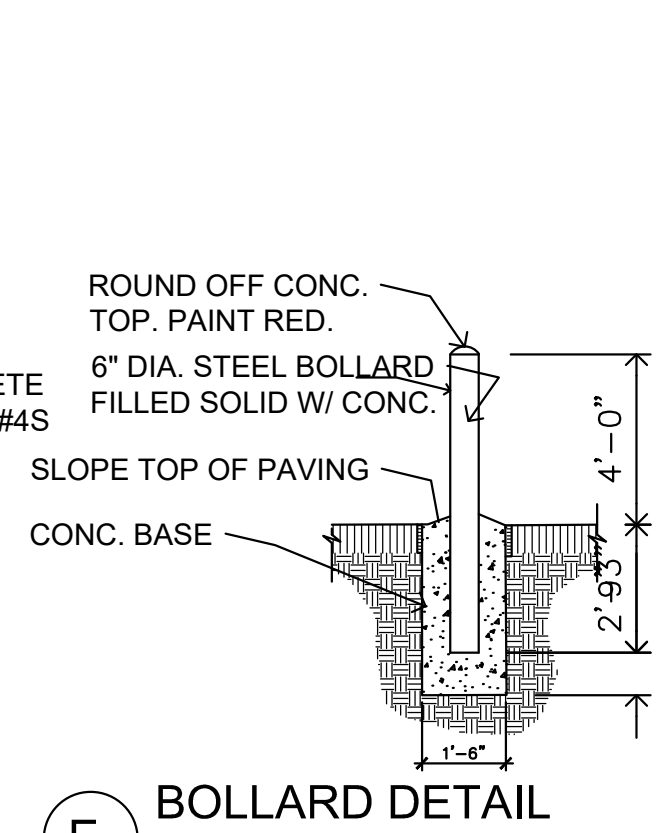
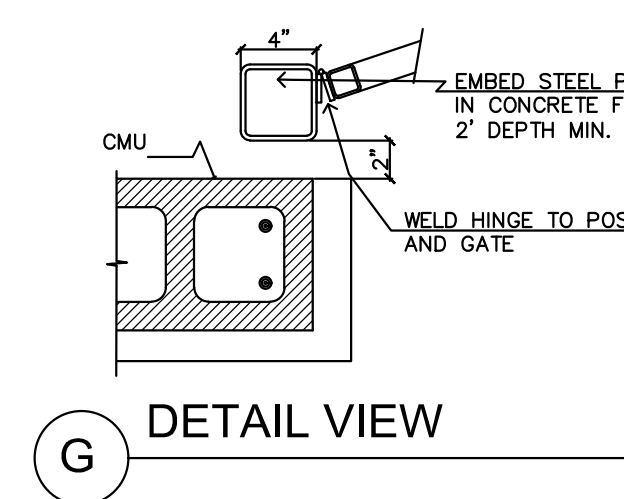


A PLAN VIEW

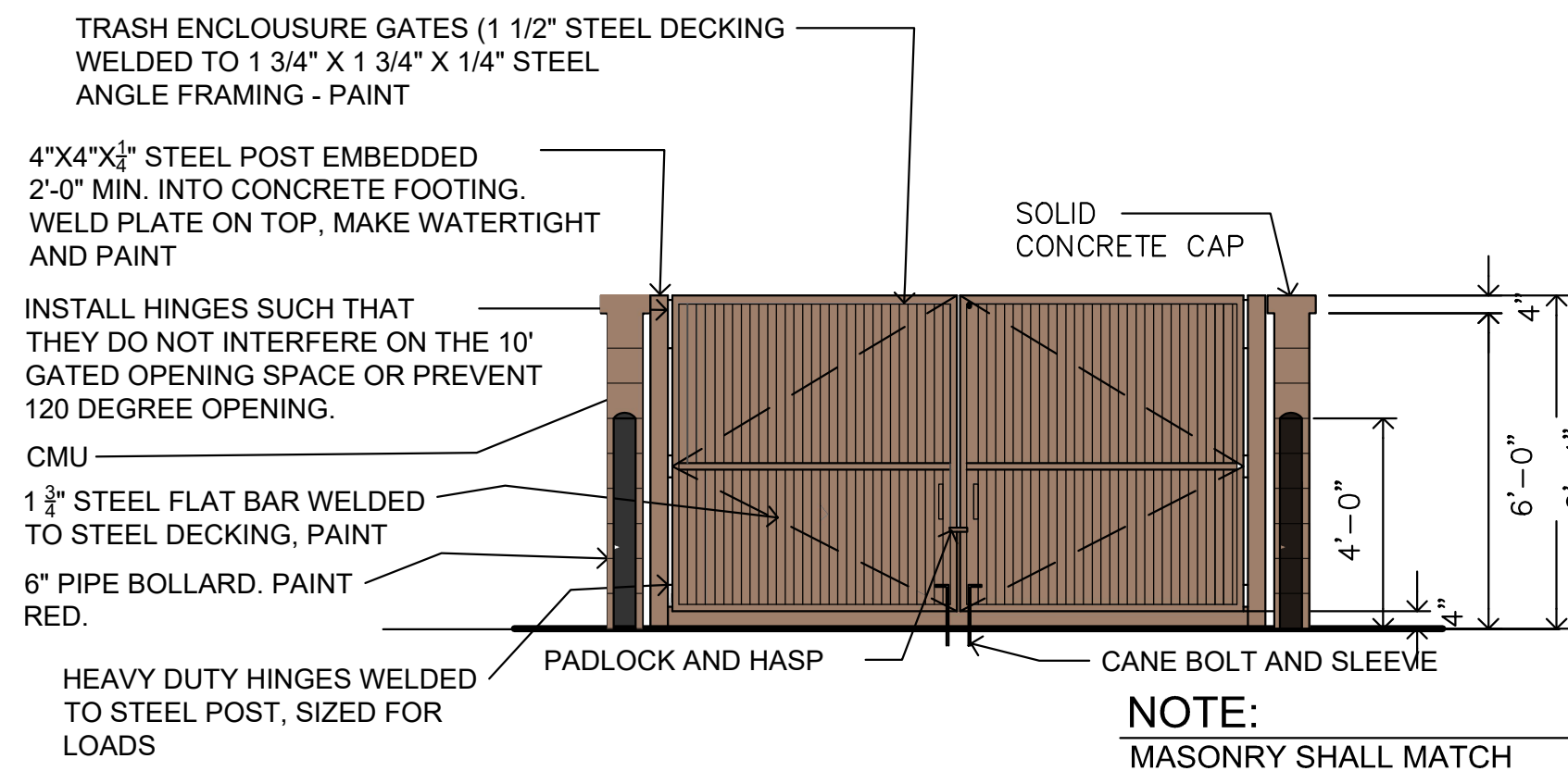
3 TRASH ENCLOSURE DETAIL
NO SCALE



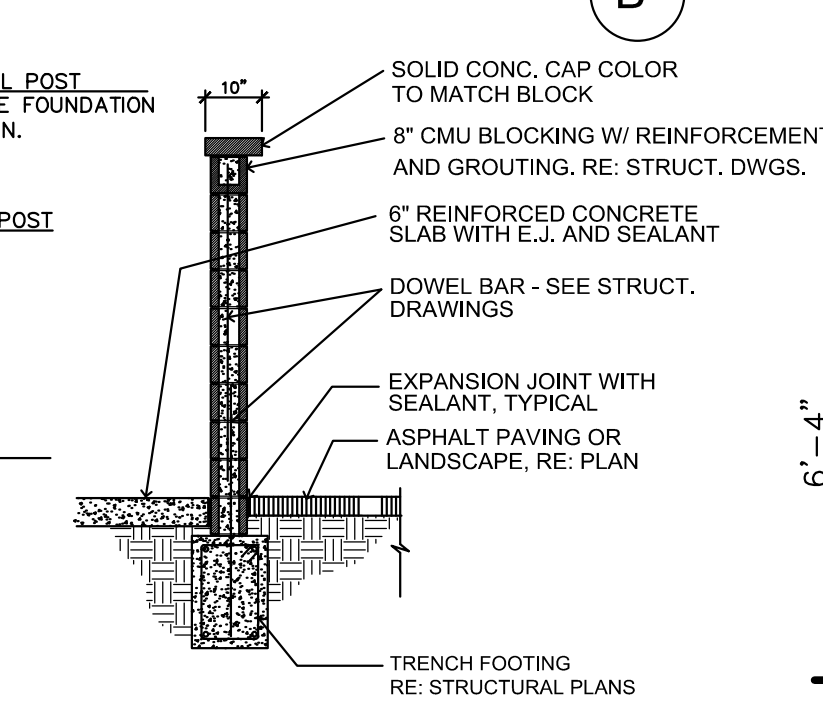
E BOLLARD DETAIL



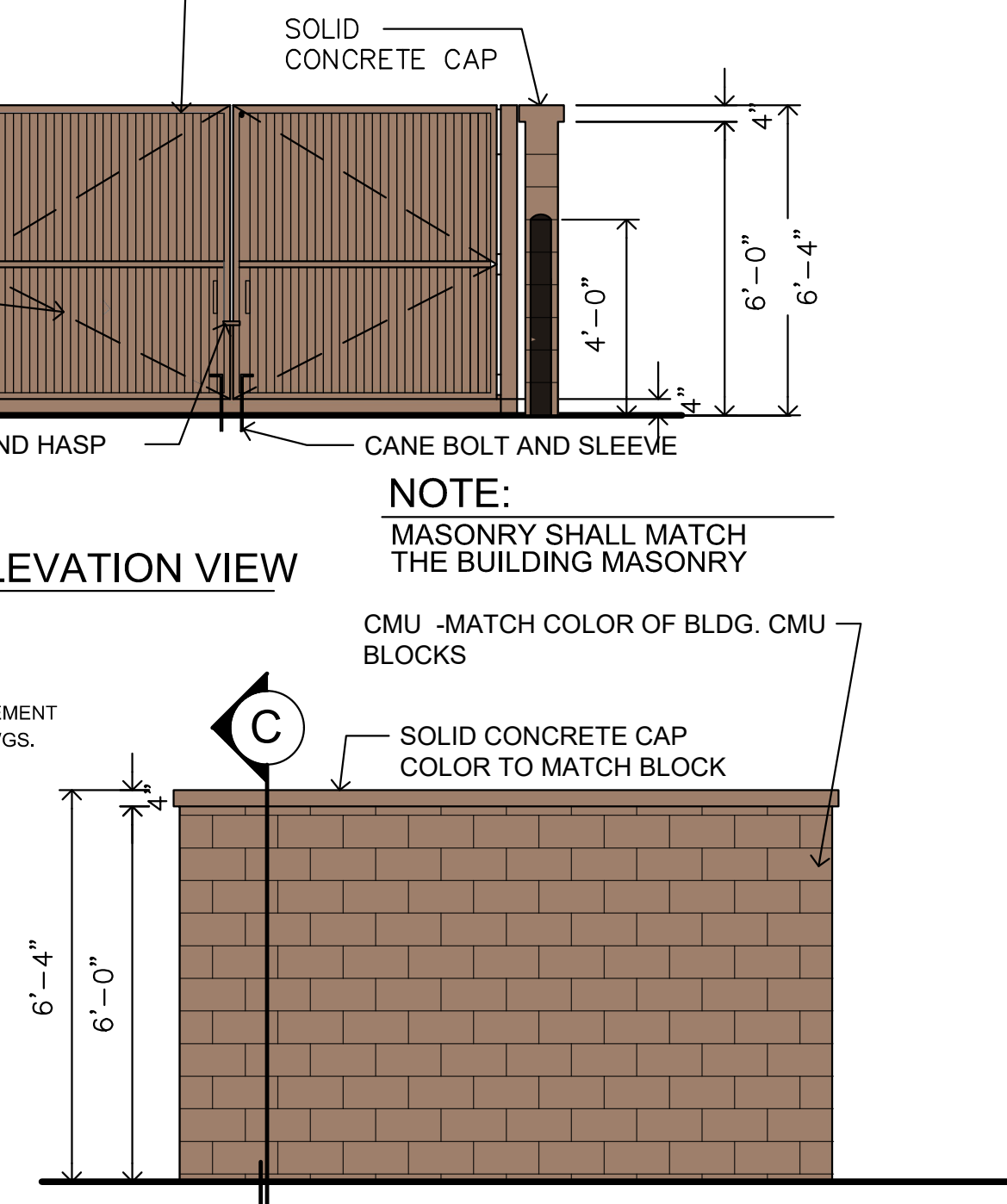
G DETAIL VIEW



C BLOCK WALL DETAIL



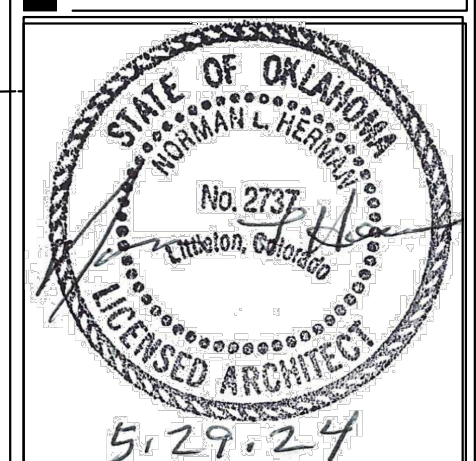
B ELEVATION VIEW



F WALL ELEVATION

BRAKES PLUS

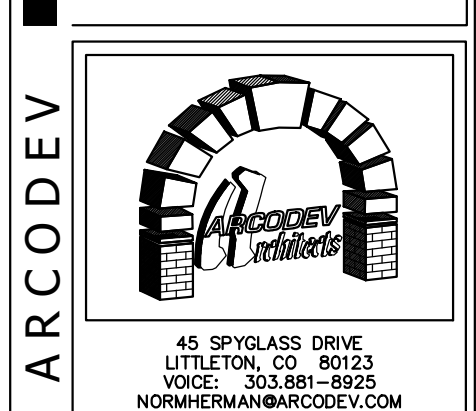
4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA



ARCHITECT OF RECORD

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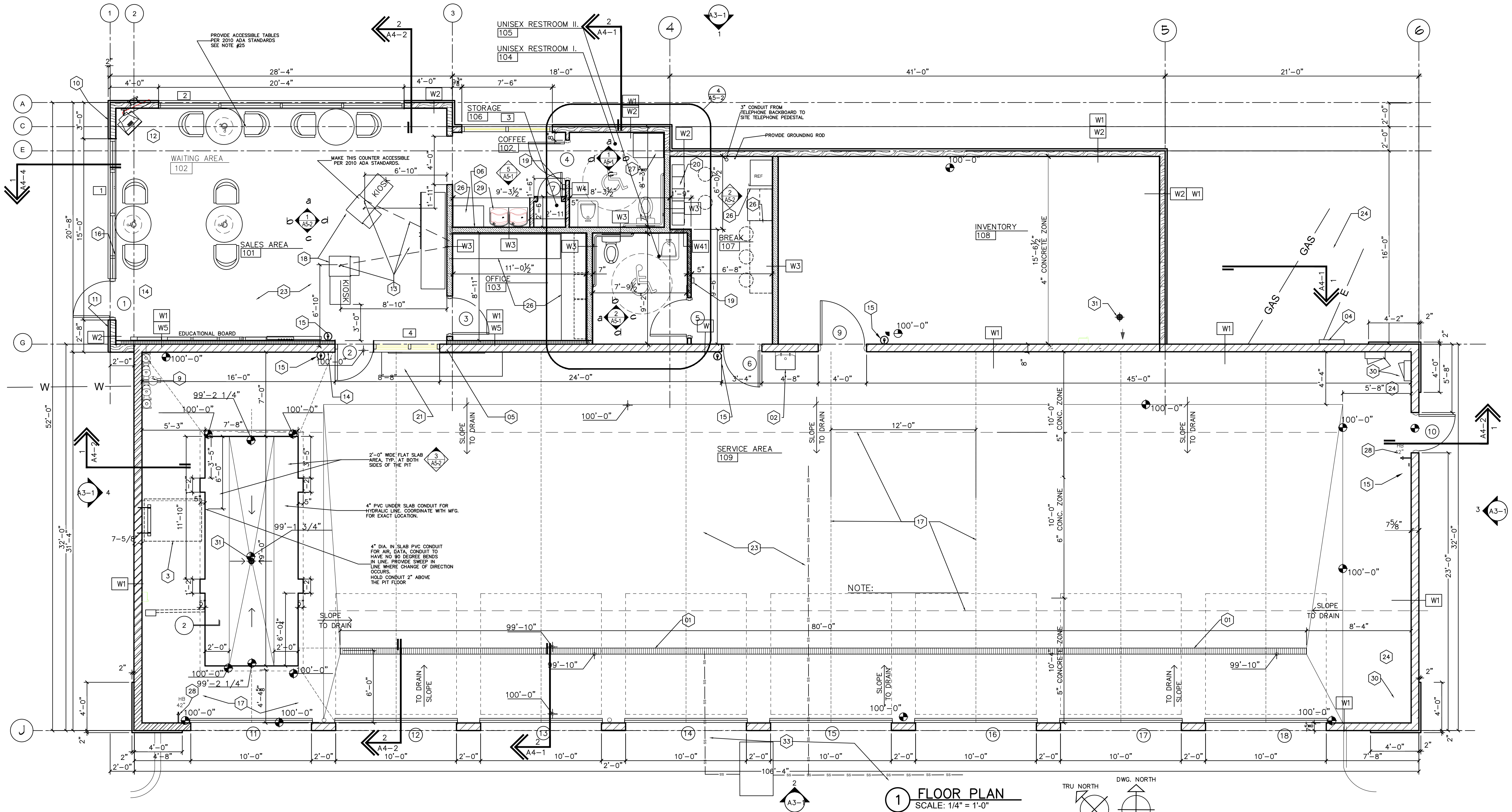


45 SPYGLASS DRIVE
LITTLETON, CO 80123
VOICE: 303.681-8925
NORMAN@ARCODEV.COM

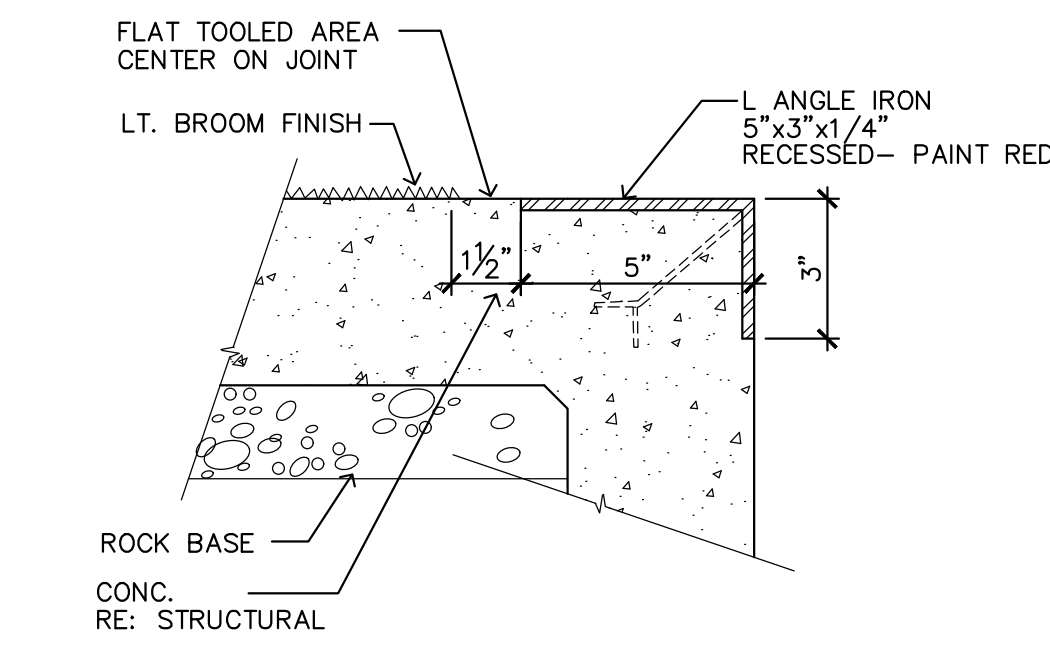
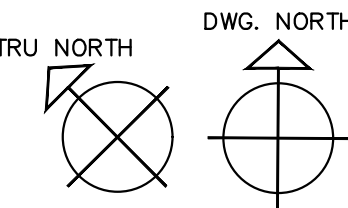
SHEET

A1-1

SITE PLAN AND DETAILS



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



2 "L" MTL. AT RECESSED SLAB TYP.
SCALE: 1/4" = 1'-0" (4,862sft)

WALLS ASSEMBLIES:			
ID	WALL TYPE / SYMBOL	DESCRIPTION	UL LISTING
W1	8" NOM. CONCRETE BLOCK FULL HEIGHT / DECK	NOMINAL (see PLAN) 16x8 LIGHT WEIGHT CONCRETE BLOCK. PROVIDE LOOSE FILL INSULATION IN OPEN CELLS WHERE EXTERIOR. GROUT CELLS SOLID AS SPECIFIED BY THE STRUCTURAL DRAWINGS. MIN R VALUE OF 8.	-
W2	EXTERIOR NEW WOOD STUD WALL	3/4" GYP BD EACH SIDE OVER 2X6 WOOD STUDS @ 16" O.C. TO ELEVATION NOTED ON DRAWINGS. PROVIDE MOISTURE RESISTANT GYP BD AT WET LOCATIONS IN RESTROOM. USE EXTERIOR SHEATHING ON OUTSIDE SURFACES. PROVIDE MIN. FULL BATT R-19 INSULATION W/ VAPOR BARRIER (#30 KRAFT PAPER OF EQUAL CLASS II VAPOR BARRIER). PROVIDE WATER BARRIER GREENGUARD MAX BUILDING WRAP. PROVIDE DRAINAGE PER IRC SECTION 1404.2 & INSTALLED PER 1405.	-
W3	INTERIOR NEW WOOD STUD WALL TO STRUCTURE	3/4" GYP BD EACH SIDE OVER 2X6 WOOD STUDS @ 16" O.C. TO UNDERSIDE OF STRUCTURE ABOVE. PROVIDE MOISTURE RESISTANT GYP BD AT WET LOCATIONS IN RESTROOM.	-
W4	NEW INTERIOR WOOD STUD WALL	3/4" GYP BD EACH SIDE OVER 2X4 WOOD STUDS @ O.C.	-
W41		SAME AS W4, BUT HEIGHT IS ONLY 8'	-
W5	NEW INTERIOR FURRING	3/4" GYP BD OVER 2X2 WOOD FURRING STUDS @ 16" O.C. TO 6" ABOVE CEILING. PROVIDE FULL BATT INSULATION IN FLANGED CAVITY.	-
W6	NEW INTERIOR WOOD STUD LOW-WALL	2X2 STEEL POSTS @ 4'-0" O.C. MAX. PROVIDE 2X3 WOOD STUD INFILL FRAMING BETWEEN POSTS. PROVIDE 3/4" GYP BD EACH SIDE OVER 3/4" CDX PLYWOOD AND LAMINATE. REFER TO DETAIL A6-A-601.	-
GENERAL WALL CONSTRUCTION NOTES:			
PROVIDE SLIP TRACK HEAD RECEPTOR WHERE REQUIRED. ALL WALLS AROUND RESTROOMS TO RECEIVE R-19 BATT INSULATION. ALL RESTROOM CEILINGS TO RECEIVE R-19 BATT INSULATION.			

FLOOR PLAN KEYNOTES:

- 6" WIDE CONTINUOUS PRE-FORMED TRENCH DRAIN, MAX OPENING = 1/2". SEE PLUMBING DRAWINGS AND DRAIN SPEC.
- DEEP-BASIN SERVICE SINK. RE: MECHANICAL DRAWINGS. PROVIDE 48" HIGH STAINLESS STEEL PANEL ON WALL BEHIND SINK.
- ROOF LADDER (HATCH ABOVE) - RE: 2/A2-4 - COORDINATE EXACT LOCATION WITH ROOF JOIST LOCATIONS.
- ELECTRICAL CONNECTION. REFER TO ELECTRICAL DRAWINGS.
- PROVIDE ELECTRICAL CONDUIT FROM 18" AFF TO ABOVE CEILING AND PENETRATE THROUGH MASONRY WALL TO OFFICE.
- COLD WATER LINE FOR COFFEE MACHINE. RE: PLUMBING DRAWINGS.
- N/A.
- NOT USED.
- BACK FLOW PREVENTER. SEE CIVIL DRAWINGS. REFER TO PLUMBING DRAWINGS.
- PROVIDE KEY DROP BOX. MODEL NO. DSP2014K AS MANUFACTURED BY AMSEC. INSTALLED BY CONTRACTOR.
- KNOX BOX. OBTAINED FROM LOCAL FIRE DEPARTMENT AND INSTALLED BY CONTRACTOR. VERIFY LOCATION WITH FIRE DEPARTMENT PRIOR TO INSTALLATION.
- PROVIDE BACKING AS REQUIRED TO SUPPORT TV MOUNTING BRACKET. COORDINATE WITH OWNER.
- CONDUIT IN SLAB FOR POWER & DATA.
- PROVIDE SIGN AT EXIT "MAXIMUM NUMBER OF OCCUPANTS".
- PROVIDE TYPE 20B FIRE EXTINGUISHER (VERIFY TYPE, SIZE, AND LOCATION WITH FIRE DEPARTMENT).
- PROVIDE GYP BD AT END OF PART. (PART).
- CONTROL JOINTS TYP. U.
- KIOSK AND PRINTER CABINET FURNISHED AND INSTALLED BY CONTRACTOR.
- PROVIDE ACCESSIBLE SIGNAGE AT RESTROOM AS REQUIRED PER CODE.
- LOCKERS PROVIDED AND INSTALLED BY GENERAL CONTRACTOR.
- SERVICE COUNTER FURNISHED AND INSTALLED BY CONTRACTOR.
- 4'-0" W X 7'-4" H OPENING.
- CONCRETE SLAB - RE: STRUCTURAL DRAWINGS.
- PROVIDE CONDUIT FOR CONTROLS AND PIPING TO LANDSCAPE MANIFOLD.
- CONTRACTOR SHALL PROVIDE BISTRO TABLES AS SHOWN ON THE FLOOR PLAN AND DETAIL 5B SHEET A6-2.
- MILLWORK FURNISHED AND INSTALLED BY GENERAL CONTRACTOR.
- 24" W X 30" H X 12" D UPPER CABINET FURNISHED AND INSTALLED BY GC. MOUNT BOTTOM AT 40" AFF.
- HOSE BIB. REFER TO PLUMBING DRAWINGS.
- WATER FOUNTAIN.
- ELECTRICAL CIRCUIT PANELS.
- FLOOR DRAIN.
- METAL AWNING ABOVE.
- PROVIDE 6" DEEP CONCRETE APRON PAD W/ STEEL REINFORCING 10' OUT FROM BUILDING.

GENERAL NOTES:

- PAIN EXPOSED UNFINISHED METALS PER SPECIFICATIONS. COLOR TO MATCH ADJACENT SURFACE IF NOT SPECIFIED.
- MAKE SURE TO HAVE A MINIMUM OF 6" CONCRETE UNDER HEAVY EQUIPMENT.
- KEEP ALL EXPOSED PLUMBING AND CONDUIT LINES AT LEAST 6" ABOVE F.F.
- PROVIDE ANCHORS, BOLT AND OTHER NECESSARY FASTENERS AND BLOCKING AS REQUIRED AND ATTACH ACCESSORIES SECURELY TO WALLS AND PARTITIONS IN LOCATIONS AS SHOWN AS REQUIRED.
- PROVIDE FIRE EXTINGUISHERS AS REQUIRED BY LOCAL FIRE MARSHALL. CONTRACTOR IS REQUIRED TO CONTACT FIRE DEPARTMENT FOR FIRE EXTINGUISHER TYPE AND EXACT MOUNTING LOCATIONS.
- ALL ELECTRICAL DEVICES SHALL BE EXPOSED SURFACE MOUNTED IN INSTALLATION BAYS. ALL DEVICES IN PUBLIC AREAS SHALL BE CONCEALED IN WALLS.
- CONVENIENCE POWER IS INDICATED ON THIS DRAWING FOR REFERENCE. PROVIDE POWER PER EQUIPMENT AND ALL ASSEMBLIES NOTED AS WELL.
- FOLLOW ALL RECOMMENDATIONS OF THE SOILS REPORT BY ECS SOUTHWEST LLP. PROJECT #58-1830, DATED May 8, 2024.
- NOT USED.
- ALL DIMENSIONS OF FACE OF STUDS AND FACE OF CMU BLOCKS.

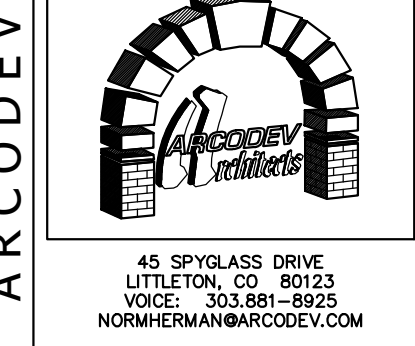
BRAKES PLUS
4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA



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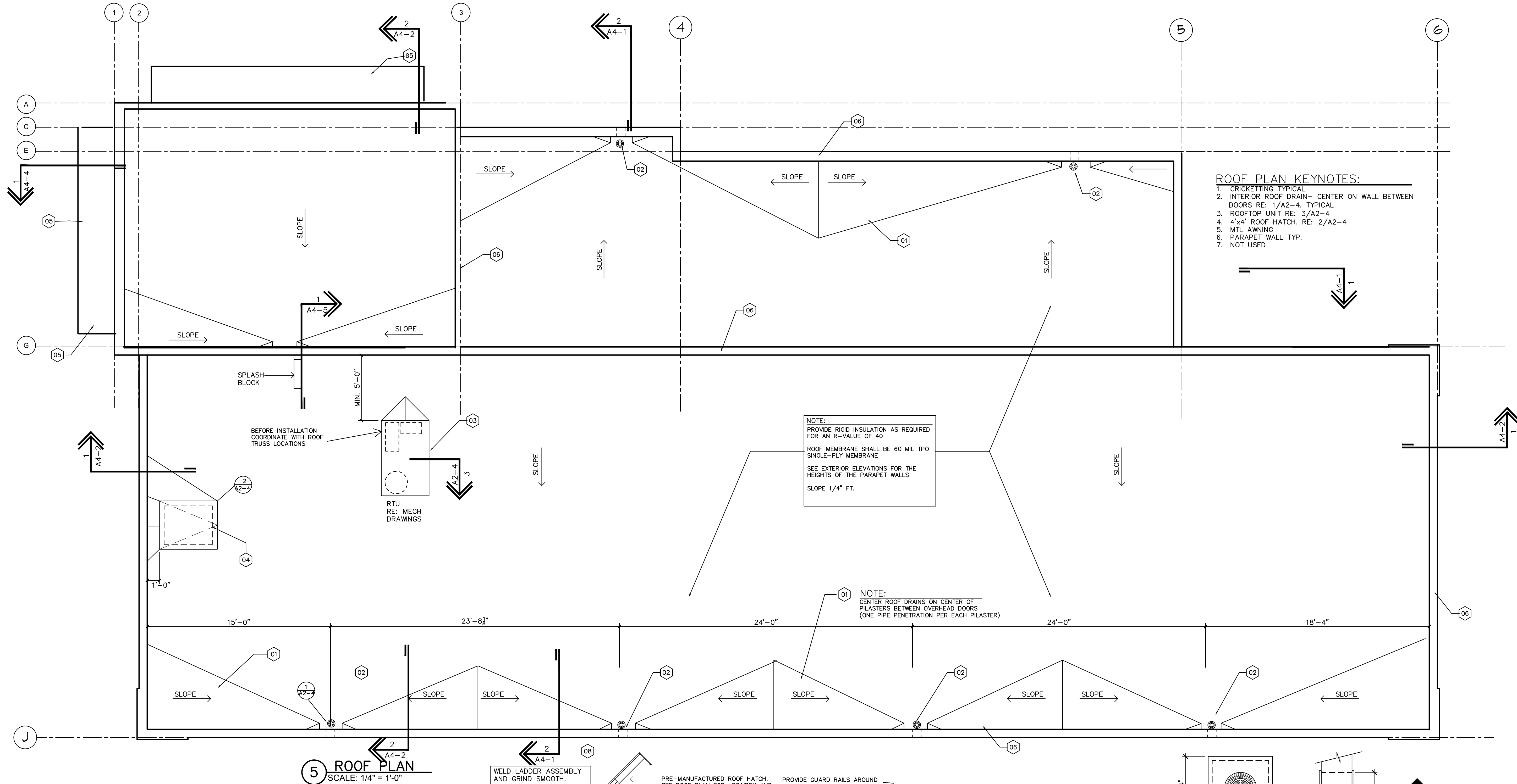
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SHEET

A2-1

FLOOR PLAN



- ROOF PLAN KEYNOTES:**
1. CRICKETING TYPICAL
 2. INTERIOR ROOF DRAIN- CENTER ON WALL BETWEEN DOORS RE: 1/A2-4. TYPICAL
 3. ROOFTOP UNIT RE: 3/A2-4
 4. 4'x4' ROOF HATCH. RE: 2/A2-4
 5. MTL AWNING
 6. PARAPET WALL TYP.
 7. NOT USED

NOTE:
PROVIDE RIGID INSULATION AS REQUIRED FOR AN R-VALUE OF 40
ROOF MEMBRANE SHALL BE 60 MIL TPO SINGLE-PLY MEMBRANE
SEE EXTERIOR ELEVATIONS FOR THE HEIGHTS OF THE PARAPET WALLS
SLOPE 1/4" FT.

NOTE:
CENTER ROOF DRAINS ON CENTER OF PILASTERS BETWEEN OVERHEAD DOORS (ONE PIPE PENETRATION PER EACH PILASTER)

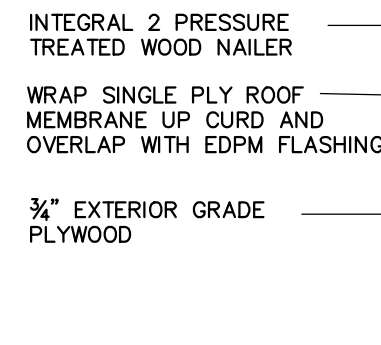
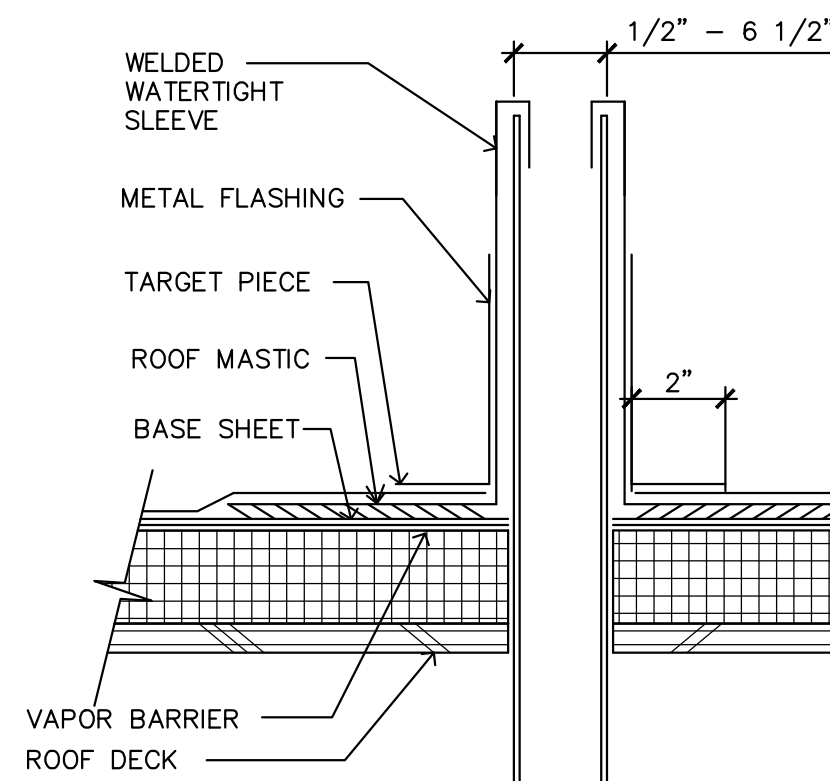
5 ROOF PLAN
SCALE: 1/4" = 1'-0"

2 ROOF HATCH DETAIL
SCALE: 3/4" = 1'-0"

1 DOWNSPOUT / OVERFLOW DETAIL
SCALE: 1" = 1'-0"

4 PIPE PENETRATION DETAIL
SCALE: 3" = 1'-0"

3 RTU CURB DETAIL
SCALE: 1 1/2" = 1'-0"



20 GA. METAL COUNTER- FLASHING CONTINUOUS AT HATCH PERIMETER

FURNISH AND INSTALL FIRE RETARDANT 2X WOOD CURB

STRUCTURE FRAMING AT OPENING, RE: STRUCTURAL

LADDER PER OSHA 1926.1053 PAINT

3/4" DIA. RUNGS AT 12" O.C. CORRUGATED, KNURLED OR DIPILED (PAINT)

1/2"x4" BENT PLATE W/3/8" EXP. ANCHOR 2" EMBEDMENT (PAINT)

PRE-MANUFACTURED ROOF HATCH. SEE ROOF PLAN FOR LOCATION AND SIZE. (MINIMUM 16 SFT.) PROVIDE LADDER FOR HEIGHT INDICATED. MECHANICALLY FASTEN LADDER TO WALL.

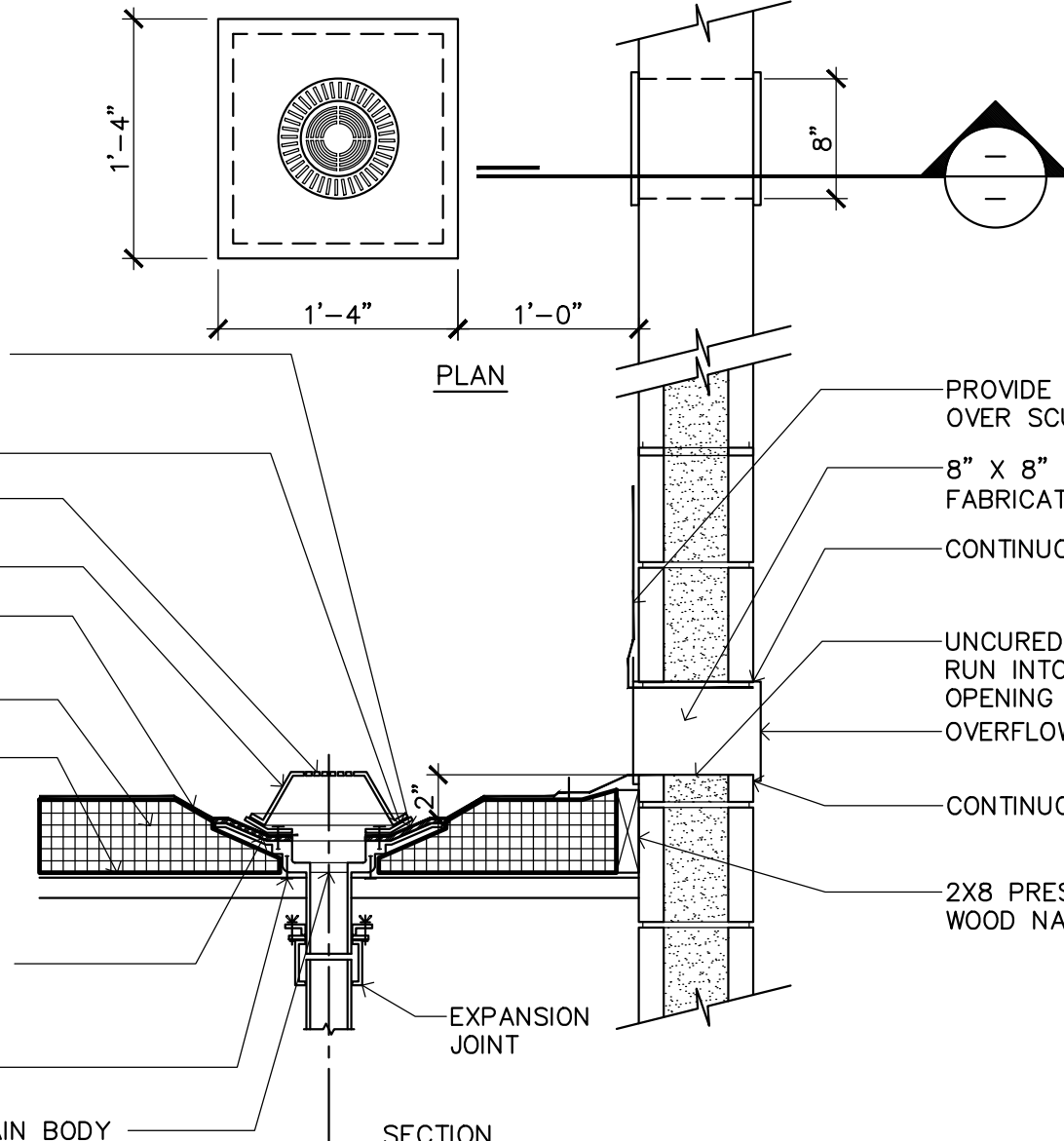
PROVIDE GUARD RAILS AROUND ROOF OPENING AS SHOWN AND PER CODE.
PROVIDE 42" HEIGHT RAILING AT PARAPET WALL IF IT IS CLOSER TO THE OPENING THEN 36" IN HORIZONTAL DISTANCE (PAINT)

3"x3"x1/2" BRACKET TO ANCHOR LADDER TO MASONRY AS REQ'D (PAINT)



MEMBRANE ROOFING CLAMPED BETWEEN MAIN BODY OF DRAIN AND CLAMPING RING
CLAMPING RING
ROOF DRAIN
DRAIN STRAINER
TAPER INSULATION TO FLOW INTO DRAIN CAVITY
RIGID INSULATION INSTALLED PER MANUFACTURER'S SPECS
ROOF DECK

APPROVED WATER STOP CAULK BETWEEN DRAIN BODY AND MEMBRANE ROOFING
BOLT AND WASHER THROUGH METAL DECK INTO MAIN BODY OF DRAIN



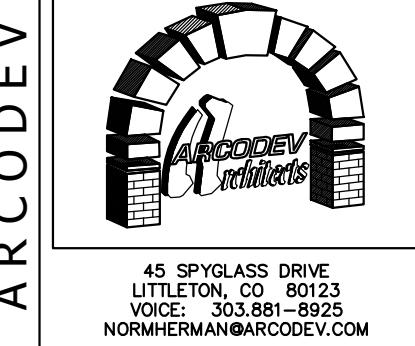
BRAKES PLUS
4000 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA



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SHEET

A2-4

ROOF PLAN

1. SMOOTH FACE CONCRETE BLOCK BY BEST BLOCK
COLOR: MEDIUM BROWN
2. EIFS - INTEGRAL COLOR TO MATCH SHERWIN WILLIAMS #2835
CRAFTSMAN BROWN
3. EIFS - INTEGRAL COLOR TO MATCH SHERWIN WILLIAMS #2834
BIRDEYE MAPLE
4. EIFS - INTEGRAL COLOR TO MATCH SHERWIN WILLIAMS #6105
DIVINE WHITE
5. METAL. MAIN DOOR. PAINT TO MATCH MASONRY

6. ALUMINUM/GLASS STOREFRONT
CLEAR ANODIZED ALUMINUM
7. ALUMINUM SECTIONAL OVERHEAD DOORS
CLEAR ANODIZED ALUMINUM
8. ILLUMINATED SIGNAGE (UNDER SEPARATE PERMIT)
9. PRE-FINISHED METAL CAP FLASHING PREFINISHED TO
MATCH FINISH ANODIZED STOREFRONT FRAMING
10. NOT USED.

- [illegible]

Architectural elevation drawing of a building facade. The drawing shows a two-story structure with a stone base and brick upper walls. A central door is flanked by windows. The roofline is marked with "T.O. PARAPET" at 122'-0" and 128'-0". The ground line is marked "FINISH FLOOR" at 100'-0". Various callouts (1-17) point to specific architectural features like windows, doors, and roof elements. A dimension of 12'-0" is shown for the height of the brick section above the stone base.

Architectural elevation drawing of the exterior of the building, showing the storefront and side wall. The drawing includes dimensions and callouts for various elements.

Storefront and Signage:

- Sign:** "brakes plus" in red script, "Complete Auto Service" in black sans-serif. A red car is depicted below the text.
- Window:** Three vertical panes.
- Door:** A glass door with a metal frame.

Dimensions and Callouts:

- 24" HIGH SIGN** (Callout 9)
- 1'-6"** (Vertical dimension for sign height)
- 1'-10"** (Vertical dimension for storefront height)
- 1'-6"** (Vertical dimension for storefront height)
- 12'-0"** (Vertical dimension for side wall height)
- 12'-0"** (Vertical dimension for side wall height)
- EMERGENCY LIGHT** (Callout 16)
- FINISH FLOOR** (100'-0")
- B.O. WINDOW** (102'-8")
- T.O. STOREFRONT** (110'-0")
- T.O. PARAPET** (128'-0")
- T.O. PARAPET** (122'-0")
- T.O. PARAPET** (120'-0")
- T.O. WAINSCOT** (104'-0")

Callouts:

- 1, 3, 4, 6, 8, 9, 11, 12, 13, 14, 15, 16, 17

BRAKES PLUS

OKLAHOMA CITY, OKLAHOMA



129.24

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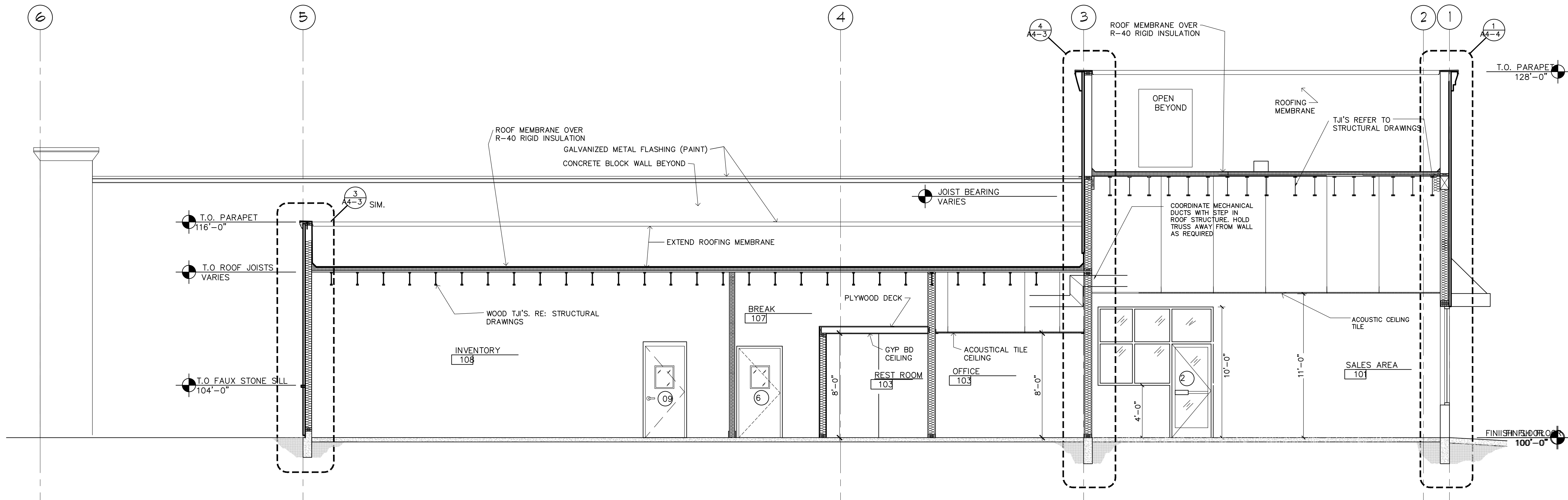


45 SPYGLASS DRIVE
LITTLETON, CO 80123
VOICE: 303.881-8925
JRMHERMAN@ARCODEV.COM

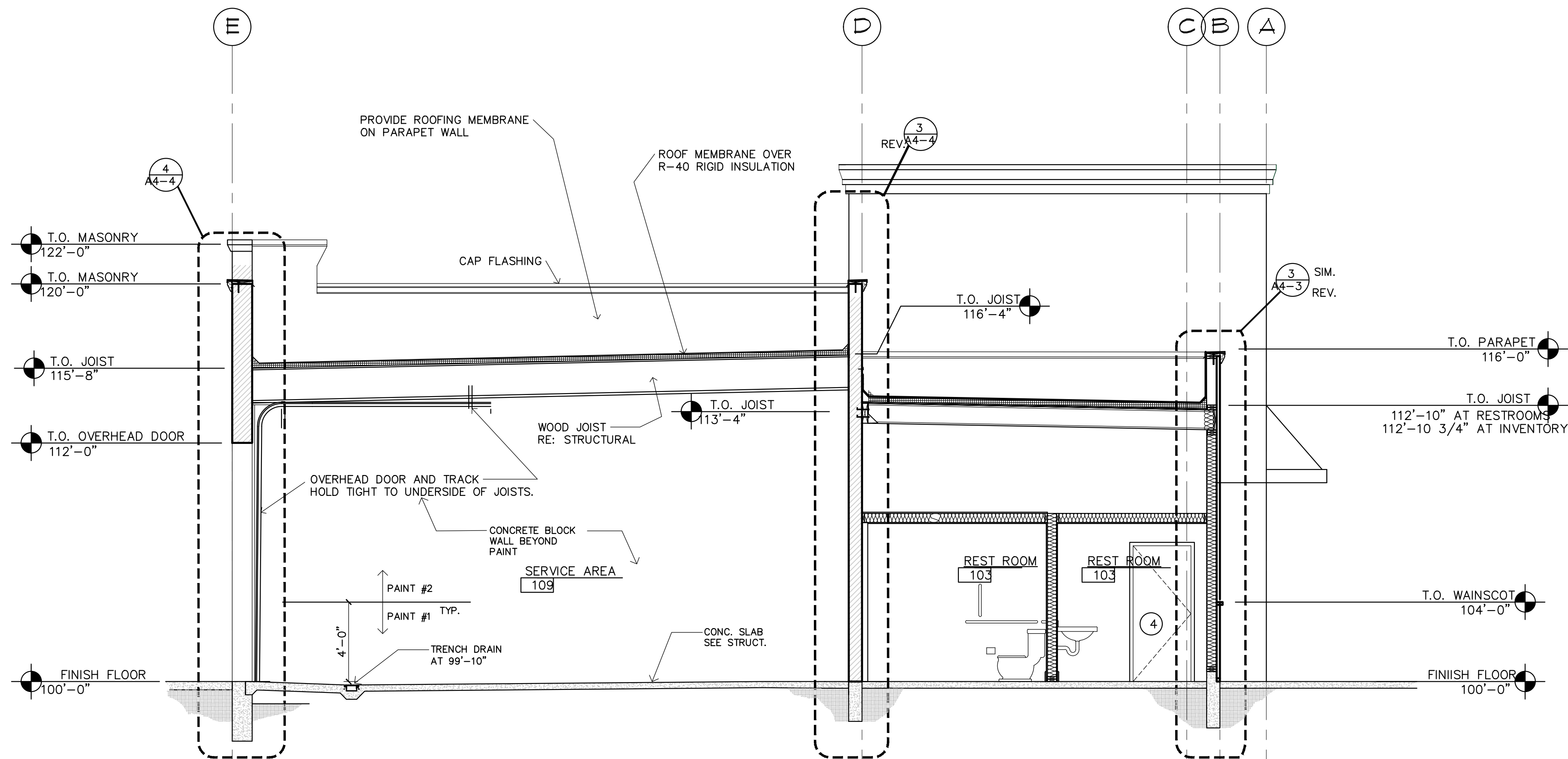
HEET

A3-1

EXTERIOR ELEVATIONS



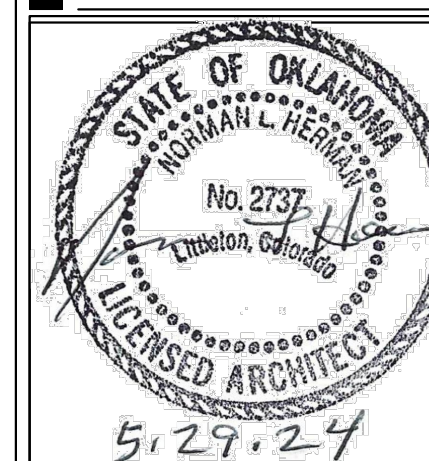
1 BUILDING SECTION
SCALE: 1/4" = 1'-0"



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

BRAKES PLUS

4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA



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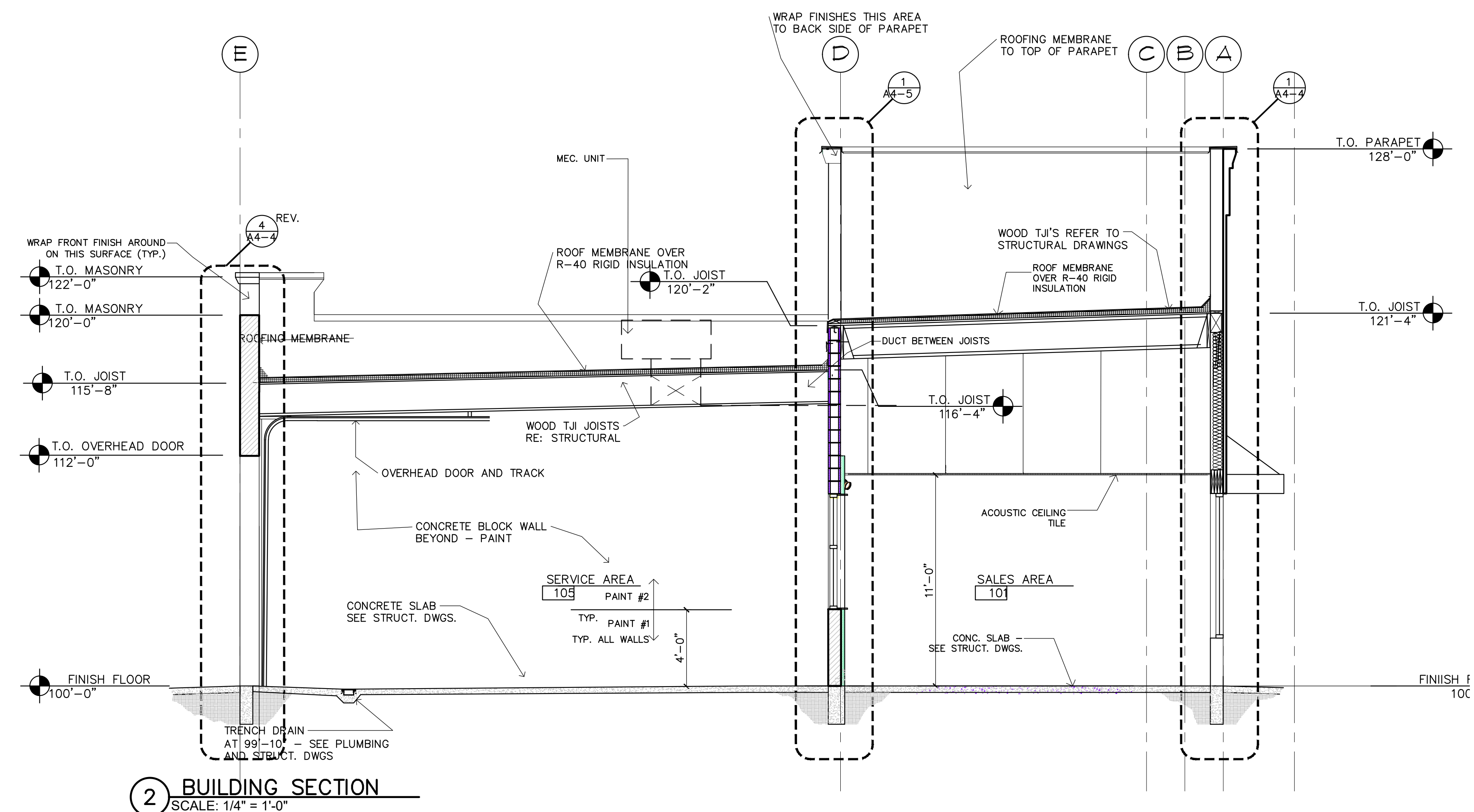
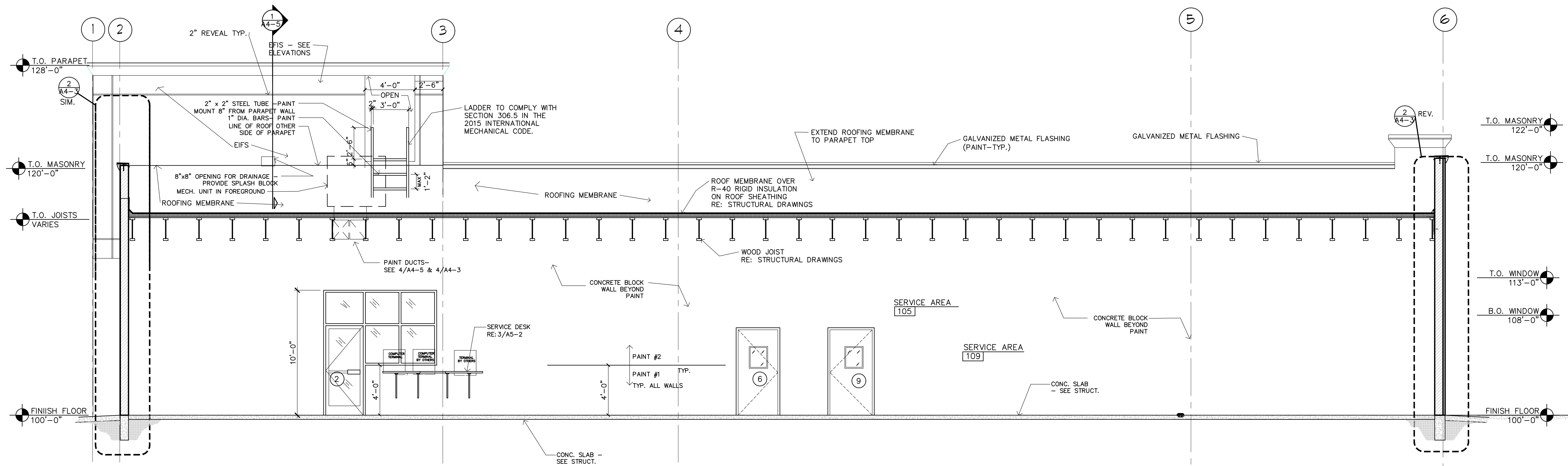
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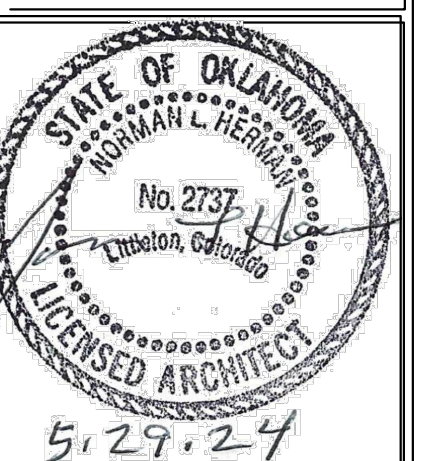
SHEET

A4-1

BUILDING SECTIONS



BRAKES PLUS
4900 NORTH MAY AVENUE



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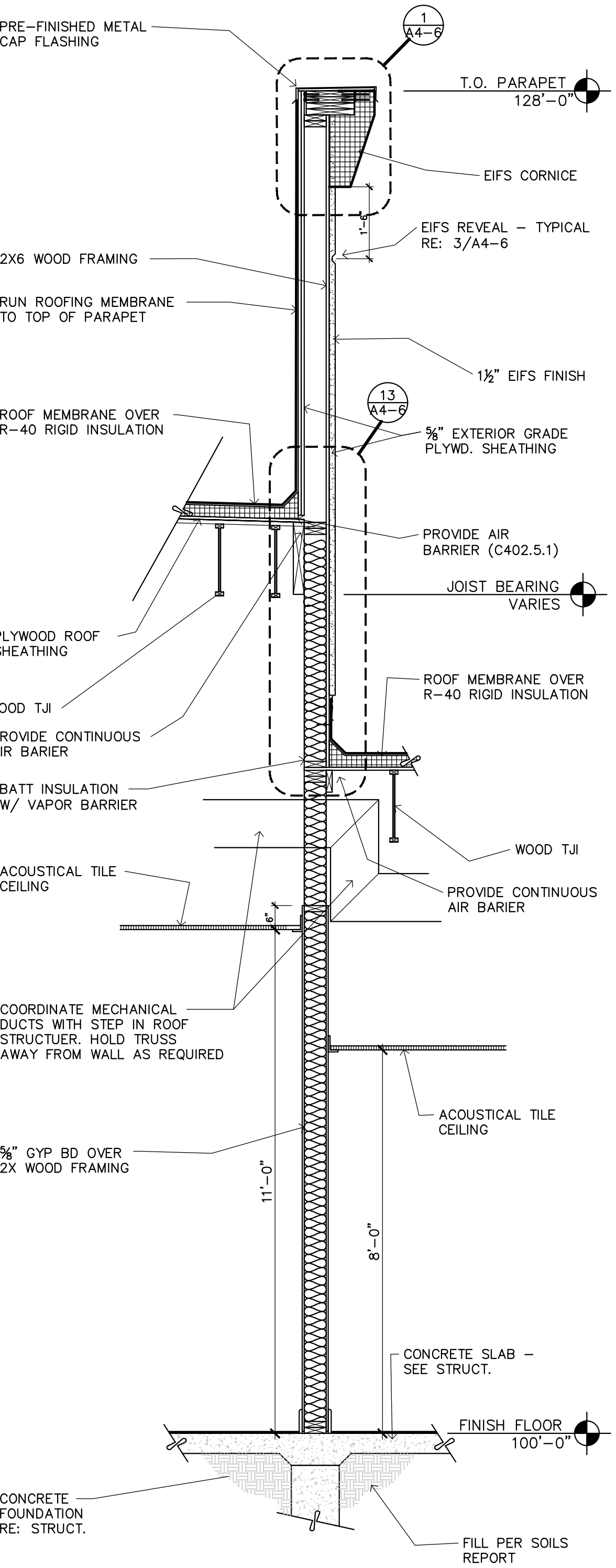
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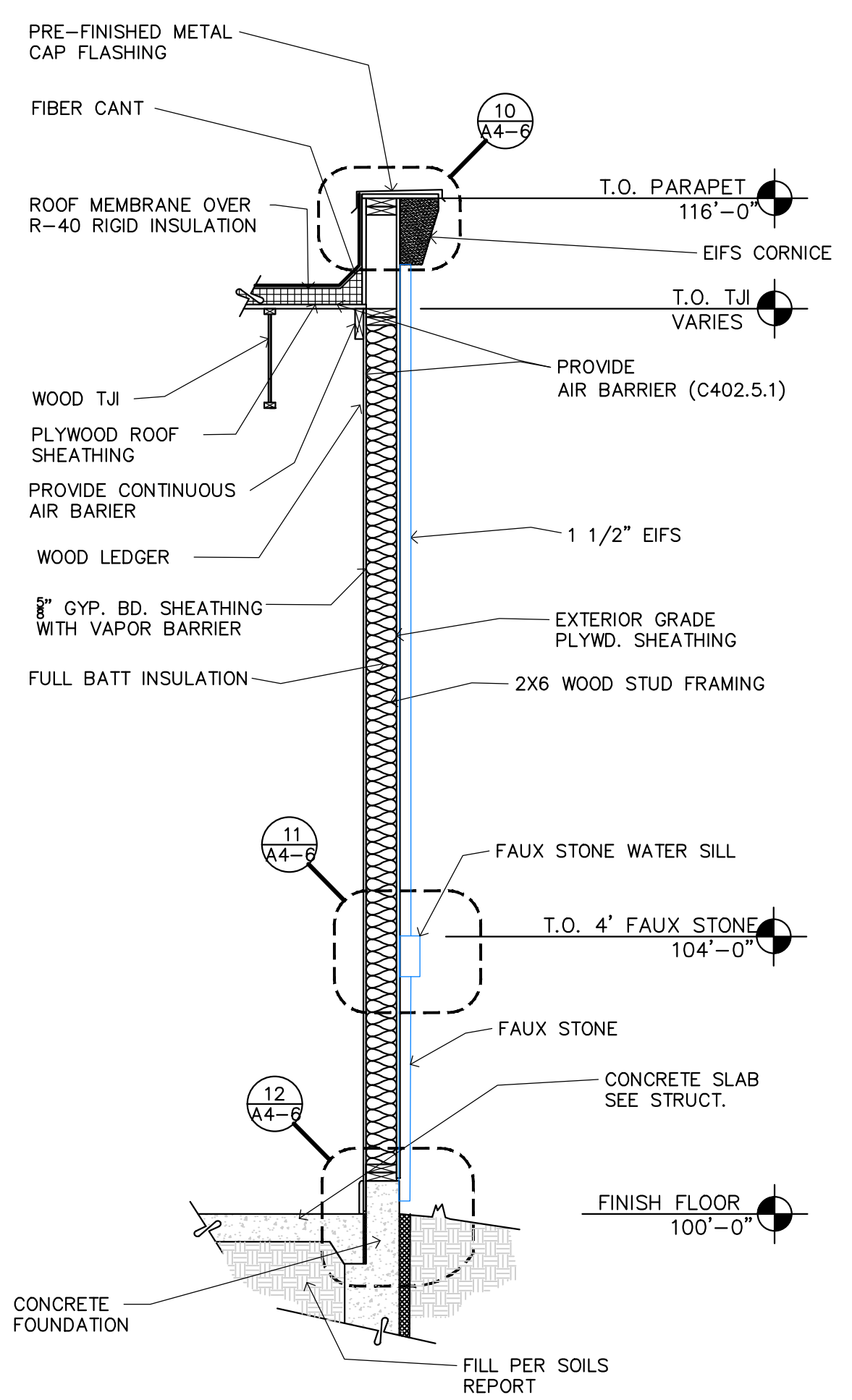
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A4-2

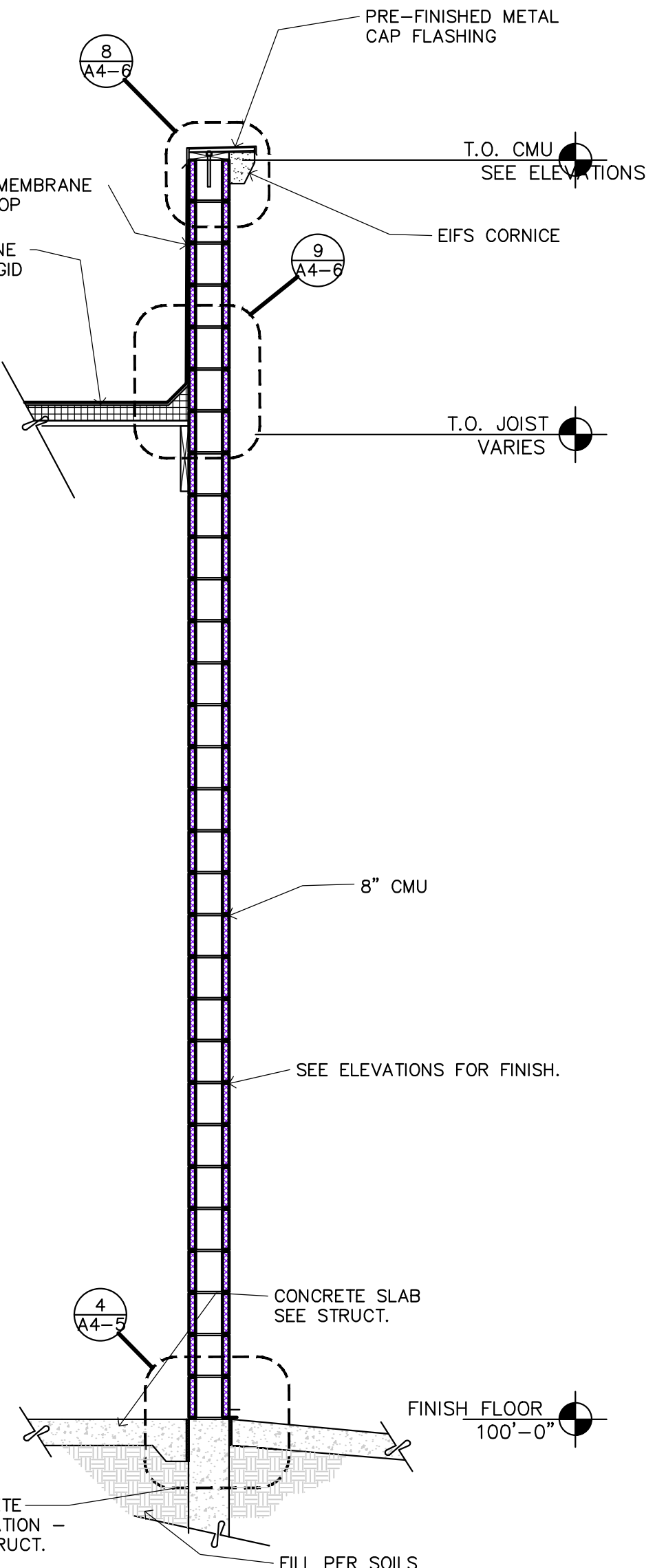
BUILDING SECTIONS



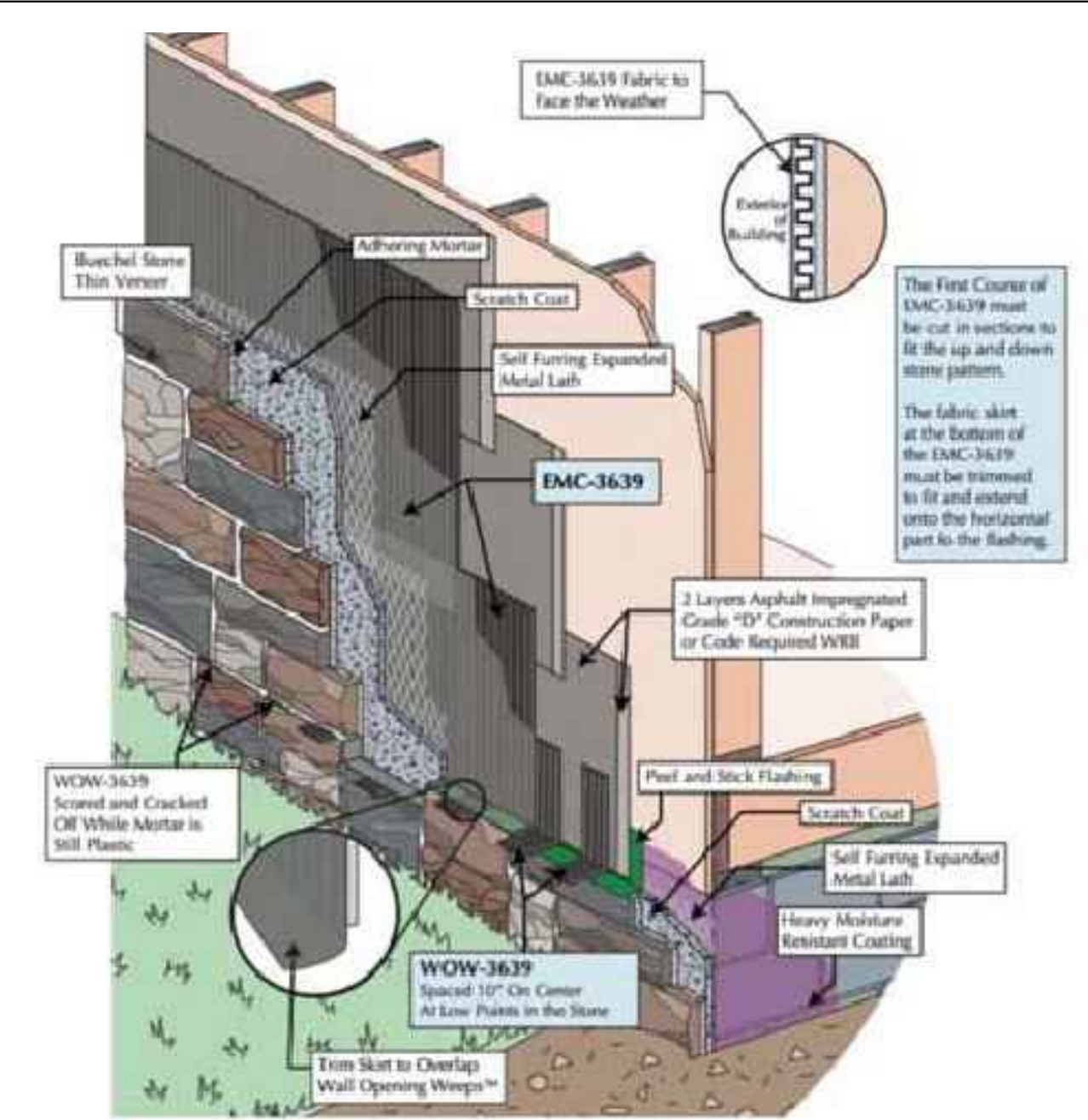
4 WALL SECTION
A4-3 1/2"=1'-0"



3 WALL SECTION
A4-3 1/2"=1'-0"



2 WALL SECTION
A4-3 1/2"=1'-0"

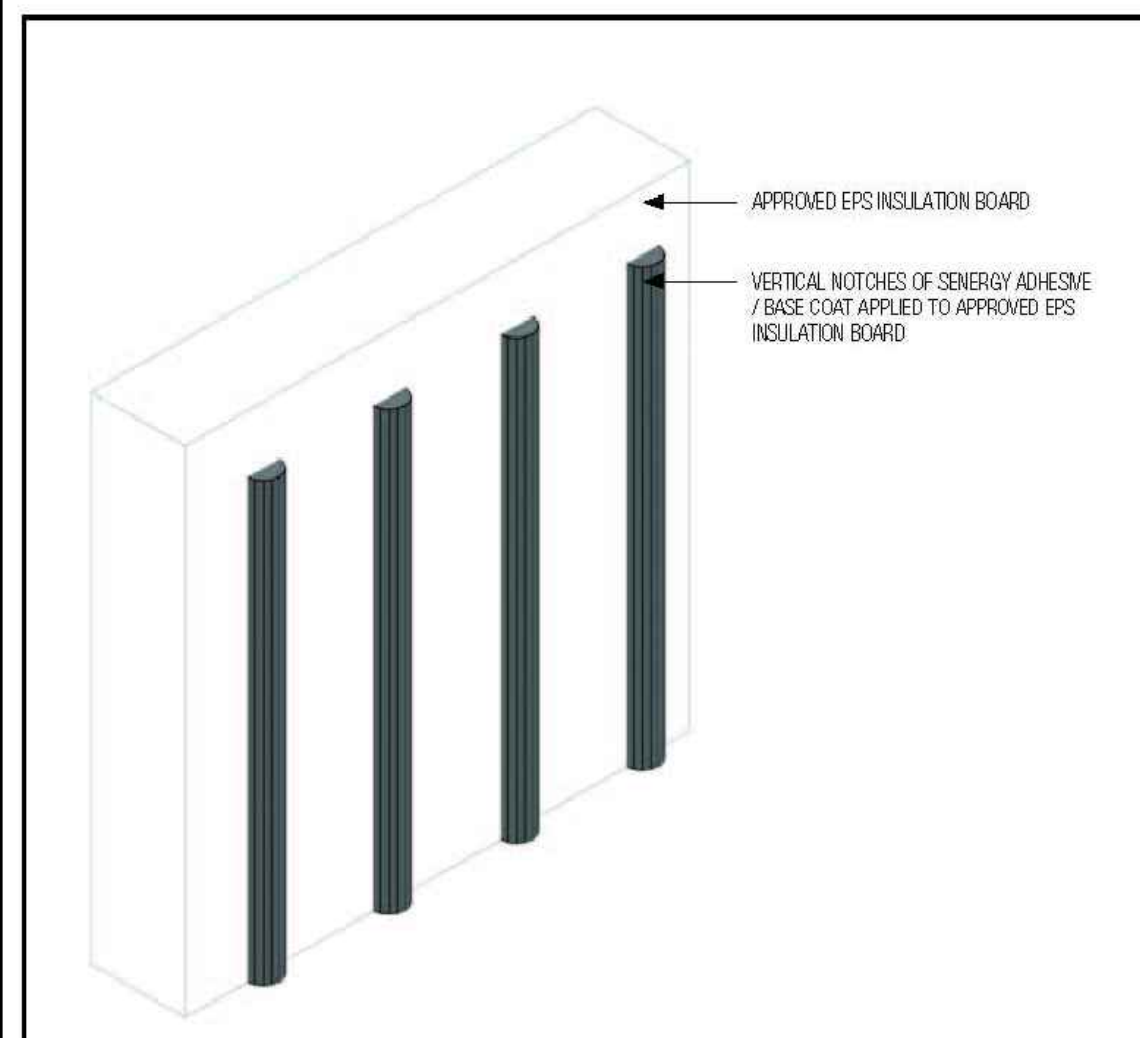


5 FAUX STONE WATER DRAINAGE DETAILS.
A4-3 NO SCALE



Channeled Adhesive CI Design

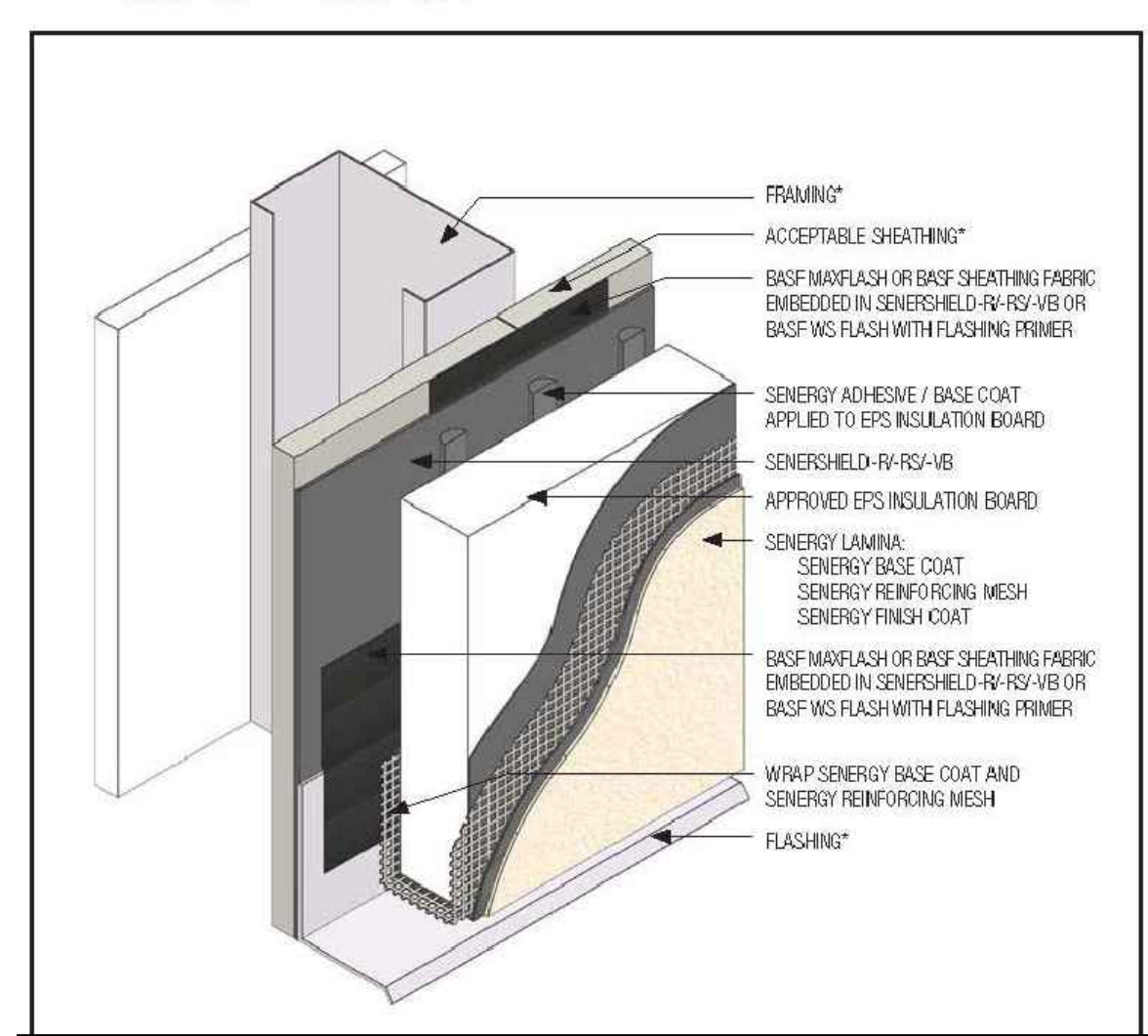
TYPICAL CHANNELED ADHESIVE



- Install BASF materials in accordance with current installation instructions.
- Unsatisfactory conditions shall be reported to the General Contractor and corrected before the application of BASF products.
- Verify all materials are installed in accordance with current installation instructions.
- Apply mixed base coat to entire surface of insulation board using a stainless steel trowel with 1/2" x 1/2" (13 mm x 13 mm) notches spaced 2" (50 mm) apart. Ribbons of adhesive must be applied parallel to the 2" (610 mm) dimension of the EPS insulation board to ensure they are vertical when the EPS insulation board is applied to the substrate.
- Set EPS insulation board into place and apply pressure over entire surface of board to ensure positive uniform contact and high initial grab. Do not slide board into place.

