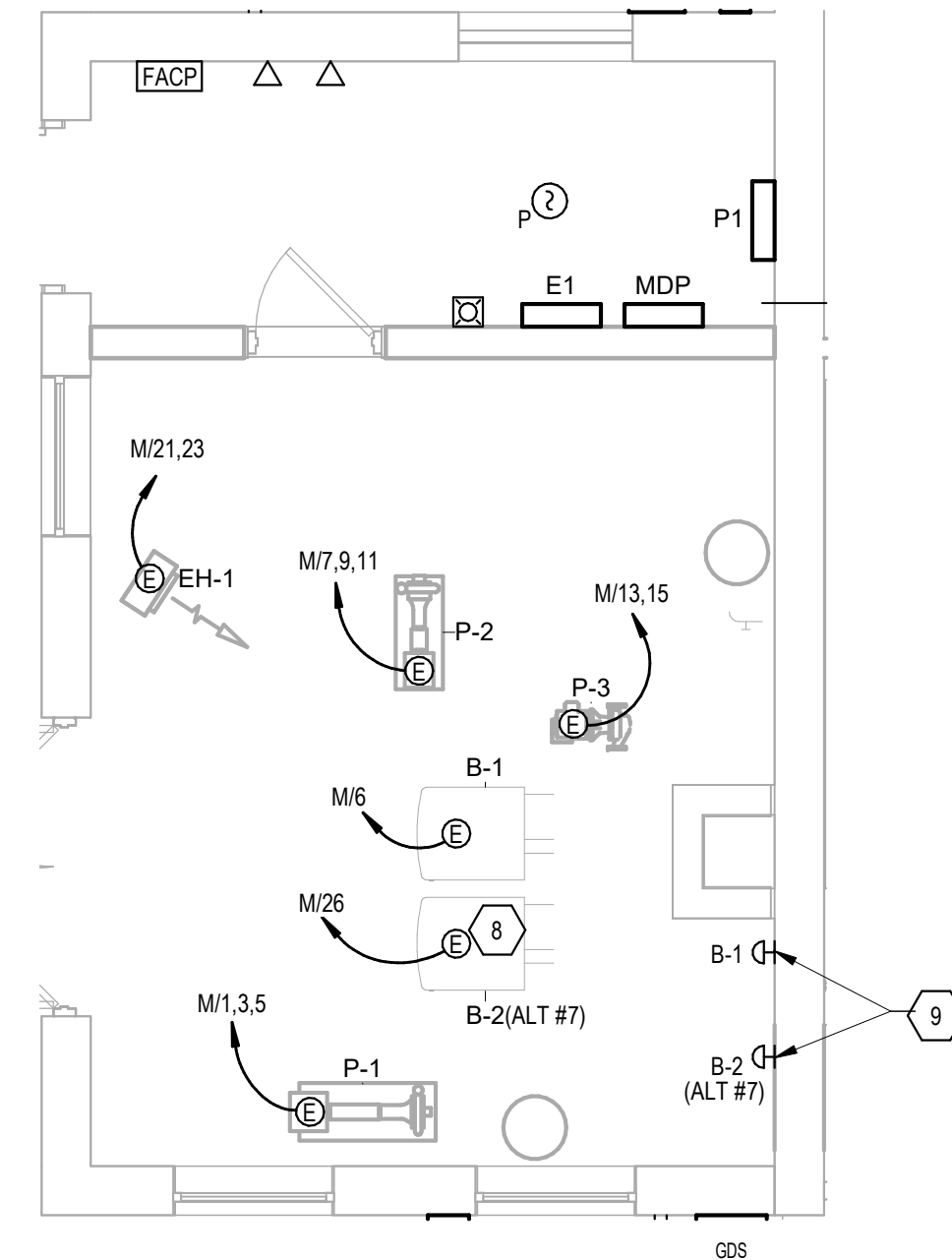
date note



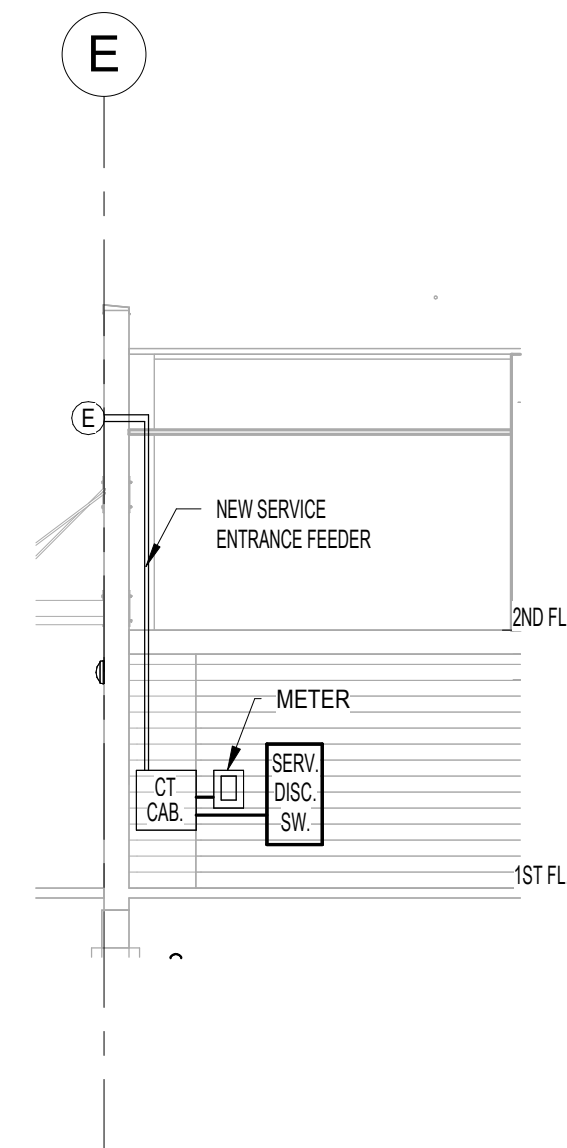
3 BASEMENT POWER - NEW
E-200 SCALE: 1/4" = 1'-0"



5 ENLARGED DATA ROOM PLAN
E-200 SCALE: 1/4" = 1'-0"



4 ROOM 140 ENLARGED PLAN - POWER
E-200 SCALE: 1/4" = 1'-0"

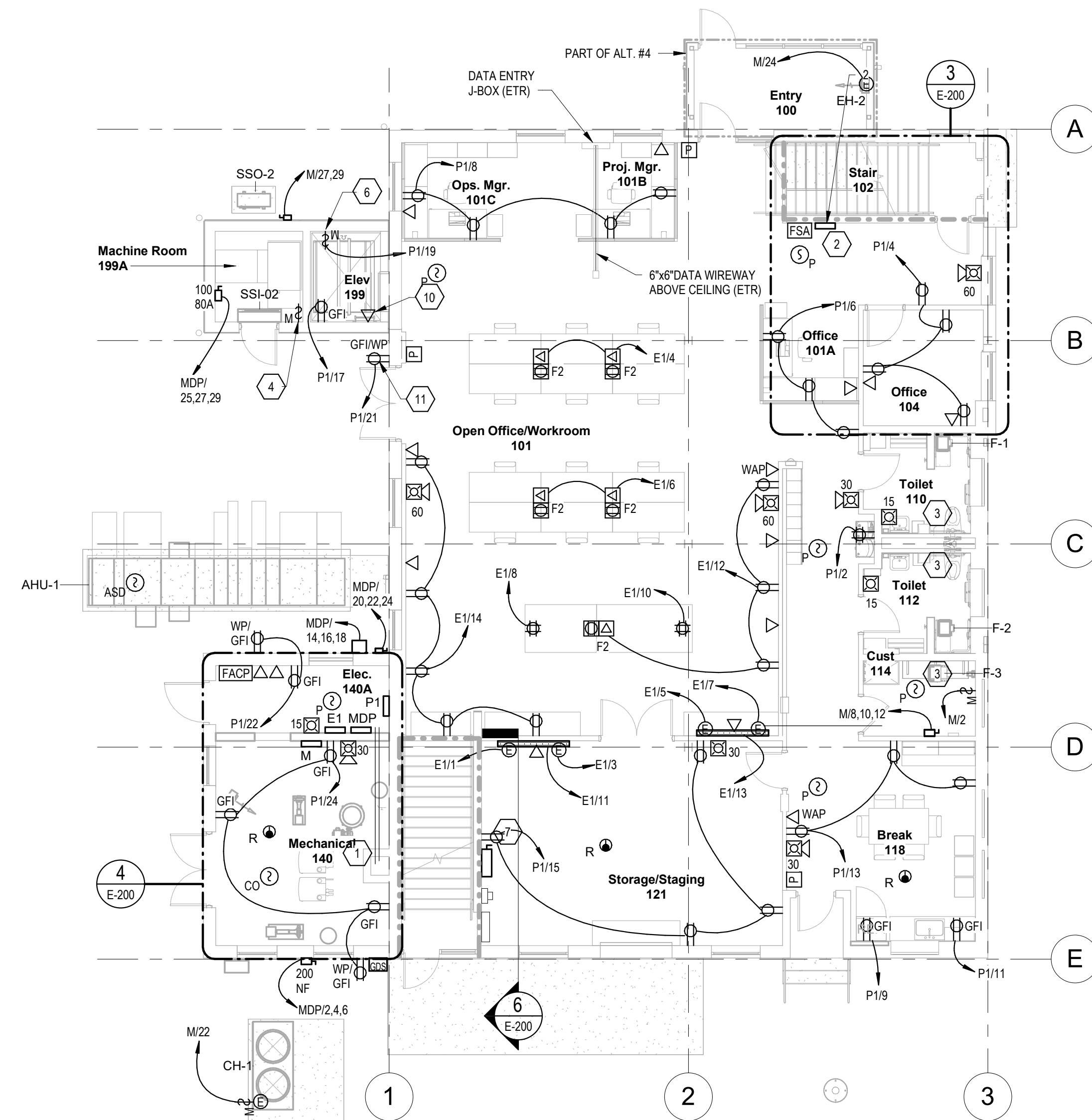


6 SERVICE ENTRANCE ELEVATION
E-200 SCALE: 1/8" = 1'-0"

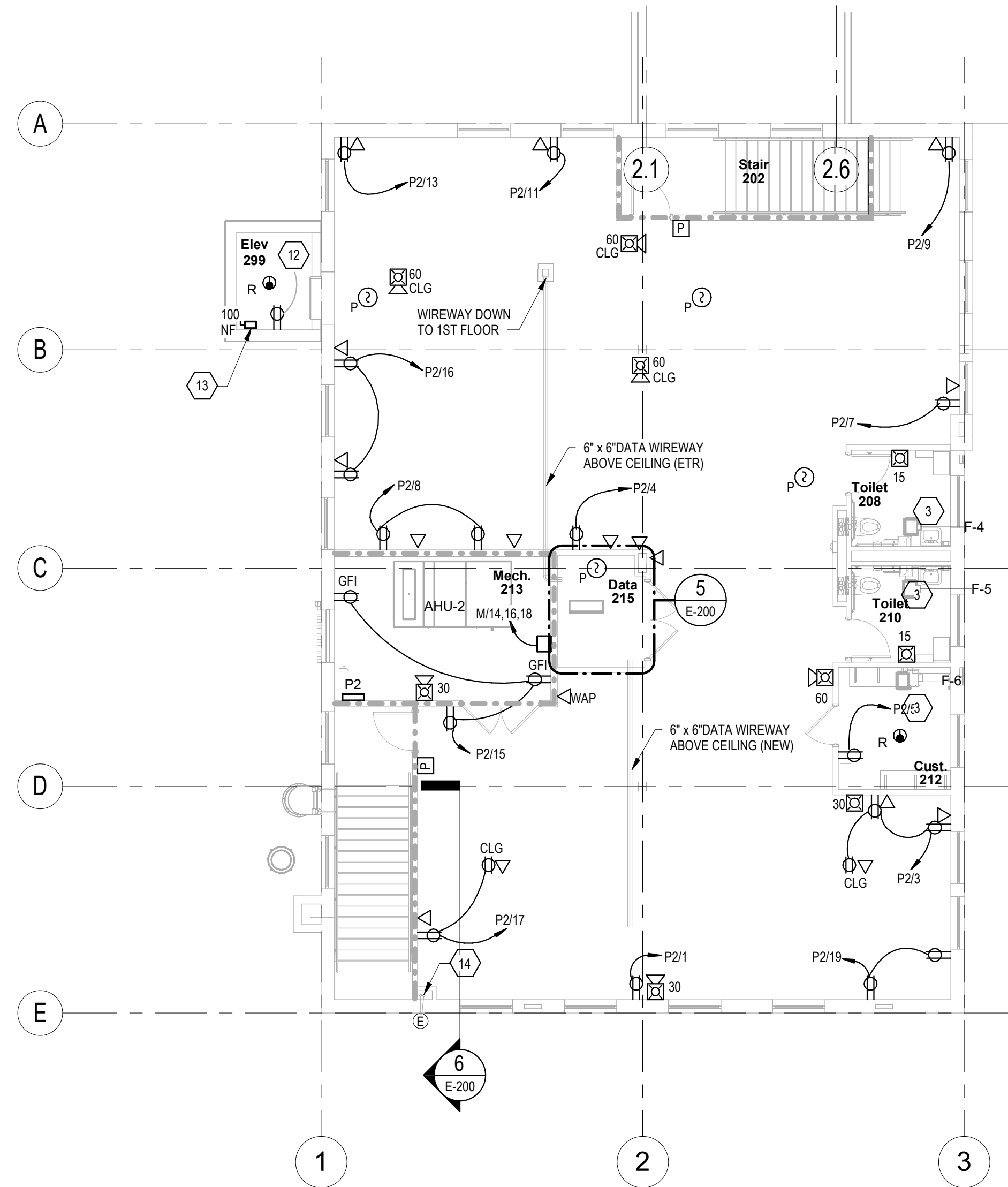
- KEYED NOTES THIS SHEET:**
- 1 PROVIDE TWO 2" RGS CONDUITS FROM THE MAIN ELECTRICAL ROOM UP THE CHIMNEY TO THE ROOF FOR FUTURE CONNECTION TO SOLAR ARRAY. REFER TO E-300 FOR ROOF PLAN.
 - 2 PROVIDE A DOCUMENT CABINET WITH A BUILT-IN USB DRIVE ADJACENT TO THE FIRE ALARM ANNUNCIATOR.
 - 3 CONNECT FAN TO THE LIGHTING CIRCUIT FOR THE SAME ROOM. FAN IS ON WHEN THE LIGHTS ARE ON.
 - 4 SPLIT SYSTEM INDOOR UNIT MOUNTED ABOVE DOOR. PROVIDE SNAP SWITCH FOR INDOOR UNIT. POWER ORIGINATES AT THE OUTDOOR UNIT.
 - 5 PROVIDE GROUND BAR AND #6AWG COPPER GROUND WIRE FROM BUILDING ELECTRICAL GROUND.
 - 6 LOCATE 120VAC DISCONNECT SWITCH FOR ELEVATOR SUMP PUMP SP-2 AT 12" GRADE. COORDINATE WITH PLUMBING.
 - 7 500A SERVICE-ENTRANCE RATED CIRCUIT BREAKER IN NEMA-1 ENCLOSURE. REFER TO RISER DIAGRAM FOR FURTHER INFORMATION. MOUNT NEXT TO EXISTING METER AND C.T. CABINET.
 - 8 BOILER B-2 IS PART OF ALTERNATE BID #7. IT IS 100% STANDBY.
 - 9 EMERGENCY SHUT-OFF FOR BOILERS.
 - 10 PROVIDE EMERGENCY COMMUNICATIONS FOR THE HEARING AND SPEECH IMPAIRED AS WELL AS VIDEO MONITORING WITHIN THE ELEVATOR CAB.
 - 11 INSTALL NEMA-3R EXTERIOR BOX FOR A NETWORK OUTLET AND A DEDICATED 120VAC RECEPTACLE FOR FUTURE OUTDOOR EQUIPMENT TESTING.
 - 12 CONNECT SECOND FLOOR ELEVATOR SHAFT RECEPTACLE TO ELEVATOR PIT RECEPTACLE CIRCUIT. REFER TO DETAIL 1 ON THIS SHEET.
 - 13 NON-FUSED DISCONNECT IN ELEVATOR SHAFT ADJACENT TO ELEVATOR MOTOR.
 - 14 PROVIDE NEW SERVICE FEED FROM EXISTING WEATHERHEAD, THROUGH THE NEW CHASE IN THE CORNER OF THE ROOM, TO THE EXISTING CT CABINET TO THE NEW ENCLOSED CIRCUIT BREAKER. REFER TO SINGLE LINE DIAGRAM FOR CONDUCTOR AND CONDUIT SIZE. REFER TO ELEVATION ON THIS SHEET FOR CONDUIT ROUTING.

GENERAL NOTES THIS SHEET:

A FIRST FLOOR DEVICES SHOWN AS CEILING-MOUNTED SHALL BE MOUNTED TO THE EXISTING STRUCTURE. THERE IS NO GRID OR GYP CEILING BELOW THE STRUCTURE. DEVICES SHOWN AS 'ABOVE CEILING' SHALL BE MOUNTED ABOVE 9'-2" A.F.F. (ABOVE THE WINDOWS).



1 FIRST FLOOR POWER - NEW WORK - BASE
E-200 SCALE: 1/8" = 1'-0"



2 SECOND FLOOR POWER - NEW WORK - BASE
E-200 SCALE: 1/8" = 1'-0"

F E D C B A

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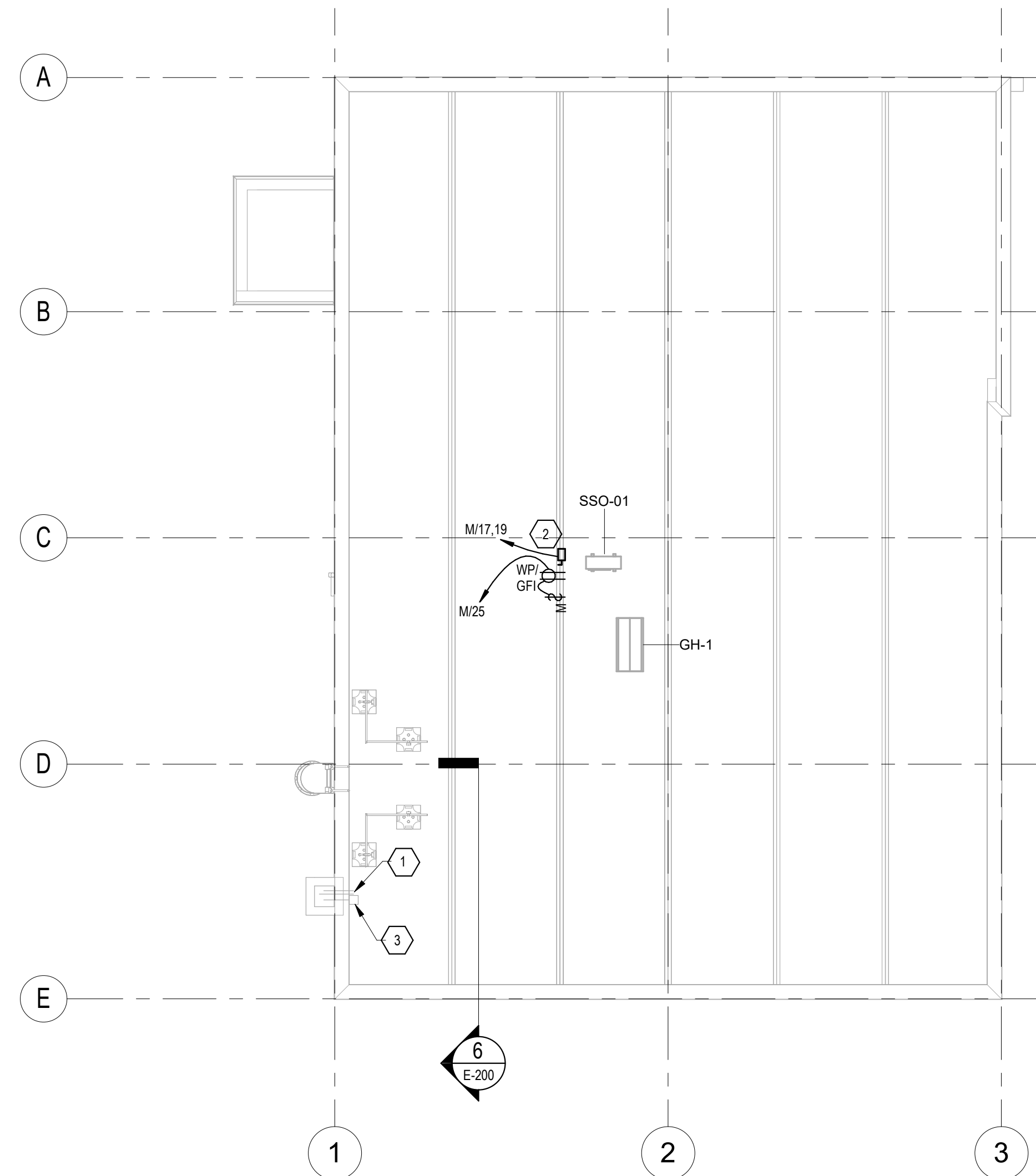
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KEYED NOTES THIS SHEET:

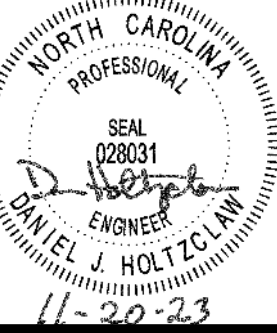
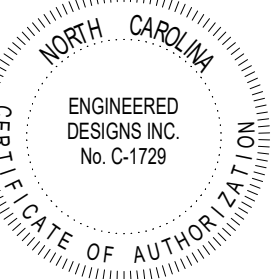
- 1 PROVIDE TWO 2" RGS CONDUITS FROM THE MAIN ELECTRICAL ROOM UP THE CHIMNEY TO THE ROOF FOR FUTURE CONNECTION TO SOLAR ARRAY. REFER TO E-200 FOR FIRST FLOOR PLAN. POKE CONDUITS THROUGH THE CHIMNEY ABOVE PARAPET AND CAP.
- 2 ROOF MOUNT RECEPTACLE PER DETAILS. DISCONNECT SWITCH SHOWN FOR REFERENCE. SWITCH IS PROVIDED BY MECHANICAL WITH THE EQUIPMENT.
- 3 CONNECT SECURITY CONDUIT FROM SECOND FLOOR TO 8"X8"X6" NEMA 3 JUNCTION BOX FOR SECURITY SYSTEM WIRING. REFER TO SHEET E-300.



1 Roof POWER - NEW
 E-201 SCALE: 1/8" = 1'-0"

CDs FOR BID

SCO ID# 19-21547-02A
NCSU ID 201920037



date note

New Building For:
**Don E. Ellis Building (133)
 Renovations**
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

PROJECT 1368-20
 DATE 11-20-23
 DRAWN DJH
 CHECKED JRQ

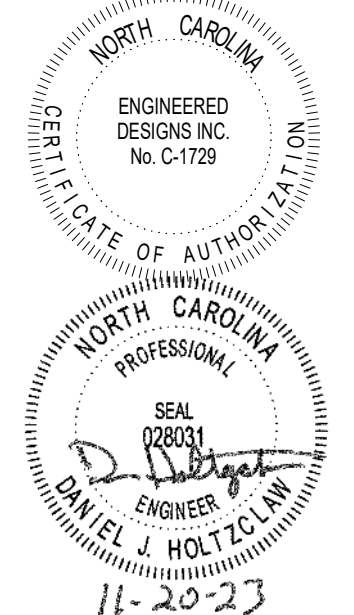
ROOF ELECTRICAL
PLAN - NEW WORK

E-201

F E D C B A

CDs FOR BID

SCO ID# 19-21547-02A
 NCSU ID 201920037



date note

New Building For:
Don E. Ellis Building (133) Renovations
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

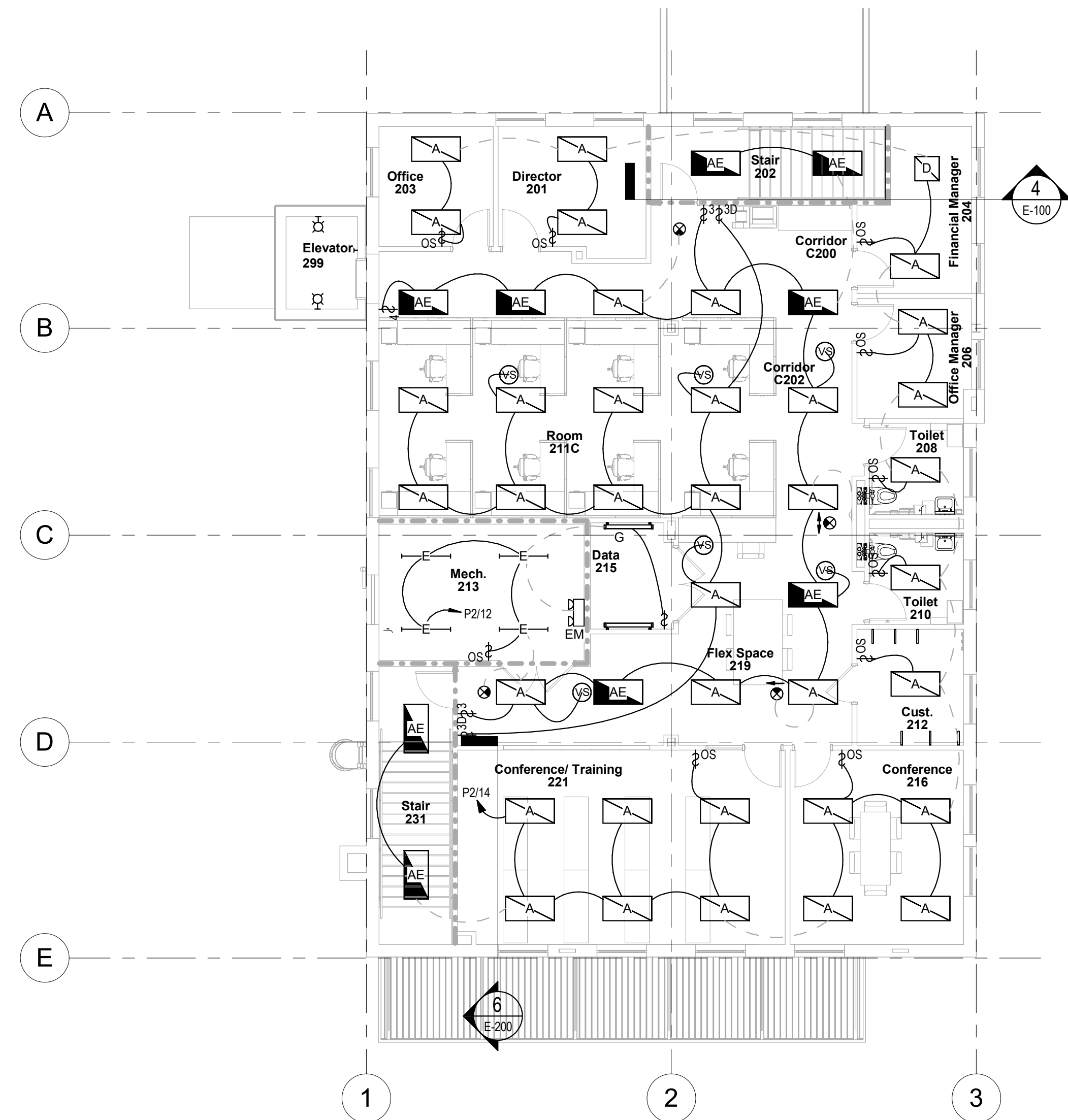
PROJECT 1368-20
 DATE 11-20-23
 DRAWN Author
 CHECKED Checker

ELECTRICAL ALT
 BID 2ND FLOOR

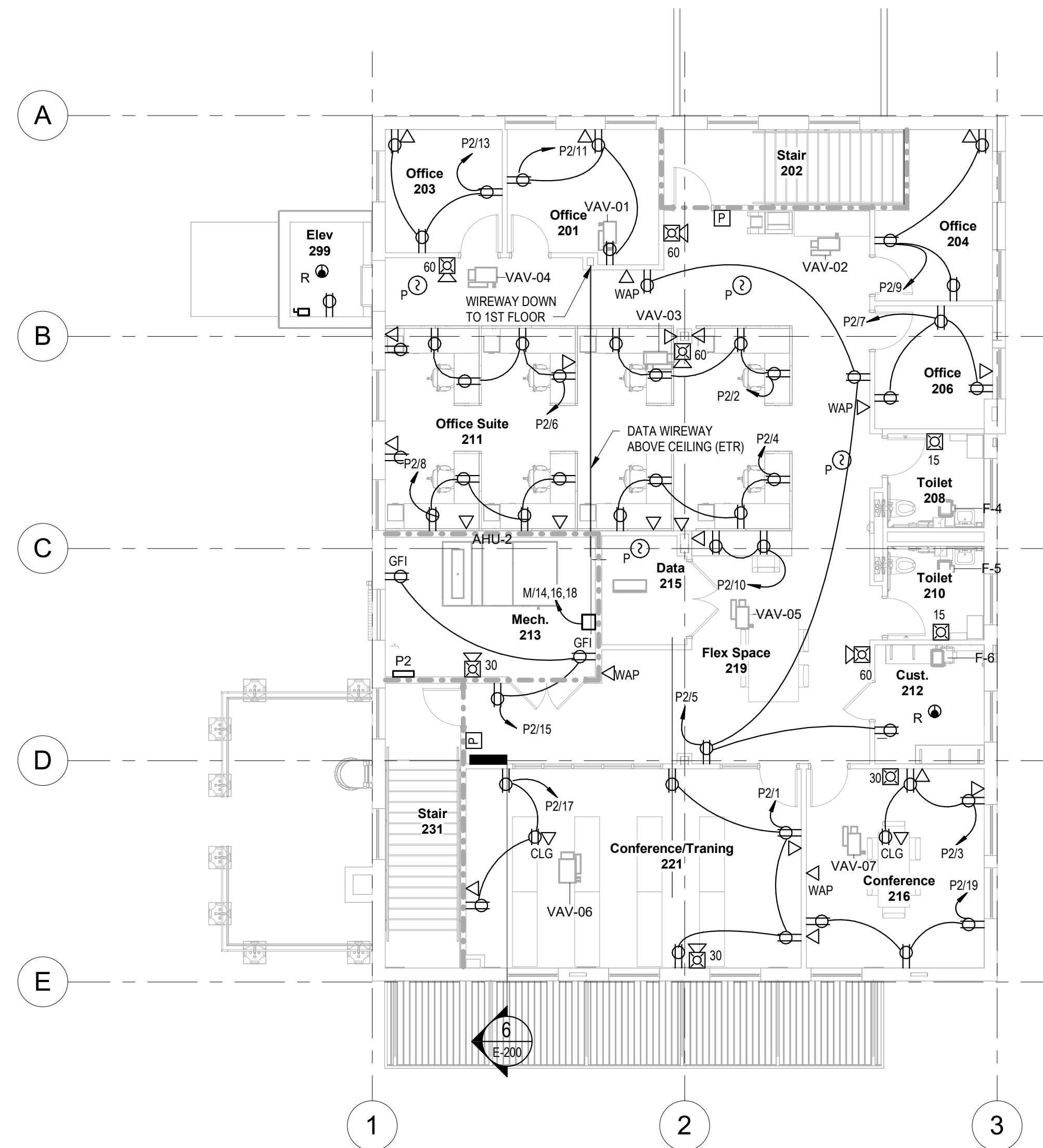
E-202

GENERAL NOTES THIS SHEET.

A. PROVIDE POWER FOR SECOND FLOOR VAV BOXES FROM CIRCUIT M20. PROVIDE JUNCTION BOX AT EACH VAV BOX TO TERMINATE POWER WIRING.

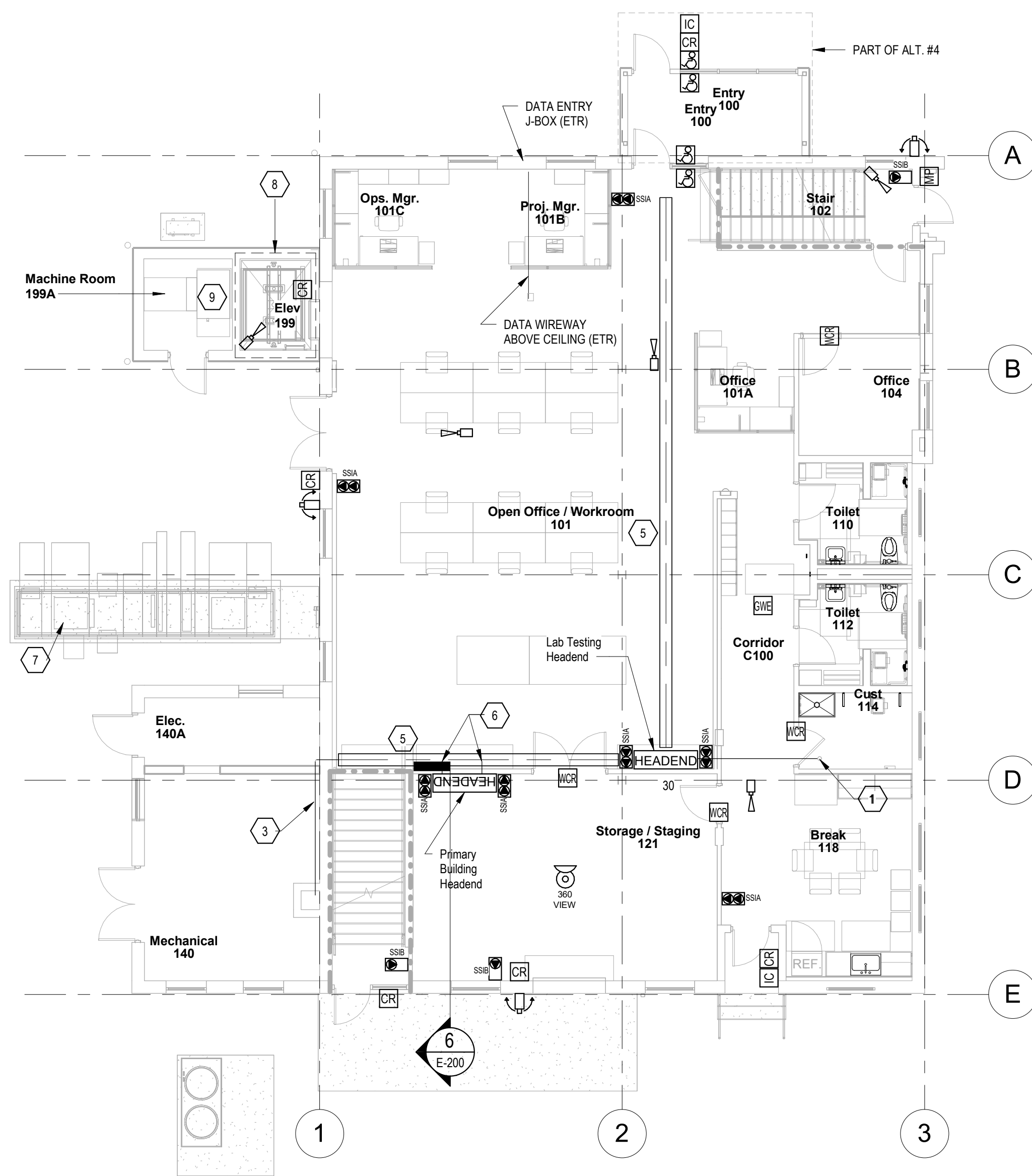


1 SECOND FLOOR LIGHTING - NEW WORK - ALT #1
 E-202 SCALE: 1/8" = 1'-0"

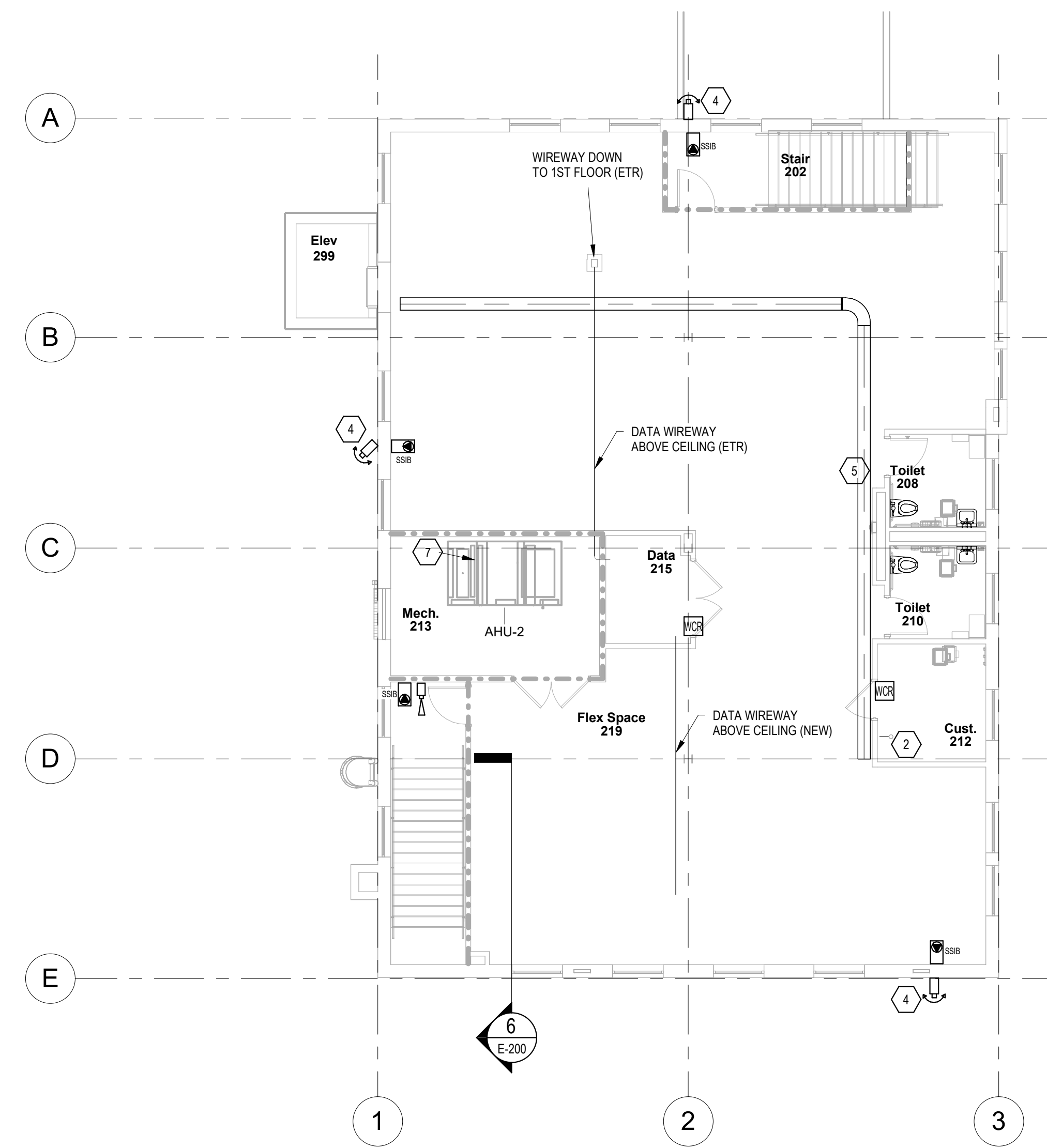


2 SECOND FLOOR POWER - NEW WORK - ALT #1
 E-202 SCALE: 1/8" = 1'-0"

11/19/2023 11:20:53 AM



1 FIRST FLOOR SYSTEMS - NEW WORK - BASE
E-300 SCALE: 1/8" = 1'-0"



2 SECOND FLOOR SYSTEMS - NEW WORK - BASE
E-300 SCALE: 1/8" = 1'-0"

KEYED NOTES THIS SHEET:

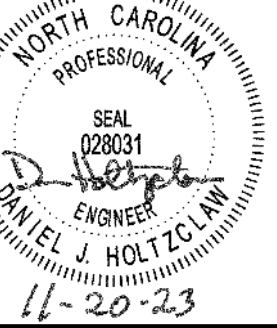
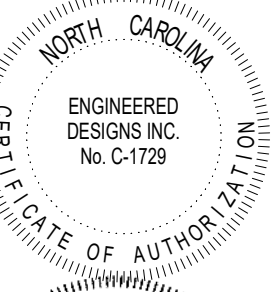
- 1 PROVIDE 2" EMT SECURITY CONDUIT FROM HEADEND EQUIPMENT TO 2" SECURITY RISER TO SECOND FLOOR SECURITY RACEWAY.
- 2 CONNECT 2" EMT SECURITY RISER CONDUIT FROM FIRST FLOOR TO SECOND FLOOR CABLE TRAY.
- 3 PROVIDE 1-1/4" SECURITY CONDUIT FROM SECURITY CABLE TRAY TO THE ROOF, VIA THE CHIMNEY, AND TERMINATED TO AN 8"X8"X6" NEMA 3 JUNCTION BOX TO SUPPORT ROOFTOP SECURITY EQUIPMENT.
- 4 CAMERA MOUNTED BELOW ROOF AT A HEIGHT ABOVE FINISHED GRADE TO BE DETERMINED.
- 5 NEW SECURITY CABLE TRAY.
- 6 PROVIDE TWO 2" CONDUITS FROM THE PRIMARY BUILDING HEADEND TO THE CABLE TRAY.
- 7 COORDINATE EXACT LOCATION OF DUCT-MOUNTED SMOKE DETECTOR WITH MECHANICAL.
- 8 NCSU SAT WILL REQUIRE ASSISTANCE FROM THE ELEVATOR CONTRACTOR TO INSTALL THE IN-CAB CAMERA AND CARD READER. THIS WILL NEED TO BE COORDINATED WITH THE ARCHITECT AND GENERAL CONTRACTOR.
- 9 PROVIDE A 1" EMT CONDUIT FROM THE ELEVATOR MACHINE ROOM TO THE SECURITY RACEWAY SO NCSU SAT CAN CONTROL THE IN-CAB CARD READER, LEVEL-2 BUTTON AND IN-CAB CAMERA FROM THE PRIMARY SECURITY HEADEND.

GENERAL NOTES THIS SHEET:

- A. PROVIDE POWER FOR SECOND FLOOR VAV BOXES FROM CIRCUIT M20. PROVIDE JUNCTION BOX AT EACH VAV BOX TO TERMINATE POWER WIRING.
- B. FIRST FLOOR DEVICES SHOWN AS CEILING-MOUNTED SHALL BE MOUNTED TO THE EXISTING STRUCTURE. THERE IS NO GRID OR GYP CEILING BELOW THE STRUCTURE. DEVICES SHOWN AS 'ABOVE CEILING' SHALL BE MOUNTED ABOVE 9'-2" A.F.F. (ABOVE THE WINDOWS).

CDs FOR BID

SCO ID# 19-21547-02A
NCSU ID 201920037



date note

New Building For:
Don E. Ellis Building (133) Renovations
1320 Varsity Drive, Raleigh, NC 27606
North Carolina State University

PROJECT 1368-20
DATE 11-20-23
DRAWN Author
CHECKED Checker

SYSTEMS PLANS - NEW WORK

E-300

11/19/2023 11:21:01 AM

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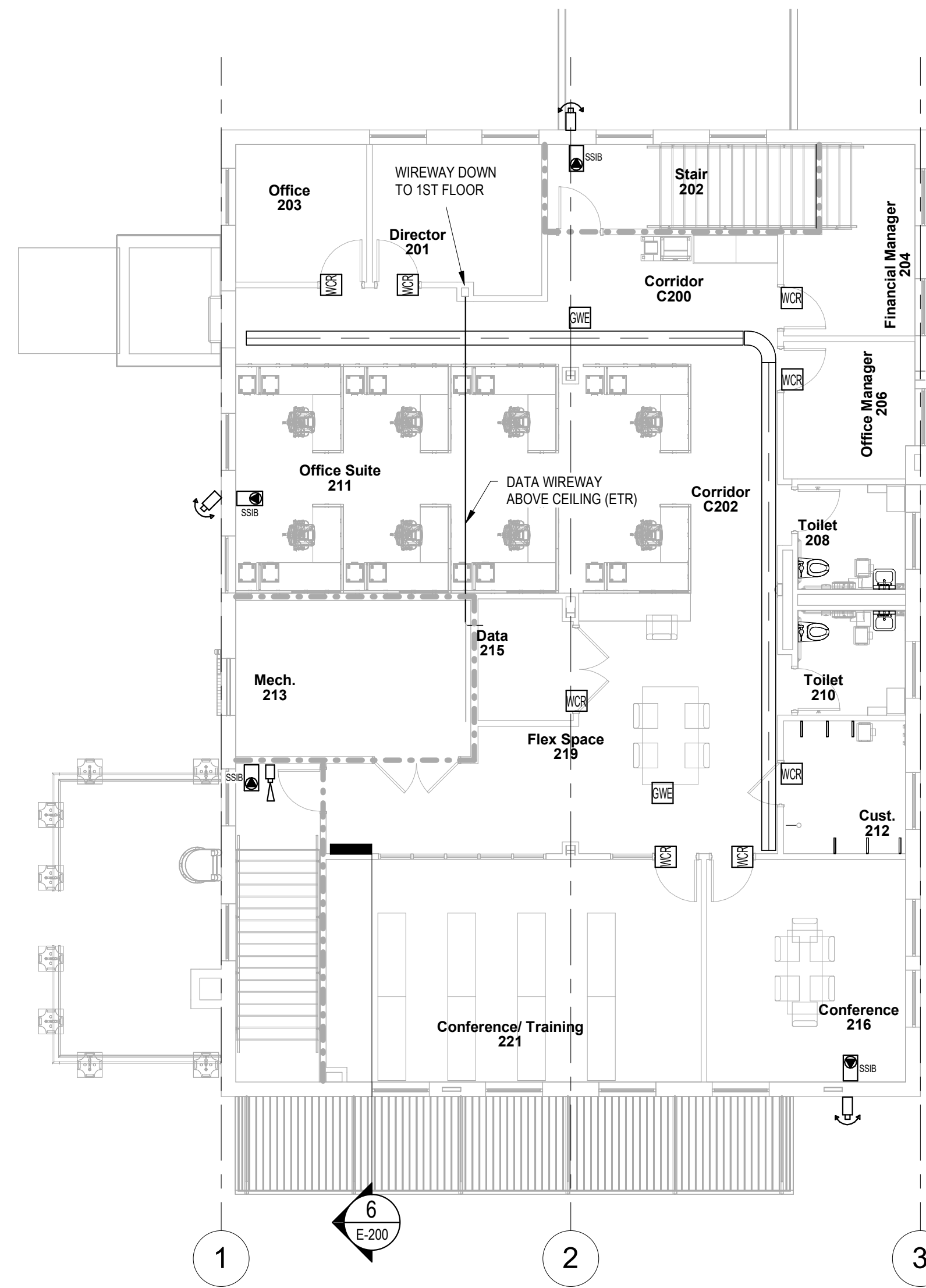
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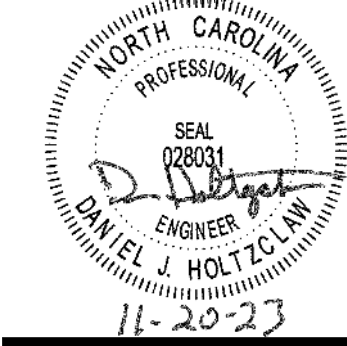
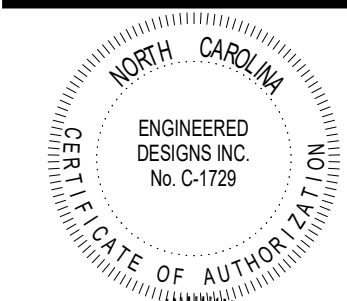
1 SECOND FLOOR SYSTEMS - NEW WORK - ALT #1
 E-301 SCALE: 1/8" = 1'-0"

Skinner | Farlow | Kirwan
architecture
 sfarchitecture.com
 301 University Ave., Suite 200
 Raleigh, NC 27602
 919.221.2072

ENGINEERED DESIGNS INC.
 North Carolina License #C-1729
 101 Old City Parkway, Suite 200, Cary, North Carolina 27518
 P 919.821.8441 F 919.821.8702 www.engineeredesigns.com

CDs FOR BID

SCO ID# 19-21547-02A
 NCSU ID 201920037



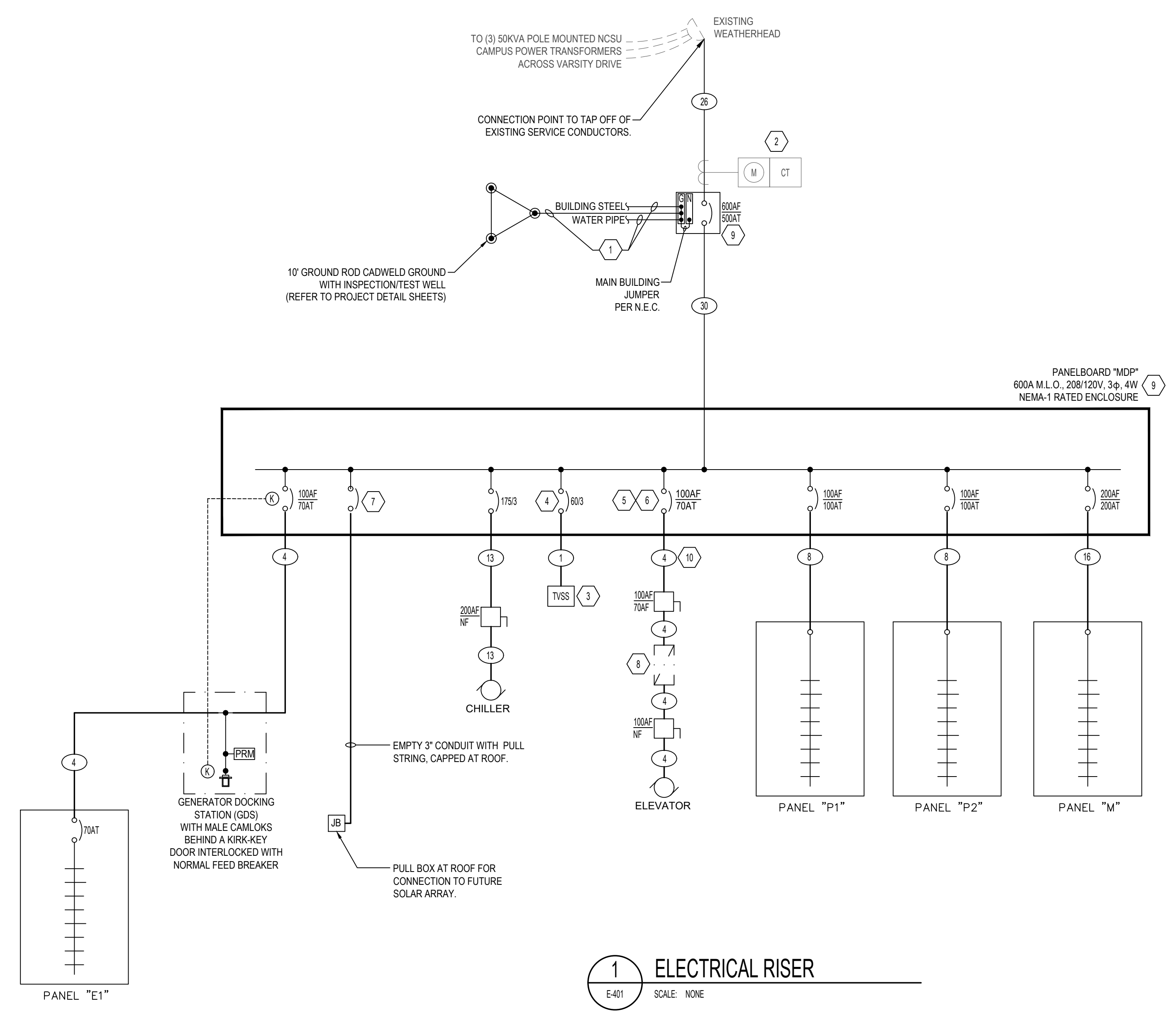
#	date	note

New Building For:
Don E. Ellis Building (133) Renovations
 1320 Varsity Drive, Raleigh, NC 27606
 North Carolina State University

PROJECT	1368-20
DATE	11-20-23
DRAWN	Author
CHECKED	Checker

SYSTEMS ALT BID
2ND FLOOR

E-301



1 ELECTRICAL RISER
E-401 SCALE: NONE

- SINGLE-LINE KEYNOTES**
- 1#3/0 TO GROUND RODS, WATER PIPE, BUILDING STEEL (CONCRETE STRUCTURE REBAR), ETC. PER NEC 250. SEE GROUNDING DETAILS ON DETAIL SHEETS.
 - EXISTING ELECTRICAL SERVICE METER AND CT CABINET.
 - PROVIDE EXTERNAL MOUNTED SURGE SUPPRESSION DEVICE THAT SHALL MEET THE FOLLOWING STANDARDS: IEEE C62.41 & IEEE C62.45, NEMALS 1, UL 1449 AND NEC ARTICLE 285. THE TVSS SHALL BE INSTALLED ON THE LOAD SIDE OF THE OVERCURRENT PROTECTIVE DEVICE AND SHALL BE A CATEGORY #2 TYPE DEVICE WITH A RATING EQUAL TO OR GREATER THAN THE AIC RATING INDICATED FOR NEW SERVICE PANEL "MDP". COMPLY WITH THE REQUIREMENTS OF NEC ARTICLE 285 "SURGE-PROTECTION DEVICES (SPDs), 1kV OR LESS".
 - PROVIDE CIRCUIT BREAKER SIZE AS RECOMMENDED BY PANEL MANUFACTURER FOR SPD. CIRCUIT BREAKER SHALL BE INSTALLED IN ACCORDANCE WITH PANELBOARD MANUFACTURER'S REQUIREMENTS.
 - CONTRACTOR SHALL VERIFY EXACT SIZE OF OVERCURRENT PROTECTION REQUIRED FOR ELEVATOR WITH ELEVATOR MANUFACTURER PRIOR TO ROUGH-IN. CONTRACTOR SHALL UPGRADE OVERCURRENT PROTECTION DEVICES AND FEEDERS AS NECESSARY IF ELEVATOR PROVIDED IS A DIFFERENT HORSEPOWER.
 - PROVIDE ELEVATOR WITH SHUNT TRIP CAPABILITY AND INTERCONNECT WITH THE FIRE ALARM SYSTEM.
 - PREPARED 250A BREAKER SPACE FOR CONNECTION TO FUTURE SOLAR ARRAY.
 - ELEVATOR CONTROLLER BY ELEVATOR MANUFACTURER/VENDOR.
 - CIRCUIT BREAKERS IN SERVICE PANEL "MDP" SHALL BE SELECTIVELY COORDINATED WITH THE UPSTREAM 500A SERVICE ENTRANCE BREAKER.
 - FEED FROM "MDP" TO THE ELEVATOR EQUIPMENT ROOM SHALL BE RUN INSIDE THE BUILDING.

FAULT CURRENT NAMEPLATE NOTE

PER NEC 110.24 THE CONTRACTOR SHALL PROVIDE A PHENOLIC NAME PLATE WITH RED BACKGROUND AND 1/2 INCH HIGH WHITE LETTERS RIVETED TO THE FACE OF THE MAIN ELECTRICAL SERVICE (SWITCHBOARD "MDP") TO READ:

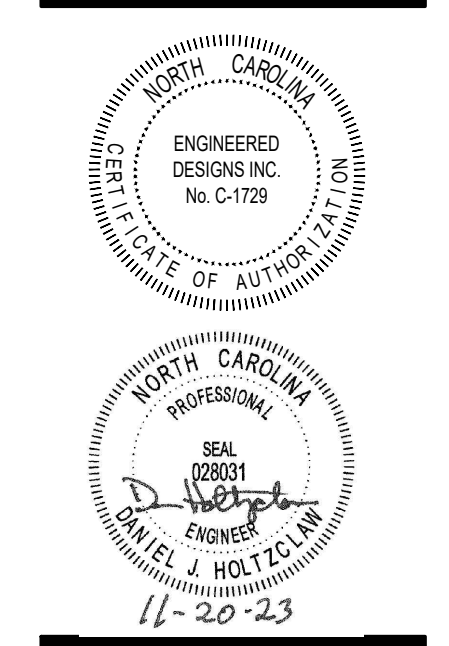
"MAXIMUM AVAILABLE FAULT CURRENT 27,800 AIC CALCULATED 31-JANUARY-2023"

ARC-FLASH HAZARD WARNING NOTE

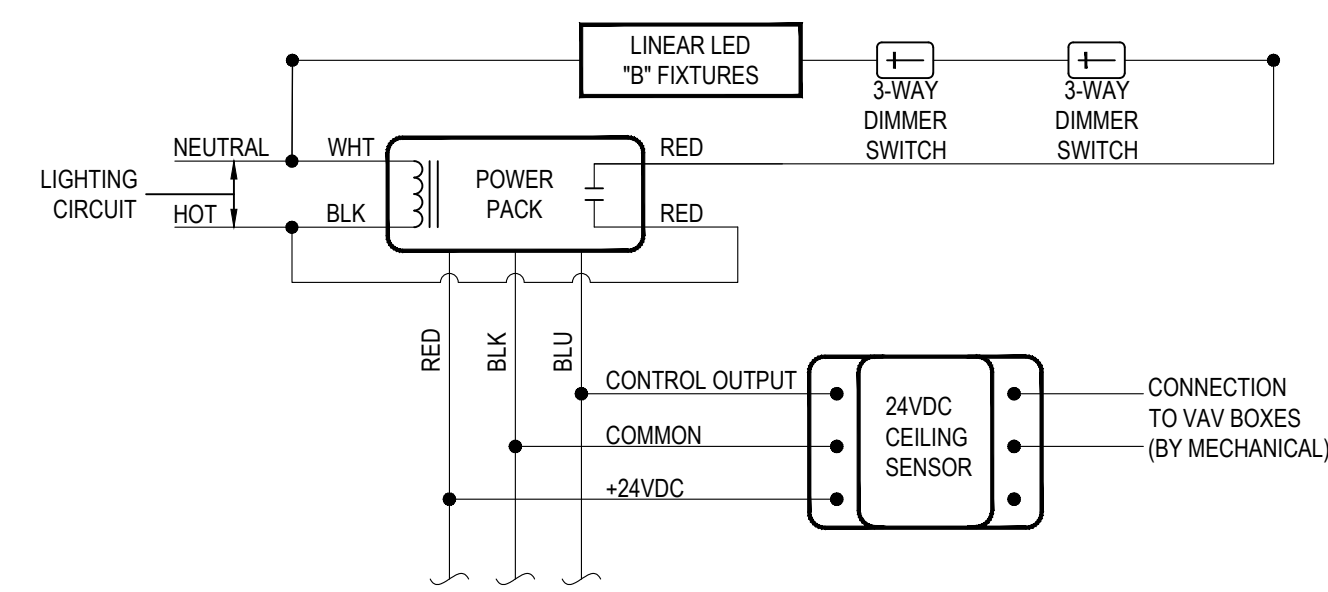
PROVIDE ARC-FLASH WARNING LABELS AS OUTLINED IN NEC 110.21(B) ON ELECTRICAL EQUIPMENT REQUIRED BY NEC 110.16(A)