Channeled Adhesive CI Design

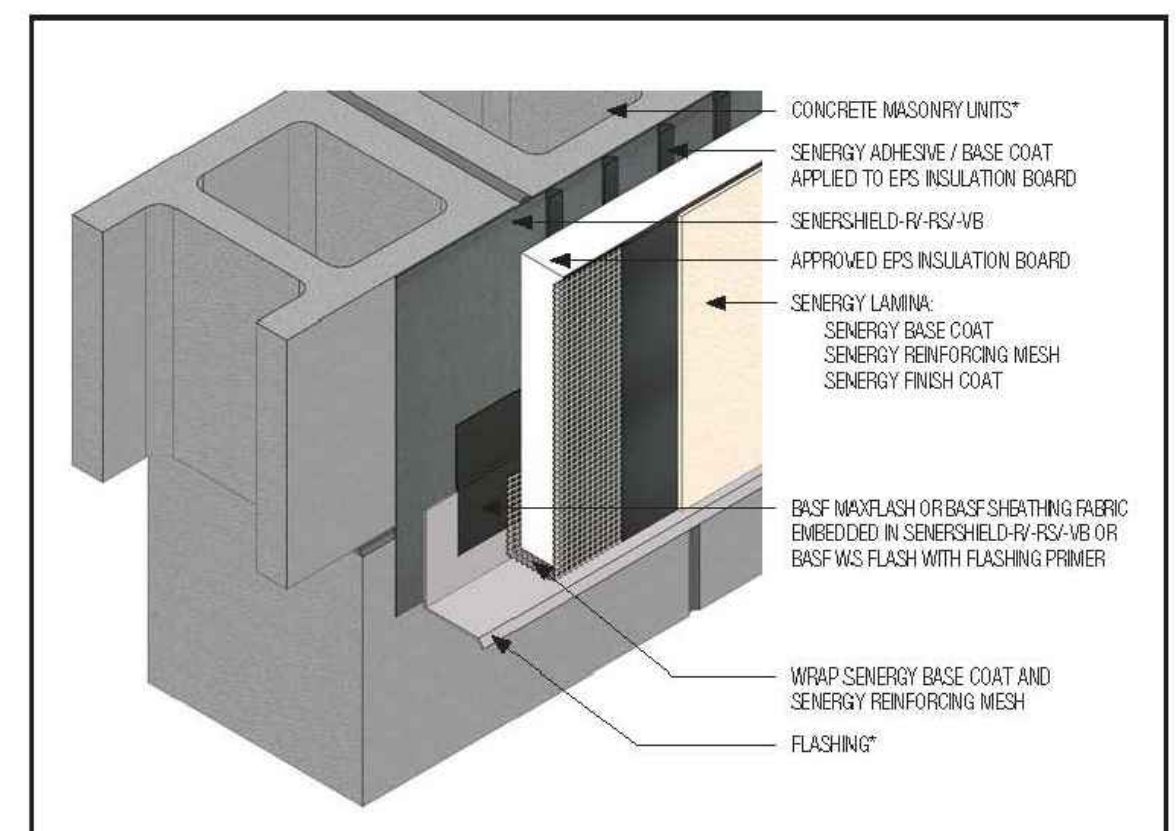
TYPICAL APPLICATION



- Install BASF materials in accordance with current installation instructions.
- Unsatisfactory conditions shall be reported to the General Contractor and corrected before the application of BASF products.
- Verify all materials are installed in accordance with current installation instructions.
- All terminations must be fully encapsulated with mesh reinforced base coat.
- Ensure a means for drainage is provided at system termination.

Channeled Adhesive CI Design

TYPICAL APPLICATION OVER CMU



- Install BASF materials in accordance with current installation instructions.
- Unsatisfactory conditions shall be reported to the General Contractor and corrected before the application of BASF products.
- Verify all materials are installed in accordance with current installation instructions.
- All terminations must be fully encapsulated with mesh reinforced base coat.
- Ensure a means for drainage is provided at system termination.

1 EIFS WATER DRAINAGE DETAILS.
A4-3 NO SCALE

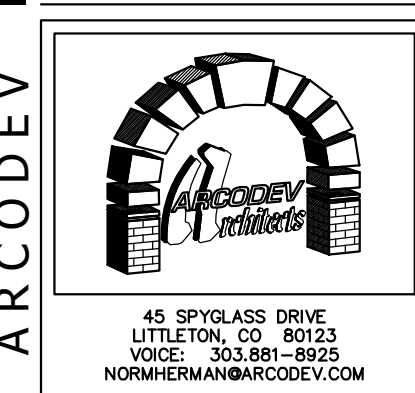
BRAKES PLUS
4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA



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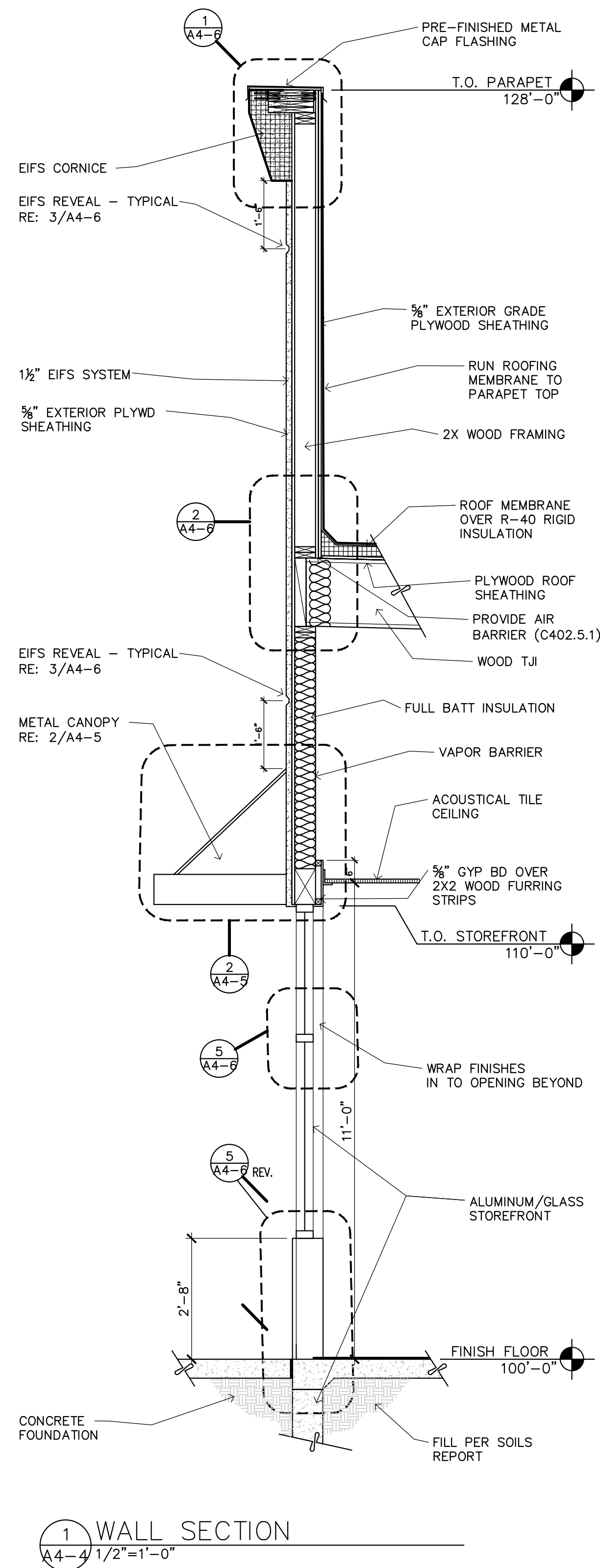
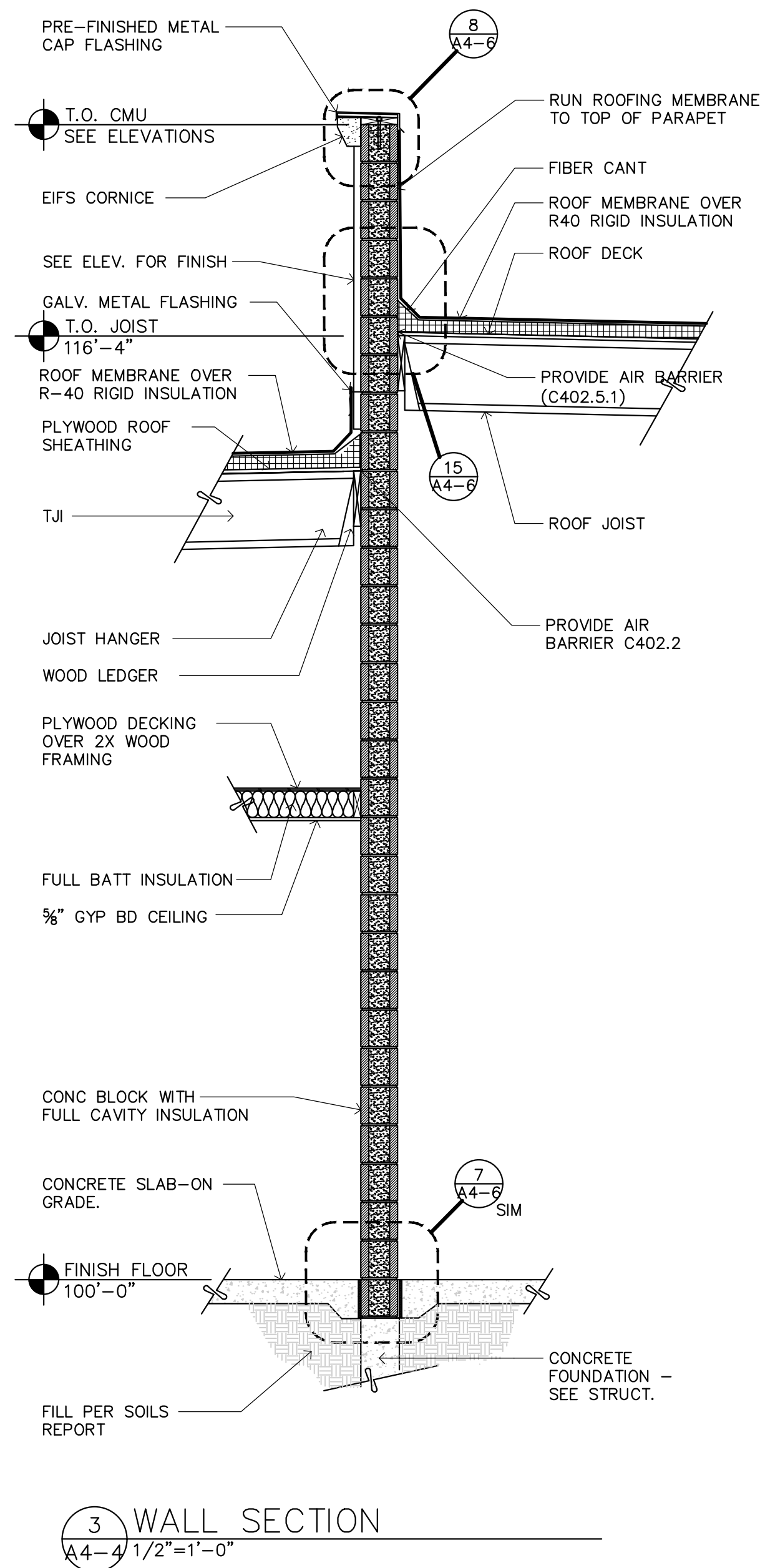
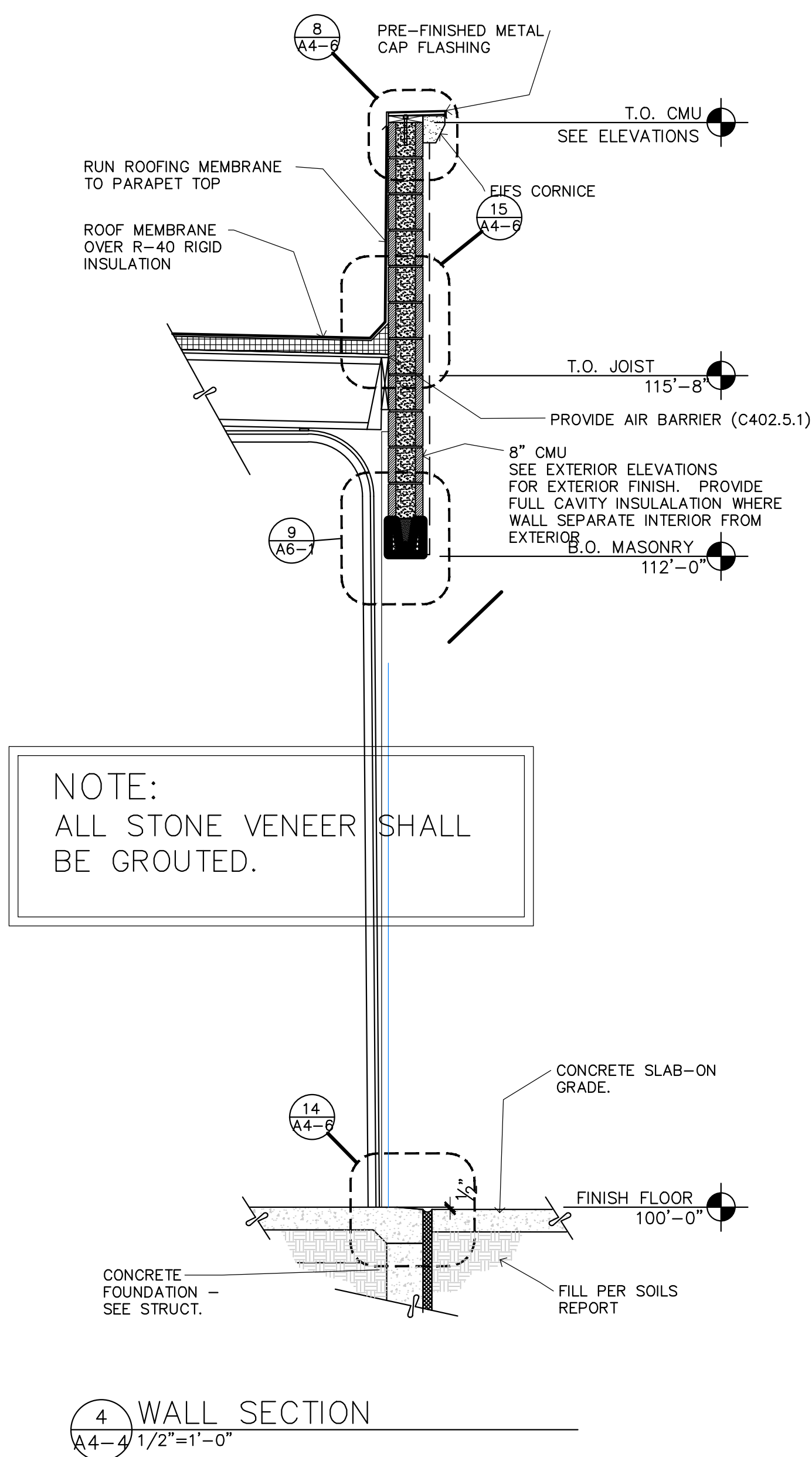
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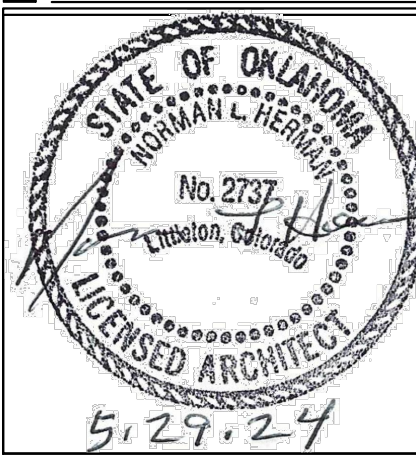
SHEET

A4-3
WALL SECTIONS



BRAKES PLUS

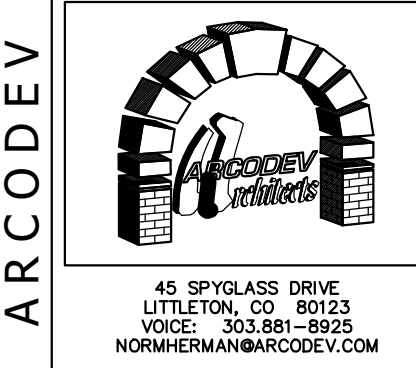
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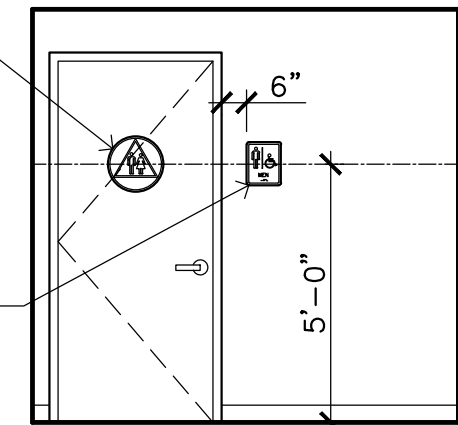
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A4-4
WALL SECTIONS

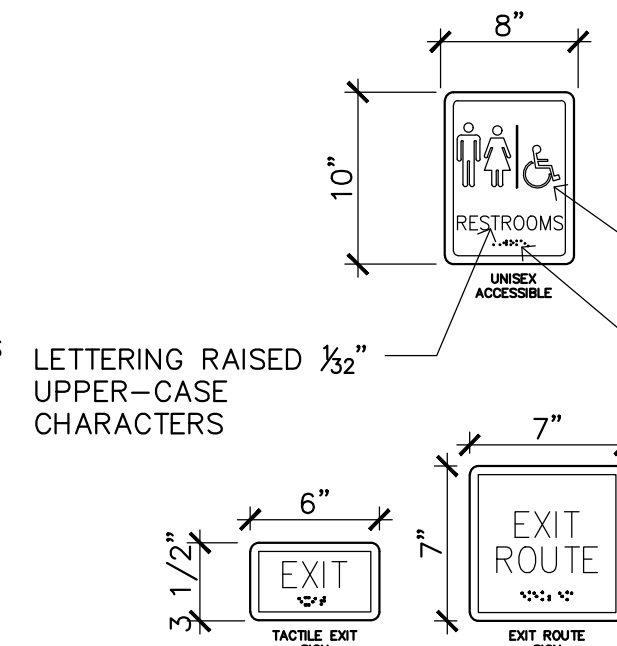


12" DIA.

UNISEX

1. ON DOORWAYS LEADING TO
SANITARY FACILITIES, THE
SYMBOLS TO BE PROVIDED ARE
12" EQUILATERAL TRIANGLE FOR
MEN, OR 12" DIAMETER CIRCLE
FOR WOMEN, 1/4" THICK CENTERED
ON DOOR 60" ABOVE FLOOR,
CONTRASTING COLOR WITH DOOR.
PER CBC 11158.6

1. H.C. SIGNS PER ADA
2. ALL LETTERS AND SYMBOLS SHALL BE RAISED 1/32"
3. 12" DIAMETER CIRCLE, 1/4" THICK WITH THE COLOR AND CONTRAST BEING DISTINCTLY DIFFERENT FROM THE COLOR OF THE DOOR
4. INTERNATIONAL SYMBOL OF ACCESSIBILITY, WHITE FIGURE ON BLUE (#15090 FEDERAL STANDARD 595A) BACKGROUND
5. SIGN SHALL BE DISPLAYED AT 60" A.F.F., CENTERED ON THE DOOR, COLOR AND CONTRAST SHALL BE DISTINCTLY DIFFERENT FROM COLOR AND CONTRAST OF THE DOOR TYP. FOR MEN'S AND WOMEN'S SIGNS
6. EDGES OF SIGNS SHALL BE ROUNDED, CHAMFERED OR EASED. CORNERS OF SIGNS SHALL HAVE A MINIMUM RADIUS OF 1/8"
7. 12" EQUILATERAL TRIANGLE, 1/4" THICK WITH THE VERTEX POINTING UPWARD AND THE COLOR AND CONTRAST BEING DISTINCTLY DIFFERENT FROM THE COLOR OF THE DOOR
8. LETTERS AND NUMERALS ON SIGNS ARE RAISED 1/32", SANS SER. UPPERCASE CHARACTERS TO BE ACCOMPANIED BY GRADE 2 BRAILLE.
9. BRAILLE DOTS ARE 1/10" ON CENTER IN EACH CELL WITH 2/10" SPACE BETWEEN CELLS
10. BRAILLE DOTS ARE RAISED A MINIMUM OF 1/40" ABOVE THE BACKGROUND
11. MOUNTING HEIGHT IS 60" FROM FINISH FLOOR TO THE CENTERLINE OF THE SIGN



NOTE
PROVIDE SIGNAGE AT RESTROOMS
AND EXITS

- WHITE SYMBOLS AND LETTERS ON A BLUE BACKGROUND, TYPICAL
- CORRESPONDING, GRADE 1 BRAILLE

1. CHARACTERS AND SYMBOLS AND THEIR BACKGROUND SHALL HAVE A NONGLARE FINISH
2. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND
3. VISUAL CHARACTERS ON SIGNS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60% MINIMUM AND 110% MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I."
4. THE THICKNESS OF THE UPPERCASE LETTER "H" SHALL BE 10% MINIMUM AND 20% MAXIMUM OF THE HEIGHT OF THE CHARACTER
5. CHARACTERS ON SIGNS REQUIRED TO BE ACCESSIBLE SHALL BE SIZED ACCORDING TO THE "VISUAL CHARACTER HEIGHT" TABLE. THE MINIMUM HEIGHT IS MEASURED USING AN UPPERCASE LETTER
6. RAISED CHARACTERS ON SIGNS SHALL BE RAISED $\frac{3}{16}$ " MINIMUM AND SHALL BE SANS SERIF UPPERCASE CHARACTERS ACCOMPANIED BY CONTRACTED (GRADE 2) BRAILLE.
7. RAISED CHARACTERS SHALL BE A MINIMUM OF $\frac{3}{16}$ " AND A MAXIMUM OF 2" HIGH.
8. PICTURED SYMBOL SIGNS (PICTOGRAMS) SHALL BE ACCOMPANIED BY THE VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE OUTSIDE DIMENSION OF THE PICTOGRAM FIELD SHALL BE A MINIMUM OF 6" IN HEIGHT.
9. BRAILLE SHALL BE PLACED A MINIMUM OF $\frac{3}{16}$ " AND A MAXIMUM OF $\frac{1}{2}$ " DIRECTLY BELOW THE TACTILE CHARACTERS, FLUSH LEFT OR CENTERED.

8. RAISED CHARACTERS ON SIGNS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60% MINIMUM AND 110% MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I," STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 10% MINIMUM AND 20% MAXIMUM OF THE HEIGHT OF THE CHARACTER.
9. CONTRACTED (GRADE 2) BRAILLE SHALL BE USED.
10. MOUNTING HEIGHT SHALL BE 48" MINIMUM, MEASURED FROM THE BASELINE OF THE LOWEST LINE OF BRAILLE, AND 60" MAXIMUM, MEASURED FROM THE BASELINE OF THE HIGHEST RAISED CHARACTERS, ABOVE THE FINISH FLOOR OR GROUND SURFACE.

6'

1'-10"

6'-0"

2'-4"

1'-10"

6'

1'-11 1/2"

12"

6"

12"

11"

3"

11"

8" BOND BEAM BEYOND

BAR JOIST RE: STR.

SUPPLY DUCT RE: MECH.

RETURN DUCT RE: MECH.

1 1/2" INSULATION AROUND DUCT WORK

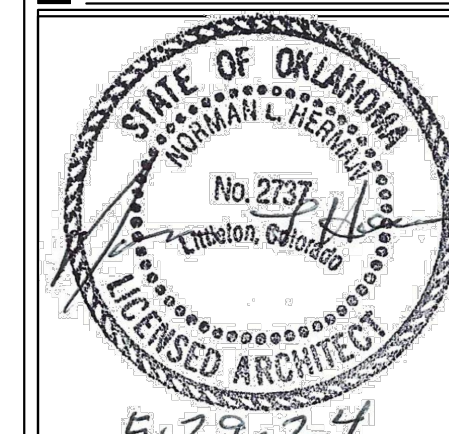
Diagram illustrating the correct method for blocking a window or door opening. The diagram shows a cross-section of a wall with a window frame. The blocking is done using a 'DOUBLE LAYER' of material, 'CHAMFERED BLOCKING 2X8', and 'USE FILLER AS NECESSARY' to ensure a proper fit and seal.

Technical cross-section drawing of a storefront assembly. The drawing shows a vertical section of a wall or window frame. Key components and labels include:

- FULL BATT INSULATION**: Indicated by a wavy line pattern in the upper left section.
- 2X WOOD FRAMING**: Indicated by two vertical lines representing the frame.
- VAPOR BARRIER**: A thin line representing a barrier layer.
- ACOUSTICAL TILE CEILING**: A horizontal section with a grid pattern on the left.
- 5/8" GYP BD SHEATHING OVER 2X2 WOOD FURRING STRIPS (PROVIDE VAPOR BARRIER)**: A horizontal section on the left.
- WOOD SHIM AS REQUIRED**: A small rectangular piece between the wall and the frame.
- BACKEROD AND CONTINUOUS CAULKING EACH SIDE**: A vertical rod and a line representing the sealant.
- ALUMINUM/GLASS STOREFRONT SYSTEM**: The main vertical assembly on the right.
- WOOD HEADER - RE: STRUCTURAL DRAWINGS**: A horizontal section at the bottom.
- EIFS/DRIP**: A vertical line at the bottom right.
- ANODIZED ALUM. CANOPY FURNISHED AND INSTALLED BY ANOTHER PARTY**: A horizontal section at the bottom right.
- 3'-0"**: Dimension lines indicating the height and width of the assembly.
- 1 1/2" E.I.F.S.**: Dimension line indicating the thickness of the insulation.
- 5/8" EXTERIOR GRADE GYP BD SHEATHING**: A horizontal section on the right.
- GALVANIZED FLASHING PAINT**: A horizontal line at the top right.
- LIGHT FIXTURE**: A vertical section on the right.

Architectural section drawing of a wall and roof assembly. The drawing shows a vertical wall section with various materials and layers. At the top, there is a roof assembly with a pre-finished metal cap flashing, EIFS finish, and a 5/8" exterior grade sheathing roofing membrane. A 6"x8" opening for drainage is shown with a splash block at the lower roof. The roof membrane is over a minimum R40 rigid insulation. The wall assembly includes a fiber cant, roofing membrane over minimum R40 rigid insulation, roofing sheathing, and an air barrier (C402.5.2). The wall is constructed of 8" concrete block with full cell insulation. The wall is supported by a metal bar joist (re: struct. dwgs). The wall is finished with 1" insulating glass in an aluminum window system. The wall is supported by a cultured marble sill. The wall is finished with 5/8" GYP. BD. ON 2X FURRING WITH 1 1/2" RIGID INSULATION. The wall is supported by a concrete slab (see struct.). The wall is finished with a finish floor (100'-0"). The wall is supported by a foundation (re: struct. dwgs). The drawing includes several callouts and dimensions: T.O. PARAPET 128'-0", T.O. CMU 120'-0", B.O. MASONRY 110'-0", T.O. MASONRY 104'-0", and FINISH FLOOR 100'-0". There are also circular callouts with numbers 1, 5, and 6.

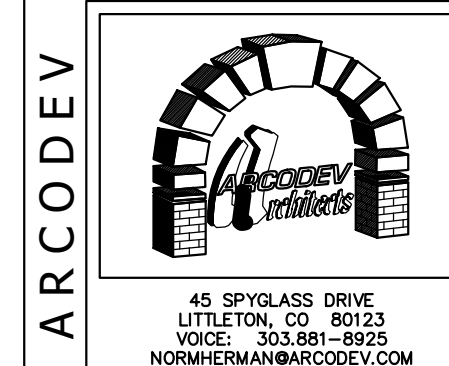
BRAKES PLUS



ARCHITECT OF RECORD

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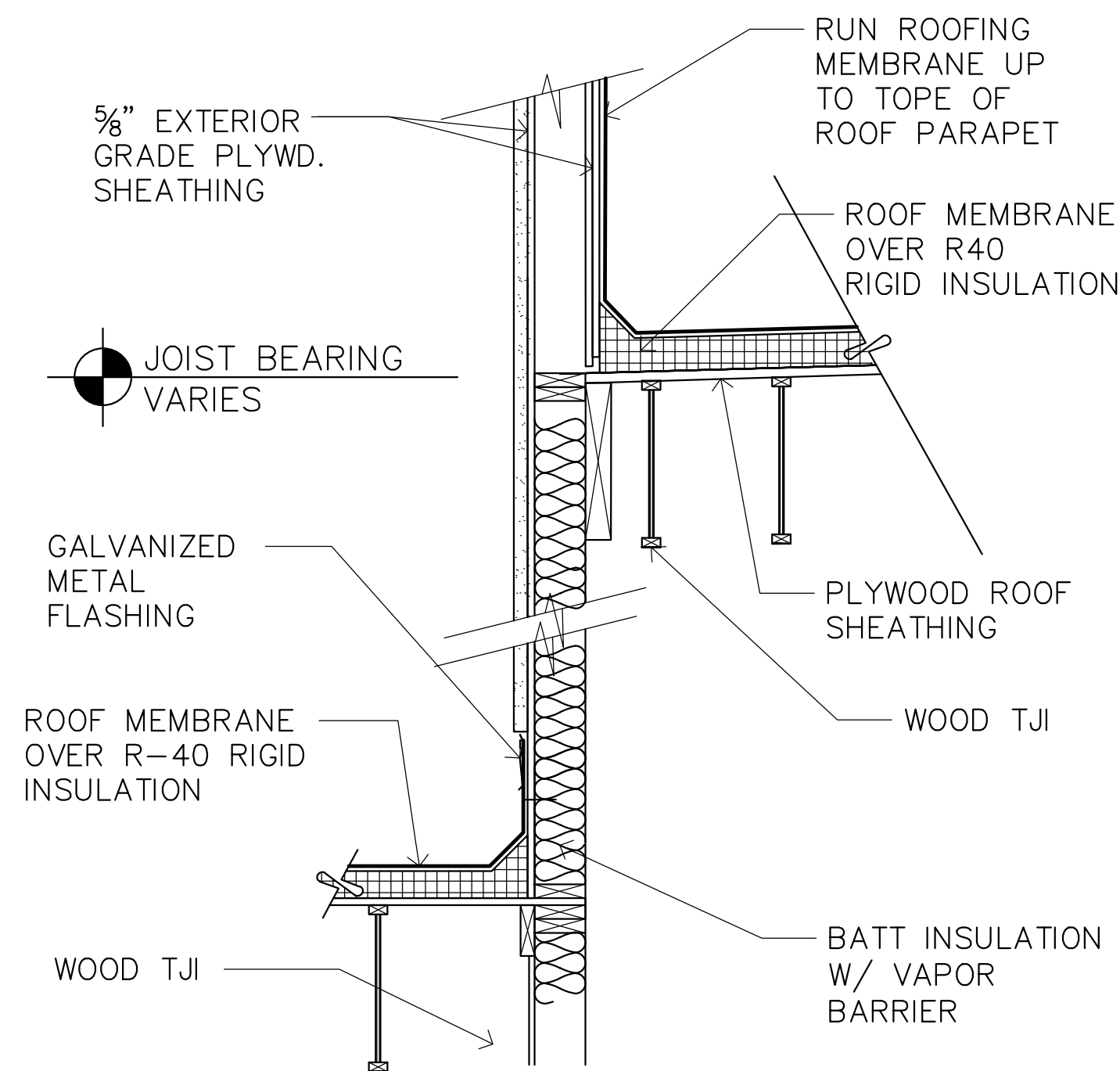
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CLIENTJOB #: _____
DRAWN BY: _____
CHECKED BY: _____ NLH
DATE OF ISSUE: 05.13.24



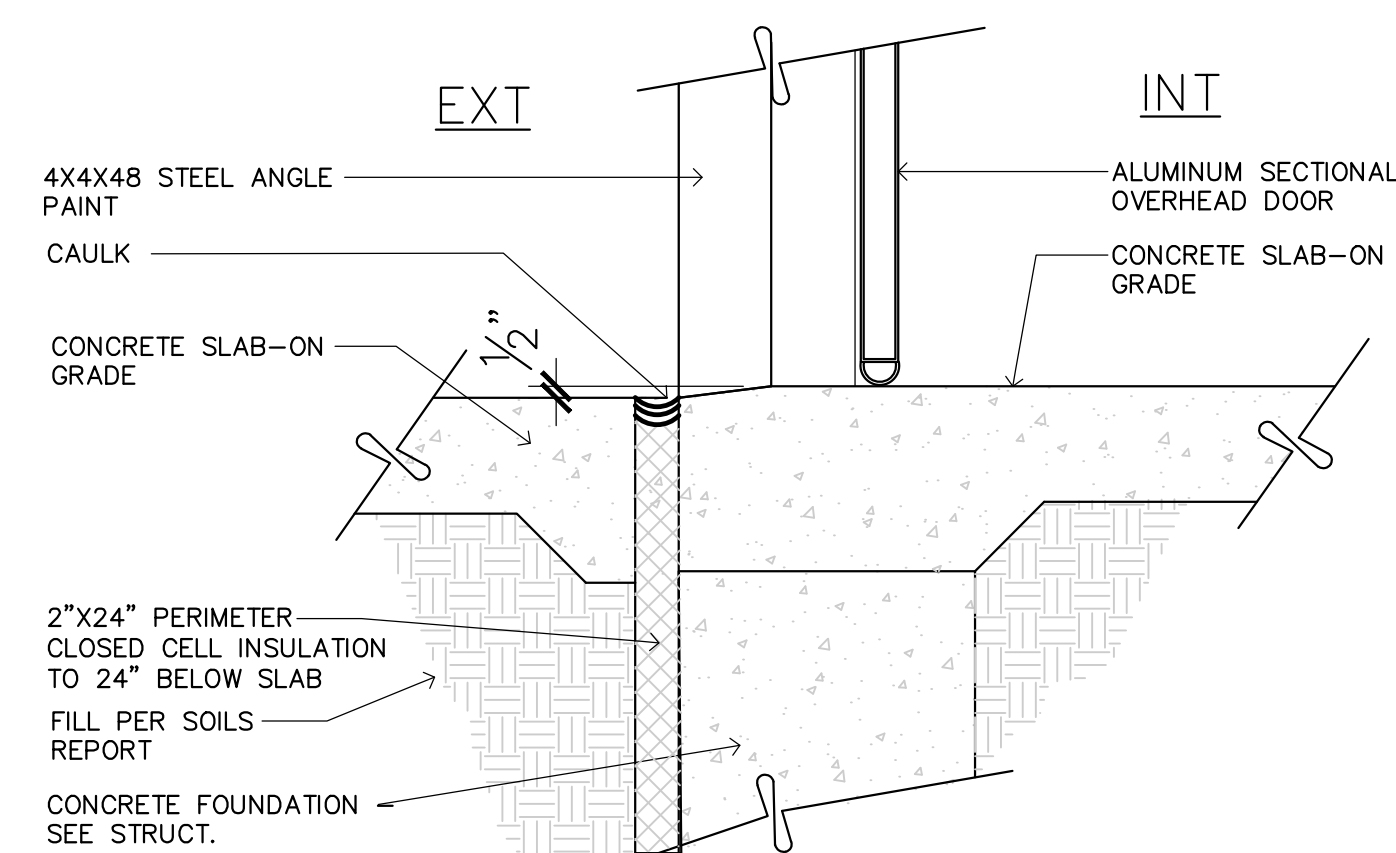
SHEET

A4-5

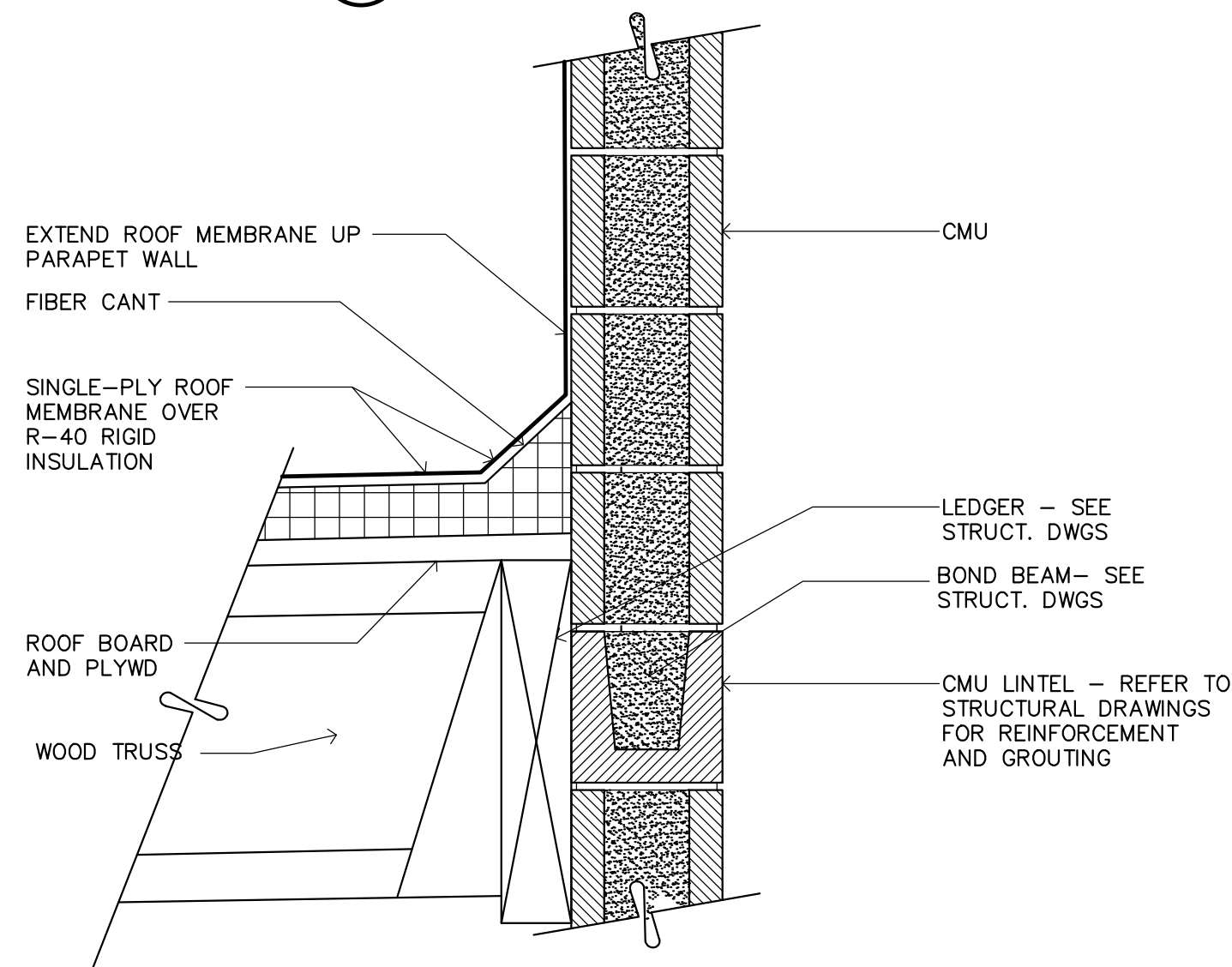
WALL SECTIONS & DET.



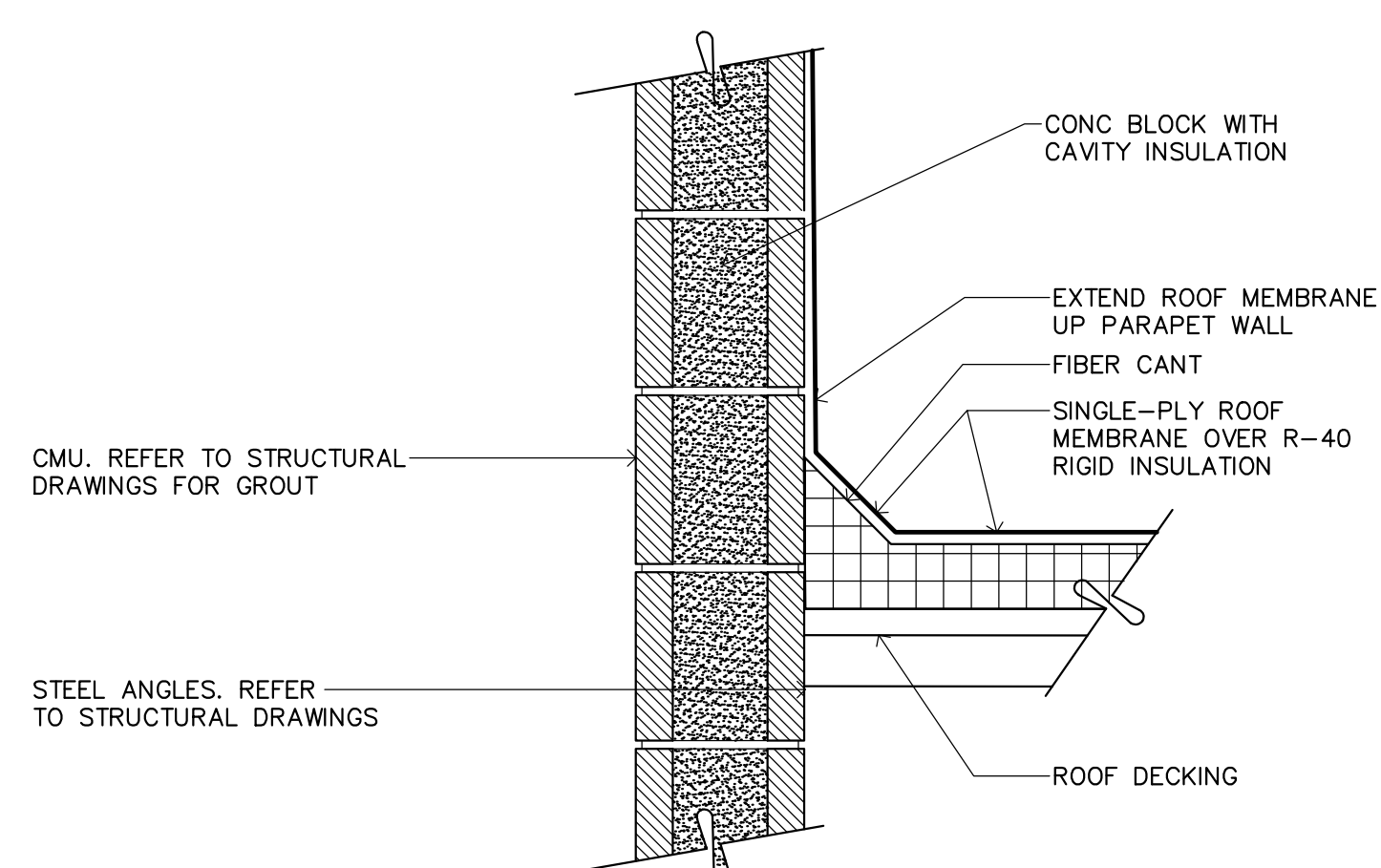
13 ROOF DETAIL
SCALE: NO SCALE



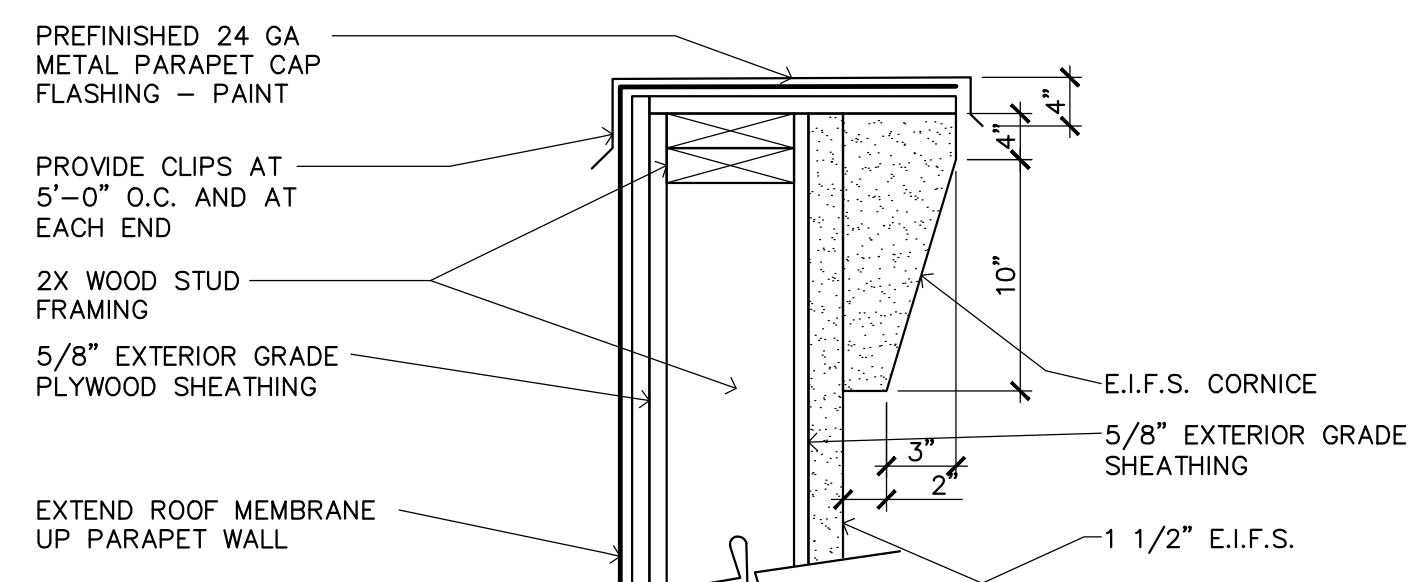
14 FOUNDATION DETAIL
SCALE: 1 1/2"=1'-0"



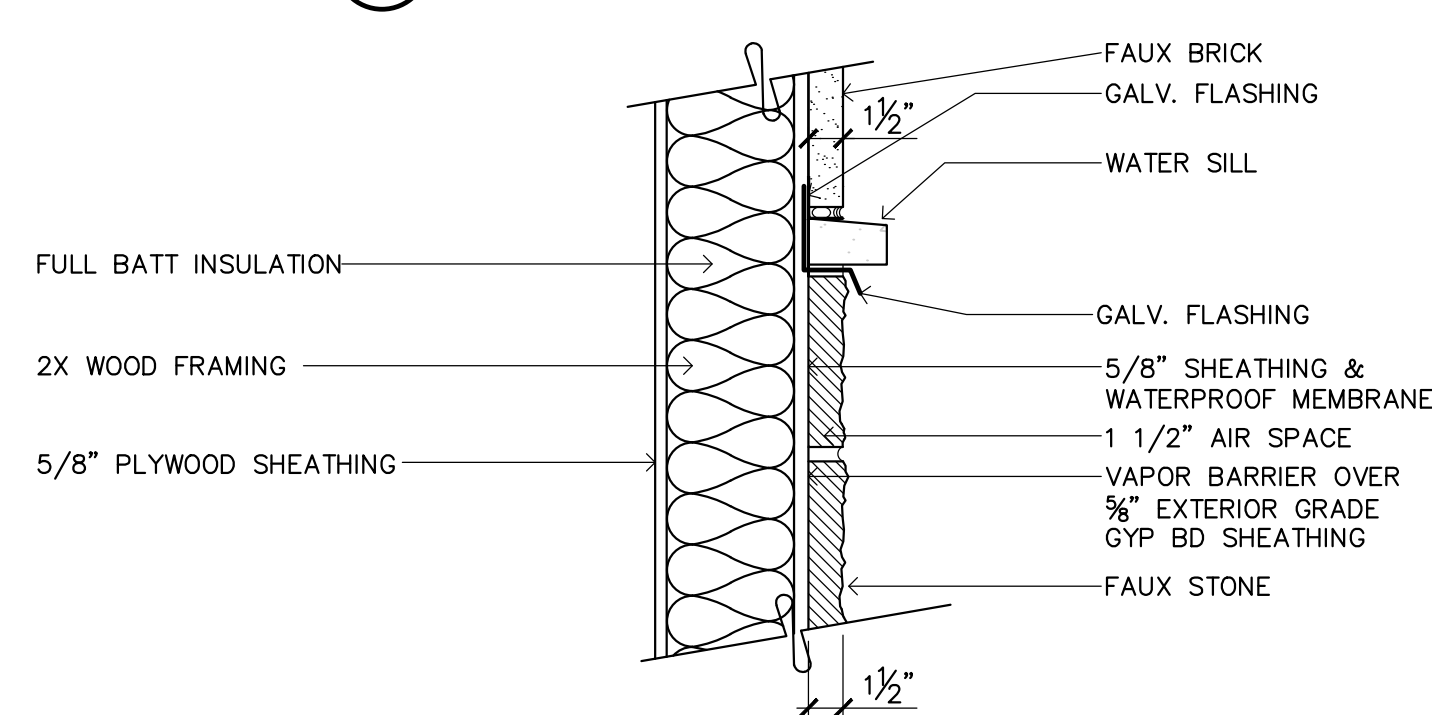
15 ROOF AT CMU DETAIL
SCALE: 1 1/2"=1'-0"



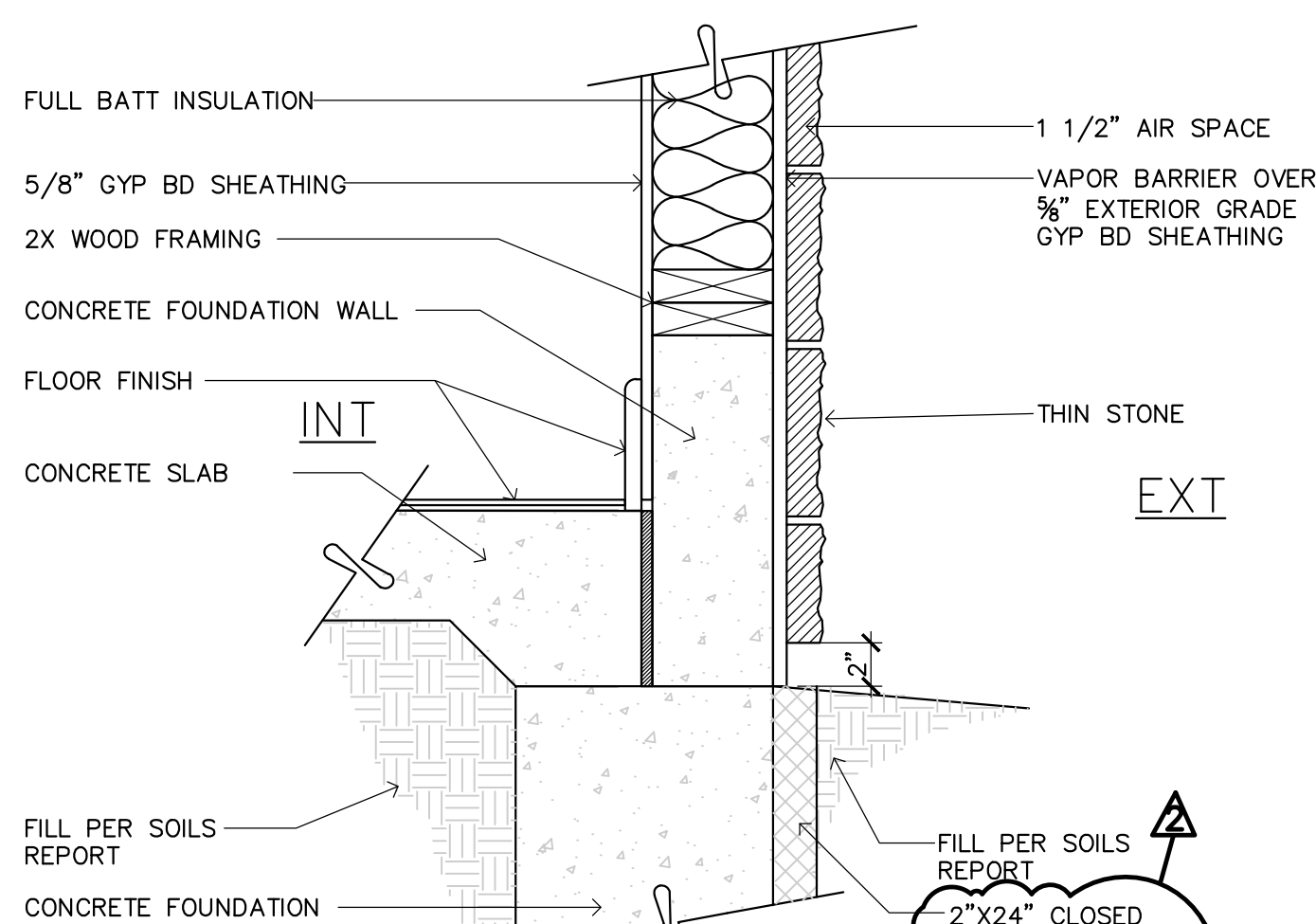
9 DECK AT CMU DETAIL
SCALE: 1 1/2"=1'-0"



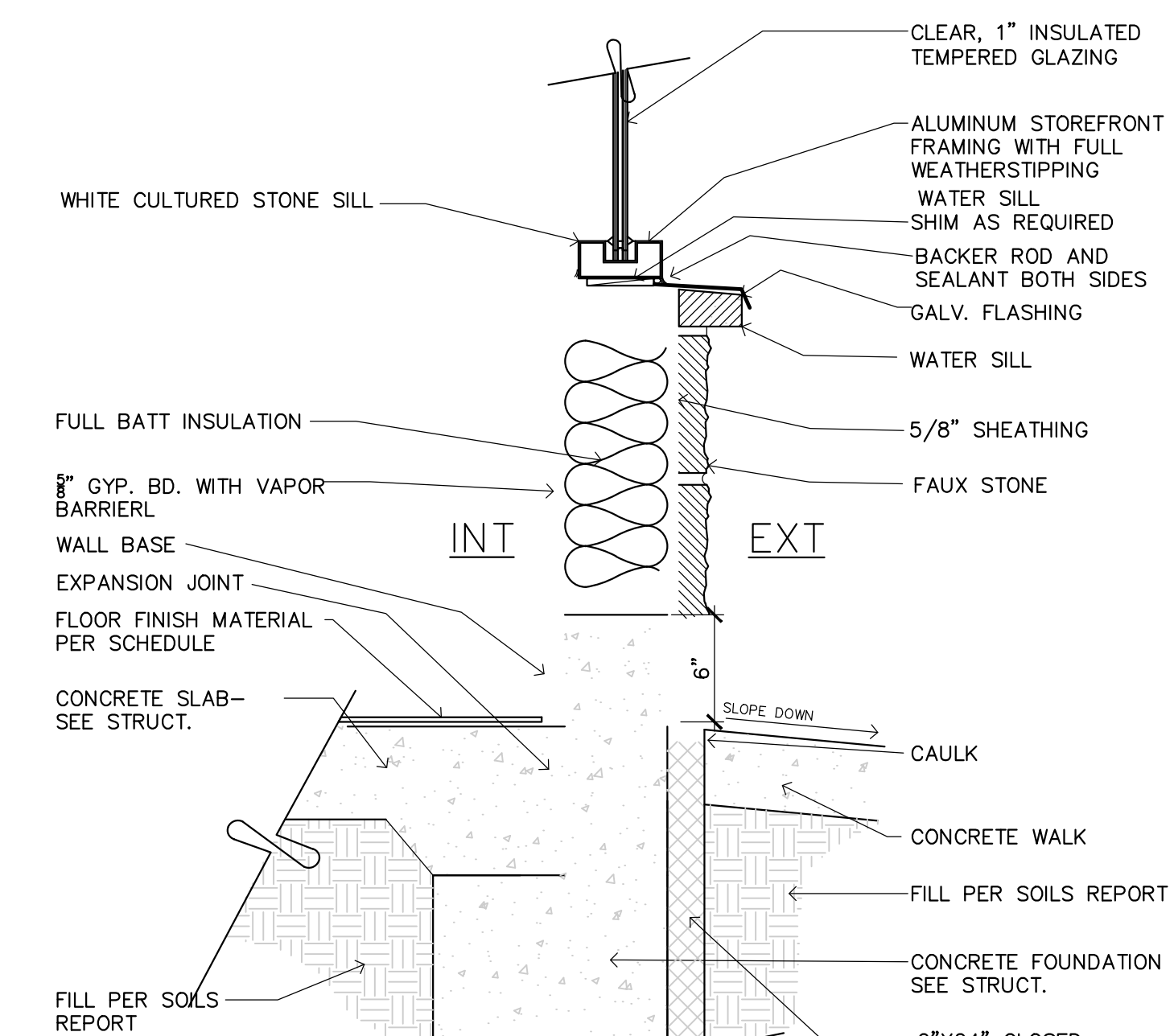
10 CORNICE AT STUD WALL DETAIL
SCALE: 1 1/2"=1'-0"



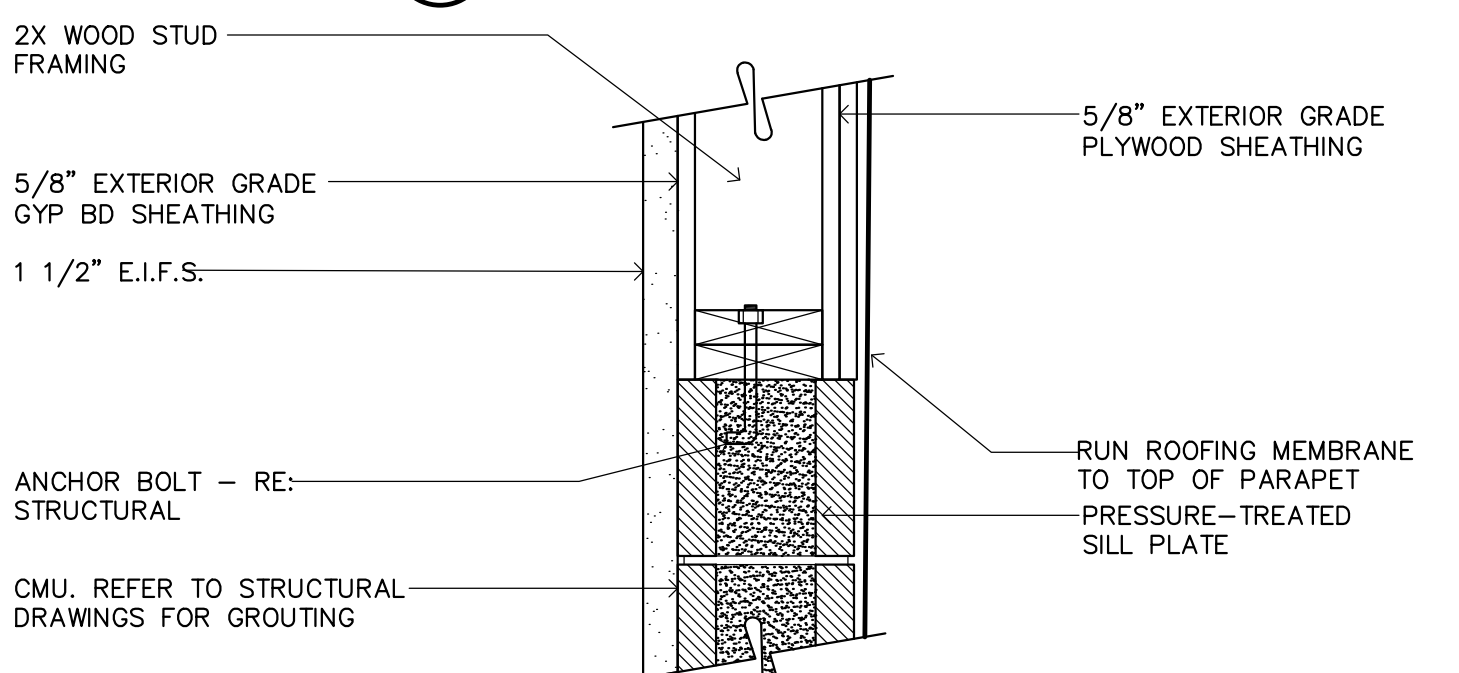
11 WAINSCOT DETAIL
SCALE: 1 1/2"=1'-0"



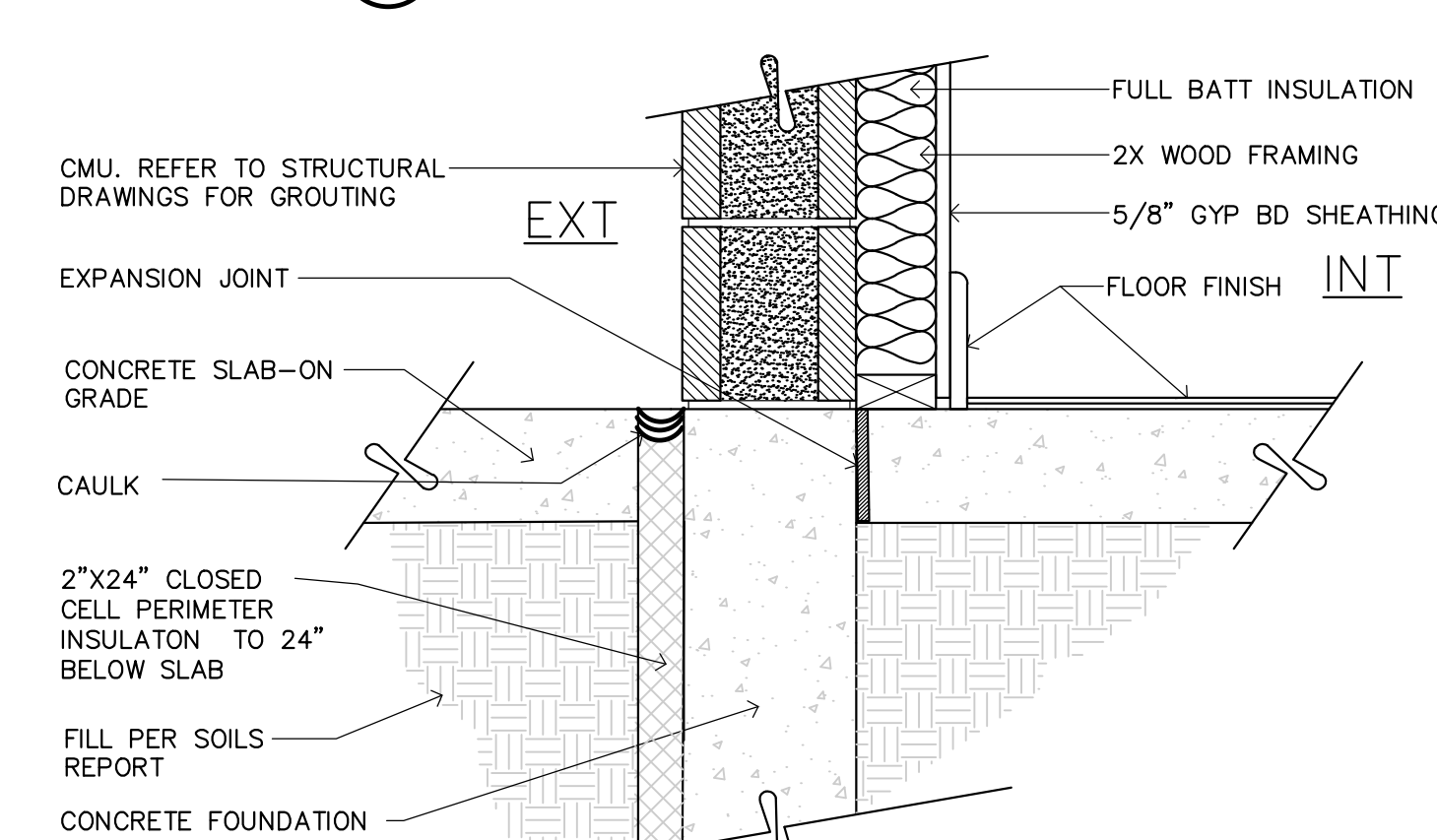
12 FOUNDATION DETAIL
SCALE: 1 1/2"=1'-0"



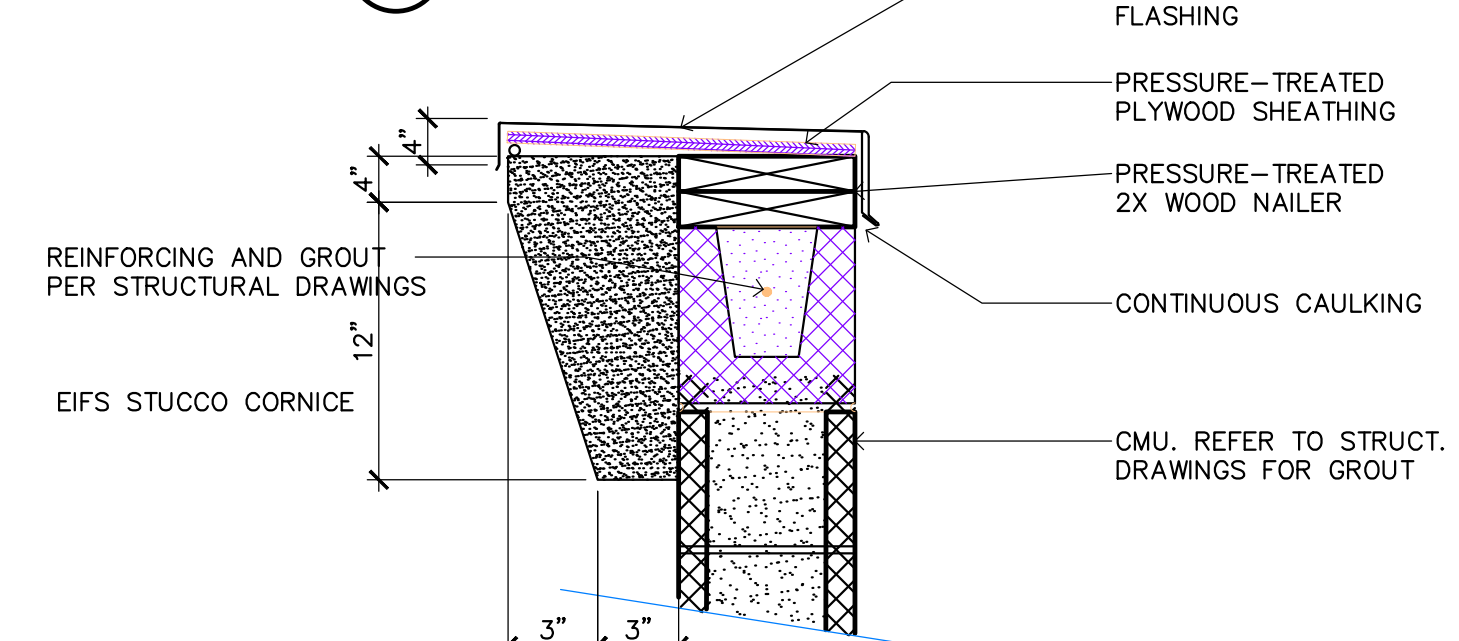
5 FOUNDATION DETAIL
SCALE: NO SCALE



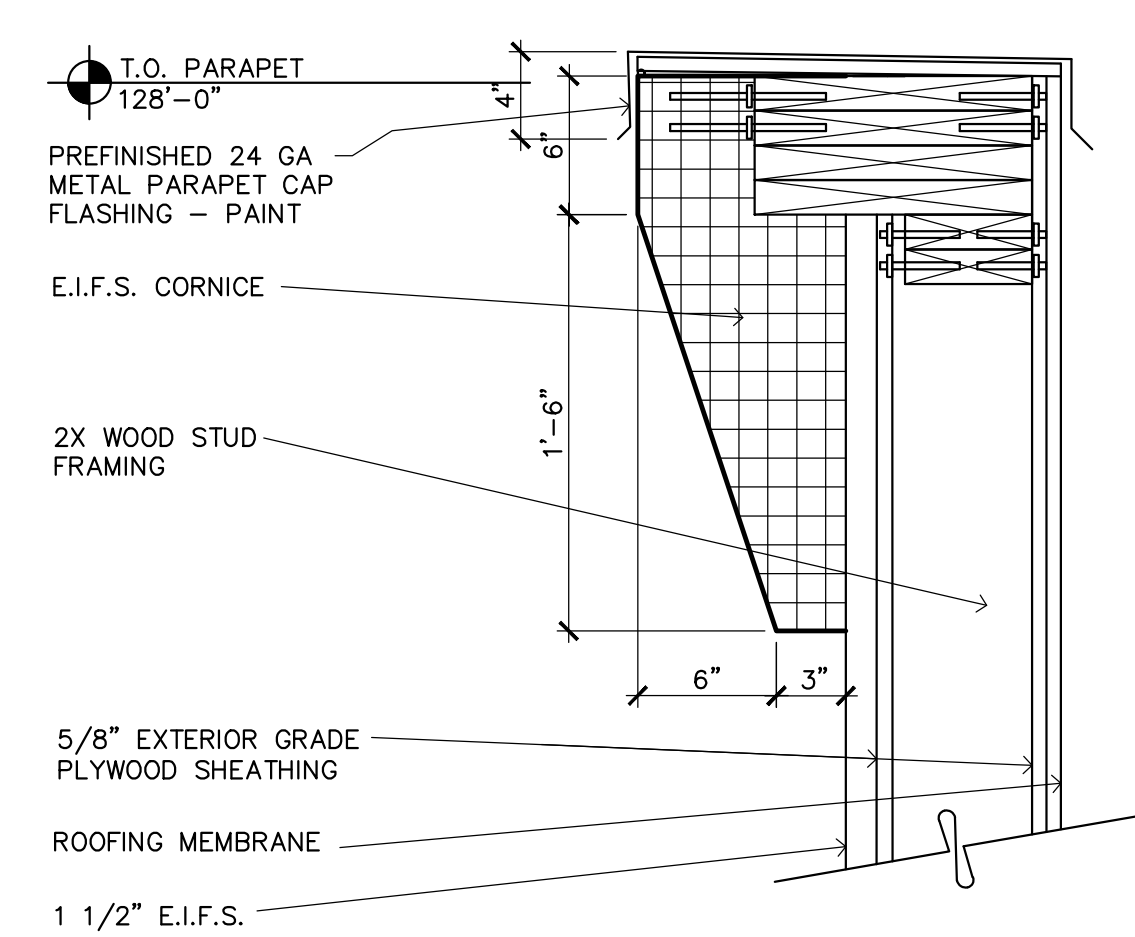
6 CMU AT STUD WALL DETAIL
SCALE: 1 1/2"=1'-0"



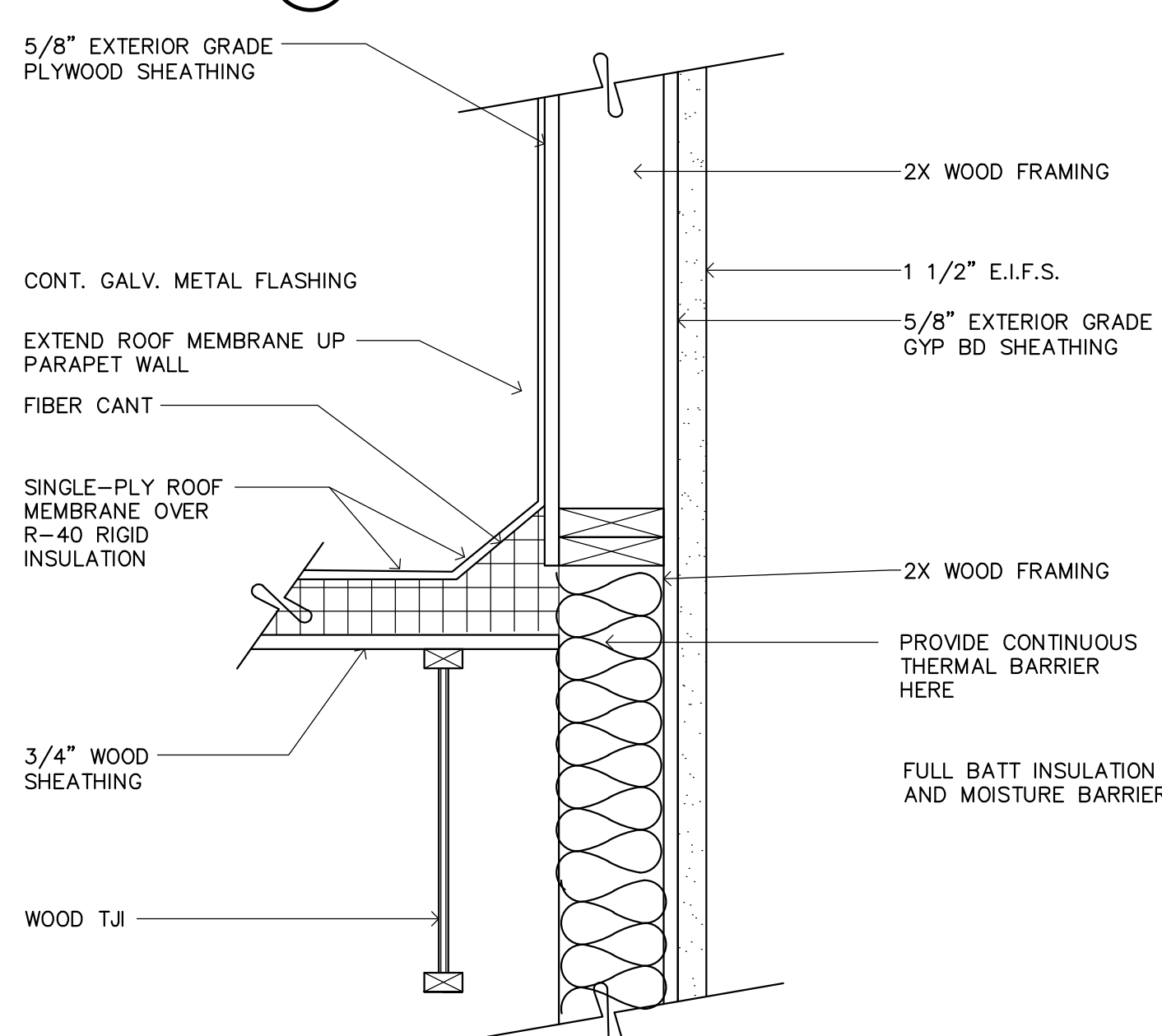
7 FOUNDATION DETAIL
SCALE: 1 1/2"=1'-0"



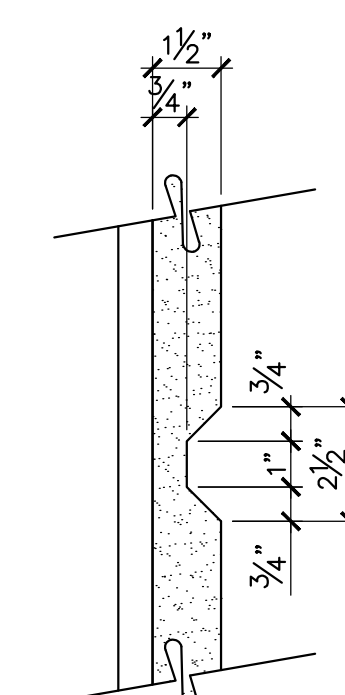
8 CORNICE AT CMU DETAIL
SCALE: 1 1/2"=1'-0"



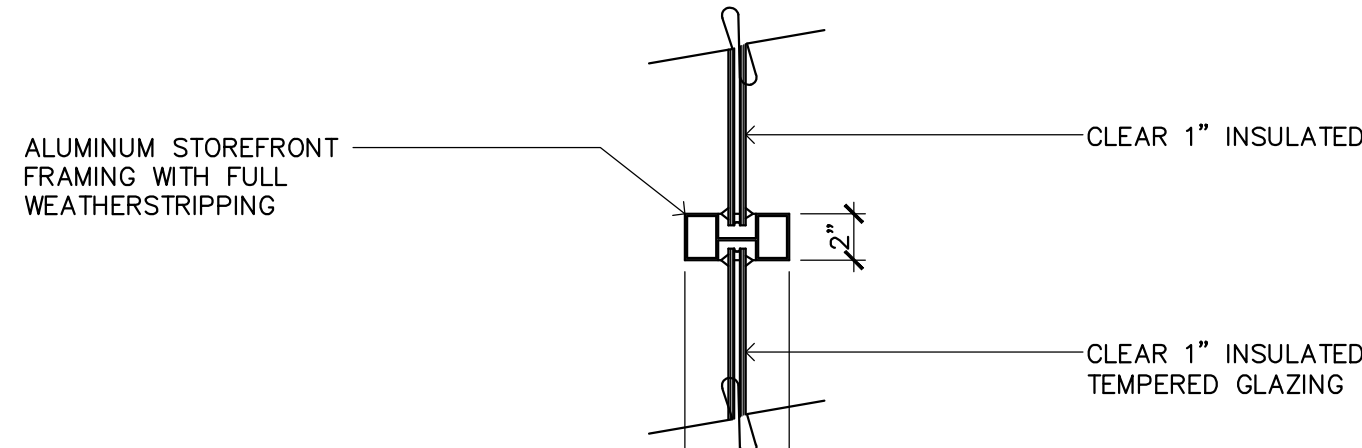
1 CORNICE AT STUD WALL DETAIL
SCALE: 1 1/2"=1'-0"



2 DECK AT STUD WALL DETAIL
SCALE: 1 1/2"=1'-0"



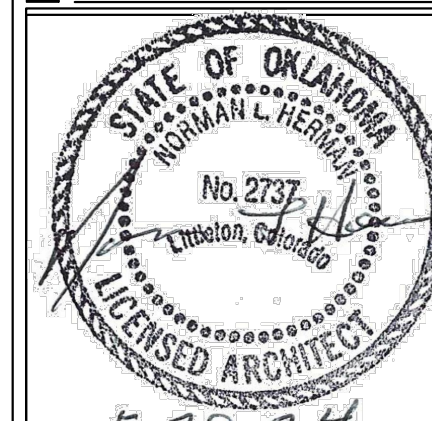
3 REVEAL DETAIL
SCALE: 3"=1'-0"



4 STOREFRONT WINDOW DETAIL
SCALE: 1 1/2"=1'-0"

BRAKES PLUS

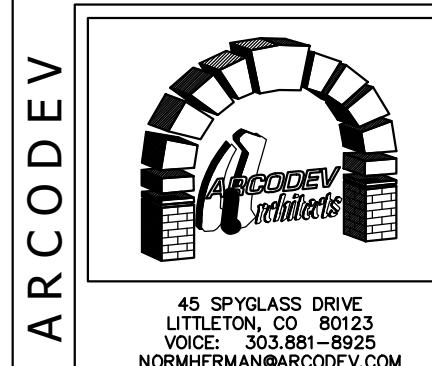
4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA



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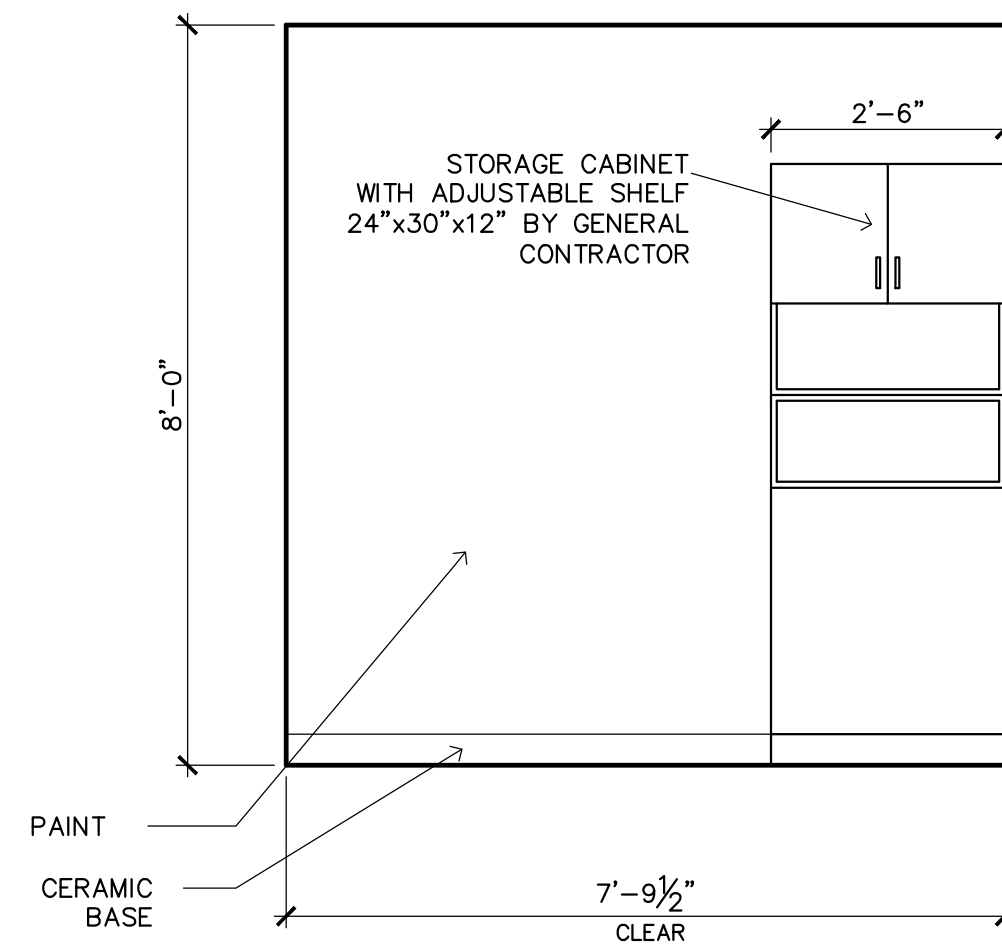
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CLIENT/JOB #:
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CHECKED BY: NLH
DATE OF ISSUE: 05.13.24