FEEDER SCHEDULE - COPPER CONDUCTORS					
FEEDER SYMBOL	CONDUCTORS (3 PHASE, 3 WIRE) WITH GROUND	RACEWAY SIZE	CONDUCTORS (3 PHASE, 4 WIRE) WITH GROUND	RACEWAY SIZE	NOMINAL AMPERE RATING
1	3#6 & 1#10G	3/4"			60
2			4#6 & 1#10G	1"	
3	3#4 & 1#6G	1"			70, 80
4			4#4 & 1#6G	1-1/4"	
5	3#3 & 1#6G	1-1/4"			90
6			4#3 & 1#6G	1-1/4"	
7	3#2 & 1#6G	1-1/4"			100, 110
8			4#2 & 1#6G	1-1/2"	
9	3#1 & 1#6G	1-1/2"			125
10			4#1 & 1#6G	1-1/2"	
11	3#1/0 & 1#6G	1-1/2"			150
12			4#1/0 & 1#6G	2"	
13	3#2/0 & 1#6G	2"			175
14			4#2/0 & 1#6G	2"	
15	3#3/0 & 1#6G	2"			200
16			4#3/0 & 1#6G	2"	
17	3#4/0 & 1#4G	2"			225
18			4#4/0 & 1#4G	2-1/2"	
19	3#250kcmil & 1#4G	2-1/2"			250
20			4#250kcmil & 1#4G	3"	
21	3#350kcmil & 1#4G	3"			300
22			4#350kcmil & 1#4G	3"	
23	3#500kcmil & 1#3G	3"			350
24			4#500kcmil & 1#3G	4"	
25	3#500kcmil & 1#3G	3"			400
26			4#500kcmil	4"	
27	2 Sets(3#4/0 & 1#2G)	(2)2"			450
28			2 Sets(4#4/0)	(2)2"	
29	2 Sets(3#250kcmil & 1#2G)	(2)2-1/2"			500
30			2 Sets(4#250kcmil & 1#2G)	(2)2-1/2"	
31	2 Sets(3#350kcmil & 1#1G)	(2)3"			600
32			2 Sets(4#350kcmil & 1#1G)	(2)3"	
33	2 Sets(3#500kcmil & 1#10G)	(2)3"			700
34			2 Sets(4#500kcmil & 1#10G)	(2)3-1/2"	
35	2 Sets(3#600kcmil & 1#10G)	(2)3-1/2"			800
36			2 Sets(4#600kcmil & 1#10G)	(2)4"	
37	3 Sets(3#400kcmil & 1#20G)	(3)3"			1000
38			3 Sets(4#400kcmil & 1#20G)	(3)3"	
39	3 Sets(3#600kcmil & 1#30G)	(3)3-1/2"			1200
40			3 Sets(4#600kcmil & 1#30G)	(3)4"	
41	4 Sets(3#600kcmil & 1#40G)	(4)3-1/2"			1600
42			4 Sets(4#600kcmil & 1#40G)	(4)4"	

- NOTES:**
1. CONDUCTOR SIZES FOR THE ASSOCIATED NOMINAL AMPERE RATING ARE THE MINIMUM ALLOWED BASED UPON NEC TABLE 310.15(B)(16) WITH NO GREATER THAN THREE CURRENT CARRYING CONDUCTORS PER RACEWAY IN AN AMBIENT TEMPERATURE NOT TO EXCEED 30°C. FEEDER TAGS MAY BE OVERSIZED FOR THE ASSOCIATED OVERCURRENT PROTECTION TO ACCOUNT FOR DERATING FACTORS OR LIMIT VOLTAGE DROP.
 2. RACEWAY SIZES ARE THE MINIMUM ALLOWED BASED UPON NEC TABLE C1 FOR THHN/THWN CONDUCTORS IN EMT. RACEWAY SIZES SHALL BE INCREASED TO ACCOMMODATE DIFFERING INSULATION SYSTEMS AND RACEWAY TYPES TO LIMIT RACEWAY FILL TO LESS THAN 40%.
 3. FEEDERS DESIGNATED IN MULTIPLE SETS SHALL HAVE THE REQUIRED SETS INSTALLED IN PARALLEL.

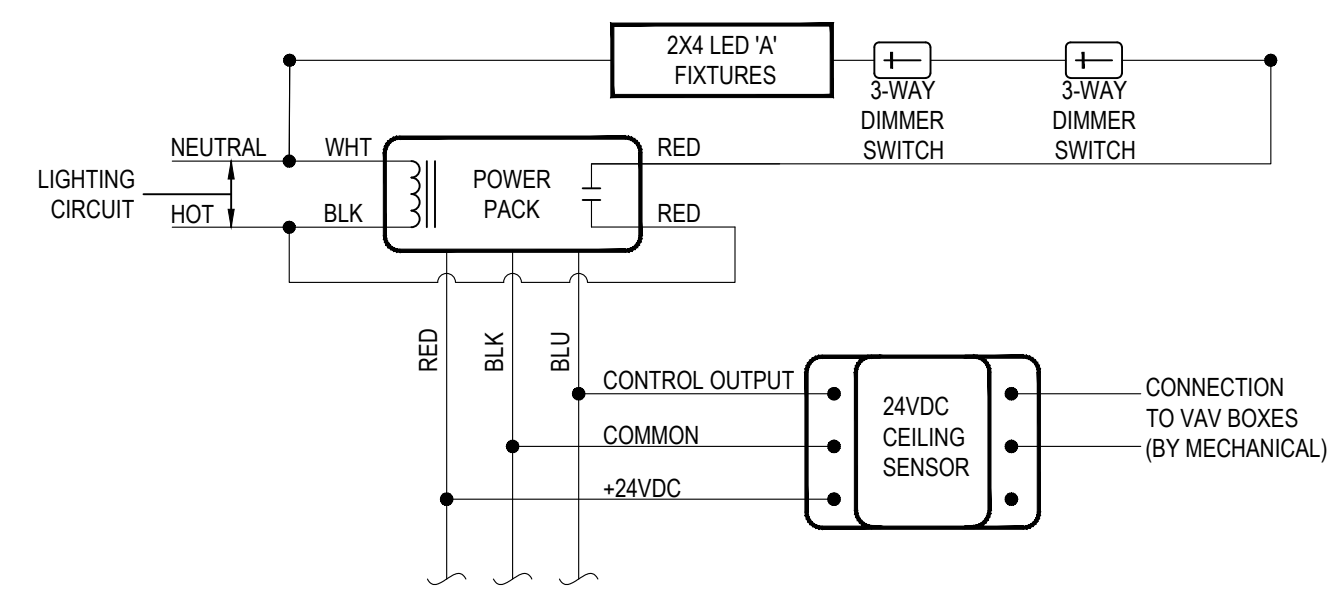


date note



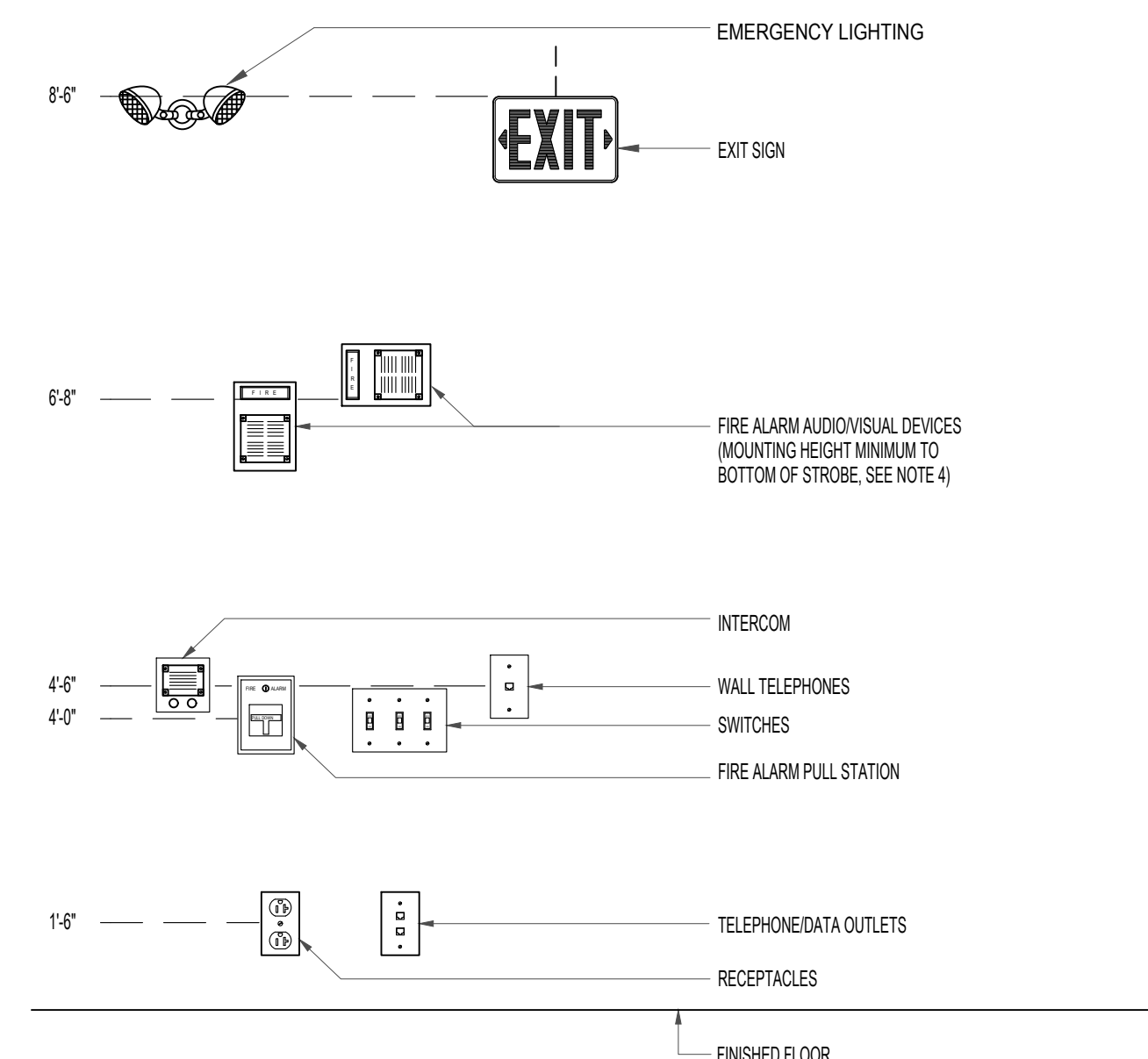
1 VACANCY SENSOR WIRING DIAGRAM - ROOM 101

E-601 SCALE: N.T.S.



2 VACANCY SENSOR WIRING DIAGRAM - ROOMS 219/211

E-601 SCALE: N.T.S.

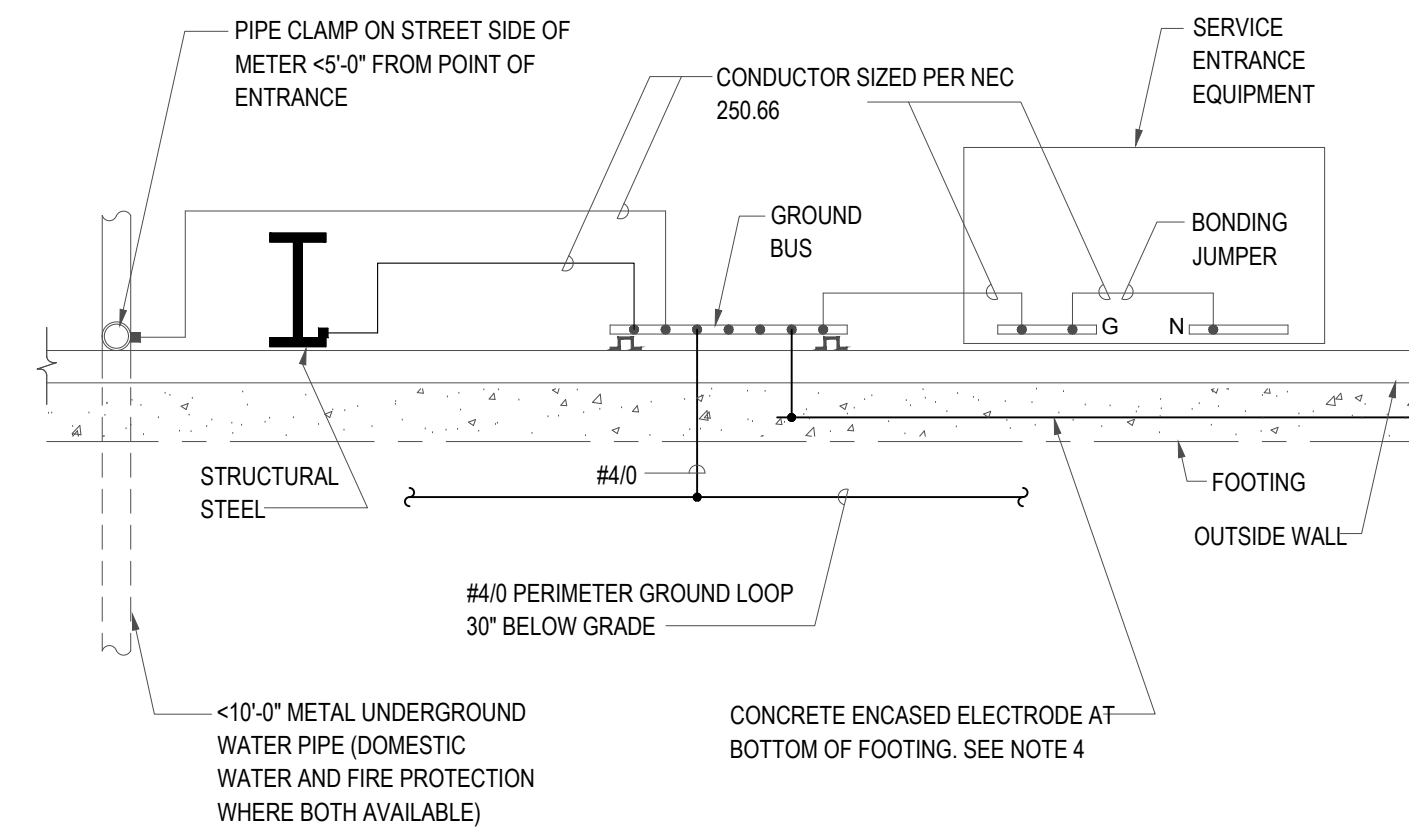


NOTES:

1. ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGNS, CLOCKS, EMERGENCY LIGHTING AND FIRE ALARM A/V DEVICES.
2. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
3. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.
4. STROBE HEIGHT ILLUSTRATED AT MINIMUM HEIGHT OF 80" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER, IN ACCORDANCE WITH NFPA 72 CRITERIA. THIS DOES NOT APPLY TO CEILING MOUNTED STROBES.
5. ALL OUTLET MOUNTING HEIGHTS SHALL CONFORM TO ANSI A117.1.

7 DEVICE MOUNTING HEIGHT DETAIL

E-601 SCALE: N.T.S.

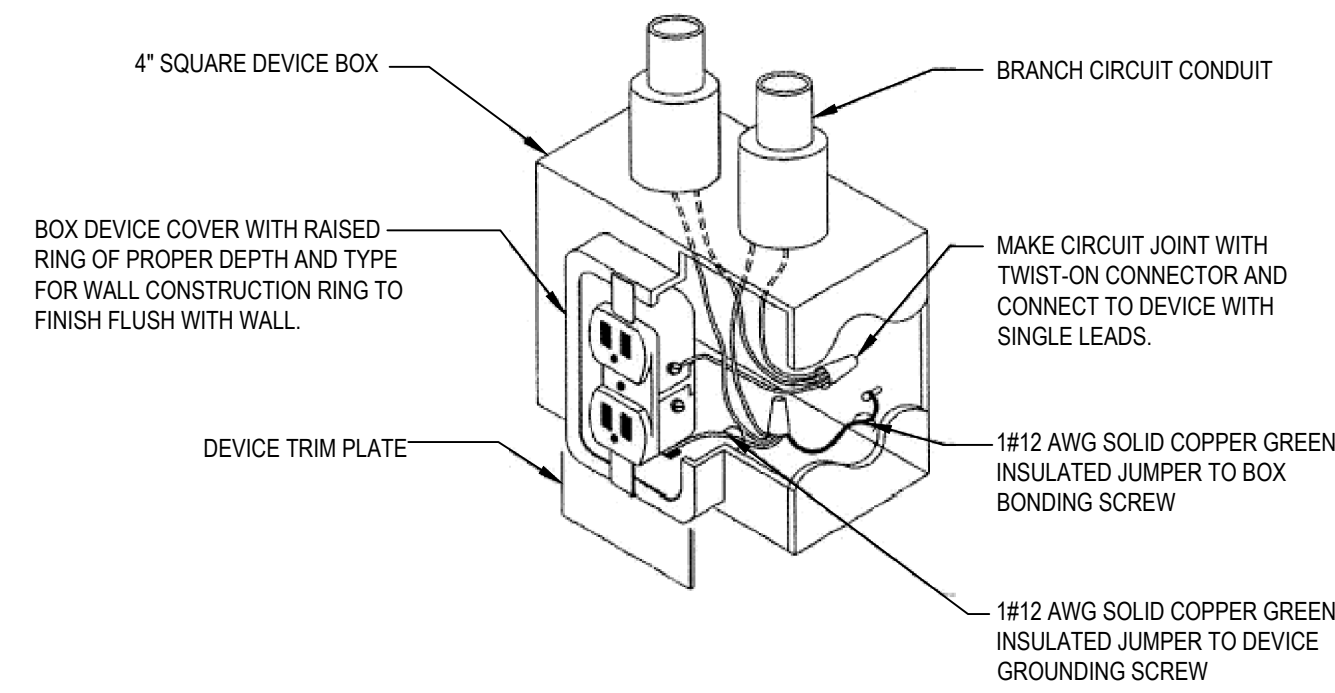


NOTES:

1. THIS DRAWING IS INTENDED TO ILLUSTRATE THE SERVICE GROUNDING REQUIREMENTS. REFER TO NEC ARTICLE 250 FOR ADDITIONAL DETAILS.
2. ALL CONNECTIONS SHALL BE EXOTHERMIC WELDS WITH THE EXCEPTION OF MECHANICAL LUGS IN THE SERVICE ENTRANCE EQUIPMENT.
3. WALL MOUNTED COPPER 4x24x1/2" GROUND BUS SHALL BE EQUAL TO ERICO EGB-A14424BB.
4. PROVIDE 20' #4 AWG BARE COPPER IN LIEU OF BONDING TO REBAR WHERE 20' OF BARE REBAR IS NOT INSTALLED.