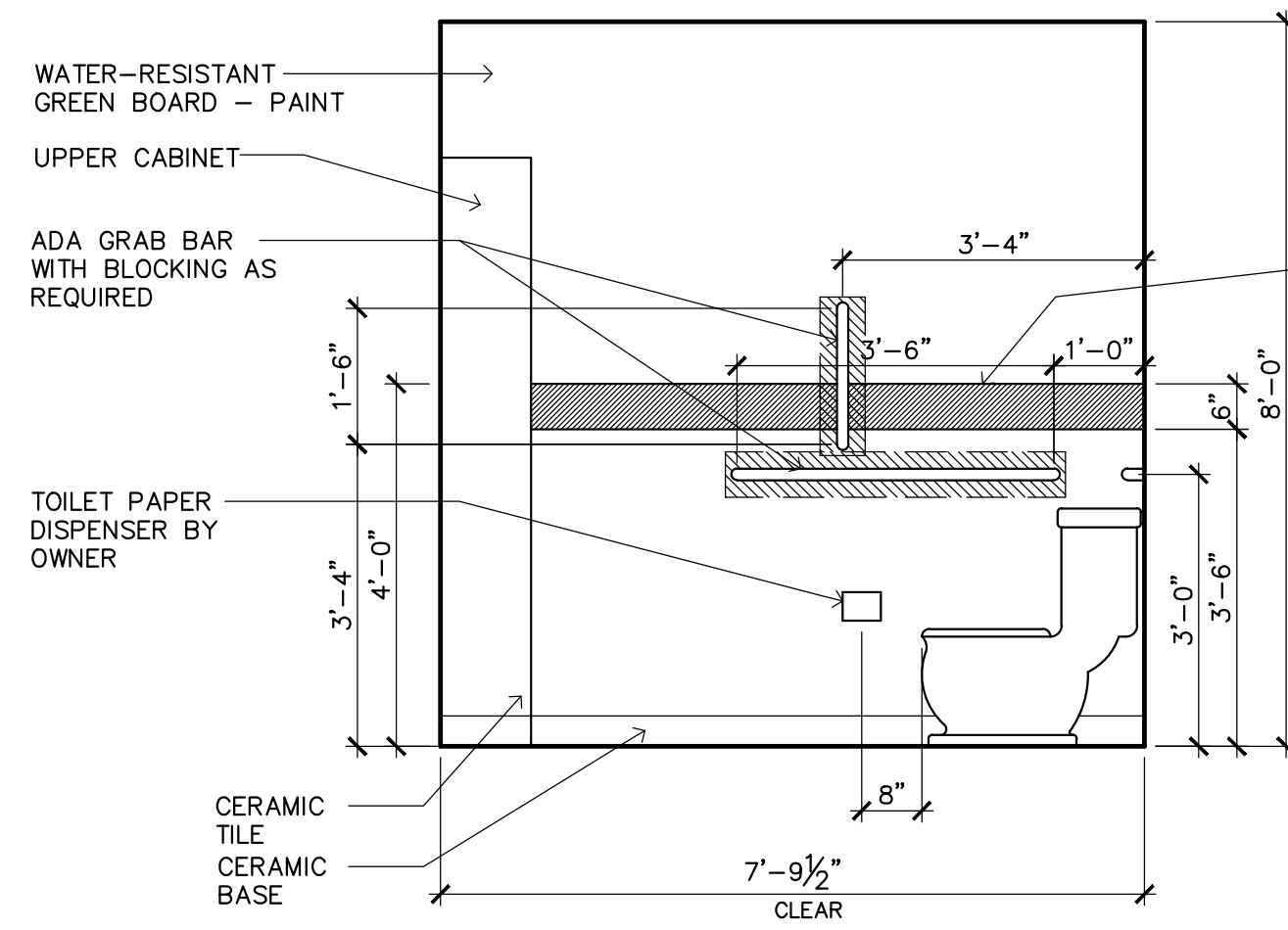
SHEET

A4-6

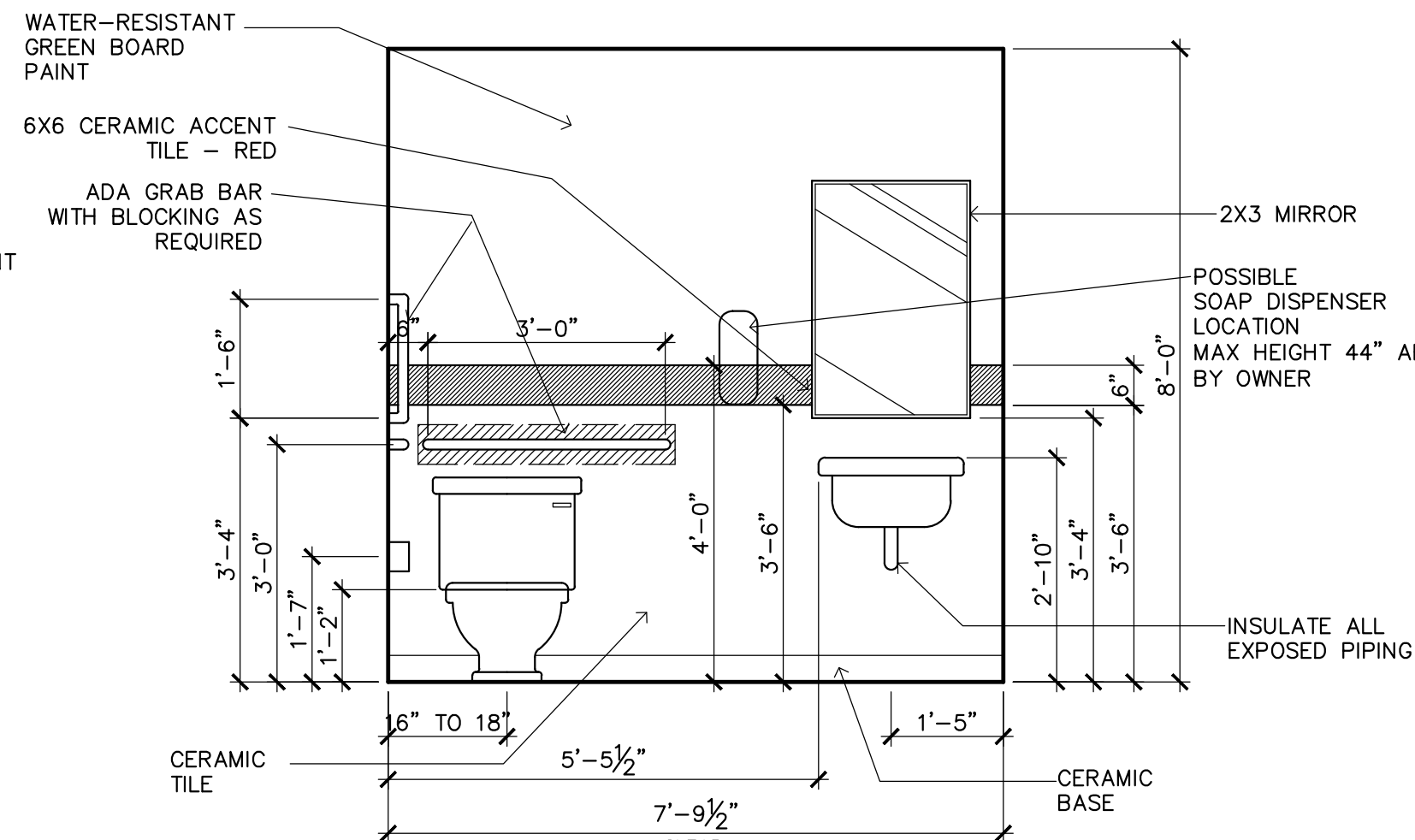
DETAILS



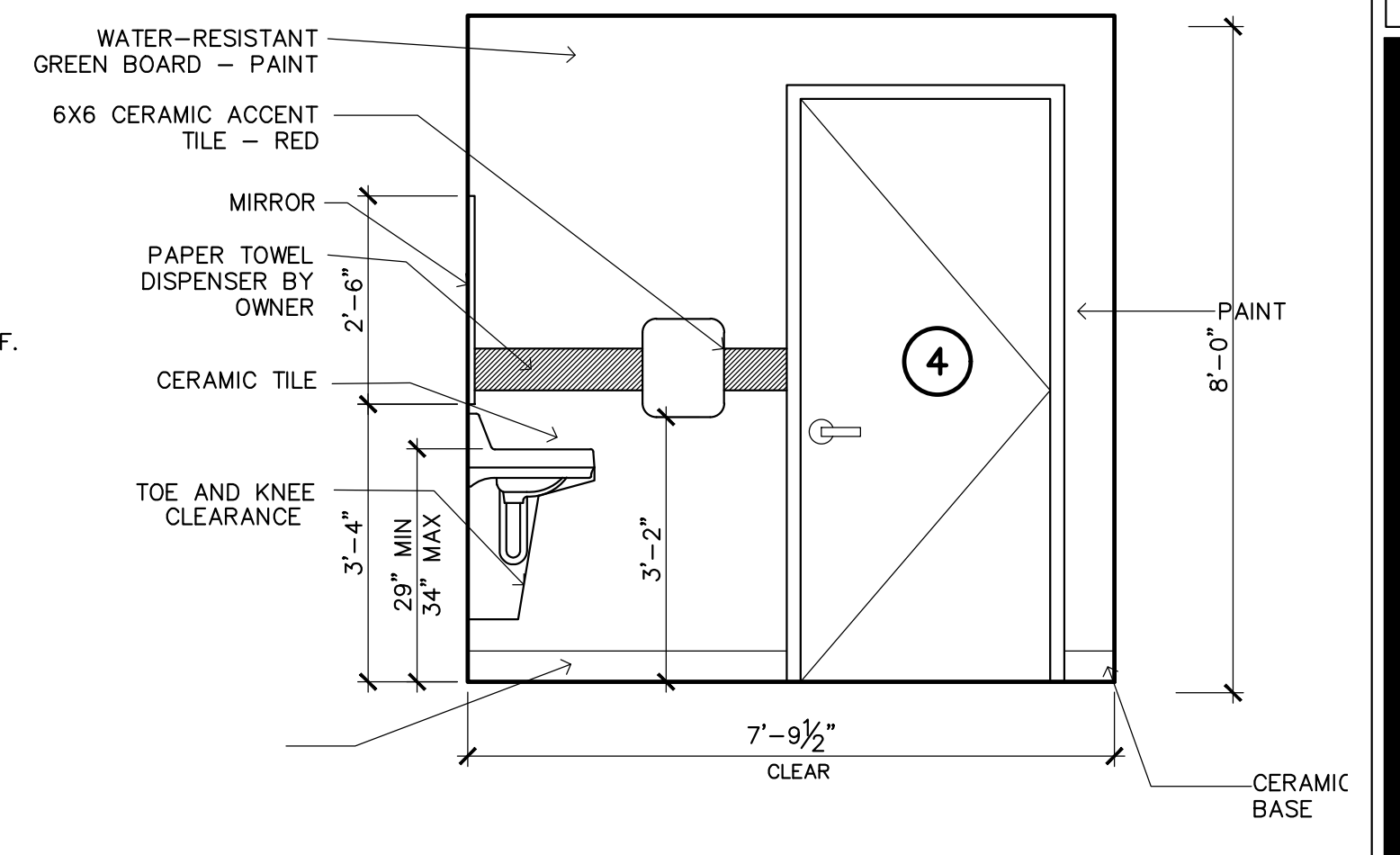
① UNISEX RESTROOM ELEVATION
SCALE: 1/2" = 1'-0"



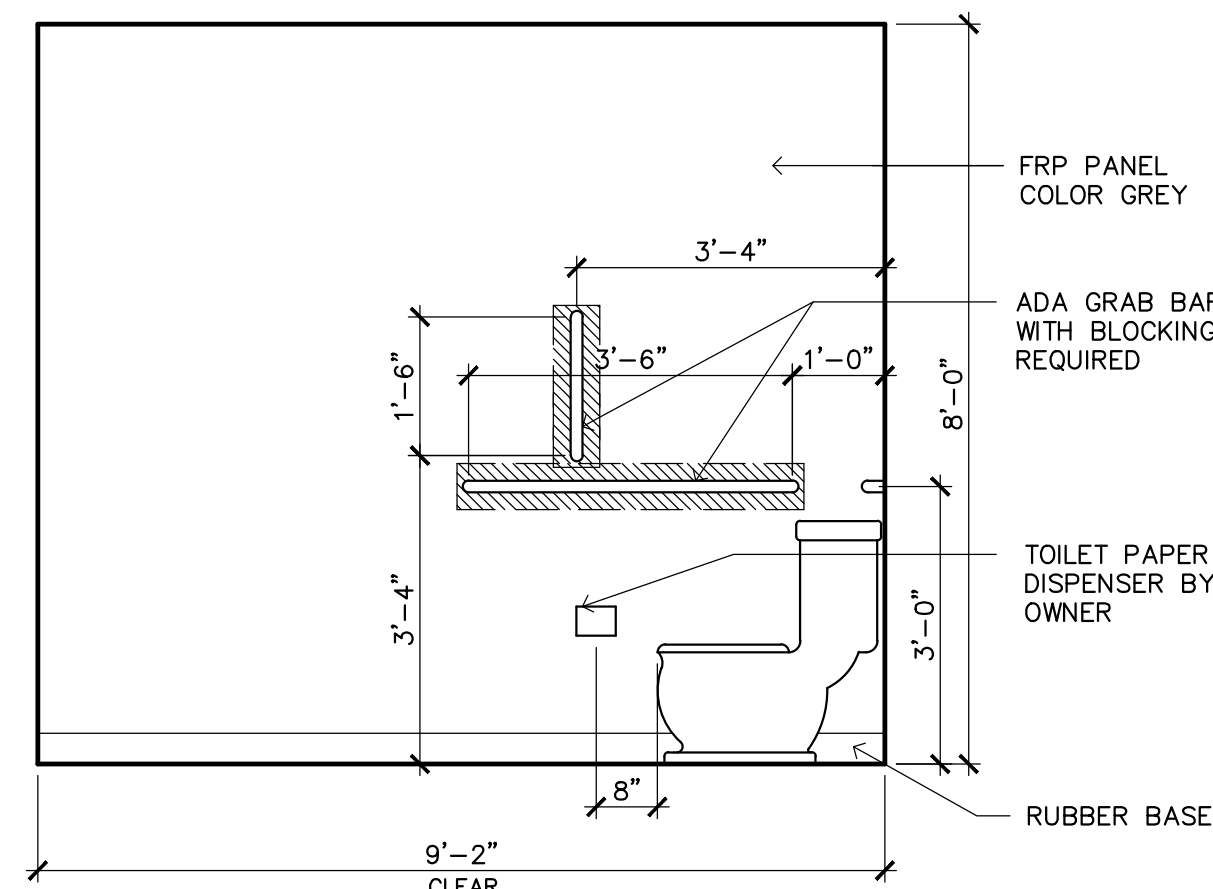
②



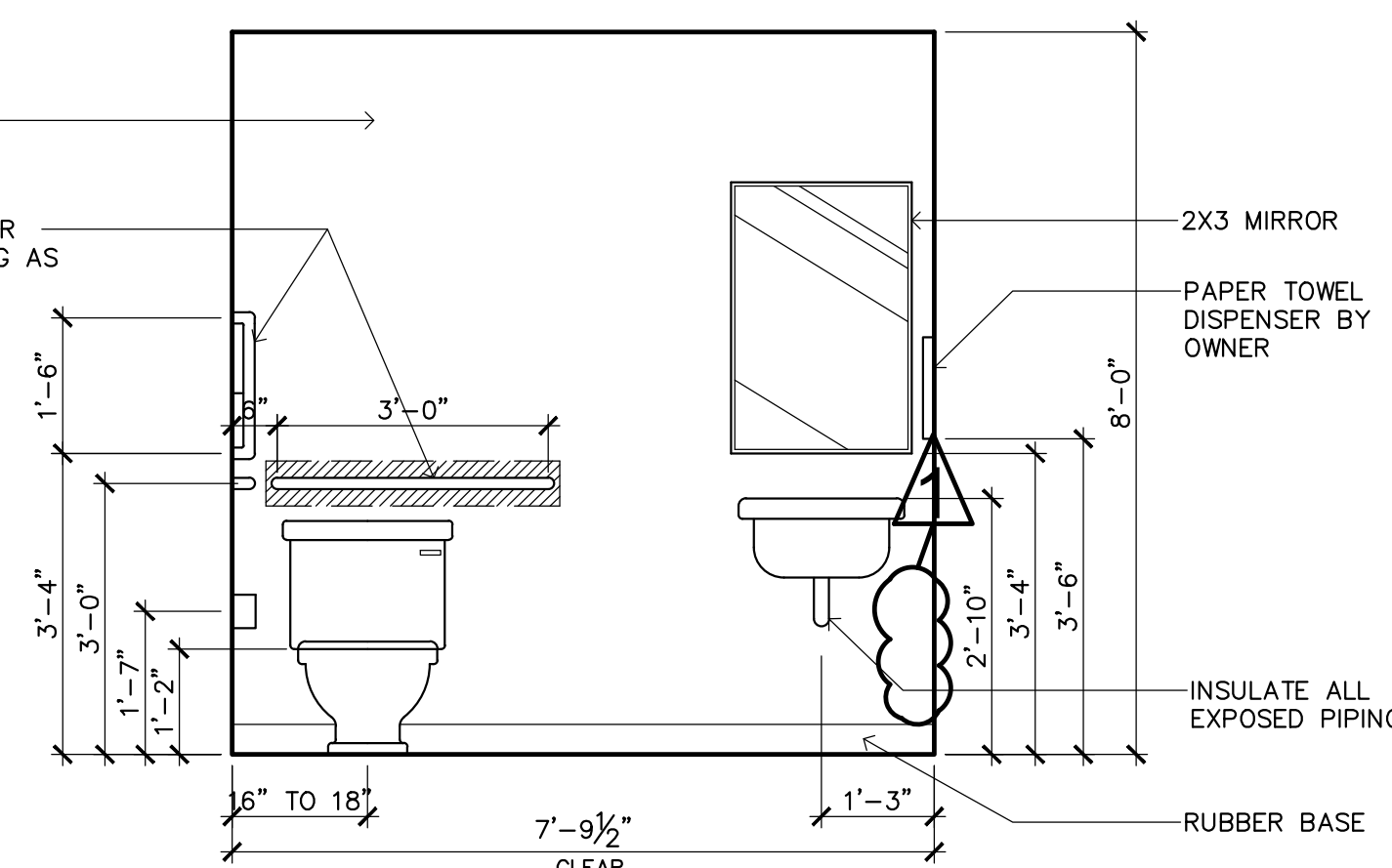
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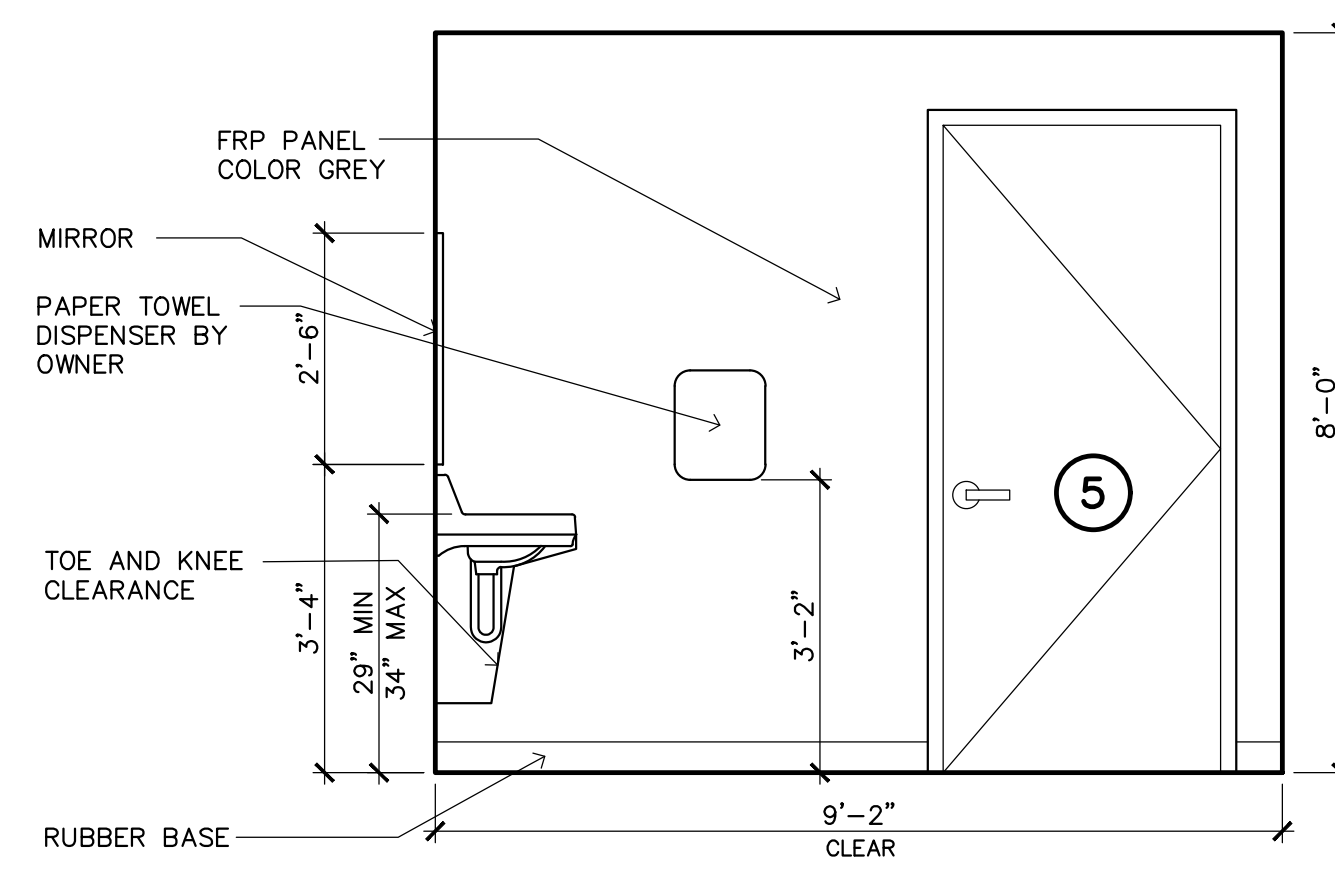
④



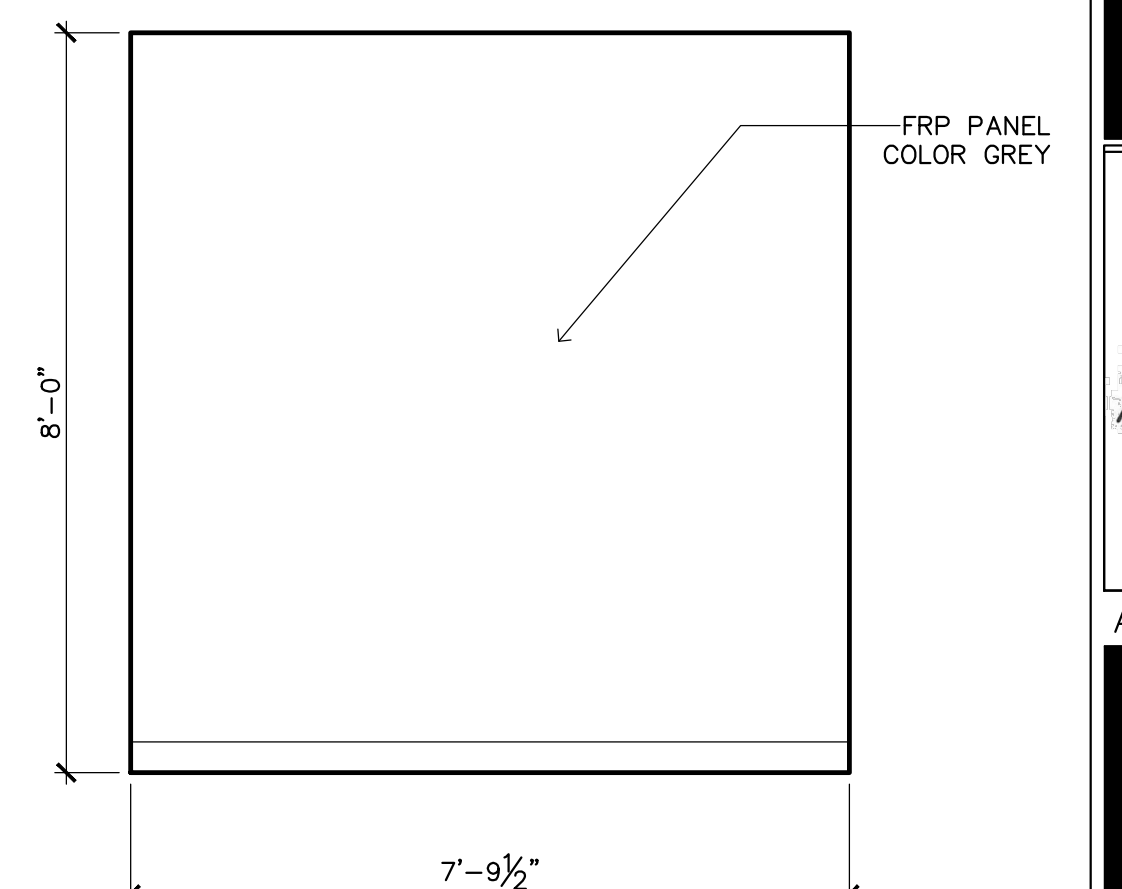
② UNISEX RESTROOM ELEVATION
SCALE: 1/2" = 1'-0"



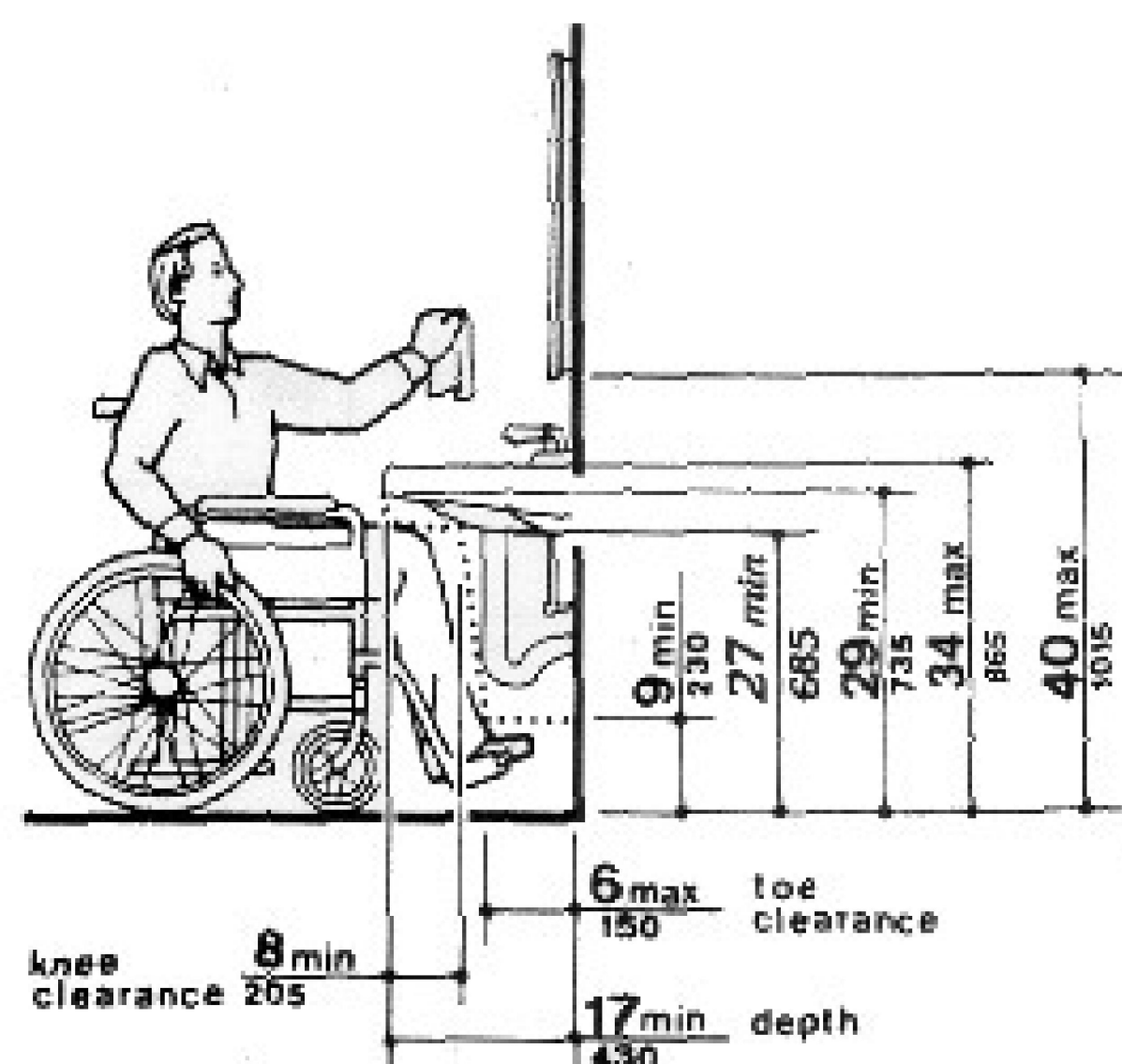
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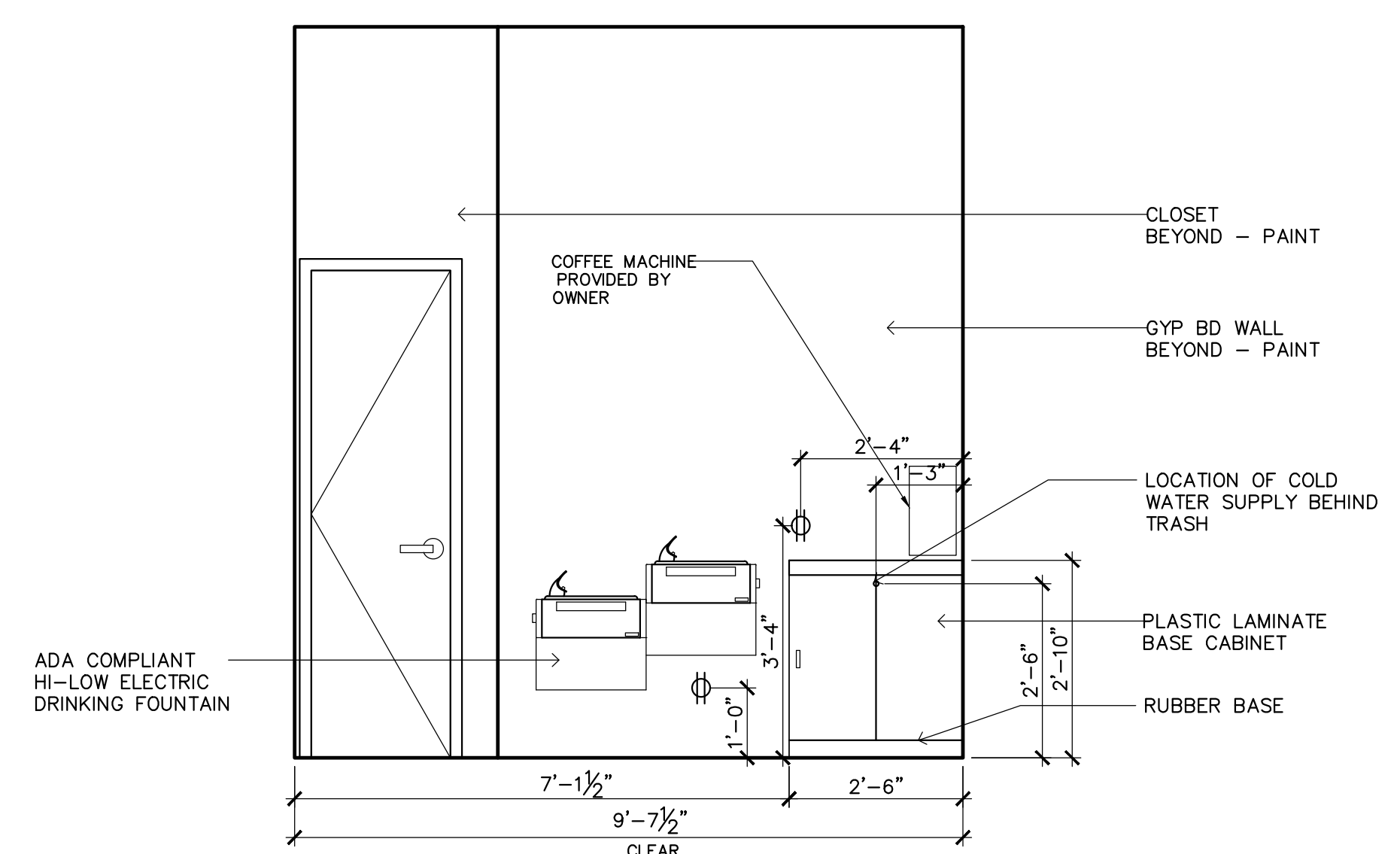
④



⑤



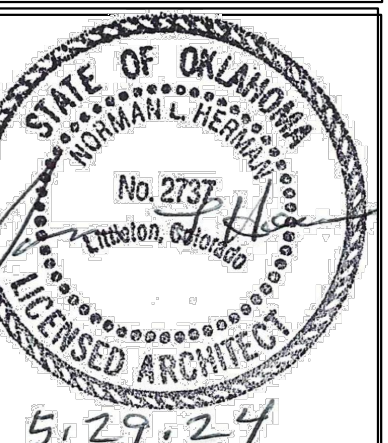
⑥ ADA PLACEMENT OF FIXTURES
SCALE: 1/2" = 1'-0"



⑤ COFFEE ROOM ELEVATION
SCALE: 1/2" = 1'-0"

BRAKES PLUS

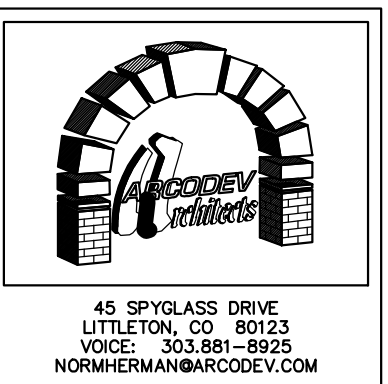
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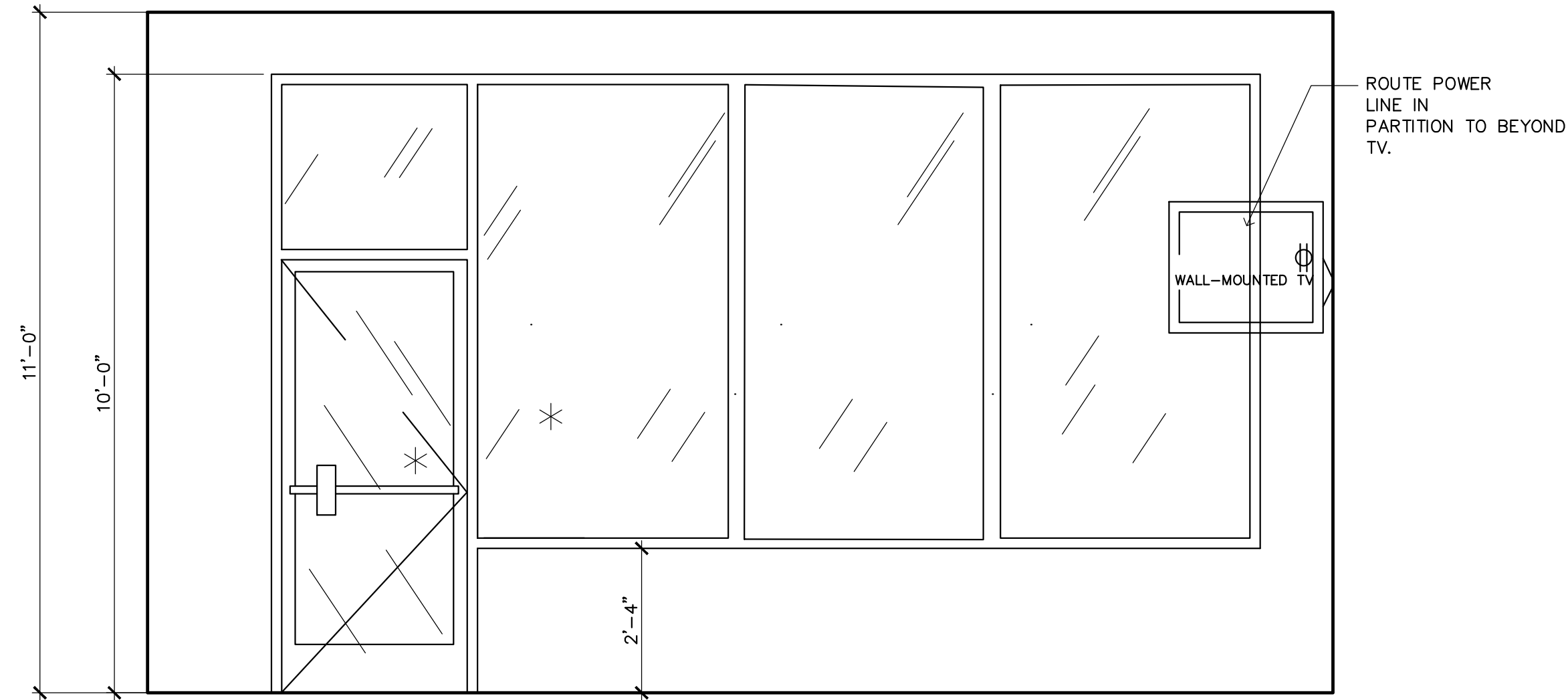
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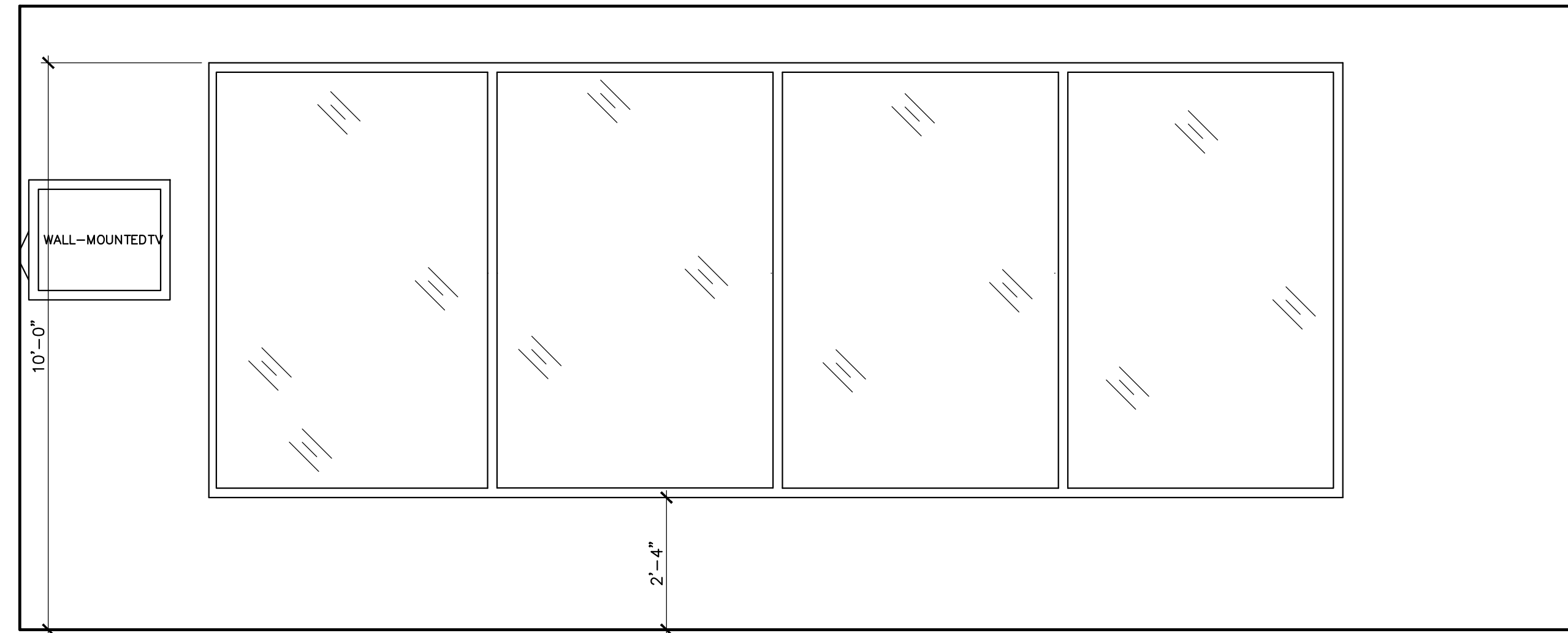
SHEET

A5-1

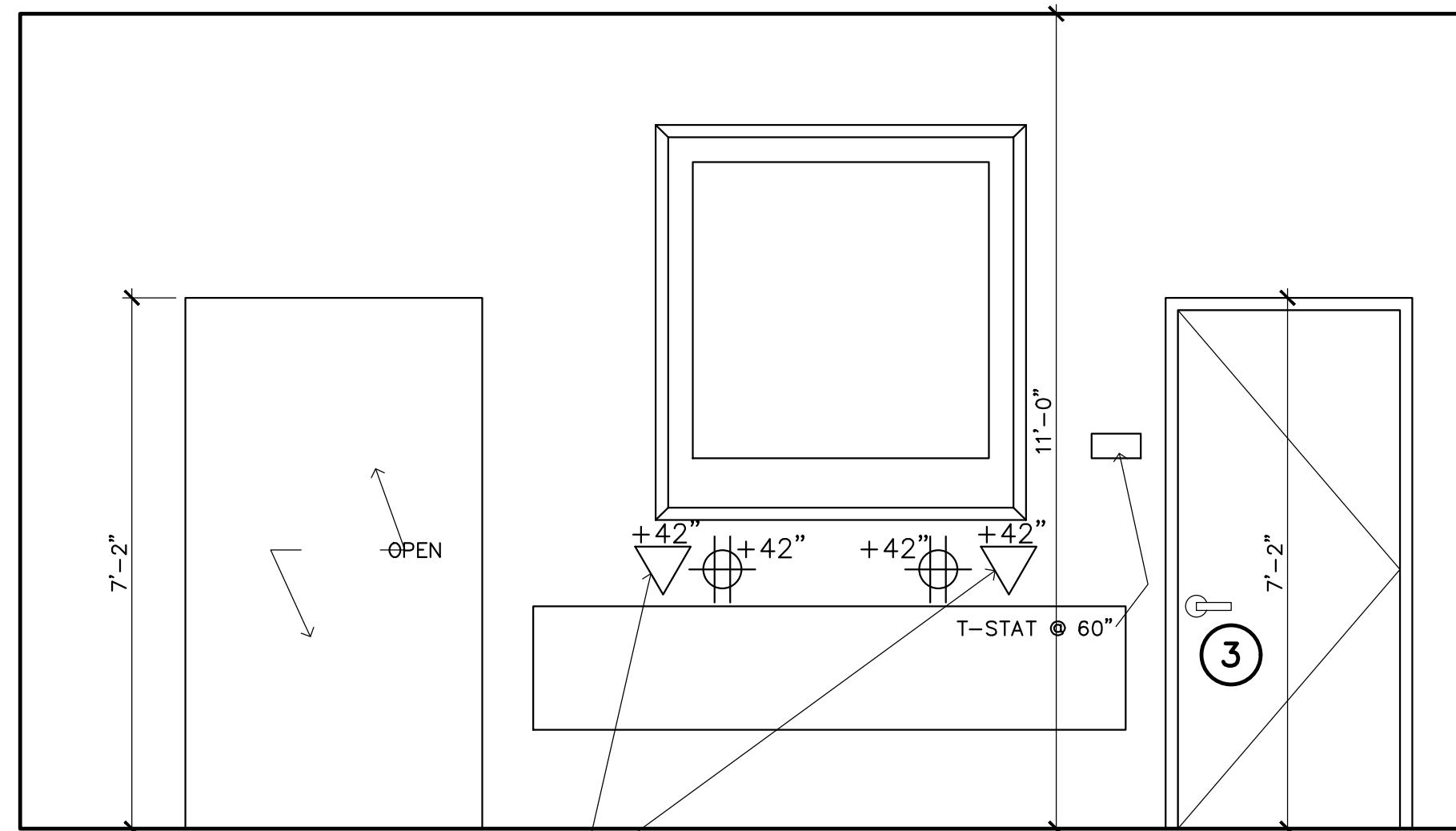
INTERIOR ELEVATIONS
AND DETAILS



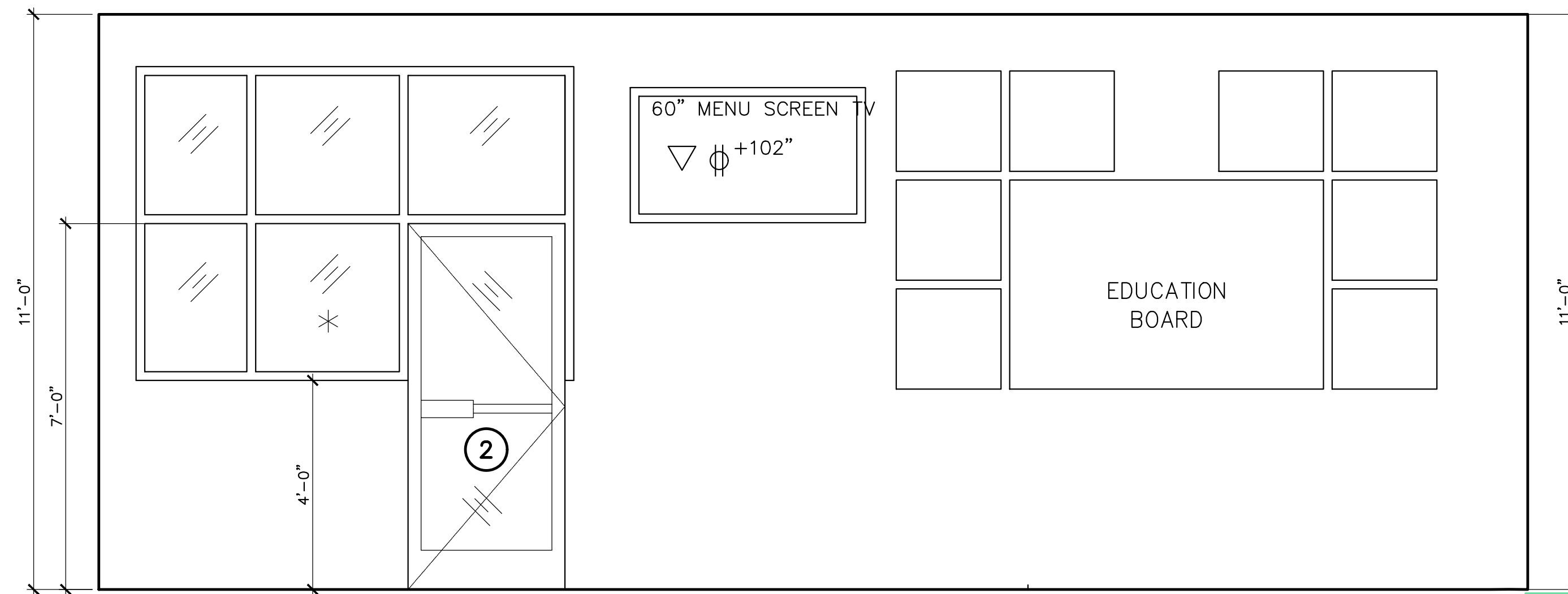
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a



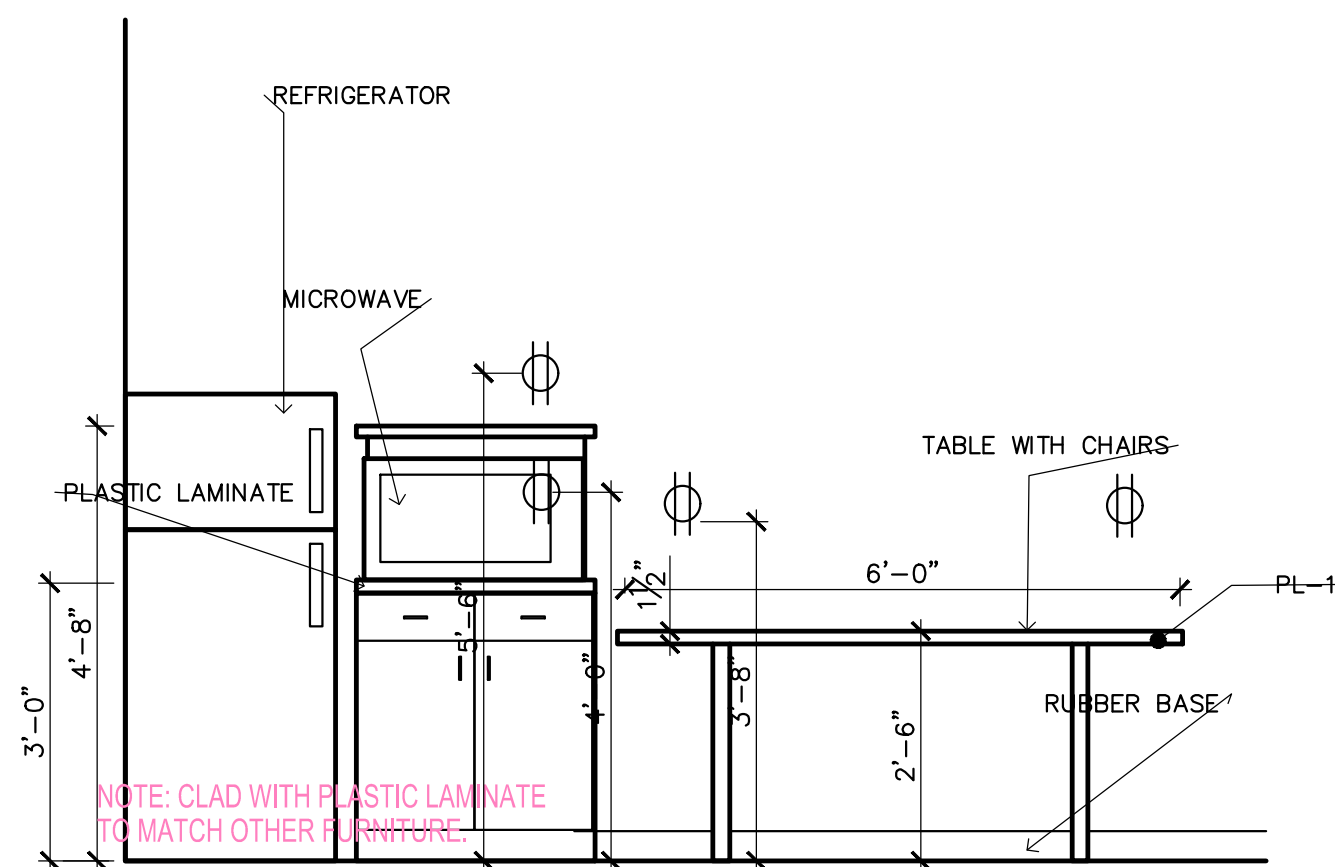
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c

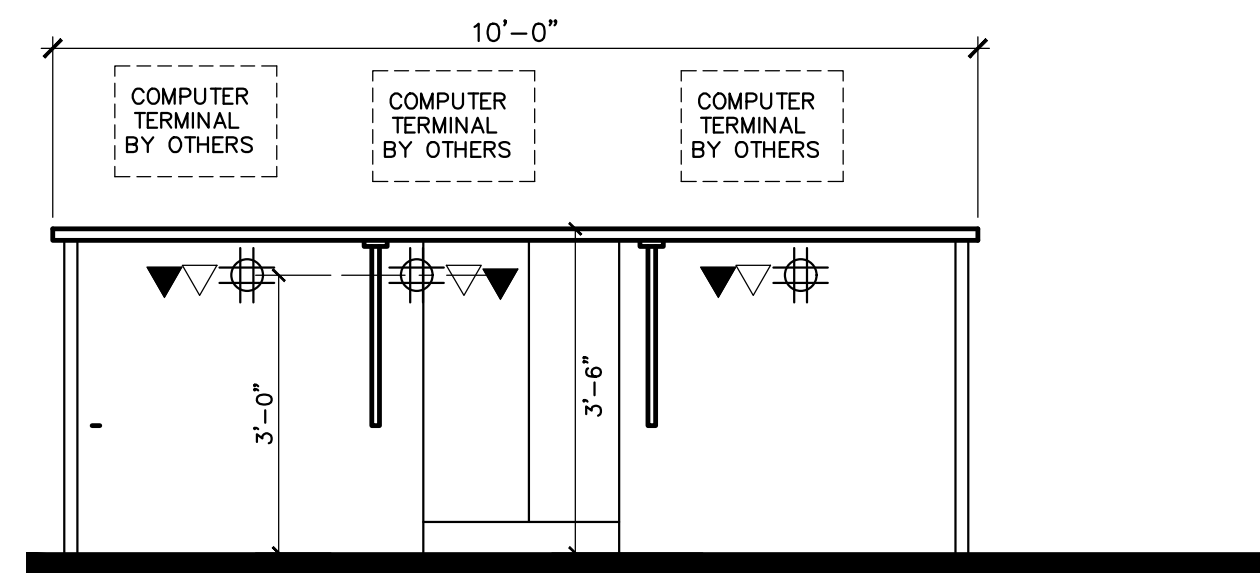
1 SALES AREA ELEVATIONS

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



2 BREAK ROOM ELEVATION

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



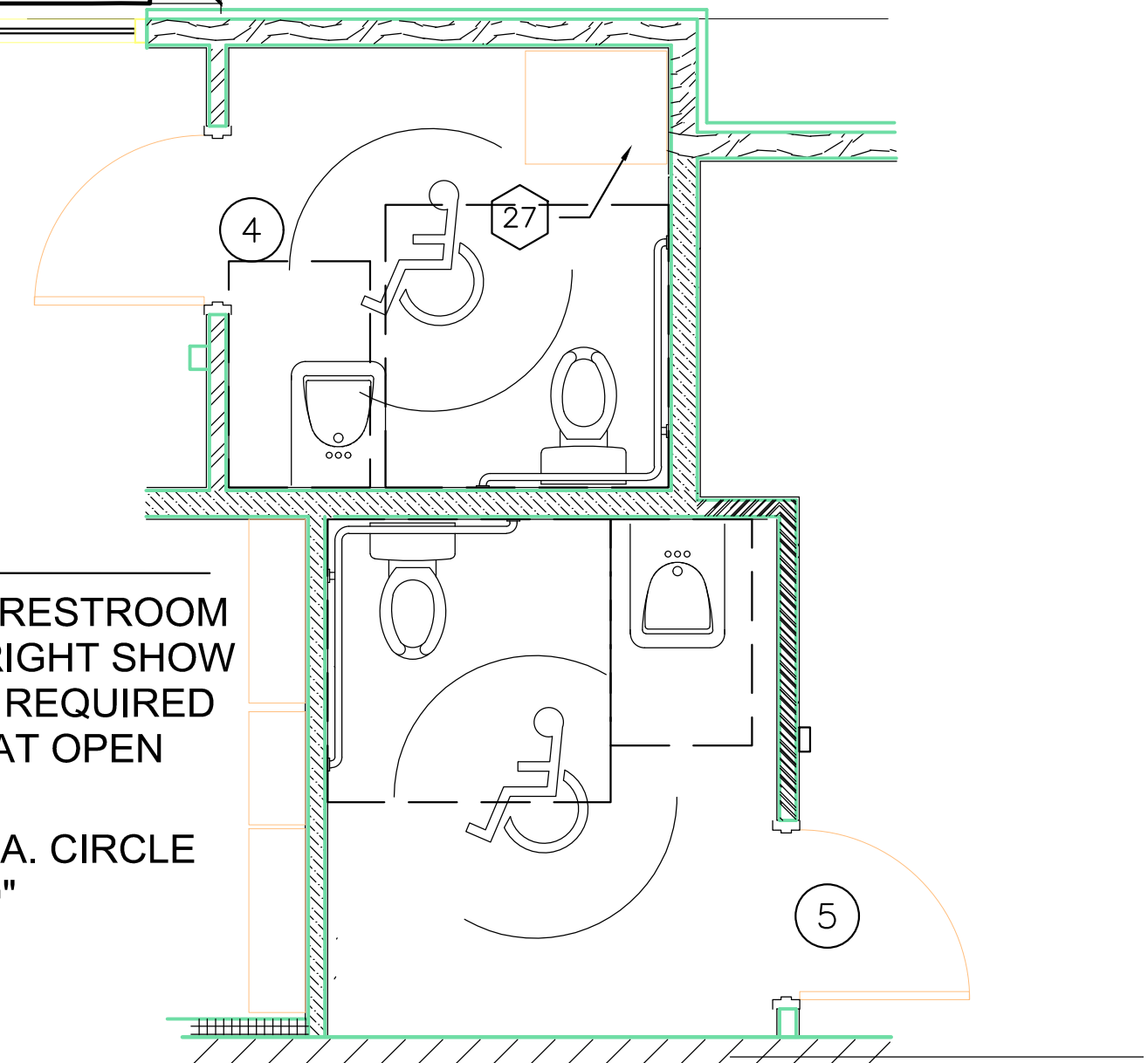
3 SERVICE DESK COMP. TERMINAL STATION

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

NOTE:

DASHED LINES ON RESTROOM FLOOR PLANS AT RIGHT SHOW THE CLEAR SPACE REQUIRED AT FIXTURES AND AT OPEN AREA:

OPEN AREA: 60" DIA. CIRCLE
TOILET: 5'-0" X 5'-0"
SINK: 30"X48"



BRAKES PLUS

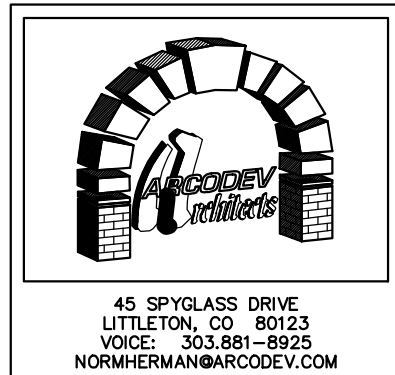
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SHEET

A5-2

INTERIOR ELEVATIONS
AND DETAILS

DOOR SCHEDULE

DOOR NO.	DOOR SIZE	TYPE	DOOR			FRAME		DETAILS			HDMR GROUP	FIRE RATING	REMARKS
			MAT'L	FINISH	OUT	MAT'L	FINISH	HEAD	JAMB	SILL			
1	3'-0" X 7'-0"	C	ALUM./GL	M1	M1	ALUM.	M1	8/A6-1	7/A6-1	8/A6-1	6	-	SIGN THIS DOOR SHALL REMAIN UNLOCKED DURING BUSINESS HOURS.
2	3'-0" X 7'-0"	C	ALUM./GL	M1	M1	ALUM.	M1	8/A6-1	7/A6-1	8/A6-1	6	-	THIS DOOR CLEAR MILL FINISH TO MATCH STOREFRONT FRAMING
3	3'-0" X 7'-0"	B	H.M.	P2	P2	H.M.	P2	3/A6-1	3/A6-1	-	2	-	-
4	3'-0" X 7'-0"	B	H.M.	P2	P2	H.M.	P2	3/A6-1	3/A6-1	-	1	-	PROVIDE ACCESSIBLE RESTROOM SIGNAGE.
5	3'-0" X 7'-0"	F	H.M.	P2	P2	H.M.	P2	3/A6-1	3/A6-1	-	1	-	PROVIDE ACCESSIBLE RESTROOM SIGNAGE.
6	3'-0" X 7'-0"	E	H.M.	P2	P2	H.M.	P2	2/A6-1 SIM	4/A6-1 SIM	2/A6-1 SIM	4	-	PROVIDE 16"X30" VIEW PANEL.
7	2'-0"X 7'-0"	A	H.M.	-	-	-	-	-	-	-	-	-	1 1/2 PR. HINGES, LEVER LATCH SET.
8	NOT USED	-	-	-	-	-	-	-	-	-	-	-	-
9	3'-8" X 7'-0"	E	H.M.	P2	P2	H.M.	P2	1/A6-1	4/A6-1	-	1	-	PROVIDE 16"X30" VIEW PANEL.
10	3'-0" X 7'-0"	B	H.M.	-	-	-	-	1,2/A6-1	4/A6-1	1,2/A6-1	3	-	INSULATED DOOR
11	10'-0" X 12'-0"	D	ALUM./GL	-	-	-	-	9/A6-1	6/A6-1	9/A6-1	-	-	PADLOCK
12	10'-0" X 12'-0"	D	ALUM./GL	-	-	-	-	9/A6-1	6/A6-1	9/A6-1	-	-	PADLOCK
13	10'-0" X 12'-0"	D	ALUM./GL	-	-	-	-	9/A6-1	6/A6-1	9/A6-1	-	-	PADLOCK
14	10'-0" X 12'-0"	D	ALUM./GL	-	-	-	-	9/A6-1	6/A6-1	9/A6-1	-	-	PADLOCK
15	10'-0" X 12'-0"	D	ALUM./GL	-	-	-	-	9/A6-1	6/A6-1	9/A6-1	-	-	PADLOCK
16	10'-0" X 12'-0"	D	ALUM./GL	-	-	-	-	9/A6-1	6/A6-1	9/A6-1	-	-	PADLOCK
17	10'-0" X 12'-0"	D	ALUM./GL	-	-	-	-	9/A6-1	6/A6-1	9/A6-1	-	-	PADLOCK
18	10'-0" X 12'-0"	D	ALUM./GL	-	-	-	-	9/A6-1	6/A6-1	9/A6-1	-	-	PADLOCK

NOTE:

- THRESHOLD SHALL BE MAXIMUM 1/2" HIGH ABOVE FLOOR AND LANDING ON BOTH SIDES AT BUILDING ENTRANCES.
- MAXIMUM DOOR OPENING EFFORT SHALL BE 5 LBS AT EXTERIOR AND INTERIOR DOORS PER ANSI 404.2.9.
- ALL DOORS SHALL BE EQUIPED WITH SINGLE-EFFORT, NON-GRASP HARDWARE CENTERED BETWEEN 34" AND 48" ABOVE THE FLOOR.

ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOORS		WALLS								CEILINGS		REMARKS	
		FLOOR	BASE	EAST		WEST		NORTH		SOUTH		MATERIAL	FINISH		
				MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH				
101	SALES FLOOR	LVT	RB	GB	F3	ALUM/G.B.	F3	ALUM/GB	F3	G.B.	F3	ACT	F1	11'-0"	—
102	COFFEE ROOM	LVT	RB	GB	F3	GB	F3	GB	F3	GB	F3	ACT	F1	10'-0"	—
103	OFFICE	LVT	RB	GB	F3	GB	F3	GB	F3	GB	F3	ACT	F1	8'-0"	—
104	UNISEX RR.	LVT	CT	G.B./CT	F4/F1	GB	G.B.	GB/CT	F4/F1	GB/CT	F4/F1	GB	F4	8'-0"	—
105	UNISEX RR.	SEALED CONCRETE	RB	FRP	F1	FRP	F1	FRP	F1	CMU	F1	GB	F4	8'-0"	PROVIDE 1 COAT BLOCK FILLER AT CMU WALL
106	STO.	LVT	RB	GB	F3	GB	F3	GB	F3	GB	F3	GB	F4	ON TRUSS	
107	BREAK ROOM	SEALED CONCRETE	RB	GB	F3	GB	F3	G.B.	F3	CMU	F3	OPEN	P2	ON TRUSS	
108	INVENTORY	SEALED CONCRETE	RB	GB	F3	GB	F3	GB	F3	CMU	F5	OPEN	F4	ON TRUSS	—
109	SERVICE AREA	SEALED CONCRETE	—	CMU	F5	CMU	F5	CMU	F5	CMU	F5	OPEN	F4	VARIES	—
110	NOT USED	—	—	—	—	—	—	—	—	—	—	—	—	—	—
111															

NOTES:

- PROVIDE MOISTURE-RESISTANT GYPSUM BOARD.

HARDWARE SCHEDULE

GROUP	QTY.	DESCRIPTION
1	1 EACH 1 EACH 3 EACH 1 EACH 1 EACH	FRAME - ME416 3070 X 5 3/4" HMF DOOR - 3070 X 1 3/4" H.M. HINGE - STANLEY FBB179 4.5 X 4.5 X 626 LOCKSET - SCHLAGE AL405 SAT X 626 (PRIVACY) FLOOR STOP - MM FS13 X US26D
2	1 EACH 1 EACH 3 EACH 1 EACH 1 EACH 1 EACH	FRAME - ME416 3070 X 5 3/4" HMF LH CR ASA DOOR - 3070 X 1 3/4" H.M. HINGE - STANLEY FBB179 4.5 X 4.5 X 626 LOCKSET - SCHLAGE AL53PD SAT X 626 (ENTRY) CLOSER - LCN 1461 REG/PA TBMS X ALU FLOOR STOP - MM FS13 X US26D
3	1 EACH 1 EACH 3 EACH 1 EACH 1 EACH 1 EACH 1 EACH 1 EACH 1 EACH 1 EACH	FRAME - ME416 3070 X 5 3/4" 4" HD HMF RH CR BJPR DOOR - 3070 X 1 3/4" HMD BLANK MOLCR HINGE - STANLEY FBB179 NRP 4.5 X 4.5 X 626 EXIT DEVICE - VON DUPRIN 22NL 3" X SP28 RIM CYLINDER - SCH 'C' X US26D CLOSER - LCN 4041 CUSH TBMS X ALU LATCHGUARD - MM MG2C THRESHOLD - PEMKO 179AV X 36" SWEEP - PEMKO 18137P X 36" SMOKE SEAL - PEMKO 586C 17"
4	1 EACH 1 EACH 3 EACH 1 EACH 1 EACH	FRAME - ME416 3070 X 5 3/4" HMF LH CR ASA DOOR - 3070 X 1 3/4" H.M. HINGE - STANLEY FBB179 4.5 X 4.5 X 626 LOCKSET - SCHLAGE AL539D SAT X 626 (ENTRY) CLOSER STOP - MM FS13 X US26D
5	1 EACH 1 EACH 3 EACH 1 EACH 1 EACH	FRAME - ME416 3070 X 5 3/4" HMF DOOR - 3070 X 1 3/4" H.M. HINGE - STANLEY FBB179 4.5 X 4.5 X 626 LOCKSET - SCHLAGE AL105 SAT X 626 (PASSAGE) FLOOR STOP - MM FS13 X US26D
6	2 EACH 1 EACH 1 EACH 1 EACH 1 EACH 1 EACH 1 EACH 1 EACH 1 EACH 1 EACH	HINGE - KAWNEER OFFSET PIVOT CLOSER - LCN 4041 CUSH TBMS X ALU PUSH/PULL - KAWNEER, STYLE F-2 DEADLOCK - KAWNEER ADAMS RITE MS-1850A-505 W/ STANDARD LOCK CYLINDERS WITH HEAD & SILL BOLTS EXIT INDICATOR - KAWNEER ADAMS RITE 4089

* ALL DOOR HARDWARE SHALL BE LEVER TYPE

FINISHES

DOOR AND FRAME MATERIAL

SCW SOLID CORE WOOD
HM HOLLOW METAL
ALUM ALUMINUM
STL STEEL

DOOR AND FRAME FINISHES

P1 NOT USED
P2 PRIMER AND PAINTED
P3 FACTORY PRIMER, STANDEARD WHITE/LIGHT GRAY
M1 CLEAR ANODIZED ALUMINUM, MILL FINISH

FINISH MATERIALS

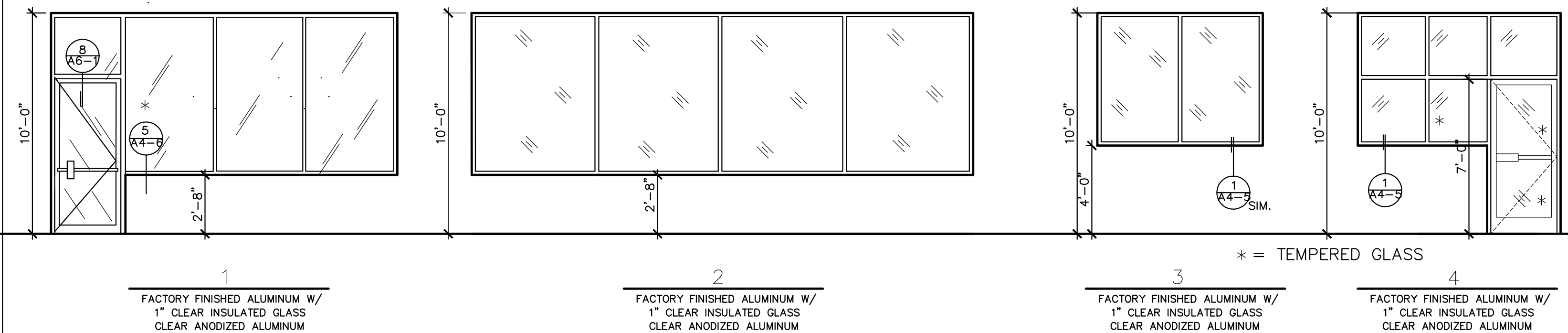
ACT ACUSTICAL CEILING TILES
CT CERAMIC TILE
CMU CONCRETE MASONRY UNIT
RB RUBBER BASE
GB GYPSUM BOARD
FRP FIBERGLASS REINFORCED PLASTIC
OPT CARPET

FINISHES

F1 NONE
F2 HARDENER AND SEALER
F3 2 COATS ENAMEL
F4 2 COATS ENAMEL
F5 1 COAT BLOCK FILLER - 2 COAT HIGH GLOSS ENAMEL
F6 TO 4'-0" AFF - 1 COATS HIGH GLOSS ENAMEL
F7 ABOVE 4'-0" AFF - 2 COATS SEMI-GLOSS ENAMEL

WINDOW TYPES

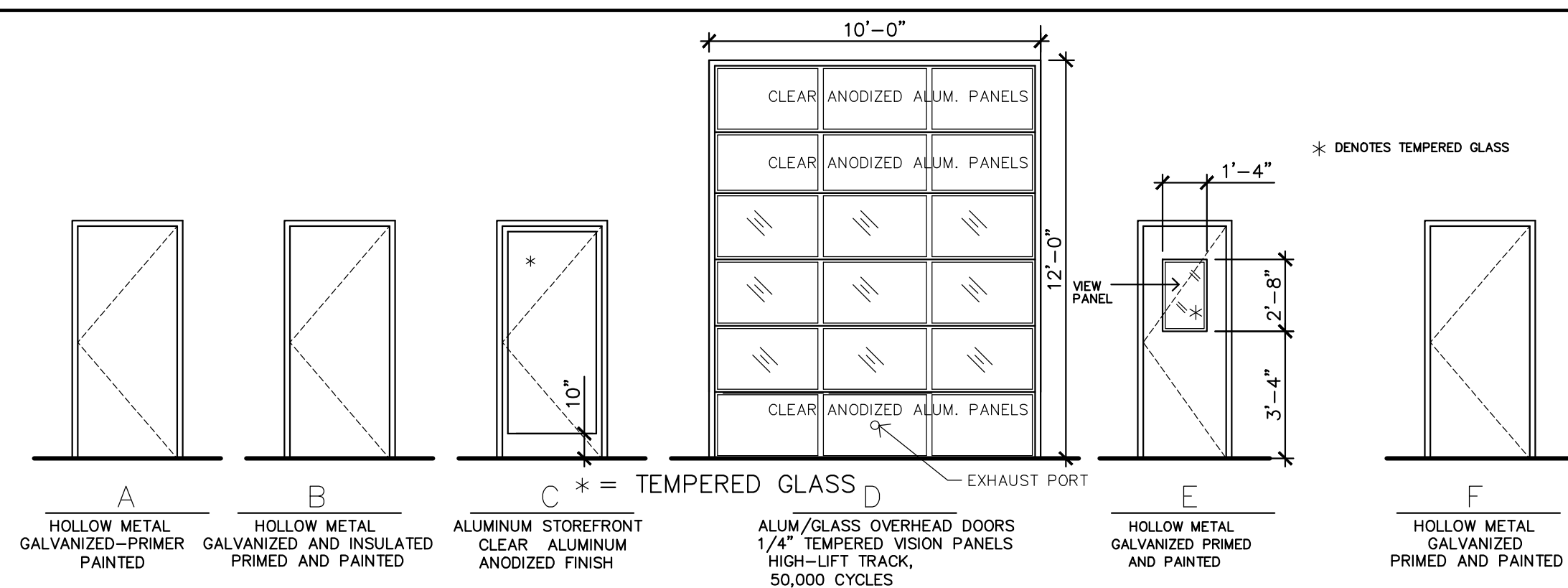
* = TEMPERED GLAZING



50,000 CYCLES

DOOR TYPES

= TEMPERED GLAZING

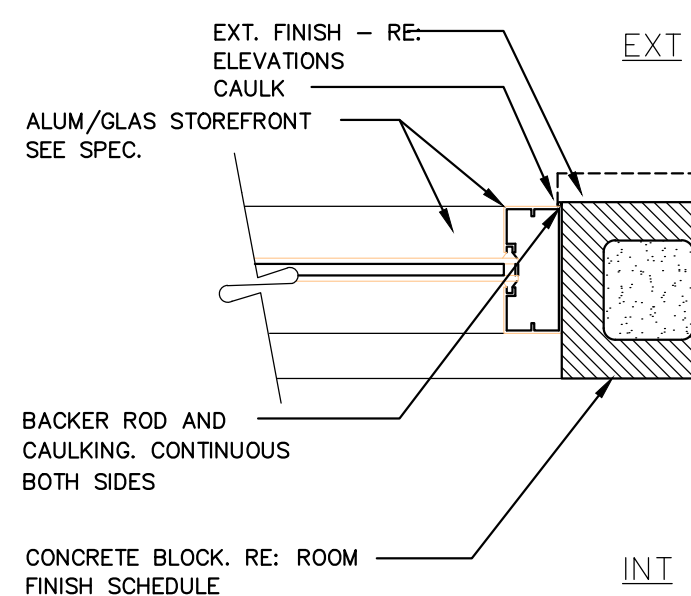


NOTE:

DOOR HANDLES, PULLS, LATCHES, AND OTHER OPERATING DEVICES ON DOORS REQUIRED TO BE ACCESSIBLE BY CHAPTER 11 SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE.

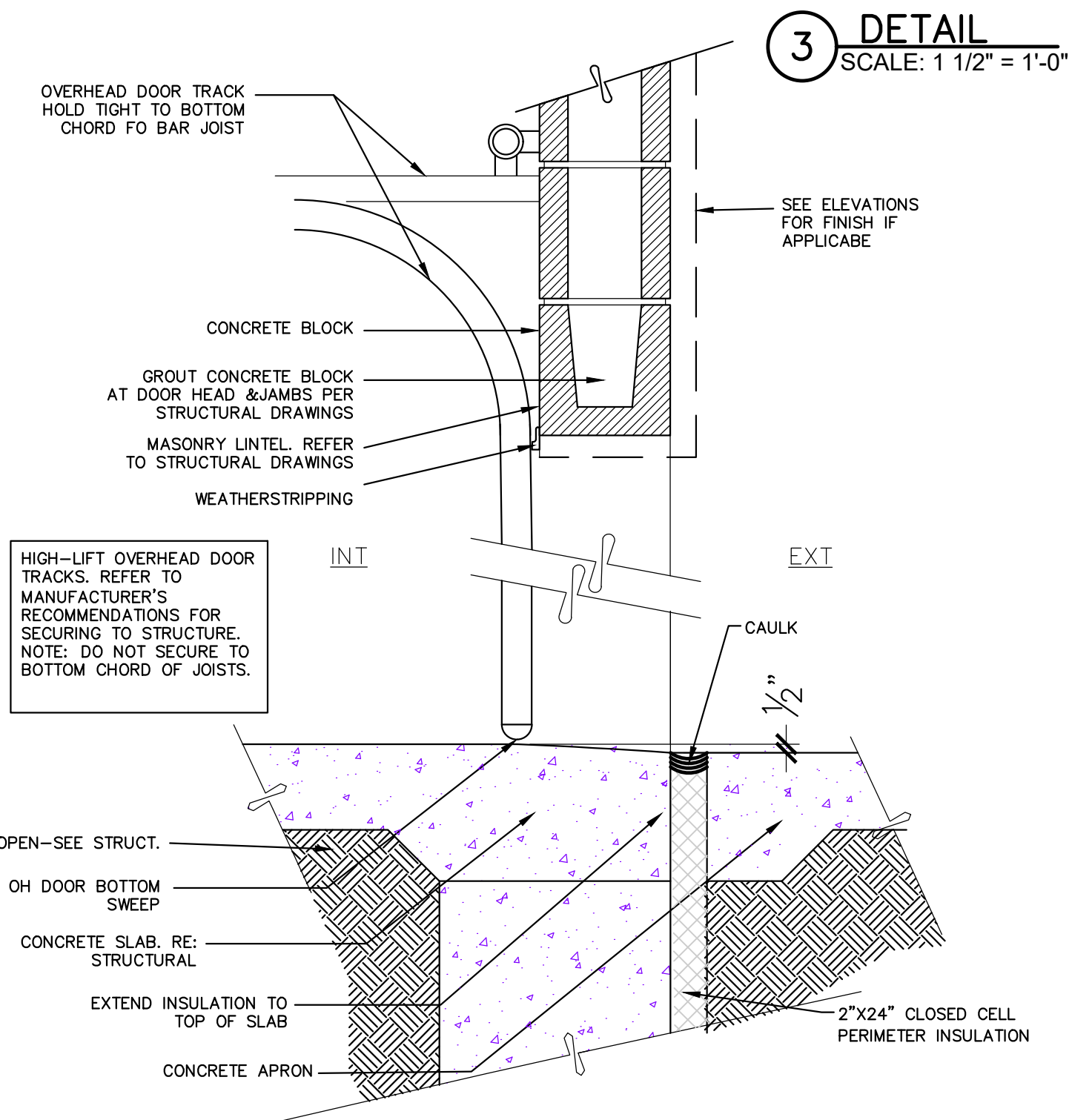
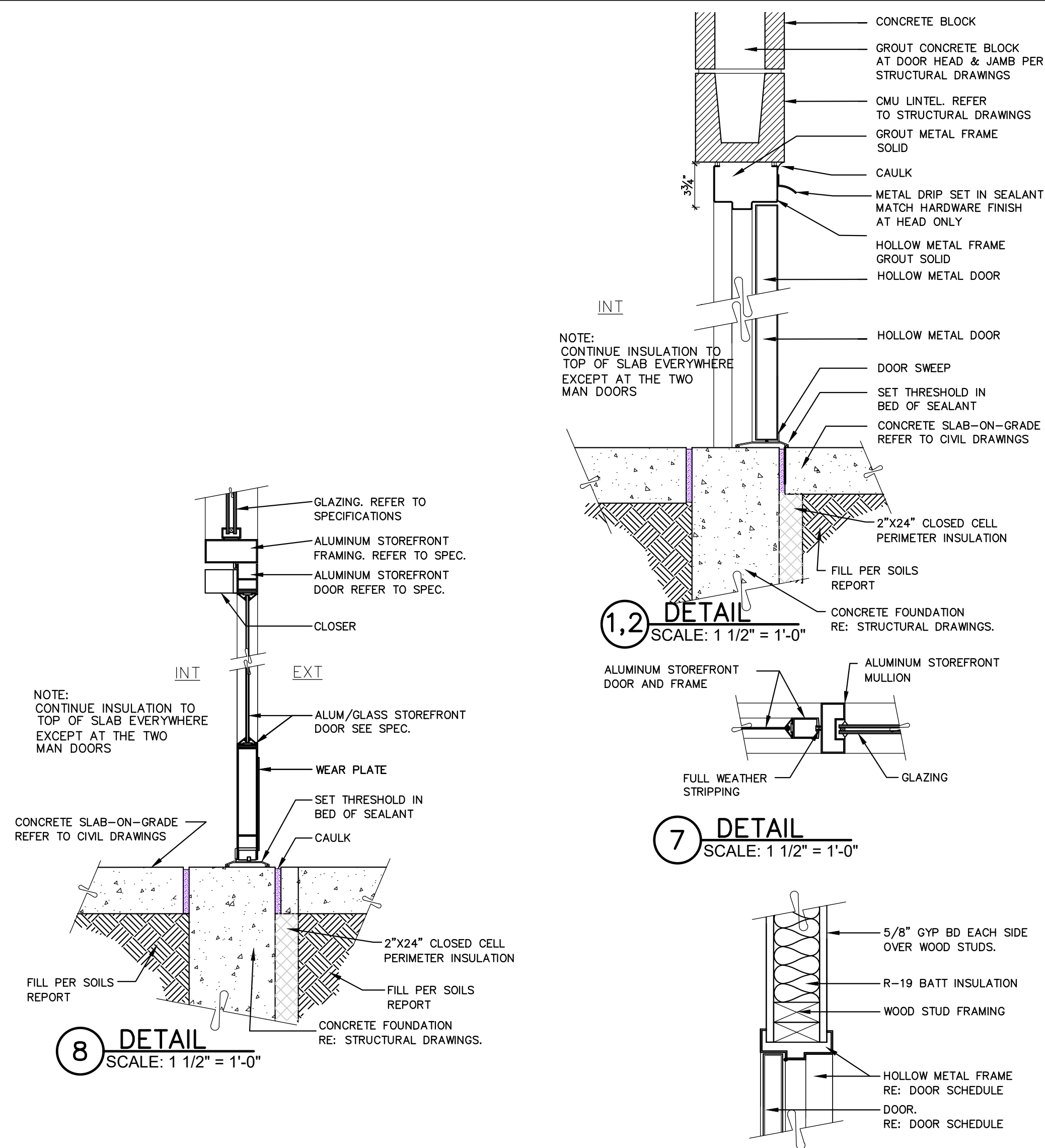
NOTE:

EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT



5 DETAIL

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



9 DETAIL

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

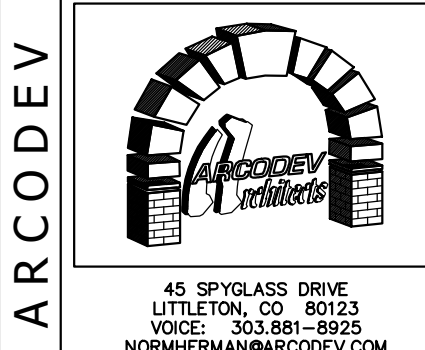
BRAKES PLUS

4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA

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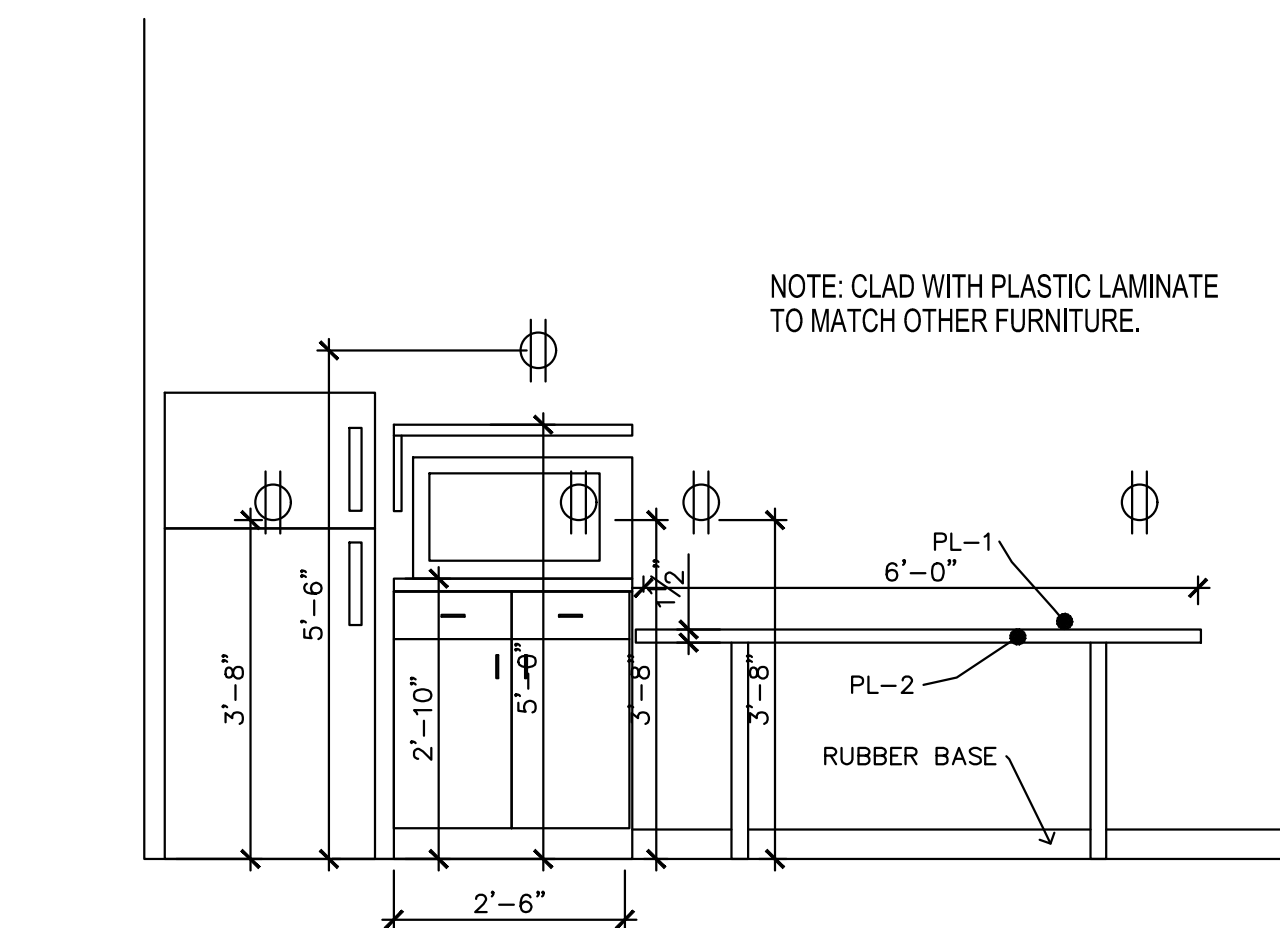
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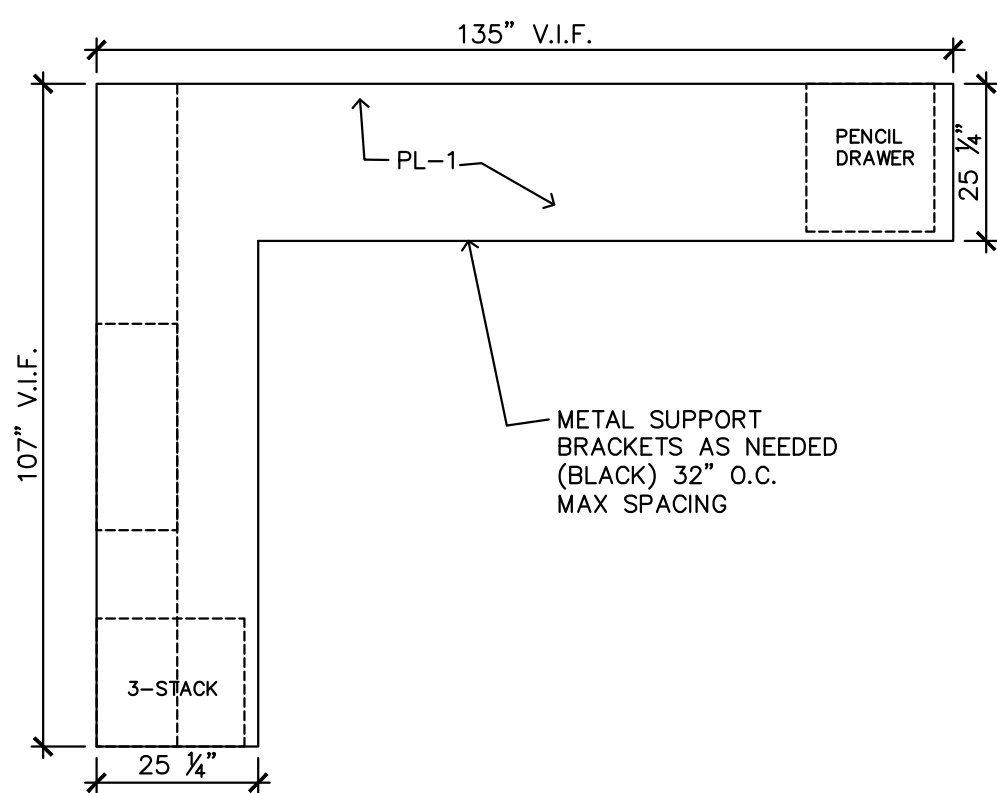
SHEET

A6-1

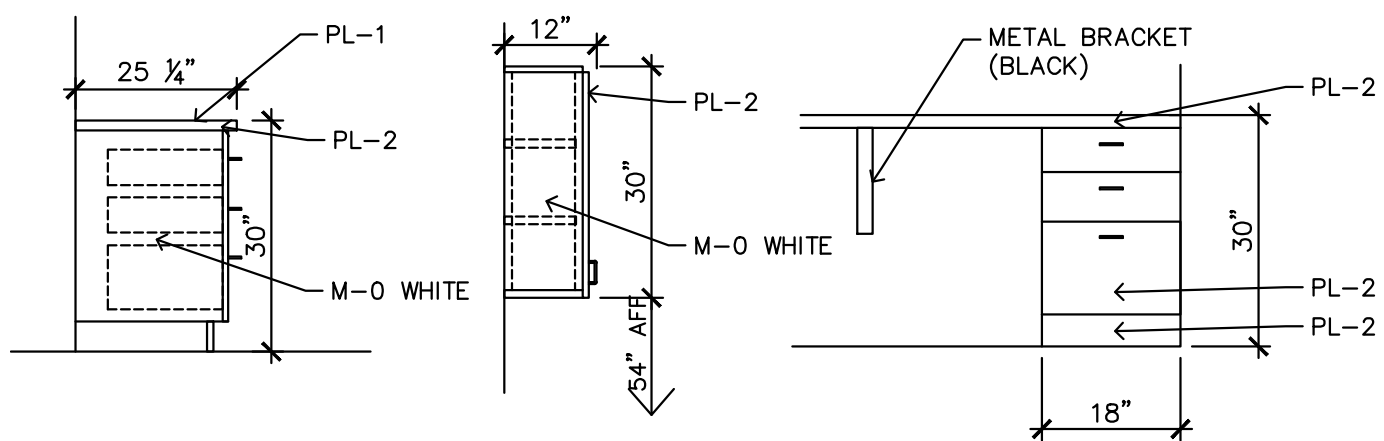
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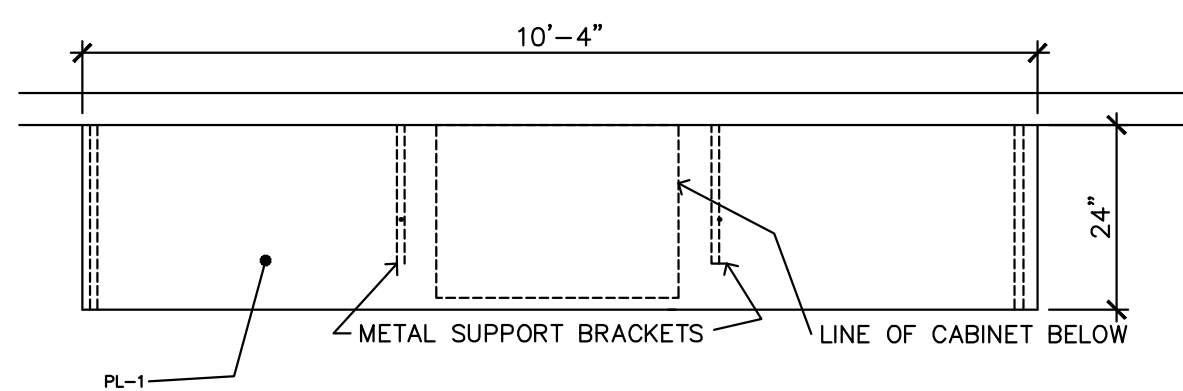
13 DETAIL — BREAK ROOM ELEVATION
SCALE: 1/2" = 1'-0"



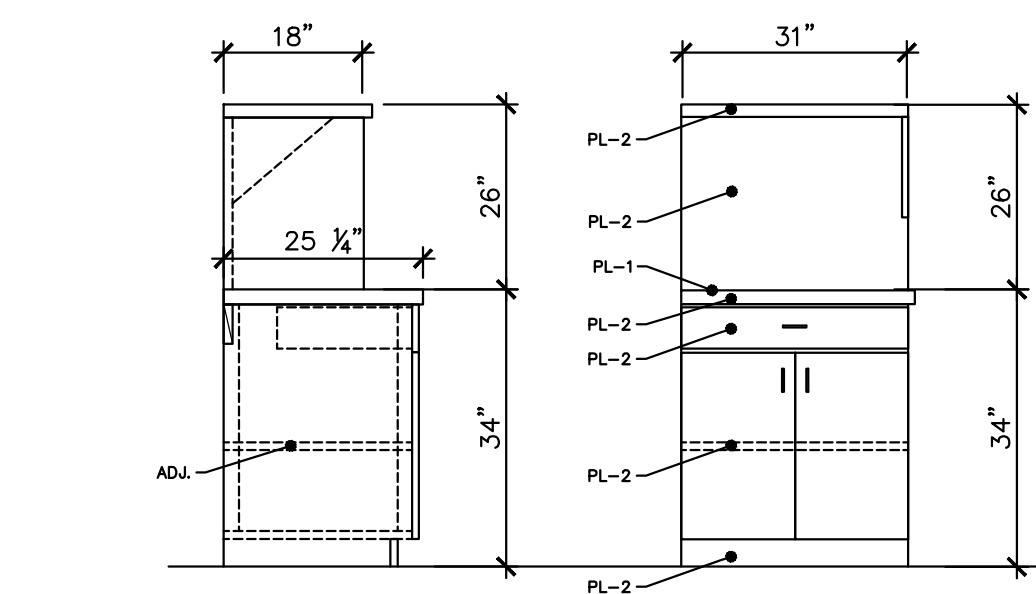
14 DETAIL — OFFICE 103 FURNITURE
SCALE: 1/2" = 1'-0"



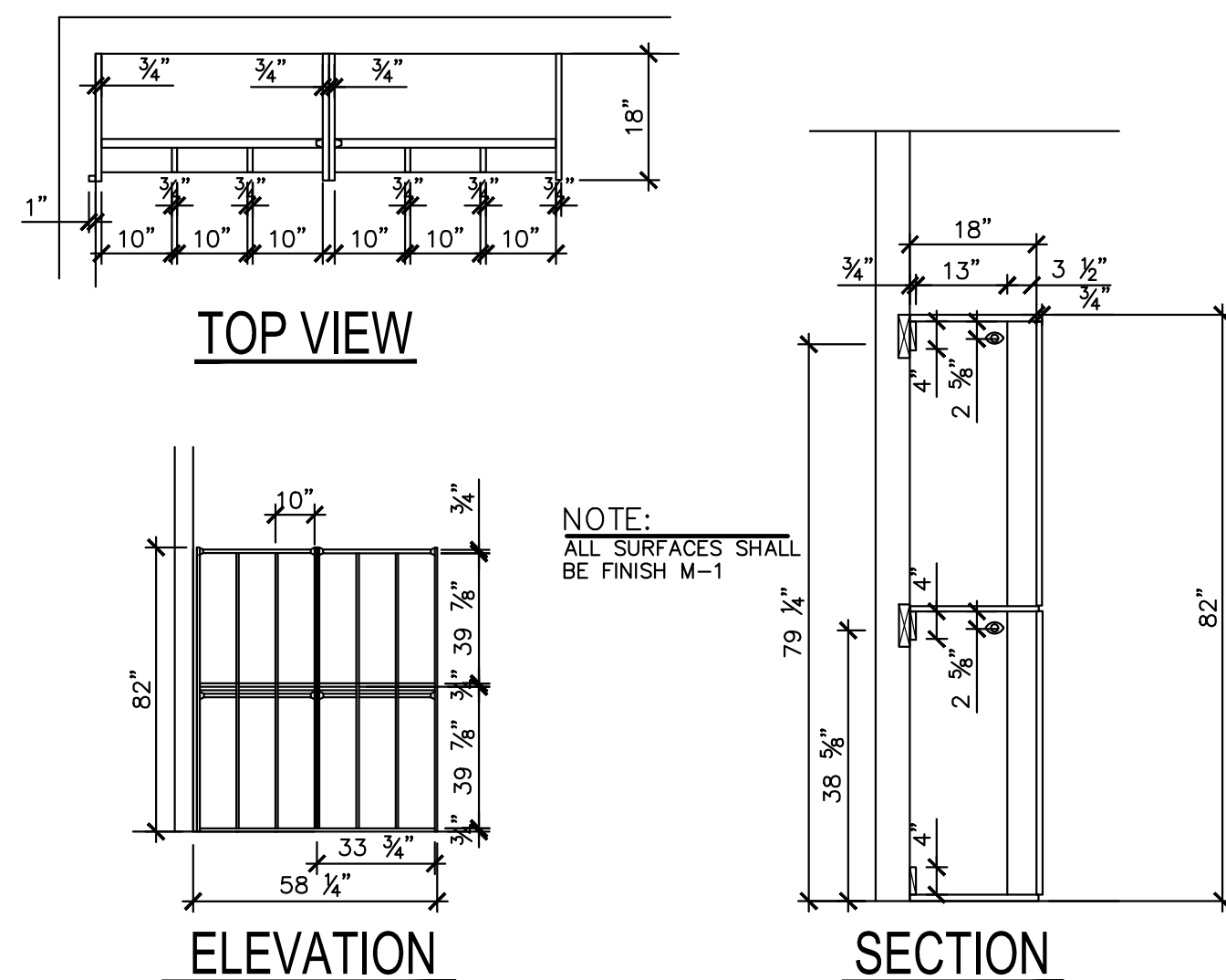
15 DETAIL — OFFICE 103 FURNITURE
SCALE: 1/2" = 1'-0"



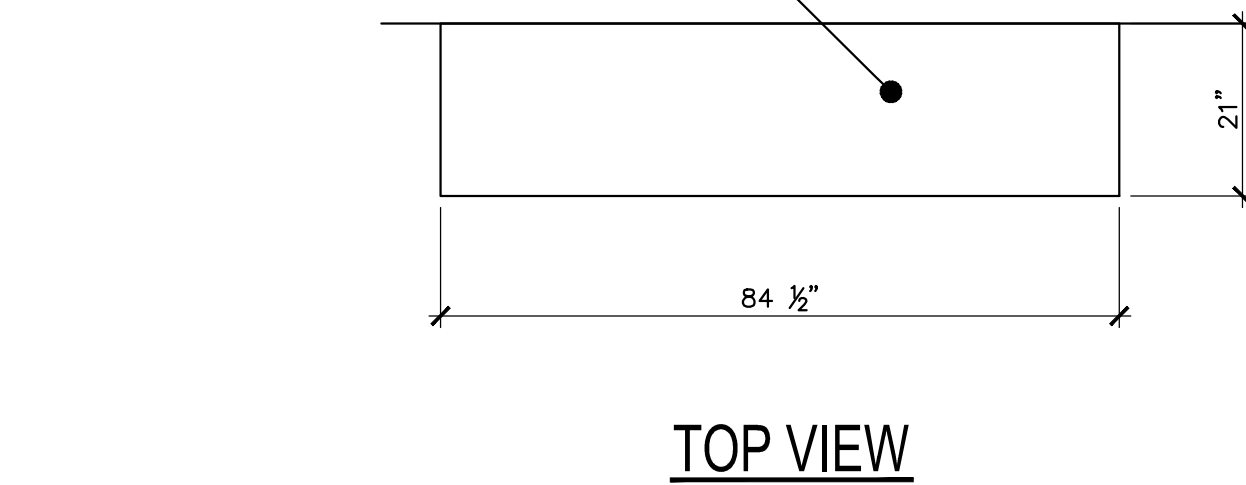
16 DETAIL — SERVICE ADVISORS DESK
SCALE: 1/2" = 1'-0"



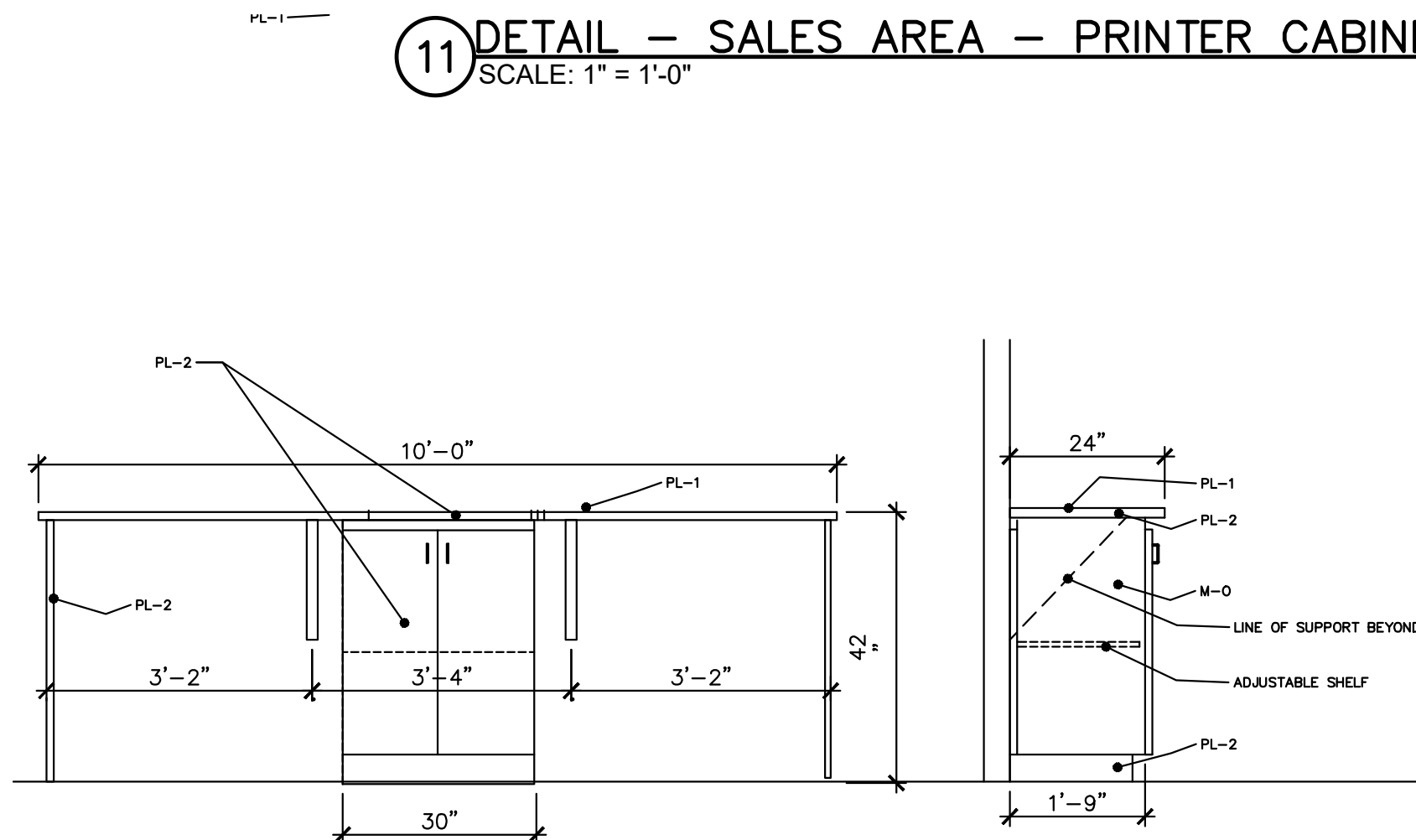
9 DETAIL — MICROWAVE STAND
SCALE: 1/2" = 1'-0"



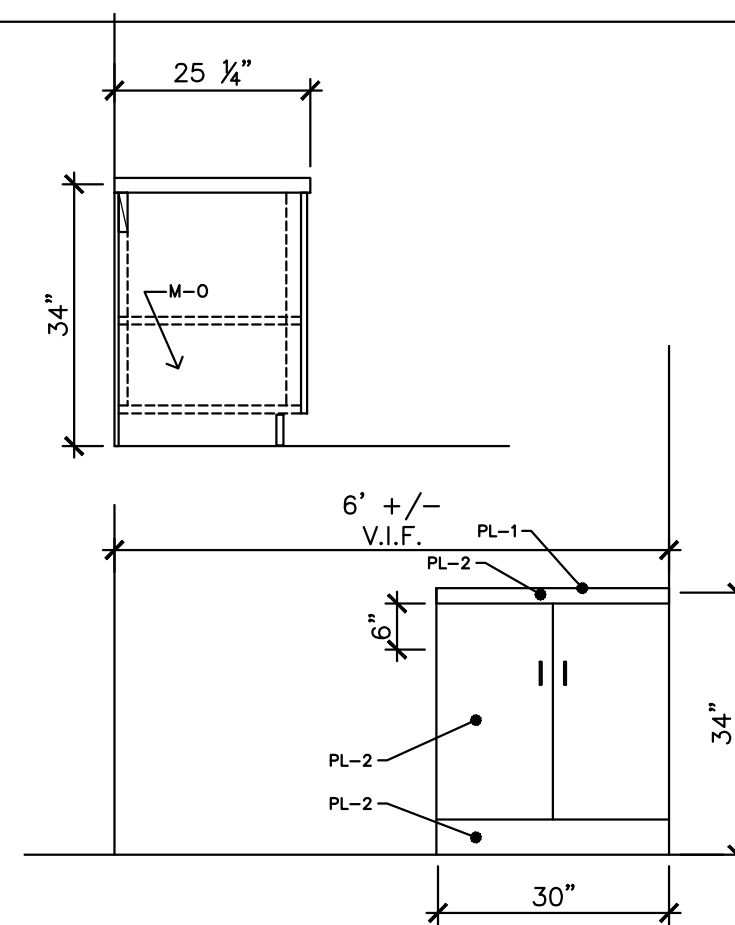
10 DETAIL — UNIFORM LOCKERS
SCALE: N/A



11 DETAIL — SALES AREA — PRINTER CABINETS
SCALE: 1" = 1'-0"



12 DETAIL — SERVICE ADVISORS DESK
SCALE: 1/2" = 1'-0"

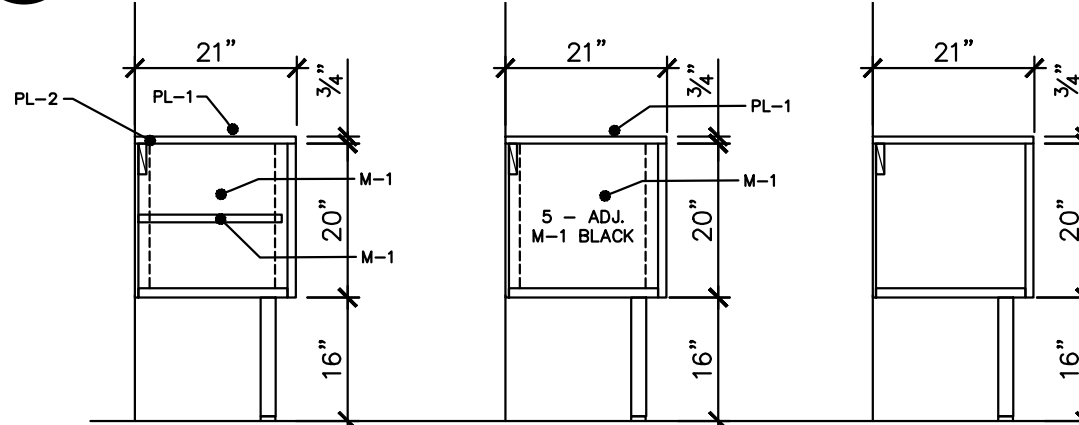


5 DETAIL — COFFEE ROOM 102
SCALE: 1/2" = 1'-0"

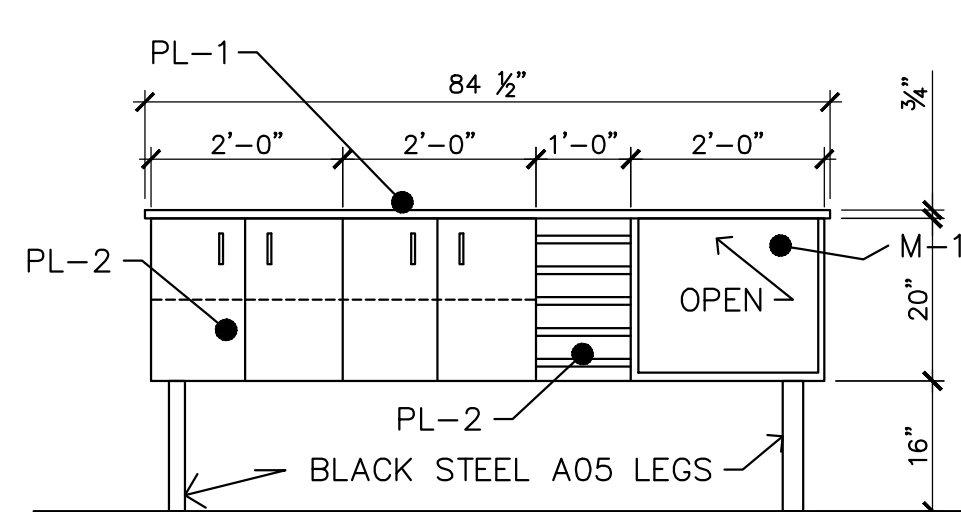


- NOTE:
- 24" DIAMETER, 1.5" THICK
 - EDGE - 3MM PVS EDGEBAND TO MATCH NATURAL TIGRUS LAMINATE
 - FLAT TOP SURFACE - WILSON ART 4689-60 NATURAL TIGRUS MATT FINISH
 - CENTER POST BASE, 30" TABLE HEIGHT, BLACK BASE

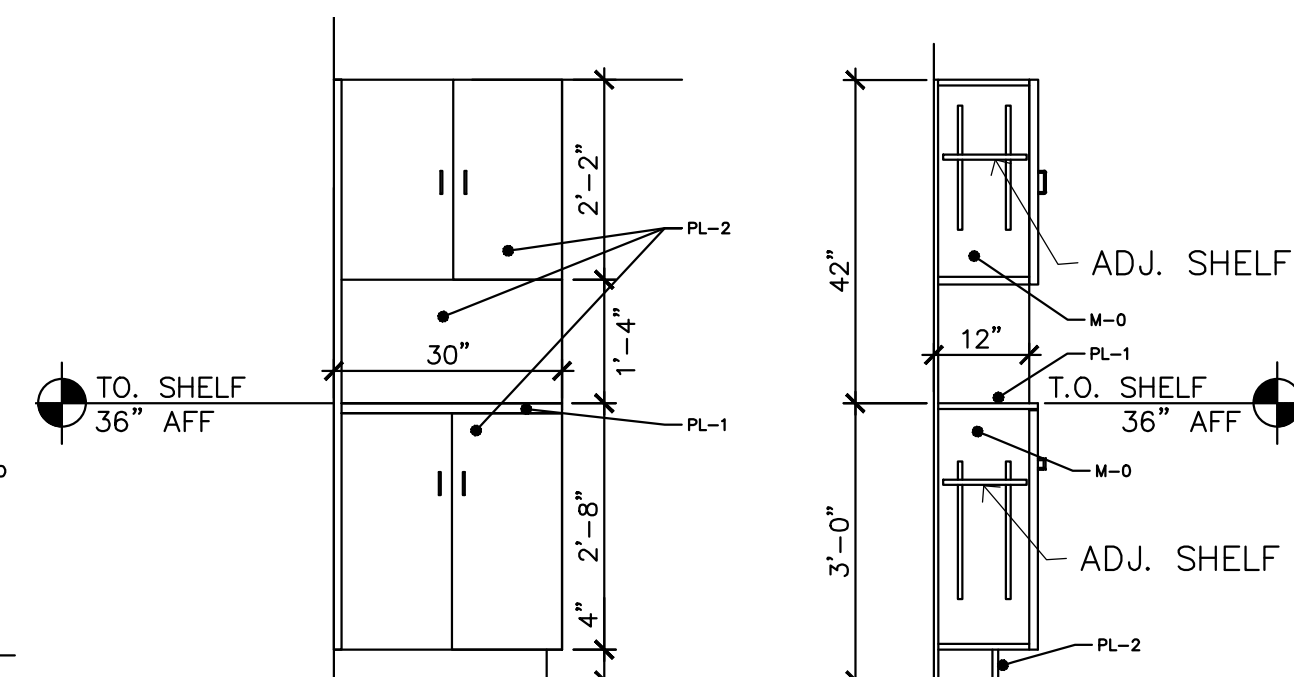
5B BISTRO TABLE
NO SCALE



6 DETAIL — SALES AREA — PRINTER CABINETS
SCALE: 1/2" = 1'-0"



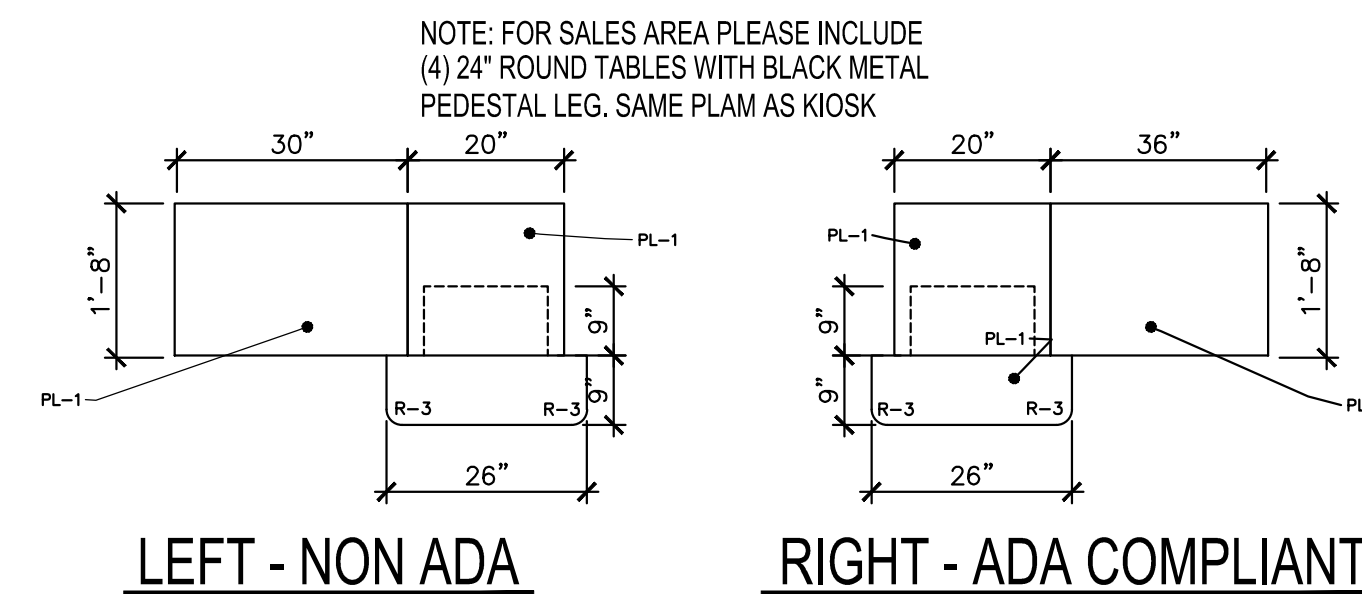
7 DETAIL — SALES AREA — PRINTER CABINETS
SCALE: 1" = 1'-0"



8 DETAIL — RESTROOM CABINETS
SCALE: 1/2" = 1'-0"

PLAM COLORS LEGEND:
PLAM COLORS - WILSON ART:
PL-1 = #4689 NATURAL TIGRUS
PL-2 = #4623 GRAPHITE NEBULA
M-0 = WHITE MELAMINE
M-1 = BLACK MELAMINE

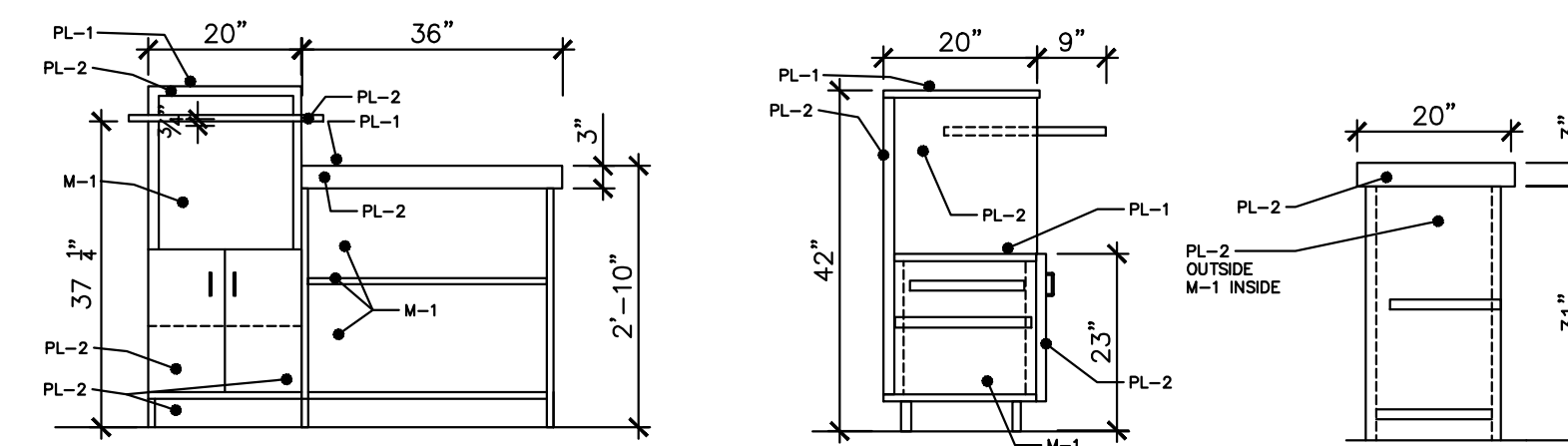
NOTE:
SELECTED CONTRACTOR WILL PROVIDE
COMPLETE NEW DRAWINGS FOR APPROVAL.



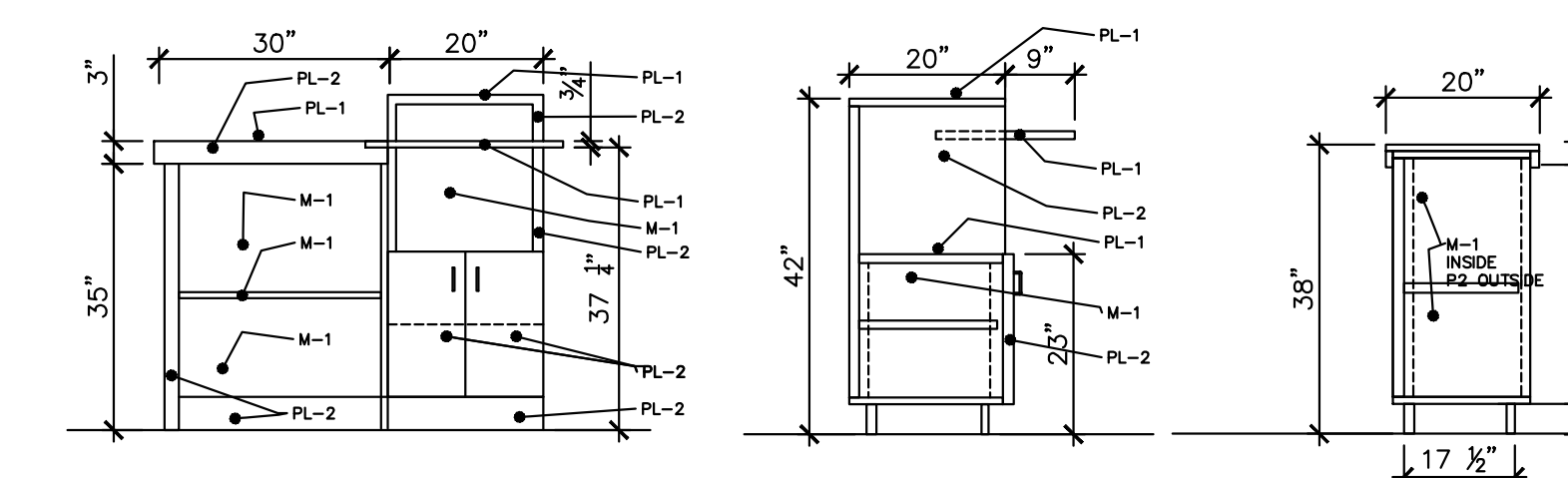
LEFT - NON ADA

RIGHT - ADA COMPLIANT

2 DETAIL — SALES AREA KIOSKS
SCALE: 1/2" = 1'-0"

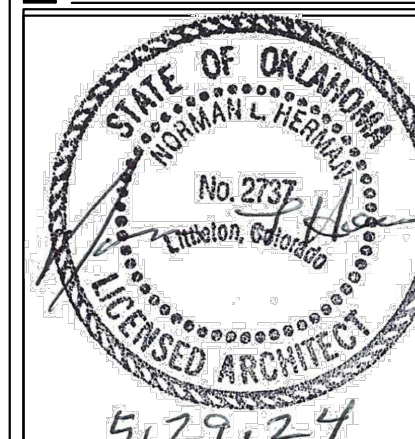


3 DETAIL — KIOSK 2 — ADA COMPLIANT
SCALE: 1/2" = 1'-0"



4 DETAIL — KIOSK 1 — NON ADA
SCALE: 1/2" = 1'-0"

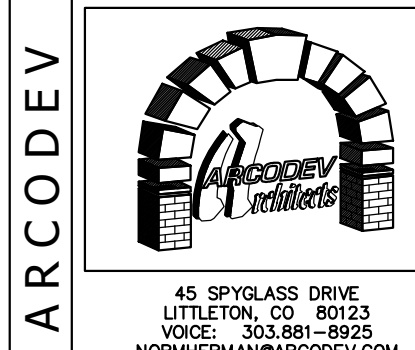
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OKLAHOMA CITY, OKLAHOMA



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SHEET

A6-2

FURNITURE AND
FIXTURE DETAILS

RESTROOM WAINSCOT FINISHES

MAIN COLOR	TWO TOP ROWS
DALTILE (SEMI-GLOSS)	DALTILE (SEMI-GLOSS)
PRICE GROUP 2	PRICE GROUP 3
#0132	#DM-1
URBAN PUTTY #0161	CURRENT
SEMI-GLOSS	SEMI-GLOSS
4 1/4" X 4 1/4"	4 1/4" X 4 1/4"
GROUT: MAYEI BLANCO	GROUT: MAYEI BLANCO

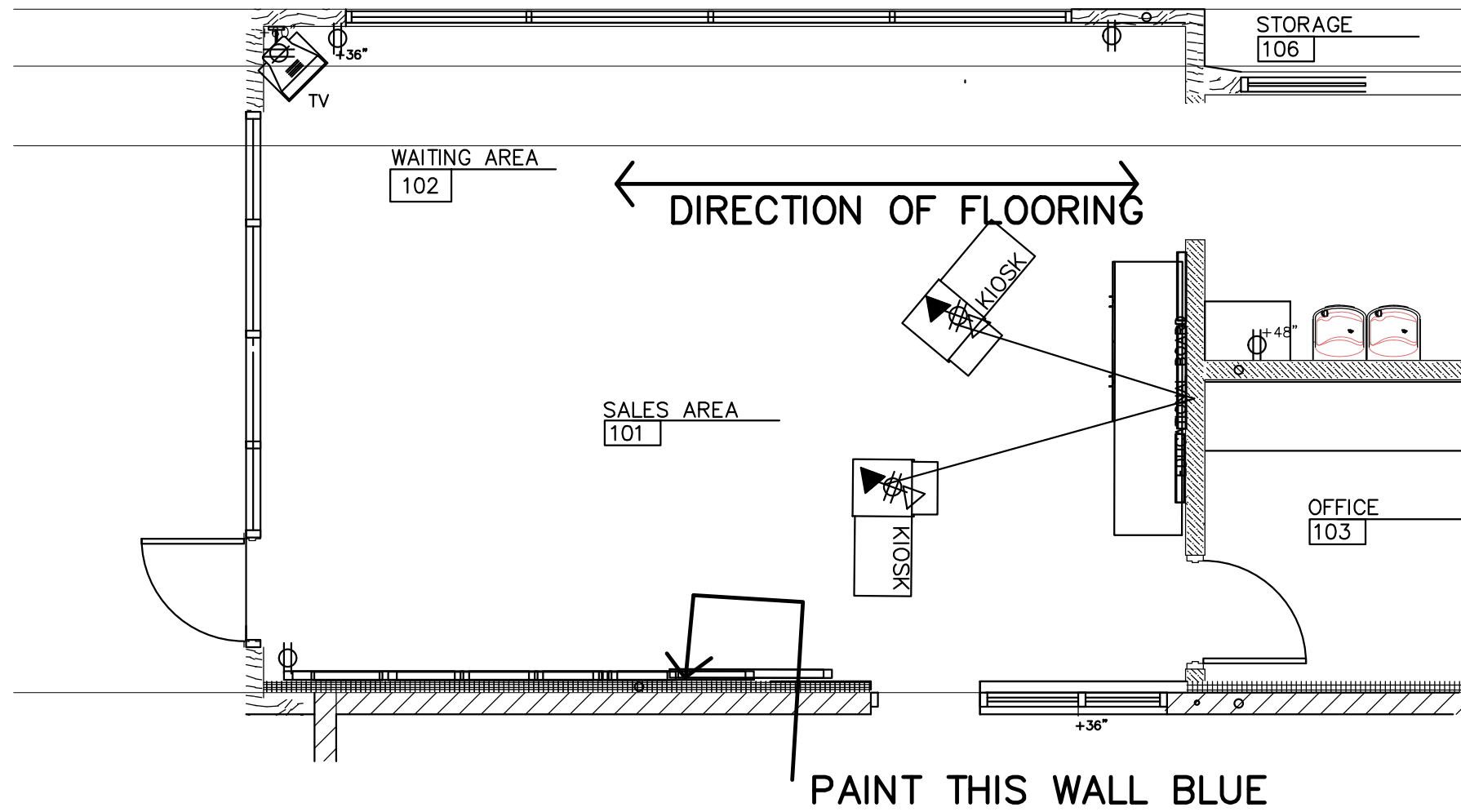
4 RESTROOM FINISHES
SCALE: N.T.S.

GENERAL NOTES:

- APPLY THE WALK OFF CARPET (4'X6' DIRECTRLY TO THE CONCRETE SLAB DO NOT APPLY IT OVER THE FLOORING. PROVIDE JOHNSONITE REDUCER AROUND ALL EDGES (STYLE: CTA-09-A1, COLOR: BURNT UMBER)
- ALL FLOORING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR
- PROVIDE 1 EXTRA BOX (32 S.F.) OF ALL FLOORING PRODUCTS FOR ATTIC STOCK
- ALL FLOORING MATERIALS MAY BE PURCHASED FROM EF CONTRACT FLOORING EXCEPT ADHESIVE AND THE TRANSITION STRIPS.....CONTACT KIMBERLY LYNCH AT THE CONTACT INFORMATION SHOWN BELOW.
- RUBBER TRANSITION STRIP HAS A 1-3 WEEK LEAD TIME

NOTE:

ALL INTERIOR FINISHES SHALL COMPLY WITH THE REQUIREMENTS CONTAINED IN TE 2018 IBC CHAPTER 18



1 DETAIL - INTERIOR PAINT DETAILS
SCALE: N.T.S.

Brakes Plus Exterior Paint Specifications

Location	Brand	Color	Number	Finish	Special Instructions
Corner-guards	Sherwin Williams	Artisan Tan	SW 7540		
Doors	Sherwin Williams	Artisan Tan	SW 7540		
Trash Enclosure Doors	Sherwin Williams	Artisan Tan	SW 7540		

5 DETAIL - EXTERIOR PAINT SPECIFICATIONS
SCALE: N.T.S.

Manufacturer (1)	Floor	Supplied by:
	Bolyu/EF Contract Flooring	Bolyu/EF Contract Flooring
Number (1)	Main Floor LVT Style: Woodlands, Color Ironwood LVT direction - Run lengthwise in the wide direction of the room. Regardless of entry location /showroom design	Bolyu/EF Contract Flooring
Color (1)	Ironwood - Item # EFCWL001	Bolyu/EF Contract Flooring
Finish	N/A	
Size (1)	7" x 48" (42 sq ft per box)	Bolyu/EF Contract Flooring
Note (1)	LVT - with Hardwood Plank Pattern Attic Stock - Provide 1 extra Box (32 sq. ft) extra for Attic Stock	
Adhesive (1a)	LVT Adhesive The LVT adhesive, Taylor, RESOLUTE (MS-PLUS® RESILIENT™) Adhesive	Supplied by Installer
Transition	Johnsonite - Rubber Reducer - Style: CTA-09-A1, Color: #63 Burt Umber	Supplied by Installer - Lead Time 1 - 3 weeks
Size (2)	24" x 24", (6.22 sq yds per box)	Bolyu/EF Contract Flooring
Note (2)	Install Quarter Turn	
Adhesive (2a)	Nexus, multipurpose carpet tile adhesive	Bolyu/EF Contract Flooring
<p>CONTACT PRICING AND QUESTIONS (ALL LOCATIONS, NATIONWIDE) TARA KALVA BOLYU/EF CONTRACT 720-404-9944 TARA.KALVA@EFCONTRACTFLOORING.COM</p>		

3 DETAIL - FLOORING SPECIFICATIONS
SCALE: N.T.S.

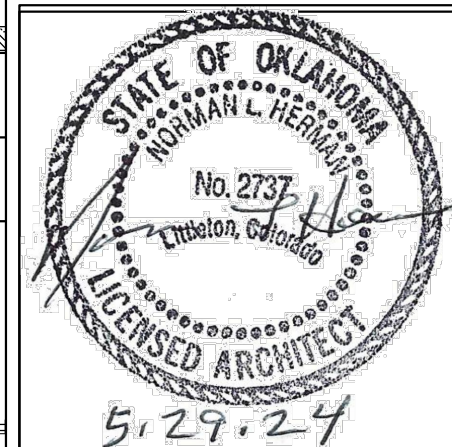
Brakes Plus Interior Paint Specifications

Location	Worldly Gray	Intellectual Gray	Virtual Taupe	Balanced Beige	Safety Red	Brakes Plus Blue
Shop	All walls above red base	Ceiling & Joists	Metal Doors & Frames (Interior of Building)		Lower 4" of walls This area to receive block filler & gloss paint	
Office			Painted Wood Doors and Frames	Walls		
Showroom			Half Wall Drywall Painted Wood Doors and Frames (to office and bathroom and Closet)	Walls		See attached Drawing
Parts Room	Walls	Ceiling & Joists	Metal Door and Frame			
Employee Bath	Walls & Ceiling		Metal Doors & Frames			
Customer Bath			Painted Wood Doors and Frames	Walls & Ceiling		Formula: Promar 200 Deep Base B31W2253 1 Gallon Formula W1 2Y 23+11 B1 1+01 L1 2Y 21+11 R3 55+01
Break Room	Walls	Ceiling				
* Use block fill on all cinder block walls prior to painting (See Finish Schedule Section 3.05)						
Brand	Sherwin-Williams	Sherwin-Williams	Sherwin-Williams	Sherwin-Williams	Sherwin-Williams	Sherwin-Williams
Color	Worldly Gray	Intellectual Gray	Virtual Taupe	Balanced Beige	Safety Red	Blue
Number	SW7043	SW7045	SW7039	SW7037		Brakes Plus Custom Color
Product						
Finish	See Finish Schedule Section 3.05	Dry Fall	See Finish Schedule Section 3.05	See Finish Schedule Section 3.05	See Finish Schedule Section 3.05	

2 DETAIL - INTERIOR PAINT SPECIFICATIONS
SCALE: N.T.S.

BRAKES PLUS

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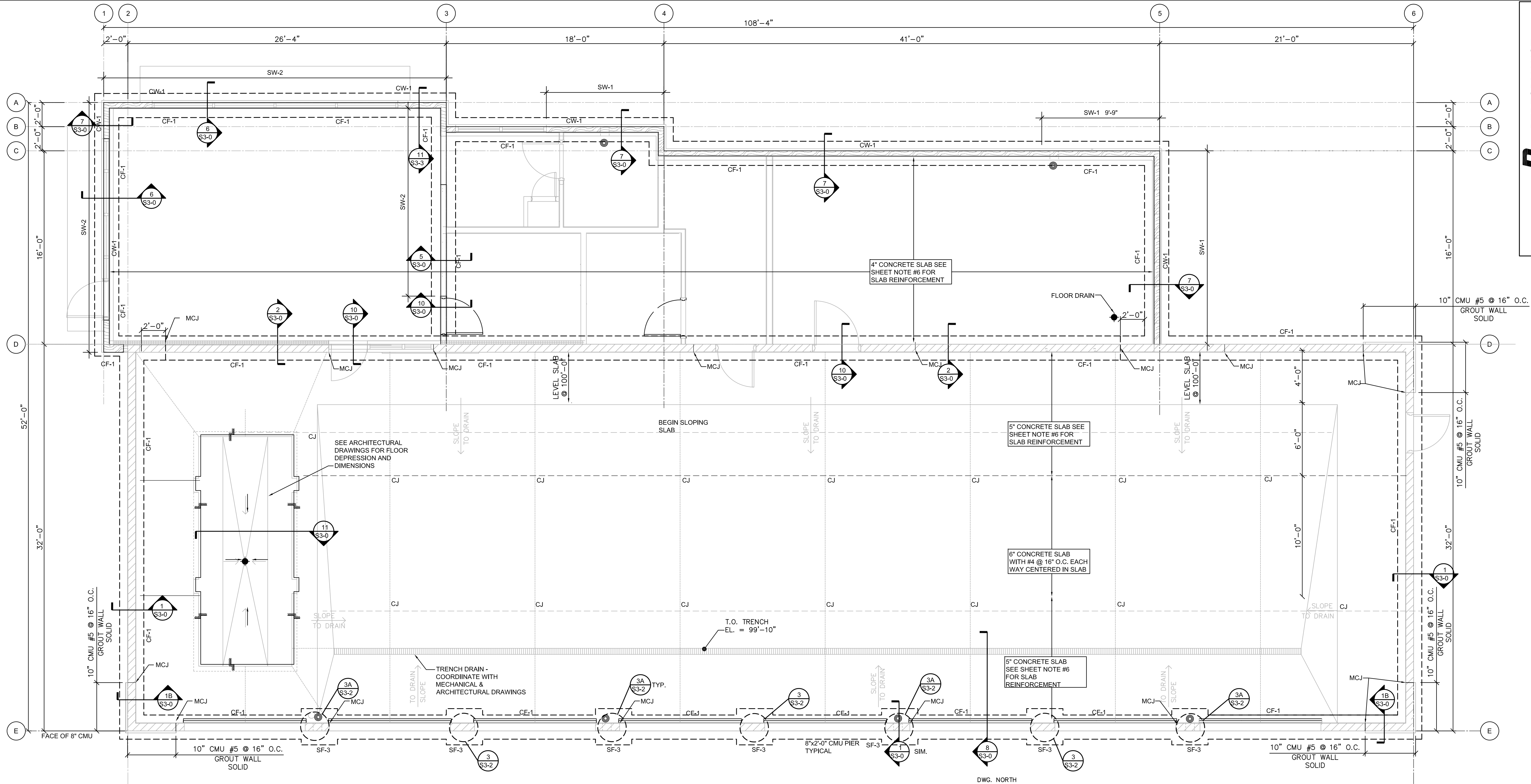
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SHEET

A6-3

MATERIAL FINISHES



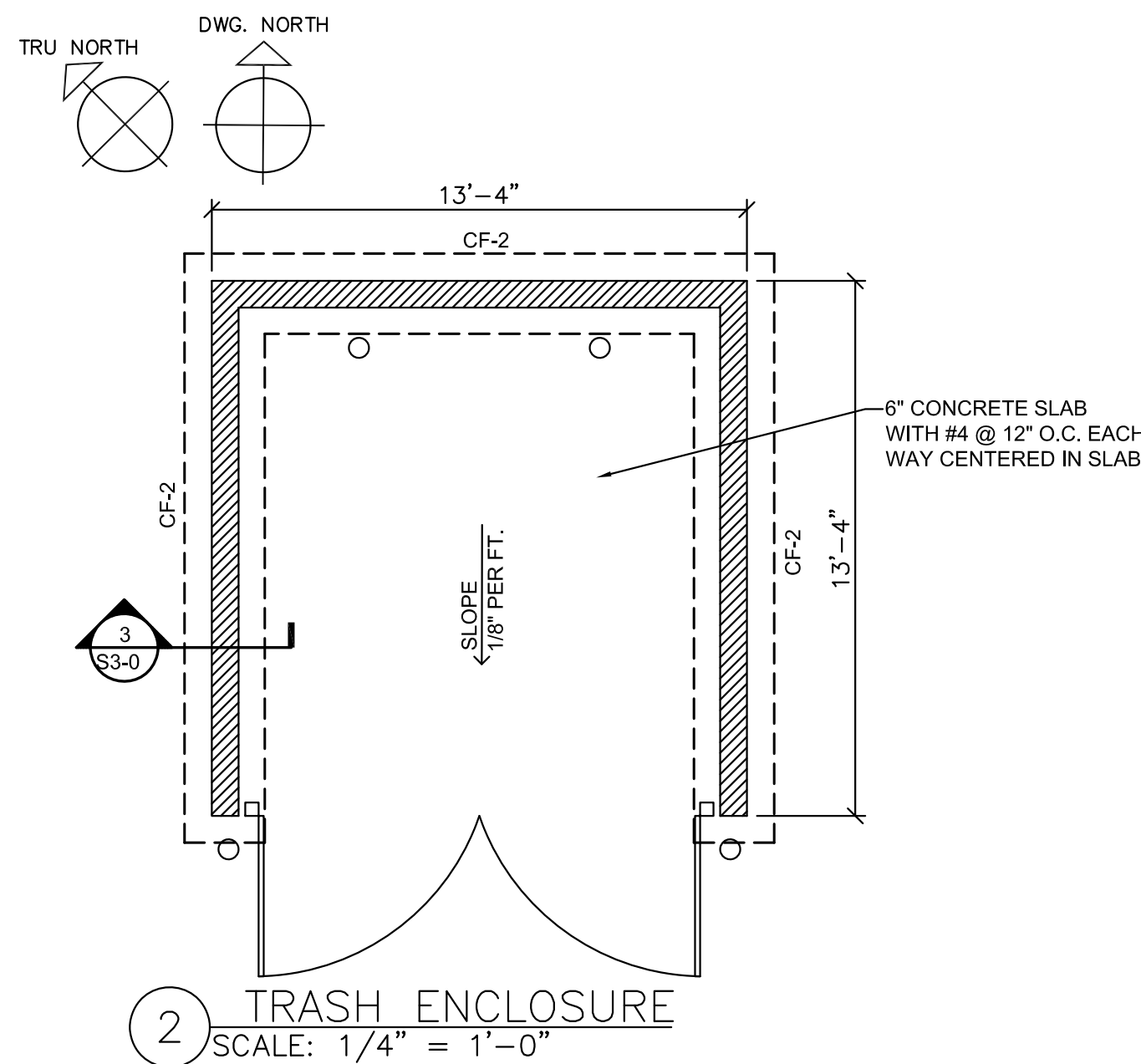
1 FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

SHEAR WALL SCHEDULE									
MARK	WALL SHEATHING	NAILS, PENETRATION	PANEL EDGE NAILING	FIELD NAILING	SILL BOLTS	STUDS, SILLS & PLATES	ALLOWABLE SHEAR (PLF)	HOLDOWNS	FOUNDATION ANCHOR
SW-1	1 7/8" NOMINAL STRUCTURAL I SHEATHING, ONE SIDE, BLOCKED	10d x 3" 1 1/2" PEN.	6" O.C.	6" O.C.	3/4" DIA. @ 24" O.C.	2x STUDS, 2x SILL, 2x PL	340	HDU8-SDS2.5	7/8" DIA. EMBED 9"
SW-2	1 7/8" NOMINAL STRUCTURAL I SHEATHING, TWO SIDES, BLOCKED	10d x 3" 1 1/2" PEN.	6" O.C.	6" O.C.	3/4" DIA. @ 24" O.C.	2x STUDS, 2x SILL, 2x PL	680	HDU11-SDS2.5	1" DIA. EMBED 12"

- NOTE:
1. ALL WOOD MEMBERS IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.
2. NAILING & HARDWARE IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE HOT DIPPED GALVANIZED.
3. WHERE PANELS ARE APPLIED ON BOTH FACES OF WALL AND NAIL SPACING IS LESS THAN 6" O.C. ON EITHER SIDE PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS. STAGGER NAILING AT EACH SIDE OF JOINT.
4. INSTALL HARDWARE IN ACCORD WITH MANUFACTURER'S RECOMMENDATIONS.
5. ALL BOLT HOLES SHALL BE 1/16" (MAX) OVERSIZED AT THE CONNECTION OF HOLD DOWNS TO POSTS. INSPECTOR SHALL VERIFY.
6. SEE DETAIL 5/S3-3 FOR TYPICAL SHEAR WALL FRAMING.

FOUNDATION SCHEDULE		
MARK	SIZE (L x W x D)	REINFORCING
CF-1	CONT. x 2'-0" x 1'-4"	3 - #5 CONT. BOTT W/ #5 TRANSVERSE @ 12" O.C.
CF-2	CONT. x 2'-0" x 1'-4"	3 - #5 CONT. BOTT W/ #5 TRANSVERSE @ 12" O.C.
SF-3	3'-0" x 3'-0" x 1'-4"	3 - #5 EACH WAY

FOUNDATION WALL SCHEDULE		
MARK	SIZE	REINFORCING
CW-1	6" WIDE x 1'-2" HIGH	2 - #5 CONT. & #4 DOWELS AT 24" O.C.



- SHEET NOTES:**
1. [Hatched pattern] INDICATES CMU WALLS WITH #5 VERTICAL BARS @ 2'-0" O.C. CENTERED IN MASONRY WALLS. SEE S3-3 FOR MASONRY CONSTRUCTION.
2. SOIL PREPARATION BENEATH BUILDING AND FOUNDATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT FOR A MONOLITHIC REINFORCED STIFFENED SLAB ON GRADE CONSTRUCTION (OPTION #2 & TABLE 3.2 OF THE SOIL REPORT). THIS ACTION SHALL BE OBSERVED BY A REPRESENTATIVE OF THE GEOTECHNICAL FIRM ON A CONTINUOUS BASIS TO ENSURE THAT SOIL PROPERTIES MEET THE REQUIREMENTS IN THE GEOTECHNICAL REPORT.
- ALL SUBGRADE SOILS BELOW SLAB ON GRADES SHALL BE MOISTURE CONDITIONED AND COMPACTED AS DISCUSSED IN THE SOIL REPORT.
- CONTRACTOR SHALL FOLLOW ALL RECOMMENDATIONS FOR MATERIAL AND COMPACTION LISTED IN THE SOIL REPORT
3. CONTRACTOR SHALL COORDINATE SIZE AND LOCATION OF FLOOR AND WALL PENETRATIONS AND BLOCK OUT ACCORDINGLY.
4. TOP OF FOOTING ELEVATION SHALL BE 99'-4" UNLESS NOTED OTHERWISE. CONTINUOUS FOOTINGS MAY BE EARTH FORMED. SLABS THICKEN/HAUNCH TO 8" OVER FOOTINGS.
5. "MCJ" INDICATES MASONRY CONTROL JOINT LOCATION FOR CONCRETE MASONRY UNITS. SEE 2/S3-3 & 4/S3-3 FOR DETAILS. SEE ARCHITECTURAL DRAWINGS FOR BRICK CONTROL JOINTS.
6. SEE PLAN FOR SHOP AREA SLAB ON GRADE THICKNESS. REINFORCE CONCRETE SLAB WITH #4 BARS @ 16" O.C. EA. WAY. TOP OF SLAB SHALL BE 100'-0" UNLESS NOTED OTHERWISE.
7. SW-W INDICATES SHEAR WALL TYPE. SEE SCHEDULE.

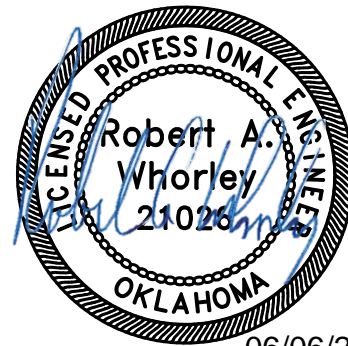
PERFORMANCE Engineering

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OKLAHOMA CITY, OKLAHOMA



06/06/24

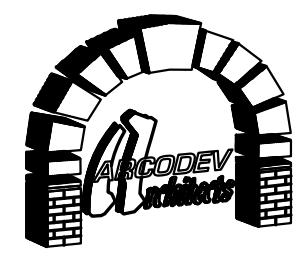
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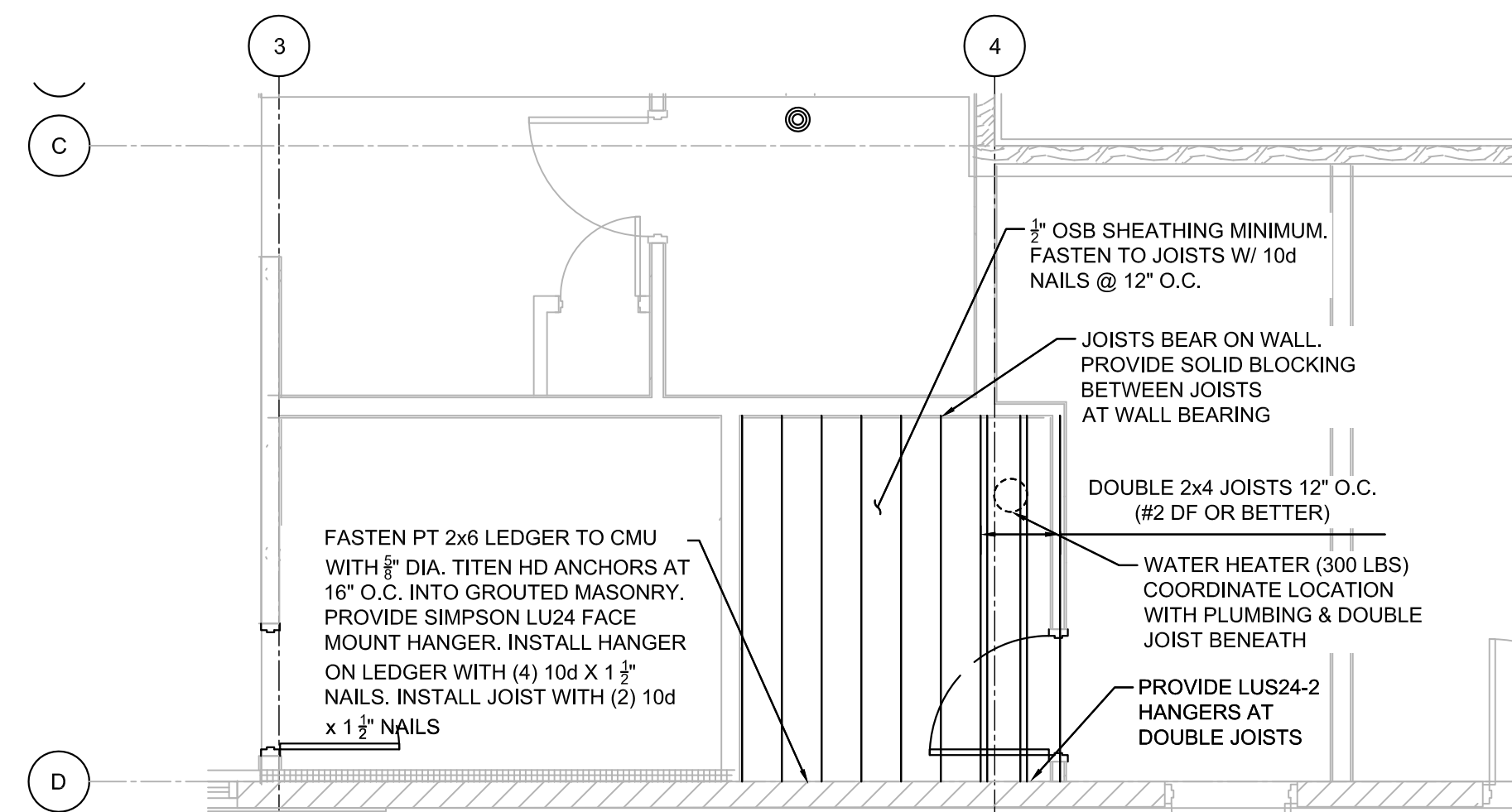


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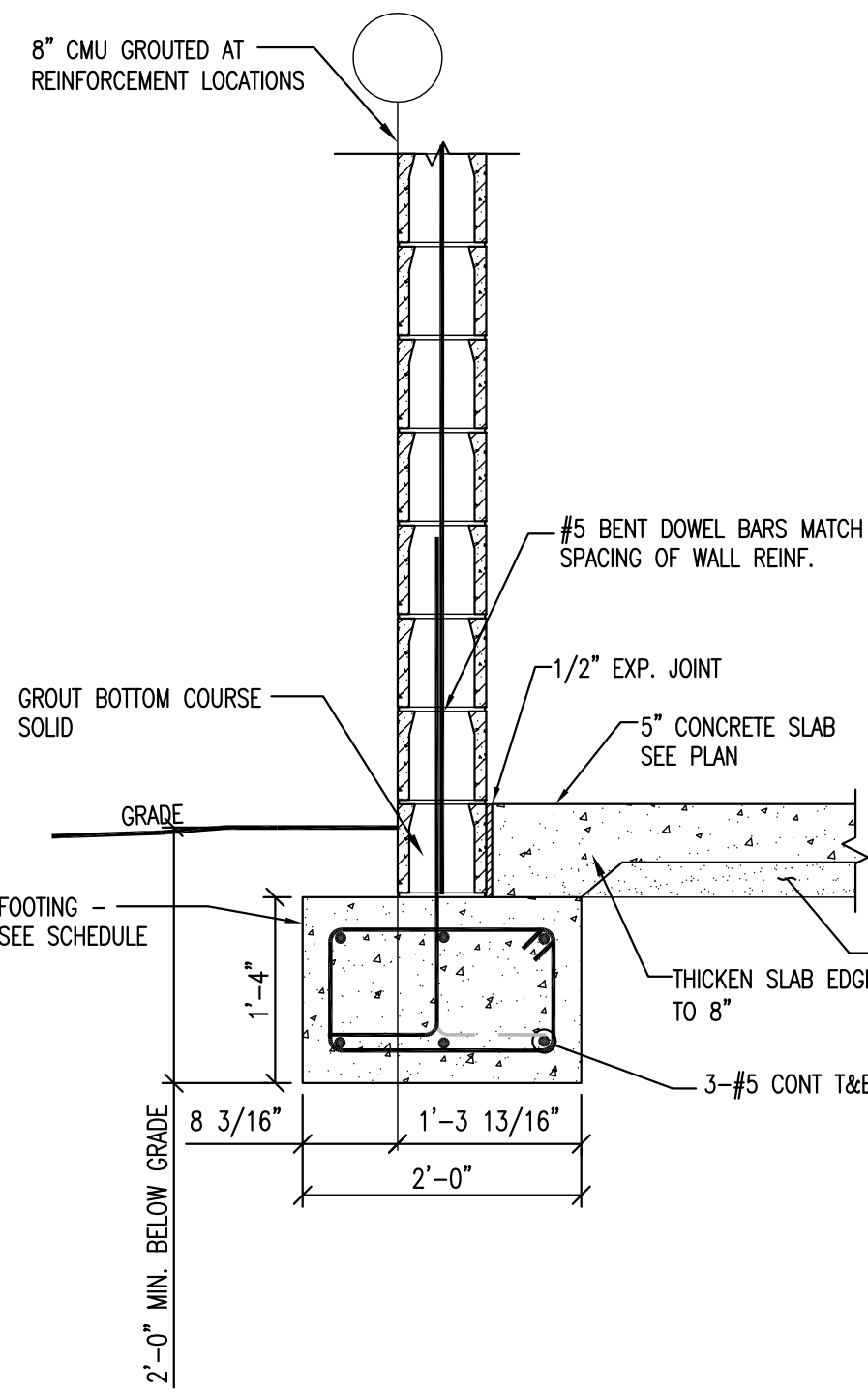
SHEET

S2-0

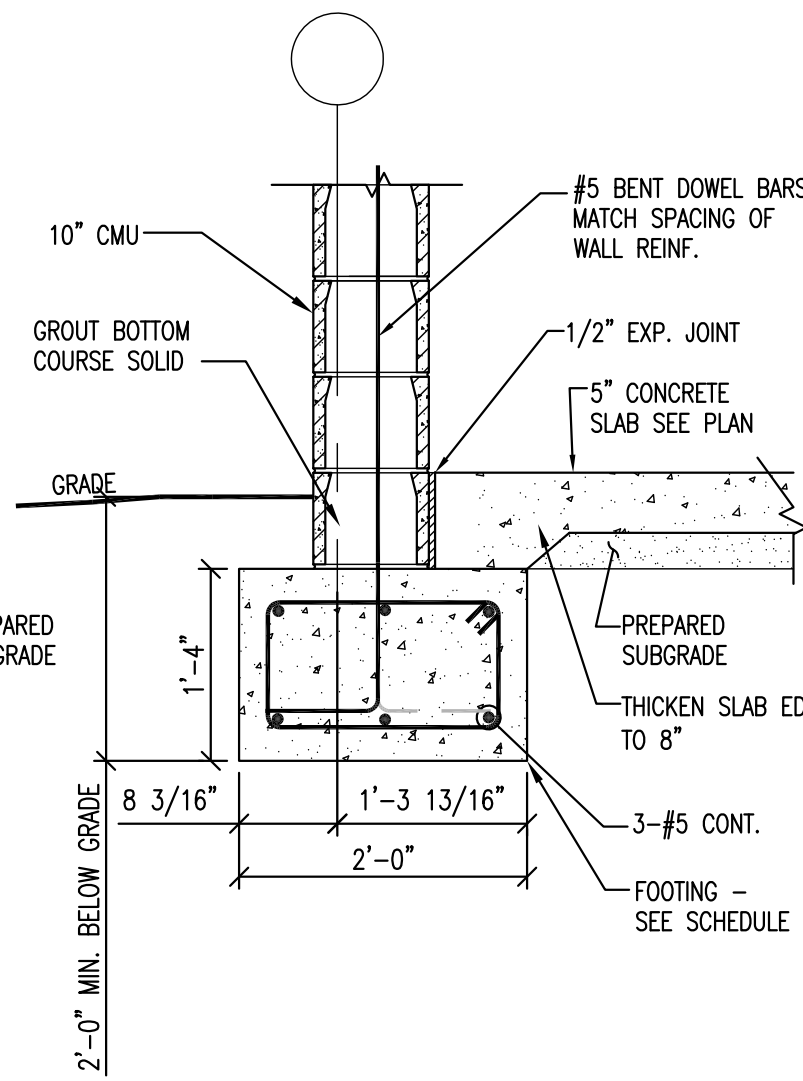
FOUNDATION PLAN



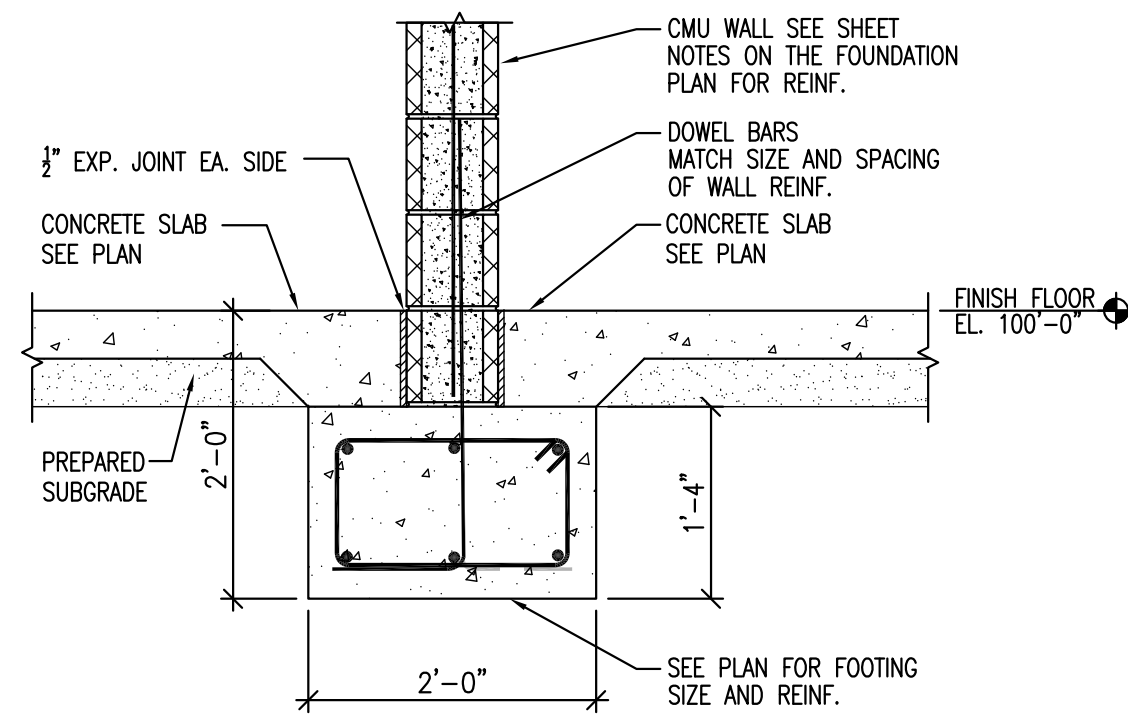
1. DIAPHRAGM SHALL BE A MINIMUM OF 3/4" PLYWOOD SHEATHING WITH A SPAN RATING OF 48/24, EXTERIOR GRADE AND SHALL BE FASTENED TO STRUCTURE AS FOLLOWS:
 - a) 10d NAILS x 1 1/2"
 - b) SEE S1-0 FOR NAILING PATTERN OF ROOF DIAPHRAGM
 - c) FIELD NAILING @ 12" O.C.
2. BLOCK EDGES OF PLYWOOD IN ROOF DIAPHRAGM AS SHOWN ON S1-0. BLOCKING SHALL BE A MINIMUM OF 2X NOMINAL THICKNESS
2. ML-# INDICATES MASONRY LINTEL TYPE. SEE DETAIL 11/S3-2.
3. UNLESS OTHERWISE DETAILED, CONNECTIONS FOR ITEMS HUNG FROM JOISTS (FANS, HEATERS, GARAGE DOORS, ETC.) SHALL BE DESIGNED AND INSTALLED BY THE GENERAL CONTRACTOR AND THEIR RESPECTIVE TRADES, THIS LOAD SHALL NOT EXCEED 250 LBS PER JOIST.
4. ATTACH 2x12 LEDGER PIECES TO CMU WALL W/ (2) 3/4" DIA. ANCHORS @ 24" O.C., EMBED 6" MIN. FASTENERS SUCH AS NAILS, SCREWS, AND ANCHORS SHALL BE HOT DIPPED GALVANIZED WHEN CONNECTING TO OR ANCHORING PRESSURE TREATED LUMBER.
4. ATTACH 3 1/2x20 LVL LEDGER TO CMU WALL W/ 3/4" DIA. A36 ANCHOR BOLTS @ 16" O.C. (HORZ.) TOP AND BOTTOM, 12" O.C. (VERT.), EMBED 6" MIN. PROTECT JOIST HANGERS FROM CONTACT WITH TREATED LEDGER VIA MOISTURE BARRIER (GRACE VERTI-PROTECT JOIST PROTECTOR), WHERE ANCHOR BOLTS ARE LOCATED, THE CELLS OF THE CLAY MASONRY UNITS ARE TO BE FULLY GROUTED, FASTENERS SUCH AS NAILS, SCREWS, AND ANCHORS SHALL BE HOT DIPPED GALVANIZED WHEN CONNECTING TO OR ANCHORING PRESSURE TREATED LUMBER.
5. SEE DETAIL 7/S3-3 FOR ROOF OPENINGS & PENETRATIONS.
6. WOOD WALLS SHALL BE 2x6 DOUGLAS FIR SUPPORT NO. 2 STUD, STUD SPACING SHALL BE 16" O.C. UNLESS NOTED OTHERWISE.
7. ALL WOOD JOISTS SHALL BE DESIGNED TO SUPPORT THE LOADS INDICATED ON SHEET S1-0.