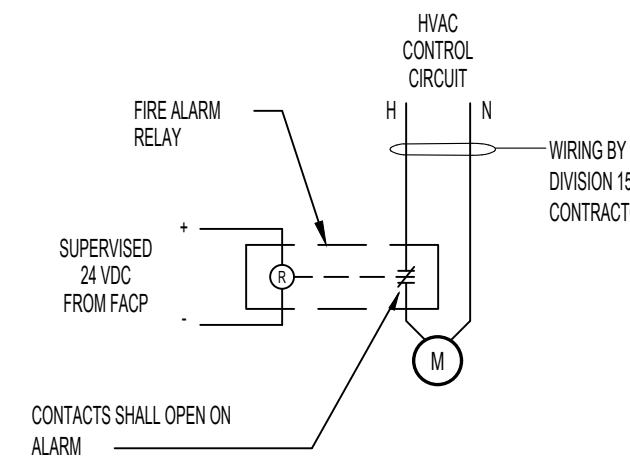
8 SERVICE GROUNDING ELECTRODE DETAIL

E-601 SCALE: N.T.S.



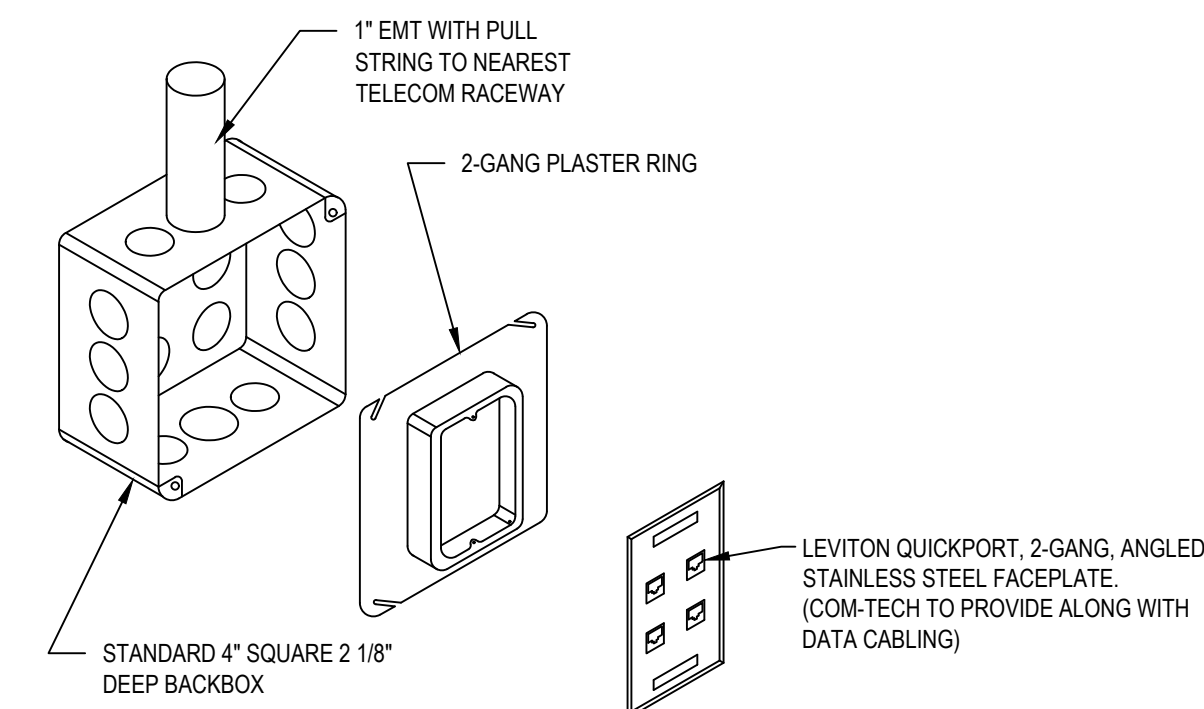
3 RECEPTACLE GROUNDING DETAIL

E-601 SCALE: N.T.S.



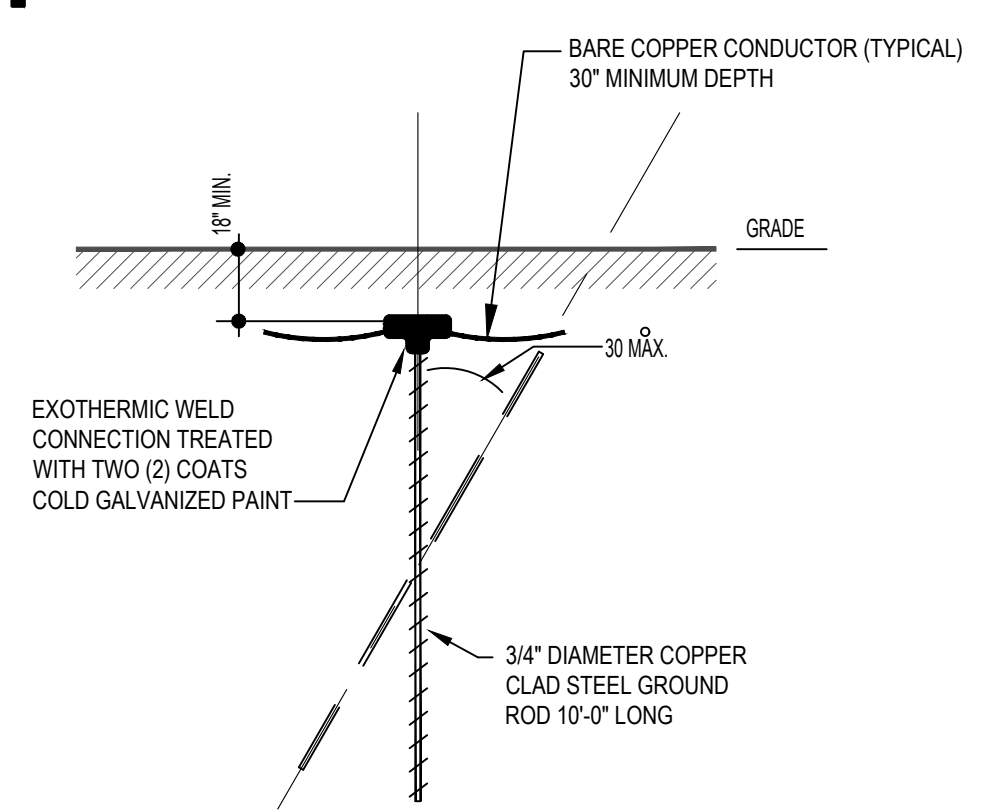
4 TYPICAL AHU SHUTDOWN CIRCUIT

E-601 SCALE: N.T.S.



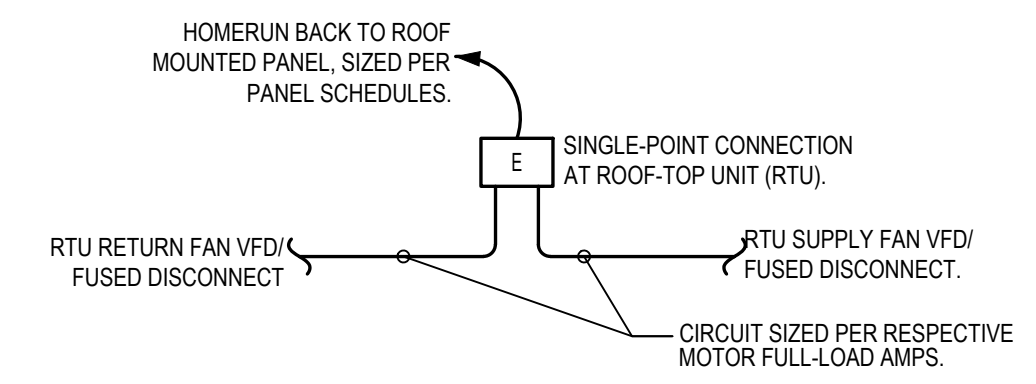
9 NETWORK BOX & FACEPLATE DETAIL

E-601 SCALE: N.T.S.



5 TYPICAL GROUND ROD DETAIL

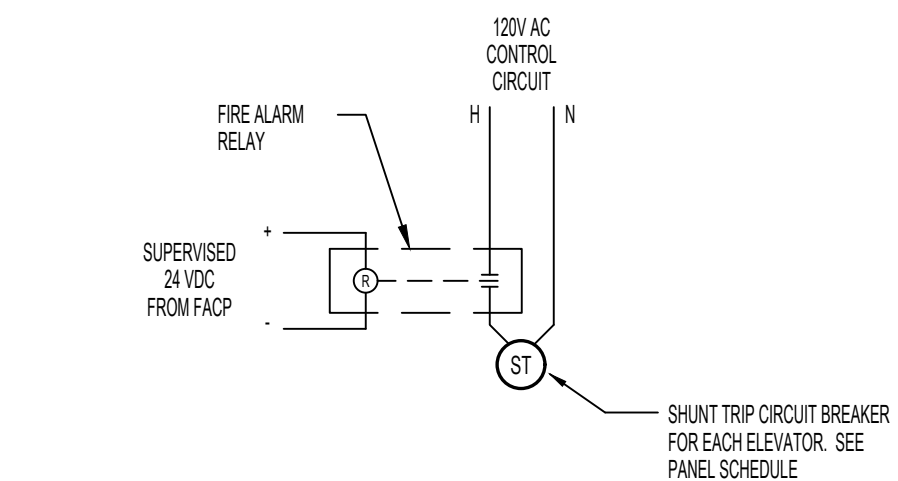
E-601 SCALE: N.T.S.



A. LENGTH OF SUB FEEDS TO INDIVIDUAL VFD'S SHALL NOT EXCEED THE 25-FOOT TAP RULE PER 2017 NEC 240.21(B)(2).

6 RTU VFD CONNECTION DETAIL

E-601 SCALE: NONE

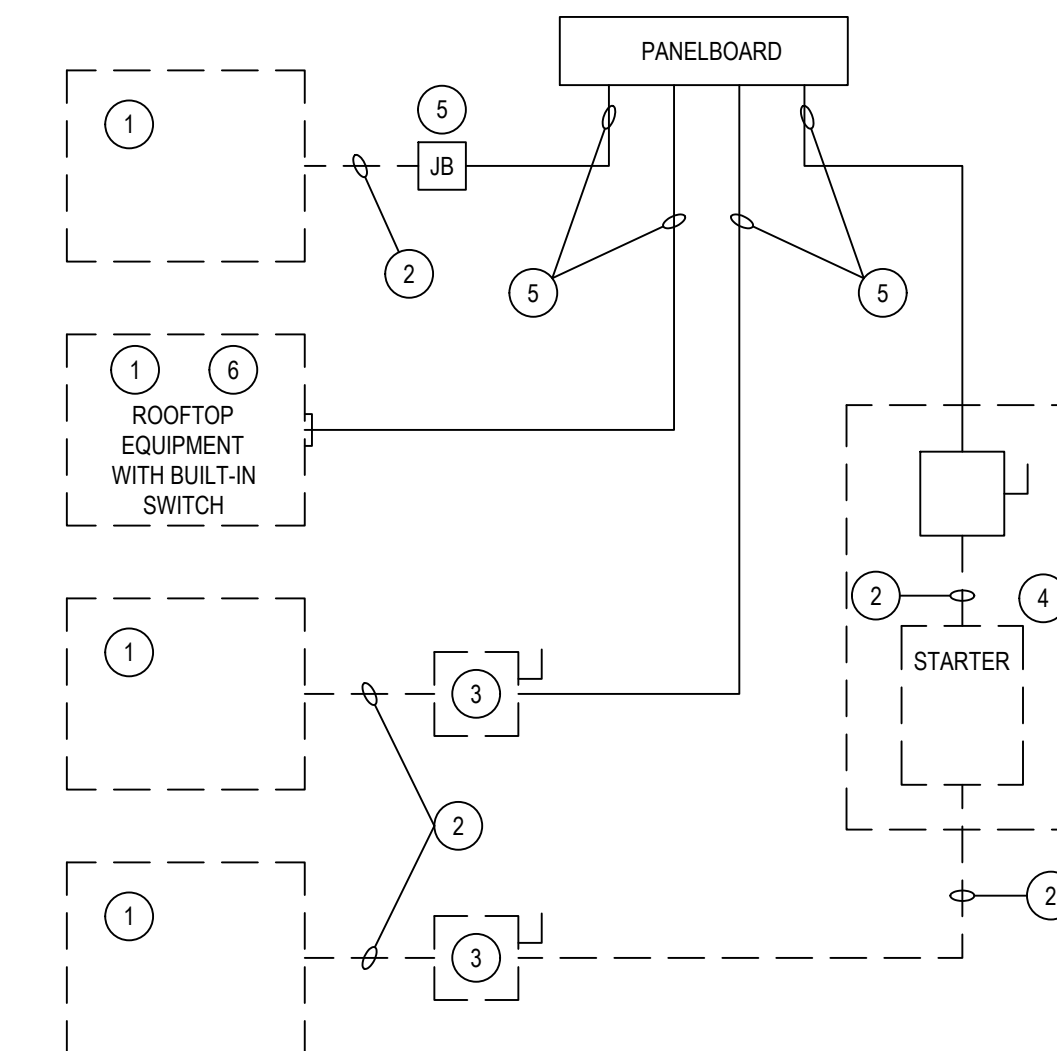


10 ELEVATOR SHUTDOWN CIRCUIT

E-601 SCALE: N.T.S.

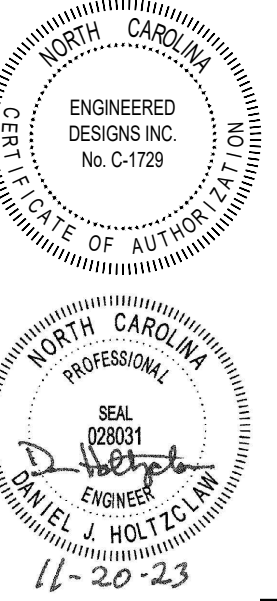
ELECTRICAL NOTES

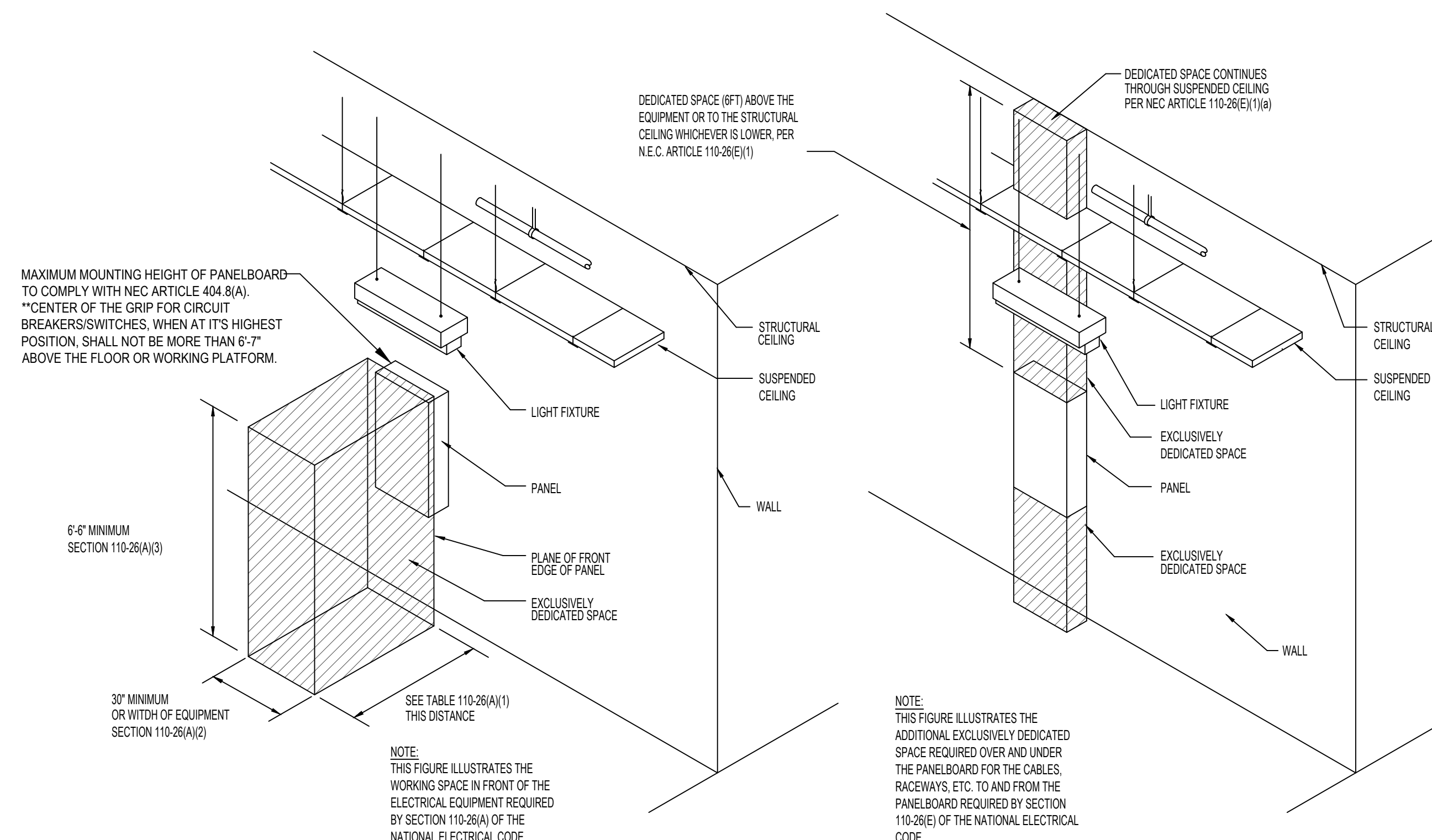
1. EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.
2. CONDUIT & WIRING BY HVAC, PLUMBING CONTRACTOR OR OTHER TRADES.
3. IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR.
4. A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER. LOCATE ADJACENT TO EQUIPMENT.
5. JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT. IF NO STARTER OR DISCONNECT IS SUPPLIED, A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING WILL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
6. IF THE ROOFTOP EQUIPMENT IS NOT PROVIDED WITH BUILT IN SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.
7. IN A SINGLE PRIME CONTRACT, IT IS THE RESPONSIBILITY OF THE PRIME CONTRACTOR TO COORDINATE BETWEEN THE ELECTRICAL AND THE OTHER TRADES.



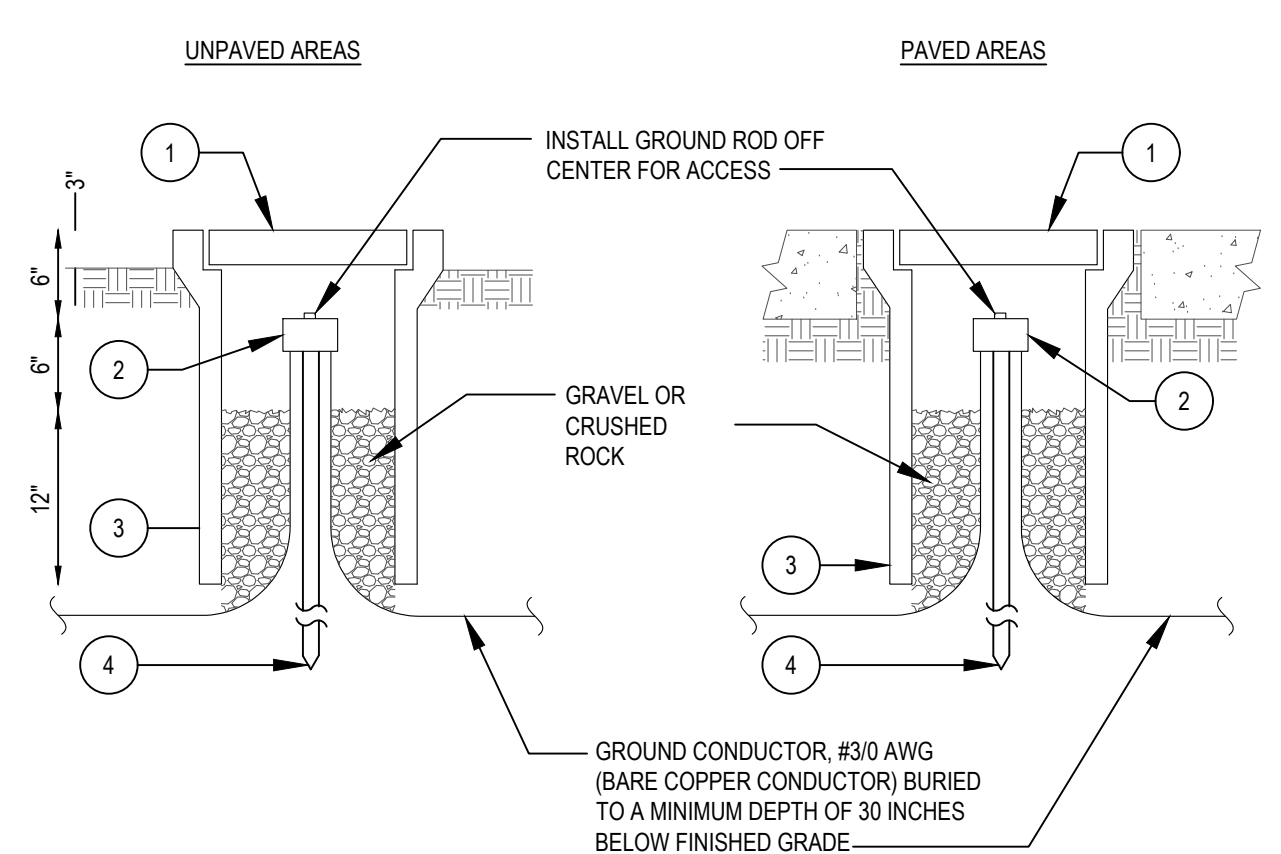
11 ELECTRICAL EQUIPMENT CONNECTION

E-601 SCALE: N.T.S.





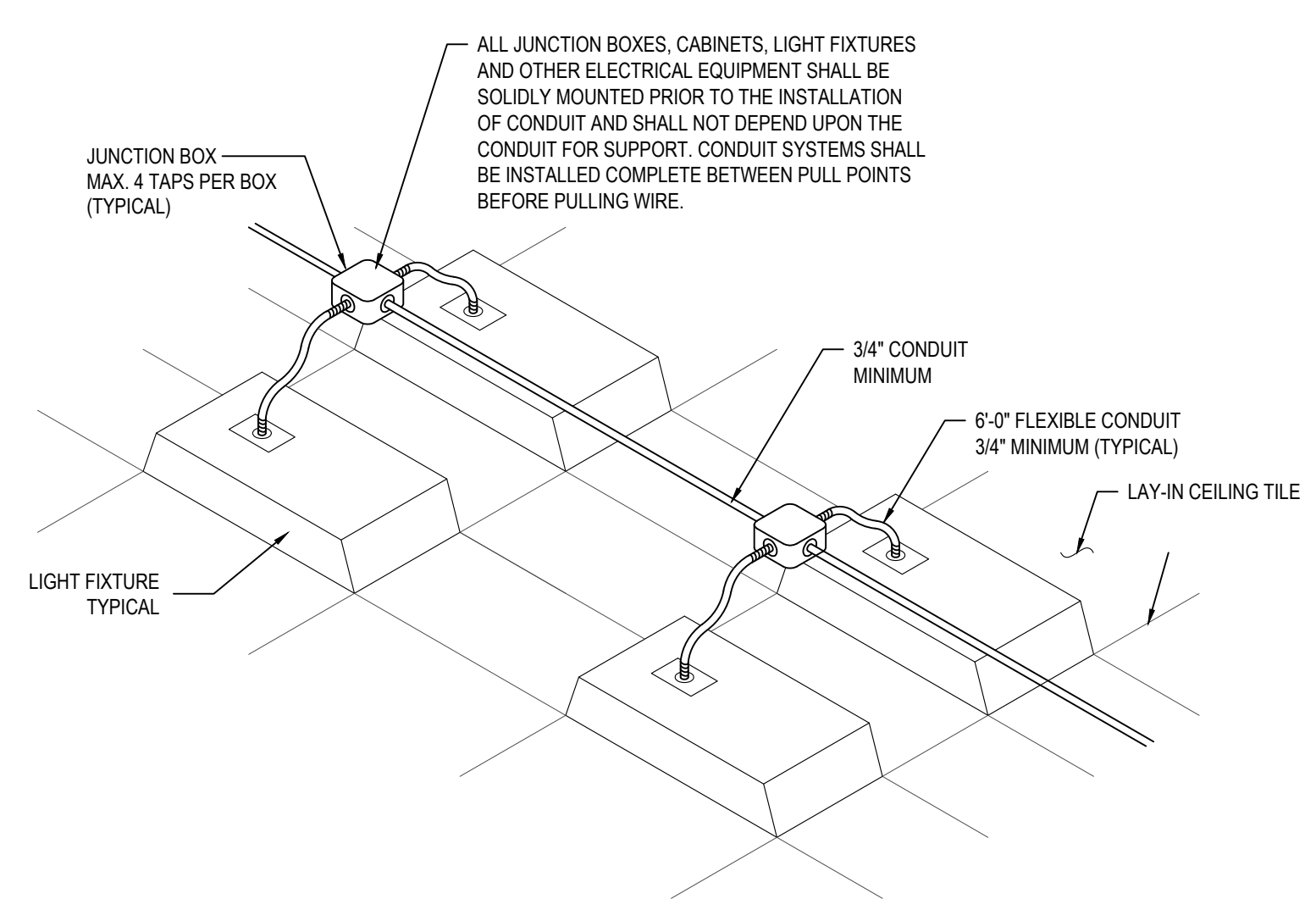
1 DEDICATED SPACE REQUIREMENTS FOR PANELBOARDS
E-602 SCALE: NTS



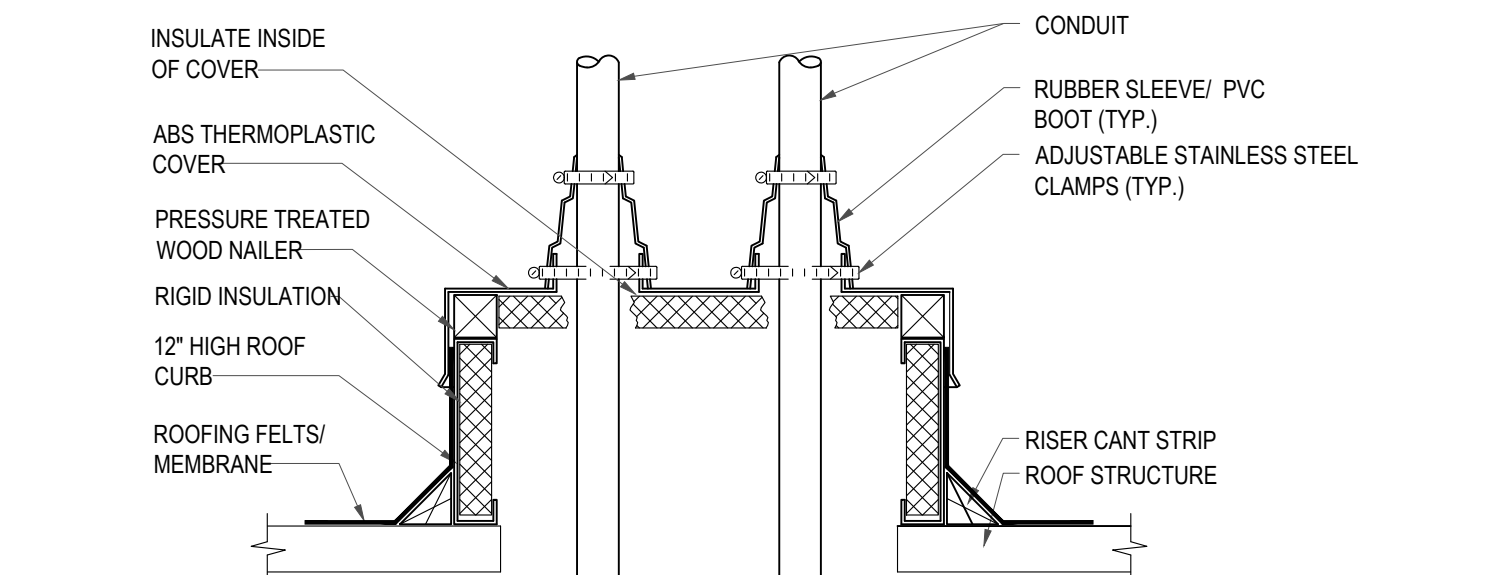
2 GROUND GRID INSPECTION WELL DETAIL
E-602 SCALE: NTS

LIST OF MATERIALS

ITEM NO.	QTY	DESCRIPTION
1	1	HARGER LIGHTNING PROTECTION CAST IRON OR STAINLESS STEEL COVER
2	1	CADWELD (EXOTHERMIC) CONNECTION TYPE GT TO TOP OF GROUND ROD
3	1	HARGER LIGHTNING PROTECTION PVC WELL (8" MIN. DIA. X 24" DEEP)
4	1	GROUND ROD COPPER-CLAD STEEL 3/4" DIA X 10'-0"

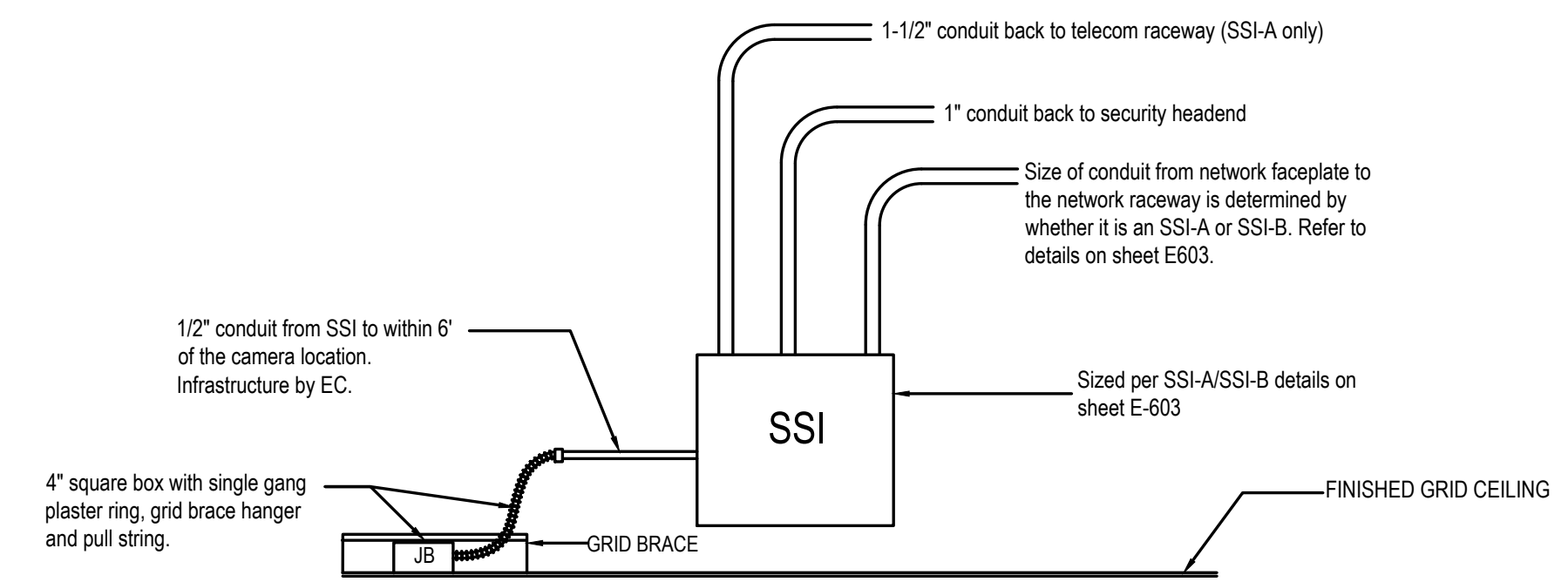


3 RECESSED LIGHT FIXTURE WIRING DETAIL
E-602 SCALE: NTS

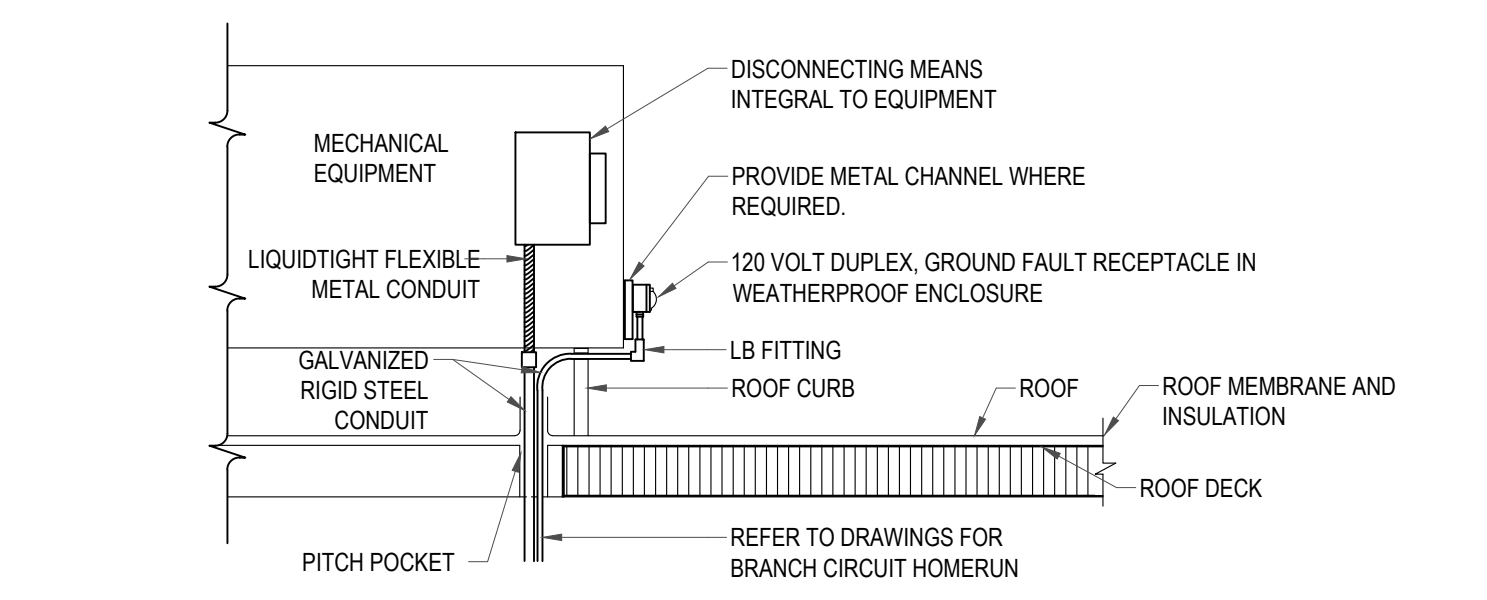


4 ROOF PENETRATION DETAIL
E-602 SCALE: NTS

NOTES:
1. ROOFING MODIFICATIONS/PENETRATIONS SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURER'S SPECIFICATIONS AND DETAILS TO MAINTAIN THE ROOFING SYSTEM WARRANTY. COORDINATE ALL ROOFING WORK WITH THE OWNER AND/OR ASSOCIATED CONTRACTOR.
2. WHERE POSSIBLE UTILIZE EXISTING ROOF PENETRATIONS.