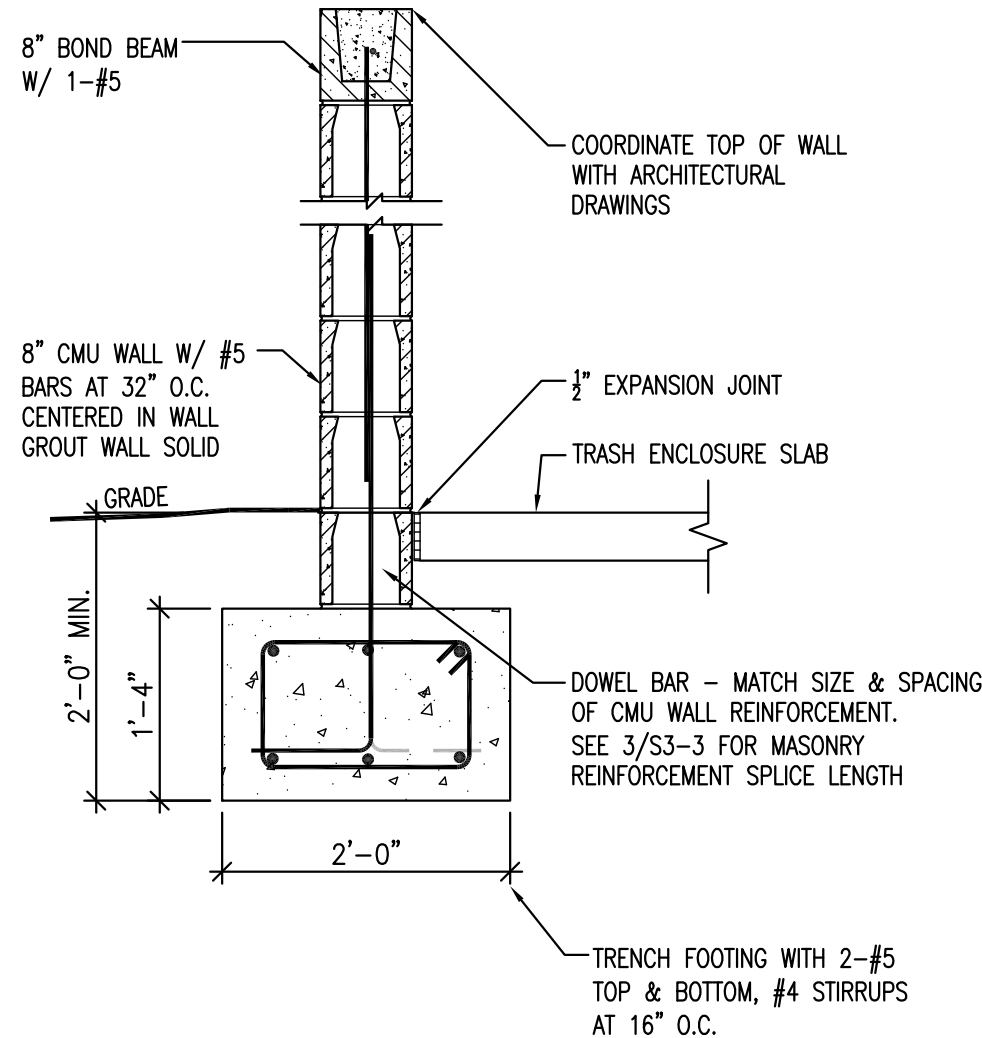
1 TRENCH FOOTING @ WALL
S3-0 3/4"=1'-0"



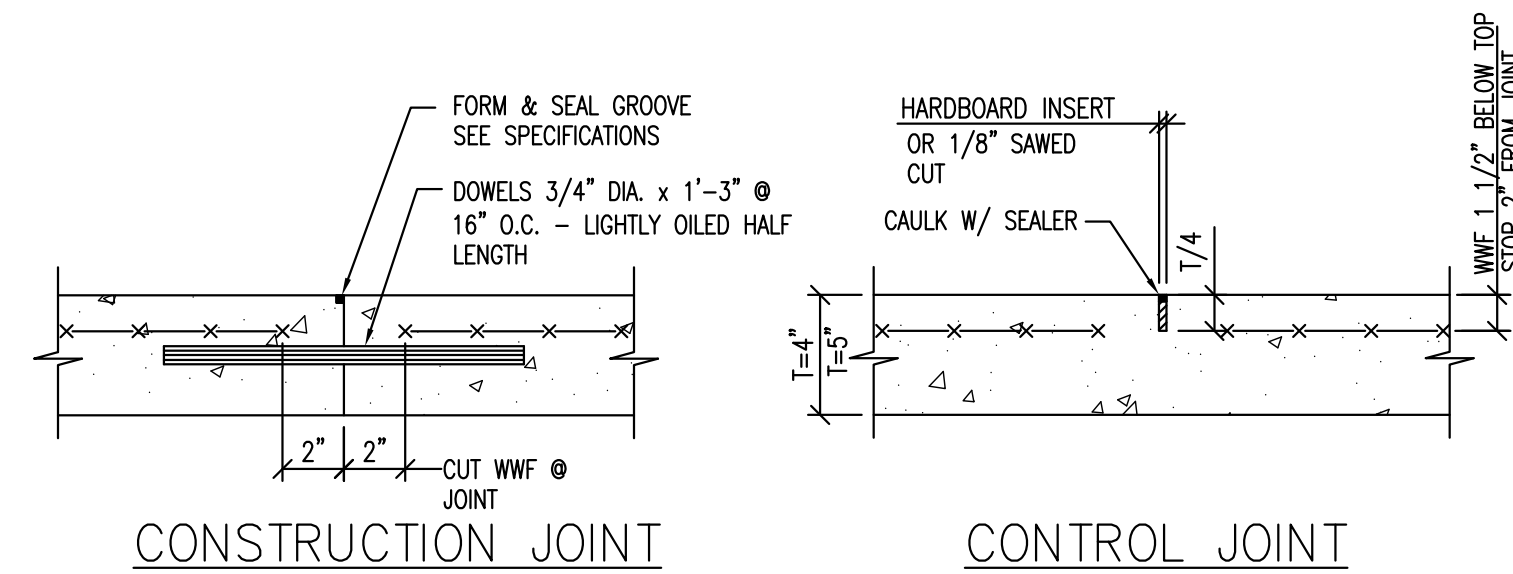
1B FOOTING @ 10" CMU
S3-0 3/4"=1'-0"



2 FOOTING
S3-0 3/4"=1'-0"



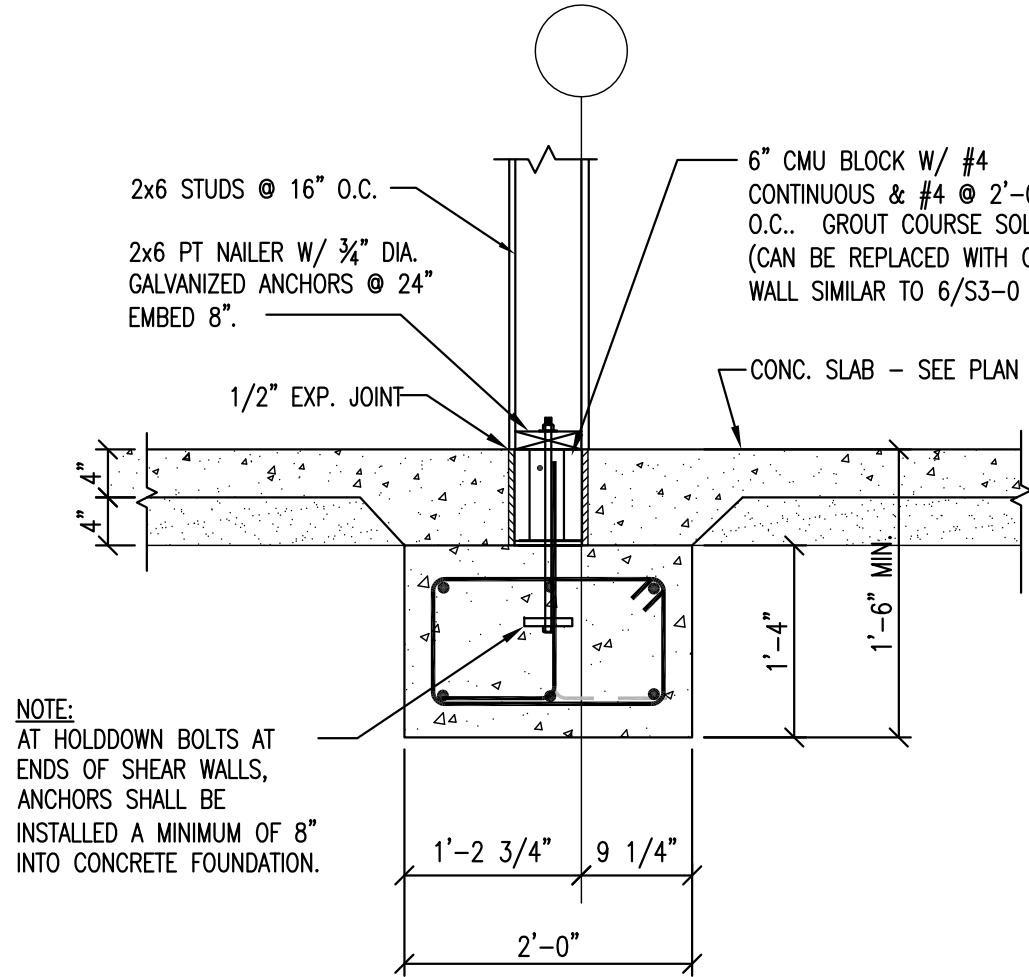
3 TRASH ENCLOSURE WALL SECTION
S3-0 3/4"=1'-0"



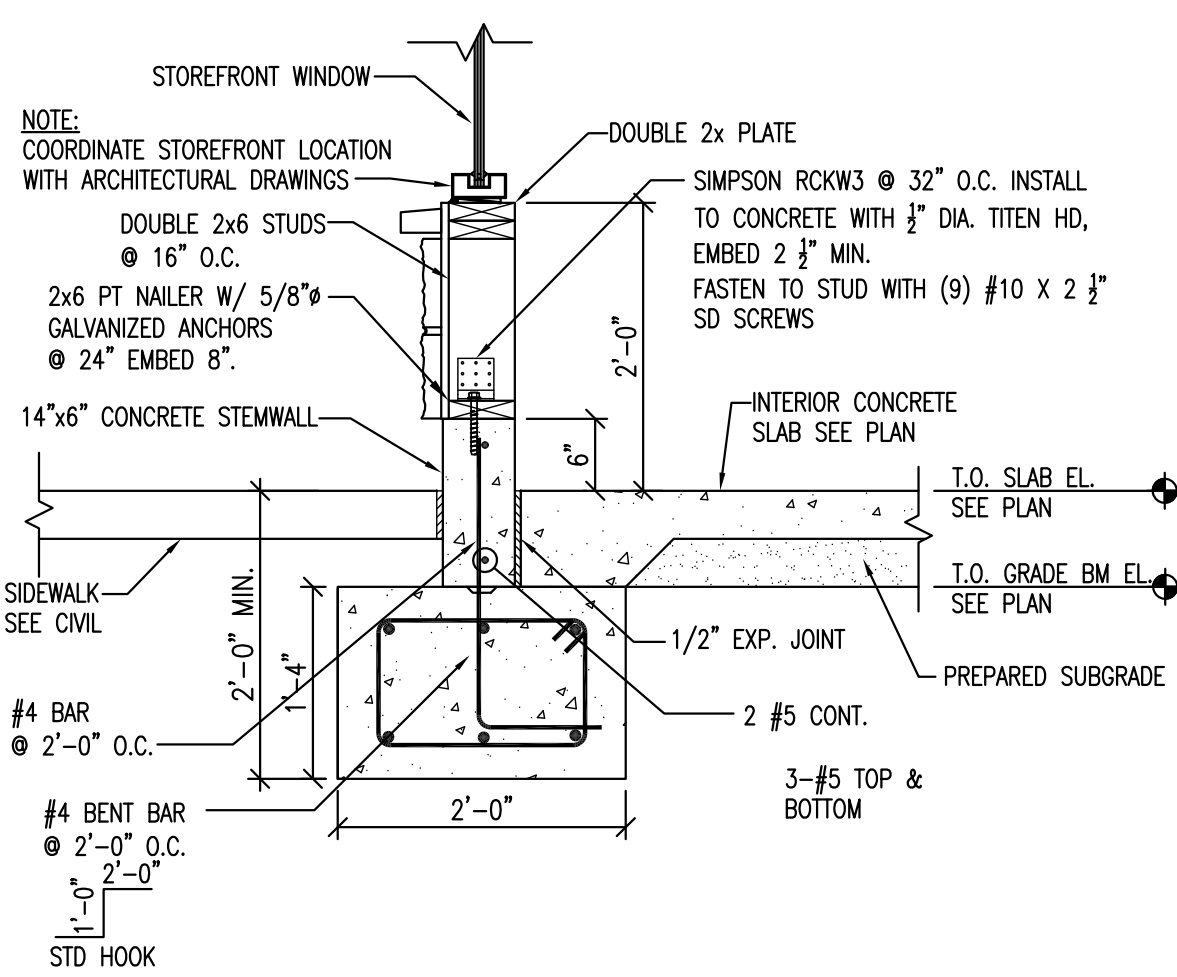
CONSTRUCTION JOINT CONTROL JOINT

- NOTES:
1. EPOXY JOINT FILLER TO BE SIKADUR 51 BY SIKA CORPORATION OR APPROVED EQUAL. MINIMUM AGE OF CONCRETE TO BE 28 DAYS WHEN FILLED.
 2. SAW JOINT AS SOON AS SURFACE IS FIRM ENOUGH TO BE TORN OR DAMAGED BY THE BLADE (USUALLY 4 TO 12 HOURS AFTER CONCRETE HARDENS).

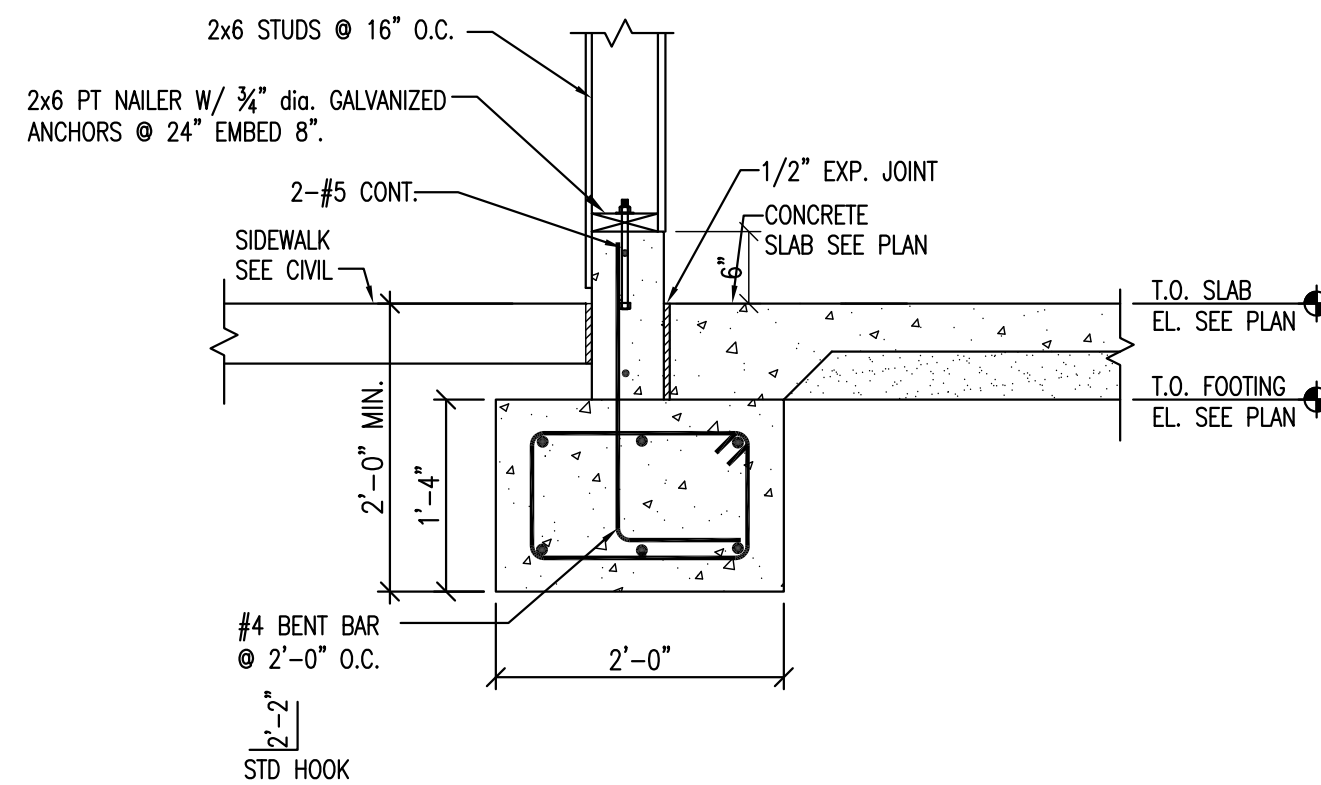
4 4" & 5" CONCRETE SLAB (C.J.) DETAILS
S3-0 N.T.S.



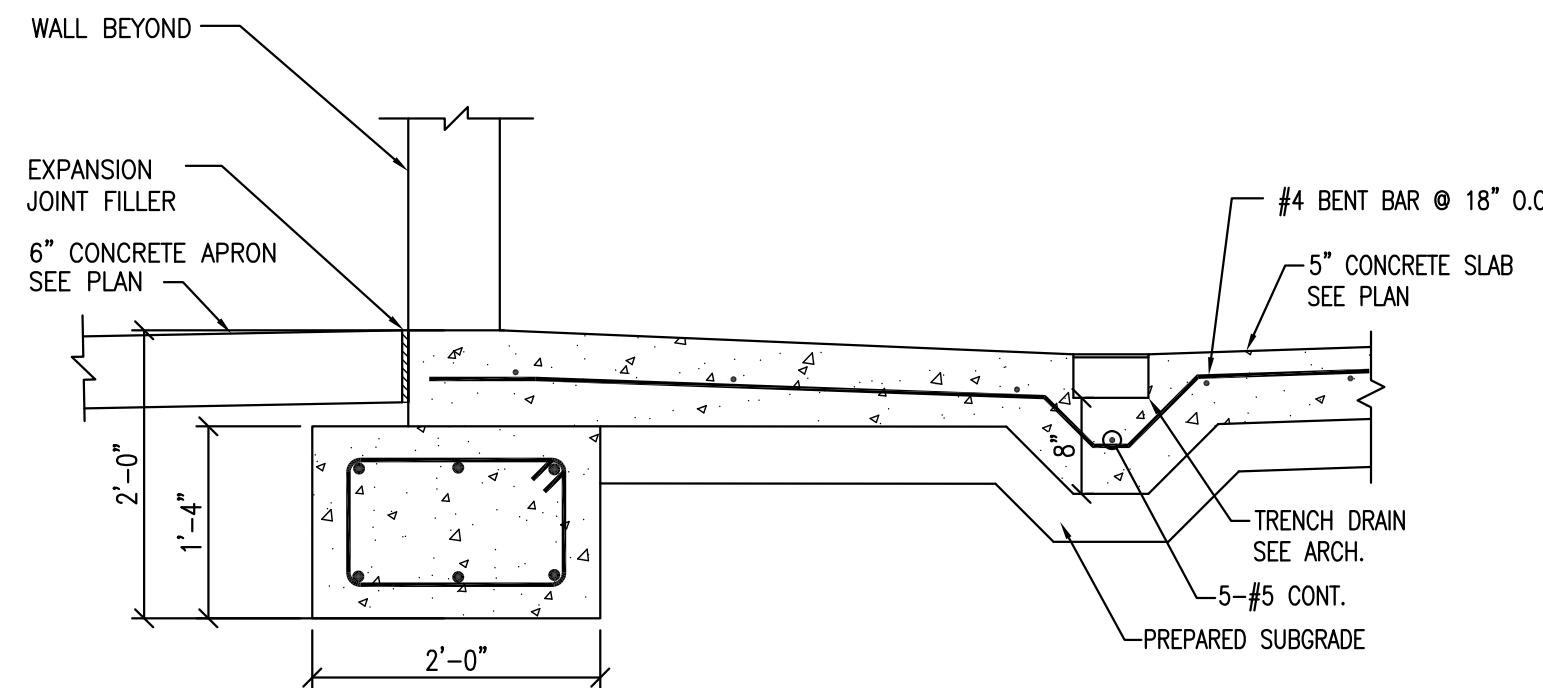
5 FOUNDATION SECTION
S3-0 3/4"=1'-0"



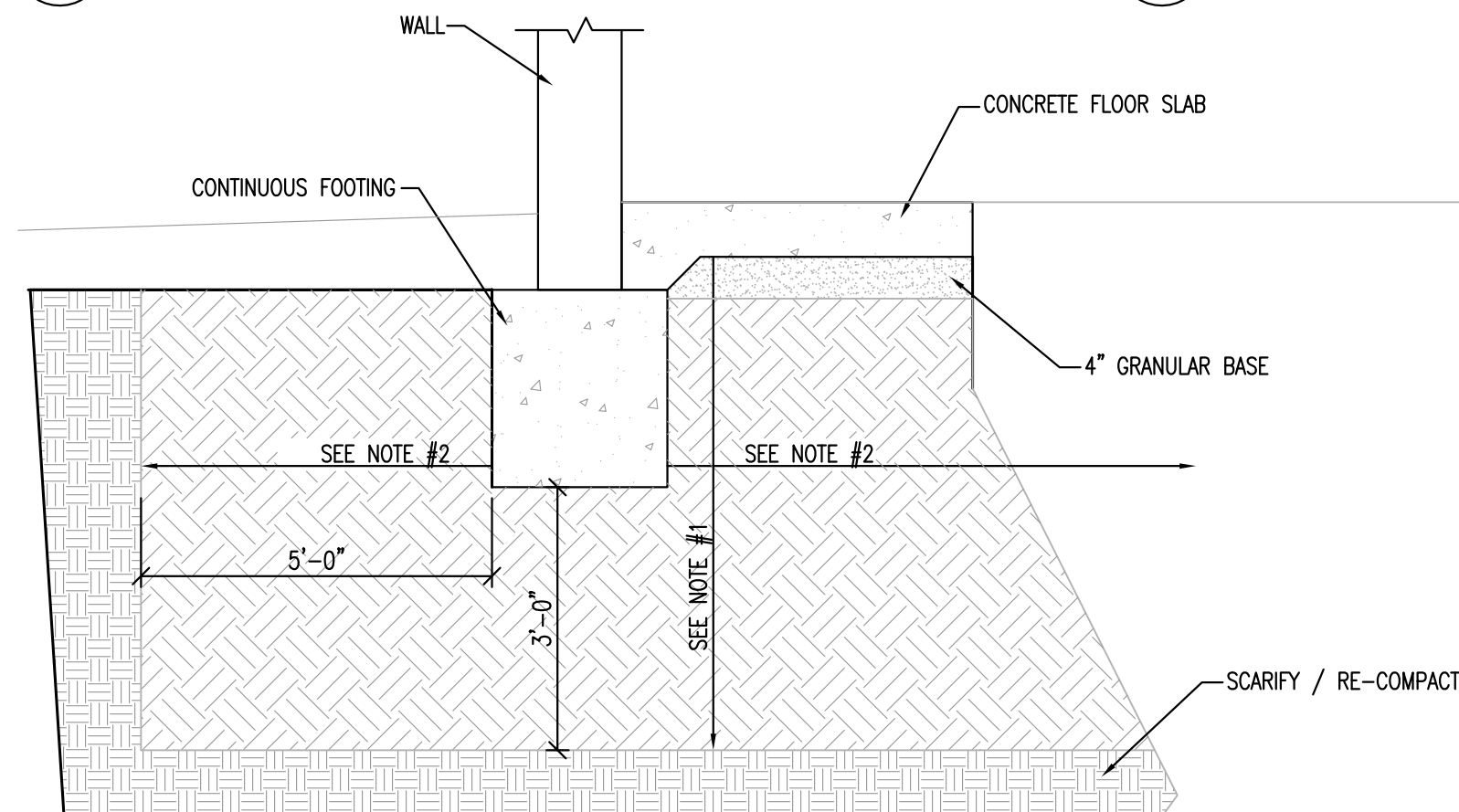
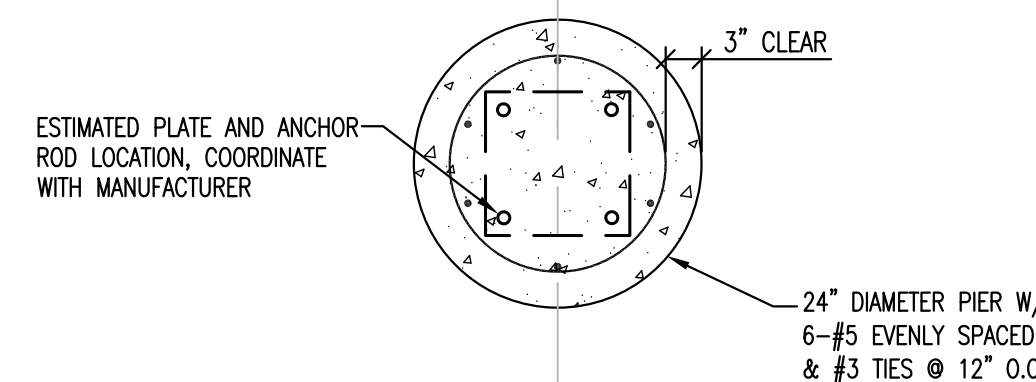
6 FOOTING @ STOREFRONT
S3-0 3/4"=1'-0"



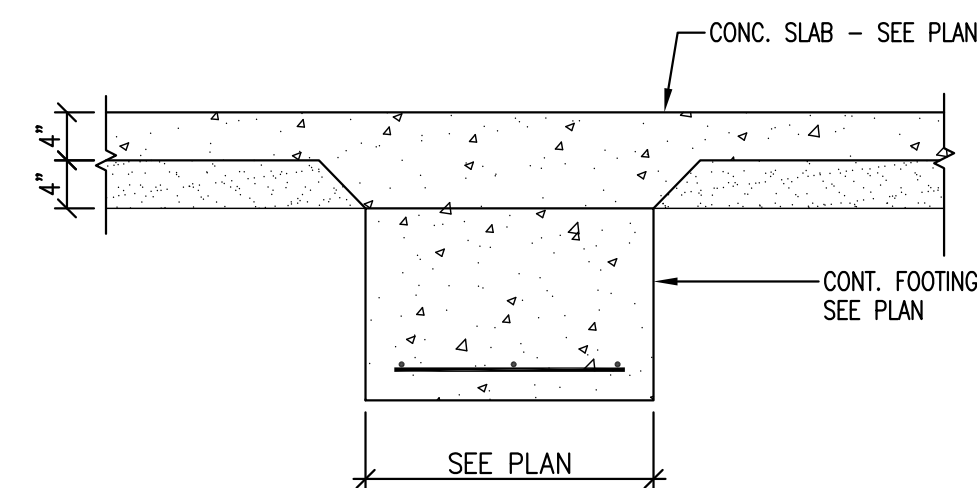
7 FOOTING @ WOOD WALL
S3-0 3/4"=1'-0"



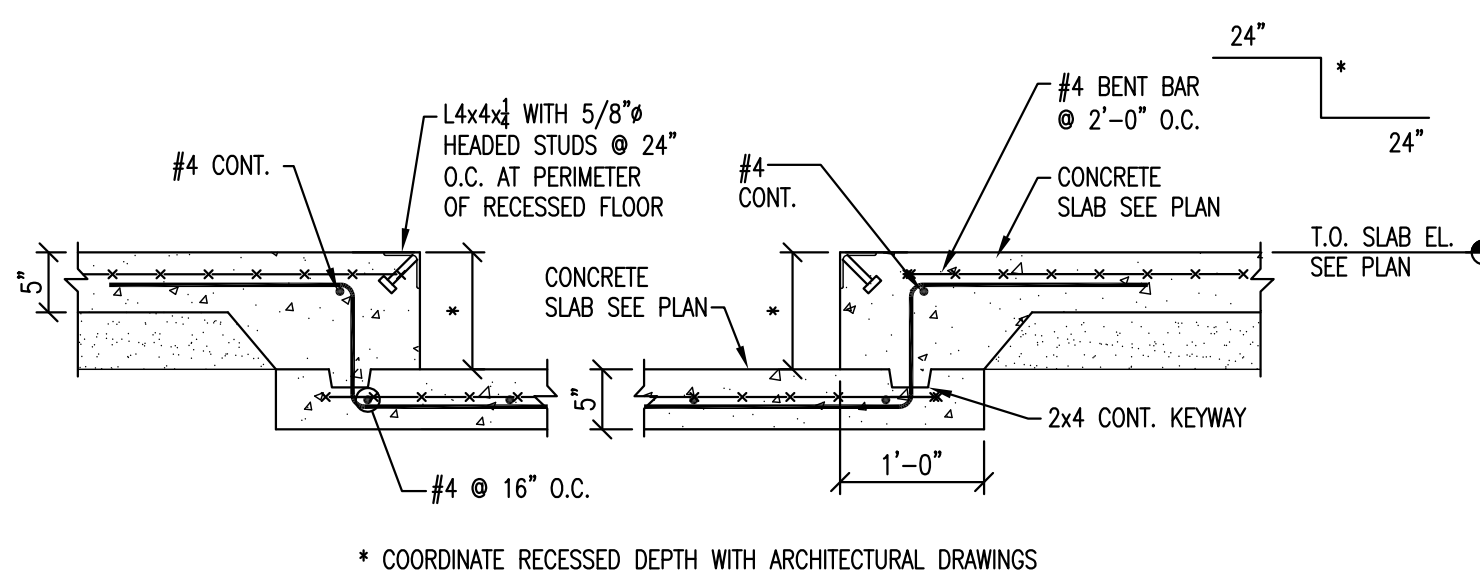
8 FOOTING & TRENCH DRAIN
S3-0 3/4"=1'-0"



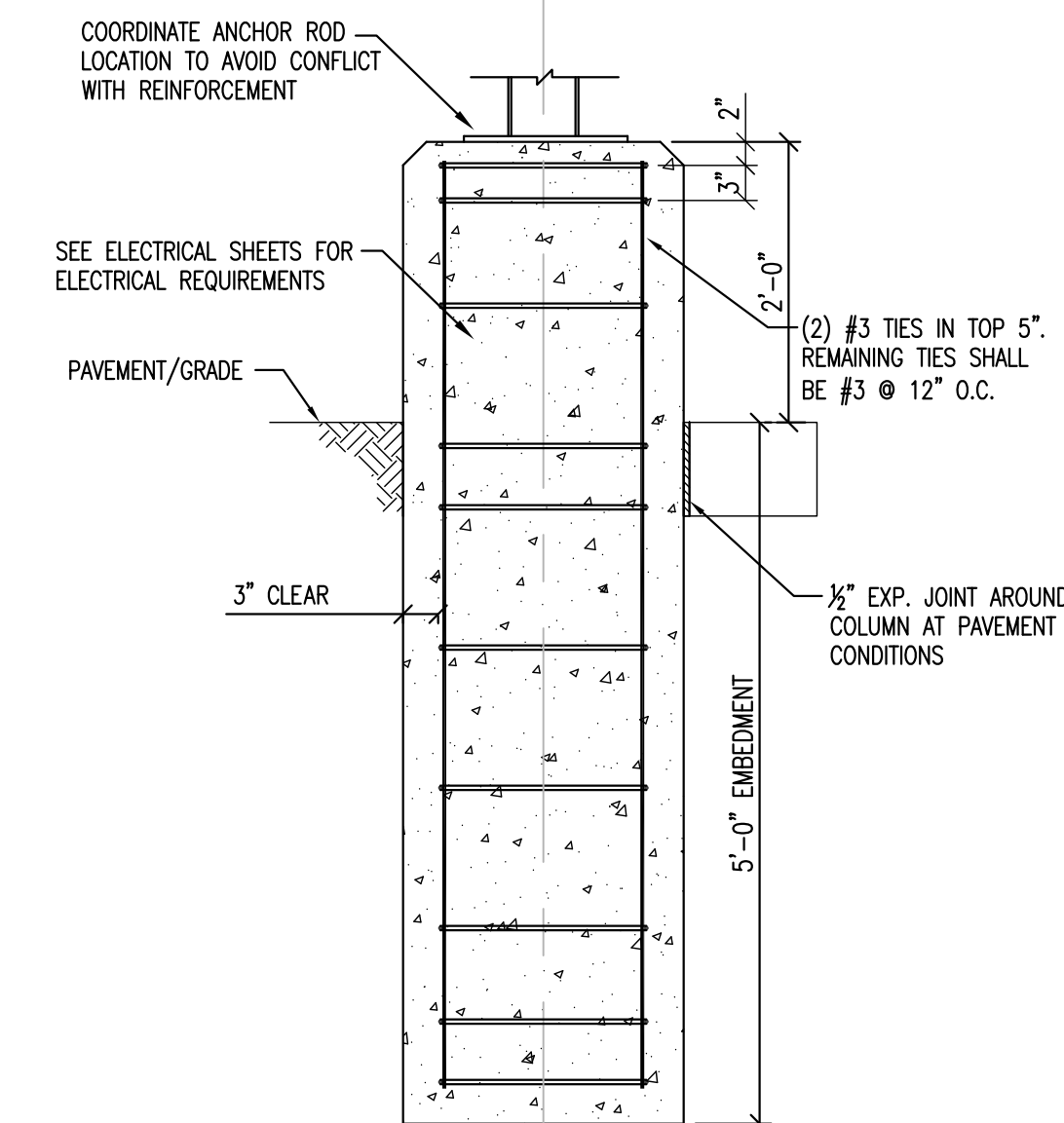
9 SUBGRADE PREPARATION
S3-0 3/4"=1'-0"



10 FOOTING SECTION
S3-0 3/4"=1'-0"



11 DEPRESSED SLAB DETAIL
S3-0 3/4"=1'-0"

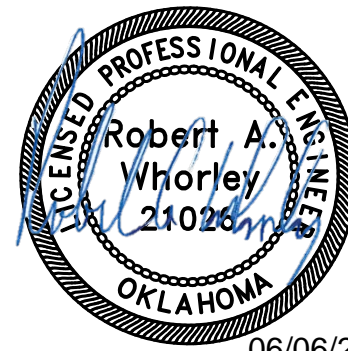
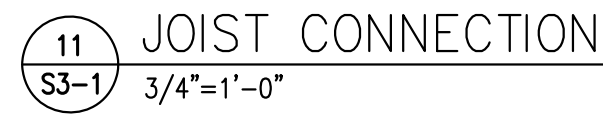
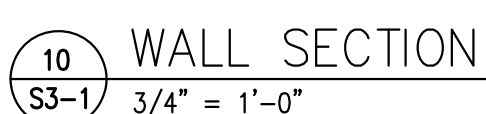
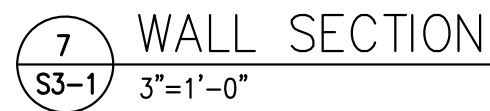
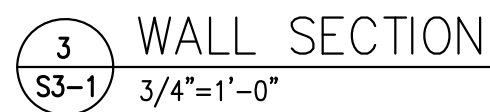
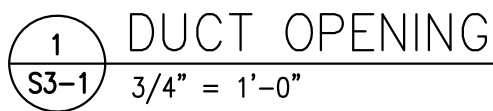


12 LIGHT POLE FOUNDATION
S3-0 3/4"=1'-0"

- SUBGRADE PREPARATION NOTES:
- #1 SUBGRADE IMPROVEMENTS SHALL CONSIST OF A MINIMUM OF 3'-0" BELOW FOOTINGS OF ENGINEERED FILL
 - #2 THE OVEREXCAVATION SHALL EXTEND BELOW THE ENTIRE STRUCTURE AND BEYOND THE OUTSIDE EDGES OF THE PROPOSED BUILDING FOOTPRINT A MINIMUM DISTANCE OF 5'-0".
 - #3 REFER TO THE SOIL REPORT FOR ALL MATERIAL TYPE, COMPACTION, AND MOISTURE REQUIREMENTS FOR THE IMPROVED SUBGRADE ZONE
 - #4 PROVIDE 4" GRANULAR LEVELING AND DRAINAGE LAYER DIRECTLY UNDER THE SLAB.

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DATE OF ISSUE: 06.07.24



06/06/24

ENGINEER OF RECORD

REVISION	DATE	COMMENTS

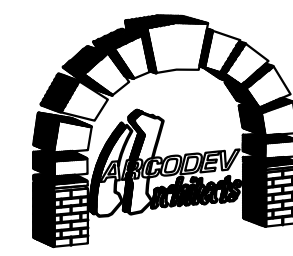
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CLIENTJOB #:

DRAWN BY: _____ SL

CHECKED BY: _____ TA _____

DATE OF ISSUE: 06.07.2

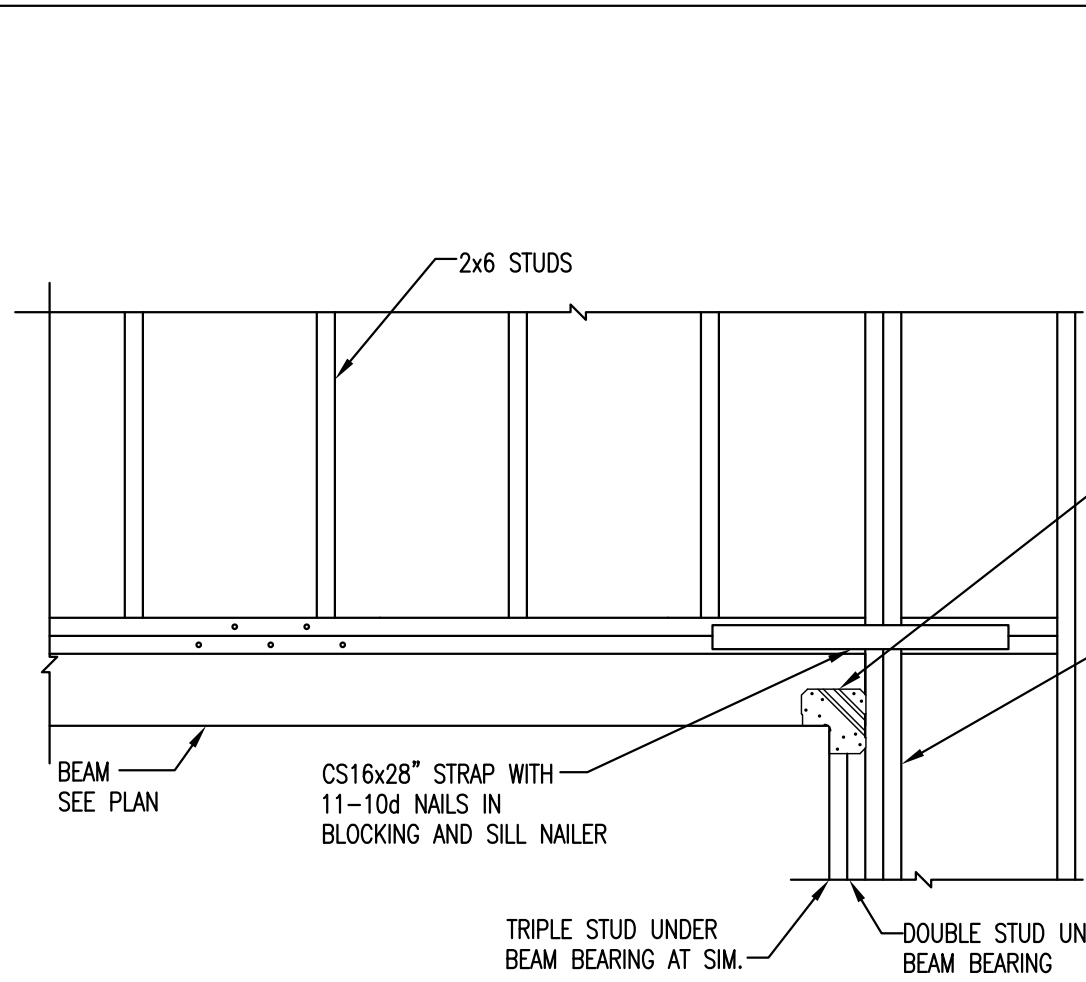


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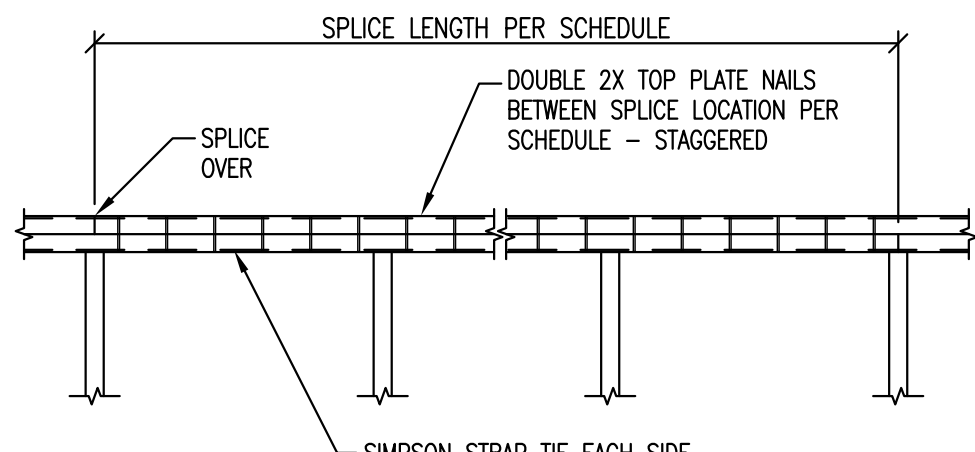
SHEET

S3-1

SECTIONS AND DETAILS



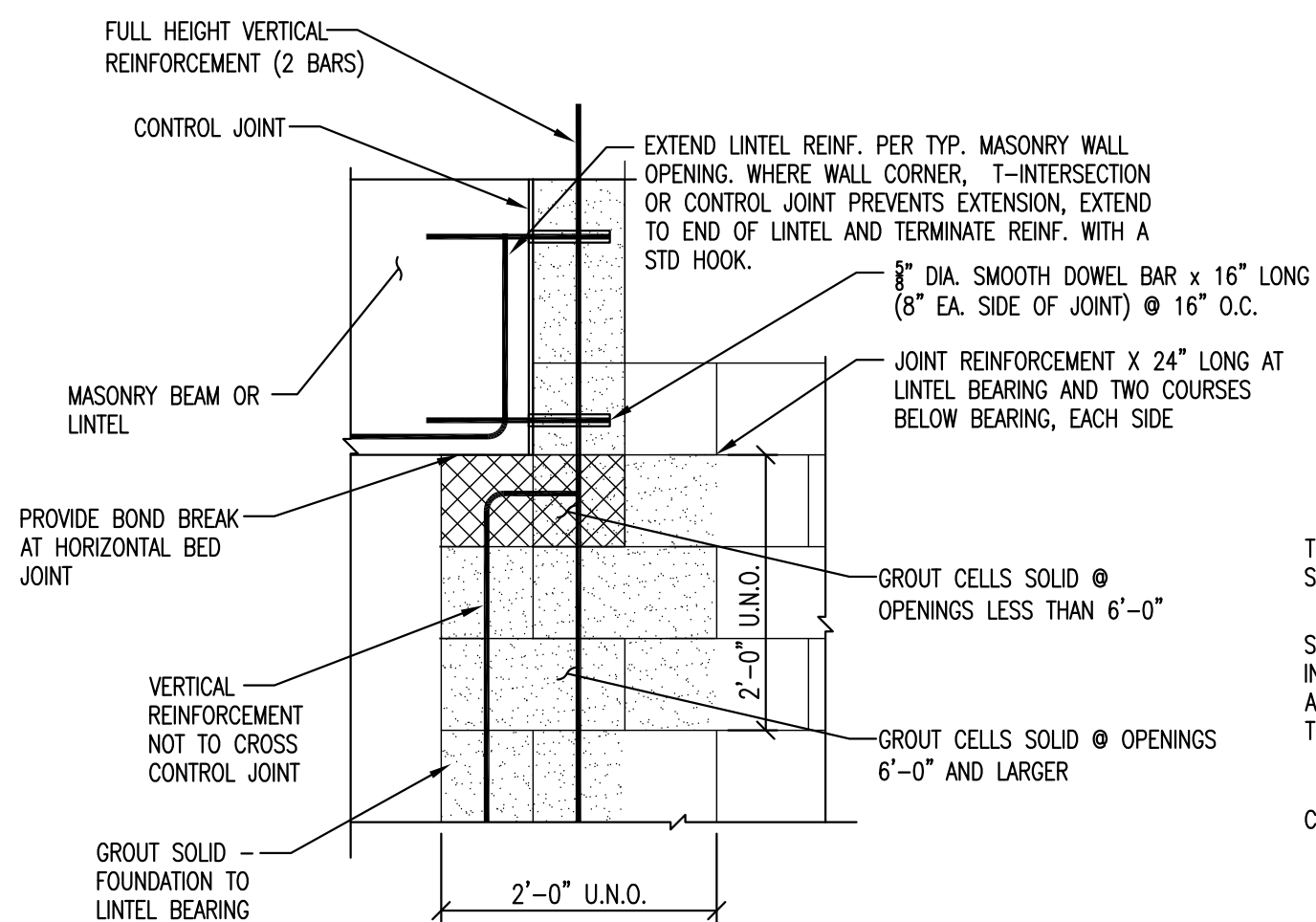
1 BEAM BEARING DETAIL
S3-2 3/4"=1'-0"



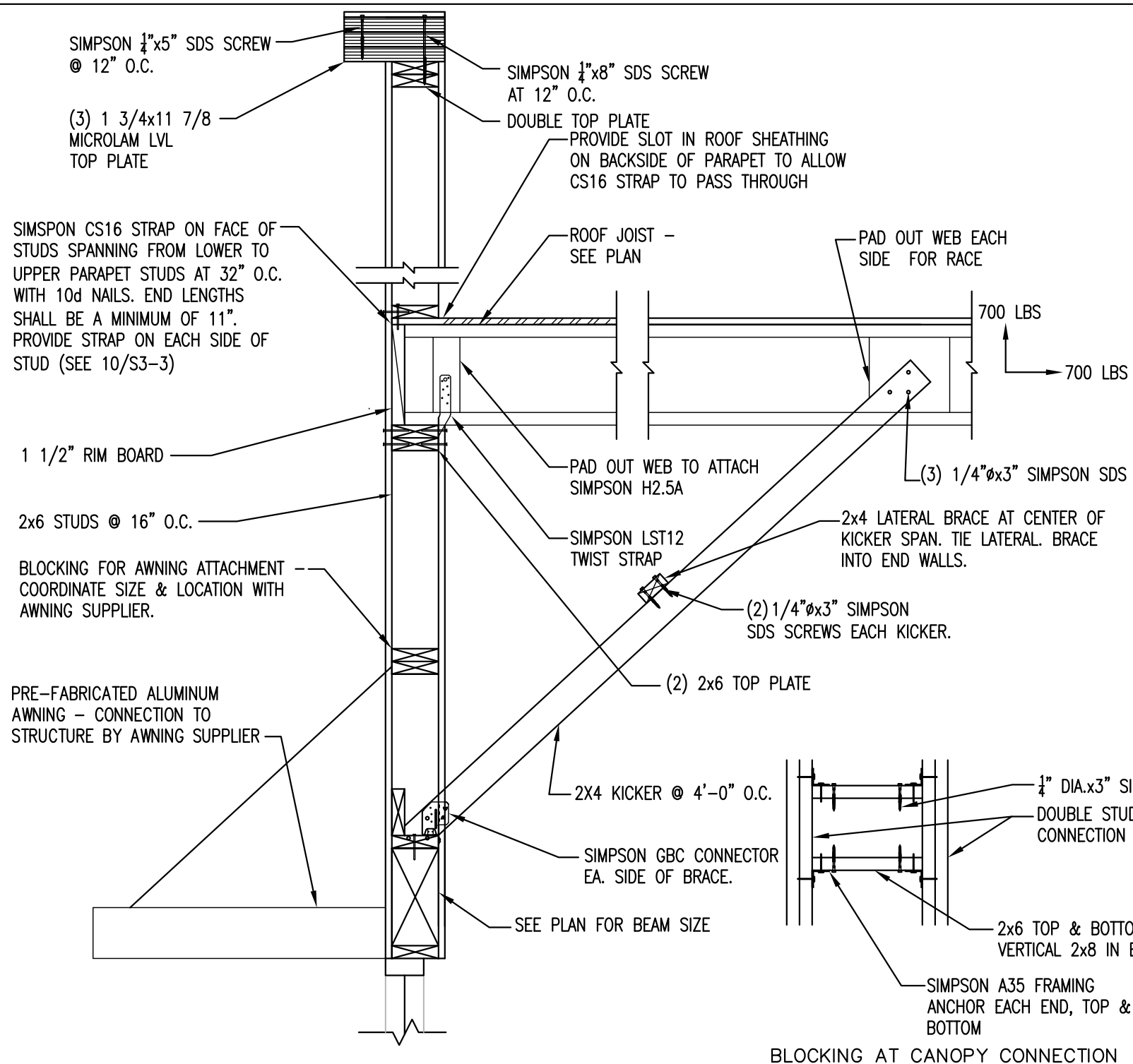
LENGTH OF WALL (BETWEEN CORNERS)	SPLICE LENGTH (MINIMUM)	NAILS ALONG SPLICE LENGTH
OVER 30'	4'-0"	18-16d
OVER 20'	2'-8"	10-16d
OVER 10'	1'-4"	6-16d
LESS THAN 10'	1'-4"	4-16d

NOTE:
1. DO NOT SPLICE TOP PLATES WITHIN 6'-0" OF ENDS OF WOOD STRUCTURAL PANEL SHEAR WALLS.
2. THIS DETAIL APPLIES TO ALL EXTERIOR WALLS AND INTERIOR WALLS. SIMPSON STRAP TIE NEED NOT BE APPLIED TO INTERIOR WALLS.
3. PROVIDE SIMPSON CMST 14 ON EACH SIDE OF TOP PLATE AT SPLICE LOCATION. EXTEND STRAP 34" BEYOND END OF PLATE SPLICE. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

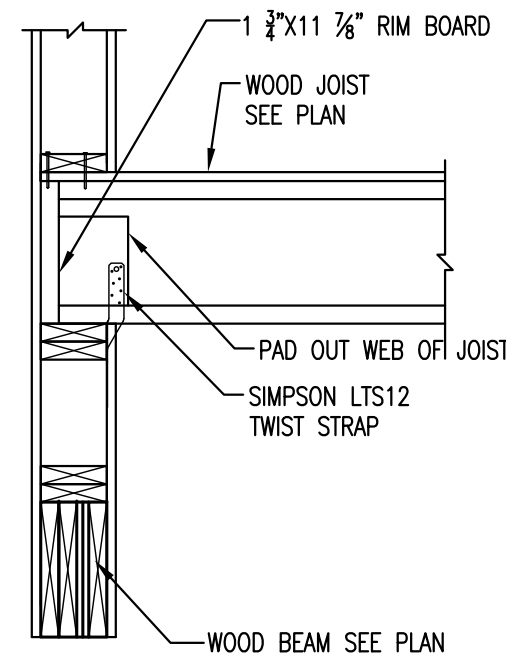
6 CHORD SPLICE
S3-2 3/4"=1'-0"



10 TYP. MASONRY BM/ LINTEL BEARING
S3-2 3/4"=1'-0"



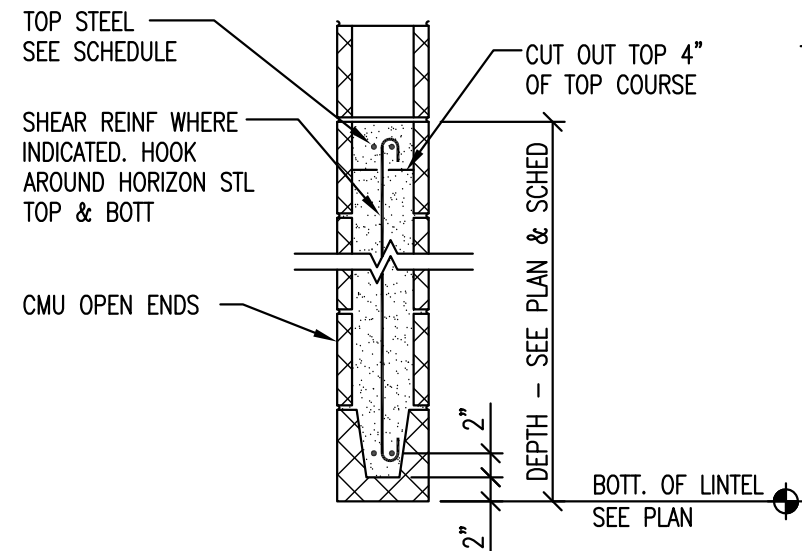
2 HIGH PARAPET
S3-2 3/4"=1'-0"



7 FRAMING SECTION
S3-2 3/4" = 1'-0"

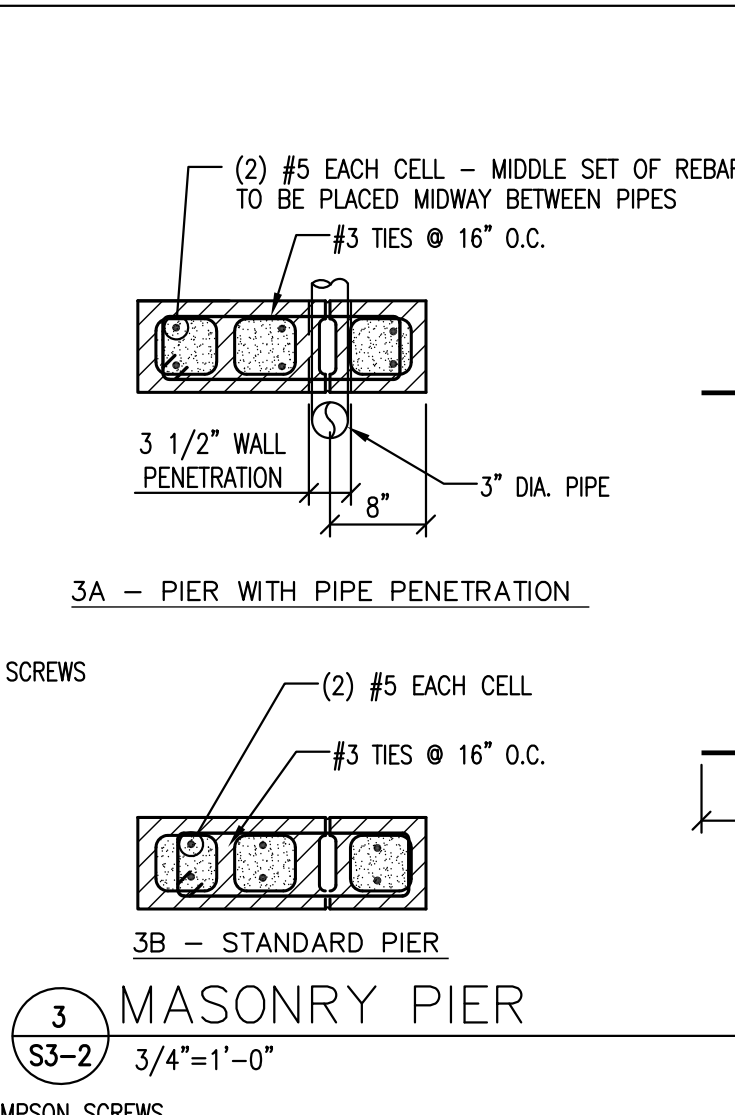
MASONRY LINTEL SCHEDULE				
MARK	DEPTH	BOND BM REINF	SHEAR REINF	REMARKS
ML-1	2'-8"	2-#5 TOP & BOT	-	8" CMU
ML-2	1'-4"	2-#5 TOP & BOT	-	8" CMU

- NOTE:
1. USE LINTEL ML-2 AT ALL OPENINGS LESS THAN 4'-0" WIDE UNLESS NOTED OTHERWISE.
2. BOND BEAM REINFORCING SHALL BE CONTINUOUS WITHOUT SPLICES.
3. MASONRY LINTELS SHALL BE GROUTED SOLID.

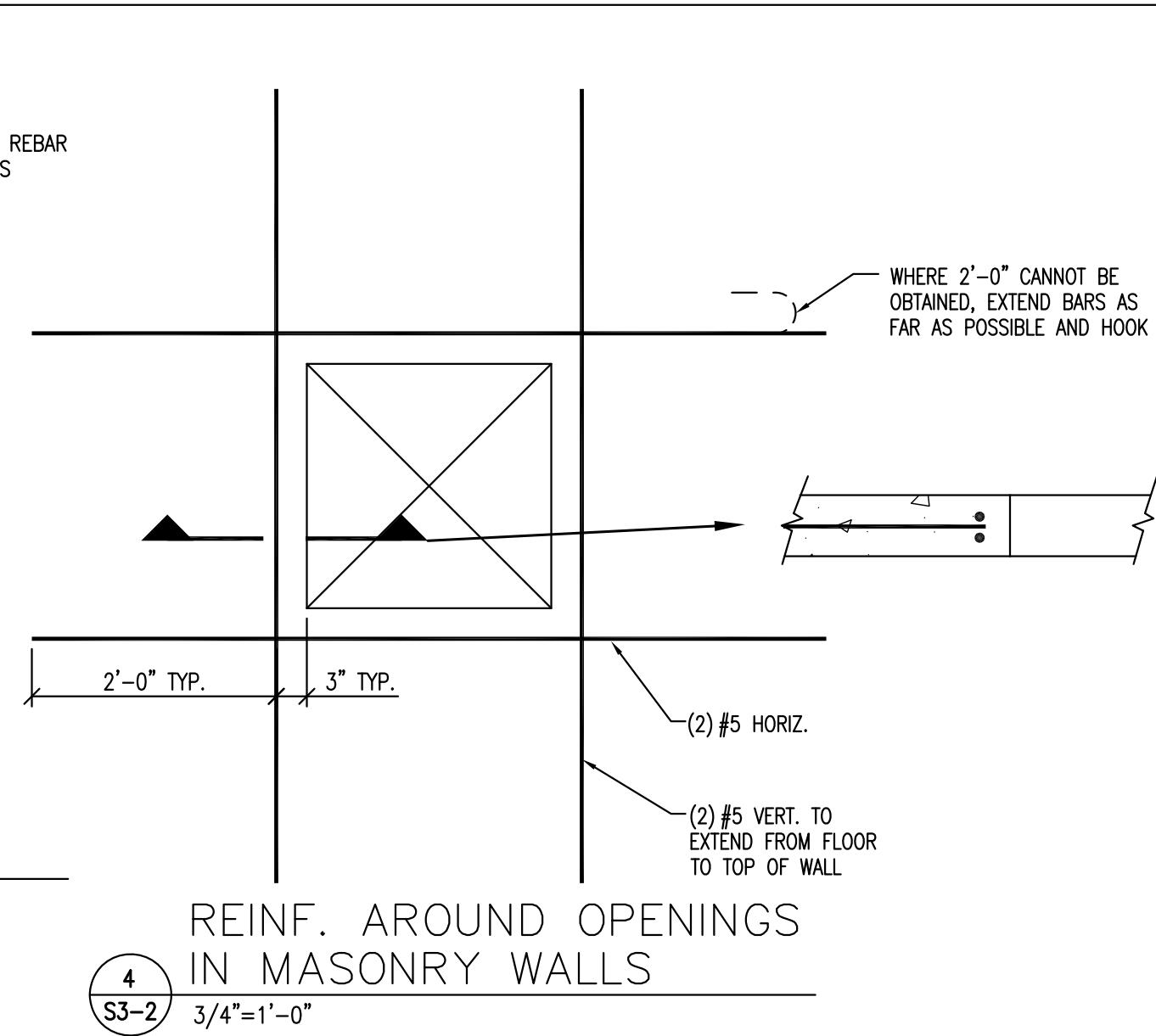


11 TYP. MASONRY BEAM/ LINTEL
S3-2 3/4"=1'-0"

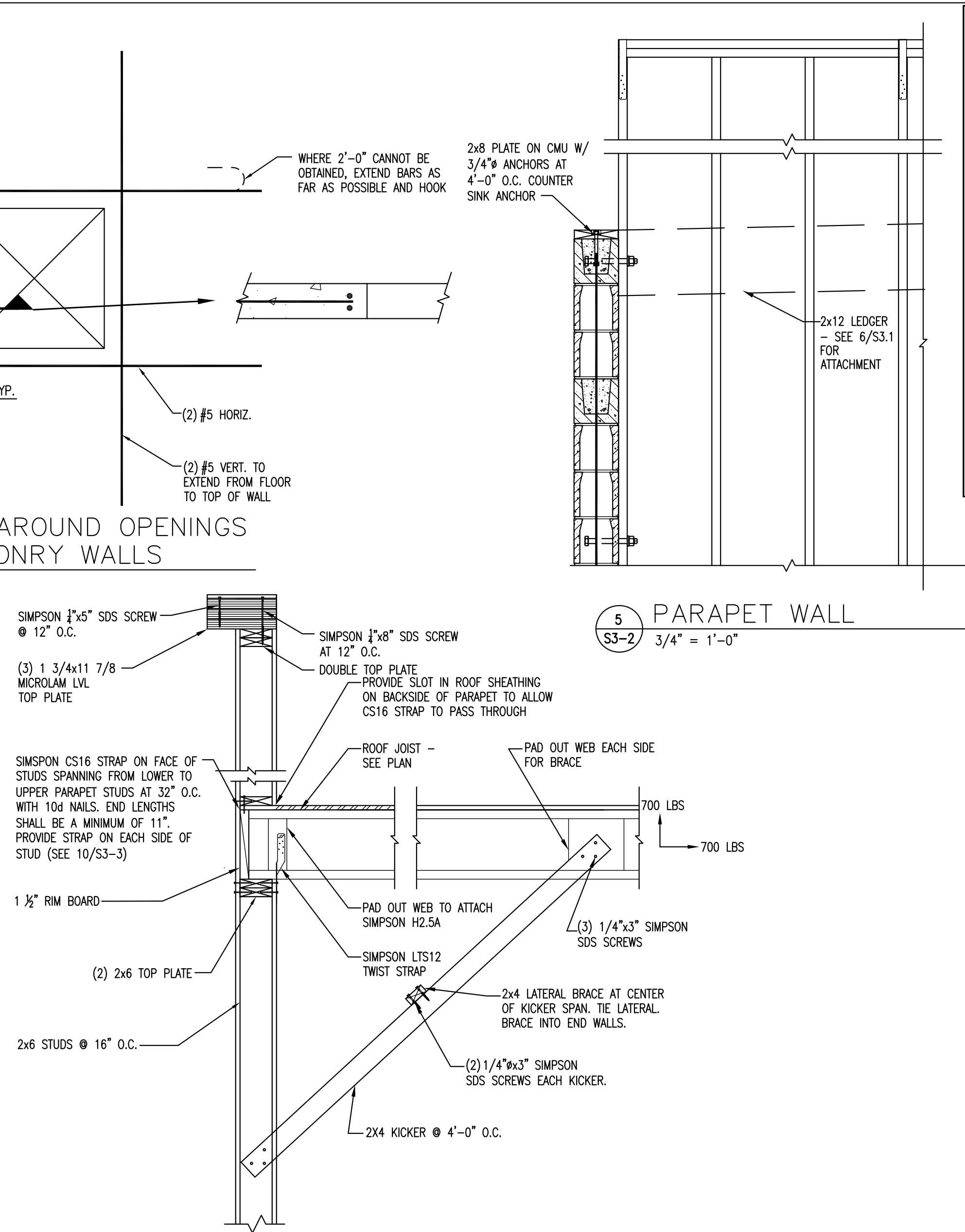
- NOTES:
1. PROVIDE SHORING UNDER BEAM FOR A MIN. OF 7 DAYS AFTER GROUTING.
2. MONOLITHICALLY GROUT BOND BEAM AND ALL CELLS SOLID. GROUTING SHALL HAVE NO VERTICAL OR HORIZONTAL COLD JOINTS FULL HEIGHT AND LENGTH OF LINTEL INCLUDING END BEARINGS.
3. MECHANICALLY VIBRATE GROUT.
4. SEE TYPICAL MASONRY BEAM/LINTEL BEARING DETAIL FOR BEARING.
5. HORIZONTAL REINFORCEMENT SHALL NOT BE SPLICED.



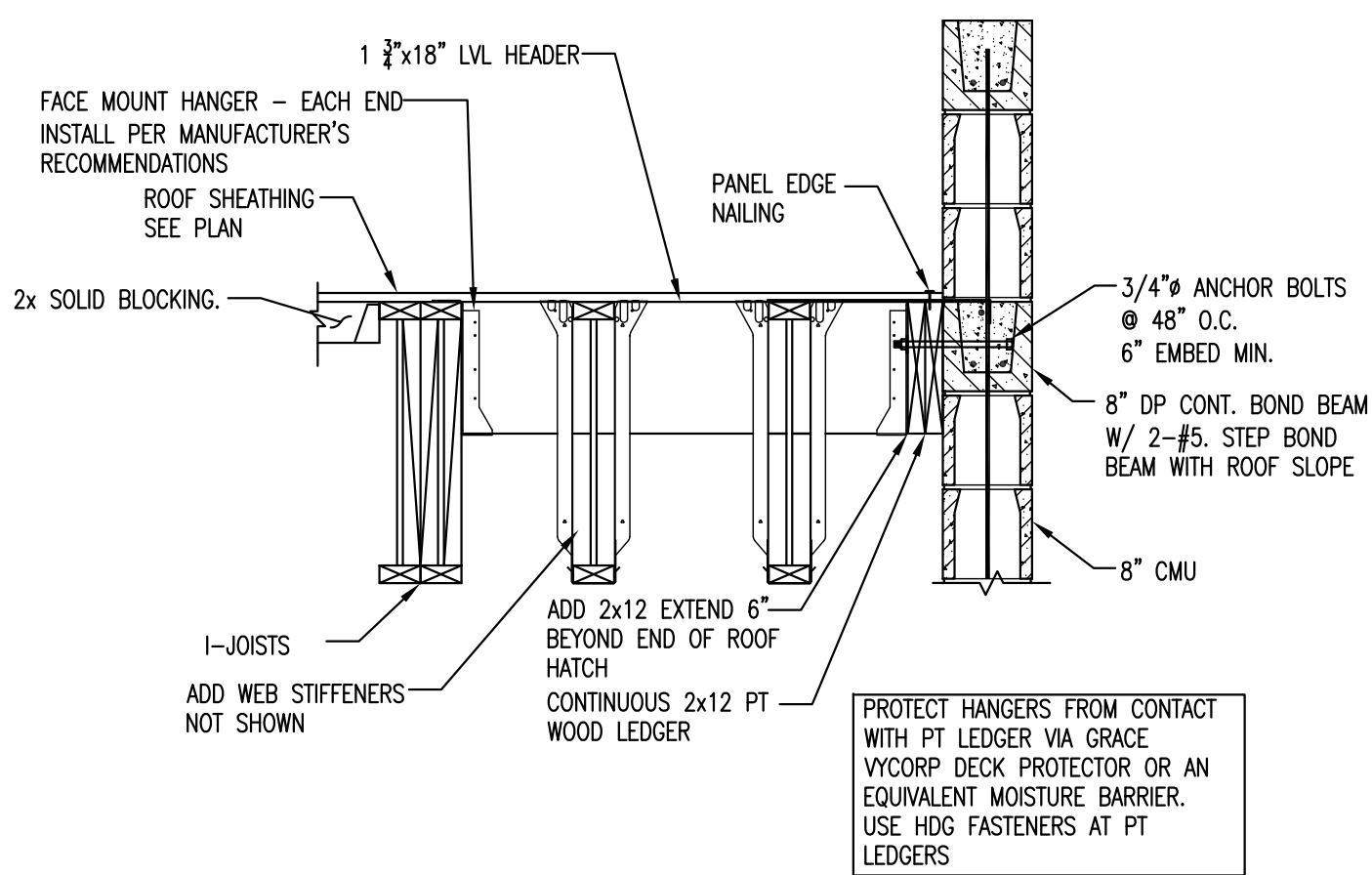
12 PARAPET WALL SECTION
S3-2 3/4"=1'-0"



13 ROOF OPENING DETAIL
S3-2 3/4"=1'-0"



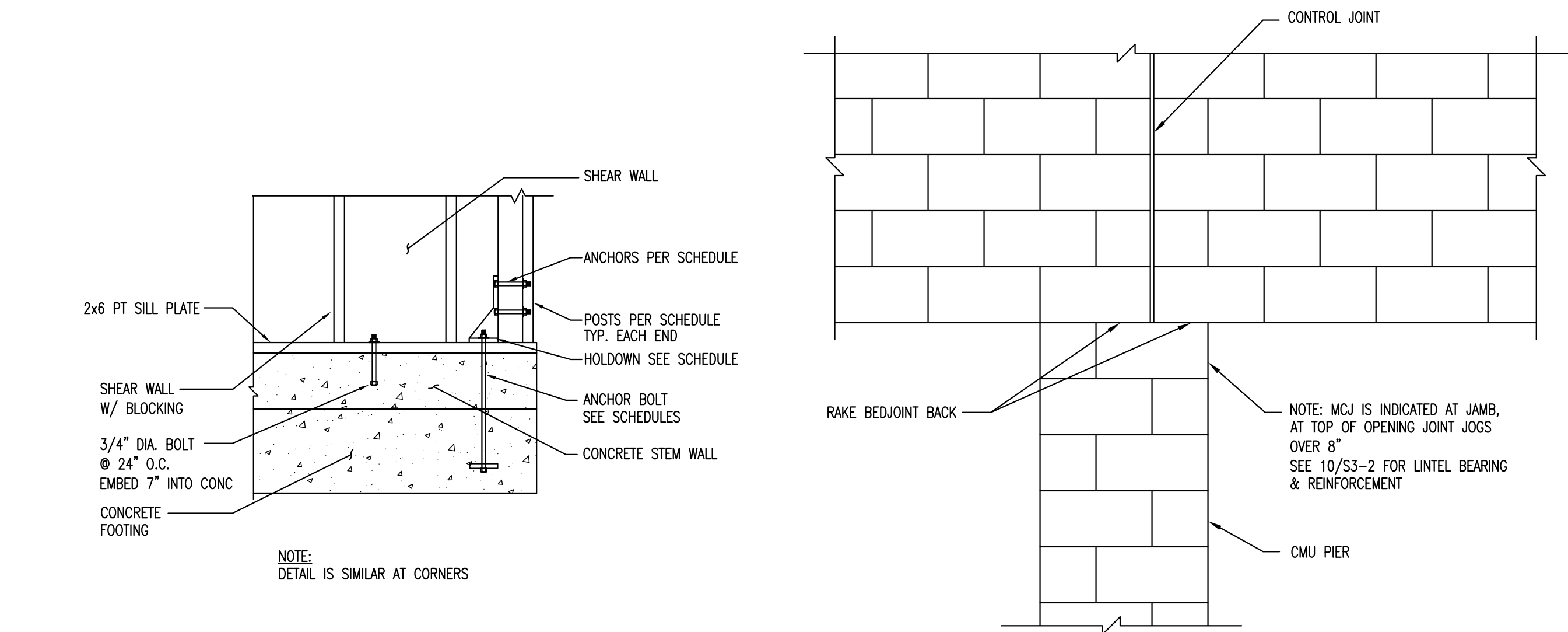
9 WALL SECTION
S3-2 3/4"=1'-0"



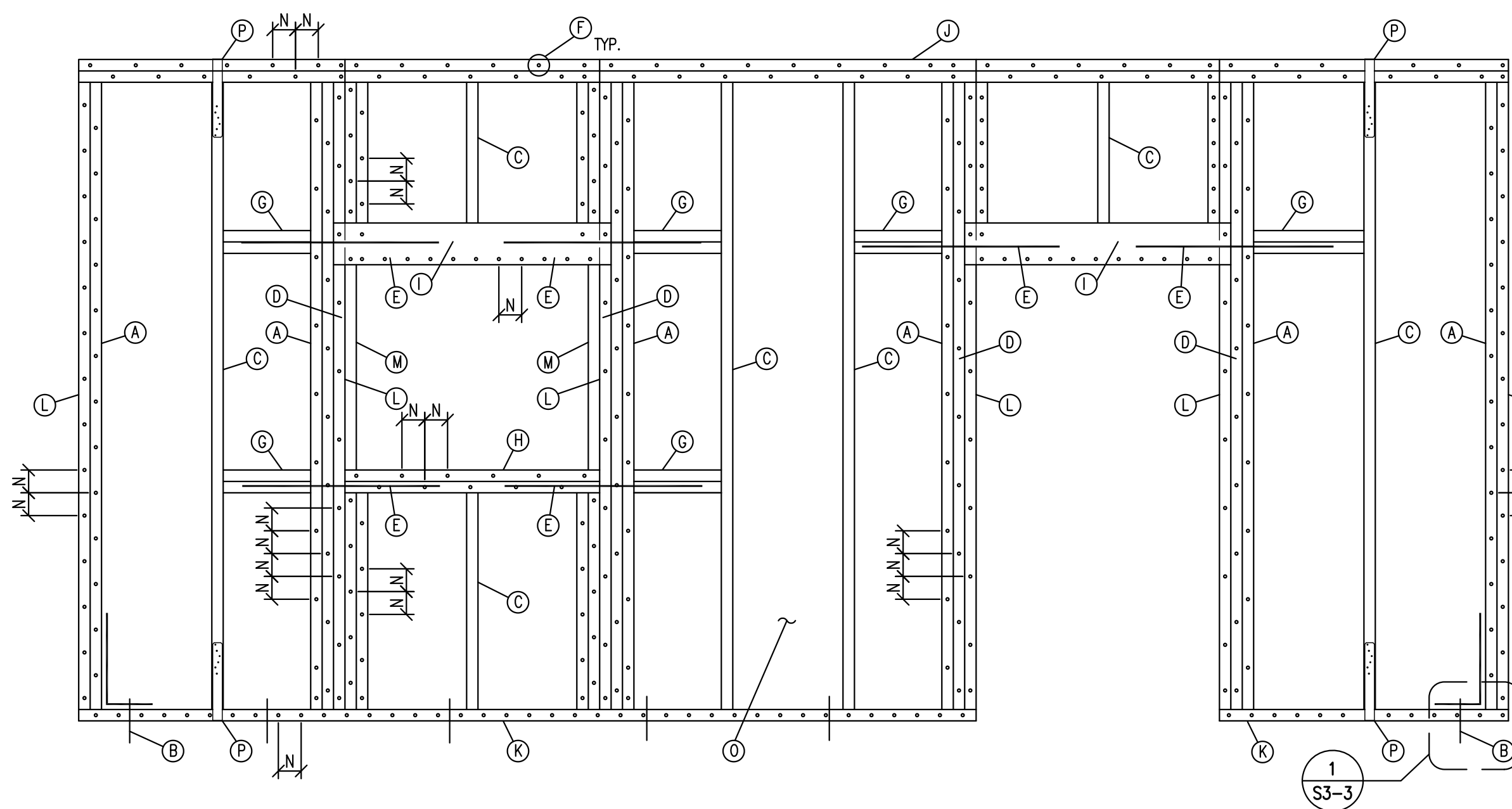
11 TYP. MASONRY BEAM/ LINTEL
S3-2 3/4"=1'-0"

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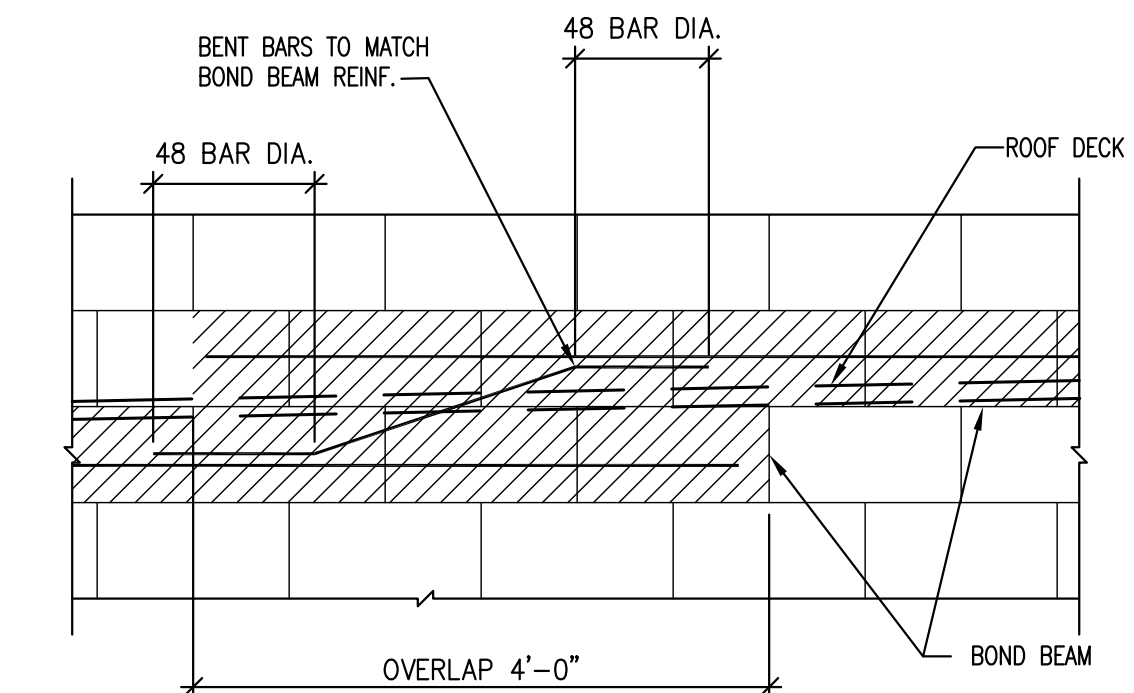


1 FOOTING @ COLUMN
S3-3 3/4"=1'-0"

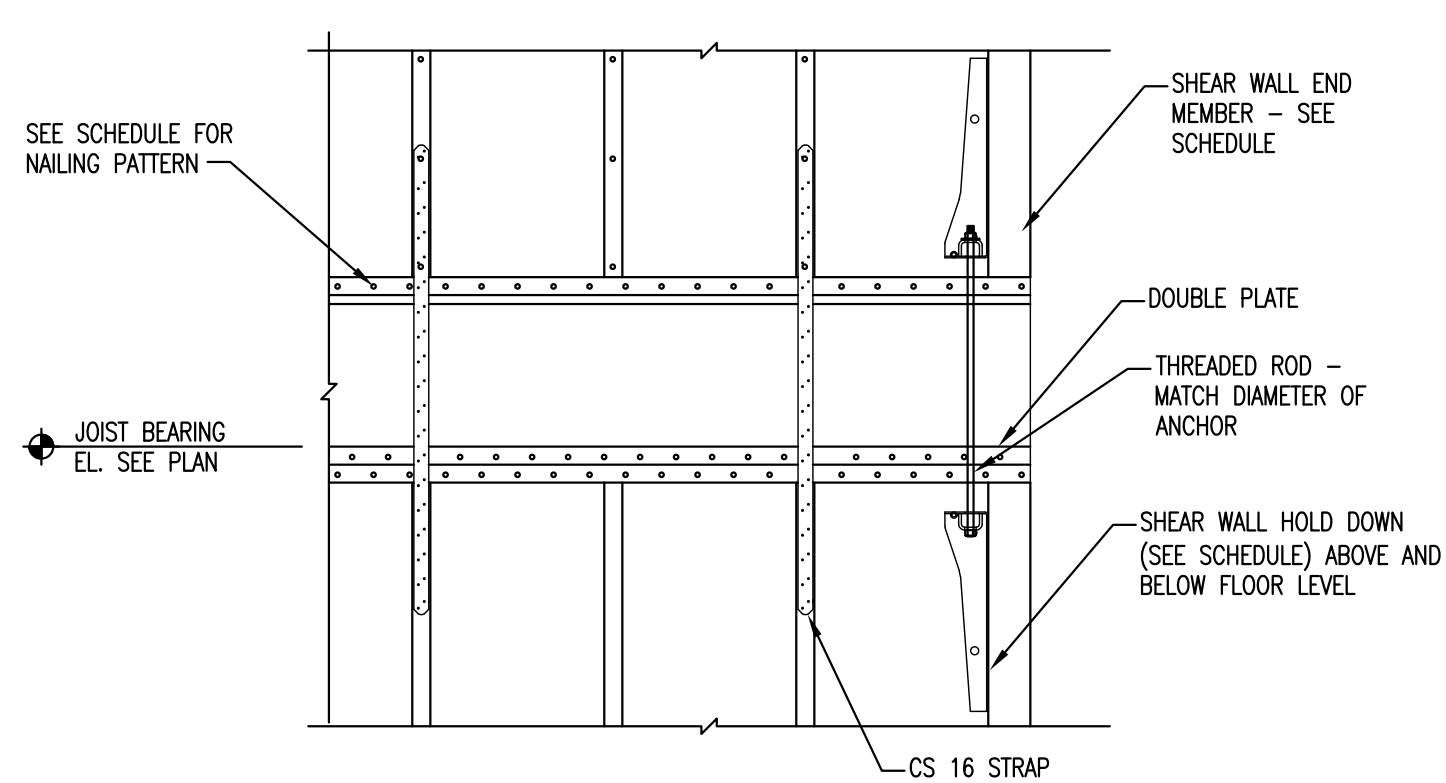


2 CONTROL JOINT @ PIER
S3-3 3/4"=1'-0"

5 SHEAR WALL CONSTRUCTION
S3-3 3/4"=1'-0"



9 BOND BEAM STEP AT SLOPING ROOF
S3-3 3/4"=1'-0"

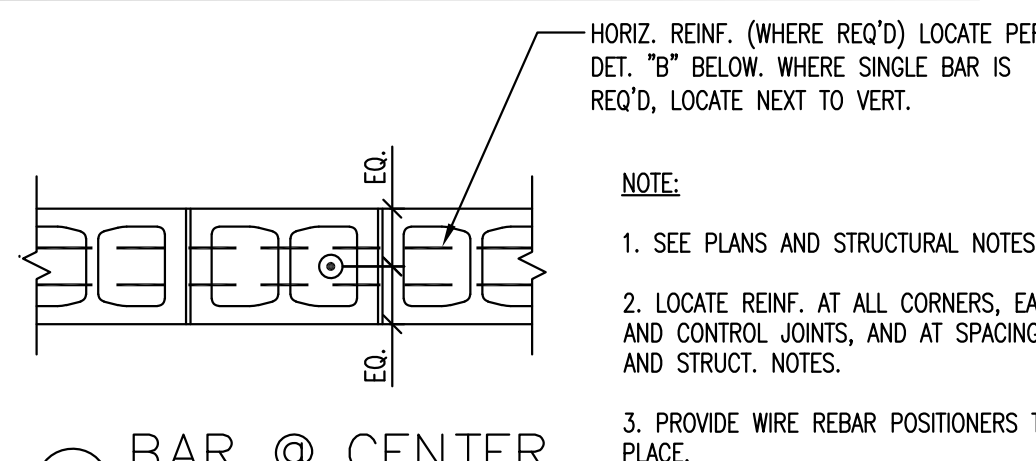


10 TWO LEVEL SHEAR WALL CONNECTION
S3-3 3/4" = 1'-0"

BAR SIZE	6" BLOCK	8" BLOCK		10" BLOCK		12" BLOCK		REMARKS
	BAR @ CL	BAR @ CL	BAR @ EDGE	BAR @ CL	BAR @ EDGE	BAR @ CL	BAR @ EDGE	
#4	2'-1"	1'-9"	2'-7"	2'-1"	2'-5"	2'-1"	2'-4"	-
#5	3'-3"	2'-2"	4'-0"	2'-7"	3'-10"	2'-7"	3'-7"	-
#6	-	3'-6"	8'-2"	4'-4"	7'-8"	4'-4"	7'-3"	-
#7	-	5'-0"	-	5'-1"	10'-5"	5'-1"	9'-10"	-

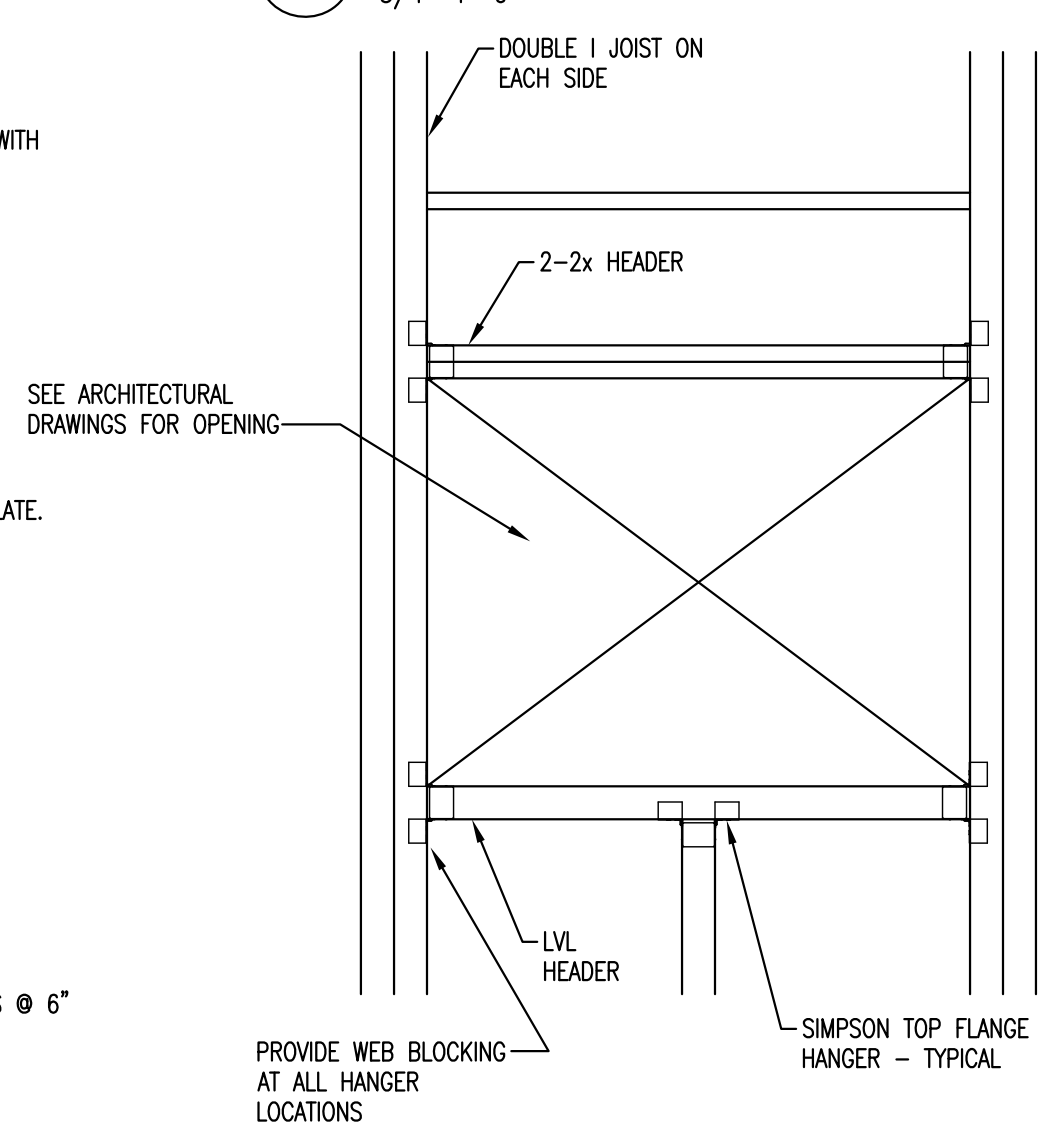
NOTE: WHEN REQUIRED SPLICE LENGTH EXCEEDS 4'-0" USE HIGH LIFT GROUTING WITH NO SPLICES OR USE MECHANICAL TENSION SPLICES WITH LOW LIFT GROUTING.