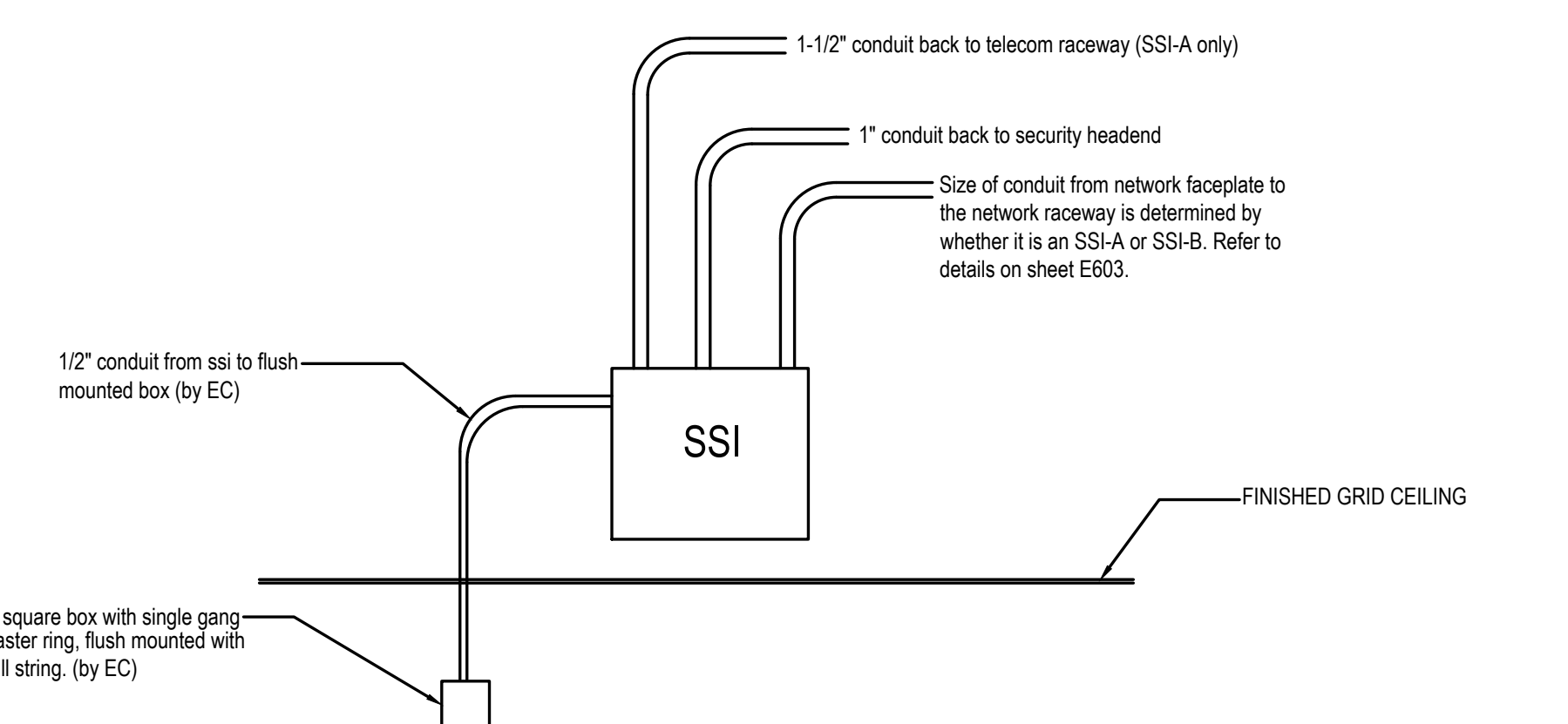


6 CEILING GRID MOUNTED IP CAMERA WITH SSI AND HEADEND CONNECTIVITY
E-602 SCALE: NTS

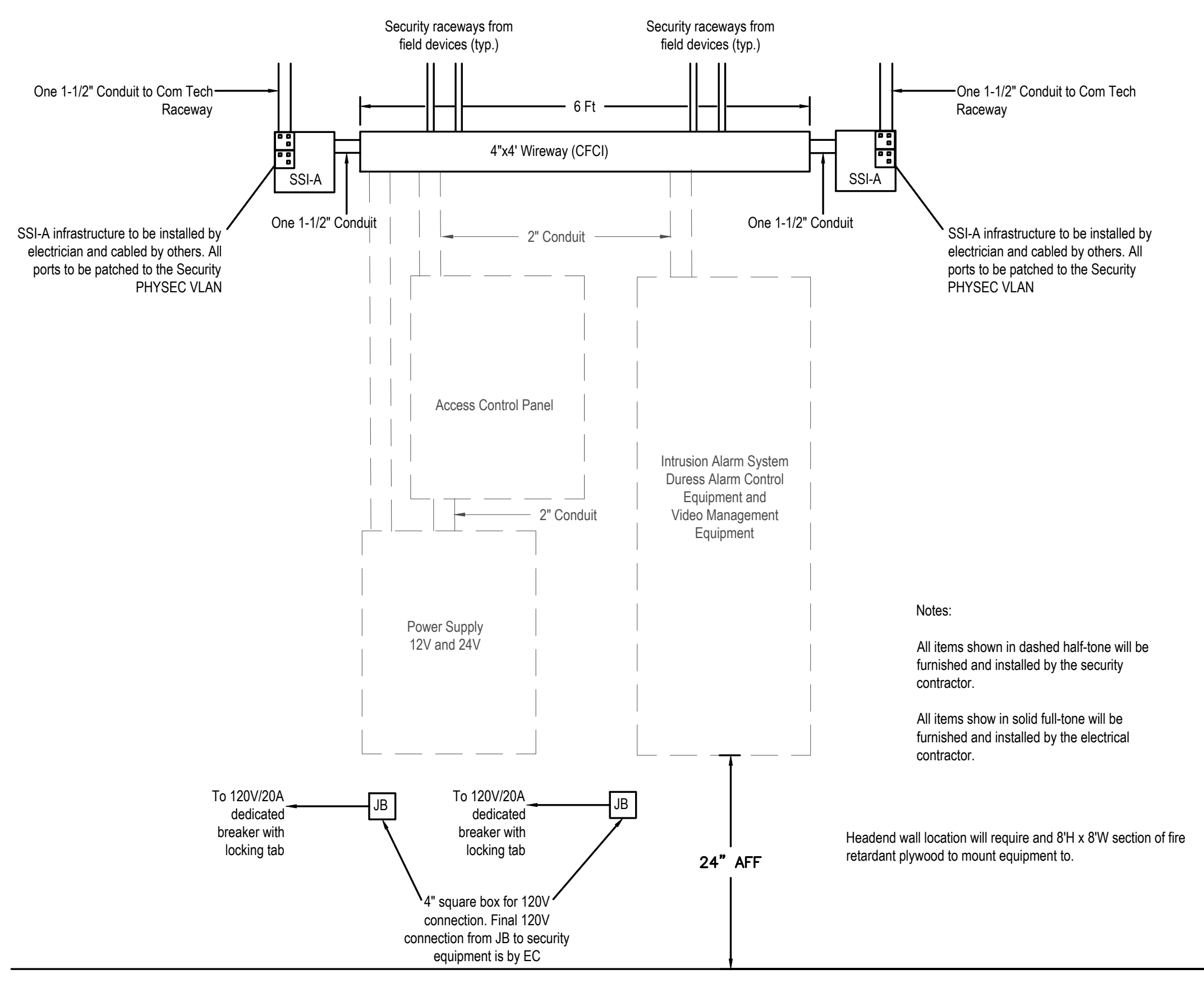


5 HVAC EQUIPMENT RECEPTACLE DETAIL
E-602 SCALE: NTS

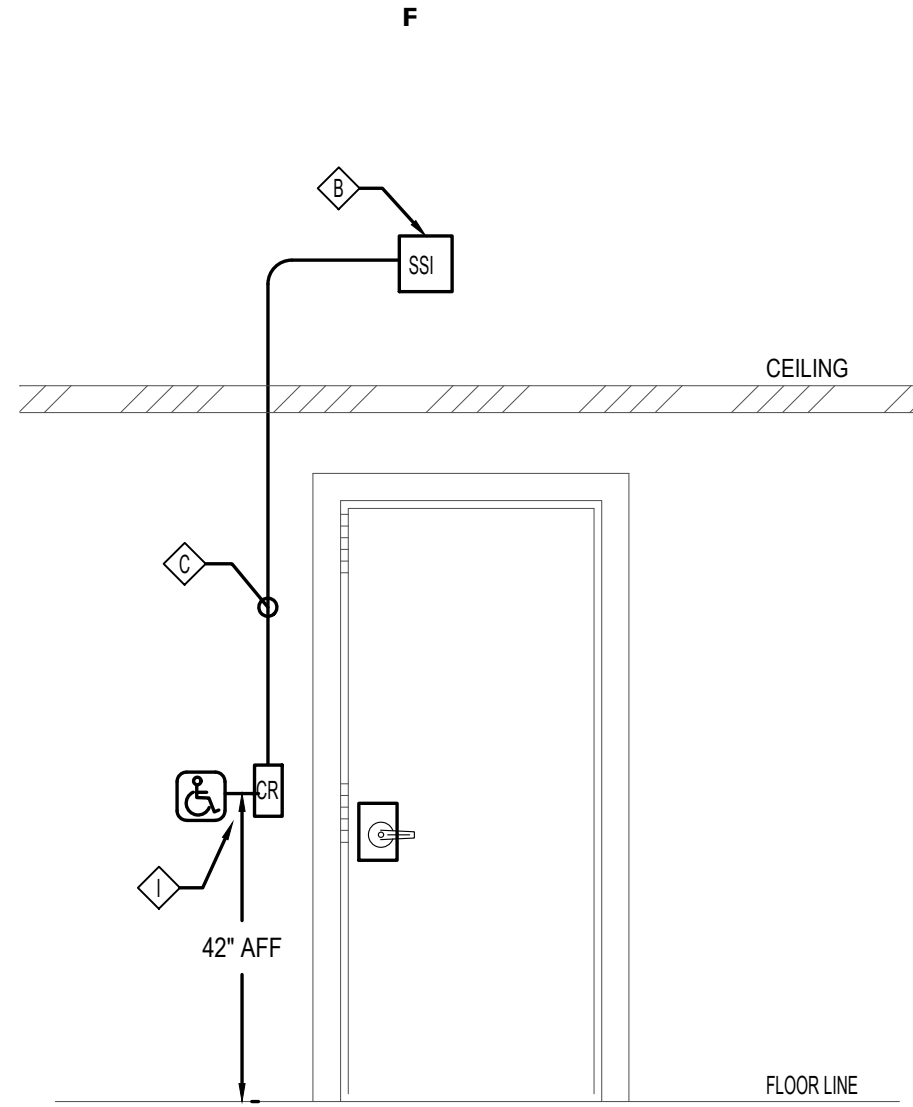
NOTES:
1. LOCATION OF RECEPTACLE AND DISCONNECT SWITCH IS REPRESENTATIVE AND SHALL BE INSTALLED PER MECHANICAL EQUIPMENT MANUFACTURERS RECOMMENDATIONS.
2. WORK SPACE IN ACCORDANCE WITH NEC 110.26 SHALL BE MAINTAINED.



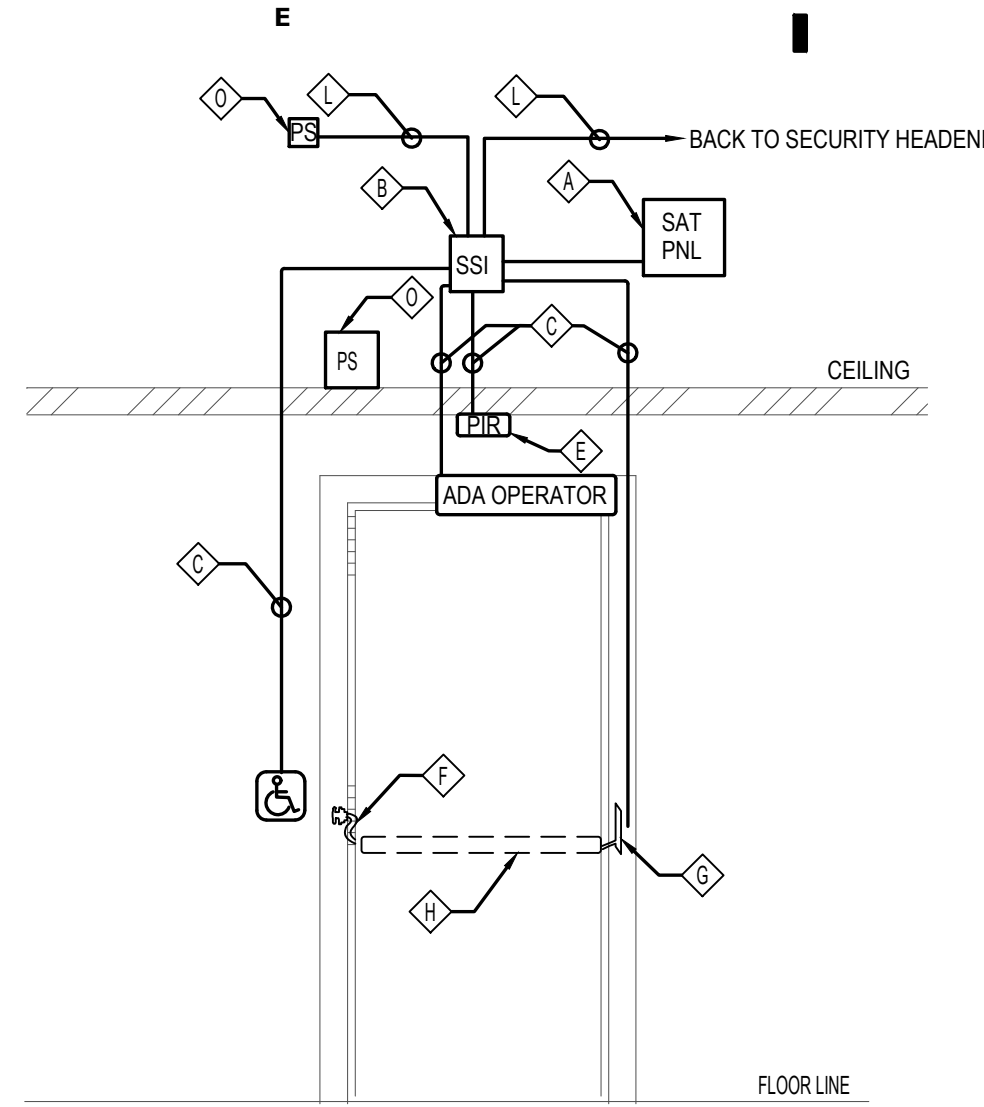
7 WALL FLUSH MOUNTED IP CAMERA WITH SSI AND HEADEND CONNECTIVITY
E-602 SCALE: NTS



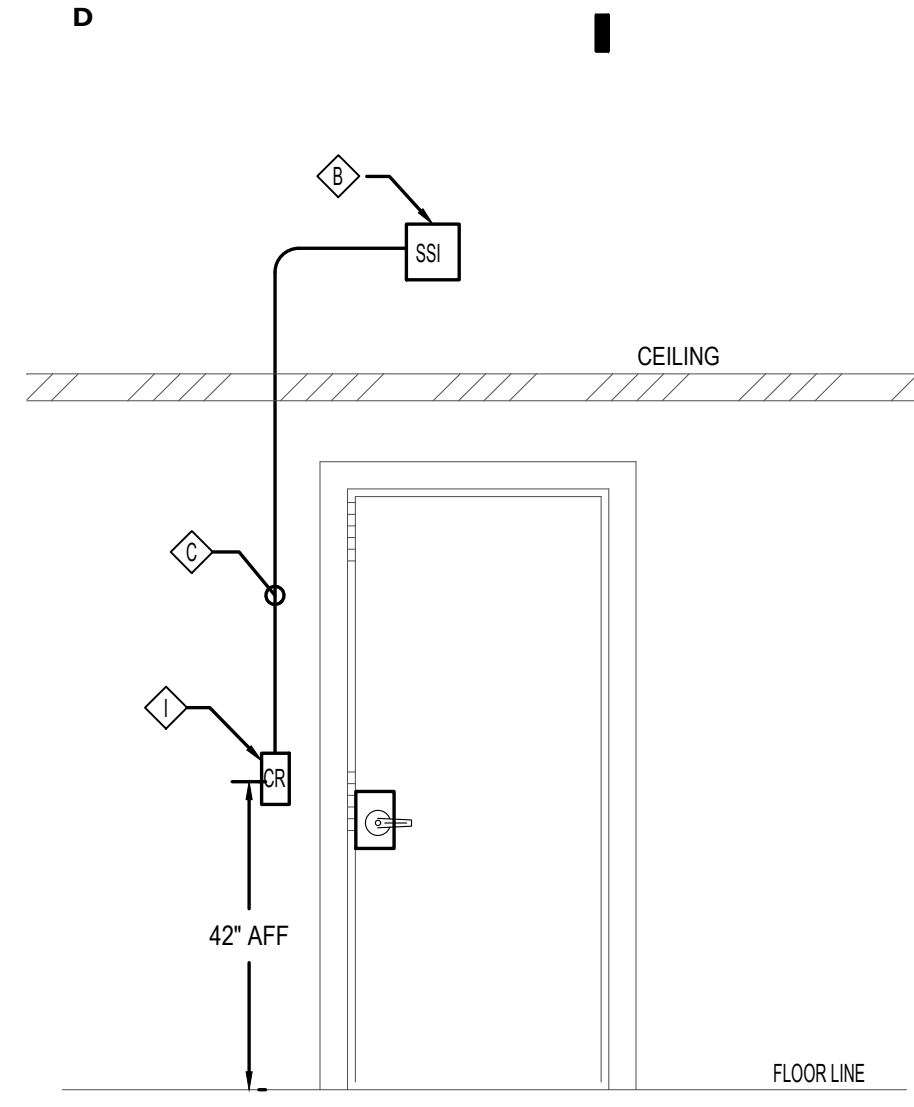
8 ACCESS CONTROL, VIDEO MANAGEMENT EQUIPMENT AND INTRUSION/DURESS CONTROL PANELS - MOUNTING DETAILS
E-602 SCALE: NTS



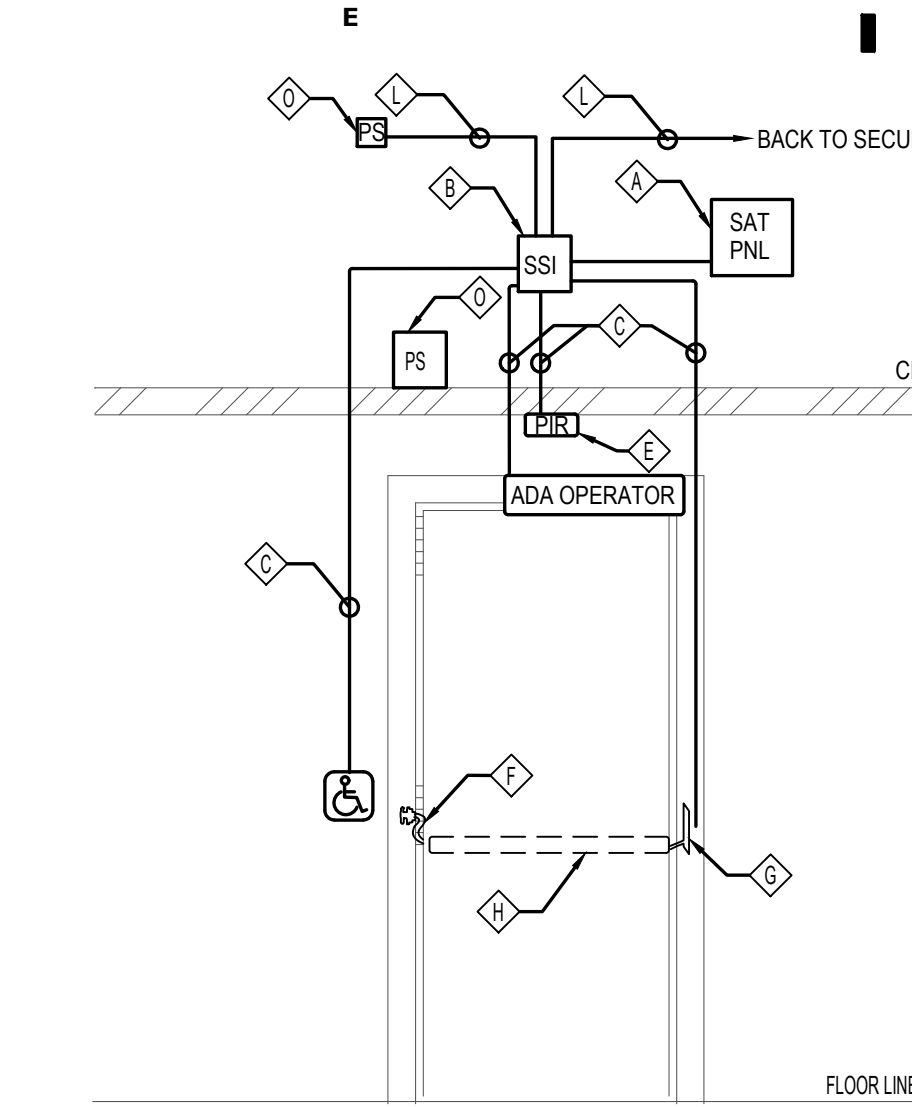
1 SECURITY DOOR WITH (1) CARD READER & ADA OPERATOR
E-603 SCALE: NTS



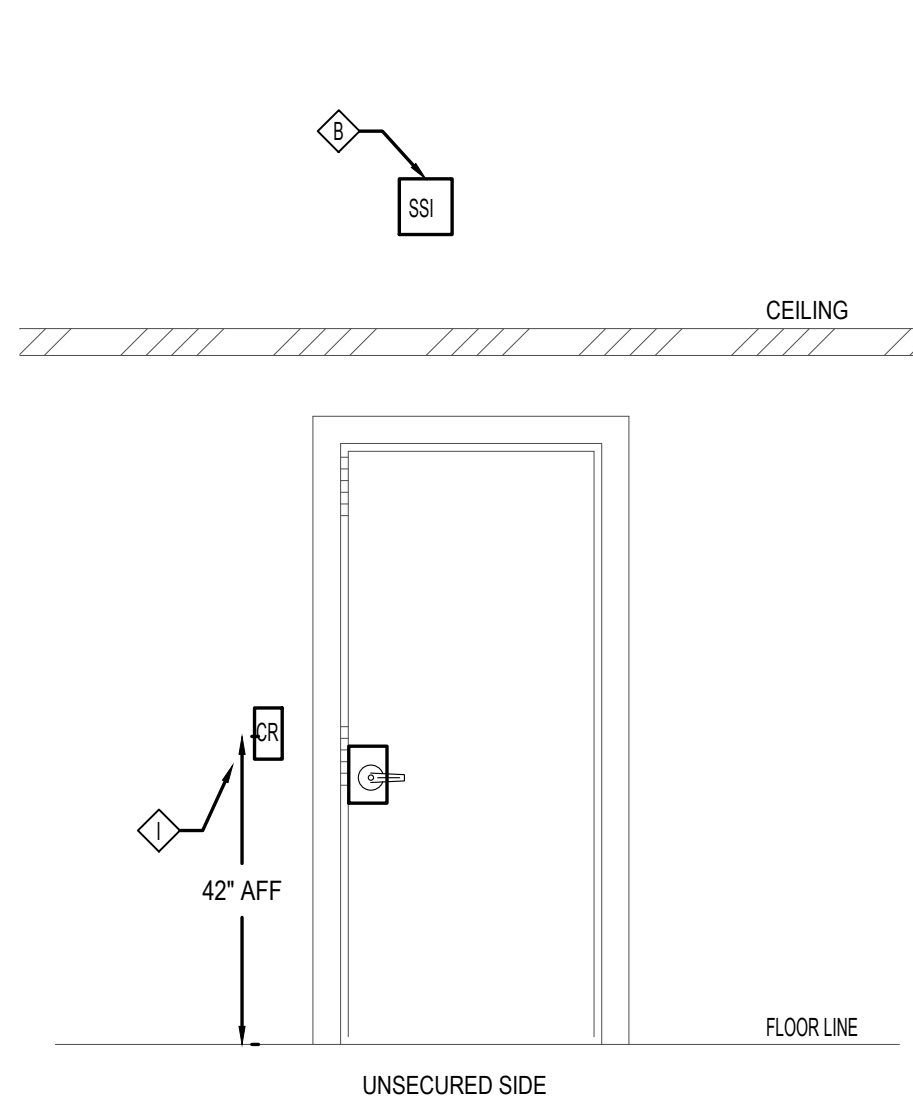
2 SECURITY DOOR WITH (1) CARD READER
E-603 SCALE: NTS



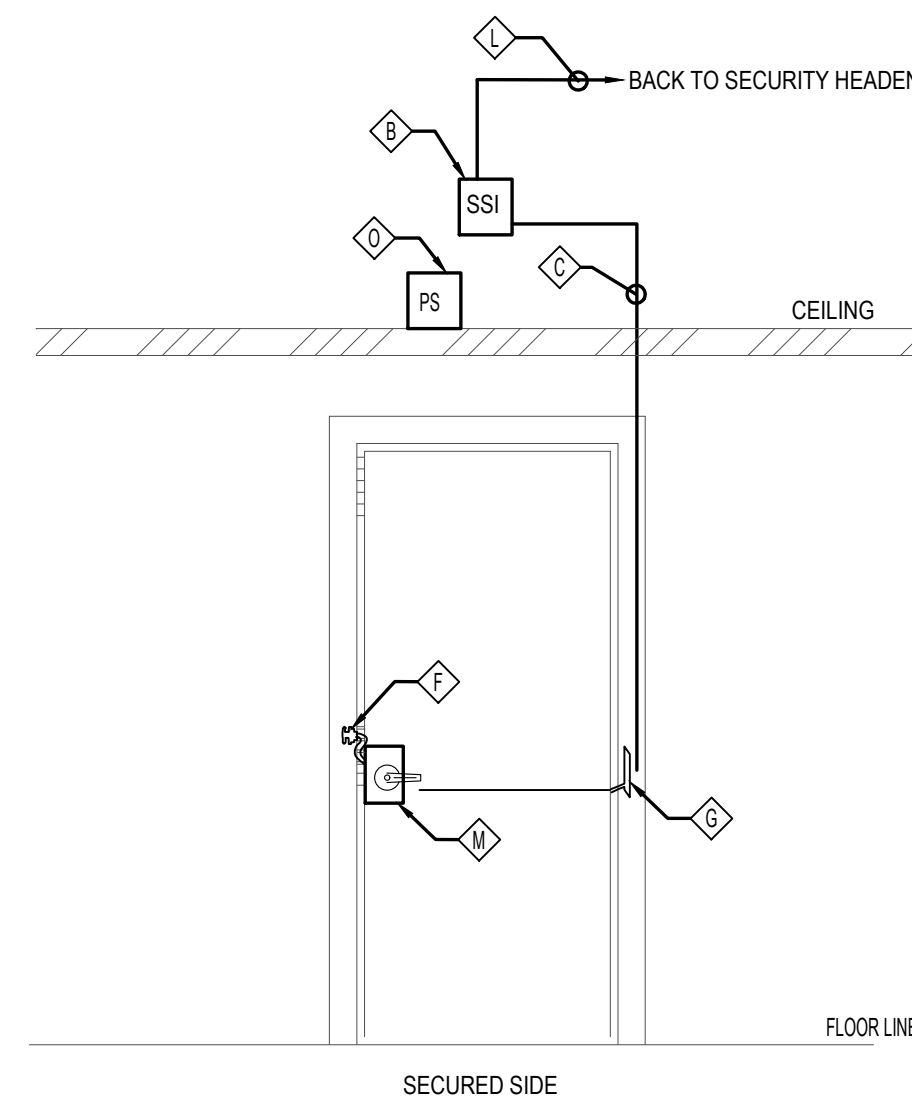
3 WCR SECURITY DOOR WITH (1) CARD READER
E-603 SCALE: NTS



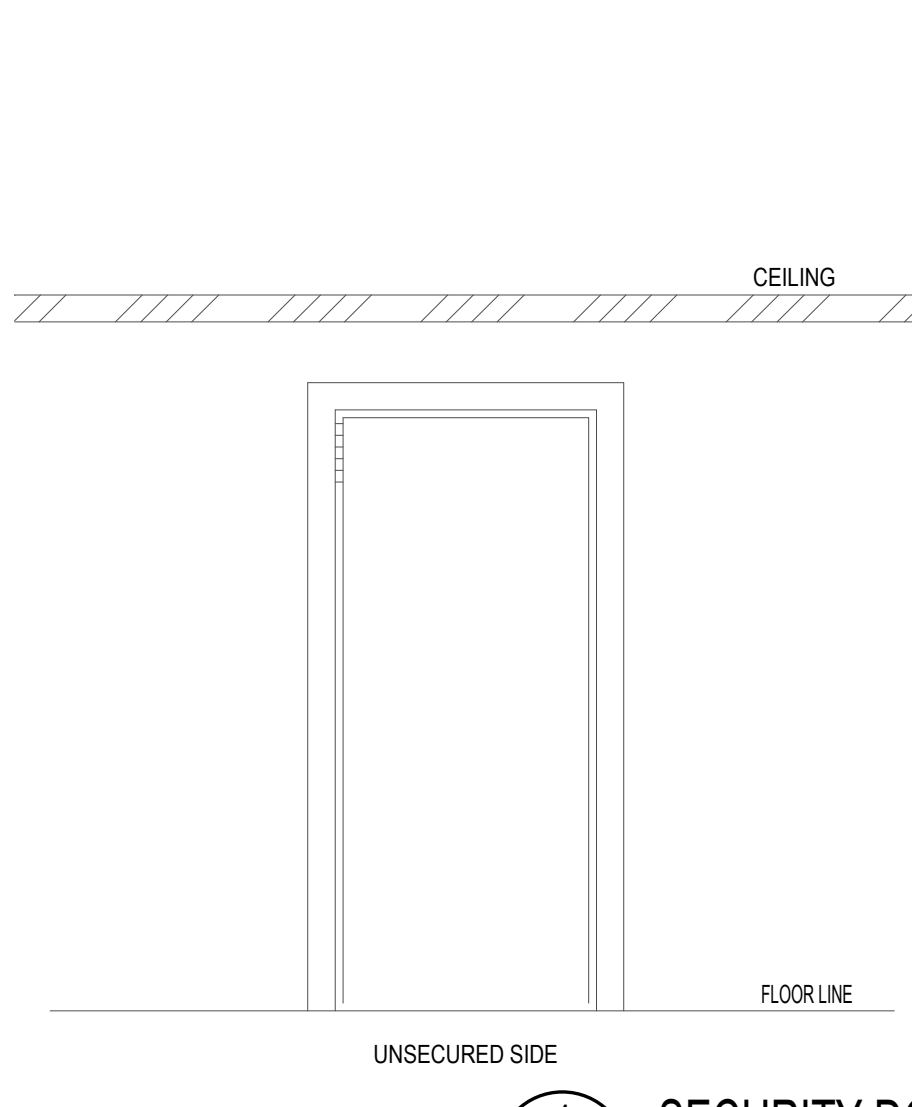
4 SECURITY DOOR WITH (1) MONITORED LEAF
E-603 SCALE: NTS



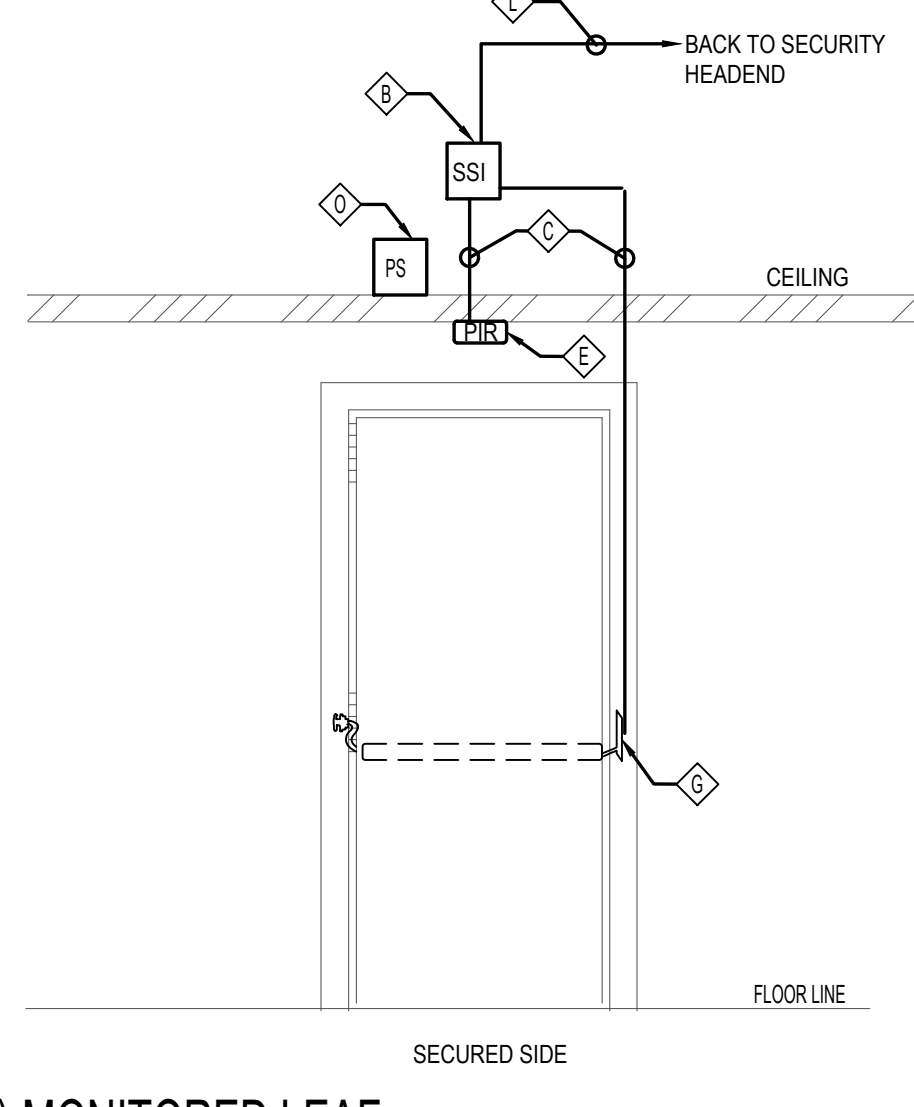
5 CR ROLL-UP DOOR WITH (1) CARD READER
E-603 SCALE: NTS



6 CEILING GRID MOUNTED (GWE) GATEWAY
E-603 SCALE: NTS

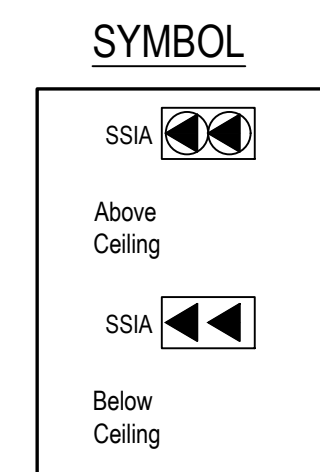


7 SECURITY INTERFACE OUTLET - SSI A
E-603 SCALE: NTS

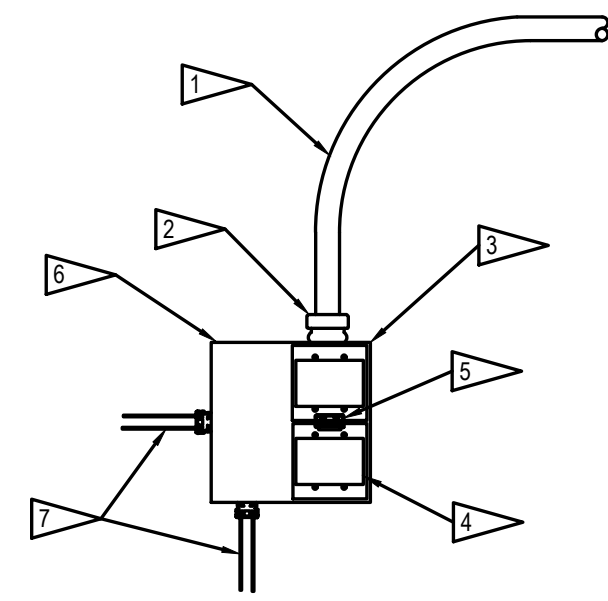


8 SECURITY INTERFACE OUTLET - SSI B
E-603 SCALE: NTS

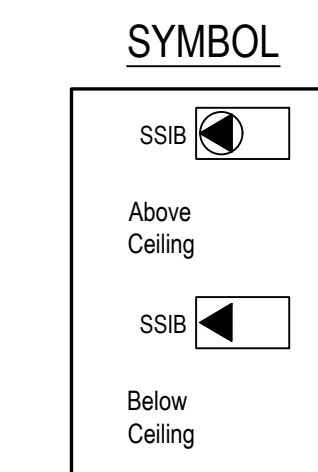
MARK	DESCRIPTION
⬠	PRIMARY ACCESS CONTROL PANEL INSTALLED AND PROVIDED BY NC STATE SECURITY CONTRACTOR
⬢	SEE SSI DETAIL ON THIS DRAWING.
⬠	1/2" CONDUIT INSTALLED BY ELECTRICAL CONTRACTOR.
⬠	LOCAL SOUNDER PROVIDED AND INSTALLED BY NC STATE SECURITY CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE INCLUDING SINGLE GANG BOX.
⬠	PIRSOUNDER PROVIDED AND INSTALLED BY NC STATE SECURITY CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE INCLUDING SINGLE GANG BOX.
⬠	DOOR POSITION SWITCH PROVIDED AND INSTALLED BY NC STATE SECURITY CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT PREP, FRAME PREP BY DOOR HARDWARE CONTRACTOR.
⬠	ELECTRIFIED TRANSFER HINGE INSTALLED BY DOOR HARDWARE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE.
⬠	ELECTRIFIED EXIT DEVICE WITH INTERNAL REQUEST-TO-EXIT SWITCH AND LATCH BOLT. MONITOR INSTALLED BY DOOR HARDWARE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE.
⬠	PROVIDE SINGLE GANG BOX FOR CARD READER OR KEYPAD. CARD READER PROVIDED BY NC STATE SECURITY CONTRACTOR. MOUNT SINGLE GANG BOX 6"-10" FROM DOOR FRAME.
⬠	MECHANICAL EXIT DEVICE WITH INTERNAL REQUEST-TO-EXIT SWITCH AND LATCH BOLT. MONITOR INSTALLED BY DOOR HARDWARE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE.
⬠	ELECTRICAL CONTRACTOR SHALL PROVIDE 8"X8"X4" JUNCTION BOX.
⬠	1" CONDUIT INSTALLED BY ELECTRICAL CONTRACTOR
⬠	ELECTRIFIED MORTISE LOCK (SCHLAGE 'LEMB WIRELESS LOCK' WITH LR/RX AND DPS INSTALLED BY DOOR HARDWARE CONTRACTOR.
⬠	SECONDARY ACCESS CONTROL PANEL PROVIDED BY NC STATE SECURITY CONTRACTOR.
⬠	POWER SUPPLY (APPROXIMATELY 12" X 14") FOR DOOR HARDWARE BY OTHERS. ELECTRICAL CONTRACTOR SHALL PROVIDE DEDICATED 120VAC CIRCUIT AND CONNECTIVITY
⬠	ADA OPERATOR AND PUSH PLATES INSTALLED BY DOOR HARDWARE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE.



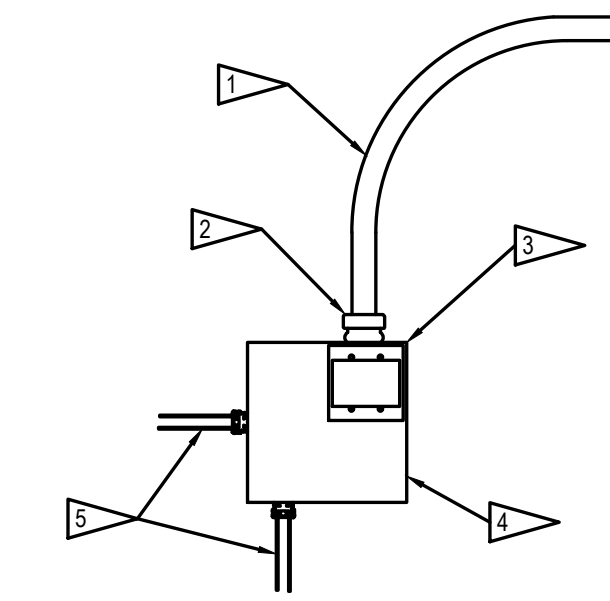
- KEYNOTES:**
- 1-1/2" EMT CONDUIT TO TELECOM WIREWAY
 - 1-1/2" EMT COMPRESSION TYPE CONNECTOR. ATTACH IN CENTER OF WIREMOLD BOX AS SHOWN.
 - WIREMOLD V-2444-2 TWO-GANG SURFACE MOUNTED OUTLET BOX. PROVIDE PULLSTRING FROM OUTLET TO WIREWAY. SECURE AT BOTH ENDS.
 - WIREMOLD V-2444-2 TWO-GANG SURFACE MOUNTED OUTLET BOX.
 - 1" CONDUIT CHASE NIPPLE AND LOCKNUT.
 - 10"X10"X6" JUNCTION BOX WITH SCREW COVER.
 - EMT CONDUIT TO SECURITY SYSTEM ENDPOINT DEVICES (BY OTHERS)



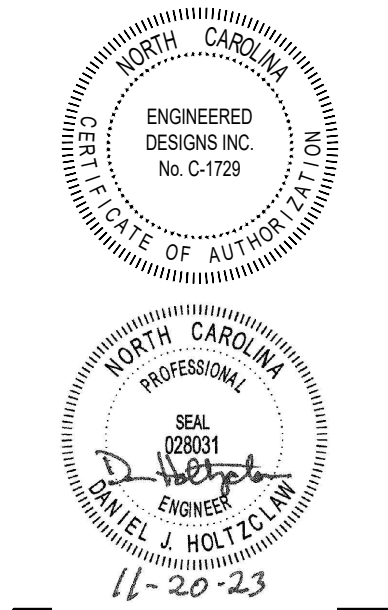
- NOTES:**
- CABLING SUPPORTED UWS 3.0 BUILDINGS - 4 to 6 IP CONNECTIONS
 - INSTALL BOX BETWEEN 9' AND 14' ABOVE FINISHED FLOOR (AFF) UNLESS APPROVED BY NCSU COMTECH OR NCSU SAT OFFICE.



- KEYNOTES:**
- 1-1/2" EMT CONDUIT TO TELECOM WIREWAY
 - 1-1/2" EMT COMPRESSION TYPE CONNECTOR. ATTACH IN CENTER OF WIREMOLD BOX AS SHOWN.
 - WIREMOLD V-2444-2 TWO-GANG SURFACE MOUNTED OUTLET BOX. PROVIDE PULLSTRING FROM OUTLET TO WIREWAY. SECURE AT BOTH ENDS.
 - 8"X8"X6" JUNCTION BOX WITH SCREW COVER.
 - EMT CONDUIT TO SECURITY SYSTEM ENDPOINT DEVICES (BY OTHERS)



- NOTES:**
- CABLING SUPPORTED UWS 3.0 BUILDINGS - 4 to 6 IP CONNECTIONS
 - INSTALL BOX BETWEEN 9' AND 14' ABOVE FINISHED FLOOR (AFF) UNLESS APPROVED BY NCSU COMTECH OR NCSU SAT OFFICE.



date note