3 MASONRY REINFORCEMENT SPLICE & DEVELOPMENT LENGTH
S3-3 3/4"=1'-0"

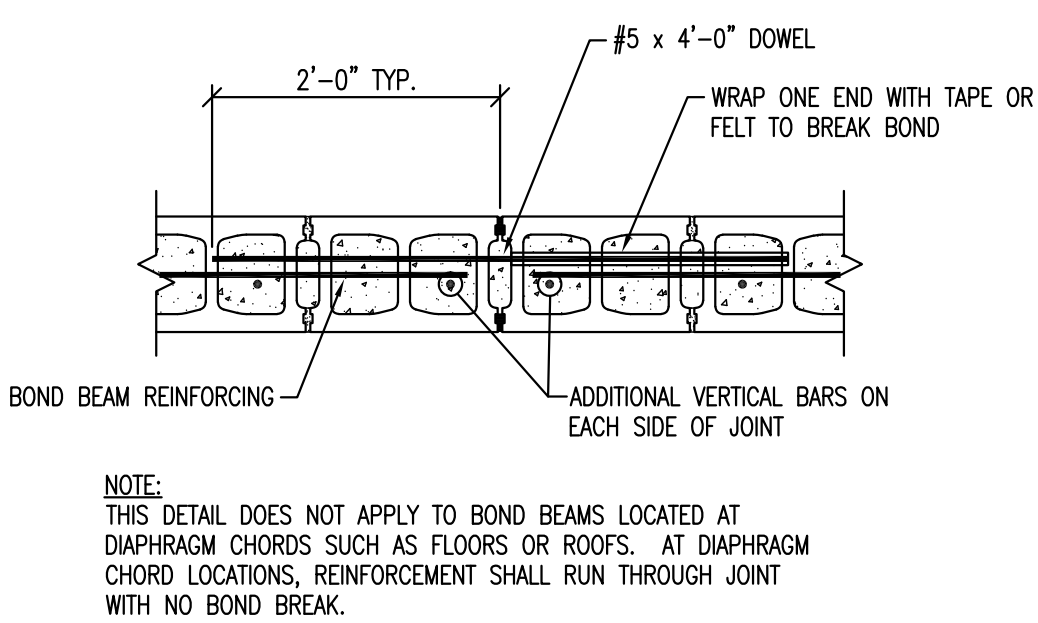


A BAR @ CENTER

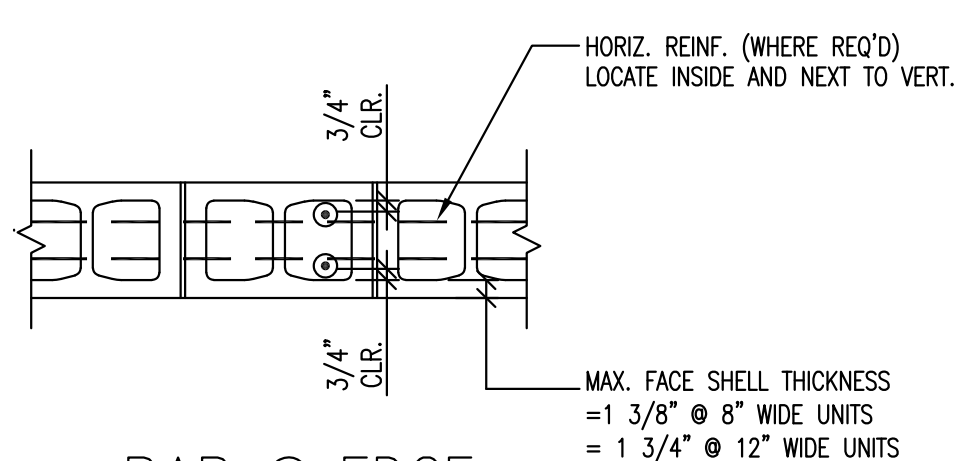
6 TYP. MASONRY WALL REINF. PLACEMENT
S3-3 3/4"=1'-0"



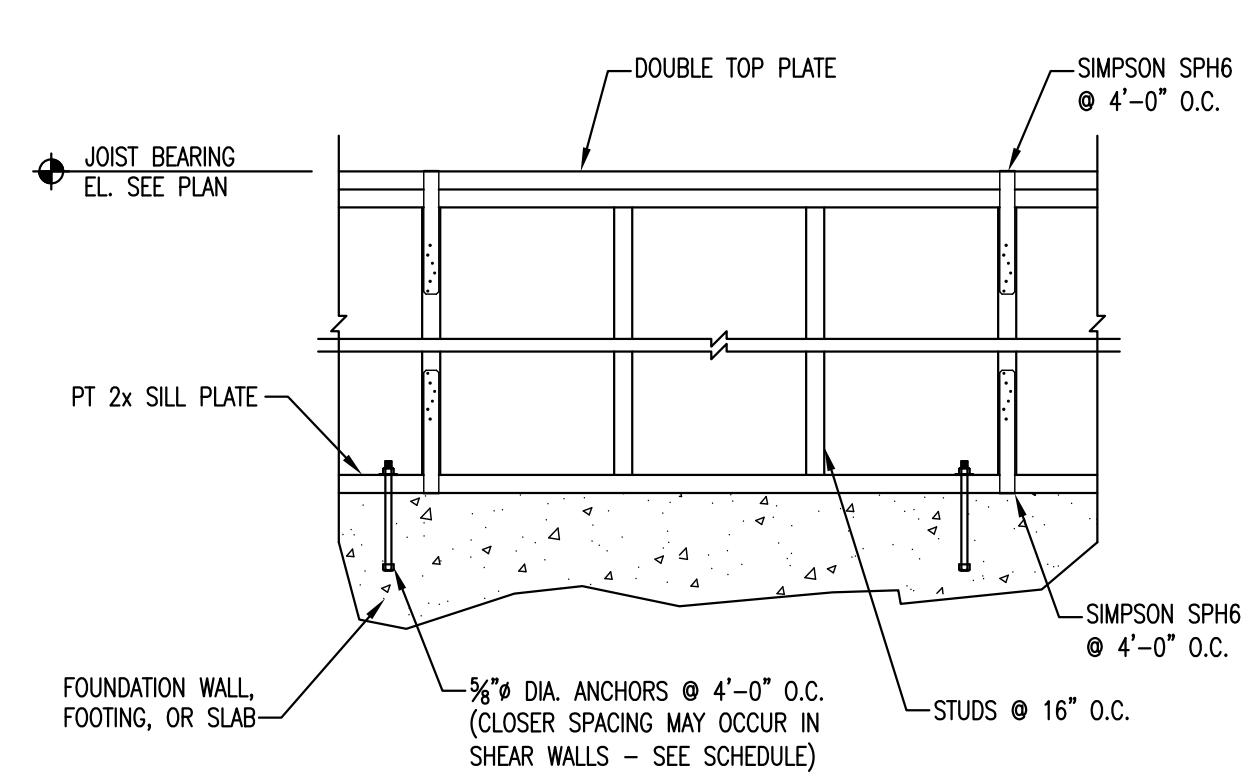
7 WOOD ROOF OPENING PLAN
S3-3 3/4" = 1'-0"



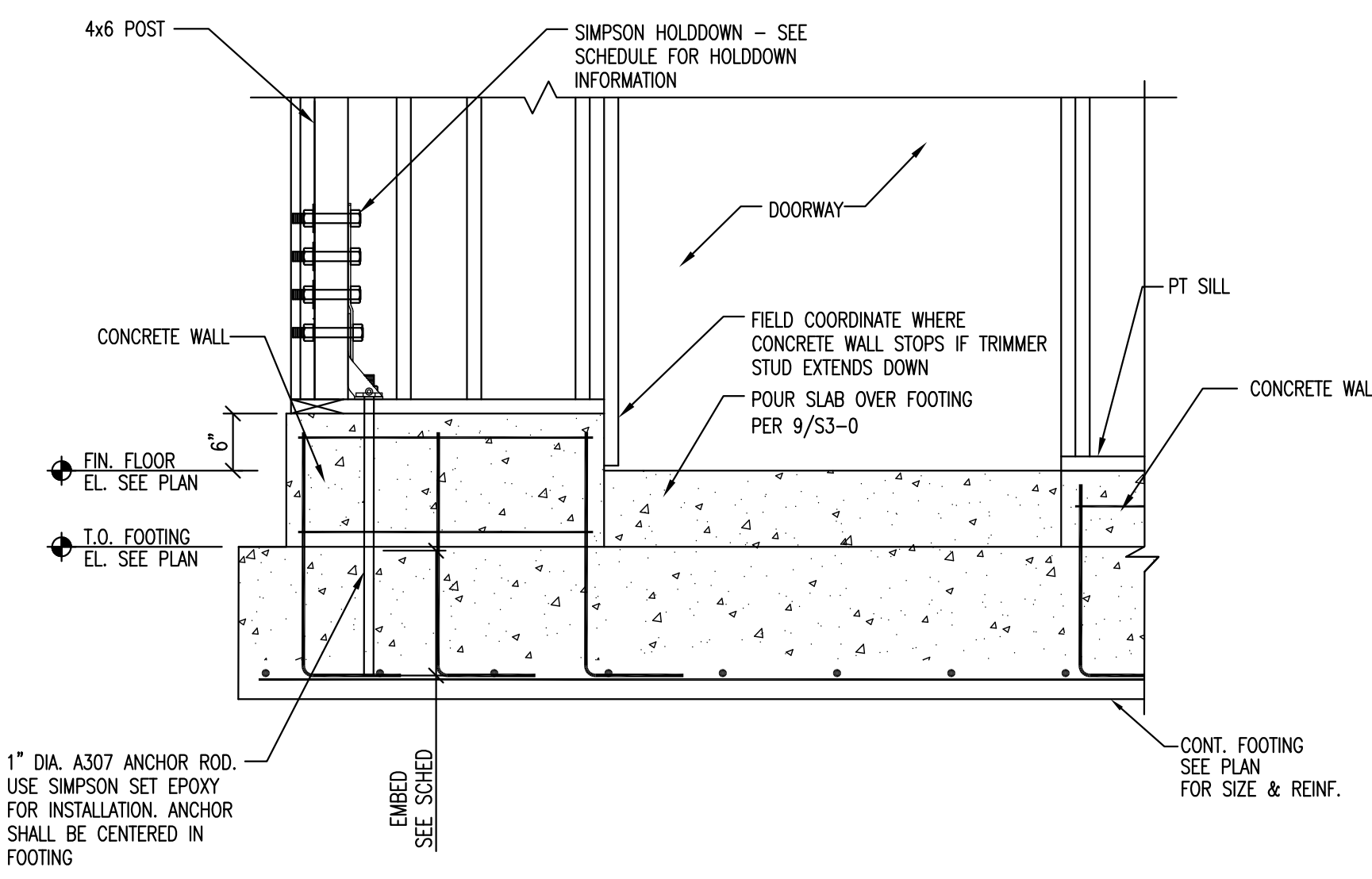
4 MASONRY CONTROL JOINT
S3-3 3/4"=1'-0"



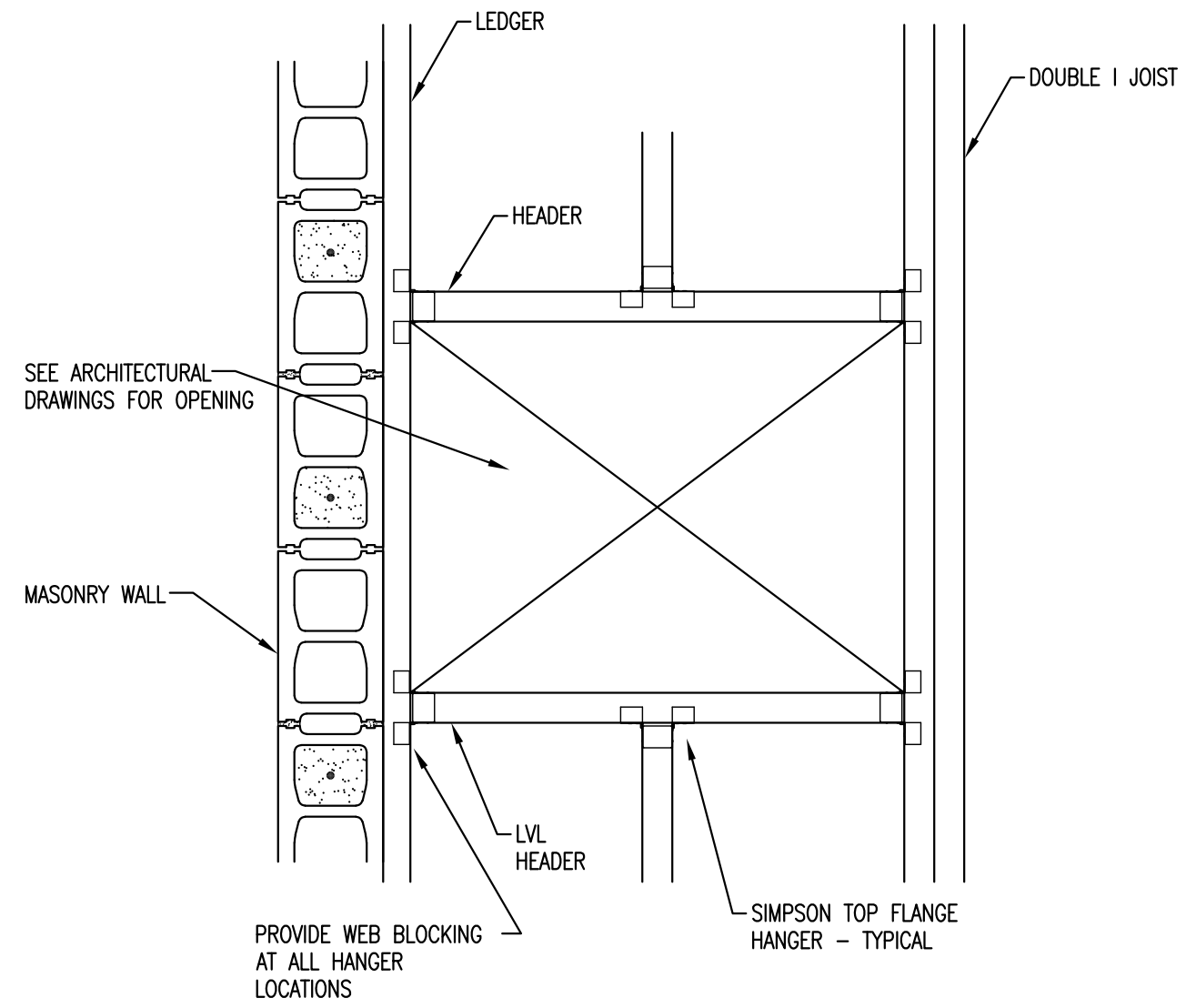
B BAR @ EDGE



8 TYPICAL WALL FRAMING
S3-3 3/4"=1'-0"



11 FOOTING SECTION
S3-3 NTS



12 ROOF ACCESS OPENING
S3-3 3/4" = 1'-0"

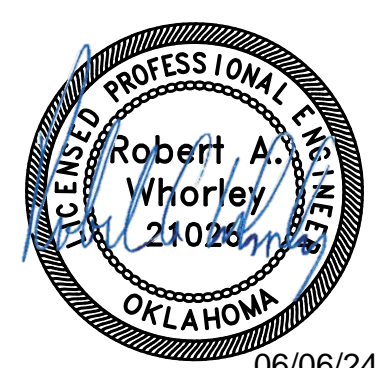
PERFORMANCE Engineering

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BRAKES PLUS

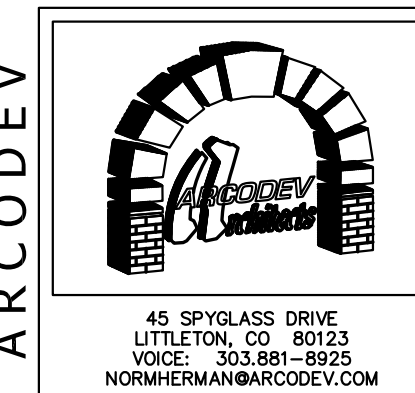
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OKLAHOMA CITY, OKLAHOMA



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SHEET

S3-3

SECTIONS AND DETAILS

MECHANICAL GENERAL NOTES AND SPECIFICATIONS

GENERAL CONSTRUCTION NOTES:

1. DRAWINGS ARE MEANT TO SHOW INTENT ONLY, NOT EXACT DETAIL. THESE DRAWINGS ARE A "BUILDERS SET" AND INTENDED FOR THE USE ON AN EXPERIENCED AND WELL QUALIFIED CONTRACTOR WHO MAY INFER REASONABLE INFORMATION BASED ON EXPERIENCE COMMON IN THE INDUSTRY AND TRADES. QUALITY LEVEL IS A REQUIRED STANDARD. DO NOT SCALE DRAWINGS. FIELD VERIFY ALL CONDITIONS OF WORK AND REPORT ANY DISCREPANCIES TO THE ARCHITECT/ENGINEER FOR CLARIFICATIONS BEFORE STARTING ANY WORK. CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL ERRORS IN HIS WORK, INCLUDING THE LACK OF FIELD VERIFICATION OF EXISTING CONDITIONS.

2. THE ARCHITECT AND PROFESSIONAL CONSULTANTS WILL NOT HAVE CONTROL, OF AND WILL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, OR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK ON THIS PROJECT OR FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK ON THIS SITE, NOR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE INTENT OF THE CONTRACT AND OR THESE CONSTRUCTION DOCUMENTS.

BASIC REQUIREMENTS:

MECHANICAL DESIGN SHALL CONFORM TO THE 2018 INTERNATIONAL MECHANICAL CODE. PROJECT SHALL BE COORDINATED WITH THE EXISTING BUILDING SERVICES AND SHALL INCLUDE ALL ITEMS NECESSARY FOR COMPLETE AND FULLY OPERATIONAL TENANT MECHANICAL SYSTEMS. MAKE CONNECTIONS TO AND EXTEND SYSTEMS INSTALLED BY OTHERS AND/OR FURNISHED BY OTHERS. PROVIDE ACCESSORIES AND INCIDENTAL ITEMS AS REQUIRED FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM WHETHER OR NOT SPECIFICALLY SPECIFIED AND/OR SHOWN ON THE PLANS.

COORDINATE WITH OTHER TRADES FOR A COORDINATED INSTALLATION WITHIN THE AVAILABLE SPACE. WHERE CROWDED CONDITIONS EXIST, PREPARE COORDINATION DRAWINGS SHOWING ALL TRADE CONFLICTS AND SUBMIT TO ARCHITECT FOR APPROVAL AND DIRECTION PRIOR TO ROUGH-IN AND/OR INSTALLATION.

RELOCATION OF OUTLETS AND/OR DEVICES MADE PRIOR TO ROUGH-IN SHALL BE DONE AT NO ADDITIONAL COST.

ALL WORK SHALL BE PERFORMED BY PROPERLY LICENSED MECHANICS OR UNDER THEIR DIRECT SUPERVISION. ALL MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS OF UL AND SHALL BEAR THE UL LABEL AS EVIDENCE THAT THE MATERIAL AND/OR EQUIPMENT MEETS THIS REQUIREMENT.

INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS AND DETAILS UNLESS OTHERWISE NOTED IN THESE PLANS. IF DISCREPANCIES EXIST CONTACT THE ENGINEER PRIOR TO ORDERING EQUIPMENT AND ROUGH-IN.

ALL EQUIPMENT START UP AND TESTING SHALL BE PERFORMED BY THE EQUIPMENT MANUFACTURER TRAINED SERVICE TECHNICIAN.

THE SUB-CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME FAMILIARIZED WITH ALL REQUIREMENTS OF THE CONTRACT PRIOR TO SUBMISSION OF BID. THE SUB-CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY CONFLICTS PRIOR TO BID OR START OF INSTALLATION.

THE SUB-CONTRACTOR SHALL ARRANGE FOR ALL INSPECTIONS WHEN THEY BECOME DUE, AND SHALL NOT COVER ANY WORK UNTIL APPROVED BY THE INSPECTION AUTHORITY. ANY AND ALL FEES ASSOCIATED WITH THE MECHANICAL WORK, INCLUDING CONSTRUCTION AND INSPECTIONS SHALL BE PAID FOR BY THE SUB-CONTRACTOR IN ORDER TO DELIVER A COMPLETE AND FINISHED BUILDING, READY FOR OCCUPANCY AND 100% USAGE. THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT THE SUB-CONTRACTOR HAS FAMILIARIZED HIMSELF/HERSELF WITH THE PLANS AND BUILDING SITE. CLAIMS MADE SUBSEQUENT TO THE PROPOSAL FOR MATERIALS AND LABOR BECAUSE OF DIFFICULTIES ENCOUNTERED, WILL NOT BE RECOGNIZED IF THEY COULD HAVE BEEN FORESEEN HAD PROPER EXAMINATION BEEN MADE. ANY COSTS DUE TO THE LACK OF COOPERATION AMONG TRADES SHALL BE BORNE BY THE SUB-CONTRACTOR.

THE INFORMATION PRESENTED ON THESE DRAWINGS IS DIAGRAMMATIC IN NATURE. IT DOES NOT NECESSARILY REPRESENT ALL FITTINGS, HANGERS, ETC. FOR A COMPLETE WORKING SYSTEM. PROVIDE ALL MATERIALS AND LABOR FOR COMPLETELY FINISHED AND OPERATIONAL SYSTEMS. REFER TO LATEST ARCHITECTURAL DRAWINGS

FOR: EXACT WALL LOCATIONS, DIMENSIONS, AND PLUMBING FIXTURE LOCATIONS AND REQUIREMENTS.

SUB-CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY ALTERATIONS REQUIRED BY THE OWNER, ARCHITECT, OR FIELD CONDITIONS.

ALL EQUIPMENT SHALL BE NEW, SHALL COMPLY WITH APPLICABLE INDUSTRY STANDARDS, WITH SPECIFICATIONS ON DRAWINGS, AND ENERGY CODE COMPLIANCE CERTIFICATION AS ADOPTED BY THE STATE, AS WELL AS LOCAL JURISDICTIONAL BUILDING DEPARTMENT. SUBMIT DATA FOR APPROVAL PRIOR TO ORDERING EQUIPMENT. SUBMITTAL SHALL INCLUDE ENERGY CODE COMPLIANCE CERTIFICATION.

SUB-CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT INCLUDING: FIXTURES SPECIFIED IN EQUIPMENT SCHEDULE ON DRAWINGS FOR REVIEW/APPROVAL (5) DAYS PRIOR TO BID. EQUIPMENT IS NOT TO BE ORDERED WITHOUT SUBMITTAL TO ARCHITECT/OWNER/ENGINEER.

ALL SPACE HEATING SUPPLY AIR DUCTS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST S.M.A.C.N.A. DUCT CONSTRUCTION STANDARDS AND BE INSULATED IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL JURISDICTIONAL ENERGY CONSER- VATION STANDARDS AND THE LATEST EDITION INTERNATIONAL MECHANICAL CODE.

ALL DUCT DIMENSIONS ARE CLEAR INSIDE DIMENSIONS. INCREASE LISTED DUCT SIZE TO ACCOMMODATE LINER.

FLEX SHALL NOT EXCEED 8 FT. IN LENGTH AND SHALL BE TYPE "1" FACTORY DUCT. PROVIDE WITH 1 IN. EXTERNAL INSULATION IF MAIN SUPPLY DUCT IS INSULATED.

ALL SUPPLY RUN-OUTS TO HAVE MANUALLY ADJUSTABLE VOLUME DAMPERS WITH ABILITY TO LOCK IN PLACE. THIS SUB-CONTRACTOR SHALL INCLUDE IN HIS/HER BID THE COMPLETE COST FOR THE ELECTRICAL CONTRACTOR TO INTERLOCK EXHAUST FANS AS REQUIRED BY EQUIPMENT SCHEDULE. THIS SUB-CONTRACTOR SHALL FIELD VERIFY 10 FT. MINIMUM CLEARANCE BETWEEN FRESH AIR INTAKE AND ALL VENTS OR EXHAUST OUTLETS.

WALL THERMOSTATS FOR HEATING/COOLING UNITS TO BE AUTOMATIC CHANGEOVER TYPE AND INSTALLED 48 IN. ABOVE FINISHED FLOOR. HEATING/COOLING UNITS SHALL MAINTAIN MINIMUM OUTSIDE AIR AS SHOWN ON SCHEDULE OR SHOWN IN FRESH AIR CALCULATIONS.

ALL FURNACES OR ROOFTOP UNITS SUPPLYING MORE THAN 2000 CFM OF AIR SHALL BE EQUIPPED WITH A SMOKE DETECTOR IN THE MAIN RETURN AIR DUCT WHICH WILL SHUT THE POWER OFF TO THE UNIT WHEN SMOKE IS DETECTED. THIS SMOKE DETECTOR SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR AND WIRED BY THE MECHANICAL CONTRACTOR. IN BUILDINGS WHERE FIRE DETECTION OR ALARM SYSTEMS ARE PROVIDED, THE SMOKE DETECTOR SHALL BE WIRED BY THE ELECTRICAL CONTRACTOR AND SHALL BE SUPERVISED BY FIRE ALARM SYSTEM. SEE LATEST EDITION INTERNATIONAL MECHANICAL CODE FOR ADDITIONAL REQUIREMENTS. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL REMOTE TEST SWITCH AND INDICATING LIGHT AT CEILING LOCATION NEAR FURNACE/ROOFTOP LOCATION.

MECHANICAL CONTRACTOR IS RESPONSIBLE TO HAVE ROOFTOP UNIT MANUFACTURERS TECHNICIAN START ALL ROOFTOP UNITS. PROVIDE WRITTEN REPORT FROM MANUFACTURER FOR START-UP COMMISSIONING.

INSULATION

A. ALL INSULATING VALUES ARE TO CONFORM TO THE LATEST VERSION OF THE INTERNATIONAL ENERGY CODE.

B. ALL ROUND CONCEALED RIGID SUPPLY DUCTWORK SHALL BE EXTERNALLY WRAPPED WITH NOMINAL 1-1/2" THICK (MINIMUM R-6.0) FIBER GLASS INSULATION WITH FIRE RETARDANT VAPOR BARRIER.

C. OUTDOOR AIR INTAKE DUCTS SHALL BE EXTERNALLY WRAPPED WITH NOMINAL 1-1/2" THICK (MINIMUM R-12.0) FIBER GLASS INSULATION WITH FIRE RETARDANT VAPOR BARRIER.

D. WHEN LOCATED IN UNCONDITIONED SPACES ALL RECTANGULAR DUCTWORK SHALL BE LINED WITH 1" THICK 2 POUND DENSITY MINIMUM R-6.0 FIBER GLASS ACOUSTIC DUCT LINER. ALL DUCTWORK EXPOSED TO OUTDOOR AMBIENT TYPE CONDITIONS (UNCONDITIONED ATTICS, OUTSIDE AIR DUCTS, ETC) SHALL BE EXTERNALLY WRAPPED OR INTERNALLY LINED IN 2 - 2.5" NOMINAL INSULATION (MINIMUM R-12.0). ALL OUTDOOR DUCTWORK SHALL HAVE 2 - 2.5" DUCTLINER (MINIMUM R-12.0) AND THE DUCT BE SEALED WEATHERPROOF PER SMACNA GUIDELINES. RECTANGULAR DUCT WORK IN RETURN AIR PLENUM SHALL BE LINED WITH 1/2" THICK 2 POUND DENSITY (MINIMUM R2.1) MAT-LACED ACOUSTIC DUCT LINER.

AIR INLETS AND OUTLETS

A. FURNISH AND INSTALL AIR INLETS AND OUTLETS AS SCHEDULED ON THE PLANS.

B. OUTLETS SHALL HAVE A WHITE BAKED ENAMEL FINISH TO MATCH CEILING OR WALL.

EXHAUST FANS

A. FURNISH AND INSTALL CENTRIFUGAL EXHAUST FANS AS SCHEDULED ON THE PLANS.

B. FURNISH AND INSTALL ROOF CURBS AND BACKDRAFT DAMPERS.

C. FURNISH AND INSTALL UNITS COMPLETE WITH ALL OPERATIONAL AND SAFETY CONTROL NECESSARY FOR PROPER OPERATION.

ROOFTOP HVAC UNITS

A. FURNISH AND INSTALL ROOF TOP PACKAGED ELECTRIC A/C UNITS WITH NATURAL GAS HEATING SECTIONS AS SCHEDULED ON THE PLANS. ACCEPTABLE MANUFACTURERS ARE TRANE, CARRIER, CARRIER, OR YORK. ANY SUBSTITUTED MODELS MUST BE EQUAL IN CONTROLS, ACCESSORIES, AND PERFORMANCE TO SCHEDULED MODELS.

B. FURNISH AND INSTALL UNITS COMPLETE WITH ALL OPERATIONAL AND SAFETY CONTROLS FOR SATISFACTORY OPERATION. PROVIDE PHASE REVERSAL PROTECTION ON ANY UNITS WITH SCROLL COMPRESSORS.

C. FURNISH PROGRAMMABLE SPACE THERMOSTAT WITH NIGHT SETBACK OPERATION OR DIGITAL CONTROL SYSTEM FOR VAV APPLICATIONS AS APPLICABLE. MOUNT AT +42-INCHES AFF.

D. FURNISH ALL UNITS WITH 100% OUTDOOR AIR ECONOMIZER PACKAGE UNLESS OTHERWISE NOTED.

E. FURNISH ALL UNITS WITH 14-INCH ROOF CURBS.

RADIANT HEATING UNITS

A. FURNISH AND INSTALL NATURAL GAS FIRED RADIANT HEATING UNITS AND ASSOCIATED ACCESSORIES AS SCHEDULED ON THE PLANS.

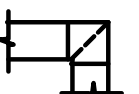
B. UNITS SHALL BE COMPLETE WITH PLUGS FOR ELECTRICAL CONNECTION, SPACE THERMOSTATS, TUBE EXTENSIONS, FLUES, AND ROOF CAPS AS REQUIRED. UNITS SHALL BE UL AND AGA RATED.


ABBREVIATIONS


(D)
(E)
(N)
AD
AFF
AHU
B
BB
BF
BFP
BT
BV
CD
CFM
CH
CO
COTG
CU
CV
CUH
DCW
DF
DHW
DSN
EC
ECO
EDH
EF
EWC
EWH
FURN
FCO
FCU
FD
FS
G
GC
GM
GPH
GPM
GUH
GW
GWH
HB
HP
HX
IM
LAV
LS
MAU
MC
MF
NIC
NC
NO
NTS
OA
ORD
P
PC
PRV
PSI
RA
RAR
RD
RH
RTA
SA
SAR
SF
SFT
SH
SK
SOI
SS
T&P
TD
TYP
UR
VAV
VVT
WB
WCO
WH


DEMO
EXISTING
NEW
AIR ADMITTANCE VALVE
AREA DRAIN
ABOVE FINISH FLOOR
AIR HANDLING UNIT
BOILER
BASEBOARD
BOOSTER FAN
BACKFLOW PREVENTER
BATH TUB
BALL VALVE
CONDENSATE DRAIN
CUBIC FEET PER MINUTE
CHILLER
CLEANOUT
CLEANOUT TO GRADE
CONDENSING UNIT
CHECK VALVE
CABINET UNIT HEATER
DOMESTIC COLD WATER
DRINKING FOUNTAIN
DOMESTIC HOT WATER
DOWN SPOUT NOZZLE
ELECTRICAL CONTRACTOR
END OF LINE CLEANOUT
ELECTRIC DUCT HEATER
EXHAUST FAN
ELECTRIC WATER COOLER
ELECTRIC WATER HEATER
FURNACE
FLOOR CLEANOUT
FAN COIL UNIT
FLOOR DRAIN
FLOOR SINK
GAS
GENERAL CONTRACTOR
GAS METER
GALLONS PER HOUR
GALLONS PER MINUTE
GAS UNIT HEATER
GREASE WASTER
GAS WATER HEATER
HOSE BIB
HEAT PUMP
HEAT EXCHANGER
ICE MAKER BOX
LAVATORY
LAUNDRY SINK
MAKE-UP AIR UNIT
MECHANICAL CONTRACTOR
MEASURE FLOW
NOT IN CONTRACT
NORMALLY CLOSED
NORMALLY OPEN
NOT TO SCALE
OUTSIDE AIR
OVER FLOW ROOF DRAIN
PUMP
PLUMBING CONTRACTOR
PRESSURE REDUCING VALVE
POUNDS PER SQUARE INCH
RETURN AIR
RETURN AIR REGISTER
ROOF DRAIN
RADIANT HEATER
ROOF TOP UNIT
SUPPLY AIR
SUPPLY AIR REGISTER
SERIES FAN
SERIES FAN TERMINAL
SHOWER
SINK
SAND/OIL INTERCEPTOR
SERVICE SINK
TEMPERATURE & PRESSURE
TRENCH DRAIN
TYPICAL
URINAL
VARIABLE AIR VOLUME
VARI TRAC
WASHER BOX
WALL CLEANOUT
WALL HYDRANT

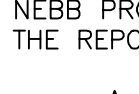
MECHANICAL LEGEND


 SUPPLY UP

 SUPPLY DOWN

 RETURN UP

 RETURN DOWN

 EXHAUST UP

 EXHAUST DN

 FLEXIBLE DUCT

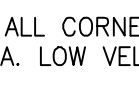
 DEMO


 MANUAL VOLUME DAMPER


 CEILING SUPPLY DIFFUSERS
SEE SCHEDULES


 CEILING RETURN AIR REGISTER
SEE SCHEDULES

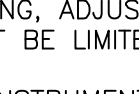
 SIDEWALL SUPPLY/RETURN REGISTER, SEE SCHEDULES


 FIRE DAMPER

 SMOKE DAMPER

 FIRE SMOKE DAMPER

 EQUIPMENT TAG

 (POC) POINT OF CONNECTION


 ROOFTOP UNIT


 FURNACE


 CONDENSING UNIT


 PARALLEL FAN POWERED VAV BOX


 VAV/VT BOX


 DOMESTIC COLD WATER

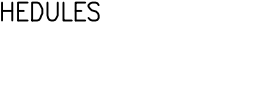
 DOMESTIC HOT WATER

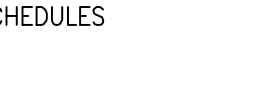
 CONDENSATE DRAIN

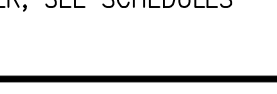
 GAS LINE

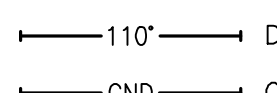
 SANITARY SEWER BELOW FLOOR (SS)

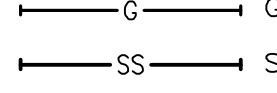
 SANITARY VENT

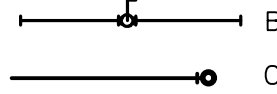
 BALL VALVE

 CLEANOUT

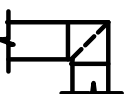
 FLOOR DRAIN


 FLOOR SINK


 ELBOW - TURNED DOWN


 ELBOW - TURNED UP

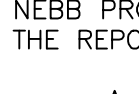
MECHANICAL LEGEND


 SUPPLY UP

 SUPPLY DOWN

 RETURN UP

 RETURN DOWN

 EXHAUST UP

 EXHAUST DN

 FLEXIBLE DUCT

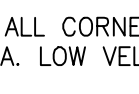
 DEMO


 MANUAL VOLUME DAMPER


 CEILING SUPPLY DIFFUSERS
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 CEILING RETURN AIR REGISTER
SEE SCHEDULES

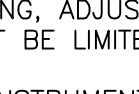
 SIDEWALL SUPPLY/RETURN REGISTER, SEE SCHEDULES


 FIRE DAMPER

 SMOKE DAMPER

 FIRE SMOKE DAMPER

 EQUIPMENT TAG

 (POC) POINT OF CONNECTION


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 FURNACE


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 PARALLEL FAN POWERED VAV BOX


 VAV/VT BOX


 DOMESTIC COLD WATER

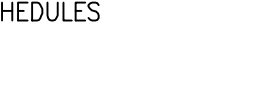
 DOMESTIC HOT WATER

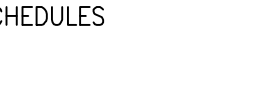
 CONDENSATE DRAIN

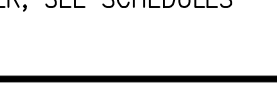
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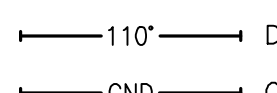
 SANITARY SEWER BELOW FLOOR (SS)

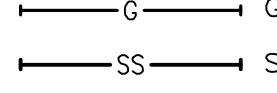
 SANITARY VENT

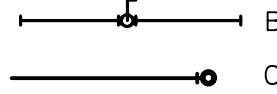
 BALL VALVE

 CLEANOUT

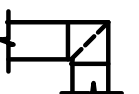
 FLOOR DRAIN


 FLOOR SINK


 ELBOW - TURNED DOWN


 ELBOW - TURNED UP

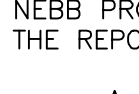
MECHANICAL LEGEND


 SUPPLY UP

 SUPPLY DOWN

 RETURN UP

 RETURN DOWN

 EXHAUST UP

 EXHAUST DN

 FLEXIBLE DUCT

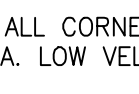
 DEMO


 MANUAL VOLUME DAMPER


 CEILING SUPPLY DIFFUSERS
SEE SCHEDULES


 CEILING RETURN AIR REGISTER
SEE SCHEDULES

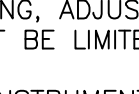
 SIDEWALL SUPPLY/RETURN REGISTER, SEE SCHEDULES


 FIRE DAMPER

 SMOKE DAMPER

 FIRE SMOKE DAMPER

 EQUIPMENT TAG

 (POC) POINT OF CONNECTION


 ROOFTOP UNIT


 FURNACE


 CONDENSING UNIT


 PARALLEL FAN POWERED VAV BOX


 VAV/VT BOX


 DOMESTIC COLD WATER

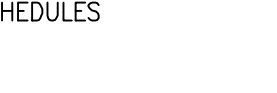
 DOMESTIC HOT WATER

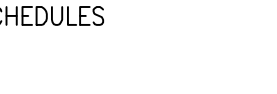
 CONDENSATE DRAIN

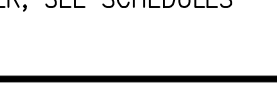
 GAS LINE

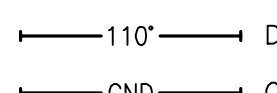
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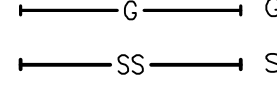
 SANITARY VENT

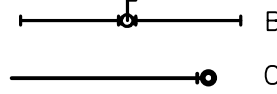
 BALL VALVE

 CLEANOUT

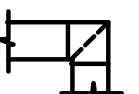
 FLOOR DRAIN


 FLOOR SINK


 ELBOW - TURNED DOWN


 ELBOW - TURNED UP

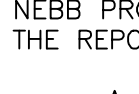
MECHANICAL LEGEND


 SUPPLY UP

 SUPPLY DOWN

 RETURN UP

 RETURN DOWN

 EXHAUST UP

 EXHAUST DN

 FLEXIBLE DUCT

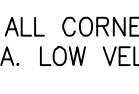
 DEMO


 MANUAL VOLUME DAMPER


 CEILING SUPPLY DIFFUSERS
SEE SCHEDULES


 CEILING RETURN AIR REGISTER
SEE SCHEDULES

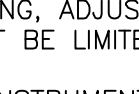
 SIDEWALL SUPPLY/RETURN REGISTER, SEE SCHEDULES


 FIRE DAMPER

 SMOKE DAMPER

 FIRE SMOKE DAMPER

 EQUIPMENT TAG

 (POC) POINT OF CONNECTION


 ROOFTOP UNIT


 FURNACE


 CONDENSING UNIT


 PARALLEL FAN POWERED VAV BOX


 VAV/VT BOX


 DOMESTIC COLD WATER

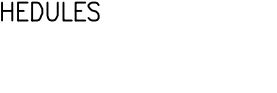
 DOMESTIC HOT WATER

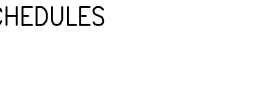
 CONDENSATE DRAIN

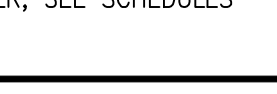
 GAS LINE

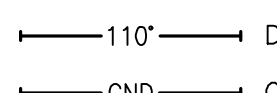
 SANITARY SEWER BELOW FLOOR (SS)

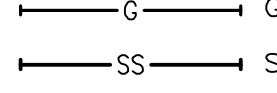
 SANITARY VENT

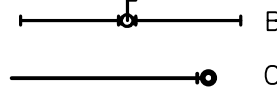
 BALL VALVE

 CLEANOUT

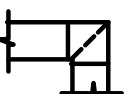
 FLOOR DRAIN


 FLOOR SINK


 ELBOW - TURNED DOWN


 ELBOW - TURNED UP

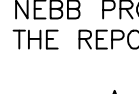
MECHANICAL LEGEND


 SUPPLY UP

 SUPPLY DOWN

 RETURN UP

 RETURN DOWN

 EXHAUST UP

 EXHAUST DN

 FLEXIBLE DUCT

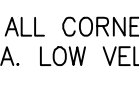
 DEMO


 MANUAL VOLUME DAMPER


 CEILING SUPPLY DIFFUSERS
SEE SCHEDULES


 CEILING RETURN AIR REGISTER
SEE SCHEDULES

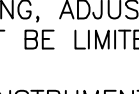
 SIDEWALL SUPPLY/RETURN REGISTER, SEE SCHEDULES


 FIRE DAMPER

 SMOKE DAMPER

 FIRE SMOKE DAMPER

 EQUIPMENT TAG

 (POC) POINT OF CONNECTION


 ROOFTOP UNIT


 FURNACE


 CONDENSING UNIT


 PARALLEL FAN POWERED VAV BOX


 VAV/VT BOX


 DOMESTIC COLD WATER

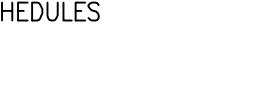
 DOMESTIC HOT WATER

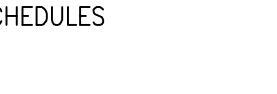
 CONDENSATE DRAIN

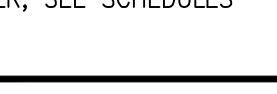
 GAS LINE

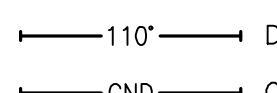
 SANITARY SEWER BELOW FLOOR (SS)

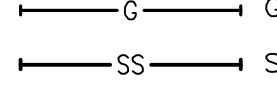
 SANITARY VENT

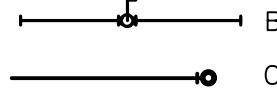
 BALL VALVE

 CLEANOUT

 FLOOR DRAIN

 FLOOR SINK

 ELBOW - TURNED DOWN

 ELBOW - TURNED UP

MECHANICAL LEGEND

 SUPPLY UP

 SUPPLY DOWN

 RETURN UP

 RETURN DOWN

 EXHAUST UP

 EXHAUST DN

 FLEXIBLE DUCT

 DEMO

 MANUAL VOLUME DAMPER

 CEILING SUPPLY DIFFUSERS
SEE SCHEDULES

 CEILING RETURN AIR REGISTER
SEE SCHEDULES

 SIDEWALL SUPPLY/RETURN REGISTER, SEE SCHEDULES

 FIRE DAMPER

 SMOKE DAMPER

 FIRE SMOKE DAMPER

 EQUIPMENT TAG

 (POC) POINT OF CONNECTION

 ROOFTOP UNIT

 FURNACE

 CONDENSING UNIT

 PARALLEL FAN POWERED VAV BOX

 VAV/VT BOX

 DOMESTIC COLD WATER

 DOMESTIC HOT WATER

 CONDENSATE DRAIN

 GAS LINE

 SANITARY SEWER BELOW FLOOR (SS)

 SANITARY VENT

 BALL VALVE

 CLEANOUT

 FLOOR DRAIN

 FLOOR SINK

 ELBOW - TURNED DOWN

 ELBOW - TURNED UP

MECHANICAL LEGEND

 SUPPLY UP

 SUPPLY DOWN

 RETURN UP

 RETURN DOWN

 EXHAUST UP

 EXHAUST DN

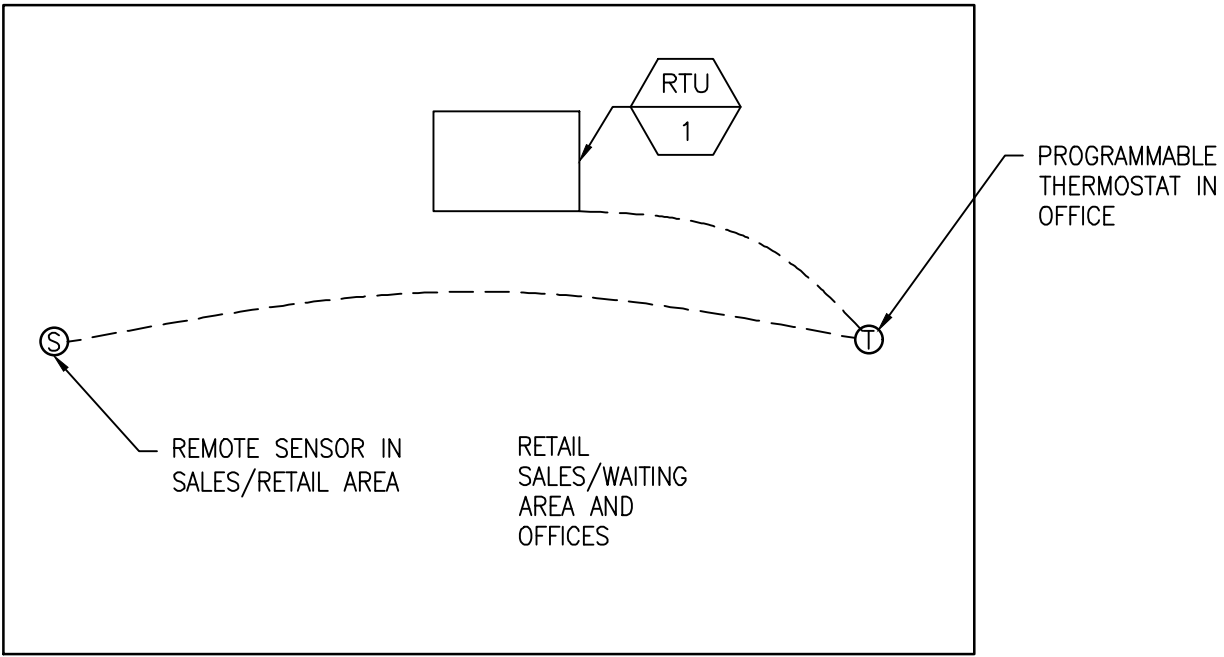
 FLEXIBLE DUCT

 DEMO

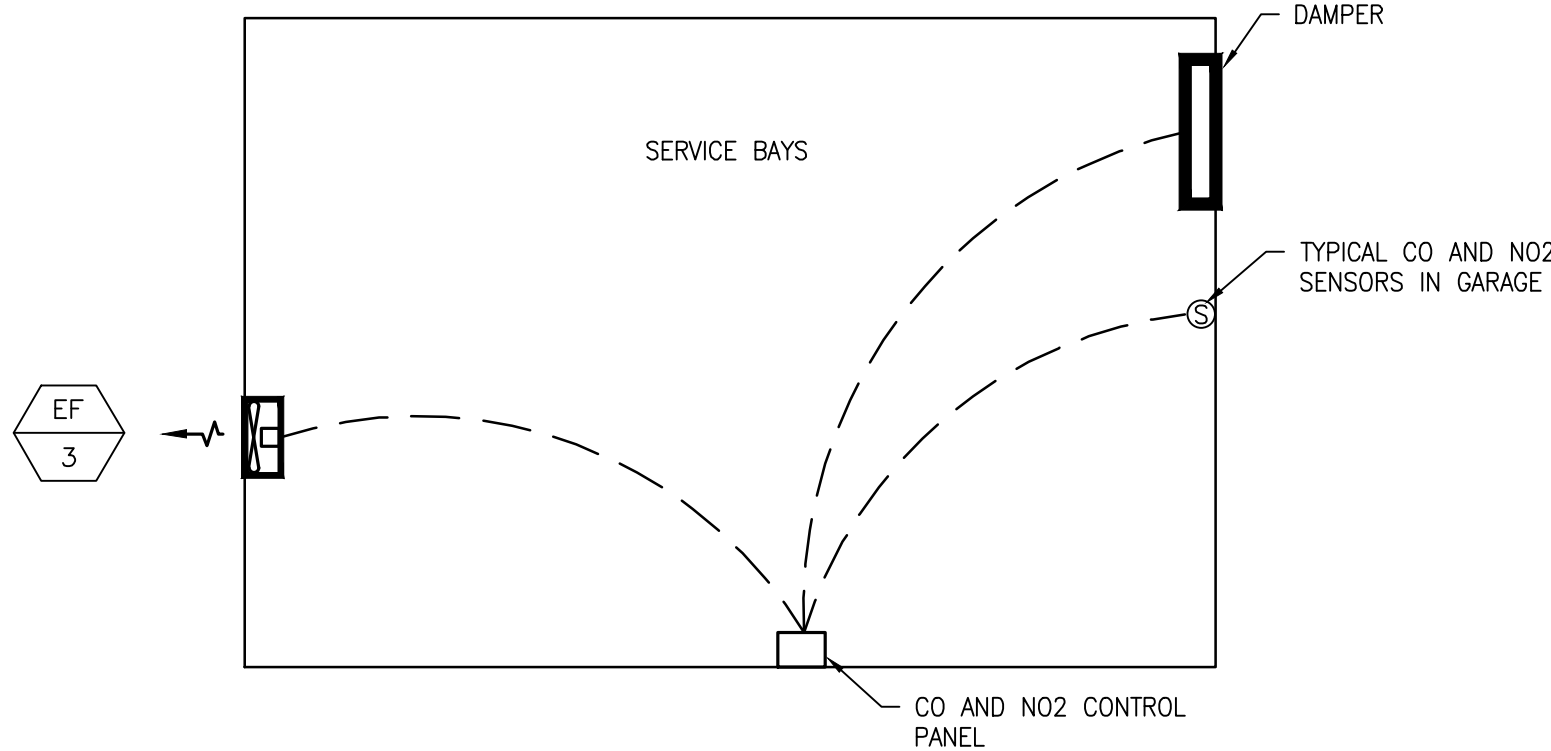
 MANUAL VOLUME DAMPER

 CEILING SUPPLY DIFFUSERS
SEE SCHEDULES

 CEILING RETURN AIR REGISTER
SEE SCHEDULES



OFFICE/RETAIL SALES ROOFTOP UNIT
NOT TO SCALE



SEQUENCE OF OPERATION FOR SERVICE BAYS:

EF-3 SHALL REMAIN OFF AND L-1 SHALL REMAIN CLOSED UNLESS A CALL FOR CARBON MONOXIDE OR NITROGEN DIOXIDE VENTING IS INITIATED.

VENTILATION SHALL BE INITIATED ACCORDING TO THE FOLLOWING SCHEDULE:

STAGE 1: LOW ALARM (25 PPM CO) (0.5 PPM NO2), MOTORIZED DAMPER FOR INTAKE LOUVER SHALL OPEN.

STAGE 2: MEDIUM ALARM (75 PPM CO) (1 PPM NO2), MOTORIZED DAMPER SHALL BE FULLY OPEN AND EXHAUST FAN SHALL BE ENERGIZED.

THE FAN SHALL OPERATE WHEN CARBON MONOXIDE LEVELS FALL BELOW 25 PPM OR NITROGEN DIOXIDE LEVELS FALL BELOW 0.5 PPM. EF SHALL TIME OFF AND L-1 SHALL CLOSE.

GARAGE TRANSFER FANS SHALL REMAIN ON CONSTANT DUTY.

GARAGE GAS DETECTION SPECIFICATIONS

- A. THE GARAGE GAS DETECTION SYSTEM SHALL HAVE A DEDICATED MICROPROCESSOR-BASED CONTROLLER THAT SHALL MONITOR AND CONTROL THE GARAGE GAS DETECTION SYSTEM IN A STAND-ALONE MODE OR AS A PART OF THE BUILDING AUTOMATION SYSTEM. THE CONTROLLER SHALL HAVE A LOCAL DISPLAY.
- B. THE SYSTEM SHALL CONSIST OF EXHAUST FANS, NATURAL MAKEUP AIR AND MULTIPLE GAS DETECTION SENSORS LOCATED PER SUPPLIER REQUIREMENTS AND RECOMMENDATIONS. THE PLANS ARE ONLY A GUIDE, ALL REQUIRED SENSOR LOCATIONS SHALL BE INCLUDED IN THE BID.
- C. THE SENSORS SHALL BE ONE OF THE FOLLOWING TYPES:
1. MACURCO CM21A
 2. VULCAIN Q2
 3. VERIS G SERIES
 4. MSA Z GUARD
- EACH SENSOR SHALL HAVE AN INTEGRAL ALARM LIGHT FOR 25, 50 AND 200 PPM CO AS A MINIMUM. AS AN ALTERNATE, A SERIES OF LIGHTS SHALL BE MOUNTED AT EACH SENSOR FOR THIS PURPOSE.
- D. THE CONTROLLER SHALL MONITOR THE FAN STATUS AND IF THE FAN FAILS TO START AN AUDIBLE ALARM SHALL BE SOUNDED IN THE GARAGE TO ANNUNCIATE THE FAILURE. THE FAILURE SHALL AUTOMATICALLY RESET WHEN FAN STATUS IS ESTABLISHED.
- E. THE SYSTEM SHALL MONITOR ALL OF THE GAS DETECTION SENSORS IN THE GARAGE AND DETERMINE THE MAXIMUM VALUE OF ALL OF THE SENSORS. IF THE MAXIMUM VALUE EXCEEDS THE MINIMUM SETPOINT (THRESHOLD 1) (ADJ.) THE EXHAUST FANS SHALL OPERATE. WHEN THE MAXIMUM VALUE DROPS BELOW 80% OF MINIMUM SETPOINT (THRESHOLD 1) (ADJ.) THE FAN SHALL BE DISABLED. SYSTEM TO EXHAUST A MINIMUM OF 0.75 CFM/SQFT AT HIGH SPEED.
- F. IF ANY SENSOR FAILS THE FAN SHALL OPERATE CONTINUOUSLY AND THE AUDIBLE ALARM SHALL BE SOUNDED. IF ANY SENSOR READING RISES ABOVE 200 PPM CO OR 2.0 PPM NO2, THE AUDIBLE ALARM SHALL BE SOUNDED.
- G. POINTS LIST:
1. AIP CARBON MONOXIDE SENSORS (AS REQUIRED)
 2. AIP NITROGEN DIOXIDE SENSORS (AS REQUIRED)
 3. AOP FAN ANALOG SPEED REQUEST
 4. BIP FAN STATUS
 5. BOP ALARM LIGHT, HORN WITH SILENCE BUTTON
 6. ALM FAN FAILURE
 7. STPT FAN ENABLE LEVEL
 8. STPT FAN DISABLE LEVEL

END

SERVICE BAY EXHAUST FAN / INTAKE LOUVER
NOT TO SCALE

ADAM A. POWELL , P.E.
PEC Enterprises, Inc.
14412 Alene Ct. NE
Albuquerque, NM 87123
Telephone 720-409-2454

BRAKES PLUS
4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA

5/28/24

ARCHITECT OF RECORD

REVISION	DATE	COMMENTS
	5/28/24	PERMIT

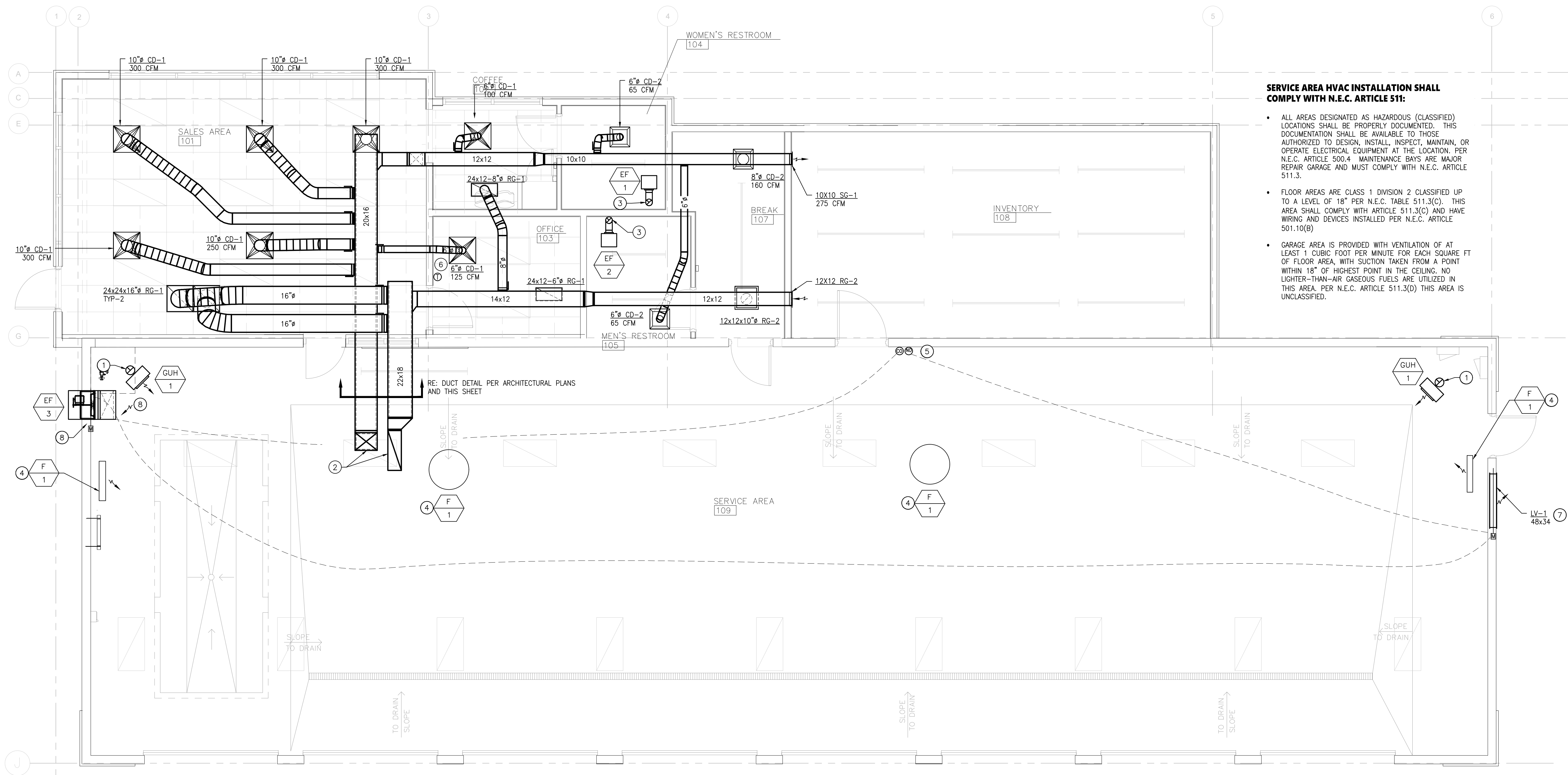
ARCODEV JOB #:
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DRAWN BY: JRG
CHECKED BY: LRP
DATE OF ISSUE: 5/28/24

45 SPYGLASS DRIVE
LITTLETON, CO 80123
VOICE: 303.881.6895
NORMHERMAN@ARCODEV.COM

SHEET

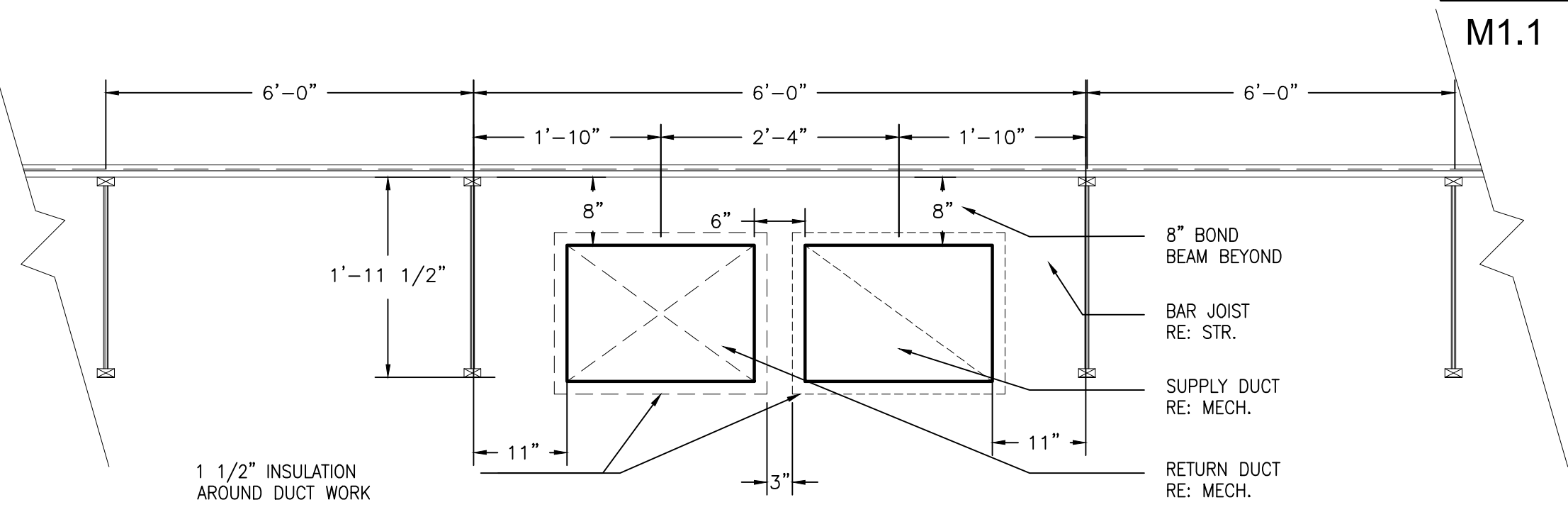
MO.2

MECHANICAL SEQUENCE
OF OPERATIONS

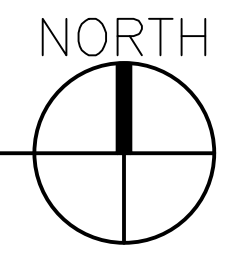


SERVICE AREA HVAC INSTALLATION SHALL COMPLY WITH N.E.C. ARTICLE 511:

- ALL AREAS DESIGNATED AS HAZARDOUS (CLASSIFIED) LOCATIONS SHALL BE PROPERLY DOCUMENTED. THIS DOCUMENTATION SHALL BE AVAILABLE TO THOSE AUTHORIZED TO DESIGN, INSTALL, INSPECT, MAINTAIN, OR OPERATE ELECTRICAL EQUIPMENT AT THE LOCATION. PER N.E.C. ARTICLE 500.4 MAINTENANCE BAYS ARE MAJOR REPAIR GARAGE AND MUST COMPLY WITH N.E.C. ARTICLE 511.3.
- FLOOR AREAS ARE CLASS 1 DIVISION 2 CLASSIFIED UP TO A LEVEL OF 18" PER N.E.C. TABLE 511.3(C). THIS AREA SHALL COMPLY WITH ARTICLE 511.3(C) AND HAVE WIRING AND DEVICES INSTALLED PER N.E.C. ARTICLE 501.10(B).
- GARAGE AREA IS PROVIDED WITH VENTILATION OF AT LEAST 1 CUBIC FOOT PER MINUTE FOR EACH SQUARE FT OF FLOOR AREA, WITH SUCTION TAKEN FROM A POINT WITHIN 18" OF HIGHEST POINT IN THE CEILING. NO LIGHTER-THAN-AIR GASEOUS FUELS ARE UTILIZED IN THIS AREA. PER N.E.C. ARTICLE 511.3(D) THIS AREA IS UNCLASSIFIED.



1 MECHANICAL PLAN
M1.1
4' 2' 0 4' 8'
1/4"=1'-0"



- DRAWING NOTES:**
- FLUE/COMBUSTION AIR INTAKE UP THRU ROOF, PROVIDE WITH MANUFACTURER APPROVED INTAKE CAP TERMINATION.
 - FULL SIZE SA/RA DUCT DOWN FROM RTU. PROVIDE TRANSITIONS AS REQUIRED TO ACCOMMODATE DUCT SIZE AS INDICATED. PROVIDE FLEXIBLE CONNECTIONS AS REQUIRED.
 - EXHAUST DUCT UP THRU ROOF TO APPROVED CAP OR GOOSENECK TERMINATION. SIZE AS INDICATED
 - FANS SHALL BE EITHER WALL OR CEILING MOUNTED AT 10'-0" AFF. REFERENCE ARCHITECTURAL PLANS FOR FINAL LOCATION. COORDINATE WITH OTHER HVAC/SHOP EQUIPMENT. SEE OWNER FOR EXACT LOCATION.
 - CONTROL WIRE FROM CO/NOX SENSORS BACK TO DETECTION SYSTEMS CONTROL PANEL. LOCATE AND INSTALL THE SENSORS BASED ON MANUFACTURERS INSTALLATION INSTRUCTIONS. COORDINATE FINAL LOCATION FOR CONTROL PANEL(S). PROVIDE 7-DAY, 24 HOUR PROGRAMMABLE THERMOSTAT WITH SPACE SENSOR. THERMOSTAT AND SENSOR LOCATIONS ON WALL TO BE VERIFIED WITH OWNER PRIOR TO INSTALLATION.
 - PROVIDE 7-DAY PROGRAMMABLE T-STAT WITH SPACE SENSOR. BOTH SENSOR AND THERMOSTAT LOCATION SHALL BE COORDINATED WITH BUILDING OWNER.
 - COORDINATE EXTERIOR WALL LOUVER AND EXHAUST FAN WALL OPENING SIZES AND LOCATIONS PER ARCHITECTURAL PLANS FOR EXACT LOCATION AND ELEVATION.
 - PROVIDE 30x12 EXHAUST DUCT FROM EF-3, ROUTE UP INTERIOR WALL TO MIN. 18" BELOW STRUCTURE. PROVIDE HARDWARE MESH SCREEN AT OPENING. COORDINATE OPENINGS W/ ARCH PLANS AND OWNER.

2 DUCTWORK DETAIL
M1.1
1' 6" 0 1' 2'
3/4"=1'-0"

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BRAKES PLUS
4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA

ADAM A. POWELL
27258
OKLAHOMA
5/28/24
LICENSED PROFESSIONAL ENGINEER

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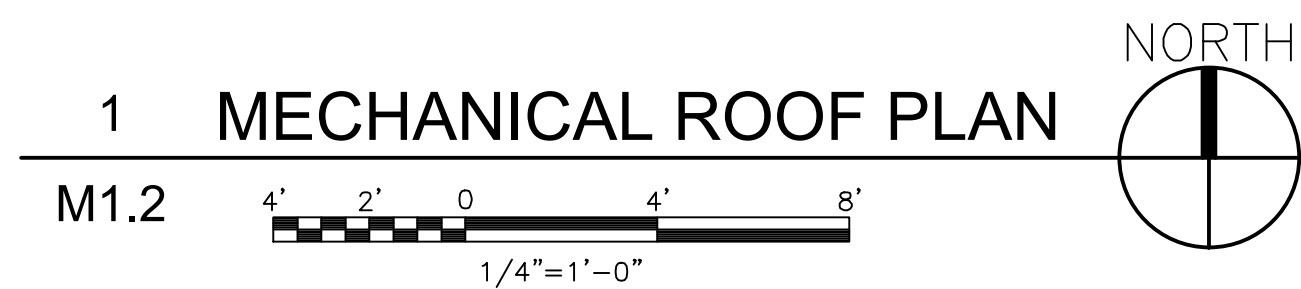
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CLIENT JOB #:
DRAWN BY: JRC
CHECKED BY: LRP
DATE OF ISSUE: 5/28/24

45 SPYGLASS DRIVE
LITTLETON, CO 80123
VOICE: 303.681.6895
NORTHHERMAN@ARCODEV.COM

SHEET

M1.1

MECHANICAL PLAN



① EXHAUST DUCT FROM RESTROOM BELOW. TERMINATE WITH APPROVED CAP.
② NEW ROOFTOP UNIT: MAINTAIN 10'-0" FROM OUTSIDE AIR INTAKE.



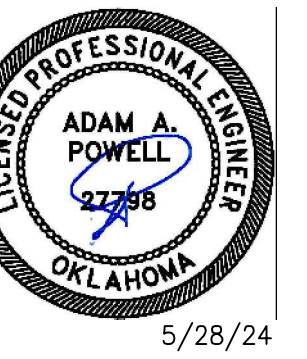
45 SPYGLASS DRIVE
LITTLETON, CO 80123
VOICE: 303.881-8925
NORMHERMAN@ARCODEV.COM

M1.2

MECHANICAL ROOF PLAN

BRAKES PLUS
1900 NORTH MAY AVENUE

4300 NORTH HAVEN AVENUE
OKLAHOMA CITY, OKLAHOMA



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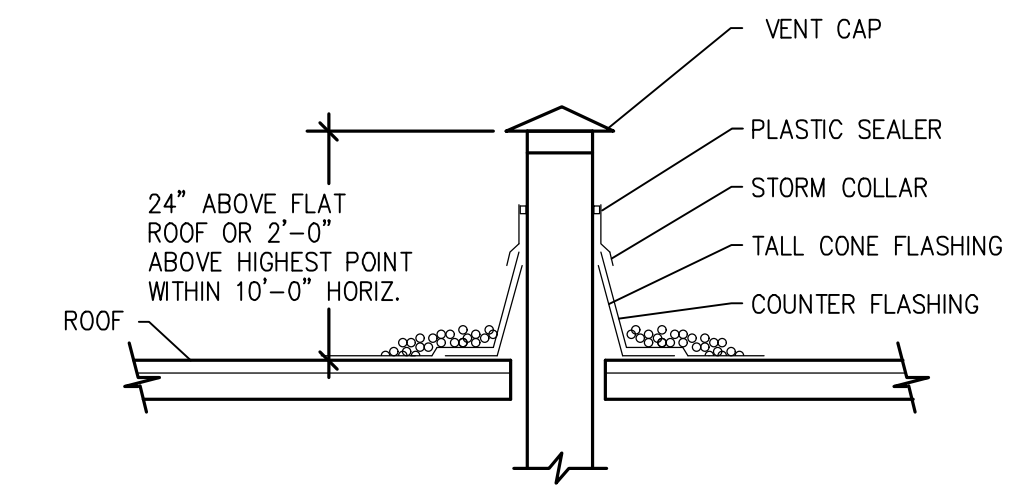
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CLIENT JOB #:

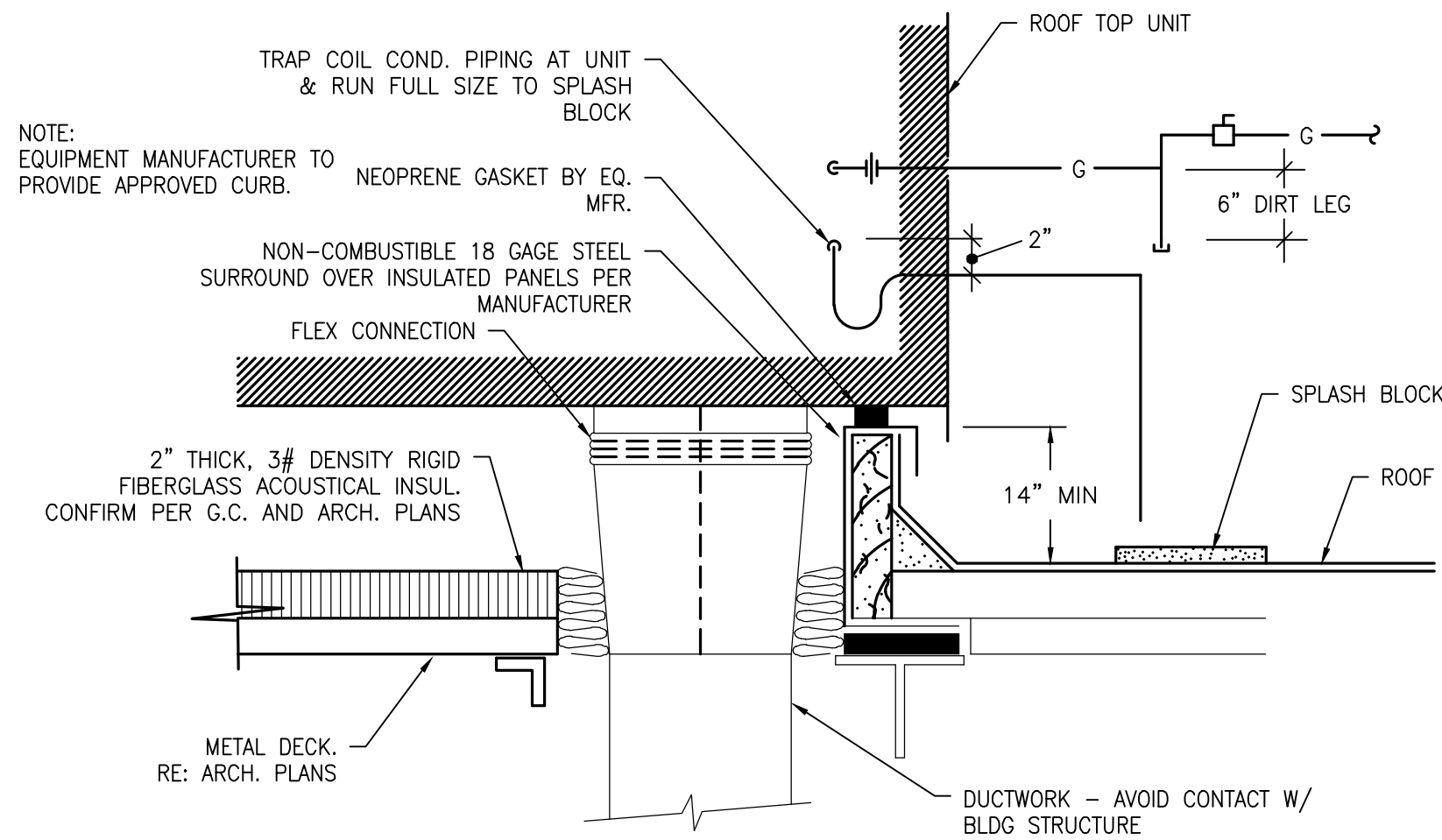
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CHECKED BY: _____ LRP

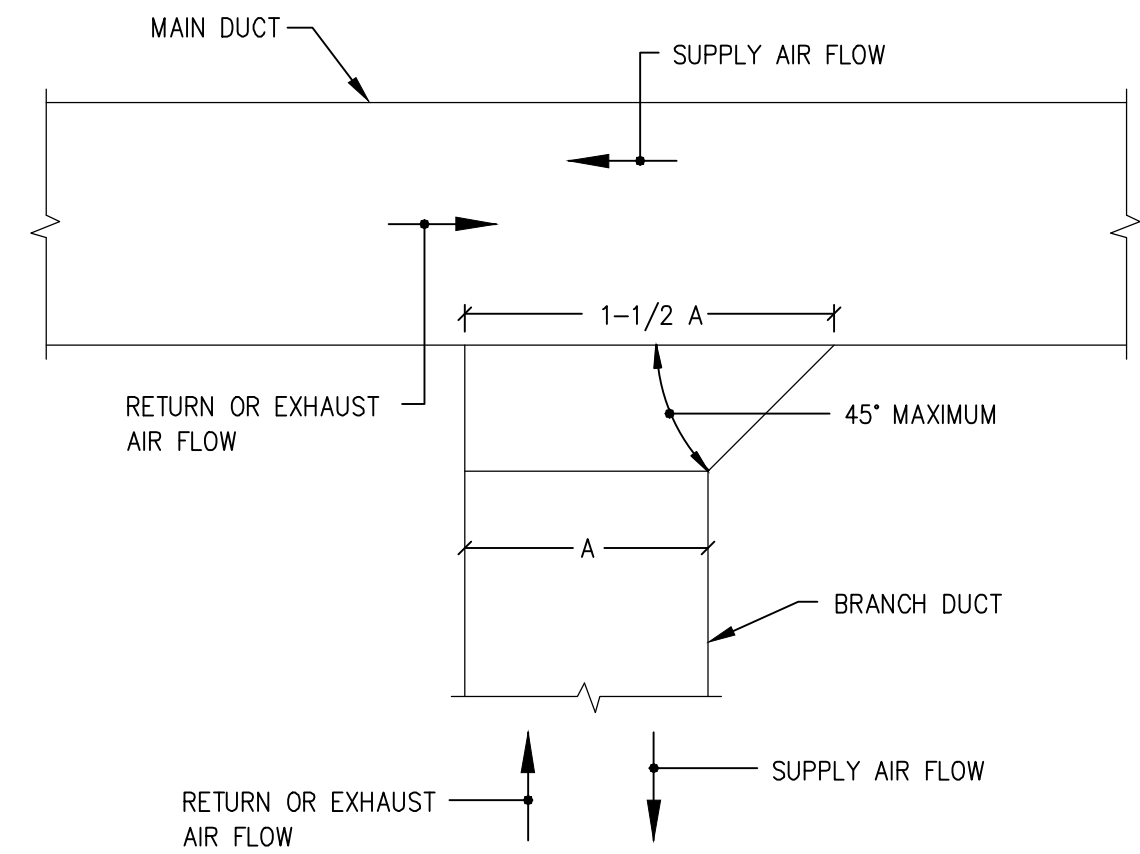
DATE OF ISSUE: 5/28/24



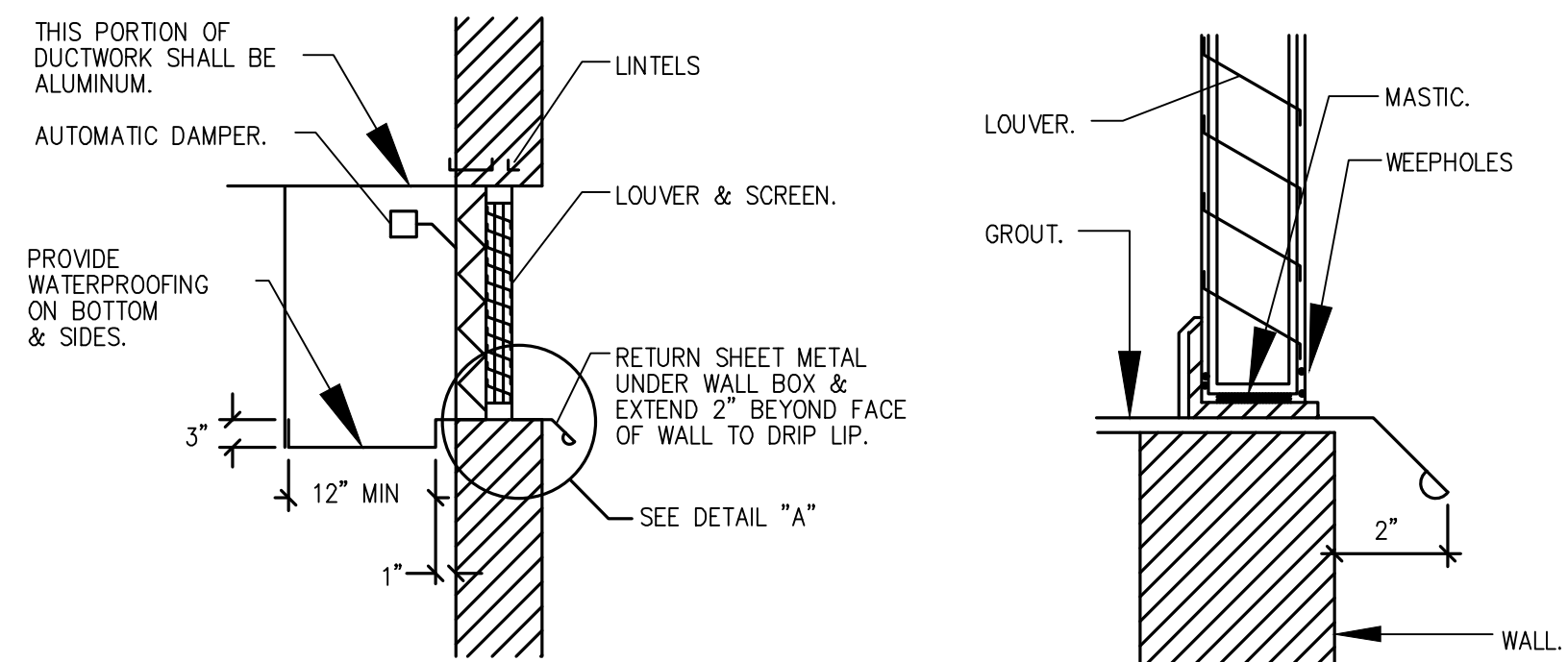
EXHAUST FAN DUCT THRU ROOF DETAIL
NOT TO SCALE



ROOFTOP UNIT INSTALLATION DETAIL
NOT TO SCALE



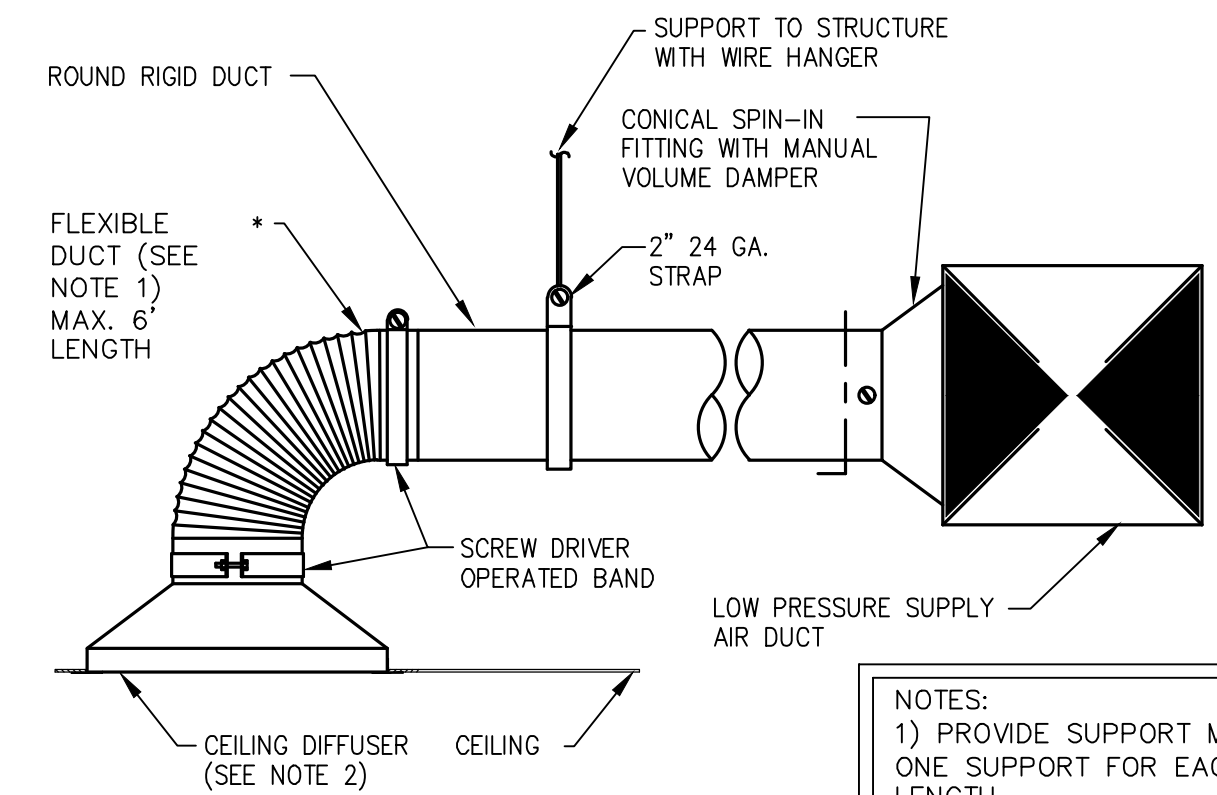
DUCT TAKE-OFF DETAIL
NOT TO SCALE



NOTE:
REFER TO MFR'S INSTURCTIONS
FOR SPECIFIC MOUNTING DETAILS.
COORDINATE WITH
ARCHITECTURAL REQUIREMENTS.

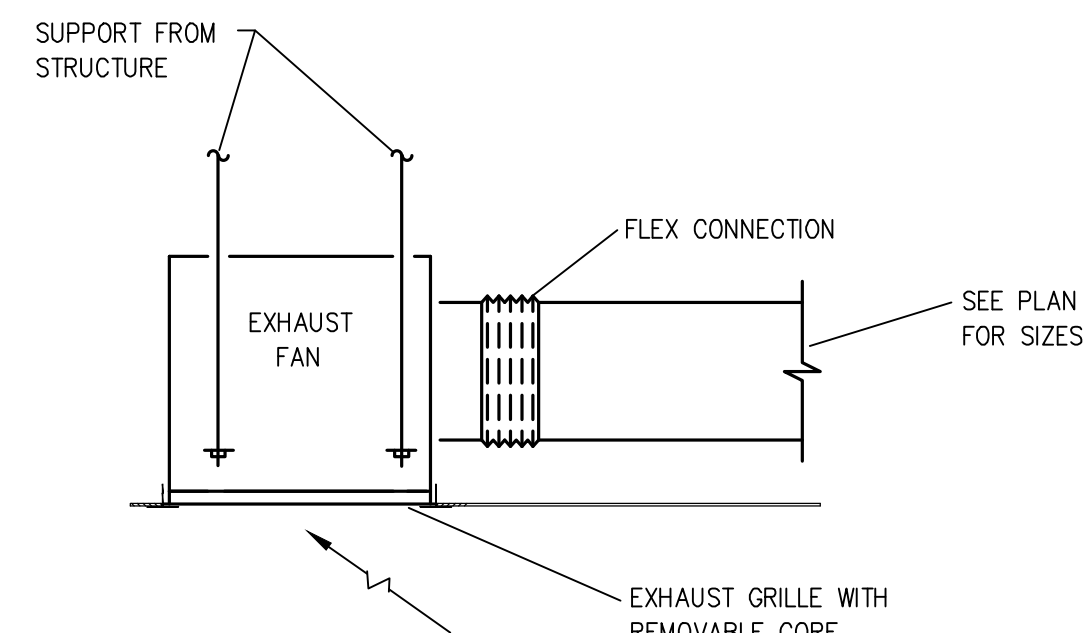
DETAIL A
NOT TO SCALE

WATERTIGHT LOUVER CONNECTION DETAIL
NOT TO SCALE



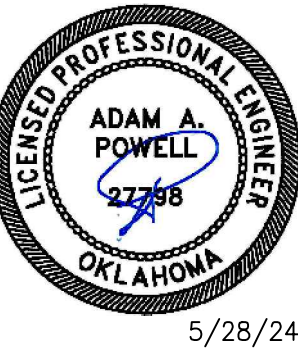
NOTES:
1) PROVIDE SUPPORT MINIMUM OF
ONE SUPPORT FOR EACH 3'-0" OF
LENGTH
2) SUPPORT DIFFUSER
INDEPENDENT FROM DUCTWORK
WITH WIRE HANGERS WHEN
REQUIRED BY LOCAL CODE.

AIR DEVICE DETAIL
NOT TO SCALE



CEILING EXHAUST FAN DETAIL
NOT TO SCALE

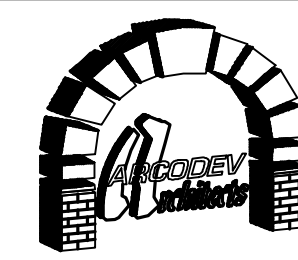
BRAKES PLUS
4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA



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	5/28/24	PERMIT

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45 SPYGLASS DRIVE
LITTLETON, CO 80123
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SHEET

M2.1

MECHANICAL DETAILS

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14412 Alene Ct. NE
Albuquerque, NM 87123
Telephone 720-409-2454

Section # & Req.ID

C404.5, C404.5.1, C404.5.2 [PL6]¹

Plumbing Rough-In Inspection

Complies?

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C404.5, C404.5.1, C404.5.2 [PL6]¹

Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C404.5, C404.5.1, C404.5.2 [PL6]¹

Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C404.6.1, C404.6.2 [PL3]¹

Automatic time switches installed to automatically switch off the recirculating hot-water system or heat trace.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C404.6.3 [PL7]¹

Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C404.6.3 [PL7]¹

Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C404.6.3 [PL7]¹

Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C404.7 [PL8]¹

Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C404.7 [PL8]¹

Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C404.7 [PL8]¹

Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Additional Comments/Assumptions:

1 High Impact (Tier 1)

2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Project Title: Brakes Plus

Report date: 05/28/24

Data filename: G:\24XXXX - Brakes Plus - 4900 May - Oklahoma City, OK-Norm Herman-UL GUH\Engfile\Mech Page 4 of 11

calcs\BRAKES -MAY STREET-OK.cck

Section # & Req.ID

C403.12.2 [FO9]¹

Footing / Foundation Inspection

Complies?

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C403.12.2 [FO9]¹

Snow/ice melting system and freeze protection systems have sensors and controls configured to limit service for pavement temperature and outdoor temperature, future connection to controls.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Additional Comments/Assumptions:

1 High Impact (Tier 1)

2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Project Title: Brakes Plus

Report date: 05/28/24

Data filename: G:\24XXXX - Brakes Plus - 4900 May - Oklahoma City, OK-Norm Herman-UL GUH\Engfile\Mech Page 3 of 11

calcs\BRAKES -MAY STREET-OK.cck

COMcheck Software Version 4.1.5.5

Inspection Checklist

Energy Code: 2018 IECC

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PI2] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	<div><div><input type="checkbox"/>Complies</div><div><input type="checkbox"/>Does Not</div><div><input type="checkbox"/>Not Observable</div><div><input type="checkbox"/>Not Applicable</div></div>	
C103.2 [PI3] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	<div><div><input type="checkbox"/>Complies</div><div><input type="checkbox"/>Does Not</div><div><input type="checkbox"/>Not Observable</div><div><input type="checkbox"/>Not Applicable</div></div>	

Additional Comments/Assumptions:

1 High Impact (Tier 1)

2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Project Title: Brakes Plus

Report date: 05/28/24

Data filename: G:\24XXXX - Brakes Plus - 4900 May - Oklahoma City, OK-Norm Herman-UL GUH\Engfile\Mech Page 2 of 11

calcs\BRAKES -MAY STREET-OK.cck

COMcheck Software Version 4.1.5.5

Mechanical Compliance Certificate

Project Information

Energy Code: 2018 IECC

Project Title: Brakes Plus

Location: Oklahoma City, Oklahoma

Climate Zone: 3a

Project Type: New Construction

Construction Site: 4900 NORTH MAY AVENUE OKLAHOMA CITY, OK

Owner/Agent: Brakes Plus

Designer/Contractor: Loren Priest
EE LLC Engineering
12005 Antelope Trail
Parker, CO 80138
3037481189
loren@eeparker.com

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
Reduced Lighting Power, 1.0 credit

Mechanical Systems List

Quantity System Type & Description

2 IR-1 (Single Zone):
Heating: 1 each - Radiant Heater, Gas, Capacity = 175 kBtu/h
No minimum efficiency requirement applies
Fan System: None

1 RTU-1 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 130 kBtu/h
Proposed Efficiency = 90.00% Ef, Required Efficiency: 80.00% Ef or 80% AFUE
Cooling: 1 each - Single Package DX Unit, Capacity = 60 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 14.00 SEER, Required Efficiency: 14.00 SEER
Fan System: RTU-1 - Compliance (Motor nameplate HP method) - Passes

Fans:
RTU-1 Supply - Constant Volume, 1995 CFM, 2.0 motor nameplate hp, 0.0 fan efficiency grade

1 EVH-1:
Electric Storage Water Heater, Capacity: 30 gallons of Circulation Pump
Proposed Efficiency: 1.20 SL, %/h (# > 12 kW), Required Efficiency: 1.20 SL, %/h (# > 12 kW)

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title

Signature

Date

Project Title: Brakes Plus

Report date: 05/28/24

Data filename: G:\24XXXX - Brakes Plus - 4900 May - Oklahoma City, OK-Norm Herman-UL GUH\Engfile\Mech Page 1 of 11

calcs\BRAKES -MAY STREET-OK.cck

Section # & Req.ID

C402.2.6 [ME41]¹

Mechanical Rough-In Inspection

Complies?

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C403.11.3 [ME6]¹

HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C403.8.1 [ME6]¹

HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions: See the Mechanical Systems list for values.

Section # & Req.ID

C403.8.3 [ME11]¹

Fans have efficiency grade (FEG) >= 67. The total efficiency of the fan at the design point of operation <= 15% of maximum total efficiency of the fan.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C403.8.4 [ME14]¹

Motors for fans that are not less than 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the means to adjust motor speed.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C403.8.5 [ME14]¹

Each DX cooling system > 65 kBtu and chiller water/evaporative cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements of this section.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C403.12.1 [ME7]¹

Systems that heat outside the building envelope are radiant heat systems controlled by an occupancy sensing device or timer switch.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C403.2.3 [ME5]¹

HVAC equipment efficiency verified.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions: See the Mechanical Systems list for values.

Section # & Req.ID

C403.5.5 [ME11]¹

Fault detection and diagnostics installed with air-cooled unitary DX units having economizers.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C403.2.2 [ME59]¹

Natural or mechanical ventilation is provided in accordance with International Mechanical Code Chapter 4. Mechanical ventilation has capability to reduce outdoor air supply to minimum per IMC Chapter 4.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C403.7.1 [ME59]¹

Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper, control, or design airflow >3,000 cfm.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Additional Comments/Assumptions:

1 High Impact (Tier 1)

2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

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Section # & Req.ID

C403.12.2 [FO9]¹

Footing / Foundation Inspection

Complies?

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Section # & Req.ID

C403.12.2 [FO9]¹

Snow/ice melting system and freeze protection systems have sensors and controls configured to limit service for pavement temperature and outdoor temperature, future connection to controls.

Complies

☐Complies

Does Not

☐Does Not

Not Observable

☐Not Observable

Not Applicable

☐Not Applicable

Comments/Assumptions

Additional Comments/Assumptions:

1 High Impact (Tier 1)

2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Project Title: Brakes Plus

Report date: 05/28/24

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Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C403.3.3 C403.2.3 [F10]¹	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.2.2 [F127]¹	HVAC systems and equipment capacity does not exceed calculated loads.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.2.4.1 [F147]¹	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.2.4.2 [F147]¹	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.4.1.1 [F138]¹	Thermostatic controls have a 5 °F deadband.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.2.4.1.3 [F120]¹	Temperature controls have setpoint overlap restrictions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.2.4.2 [F139]¹	Each zone equipped with setback controls using automatic time clock or programmable control system.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.2.4.2.1 C403.2.4.2.2 [F140]¹	Automatic Controls: Setback to 55°F (heat) and 55°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.2.4.2.3 [F141]¹	Systems include optimum start controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C404.3 [F111]¹	Heat traps installed on supply and discharge piping of non-circulating systems.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C404.4 [F125]¹	All piping insulated in accordance with section details and Table C403.11.3.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C404.6.1 [F112]¹	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank. System return pipe is a dedicated return pipe or a cold water supply pipe.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)			
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Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.3.3 [ME33]¹	Hot gas bypass limited to: <=240 kbtu/h - 50% >240 kbtu/h - 25%	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C408.2.2 [ME33]¹	Air outlets and zone terminal devices have means for air balancing.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.5.1 C403.5.2 [ME123]¹	Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403.5.1 and refrigeration compressor systems that comply with C403.5.2...	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
Additional Comments/Assumptions:			
1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)			
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Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.7.2 [ME115]¹	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.7.6 [ME141]¹	HVAC systems serving guestrooms in Group R-3 buildings with > 50 guestrooms: Each guestroom is provided with controls that automatically manage temperature setpoint and ventilation (see sections C403.7.6.1 and C403.7.6.2).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.7.4 [ME57]¹	Exhaust air energy recovery on systems meeting Table C403.7.4(1) and C403.7.4(2).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.7.5 [ME116]¹	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.11.1 C403.11.2 [ME60]¹	HVAC ducts and plenums insulated in accordance with C403.11.1 and constructed in accordance with C403.11.2, verification may need to occur during Foundation Inspection.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.5.1 C403.5.2 [ME62]¹	Air economizers provided where required, meet the requirements for design capacity, control signal, ventilation controls, high-limit shut-off, integrated economizer control, and provide a means to relieve excess outside air during operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.5.3.3 [ME124]¹	Air economizers automatically reduce outdoor air intake to the design minimum outdoor air quantity when outdoor air intake will not reduce cooling energy usage. See Table C403.5.3.3 for applicable device types and climate zones.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.5.3.4 [ME125]¹	System capable of relieving excess outdoor air during air economizer operation to prevent overpressurizing the building. The relief air outlet located to avoid recirculation into the building.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.5.3.5 [ME126]¹	Return, exhaust/relief and outdoor air dampers used in economizers have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Reference section C403.7.7 for details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C403.4.1 [ME63]¹	Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45°F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60°F and cooling setpoint >= 80°F.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)			
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Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C408.2.1 [F128]¹	Commissioning plan developed by registered design professional or approved agency.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C408.2.3.1 [F131]¹	HVAC equipment has been tested to ensure proper operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C408.2.3.2 [F110]¹	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C408.2.3.3 [F132]¹	Economizers have been tested to ensure proper operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C408.2.4 [F129]¹	Preliminary commissioning report completed and certified by registered design professional or approved agency.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C408.2.5.1 [F17]¹	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C408.2.5.3 [F143]¹	An air and/or hydronic system balancing report is provided for HVAC systems.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C408.2.5.4 [F130]¹	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
Additional Comments/Assumptions:			
1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)			
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PLUMBING GENERAL NOTES AND SPECIFICATIONS		
GENERAL CONSTRUCTION NOTES:		
<p>1. DRAWINGS ARE MEANT TO SHOW INTENT ONLY, NOT EXACT DETAIL. THESE DRAWINGS ARE A "BUILDERS SET" AND INTENDED FOR THE USE ON AN EXPERIENCED AND WELL QUALIFIED CONTRACTOR WHO MAY INTERPRET REASONABLE INFORMATION BASED ON EXPERIENCE COMMON IN THE INDUSTRY AND TRADES. QUALITY LEVEL IS A REQUIRED STANDARD. DO NOT SCALE DRAWINGS. FIELD VERIFY ALL CONDITIONS OF WORK AND REPORT ANY DISCREPANCIES TO THE ARCHITECT/ENGINEER FOR CLARIFICATIONS BEFORE STARTING ANY WORK. CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL ERRORS IN HIS WORK, INCLUDING THE LACK OF FIELD VERIFICATION OF EXISTING CONDITIONS.</p> <p>2. THE ARCHITECT AND PROFESSIONAL CONSULTANTS WILL NOT HAVE CONTROL OF AND WILL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, OR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK ON THIS PROJECT OR FOR THE ACTIONS OR OMISSIONS OF ANY SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK ON THIS SITE, NOR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE INTENT OF THE CONTRACT AND OR THESE CONSTRUCTION DOCUMENTS.</p>		
BASIC REQUIREMENTS:		
<p>PLUMBING DESIGN SHALL CONFORM TO THE CURRENT INTERNATIONAL PLUMBING CODE. PROJECT SHALL BE COORDINATED WITH THE EXISTING BUILDING SERVICES AND SHALL INCLUDE ALL ITEMS NECESSARY FOR COMPLETE AND FULLY OPERATIONAL TENANT PLUMBING SYSTEMS. MAKE CONNECTIONS TO AND EXTEND SYSTEMS INSTALLED BY OTHERS AND/OR FURNISHED BY OTHERS. PROVIDE ACCESSORIES AND INCIDENTAL ITEMS AS REQUIRED FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM WHETHER OR NOT SPECIFICALLY SPECIFIED AND/OR SHOWN ON THE PLANS.</p> <p>DO NOT SCALE FROM THESE DRAWINGS. REFER TO ARCHITECTURAL OR CIVIL DRAWINGS BY OTHERS FOR DIMENSIONS AND FOR ESTIMATING DISTANCES. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS RELATING TO THE JOB WHETHER OR NOT INDICATED ON THESE DRAWINGS.</p> <p>ANY SCALE, DIMENSION OR QUANTITIES SHOWN ON THE DRAWINGS ARE FOR ENGINEERING CALCULATION PURPOSES ONLY. THE PLUMBING CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ESTIMATING AND DETERMINING ALL DISTANCES AND QUANTITIES RELATED TO THE PROJECT. REFER TO ARCHITECTURAL OR CIVIL DRAWINGS BY OTHERS AND VERIFY EXISTING CONDITIONS ON SITE FOR ALL ESTIMATING PURPOSES.</p> <p>COORDINATE WITH OTHER TRADES FOR A COORDINATED INSTALLATION WITHIN THE AVAILABLE SPACE. WHERE CROWDED CONDITIONS EXIST, PREPARE COORDINATION DRAWINGS SHOWING ALL TRADE CONFLICTS AND SUBMIT TO ARCHITECT FOR APPROVAL AND DIRECTION PRIOR TO ROUGH-IN AND/OR INSTALLATION. RELOCATION OF OUTLETS AND/OR DEVICES MADE PRIOR TO ROUGH-IN SHALL BE DONE AT NO ADDITIONAL COST.</p> <p>ALL WORK SHALL BE PERFORMED BY PROPERLY LICENSED PLUMBERS OR UNDER THEIR DIRECT SUPERVISION. ALL MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS OF UL AND SHALL BEAR THE UL LABEL AS EVIDENCE THAT THE MATERIAL AND/OR EQUIPMENT MEETS THIS REQUIREMENT.</p> <p>INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS AND DETAILS UNLESS OTHERWISE NOTED IN THESE PLANS. IF ANY DISCREPANCIES EXIST CONTACT THE ENGINEER PRIOR TO ORDERING EQUIPMENT AND ROUGH-IN.</p> <p>ALL EQUIPMENT START UP AND TESTING SHALL BE PERFORMED BY THE EQUIPMENT MANUFACTURER SERVICE TECHNICIAN. THE EQUIPMENT MANUFACTURER'S LITERATURE (SHOP DRAWINGS) FOR MATERIALS AND EQUIPMENT. SUBMITTAL SHALL INCLUDE EQUIPMENT PERFORMANCE DATA AT ELEVATION AND/OR LOCAL CONDITIONS. EQUIPMENT CUTSHEETS OR CATALOG COPIES ARE NOT ACCEPTABLE. SUBMITTAL SHALL BEAR THE APPROVAL OF THE GENERAL CONTRACTOR FOR COMPLIANCE WITH COORDINATION AND THESE SPECIFICATIONS PRIOR TO SUBMITTAL TO ARCHITECT AND/OR HIS AGENCIES. ANY EQUIPMENT SUBSTITUTED FOR WHAT IS SPECIFIED SHALL BE EQUAL TO THAT SCHEDULED IN CONTROLS, ACCESSORIES, AND PERFORMANCE REGARDLESS OF MANUFACTURER.</p> <p>FIELD LABEL ALL PLUMBING EQUIPMENT AND PIPING AS INDICATED ON THE PLANS PER PLUMBING AND LOCAL CODE REQUIREMENTS. INDICATE DIRECTION OF FLOW ON PIPING.</p> <p>TAG ALL VALVES WITH CONSECUTIVE NUMBERING ON PERMANENT HARD PLASTIC OR METAL TAB AND PROVIDE SCHEDULE LISTING ITEMS, AREA SERVED, SIZE AND VALVE TYPE. SUBMIT FINAL VALVE SCHEDULE FOR REVIEW.</p>		
<p>PROVIDE EXPANSION LOOPS, SWING JOINTS, OR MECHANICAL EXPANSION COMPENSATING DEVICES AS REQUIRED TO ACCOUNT FOR THERMAL EXPANSION OF ALL PIPING SYSTEMS. EXPANSION SYSTEM SIZING SHALL BE IN ACCORDANCE WITH MATERIALS DATA SHEETS AND MANUFACTURER RECOMMENDATIONS.</p> <p>INSTALL ALL EQUIPMENT PER MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS. IF PLAN DIFFERS FROM THESE INSTRUCTIONS THEN NOTIFY ENGINEER PRIOR TO ROUGH-IN. MANUFACTURERS INSTRUCTIONS SHALL PREVAIL. SPECIAL ATTENTION MUST BE PAID TO GAS FINDER EQUIPMENT FLUE/CA LENGTHS, SIZES, AND MATERIAL.</p> <p>BASIC MATERIALS</p> <p>PLUMBING CONTRACTOR TO PROVIDE PLUMBING SYSTEM CONTROLS, CONTROLLERS, CONTROL TRANSFORMER, DISCONNECTS, STARTERS, CONTROL WIRING, ASSOCIATED CONTROL POWER WIRING, AND ALL WORK NECESSARY FOR A COMPLETE AND OPERATIONAL PLUMBING SYSTEM. ALL ELECTRICAL ITEMS SHALL BE COORDINATED WITH ELECTRICAL DRAWINGS AND ELECTRICAL SUB-CONTRACTOR FOR INSTALLATION.</p> <p>PROVIDE SUPPLEMENTAL STEEL AND SUPPORTS AS REQUIRED FOR INSTALLATION OF PLUMBING MATERIALS, EQUIPMENT, AND APPARATUS.</p> <p>ALL WORK IN FINISHED AREAS SHALL BE CONCEALED UNLESS SPECIFICALLY NOTED AS EXPOSED ON THE PLANS. PRIOR TO THE INSTALLATION OF ANY EXPOSED WORK THIS CONTRACTOR SHALL VERIFY AND OBTAIN ARCHITECTURAL APPROVAL OF LOCATION AND EXTENT.</p> <p>PROVIDE PRESSURE REDUCING VALVE ASSEMBLY AT BUILDING WATER SERVICE ENTRY WHERE PRESSURE EXCEEDS 65 PSI. PRESSURE REDUCING VALVE TO BE SET TO 65 PSI.</p> <p>PROVIDE SANITARY SEWER SYSTEM CLEANOUTS AS REQUIRED BY LOCAL CODES. PROVIDE BRANCH SHUT-OFF VALVES ON ALL WATER LINES EXEMPTED FROM MAINS. THE CONTRACTOR SHALL LOCATE AND FURNISH FOR INSTALLATION BY OTHERS, ALL ACCESS PANELS AS REQUIRED FOR ACCESS TO VALVES, MOTORS, ETC. AND THE PROPER SERVICING OF EQUIPMENT AND LINES INSTALLED UNDER THIS CONTRACT.</p> <p>PIPING</p> <p>1. SANITARY, VENT, AND STORM PIPING ABOVE GRADE SHALL BE CAST IRON NO-HUB PIPE AND FITTINGS, MANUFACTURED TO CISPI 310 BEARING THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE AND BE LISTED BY NSF INTERNATIONAL. COUPLINGS FOR JOINING CAST IRON NO-HUB PIPE SHALL BE LISTED BY NSF INTERNATIONAL. COUPLINGS FOR JOINING INTERNATIONAL TO THE CISPI 310 STANDARD. IF HEAVY DUTY COUPLINGS ARE REQUIRED: HUSKY 2000, CLAMP ALL 80, OR MISSION 80 COUPLINGS WITH CONSIDERATION TO USE: HUSKY 4000 OR CLAMP ALL 125. INSTALLATION IN COMPLIANCE TO CISPI HANDBOOK.</p> <p>2. SANITARY, VENT, AND STORM PIPING BELOW GRADE SHALL BE SOLID CORE PVC SCHEDULE 40 OR 80 PIPE AND SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785 AND ASTM D 2665. INJECTION MOLDED PVC DWV FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED PVC DWV FITTINGS SHALL CONFORM TO ASTM F 1866. PIPE AND FITTINGS SHALL BE MANUFACTURED AS A SYSTEM AND BE THE PRODUCT OF ONE MANUFACTURER. PIPE AND FITTINGS SHALL BE MANUFACTURED IN THE UNITED STATES. ALL SYSTEMS SHALL UTILIZE A SEPARATE WASTE AND VENT SYSTEM. PIPE AND FITTINGS SHALL CONFORM TO NSF INTERNATIONAL STANDARD 14. INSTALLATION SHALL COMPLY WITH THE LATEST INSTALLATION INSTRUCTIONS PUBLISHED BY MANUFACTURER AND SHALL CONFORM TO ALL APPLICABLE PLUMBING, BUILDING, AND FIRE CODE REQUIREMENTS. BURIED PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D 2321 AND ASTM F 1668. SOLVENT CEMENT JOINTS SHALL BE MADE IN TWO STEP PROCESS WITH PRIMER CONFORMING TO ASTM F 656 AND SOLVENT GRANT CONFORMING TO ASTM D 2664. THE SYSTEM SHALL BE PROTECTED FROM CHEMICAL AGENTS, FIRE STOPPING MATERIALS, THREAD SEALANT, PLASTICIZED VINYL PRODUCTS, OR OTHER AGGRESSIVE CHEMICAL AGENTS NOT COMPATIBLE WITH PVC COMPOUNDS. SYSTEMS SHALL BE HYDROSTATICALLY TESTED AFTER INSTALLATION.</p> <p>3. DOMESTIC WATER PIPING ABOVE GRADE: ASTM B 88, TYPE L COPPER WITH SOLDERED OR MECHANICALLY CRIMPED JOINTS (PRO PRESS)</p> <p>4. DOMESTIC WATER PIPING ABOVE GRADE: SOCKET WELDED CPVC TUBE AND FITTINGS PER ASTM D 2846.</p> <p>5. DOMESTIC WATER PIPING ABOVE GRADE: UPONOR AUQUEPEX PIPING WITH PROPEX FITTINGS FOR ALL BRANCH CONNECTIONS AND TERMINATIONS (OR REHAU EQUIVALENT). DCW TO BE BLUE PIPE, DHW TO BE RED PIPE, AND DHWR TO BE CLEAR PIPE.</p> <p>6. DOMESTIC WATER PIPING BELOW GRADE SHALL BE TYPE K COPPER WITH SILVER SOLDERED JOINTS.</p> <p>7. CONDENSATE DRAIN PIPING SHALL BE TYPE M COPPER WITH SOLDERED JOINTS, OR CPVC IF ALLOWED BY LOCAL AUTHORITY HAVING JURISDICTION.</p>		
<p>8. ANY PIPING SYSTEM LOCATED IN A RETURN AIR PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NO MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.</p> <p>9. FIRE STOP ALL PIPING MATERIALS PASSING THROUGH FIRE RATED STRUCTURES OR FIRE RATED ASSEMBLIES IN ACCORDANCE WITH THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. USE CURRENTLY LISTED U.L. CLASSIFIED PRODUCTS, TESTED BY ASTM E814. USE FOR ALL APPLICABLE PIPE PENETRATIONS THROUGH FIRE RATED FLOORS, WALLS, OR FLOOR CEILING ASSEMBLIES IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.</p> <p>10. COMPRESSED AIR PIPING: 1" AND SMALLER: TYPE K OR L (TYPE A OR B), COPPER TUBE; WROUGHT-COPPER FITTINGS; COPPER PRESSURE-SEAL-JOINT FITTINGS; COPPER-PUSH FITTINGS; AND BRAZED JOINTS.</p> <p>11. COMPRESSED AIR PIPING: 2" DOWN TO 1-1/4" SHALL BE: TYPE K OR L (TYPE A OR B), COPPER TUBE; WROUGHT-COPPER FITTINGS; COPPER PRESSURE-SEAL-JOINT FITTINGS; AND BRAZED JOINTS.</p> <p>12. COMPRESSED AIR PIPING: 2-1/2" TO 4" SHALL BE TYPE K OR L (TYPE A OR B), COPPER TUBE; WROUGHT-COPPER FITTINGS; COPPER PRESSURE-SEAL-JOINT FITTINGS; AND BRAZED JOINTS.</p> <p>13. COMPRESSED AIR DRAIN PIPING SHALL BE TYPE M (TYPE C) COPPER TUBE; WROUGHT-COPPER FITTINGS, AND BRAZED OR SOLDERED JOINTS.</p>		
INSULATION		
<p>1. WATER PIPING IN UNCONDITIONED SPACE AND EXTERIOR WALLS SHALL BE 2" FIBERGLASS INSULATION.</p> <p>2. HOT WATER PIPING 2" OR LESS SHALL BE 1-INCH FIBERGLASS INSULATION. HOT WATER PIPING GREATER THAN 2-INCHES SHALL BE 1 1/2" FIBERGLASS INSULATION. RUNOUTS, NOT EXCEEDING 12 FEET, UP TO 2-INCHES SHALL BE 1/2-INCH THICK FIBER GLASS INSULATION WITH AN ALL-SERVICE JACKET.</p> <p>3. STORM DRAIN PIPING ABOVE GRADE SHALL BE 1/2-INCH THICK FIBER GLASS INSULATION WITH AN ALL-SERVICE JACKET.</p> <p>4. HORIZONTAL SANITARY AND STORM PIPING EXPOSED TO OUTDOOR TYPE AMBIENT CONDITIONS INCLUDING COVERED PARKING AND CRAWL SPACES SHALL BE HEAT-TRACED AND INSULATED WITH 1-INCH FIBERGLASS INSULATION.</p> <p>5. VERTICAL SANITARY AND STORM PIPING EXPOSED TO OUTDOOR TYPE AMBIENT CONDITIONS INCLUDING COVERED PARKING AND CRAWL SPACES SHALL BE INSULATED WITH 1-INCH FIBERGLASS INSULATION.</p> <p>6. CONDENSATE DRAIN PIPING SHALL BE 1/2-INCH THICK INSULATION WITH AN ALL-SERVICE JACKET.</p> <p>7. COLD WATER DISTRIBUTION PIPING SHALL NOT BE INSULATED UNLESS OTHERWISE NOTED.</p> <p>8. COLD OR HOT WATER PIPING IN A WALL, CEILING, OR FLOOR THAT IS ADJACENT TO AN UNCONDITIONED SPACE SHALL HAVE 1-INCH THICK INSULATION. THE PIPING SHALL ALSO BE INSTALLED TO THE WARM SIDE OF THE BUILDING INSULATION.</p> <p>9. HOT WATER PIPING LESS THAN 1-1/2" SHALL BE 1-INCH FIBERGLASS INSULATION. HOT WATER PIPING 1-1/2 TO 4" SHALL BE 1 1/2" FIBERGLASS INSULATION.</p>		
PLUMBING EQUIPMENT/FIXTURES		
<ul style="list-style-type: none"> FURNISH AND INSTALL PLUMBING FIXTURES AS SCHEDULED ON THE PLANS. PROVIDE CHROME PLATED ANGLE STOPS AND ESCUTCHEON PLATES ON ALL EXPOSED FIXTURES AND EQUIPMENT. PROVIDE INSULATION AND ROUGH IN AS REQUIRED FOR COMPLIANCE WITH ADA REQUIREMENTS. PROVIDE ALL ACCESSORIES AND SPECIALTY ITEMS AS REQUIRED FOR A COMPLETE FIXTURE INSTALLATION. 		
REDUCED PRESSURE BACKFLOW PREVENTER		
<p>FURNISH AND INSTALL LEADFREE REDUCED PRESSURE BACKFLOW PREVENTER FOR THE PRIMARY DOMESTIC COLD WATER SERVICE IN ACCORDANCE WITH STATE, LOCAL, AND JURISDICTIONAL WATER DISTRICT REQUIREMENTS.</p> <p>FURNISH AND INSTALL REDUCED PRESSURE BACKFLOW PREVENTER FOR MECHANICAL EQUIPMENT REQUIRED OF THIS OR OTHER SECTIONS OF</p>		

ABBREVIATIONS		PLUMBING LEGEND	
(D) DEMO		---CND---	CONDENSATE
(E) EXISTING		---DCW---	DOMESTIC COLD WATER
(N) NEW		---120°---	DOMESTIC HOT WATER
AAV AIR ADMITTANCE VALVE		---120°R---	DOMESTIC HOT WATER REIRC
AD AREA DRAIN		---GW---	GREASE WASTE
AFF ABOVE FINISH FLOOR		---G---	GAS
AHU AIR HANDLING UNIT		---RD---	ROOF DRAIN
B BOILER		---ORD---	OVERFLOW ROOF DRAIN
BB BASEBOARD		---SOI---	SAND OIL
BF BOOSTER FAN		---SS---	SANITARY SEWER
BFP BACKFLOW PREVENTER		---V---	VENT
BT BATH TUB		---(A)XX---	TYPICAL PIPE ABOVE/ON ROOF
BV BALL VALVE		---(B)XX---	TYPICAL PIPE BELOW/UNDERGROUND
CD CONDENSATE DRAIN		---(E)XX---	TYPICAL PIPE EXISTING
CFM CUBIC FEET PER MINUTE			
CH CHILLER			
COT CLEANOUT			
COTG CLEANOUT TO GRADE			
CU CONDENSING UNIT			
CV CHECK VALVE			
CUH CABINET UNIT HEATER			
DCW DOMESTIC COLD WATER			
DF DRINKING FOUNTAIN			
DHW DOMESTIC HOT WATER			
DSN DOWN SPOUT NOZZLE			
EC ELECTRICAL CONTRACTOR			
ECO END OF LINE CLEANOUT			
EDH ELECTRIC DUCT HEATER			
EF EXHAUST FAN			
EWC ELECTRIC WATER COOLER			
EWH ELECTRIC WATER HEATER			
FURN FURNACE			
FCO FLOOR CLEANOUT			
FCU FAN COIL UNIT			
FD FLOOR DRAIN			
FS FLOOR SINK			
G GAS			
GC GENERAL CONTRACTOR			
GM GAS METER			
GPH GALLONS PER HOUR			
GPM GALLONS PER MINUTE			
GUM GAS UNIT HEATER			
GW GREASE WASTE			
GWH GAS WATER HEATER			
HB HOSE BIB			
HP HEAT PUMP			
HX HEAT EXCHANGER			
IM ICE MAKER BOX			
LAV LAVATORY			
LS LAUNDRY SINK			
MAU MAKE-UP AIR UNIT			
MC MECHANICAL CONTRACTOR			
MF MEASURE FLOW			
NIC NOT IN CONTRACT			
NC NORMALLY CLOSED			
NO NORMALLY OPEN			
NTS NOT TO SCALE			
OA OUTSIDE AIR			
ORD OVER FLOW ROOF DRAIN			
PUMP PUMP			
PRV PRESSURE REDUCING VALVE			
PSI POUNDS PER SQUARE INCH			
RA RETURN AIR			
RAR RETURN AIR REGISTER			
RD ROOF DRAIN			
RH RADIANT HEATER			
RTU ROOF TOP UNIT			
SA SUPPLY AIR			
SAR SUPPLY AIR REGISTER			
SFT SUPPLY FAN			
SFS SERIES FAN TERMINAL			
SH SHOWER			
SK SINK			
SOI SAND/OIL INTERCEPTOR			
SS SERVICE SINK			
T&P TEMPERATURE & PRESSURE			
TD TRENCH DRAIN			
TYP TYPICAL			
UR URINAL			
VAV VARIABLE AIR VOLUME			
VVT VARI TRAC			
WB WASHER BOX			
WCO WALL CLEANOUT			
WH WALL HYDRANT			

TAG	ADA	DESCRIPTION	CONNECTIONS				FIXTURE		FLOW RATE	DIMENSIONS	MOUNTING	RIM HEIGHT	FINISH	MISC.	REMARKS
			DCW	DHW	WASTE	VENT	MANUFACTURER	MODEL NAME							
WC-1	YES	WATER CLOSET-TANK	1/2"		3"	2"	AMER. STND.	CADET PRO	21AA-10A	1.28 GPF	12" R/2-18" TRAP		VITREOUS CHINA	ELONGATED	
LAV-1	YES	OPEN FRONT LESS COVER					AMER. STND.	HEAVY DUTY	5901-110		ELONGATED		PLASTIC		
WC-1	YES	WALL HUNG	1/2"	1/2"	1-1/2"	2"	AMER. STND.	UCERNE	0356-XXX		WALL HANGER	31" TO 34" TO RIM	VITREOUS CHINA	STAINLESS WINGES	FRONT OVERFLOW SINGLE HOLE, 4" CENTERS
YES		FAUCET					MOEN	ELKAY	L64621	0.5 GPM	4" CENTERS		POLISHED CHROME	-	PS
SS-1	NO	SERVICE SINK			3"	2"		SERVICE SINK	14-1022322-0X	2.0 GPM	22"x22"x14"	36"	STAINLESS STEEL	-	
YES		FAUCET					CHICAGO FAUCET	MISCHAMICAL	540-LDL-12ABCP	2.2 GPM	DECK MOUNT	8" CENTERS	CHROME PLATES	ADJ. ARM. HOT/COLD PADDLE	
		MANUAL FOOT PEDAL VALVE	1/2"	1/2"			ZURN	FOOT VALVE	Z85509-XL				CHROME	-	**
TD-1	-	TRENCH DRAIN	-	-	4"	-	ZURN	Z886		-	80-0" LENGTH		W/ DGE (TRAFFIC RATED) GRATES	-	
WC-1	-	WALL BOX	1/2"	-	-	-	SIoux CHIEF	696		-	696-F FRAME	WALL		RECESSED WALL BOX	W/ WATER HAMMER ARRESTOR
EWB-1	-	INTERIOR WALL HYDRANT	3/4"	-	-	-	MODEL 101	WOODFORD	101		VARIES W/ WALL DEPTH	INTERIOR ONLY	24"AFG	INTERIOR USE ONLY	W/ BACKFLOW PROTECTION
WC-1	Y	B-LEVEL	1/2"	-	2"	2"	ELKAY	ANTI-SIPHON	EZ2SLWSK	36" WIDE	WALL	ADA	STAINLESS STEEL	BARRIER FREE	W/ BOTTLE FILLER
		WALL HANGER					ZURN	SINGLE	Z1222		FLOOR		DURA COATED	CARRIER ONLY	IF REQUIRED
RD-1	-	ROOF DRAIN	-	-	-	-	ZURN		Z100	15" DIA	ROOF/EXTERIOR		DURA COATED CAST IRON	FLASH CLAMP/GRAVEL GUARD	
DSN-1	-	DOWNSPOUT NOZZLE	-	-	-	-	ZURN		Z109			EXTERIOR		NICKEL BRONZE	-
AD-1	-	AREA DRAIN	-	-	-	-	ZURN	MEDIUM DUTY	Z-507-P			FLOOR		CAST IRON BODY	
FD-1	-	FLOOR DRAIN	-	-	-	-	ZURN		Z-550-P			FLOOR		NICKEL BRONZE FINISH, STAINLESS STRAINER	W/ TRAP PRIMER CONNECTION

****NOTE: PROVIDE 1/2"DCW/DHW DOWN WALL TO FOOT PEDAL CONNECTIONS AS PER MANUFACUTERS INSTRUCTIONS**

- | PROJECT: BRAKES PLUS - OKLAHOMA CITY | | | | | | | | | | | | |
|--------------------------------------|-------------------------|---------|----------------|---------------------|------------|-----------|-----------------|---------------------|----------------------|----------------|---------|---------------------|
| BUILDING: | | | CODE: 2018 IPC | | | | DATE: 5/28/2023 | | | | | |
| FIXTURE TOTAL | FIXTURE TYPE | | | WATER FIXTURE UNITS | | | | | WASTE FIXTURES UNITS | | REMARKS | |
| | | occ. | SUPPLY TYPE | COLD WATER | COLD TOTAL | HOT WATER | HOT TOTAL | COMBINED COLD & HOT | TOTAL | FIXTURE VALUES | | TOTAL VALUES |
| 2 | HOSE BIBBS | PRIVATE | 1/2" VALVE | 1.00 | 2.0 | | 0.0 | 1.00 | 2.0 | | 0.0 | |
| 1 | DRINKING FOUNTAIN | OFFICES | 3/8" VALVE | 0.25 | 0.3 | | 0.0 | 0.25 | 0.3 | | 0.50 | 0.5 |
| 2 | LAVATORY | PUBLIC | FAUCET | 1.50 | 3.0 | 1.50 | 3.0 | 2.00 | 4.0 | | 1.00 | 2.0 |
| 1 | SERVICE SINK | OFFICES | FAUCET | 2.25 | 2.3 | 2.25 | 3.0 | 3.00 | 3.0 | | 2.00 | 2.0 |
| 2 | WATER CLOSET | PUBLIC | FLUSH TANK | 5.00 | 10.0 | | 0.0 | 5.00 | 10.0 | | 4.00 | 8.0 |
| TOTAL
FIXT. UNITS | | | | | 17.50 | | 5.25 | | 19.25 | | 12.50 | TOTAL FIXTURE UNITS |
| | | | GPM | | | | | | 20 | | 4" | BUILDING MAIN SIZE |
| | | | PIPE SIZE | | | | | | 1" | | 1/8" | BUILDING MAIN SLOPE |
| | WATER SERVICE LINE SIZE | FT/SEC | PSI/100FT | NOTES | | | | | | | | |
| TAP & METER | 3/4" | | | | | | | | | | | |
| BFP & BLDG MAIN | 1" | 6.00 | 9.00 | | | | | | | | | |

TABLE 305.4 (IMC) & 308.5 (IPC)

A. THE MAXIMUM HORIZONTAL SPACING OF CAST IRON PIPE HANGERS SHALL BE INCREASED TO 10 FEET WHERE 10 FOOT LENGTHS OF PIPE ARE INSTALLED.

B. MIDSTORY GUIDE SHALL BE INSTALLED FOR SIZES 2 INCHES AND SMALLER TO PREVENT PIPE MOVEMENT

MINIMUM PIPE INSULATION THICKNESS (in inches) a, c							
FLUID OPERATING TEMPERATURE RANGE AND USAGE (F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (inches)				
	CONDUCTIVITY Btu · in./h. · ft. ² · °F/b	MEAN RATING TEMPERATURE °F	<1	1 to <1/2	1/2 to <4	4 to <8	> 8
> 350	0.32 - 0.34	250	4.5	5.0	5.0	5.0	5.0
251 - 350	0.29 - 0.32	200	3.0	4.0	4.5	4.5	4.5
201 - 250	0.27 - 0.30	150	2.5	2.5	2.5	3.0	3.0
141 - 200	0.25 - 0.29	125	1.5	1.5	2.0	2.0	2.0
105 - 140	0.21 - 0.28	100	1.0	1.0	1.5	1.5	1.5
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0
< 40	0.20 - 0.26	50	0.5	1.0	1.0	1.0	1.5

SHEET #	SHEET TITLE
P0.1	PLUMBING SPECS, SCHEDULES & LEGEND
P1.0	UNDERGROUND PLUMBING PLAN
P1.1	PIPING PLAN
P2.1	PLUMBING ROOF PLAN
P3.1	PLUMBING DETAILS
P4.0	PLUMBING ISOMETRICS

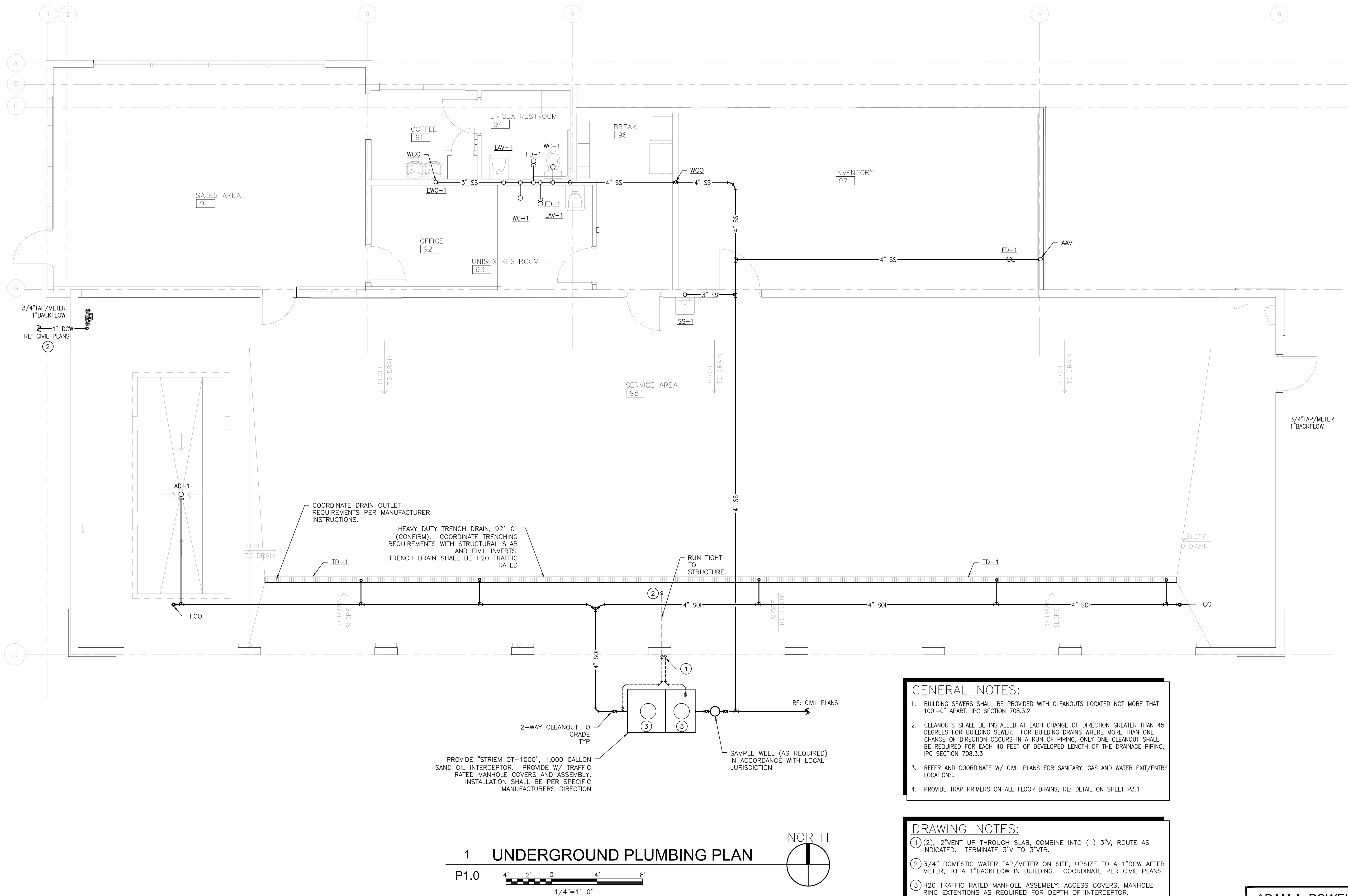
5/28/24

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45 SPYGLASS DRIVE
LITTLETON, CO 80123
VOICE: 303.881-8925
NORMHERMAN@ARCODEV.COM

PO.1

PLUMBING SPECS, SCHEDULES AND LEGEND

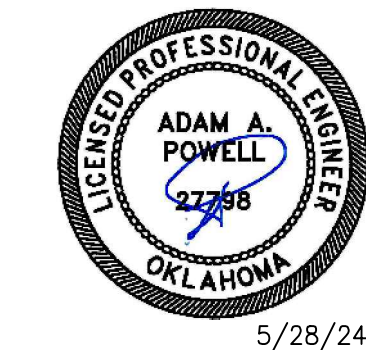


- GENERAL NOTES:**
- BUILDING SEWERS SHALL BE PROVIDED WITH CLEANOUTS LOCATED NOT MORE THAT 100'-0" APART, IPC SECTION 708.3.2
 - CLEANOUTS SHALL BE INSTALLED AT EACH CHANGE OF DIRECTION GREATER THAN 45 DEGREES FOR BUILDING SEWER. FOR BUILDING DRAINS WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A RUN OF PIPING, ONLY ONE CLEANOUT SHALL BE REQUIRED FOR EACH 40 FEET OF DEVELOPED LENGTH OF THE DRAINAGE PIPING, IPC SECTION 708.3.3
 - REFER AND COORDINATE W/ CIVIL PLANS FOR SANITARY, GAS AND WATER EXIT/ENTRY LOCATIONS.
 - PROVIDE TRAP PRIMERS ON ALL FLOOR DRAINS, RE: DETAIL ON SHEET P3.1

- DRAWING NOTES:**
- (2), 2" VENT UP THROUGH SLAB, COMBINE INTO (1) 3" V, ROUTE AS INDICATED. TERMINATE 3" V TO 3" VTR.
 - 3/4" DOMESTIC WATER TAP/METER ON SITE, UPSIZE TO A 1" DCW AFTER METER, TO A 1" BACKFLOW IN BUILDING. COORDINATE PER CIVIL PLANS.
 - H2O TRAFFIC RATED MANHOLE ASSEMBLY, ACCESS COVERS, MANHOLE RING EXTENSIONS AS REQUIRED FOR DEPTH OF INTERCEPTOR.

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4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA



ARCHITECT OF RECORD

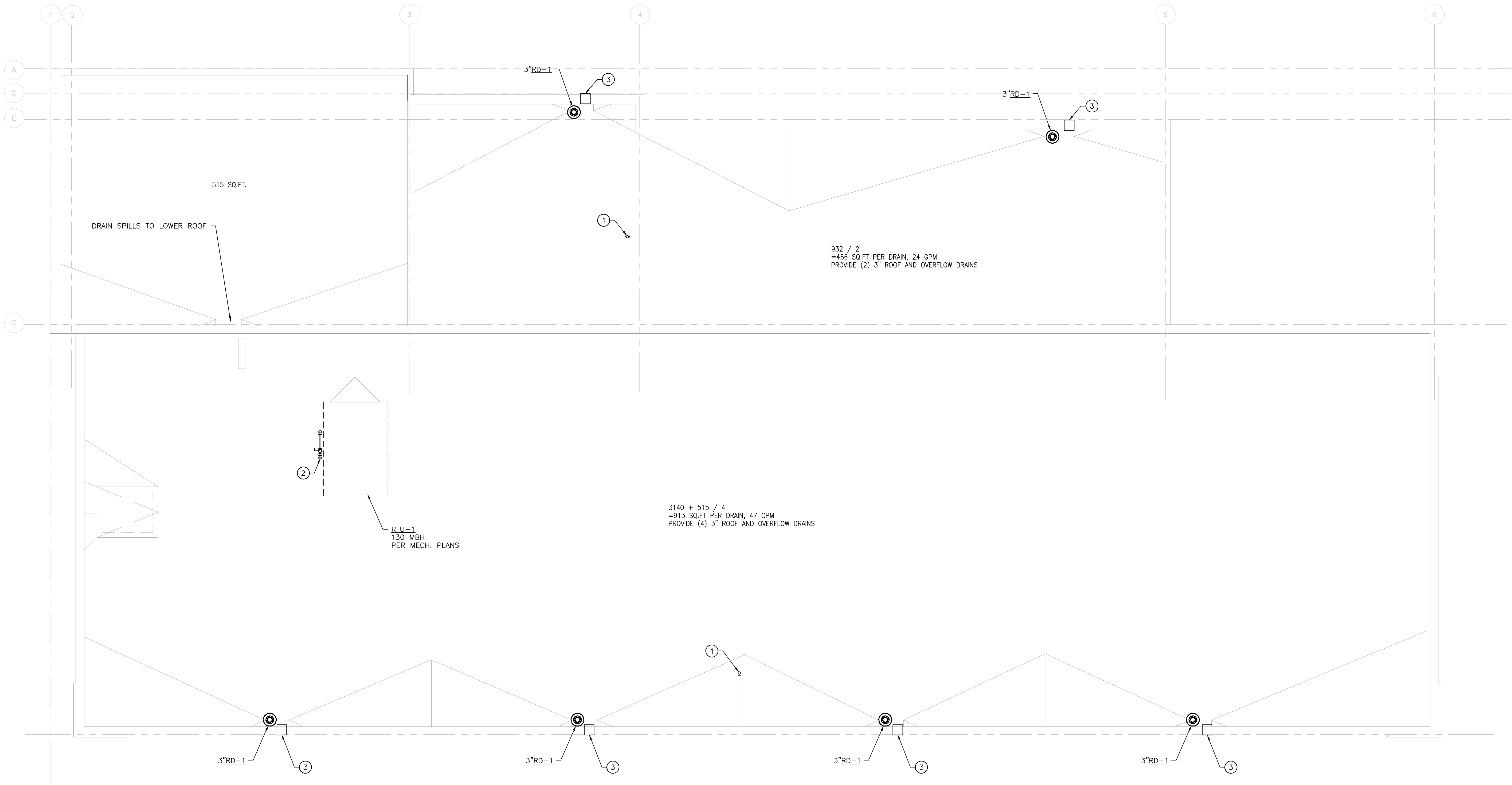
REVISION	DATE	COMMENTS
	5/28/24	PERMIT

ARCODEV JOB #:
CLIENT JOB #:
DRAWN BY: JRG
CHECKED BY: LRP
DATE OF ISSUE: 5/28/24



SHEET

P1.0
UNDERGROUND
PLUMBING PLAN



1 PLUMBING ROOF PLAN
P2.1

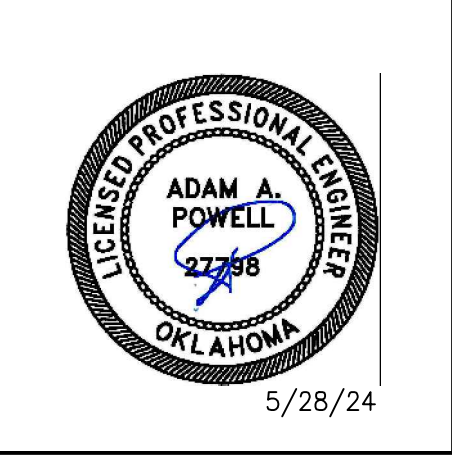
4' 2' 0 4' 8'
1/4"=1'-0"

NORTH

DRAWING NOTES:
① 3" PLUMBING VENT UP THRU ROOF FROM BELOW, RE: PLUMBING PLANS.
② TERMINATE AT ROOFTOP UNIT WITH SHUT-OFF VALVE, PRV AND DIRT LEG. PRV SHALL BE CAPABLE OF REDUCING FROM 2 PSI TO 7"W.C. AT MBH AS INDICATED.
③ OVERFLOW SCUPPER, SIZE PER ARCHITECTURAL PLANS.

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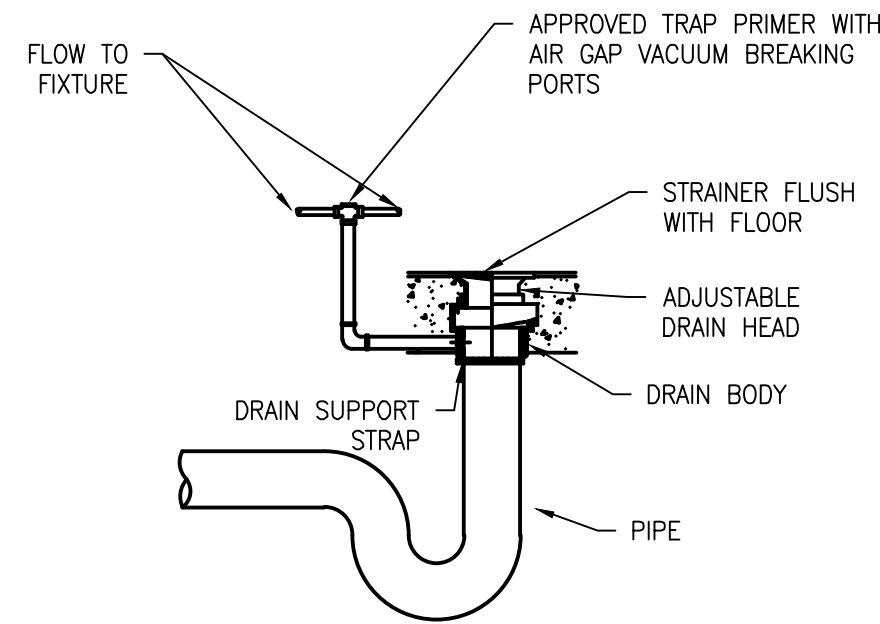
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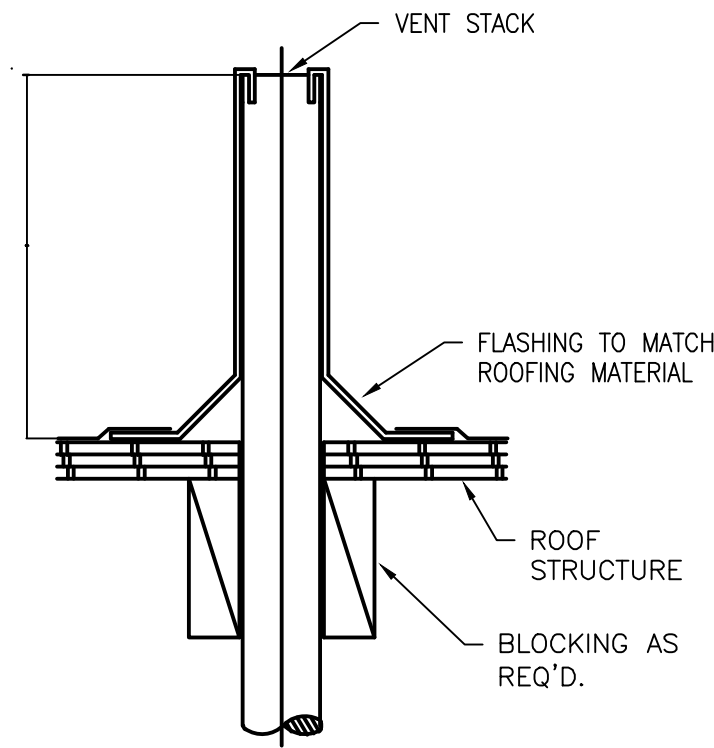
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P2.1
PLUMBING ROOF PLAN



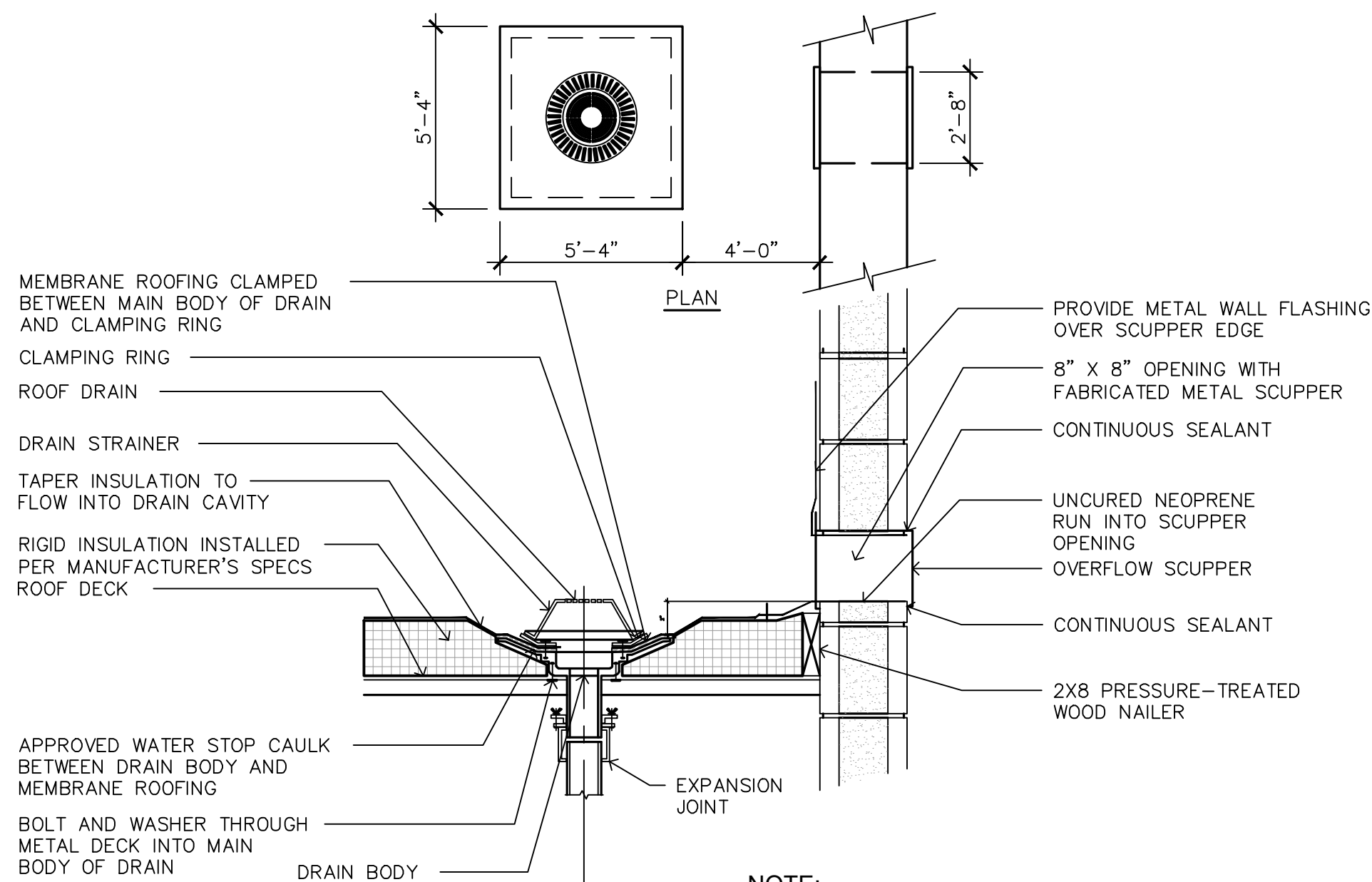
FLOOR DRAIN W/
TRAP PRIMER DETAIL

NOT TO SCALE



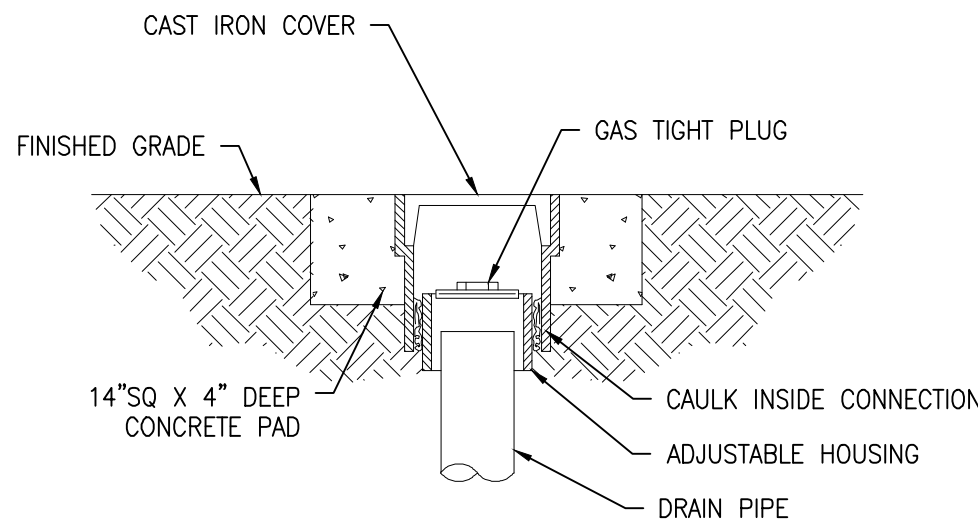
PIPE THRU ROOF DETAIL

NOT TO SCALE



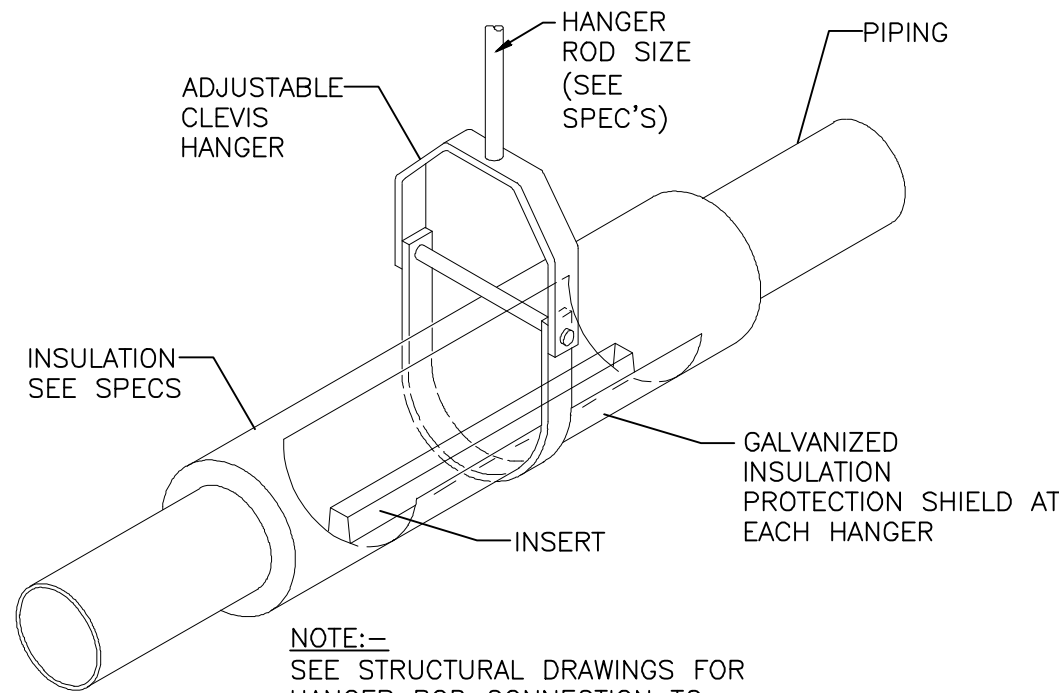
ROOF/OVERFLOW DRAIN DETAIL

NOT TO SCALE



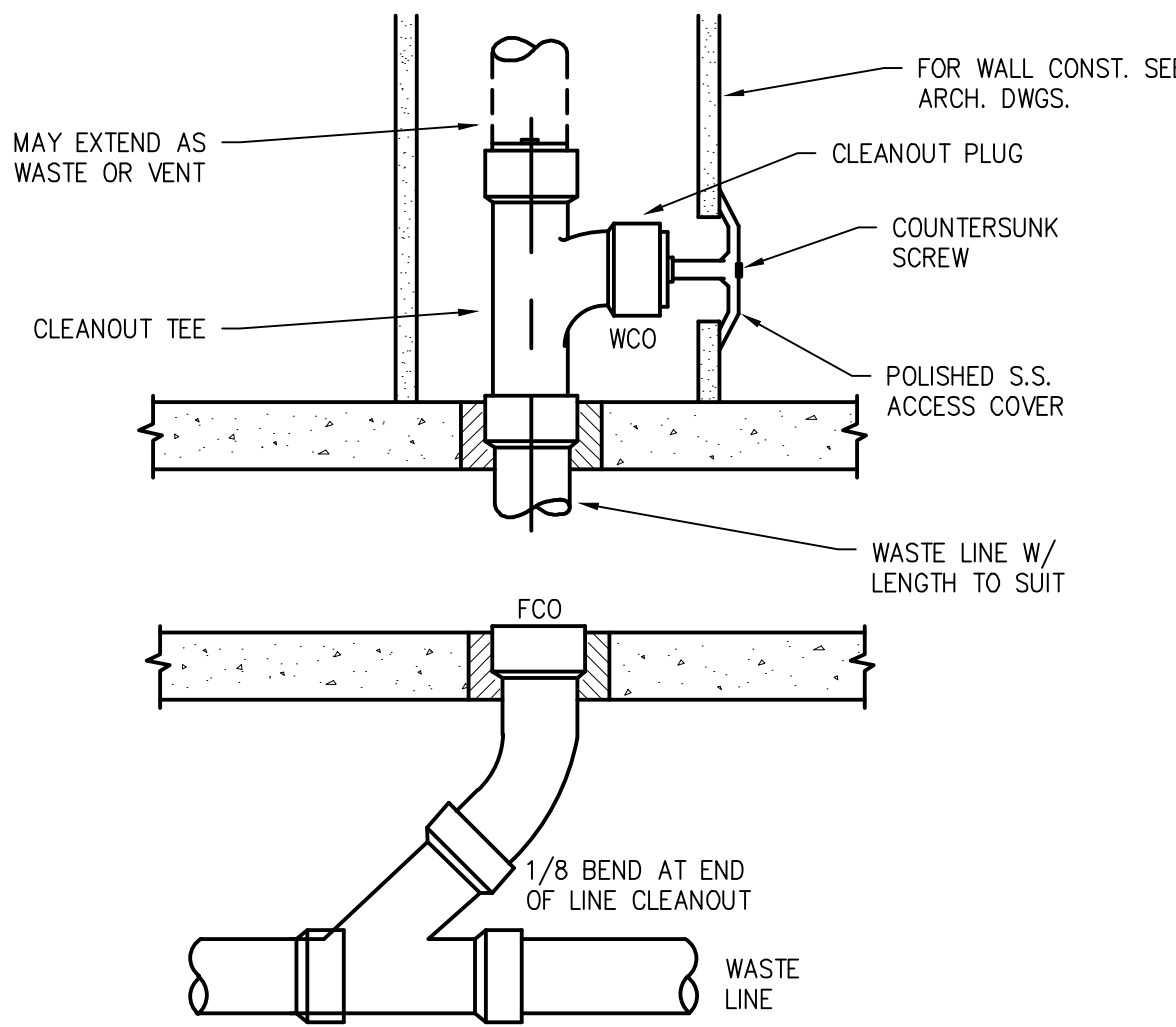
OUTSIDE CLEANOUT TO GRADE

NOT TO SCALE



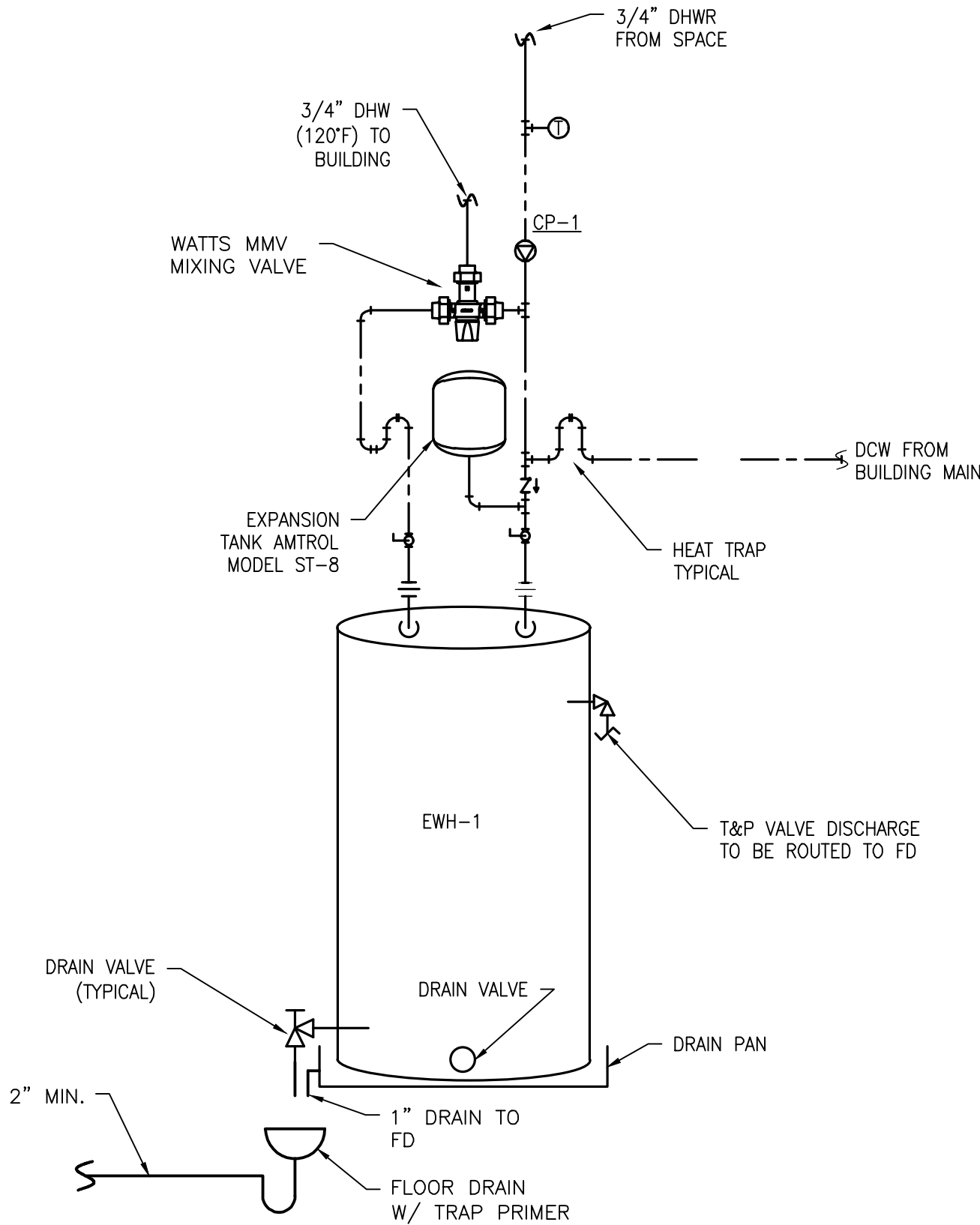
PIPE HANGER AND INSULATION DETAIL

NOT TO SCALE



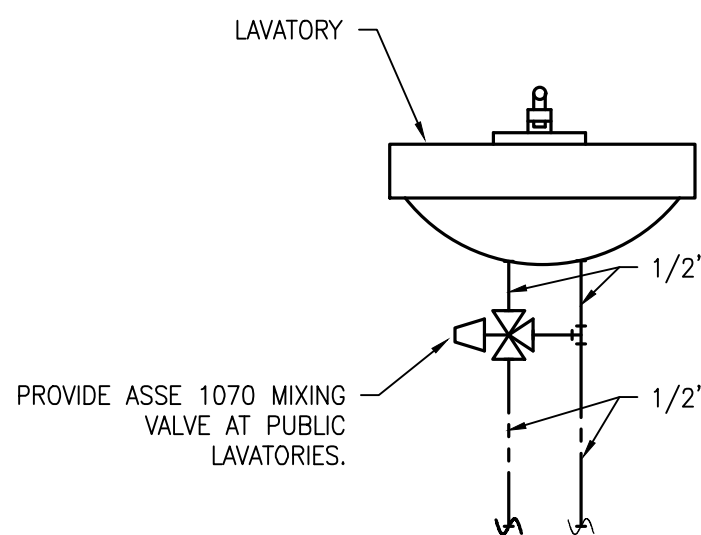
CLEANOUT DETAILS

NOT TO SCALE



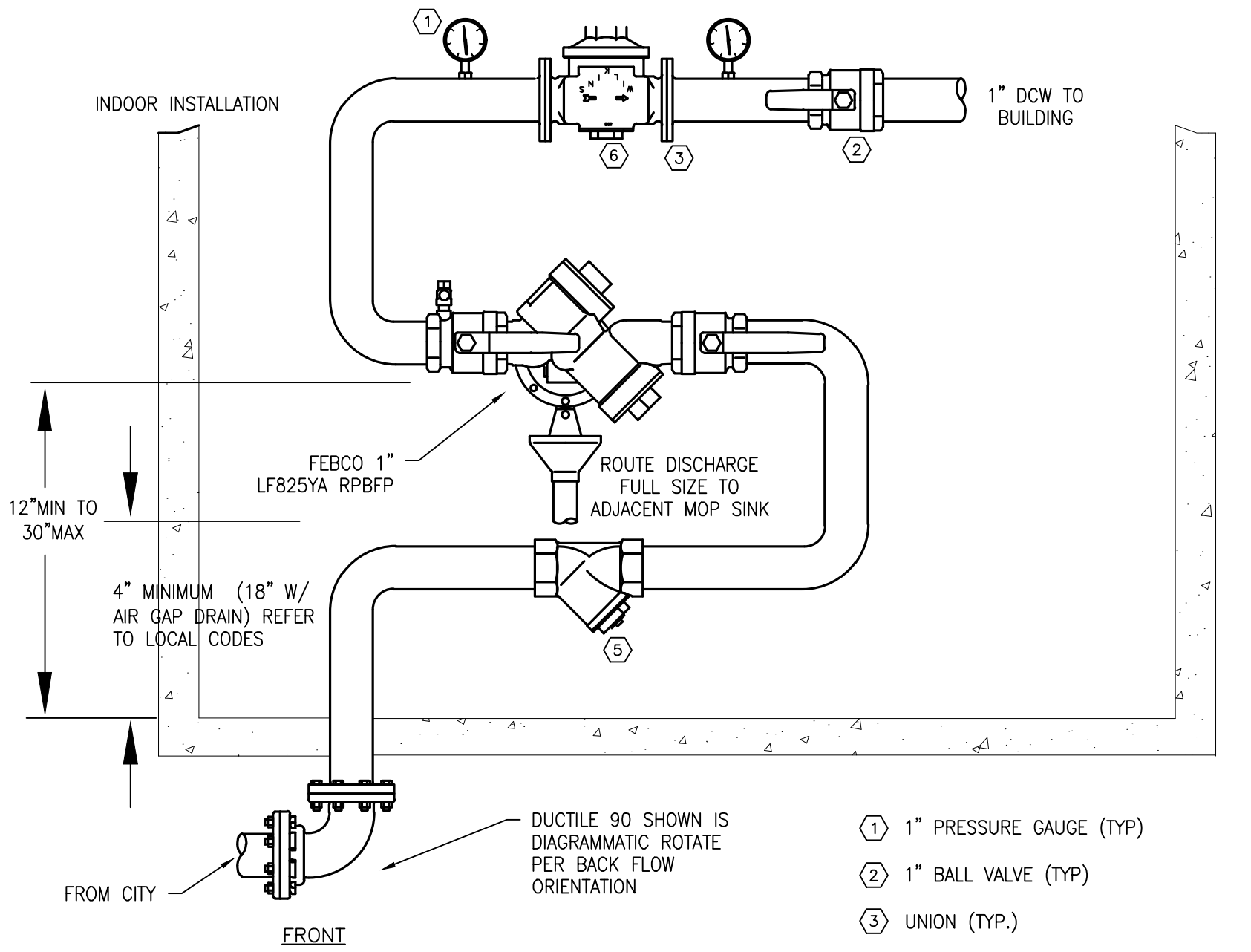
ELECTRIC WATER HEATER DETAIL

NOT TO SCALE



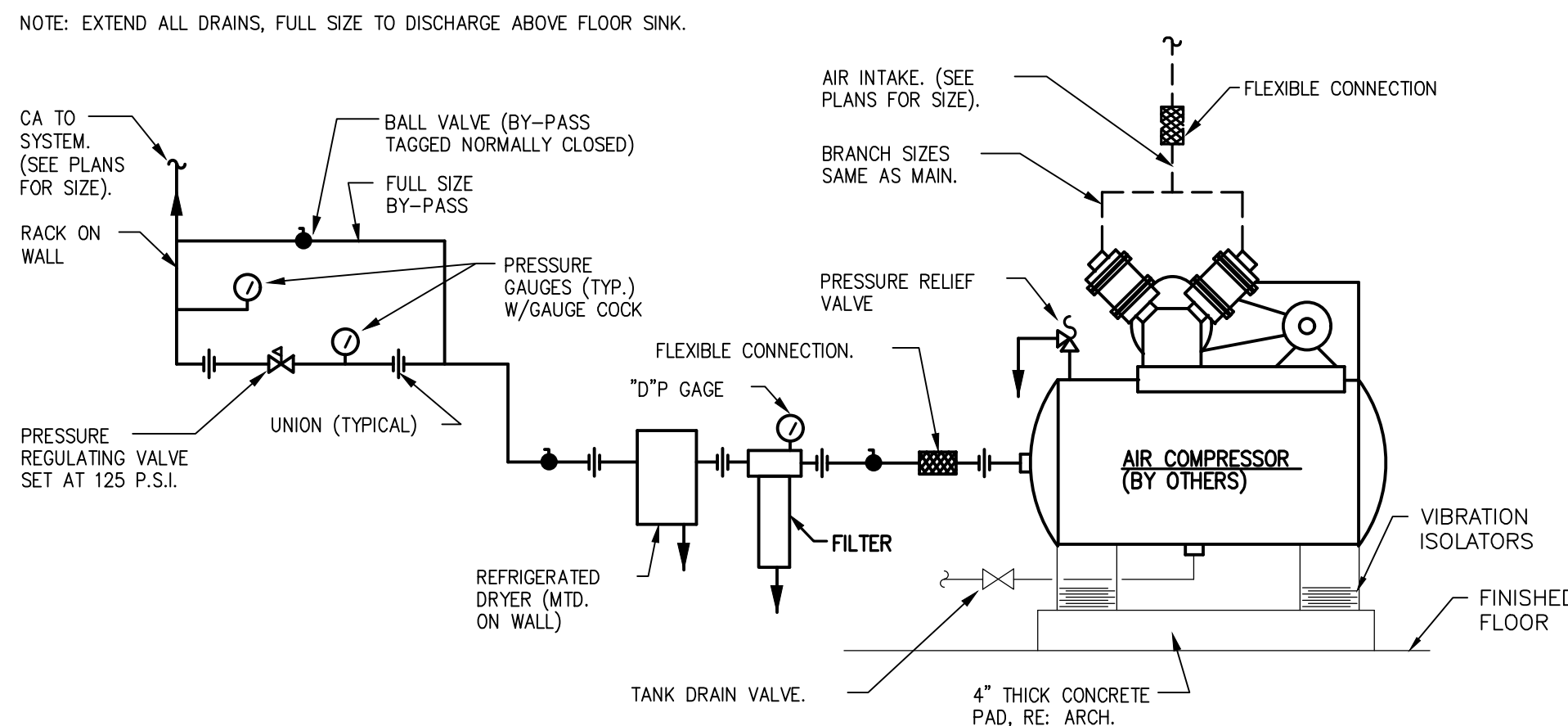
THERMOSTATIC MIXING VALVE DETAIL

NOT TO SCALE



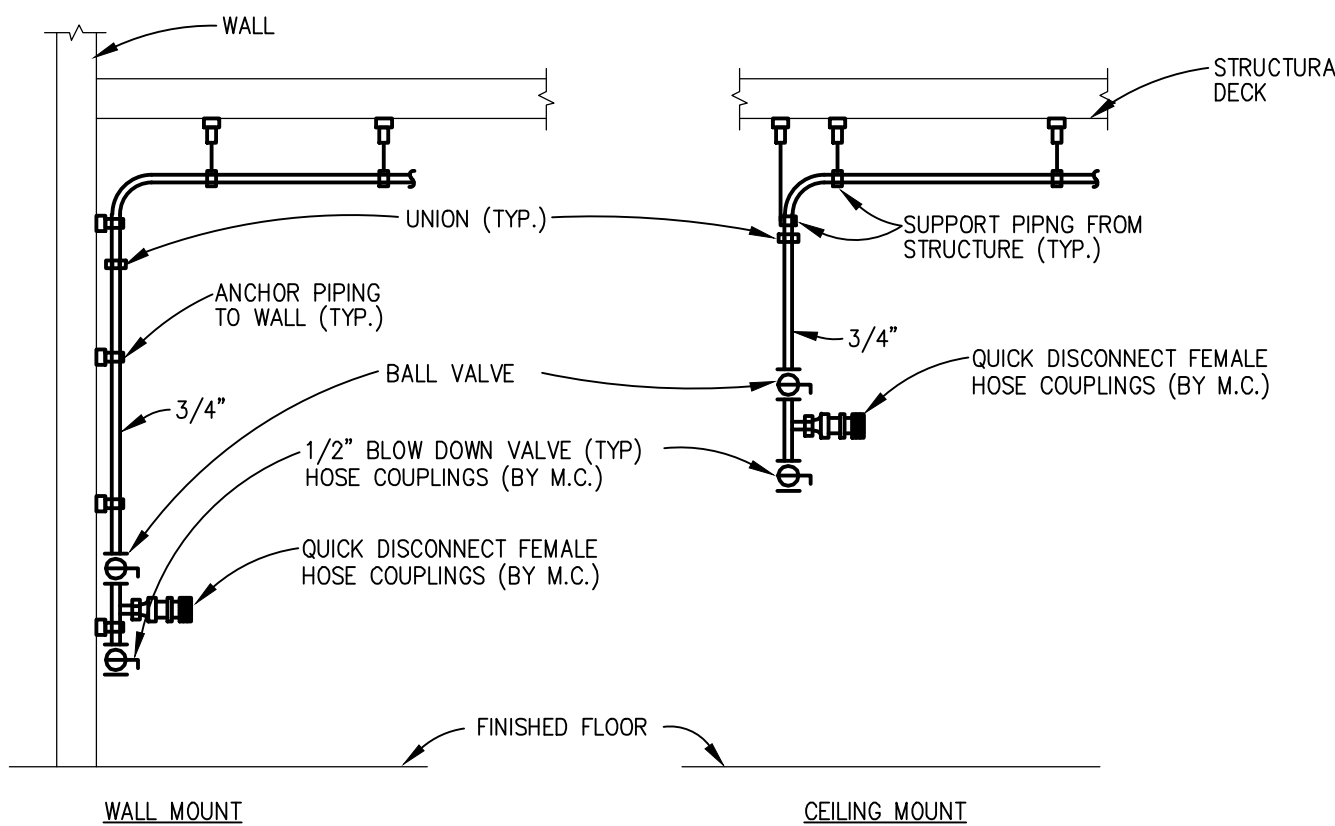
DOMESTIC WATER ENTRY
BACKFLOW DETAIL

NOT TO SCALE



AIR COMPRESSOR PIPING DETAIL

NOT TO SCALE



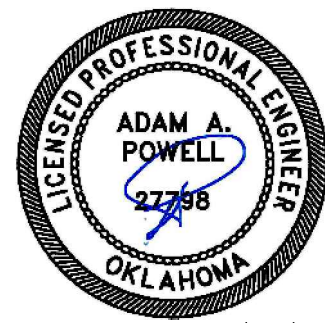
COMPRESSED AIR CONNECTION DETAILS

NOT TO SCALE

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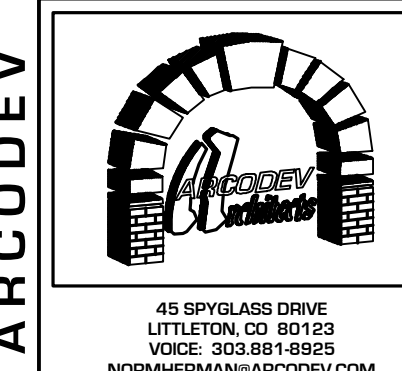


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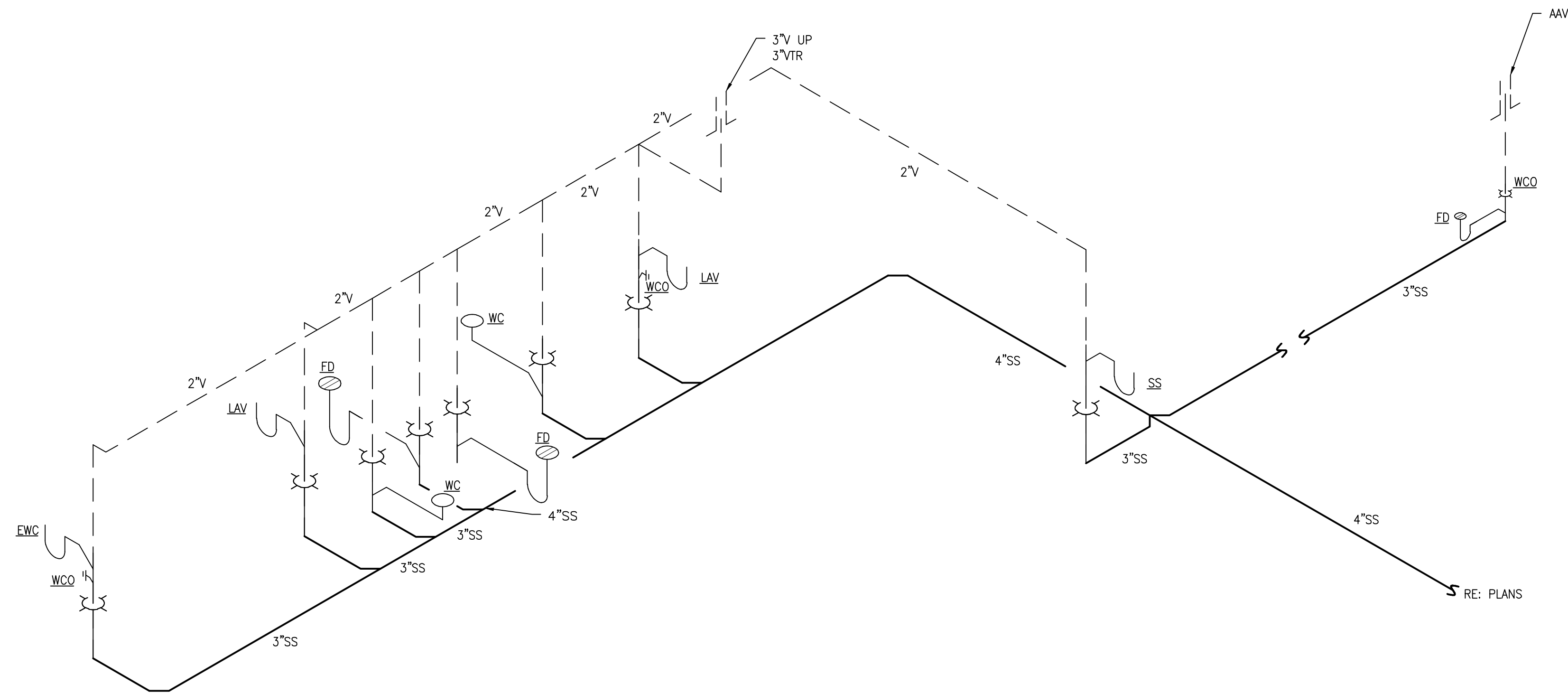
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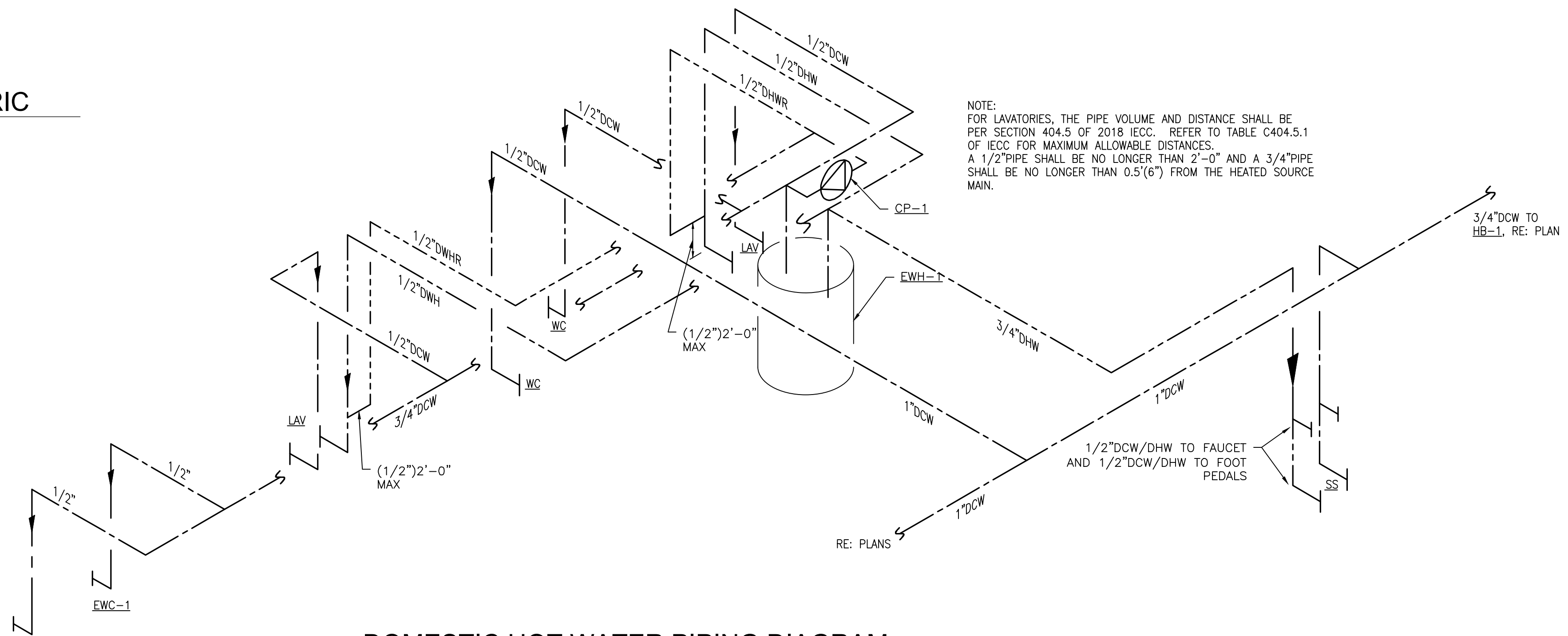
P3.1

PLUMBING DETAILS



SANITARY SEWER ISOMETRIC

NOT TO SCALE



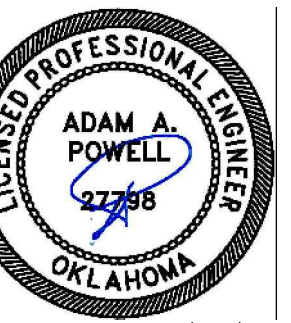
DOMESTIC HOT WATER PIPING DIAGRAM

NOT TO SCALE

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SHEET

P4.0

PLUMBING ISOMETRICS

ELECTRICAL GENERAL NOTES

1. DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK.
2. FINAL CONNECTIONS & ROUGH-IN REQUIREMENTS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
3. CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL, MECHANICAL AND OTHER DRAWINGS PRIOR TO BID.
4. CONTRACTOR SHALL VISIT SITE PRIOR TO BID AND VERIFY THAT CONDITIONS ARE AS INDICATED. CONTRACTOR SHALL REPORT DISCREPANCIES TO THE ARCHITECT AND INCLUDE IN HIS BID ALL COSTS REQUIRED TO MAKE HIS WORK MEET EXISTING CONDITIONS.
5. PROPOSED SUBSTITUTIONS OF ELECTRICAL EQUIPMENT OR REQUEST FOR "OR EQUAL" OR "APPROVED EQUAL" LISTING SHALL BE SUBMITTED TO ARCHITECT NOT LESS THAN TEN (10) WORKING DAYS PRIOR TO BID.
6. WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE ARCHITECT.
7. WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST ADOPTED EDITIONS OF LOCAL, STATE, AND NATIONAL CODES AND ORDINANCES.
8. PROVIDE PERMITS AND INSPECTIONS REQUIRED.
9. PROVIDE RECORD DRAWINGS TO ARCHITECT. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTINGS, ETC.
10. VERIFY EXACT LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
11. SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO OWNER.
12. WIRE SHALL BE COPPER, 75 DEGREE C RATED FOR GENERAL USE. FOR HID FIXTURES AND WIRING WITHIN 3 INCHES OF FLUORESCENT BALLASTS, WIRE SHALL BE COPPER, MINIMUM 90 DEGREE C RATED. SIZES INDICATED ARE FOR INSTALLATION IN A MAXIMUM 30 DEGREE C AMBIENT. CONDUCTOR AMPACITY SHALL BE DERATED FOR HIGHER AMBIENT INSTALLATIONS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING PROVIDED UNDER THIS SECTION OR FACTORY WIRING IN EQUIPMENT PROVIDED UNDER THIS SECTION.
14. CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS OR EQUIPMENT.
15. SYSTEMS SHALL BE COMPLETE, OPERABLE AND READY FOR CONTINUOUS OPERATION. LIGHTS, SWITCHES, RECEPTACLES, MOTORS, ETC., SHALL BE CONNECTED AND OPERABLE.
16. VERIFY EXACT LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES, PIPING AND RACEWAY SYSTEMS PRIOR TO TRENCHING. PROVIDE NECESSARY TRENCHING, BACKFILL, EXCAVATION SUPPORTS, SERVICE FEEDERS (CONDUIT AND/OR WIRE), PULLBOXES, TRANSFORMER PADS, SAWCUTTING AND PATCHING, CONCRETE/PAVING, ETC., REQUIRED. BACKFILL TRENCHES TO 90% COMPACTION AND PATCH TO MATCH EXISTING. CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS.
17. PROVIDE MAINTENANCE RECEPTACLE WITHIN 25'-0" OF ALL MECHANICAL OR MOTORIZED EQUIPMENT.

18. SEE MECHANICAL DRAWINGS FOR LOCATION OF MECHANICAL EQUIPMENT. PROVIDE SERVICE TO AND CONNECT EQUIPMENT AS REQUIRED. PROVIDE FUSES OR HACR-TYPE CIRCUIT BREAKERS FOR ALL AIR CONDITIONING EQUIPMENT SIZED IN ACCORDANCE WITH MANUFACTURER'S NAMEPLATE.
19. PROVIDE ENGRAVED NAMEPLATES ON PANELBOARDS, DISCONNECT SWITCHES, ETC. INDICATING EQUIPMENT DESIGNATION (OR DESIGNATION OF EQUIPMENT SERVED) AND VOLTAGE. NAMEPLATES TO BE MECHANICALLY FASTENED.
20. PANEL DIRECTORIES SHALL BE TYPED AND INSTALLED UNDER CLEAR PLASTIC COVERS.
21. ALL WIRING SHALL BE INSTALLED IN LISTED METALLIC RACEWAYS. RACEWAYS IN SLAB-ON-GRADE OR BELOW GRADE SHALL BE SCHEDULE 40 PVC. TRANSITIONS FROM BELOW TO ABOVE GRADE SHALL BE WITH RIGID STEEL ELBOWS WITH P.V.C. JACKET OR APPROVED EQUAL PROTECTION.
22. EMT, NON-METALLIC AND FLEXIBLE METAL CONDUITS SHALL HAVE A CODE SIZED COPPER GROUNDING CONDUCTOR. INCREASE CONDUIT SIZE AS REQUIRED.
23. FIRE ALARM, SOUND, TELEPHONE, COMPUTER, AND SIMILAR SYSTEMS CONDUITS LARGER THAN 1" SHALL HAVE LONG RADIUS SWEEPS (12 TIMES THE DIAMETER).
24. ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.L.
25. WIRE TERMINATION PROVISIONS FOR PANELBOARDS, CIRCUIT BREAKERS, SAFETY SWITCHES, AND ALL OTHER ELECTRICAL APPARATUS SHALL BE LISTED AS SUITABLE FOR 75 DEGREE C.
26. RECEPTACLES INSTALLED OUTSIDE, ON THE BUILDING EXTERIOR OR ROOF, WITHIN 6' OF A SINK OR WATER COOLER CONNECTION, VENDING MACHINES, AND KITCHEN AREAS SHALL BE GFCI TYPE OR PROTECTED BY GFCI CIRCUIT BREAKER PER NEC 511.12.
27. ALL NEW EQUIPMENT SUCH AS SWITCHBOARDS, DISTRIBUTION PANELS, DISCONNECT SWITCHES, TRANSFORMERS, AND PANELBOARDS SHALL BE BY THE SAME MANUFACTURER.
28. ELECTRICAL CONTRACTOR SHALL SUBMIT 5 COPIES OF ALL ELECTRICAL EQUIPMENT AND LIGHT FIXTURES TO ENGINEER VIA GENERAL CONTRACTOR FOR APPROVAL PRIOR TO ORDERING.
29. ELECTRICAL CONTRACTOR TO PROVIDE FINAL CONNECTION OF OWNER FURNISHED EQUIPMENT. VERIFY EXACT REQUIREMENTS PRIOR TO ROUGH-IN.
30. HANDLE TIES SHALL BE PROVIDED FOR ALL MULTI-WIRED BRANCH CIRCUITS UNLESS INDIVIDUAL NEUTRAL CONDUCTORS ARE PROVIDED PER NEC 210.4(B).
31. FURNISH ALL MECHANICAL EQUIPMENT WITH FUSIBLE DISCONNECTS. THESE DISCONNECTS SHALL BE EQUIPED WITH CLASS "R" FUSES.

ALL ELECTRICAL WORK SHALL COMPLY WITH N.E.C. REQUIREMENTS

ELECTRICAL SHEET INDEX

							SHEET NO.	SHEET DESCRIPTION
						5-27-24 PERMIT	E0.1	ELECTRICAL COVER SHEET
							ES1.1	ELECTRICAL SITE PLAN
							E1.1	ELECTRICAL LIGHTING PLAN
							E2.1	ELECTRICAL POWER PLAN
							E3.1	ELECTRICAL ROOF PLAN
							E4.1	ELECTRICAL ONE LINE DIAGRAM
							E5.1	LIGHTING COMPLIANCE CERTIFICATES

ELECTRICAL LEGEND

	DUPLEX OUTLET
	DEDICATED DUPLEX OUTLET
	AUTOCLAVE RECEPTACLE
	FOUR- PLEX OUTLET
	220-VOLT OUTLET
	FLOOR OUTLET
	TELEPHONE JACK
	TELEPHONE JACK +60"
	DATA JACK
	PLUGMODE
	ABOVE COUNTER
	LIGHT SWITCH @ 56" AFF
	THREE-WAY LIGHT SWITCH @56' AFF
	TELEPHONE BACKBOARD W/ OUTLET
	ELECTRICAL PANEL
	TIME CLOCK
	SIGN OUTLET
	JUNCTION BOX
	THERMOSTAT

VERIFY ELECTRICAL REQUIREMENTS WITH OWNER PRIOR TO INSTALLATION

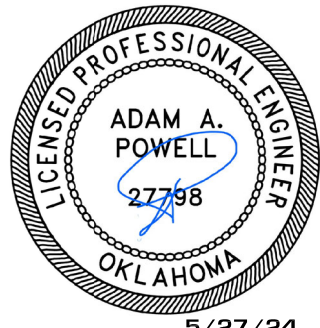
FIRE ALARM LEGEND

	MINI HORN/STROBE +90" A.F.F.
	MANUAL FIRE ALARM PULL STATION +48" A.F.F.

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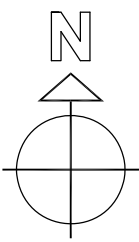
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E0.1

ELECTRICAL
COVER SHEET

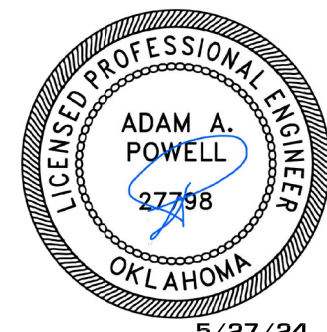


1 ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"



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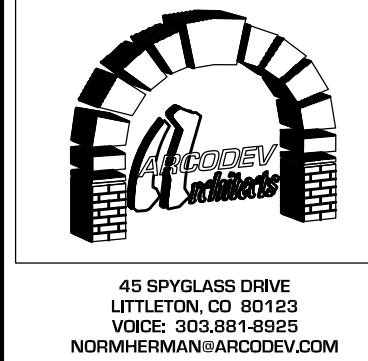
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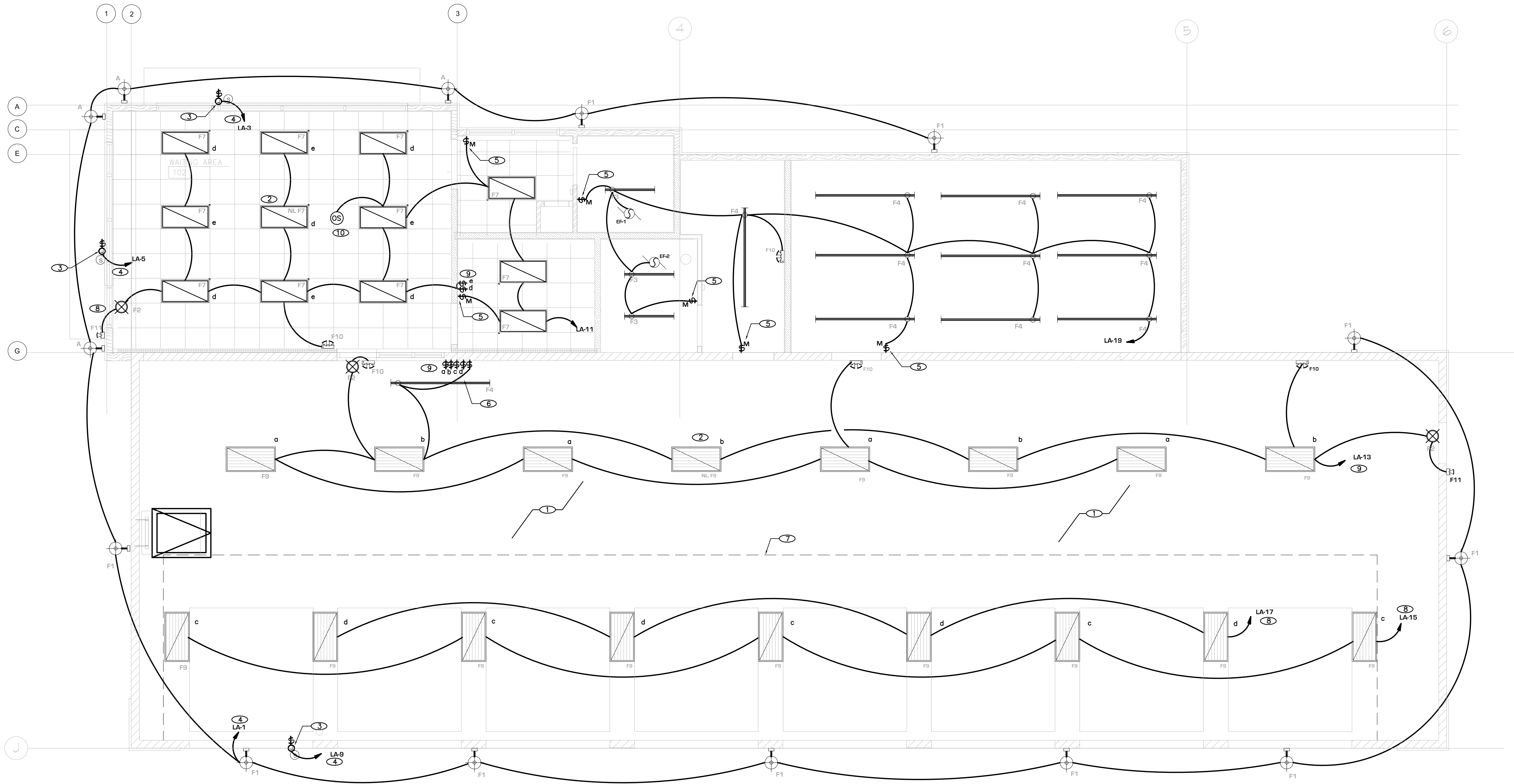
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SHEET

ES1.1

ELECTRICAL
SITE PLAN



LIGHTING GENERAL NOTES

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LUMINAIRE LOCATIONS.
2. COORDINATE LUMINAIRE LOCATION WITH MECHANICAL PIPING, DUCTWORK, ETC. TO AVOID CONFLICTS.
3. ALL CONDUIT SHALL BE INSTALLED CONCEALED IN FINISHED AREAS UNLESS OTHERWISE NOTED.
4. EACH MULTIWIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A SEPARATE NEUTRAL FOR EACH BRANCH CIRCUIT.
5. CONNECT EXTERIOR LUMINAIRES WITH MINIMUM #10 AWG CONDUCTOR.

LIGHTING DETAIL NOTES

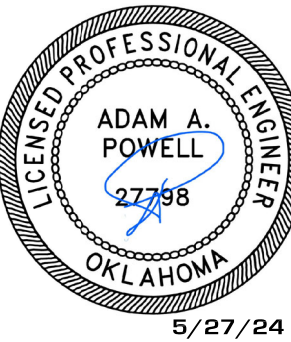
- 1 MOUNT TYPE 'F9' LUMINAIRES LOCATED IN GARAGE AREA CHAIN HUNG FROM STRUCTURE AT 12'-0" A.F.F. MOUNT TYPE 'F9' LUMINAIRES LOCATED BETWEEN OVERHEAD DOORS AT 2" BELOW OVERHEAD GRILLE GUIDES.
- 2 NIGHT LIGHT UNSWITCHED FIXTURE. CONNECT AHEAD OF LOCAL SWITCHING OR LIGHT CONTROLS.
- 3 JUNCTION BOX / DISCONNECTING MEANS FOR CONNECTION TO OWNER PROVIDED ILLUMINATED BUILDING SIGNAGE. COORDINATE EXACT LOCATION WITH SIGN CONTRACTOR PRIOR TO ROUGH-IN.
- 4 LUMINAIRE OR SIGN BRANCH CIRCUIT CONTROLLED THROUGH PHOTOCELL ON/TIMECLOCK OFF.
- 5 PROVIDED OCCUPANCY SENSOR ON/OFF SWITCH FOR CONTROL OF LIGHTING WITHIN THIS ROOM. SWITCH TO BE MANUFACTURED BY WATT STOPPER #LMPW-100.
- 6 CENTER FIXTURE OVER SERVICE MANAGER'S DESK.

- 7 DASHED LINE INDICATES DAYLIGHT ZONE.
- 8 CIRCUIT SWITCHED VIA DAYLIGHT PHOTOCELL SENSORS (DAYLIGHT RESPONSIVE CONTROLS) CONFIGURED TO COMPLETELY SHUT OFF ALL CONTROLLED LIGHT FIXTURES, IN ACCORDANCE WITH SECTION C405.2.3 OF THE 2009 IECC.
- 9 PROVIDED BI-LEVEL SWITCHING LIGHT-REDUCTION CONTROLS, IN ACCORDANCE WITH SECTION C405.2.3.1 OF THE 2009 IECC.
- 10 CEILING MOUNTED OCCUPANCY SENSOR.

1 ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"

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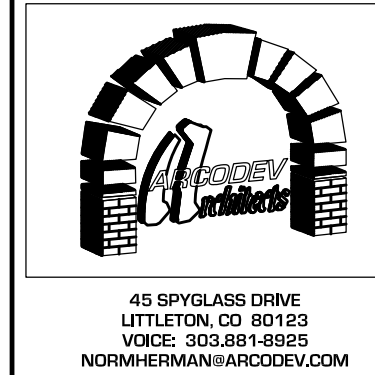
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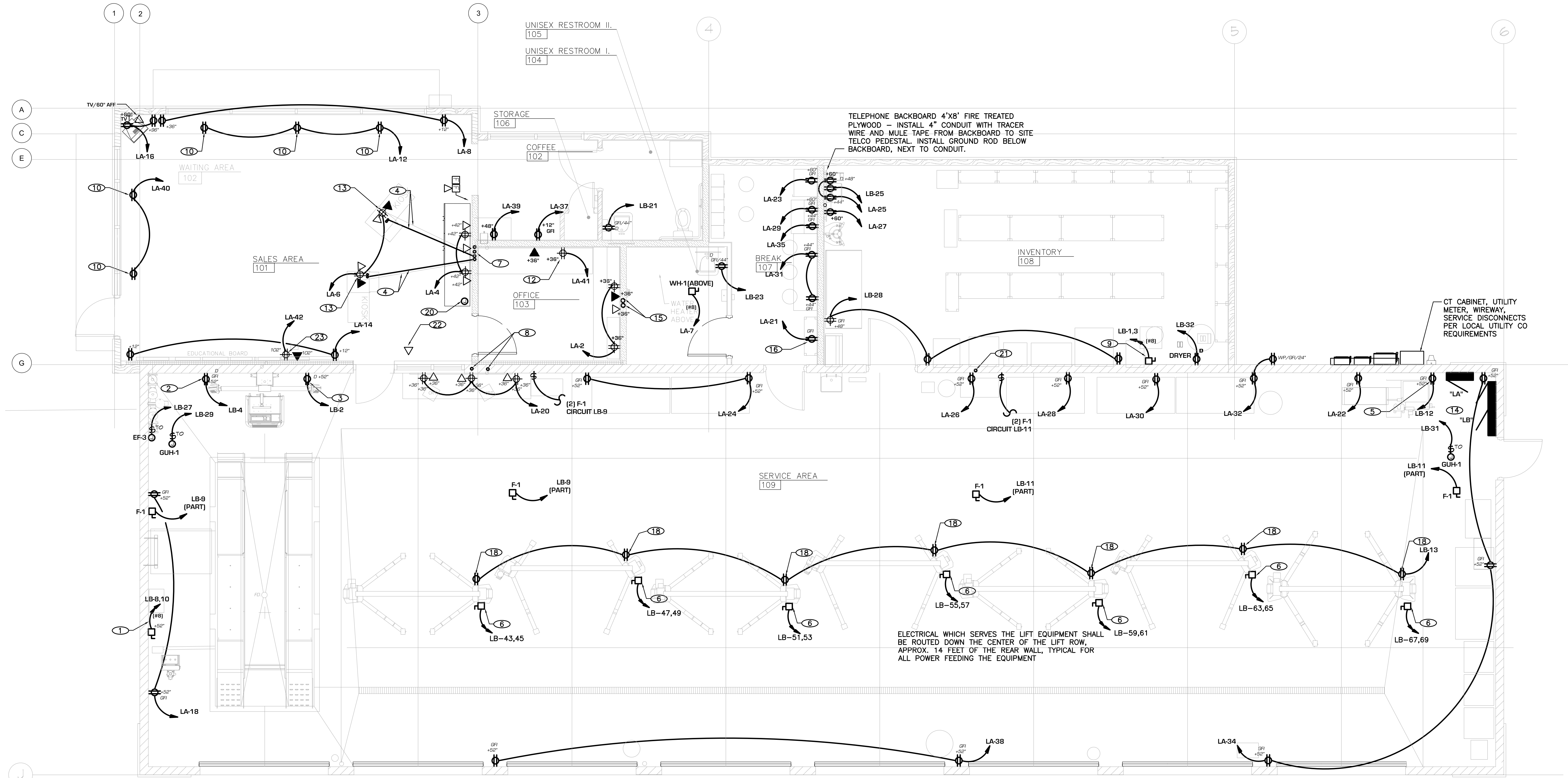
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SHEET

E1.1

ELECTRICAL
LIGHTING PLAN



POWER GENERAL NOTES

- REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT AND/OR LOCATION OF DEVICES PRIOR TO ROUGH-IN.
- COORDINATE REQUIREMENTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
- MAKE ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT.
- ALL CONDUIT SHALL BE INSTALLED CONCEALED IN FINISHED AREAS UNLESS OTHERWISE NOTED.
- EACH MULTIWIRED BRANCH CIRCUIT SHALL BE PROVIDED WITH A SEPARATE NEUTRAL FOR EACH BRANCH CIRCUIT.
- COORDINATE REQUIREMENTS AND LOCATIONS OF OWNER SUPPLIED EQUIPMENT WITH OWNER AND EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
- PROVIDE GFCI PROTECTION FOR ALL 125V, 15-20A RECEPTACLES INSTALLED IN THE SERVICE BAY AREAS WHERE DIAGNOSTIC EQUIPMENT, POWER TOOLS, OR LIGHTING EQUIPMENT IS USED PER N.E.C. ARTICLE 511.12.

8. ELECTRICAL INSTALLATION SHALL COMPLY WITH N.E.C. ARTICLE 511:

- ALL AREAS DESIGNATED AS HAZARDOUS (CLASSIFIED) LOCATIONS SHALL BE PROPERLY DOCUMENTED. THIS DOCUMENTATION SHALL BE AVAILABLE TO THOSE AUTHORIZED TO DESIGN, INSTALL, INSPECT, MAINTAIN, OR OPERATE ELECTRICAL EQUIPMENT AT THE LOCATION. PER N.E.C. ARTICLE 500.4, MAINTENANCE BAYS ARE MAJOR REPAIR GARAGE AND MUST COMPLY WITH N.E.C. ARTICLE 511.3.
- FLOOR AREAS ARE CLASS 1 DIVISION 2 CLASSIFIED UP TO A LEVEL OF 18" PER N.E.C. TABLE 511.3(C). THIS AREA SHALL COMPLY WITH ARTICLE 511.3(C) AND HAVE WIRING AND DEVICES INSTALLED PER N.E.C. ARTICLE 501.10(B).
- GARAGE AREA IS PROVIDED WITH VENTILATION OF AT LEAST 1 CUBIC FOOT PER MINUTE FOR EACH SQUARE FT OF FLOOR AREA, WITH SUCTION TAKEN FROM A POINT WITHIN 18" OF HIGHEST POINT IN THE CEILING. NO LIGHTER-THAN-AIR GASEOUS FUELS ARE UTILIZED IN THIS AREA. PER N.E.C. ARTICLE 511.3(D) THIS AREA IS UNCLASSIFIED.

POWER DETAIL NOTES

- ALIGNMENT RACK. PROVIDE 40A/2P DISCONNECT SWITCH AS REQUIRED FOR CONNECTION TO EQUIPMENT. CONNECT TO BRANCH BREAKER AS INDICATED VIA 2#8, 1#10G - 1" C.
- ALIGNMENT MACHINE. PROVIDE 20 AMP, 120 VOLT GFI DUPLEX RECEPTACLE AS REQUIRED FOR CONNECTION TO EQUIPMENT. CONNECT TO BRANCH BREAKER AS INDICATED VIA 2#12, 1#12G - 1/2" C.
- ALIGNMENT SENSORS. PROVIDE 20 AMP, 120 VOLT GFI DUPLEX RECEPTACLE AS REQUIRED FOR CONNECTION TO EQUIPMENT. CONNECT TO BRANCH BREAKER AS INDICATED VIA 2#12, 1#12G - 1/2" C.
- PROVIDE (2) 1" ELECTRICAL CONDUITS FROM JUST ABOVE CEILING, THROUGH THE WALL, AND UNDER FLOOR SLAB TO EACH KIOSK. CONDUIT #1 (FOR POWER) SHALL BE 7'-0" FROM REAR WALL AND 2'-6" FROM CENTERLINE OF FRONT DOOR. CONDUIT #2 (FOR DATA) WILL BE JUST TO THE OUTSIDE OF CONDUIT #1 AND SLIGHTLY BACK TO ALLOW FOR ANGLE MOUNTING OF KIOSK.
- BRAKE LATHE. PROVIDE 20 AMP, 120 VOLT GFI DUPLEX RECEPTACLE AS REQUIRED FOR CONNECTION TO EQUIPMENT. CONNECT TO BRANCH BREAKER AS INDICATED VIA 2#12, 1#12G - 1/2" C.
- PROVIDE POWER FOR LIFTS, 208V, 1PH, 25A CIRCUIT, 17FLA. VERIFY EXACT LOCATION AND REQUIREMENTS PRIOR TO ROUGH-IN AND INSTALLATION.
- PROVIDE TWO 1" EMPTY CONDUITS WITH PULL STRINGS FROM THE PRINTER DESK WALL BOX TO THE CEILING PLENUM.
- PROVIDE TWO 1" EMPTY CONDUITS WITH PULL STRINGS AT THE SERVICE MANAGER'S DESK FROM THE WALL BOX UP TO THE CEILING PLENUM.
- AIR COMPRESSOR. PROVIDE (1) 60A/2P DISCONNECT SWITCH AS REQUIRED FOR CONNECTION TO EACH MOTOR. CONNECT TO BRANCH BREAKER AS INDICATED VIA 2#8, 1#10G - 3/4" C.
- PROVIDE FLUSH MOUNTED DUPLEX RECEPTACLE LOCATED IN CEILING FOR SHOW WINDOW RECEPTACLES.
- INTERLOCK EF-3 WITH LV-1
- PROVIDE FOUR-PLEX RECEPTACLE FOR CONNECTION TO OWNER SUPPLIED COMPUTER SERVER. COORDINATE LOCATION AND MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH-IN.
- COORDINATE LOCATION OF DUPLEX RECEPTACLE AND DATA OUTLET IN MILLWORK PRIOR TO ROUGH-IN.
- MAINTAIN NEC REQUIRED CLEARANCES AT PANELS.

- PROVIDE 1" EMPTY CONDUIT WITH PULL STRING IN MANAGER'S OFFICE AT EACH WORK STATION FROM THE WALL BOX TO THE CEILING PLENUM.
- PROVIDE DUPLEX RECEPTACLE FOR CONNECTION TO IRRIGATION CONTROLLER. COORDINATE EXACT LOCATION WITH LANDSCAPE CONTRACTOR.
- WEATHERPROOF RECEPTACLE PROVIDED WITH ROOF TOP UNIT, E.C. TO INSTALL.
- GFI DUPLEX RECEPTACLE PROVIDED WITH LIFT. CONNECT 120 VOLT RECEPTACLE TO BRANCH CIRCUIT SERVING LIFT.
- PROVIDE 1" EMPTY CONDUIT WITH PULL STRING FROM COMPUTER STATION LOCATION WALL BOX TO THE CEILING PLENUM.
- ALARM PAD - PROVIDE 3/4" EMPTY CONDUIT STUBBED ABOVE CEILING. VERIFY EXACT LOCATION AND REQUIREMENTS PRIOR TO ROUGH-IN AND INSTALLATION.
- PROVIDE 1" EMPTY CONDUIT WITH PULL STRING FROM TECH PERSON COMPUTER LOCATION WALL BOX TO THE CEILING PLENUM.
- DATA OUTLET ABOVE CEILING FOR WIRELESS ROUTER. VERIFY EXACT LOCATION AND REQUIREMENTS PRIOR TO ROUGH-IN AND INSTALLATION.
- DUPLEX RECEPTACLE AND DATA OUTLET FOR MENU TV. VERIFY EXACT LOCATION AND REQUIREMENTS PRIOR TO ROUGH-IN AND INSTALLATION.

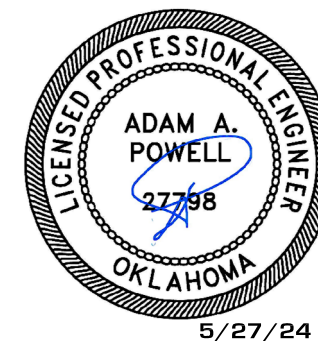
ELECTRICAL POWER PLAN

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

ADAM A. POWELL, P.E.
PEC Enterprises, Inc.
14412 Alene Ct. NE
Albuquerque, NM 87123
Telephone 720-409-2454

BRAKES PLUS

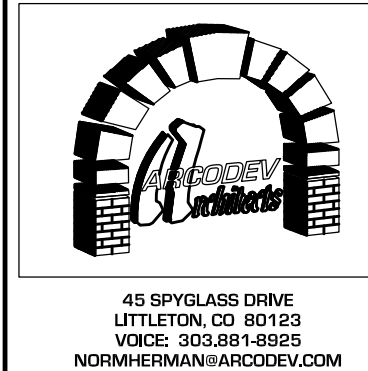
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OKLAHOMA CITY, OKLAHOMA



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REVISION DATE COMMENTS

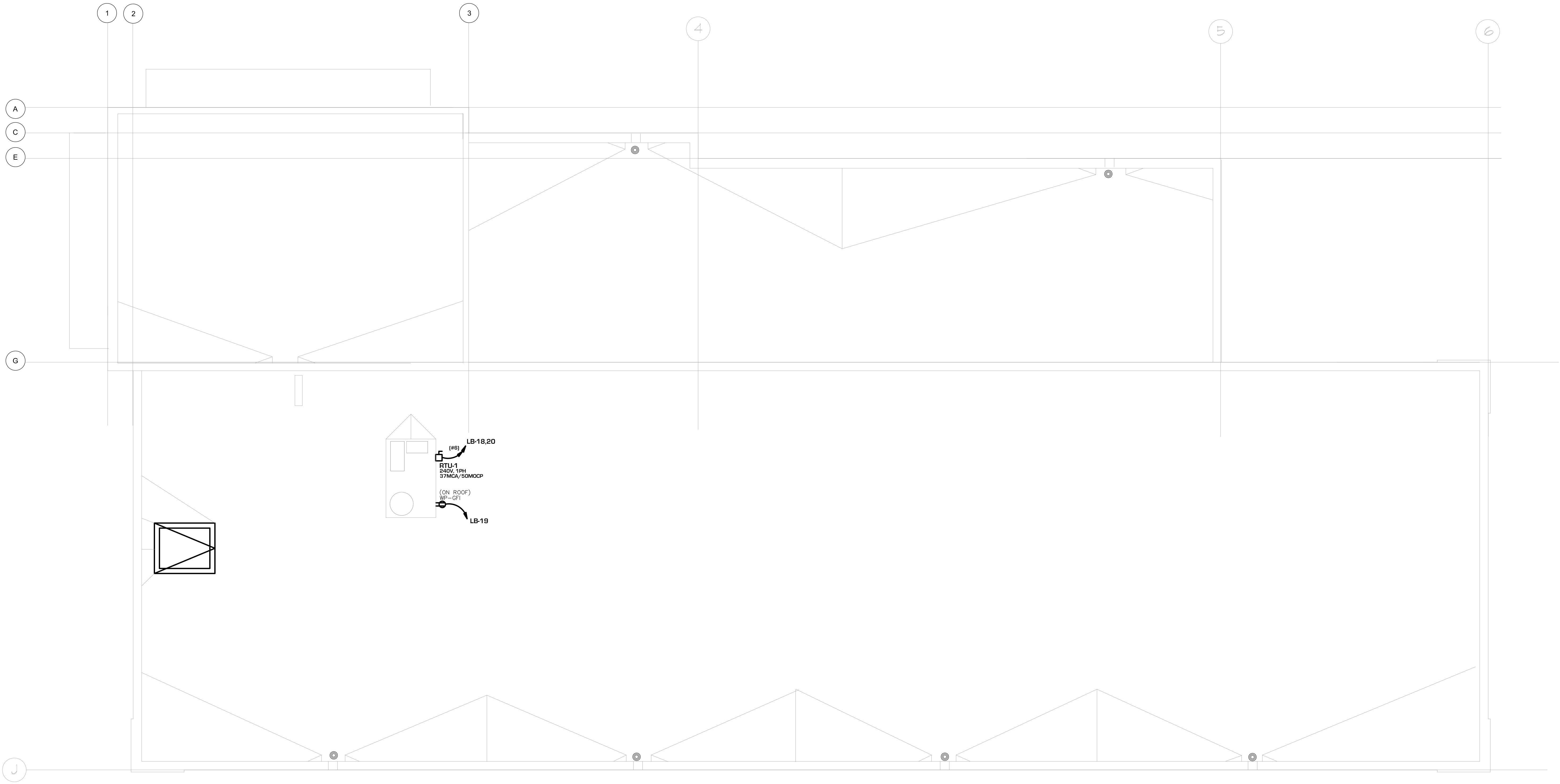
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CLIENT JOB #:
DRAWN BY: SB
CHECKED BY: LRP
DATE OF ISSUE: 05.27.24



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ELECTRICAL
POWER PLAN

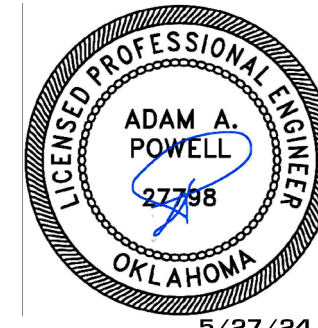


1 ELECTRICAL ROOF PLAN
SCALE: 1/4" = 1'-0"

ADAM A. POWELL, P.E.
PEC Enterprises, Inc.
14412 Alene Ct. NE
Albuquerque, NM 87123
Telephone 720-409-2454

BRAKES PLUS

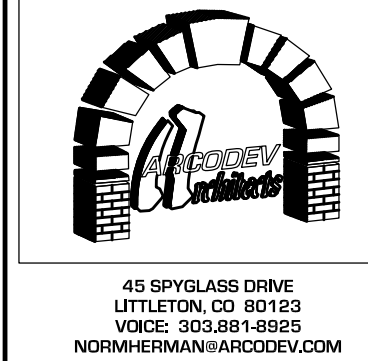
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CHECKED BY: _____ LRP
DATE OF ISSUE: 05.27.24



45 SPYGLASS DRIVE
LITTLETON, CO 80123
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NORM.HERMAN@ARCDEV.COM

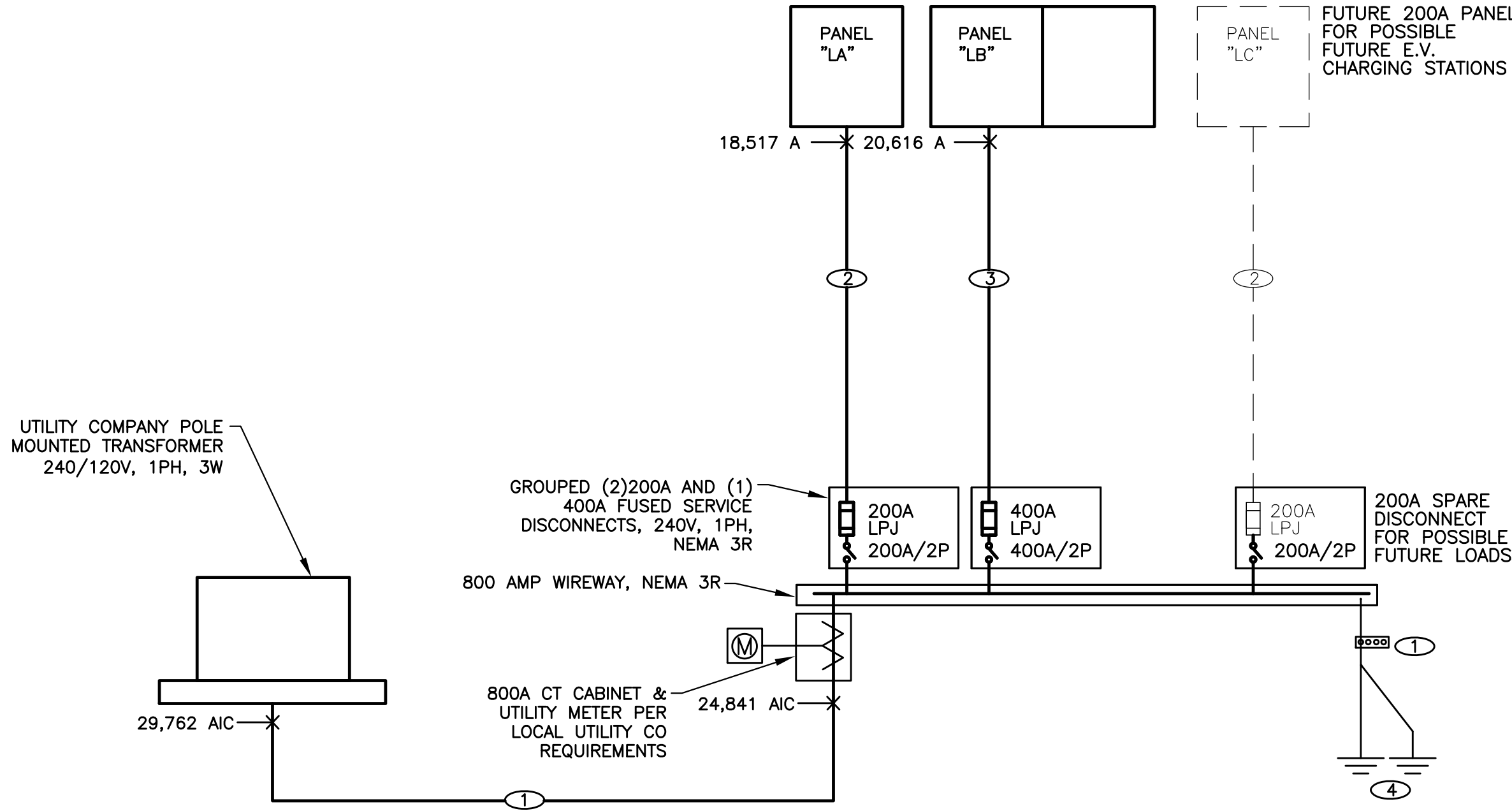
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E3.1

ELECTRICAL
ROOF PLAN

MECHANICAL EQUIPMENT SCHEDULE											
DESIGNATION	DESCRIPTION	LOAD				VOLTAGE	PHASE	DISCONNECT SIZE	FUSE SIZE	FEEDER SIZE	REMARKS
		HP	KVA	FLA	MCA						
RTU-1	ROOF TOP UNIT			31.3	37.0	240	1	60A/2P	50A FRN-R	(2#6, 1#10G, 1-1/4"C)	
EF-1	EXHAUST FAN		100W			120	1	SMT0	-	(2#12, 1#12G, 3/4"C)	
EF-2	EXHAUST FAN		100W			120	1	SMT0	-	(2#12, 1#12G, 3/4"C)	
EF-3	EXHAUST FAN	1/2	1176W	9.8		120	1	SMT0	-	(2#12, 1#12G, 3/4"C)	
F-1	AIR CIRCULATION FAN	1/4	696W	5.8		120	1	30A/1P	9A FRN-R	(2#12, 1#12G, 3/4"C)	
GUH-1	GAS UNIT HEATER	1/2				120	1	SMT0	-	(2#12, 1#12G, 3/4"C)	
EWB-1	WATER HEATER		1.5KW			120	1	-	-	(2#12, 1#12G, 3/4"C)	
REMARKS 1. UNIT FURNISHED WITH INTEGRAL DISCONNECT. 1. PROVIDE MOTOR RATED SWITCH WITH THERMAL OVERLOAD.											

LIGHT FIXTURE SCHEDULE ALL FIXTURES FURNISHED AND INSTALLED BY GENERAL CONTRACTOR											
SYMBOL	MARK	QUANTITY	DESCRIPTION	MANUF.	CAT. NO.	LAMP	MOUNTING	VOLTAGE	REMARKS		
	A	4	EXTERIOR DECORATIVE LIGHT FIXTURE	COOPER LIGHTING	303-W1-LED82-3000-UNV-T4-DIM10	16W LED	WALL	120	REFER TO ELEVATIONS FOR MOUNTING LOCATIONS - DARK BRONZE FINISH		
	F1	10	EXTERIOR DECORATIVE LIGHT FIXTURE	MCGRAW EDISON	1ST-SA1F-730-U-T4FT	25W LED	WALL	120	REFER TO ELEVATIONS FOR MOUNTING LOCATIONS - DARK BRONZE FINISH		
	F2	3	EXIT SIGN	COOPER LIGHTING	APC7 G	LED	WALL/CENTER ON DOOR	120	PROVIDE EMERGENCY BATTERY PACK (90 MINUTE MIN.)		
	F3	3	4'-0" STRIP LED	COOPER LIGHTING	4SNLED LD5 UNV	38W LED	UNIVERSAL	120	MOUNT AT 12'-0" AFF		
	F4	11	8'-0" STRIP LED	COOPER LIGHTING	8TSNLED LD5 UNV	61W LED	UNIVERSAL	120	MOUNT AT 12'-0" AFF		
	F7	12	2x4 RECESSED LED TROFFER	COOPER LIGHTING	24CGT 4540C	39W LED	GRID MOUNT	120			
	F9	17	4' - LED HIGHBAY	COOPER LIGHTING	LHB 18 UNV	87W LED	HUNG FROM STRUCT.	120			
	F10	6	EMERGENCY LIGHT W/ BATTERY BACKUP	COOPER LIGHTING	SEL 25	LED	WALL MOUNTED	120	PROVIDE EMERGENCY BATTERY PACK (90 MINUTE MIN.) AND TIME DELAY RELAY		
	F11	2	EMERGENCY EGRESS LIGHT - EXTERIOR	COOPER LIGHTING	AEL 246	LED	SURFACE	120	PROVIDE EMERGENCY BATTERY PACK (90 MINUTE MIN.)		



LOAD CALCULATIONS				
LIGHTING	9.1 @ 125%	=	11.4 kVA	
RECEPTACLE	10.0 @ 100%	=	10.0 kVA	
BALANCE	3.1 @ 50%	=	1.6 kVA	
MECHANICAL	12.4 @ 100%	=	12.4 kVA	
25% OF LARGEST		=	1.9 kVA	
SPECIAL	55.7 @ 100%	=	55.7 kVA	
TOTAL		=	93.0 kVA	(388 A)

SHORT CIRCUIT CALCULATIONS

POINT TO POINT METHOD FOR SHORT CIRCUIT CALCULATIONS ILLUSTRATED IN
BUSSMAN MANUFACTURING PUBLICATION FORM SPD90.
SERVICE: 120/240 V_{L-L}, 1-PHASE, 3W
 $I_{f.f.} = \frac{100 \times 1000}{240} = 416.67$
MULTIPLIER = $\frac{100}{1.4} = 71.43$
AVAILABLE SHORT CIRCUIT CURRENT FROM UTILITY = 29,762 A.
FIND FACTOR $f = 2.0 \times (\text{length in feet}) \times (\text{short circuit current})$
(constant from Table C) \times (line-to-line voltage)
 $f = 2.0 \times 200 \times 29,762 = 0.792$
 $3 \times 20,868 \times 240$
FIND FACTOR $M = \frac{1}{1 + f} = 0.5579$
SHORT CIRCUIT CURRENT AT CT/MAIN = $M \times$ AVAILABLE S.C. CURRENT
 $I = 16,605$ A.
LENGTH IN FEET = 16
FACTOR $f = 0.183$
FACTOR $M = 0.846$
SHORT CIRCUIT CURRENT AT PANEL "LA" = 14,041 A.
LENGTH IN FEET = 14
FACTOR $f = 0.052$
FACTOR $M = 0.951$
SHORT CIRCUIT CURRENT AT PANEL "LB" = 15,790 A.

NOTE:

1. ELECTRICAL CONTRACTOR TO LABEL THE SERVICE ENTRANCE WITH THE AVAILABLE FAULT CURRENT AND THE DATE IT WAS CALCULATED AS REQUIRED BY N.E.C. ARTICLE 100.24

SCHEDULE - PANEL LA				NOTE: ALL BREAKERS 200A UNLESS NOTED OTHERWISE	
MFG.	AS APPROVED			LIGHT	1.9 kVA @ 125% = 9.2 kVA
TYPE	PANELBOARD			RECEPT	11.7 kVA @ 100% = 11.7 kVA
LUG LOC.	TOP			MECH	kVA @ 100% = kVA
AMPS	200A, MLO			25% LARGEST MOTOR	kVA
VOLTAGE	120/240V, 1ph, 3W			SPECIAL	6.3 kVA @ 100% = 6.3 kVA
MOUNTING	SURFACE			SPARE	kVA
BRACING	22,000 A.I.C.			TOTAL	27.8 kVA
				(116A)	
EXTERIOR LIGHTING	404		12	720 OFFICE RECEPTS	
EXTERIOR SIGN	1200		14	800 SALES AREA COUNTER RECEPTS	
EXTERIOR SIGN	1200		16	1000 KIOSK RECEPTS	
EWB-1	1500		18	360 SALES AREA RECEPTS	
EXTERIOR SIGN	1200		10	SPARE	
SALES, COFFEE, OFFICE LIGHTING	528		12	1800 SHOW WINDOW RECEPTS	
SERVICE AREA LIGHTING	1144		14	360 SALES AREA RECEPTS	
SERVICE AREA LIGHTING	660		16	500 TELEVISION	
SERVICE AREA LIGHTING	528		18	360 SERVICE AREA RECEPTS	
INVENTORY, BREAK, RESTROOM LTG	1012		20	500 GARAGE A/C RECEPTS	
IRRIGATION CONTROLS	500		22	540 GARAGE RECEIPT	
BREAK RM	180		24	360 GARAGE RECEIPT	
BURGLER ALARM	400		26	200 COMPUTER	
TELEPHONE SYSTEM	400		28	500 BENCH RECEIPT	
MICROWAVE	900		30	180 GARAGE RECEIPT	
BREAK RECEPTS	360		32	360 GARAGE RECEIPT	
SPARE	33		34	540 SERVICE AREA RECEPTS	
REFRIGERATOR	1200		36	SPARE	
RECEIPT - WATER FOUNTAIN	370		38	360 GARAGE RECEIPT	
COFFEE UNIT	1000		40	1200 SHOW WINDOW RECEPTS	
OFFICE RECEPTS	360		42	300 MENU TV	
A phase =	11,526 VA	B phase =	14,420 VA	Total =	25,946 VA

SCHEDULE - PANEL LB				NOTE: ALL BREAKERS 200A UNLESS NOTED OTHERWISE	
MFG.	AS APPROVED			LIGHT	1.2 kVA @ 125% = 1.5 kVA
TYPE	PANELBOARD 2-SECTION			RECEPT	1.4 kVA @ 100% = 1.4 kVA
LUG LOC.	TOP			MECH	12.4 kVA @ 100% = 12.4 kVA
AMPS	600A, MLO			25% LARGEST MOTOR	1.9 kVA
VOLTAGE	120/240V, 1ph, 3W			SPECIAL	44.4 kVA @ 100% = 44.4 kVA
MOUNTING	SURFACE			SPARE	kVA
BRACING	22,000 A.I.C.			TOTAL	66.6 kVA
				(278A)	
AIR COMPRESSOR	3360		12	1800 ALIGNMENT SENSORS	
SPARE	3360		14	1800 ALIGNMENT MACHINE	
SPARE	7		16	SPARE	
SPARE	7		18	3120 ALIGNMENT RACK	
AIR CIRCULATION FANS	1392		10	3120	
AIR CIRCULATION FANS	1392		12	1800 BRAKE LATHE	
SHOP EQUIPMENT RECEPTS	1440		14	SPARE	
SPARE	15		16	SPARE	
SPARE	17		18	3755 RTU-1	
ROOF RECEPT	180		20	3755	
RECEPT - RESTROOM	180		22	SPARE	
RECEPT - RESTROOM	180		24	SPARE	
RECEPT - INVENTORY	180		26	SPARE	
EF-3	1130		28	720 INVENTORY RECEPTS	
GUH-1	500		30	1200 MONUMENT SIGN	
GUH-1	500		32	1000	
SPARE	33		34	SPARE	
SPARE	35		36	SPARE	
SPARE	37		38	SPARE	
SPARE	39		40	SPARE	
SPARE	41		42	SPARE	
				SECTION TWO	
LIFT	2040		144	SPACE	
SPACE	2040		146	SPACE	
LIFT	2040		148	SPACE	
SPACE	2040		150	SPACE	
LIFT	2040		152	SPACE	
SPACE	2040		154	SPACE	
LIFT	2040		156	SPACE	
SPACE	2040		158	SPACE	
LIFT	2040		160	SPACE	
SPACE	2040		162	SPACE	
LIFT	2040		164	SPACE	
SPACE	2040		166	SPACE	
LIFT	2040		168	SPACE	
SPACE	2040		170	SPACE	
SPACE	2040		172	SPACE	
SPACE	2040		174	SPACE	
SPACE	2040		176	SPACE	
SPACE	2040		178	SPACE	
SPACE	2040		180	SPACE	
SPACE	2040		182	SPACE	
SPACE	2040		184	SPACE	
A phase =	31,207 VA	B phase =	33,217 VA	Total =	64,424 VA

1 ELECTRICAL ONE LINE DIAGRAM N.T.S.

FEEDER SCHEDULE

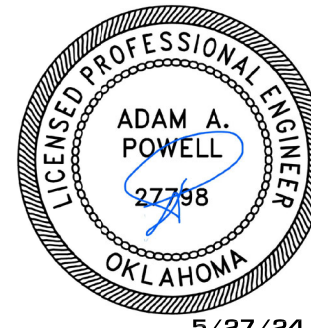
- 3 RUNS OF 3#300 MCM CU 2-1/2"C
- 3#250 MCM AL, 1#4 AL GND, 2"C
- 2 RUNS OF 3#250 MCM AL, 1#1 AL GND, 2"C
- #2/0 CU GND TO BLDG. STEEL & COLD WATER BOND, #6 CU GND TO DRIVEN ROD, & #4 TO CONCRETE ENCASED ELECTRODE (UFER).

ONE-LINE DIAGRAM DETAIL NOTES

- PROVIDE AN INTERSYSTEM BONDING TERMINATION (IBT) AS REQUIRED BY N.E.C. ARTICLE 250.94.

BRAKES PLUS

4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA



5/27/24

ARCHITECT OF RECORD

COMMENTS

DATE

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ARCOCODE JOB #:

CLIENT JOB #:

DRAWN BY: SB

CHECKED BY: LRP

DATE OF ISSUE: 05.27.24

ARCOCODE



45 SPYGLASS DRIVE
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VOICE: 303.881-8825
NORM HERMAN@ARCOCODE.COM

SHEET

E4.1

ELECTRICAL ONE
LINE DIAGRAM

ADAM A. POWELL, P.E.
PEC Enterprises, Inc.
14412 Alene Ct. NE
Albuquerque, NM 87123
Telephone 720-409-2454



COMcheck Software Version 4.1.5.5 Interior Lighting Compliance Certificate

Section 1: Project Information

Energy Code: **2009 IECC**
Project Title: Brakes Plus
Project Type: New Construction

Construction Site:
4900 North May Avenue
Oklahoma City, OK

Owner/Agent:

Designer/Contractor:
Loren Priest
EE, LLC
12005 Antelope Trail
Parker, CO 80138
303.748.1189
loren@eeparker.com

Section 2: Interior Lighting and Power Calculation

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts (B x C)
Sales Area (Retail)	1532	1.5	2298
Service/Repair (Automotive Facility)	3183	0.9	2865
Total Allowed Watts =			5163

Section 3: Interior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Sales Area (Retail:Sales Area 1532 sq.ft.)				
LED 7: F3: 4' LED Strip: LED Linear 22W:	2	3	38	114
LED 8: F4: 8' LED Strip: LED Linear 22W:	4	10	61	610
LED 7 copy 1: F7: 2x4 LED Troffer: LED Panel 19W:	1	12	39	468
Service/Repair (Automotive:Vehicular Maintenance Area 3183 sq.ft.)				
LED 8 copy 2: F9: 4' LED Highbay: LED Panel 80W:	1	17	87	1479
LED 8 copy 1: F4: 8' LED Strip: LED Linear 22W:	4	1	61	61
Total Proposed Watts =			2732	

Section 4: Requirements Checklist

Interior Lighting PASSES: Design 47% better than code.

Lighting Wattage:

- ☐ 1. Total proposed watts must be less than or equal to total allowed watts.

Allowed Watts	Proposed Watts	Complies
5163	2732	YES

Controls, Switching, and Wiring:

- ☐ 2. Daylight zones under skylights more than 15 feet from the perimeter have lighting controls separate from daylight zones adjacent to vertical fenestration.
- ☐ 3. Daylight zones have individual lighting controls independent from that of the general area lighting.

Exceptions:

- ☐ Contiguous daylight zones spanning no more than two orientations are allowed to be controlled by a single controlling device.

Project Title: Brakes Plus
Data filename: C:\COMCHECK\BRAKES PLUS\BRAKES PLUS- NORMAN OK.ckd
Report date: 05/24/24
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- ☐ Daylight spaces enclosed by walls or ceiling height partitions and containing two or fewer light fixtures are not required to have a separate switch for general area lighting.
- ☐ 4. Independent controls for each space (switch/occupancy sensor).
- Exceptions:*
- ☐ Areas designated as security or emergency areas that must be continuously illuminated.
- ☐ Lighting in stairways or corridors that are elements of the means of egress.
- ☐ 5. Master switch at entry to hotel/motel guest room.
- ☐ 6. Individual dwelling units separately metered.
- ☐ 7. Medical task lighting or art/history display lighting claimed to be exempt from compliance has a control device independent of the control of the nonexempt lighting.
- ☐ 8. Each space required to have a manual control also allows for reducing the connected lighting load by at least 50 percent by either controlling all luminaires, dual switching of alternate rows of luminaires, alternate luminaires, or alternate lamps, switching the middle lamp luminaires independently of other lamps, or switching each luminaire or each lamp.

Exceptions:

- ☐ Only one luminaire in space.
- ☐ An occupant-sensing device controls the area.
- ☐ The area is a corridor, storeroom, restroom, public lobby or sleeping unit.
- ☐ Areas that use less than 0.6 Watts/sq.ft.
- ☐ 9. Automatic lighting shutoff control in buildings larger than 5,000 sq.ft.

Exceptions:

- ☐ Sleeping units, patient care areas; and spaces where automatic shutoff would endanger safety or security.
- ☐ 10. Photocell/astromonical time switch on exterior lights.

Exceptions:

- ☐ Lighting intended for 24 hour use.
- ☐ 11. Tandem wired one-lamp and three-lamp ballasted luminaires (No single-lamp ballasts).

Exceptions:

- ☐ Electronic high-frequency ballasts; Luminaires on emergency circuits or with no available pair.

Section 5: Compliance Statement

Compliance Statement: The proposed lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 2009 IECC requirements in COMcheck Version 4.1.5.5 and to comply with the mandatory requirements in the Requirements Checklist.

Stan Bentley – Electrical Designer

Signature

5-24-24

Name - Title

Signature

Date

Project Title: Brakes Plus
Data filename: C:\COMCHECK\BRAKES PLUS\BRAKES PLUS- NORMAN OK.ckd
Report date: 05/24/24
Page 2 of 4



COMcheck Software Version 4.1.5.5 Exterior Lighting Compliance Certificate

Section 1: Project Information

Energy Code: **2009 IECC**
Project Title: Brakes Plus
Project Type: New Construction
Exterior Lighting Zone: 4 (High activity metropolitan commercial district (LZ4))

Construction Site:
4900 North May Avenue
Oklahoma City, OK

Owner/Agent:

Designer/Contractor:
Loren Priest
EE, LLC
12005 Antelope Trail
Parker, CO 80138
303.748.1189
loren@eeparker.com

Section 2: Exterior Lighting Area/Surface Power Calculation

A Exterior Area/Surface	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B x C)	F Proposed Watts
Wall area (Illuminated area of facade wall or surface)	3000 ft ²	0.2	No	600	404
Total Tradable Watts* =			0		
Total Allowed Watts =			600		
Total Allowed Supplemental Watts** =			1300		

* Wattage tradeoffs are only allowed between tradable areas/surfaces.

** A supplemental allowance equal to 1300 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Section 3: Exterior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Wall area (Illuminated area of facade wall or surface 3000 ft ²): Non-tradable Wattage				
LED 1: F1: LED Wall pack: LED A Lamp 25W:	1	10	30	300
LED 4: A: LED Decorative Wall Lt: LED A Lamp 25W:	1	4	26	104
Total Tradable Proposed Watts =			0	

Section 4: Requirements Checklist

Lighting Wattage:

- ☐ 1. Within each non-tradable area/surface, total proposed watts must be less than or equal to total allowed watts. Across all tradable areas/surfaces, total proposed watts must be less than or equal to total allowed watts.
- Compliance:** Passes.

Controls, Switching, and Wiring:

- ☐ 2. All exemption claims are associated with fixtures that have a control device independent of the control of the nonexempt lighting.
- ☐ 3. Lighting not designated for dusk-to-dawn operation is controlled by either a a photosensor (with time switch), or an astronomical time switch.
- ☐ 4. Lighting designated for dusk-to-dawn operation is controlled by an astronomical time switch or photosensor.
- ☐ 5. All time switches are capable of retaining programming and the time setting during loss of power for a period of at least 10 hours.

Project Title: Brakes Plus
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Report date: 05/24/24
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Exterior Lighting Efficacy:

- ☐ 6. All exterior building grounds luminaires that operate at greater than 100W have minimum efficacy of 60 lumen/watt.

Exceptions:

- ☐ Lighting that has been claimed as exempt and is identified as such in Section 3 table above.
- ☐ Lighting that is specifically designated as required by a health or life safety statute, ordinance, or regulation.
- ☐ Emergency lighting that is automatically off during normal building operation.
- ☐ Lighting that is controlled by motion sensor.

Exterior Lighting PASSES: Design 0.0% better than code.

Section 5: Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 2009 IECC requirements in COMcheck Version 4.1.5.5 and to comply with the mandatory requirements in the Requirements Checklist.

Stan Bentley – Electrical Designer

Signature

5-24-24

Name - Title

Signature

Date

Project Title: Brakes Plus
Data filename: C:\COMCHECK\BRAKES PLUS\BRAKES PLUS- NORMAN OK.ckd
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Page 4 of 4

BRAKES PLUS

4900 NORTH MAY AVENUE
OKLAHOMA CITY, OKLAHOMA



5/27/24

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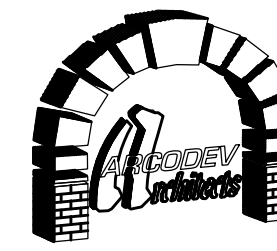
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NORM@HERMAN@ARCDEV.COM

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E5.1

**LIGHTING COMPLIANCE
CERTIFICATES**

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PEC Enterprises , Inc.
14412 Alene Ct. NE
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Telephone 720-409-2454